

our company

Tube Mac® Industries is a dynamic company internationally renowned for our products, problem solving and design services. We embrace the challenge to explore and develop improvements over traditional installation methods of piping for hydraulic and lubrication systems.



our goal

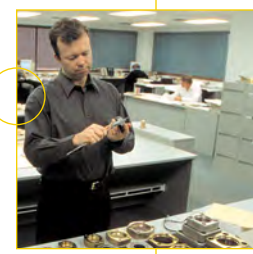
Tube Mac® Industries goal is to maximize our ability to provide the highest quality products and services that meet or exceed industry standards.



our mission

Tube Mac® Industries mission is to provide our customers with a **total quality company**. We maintain a progressive program of research and development for improved methods, processes and materials. Our highly skilled people are trained to fulfill standard or specialized requirements.

Tube Mac® Industries is responsive, innovative, reliable and committed to providing exceptional service along with the highest quality products.



Our future is in our customer's success!



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TUBE-MAC® Industries

Setting the Standard in Hydraulic/Lube Piping Systems

...Speed

...Cleanliness

...Total System

Service

...Quality



50,000 square feet equipped with the very latest machinery and technology ready and able to meet your piping and component needs .

Tube-Mac® Industries, founded in 1977, is a progressive thinking company that is built on quality and integrity. Tube-Mac® is committed to supplying the finest hydraulic/lube piping systems and services on the market today. A complete understanding of hydraulics and an uncompromising dedication to cleanliness are what has propelled Tube-Mac® to the forefront of these type of worldwide piping installations. With the needs of our customers shaping our company, Tube-Mac® is able to stay on the cutting edge of hydraulic/lube piping requirements demanded by today's state-of-the-art machinery.





TUBE-MAC[®] Industries

Speed:

With construction schedules becoming more and more compacted, today's hydraulic/lube piping installations demand **SPEED**.

The Tube-Mac[®] piping systems rise to the challenge, setting a new standard for hydraulic/lube piping installations.

With state-of-the-art, leak-free pipe connections, Tube-Mac[®] is able to supply solutions for virtually all industrial hydraulic/lube piping applications.

Method 1: Flared System. For medium to high pressures. This configuration is based on flaring the pipe ends to 37 degrees and inserting either a flat faced cone or an 'o'ring faced cone into the flared pipe. The union is completed by simply bolting together the two flanges that were slid onto the pipe prior to flaring (reference pg. B1).

Method 2: Retain Ring System. For very high pressures. This configuration utilizes heavy wall pipe that has a machined face, along with an annular groove on the outside diameter. After preparation, the flange is slid onto the pipe and a retain ring is installed. The union is completed by inserting an 'o'ring seal retainer and bolting the flanges together (reference pg. C1).

Method 3: Low Pressure Retain Ring System. For low pressures. This configuration utilizes butt weld adapters with an annular groove on the outside diameter. After pipe preparation, adapter is welded on to the pipe. The flange is slid onto the pipe and a retain ring is installed. The union is completed by inserting an 'o'ring and bolting the flanges together (reference pg. D1).

Method 4: TMI[®] Roll/Cut Grooved System. For low pressure hydraulic and lubrication systems. This configuration is made by roll forming a groove in the end of the pipes. A gasket is then slid into place, equally covering the ends of each pipe. A split coupling housing is bolted over the gasket so that it tightens directly into the grooves in the pipe (reference pg. E1).

To speed up construction further, Tube-Mac[®] utilizes cold bending techniques to install its piping systems.

Because of the non-welded joints and bending philosophy, Tube-Mac[®] is able to eliminate all the high labour costs and contamination risks associated with typical welded piping. The customer receives a clean, leak-free, easily maintained hydraulic/lube piping system in a surprisingly short period of time.



TUBE-MAC[®] Industries

Cleanliness:

For efficient hydraulic/lube system start-ups and longevity, it is essential to insist upon **CLEANLINESS**.

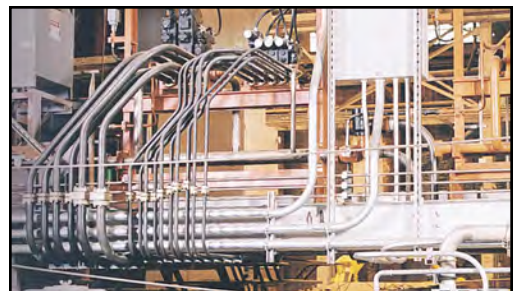
Tube-Mac[®] keeps cleanliness at the forefront of all hydraulic/lube piping installations. Today's equipment increases the demand for extremely clean piping. Sensitive piston pumps, servo and proportional valves as well as bearings require the cleanest oil because of tight tolerances. Tube-Mac[®] provides the piping that will meet these demands.

The key to Tube-Mac[®]'s superior hydraulic cleanliness is our pipe. Our tube quality piping used for working pressure lines is cold drawn during the manufacturing process leaving it internally and externally free of scale. To protect all hydraulic/lube piping, Tube-Mac[®] has standardized on phosphating. This surface conditioning procedure inhibits rusting, thus maintaining the pipe cleanliness both during storage and installation.

Tube-Mac[®]'s mechanical joint system eliminates all the contamination pitfalls of a typical welded system. The fear of pipe or weld particle migration is no longer a concern with the Tube-Mac[®] hydraulic piping system. Expensive pump groups and sensitive servo systems are now more likely to avoid internal failure.

Because of the scale-free, weld-free field installation of the Tube-Mac[®] piping system, the need for costly internal chemical flushing is a thing of the past. With Tube-Mac[®] piping, all that is necessary is an independent filtering unit utilizing system fluid for removal of loose contaminants. This method of oil flushing not only removes loose contaminants but at the same time polishes the system fluid. Now, instead of chemical disposal, the customer has a hydraulic system full of clean fluid that is ready for commissioning.

When considering a hydraulic/lube piping installation it is important to think in terms of overall installed economics. Keeping in mind the significant labour savings, the greatly reduced flushing time, and the elimination of hazardous chemical disposal, it is easy to see why a Tube-Mac[®] piping system installs with an overall cost savings.





TUBE-MAC® Industries

Total System Service:

With years of applied hydraulics expertise and the latest technologies at our disposal, Tube-Mac® Industries is able to offer **TOTAL PIPING SYSTEM SERVICE**.

Through continual education and total team effort, Tube-Mac® is able to support all phases of a piping installation before, during, and after construction.

Engineering

Close contact between the field technicians and Tube-Mac® project coordinators is maintained throughout the duration of each project. This interaction provides each project with the immediate service that is required. While utilizing state-of-the-art AutoCAD software, practical engineered piping solutions can also be generated at the design phase, which enhances the installation even further.

Field Coordination

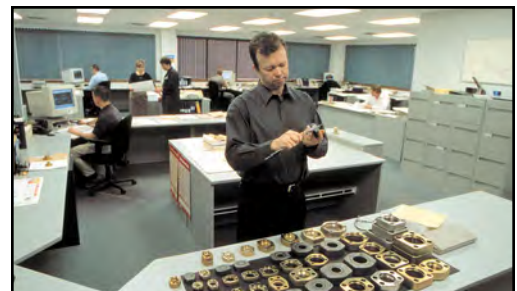
Tube-Mac® field technicians accompany virtually all piping installations. Each technician is well versed in hydraulic logic and is a qualified instructor on proper bending and installation procedures. While helping to assume the task of crew coordination and total quality assurance, the Tube-Mac® technician is a significant cost saver to the installation contractor.

Flushing and Testing

In the spirit of total piping system commitment, Tube-Mac® has developed the means to flush and pressure test all Tube-Mac® piping installations. This is possible through the use of portable flushing and testing units. Tube-Mac® can filter each piping system to customer specified cleanliness levels, while at the same time, hydrostatically test each system.

Component Sales

Tube-Mac® offers for independent sale a complete line of hydraulic piping accessories from a large inventory allowing for the fastest possible service. After market availability of all Tube-Mac® products has led to worldwide customer satisfaction.



TUBE-MAC[®] Industries

Quality:

*In order to stand the test of time in today's industrial market, the cornerstone of a company must be **QUALITY**.*

Tube-Mac[®]'s uncompromising commitment to quality has led to the assembly of the most sound, cost effective hydraulic/lube piping system available.

Material

For high pressure hydraulic applications it is important to realize the need for strong components. All Tube-Mac[®] supplied flanges are manufactured from steel to ensure the ability to withstand the shock and dynamics inherent to hydraulic systems.

Preparation

Where possible, all Tube-Mac[®] components are conditioned with either zinc phosphate or zinc dicromate rust inhibitors to ensure the longest life before and after installation. Also, Tube-Mac[®] offers the value added service of removing any internal paint from all mechanical grooved end fittings to make them fit for hydraulic/lube service.

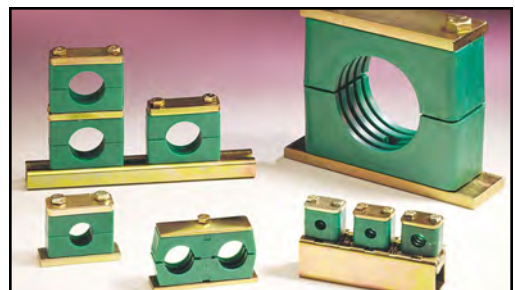
Components

In order to complete the total hydraulic/lube piping system, it is important to have quality accessories. For example, Tube-Mac[®] has standardized on a vibration dampening clamping system. To minimize noise and fatigue due to hydraulic shock, proper support is essential.

Tube-Mac[®] also supplies and uses only the finest hydraulic hoses and couplings which meet and exceed SAE standards. Also, with our trained personnel manufacturing hose assemblies, the results are reliable, safe and with quality products you can depend on.

The heavy duty hydraulic hose couplings supplied by Tube-Mac[®] are the industry's finest and feature a tapered flange head, thicker tube walls and a solid one-piece design with NO brazed/weld joints.

Top quality piping components promote expedited installations for which Tube-Mac[®] has become internationally renowned. With locations in the USA and Canada, Tube-Mac[®] provides customers with the assurance of dealing with an organization that can fulfill their technical needs, and also deliver quality products supported by friendly service in a timely manner.



Pipe



Designers Guide

Pipe Type, Size & Schedule Selection

- 1) Determine if pipe is carbon or stainless steel.
- 2) Establish the flow rate through the pipe in US Gal/min.
- 3) Select the desired line velocity in FPS (ft./sec.)

Recommended Oil Velocities

TABLE 1.

Suction Lines	Return Lines	Pressure Lines						
		0-150psi	150-375psi	375-750psi	750-1500psi	1500-2250psi	2250-3000psi	3000-5000psi
≤5FPS	≤10FPS	≤10FPS	≤12FPS	≤13FPS	≤14FPS	≤16FPS	≤18FPS	≤20FPS

- 4) Establish system design pressure (PSI)
- 5) Go to Table 2.
Under the selected line velocity column read down until the approximate flow rate is found. Read across to the left column showing the nominal pipe size and schedule required.
- 6) Go to Table 5 for carbon steel. (Table 6 for stainless steel)
Under the nominal pipe size selected above, read down the column showing available pipe and corresponding pressure rating to meet the design criteria.
The reference section shown on the right hand column of Table 5 will give more detailed information on the selected pipe connection style.

Example:

System delivering 250 GPM at 3500 PSI with a design velocity of around 20 FPS using carbon steel pipe.

Selection:

TMP52CD pipe, flared, schedule 80, 2 1/2" size would meet the design requirement of this example.



TMI[®] Pipe Flow/Velocity Guide

see page A5 for connection pressure rating

TABLE 2.

Nominal Pipe Size		Internal Area	Bore Dia. (in)	Line Velocity						
				GPM@ 2FPS	GPM@ 5FPS	GPM@ 10FPS	GPM@ 15FPS	GPM@ 20FPS	GPM@ 25FPS	GPM@ 30FPS
1/2"	Sch40	0.304	0.622	1.9	4.7	9.5	14.2	18.9	23.7	28.4
	Sch80	0.234	0.546	1.5	3.6	7.3	10.9	14.6	18.2	21.9
3/4"	Sch40	0.533	0.824	3.3	8.3	16.6	24.9	33.2	41.6	49.9
	Sch80	0.432	0.742	2.7	6.7	13.5	20.2	27.0	33.7	40.4
1"	Sch40	0.864	1.049	5.4	13.5	26.9	40.4	53.9	67.3	80.8
	Sch80	0.719	0.957	4.5	11.2	22.4	33.6	44.8	56.0	67.3
1 1/4"	Sch40	1.496	1.380	9.3	23.3	46.6	69.9	93.2	116.5	139.9
	Sch80	1.283	1.278	8.0	20.0	40.0	60.0	80.0	100.0	119.9
1 1/2"	Sch40	2.036	1.610	12.7	31.7	63.5	95.2	126.9	158.6	190.4
	Sch80	1.767	1.500	11.0	27.5	55.1	82.6	110.2	137.7	165.2
	Sch160	1.406	1.338	8.8	21.9	43.8	65.7	87.7	109.6	131.5
	Heavy Wall	1.852	1.540	11.5	28.9	57.7	86.6	115.4	144.3	173.1
2"	Sch40	3.356	2.067	20.9	52.3	104.6	156.9	209.2	261.5	313.8
	Sch80	2.953	1.939	18.4	46.0	92.0	138.1	184.1	230.1	276.1
	Sch160	2.235	1.687	13.9	34.8	69.7	104.5	139.4	174.2	209.0
	Heavy Wall	2.923	1.930	18.2	45.6	91.1	136.7	182.2	227.8	273.3
2 1/2"	Sch40	4.788	2.469	29.8	74.6	149.2	223.8	298.5	373.1	447.7
	Sch80	4.238	2.323	26.4	66.1	132.1	198.2	264.2	330.3	396.3
	Sch160	3.547	2.125	22.1	55.3	110.6	165.8	221.1	276.4	331.7
	Heavy Wall	4.383	2.360	27.3	68.3	136.6	204.9	273.2	341.5	409.8
3"	Sch40	7.393	3.068	46.1	115.2	230.4	345.6	460.8	576.1	691.3
	Sch80	6.605	2.900	41.2	102.9	205.9	308.8	411.8	514.7	617.6
	Heavy Wall	6.487	2.870	40.4	101.1	202.2	303.3	404.4	505.5	606.6
4"	Sch40	12.730	4.026	79.4	198.4	396.8	595.2	793.6	992.0	1190.4
	Sch80	11.500	3.826	71.7	179.2	358.4	537.6	716.8	896.0	1075.4
	SchXXS	7.803	3.152	48.6	121.6	243.2	364.9	486.5	608.1	729.8
	Heavy Wall	8.795	3.350	54.8	137.1	274.1	411.2	548.3	685.4	822.4
5"	Sch40	20.006	5.047	124.7	311.8	623.6	935.3	1247.1	1558.9	1870.7
	SchXXS	14.610	4.063	91.1	227.7	455.4	683.1	910.8	1138.4	1366.1
6"	Sch40	28.890	6.065	180.1	450.2	900.5	1350.7	1801.1	2251.2	2701.4
	SchXXS	21.147	4.897	131.8	329.6	659.1	988.7	1318.3	1647.9	1977.4
8"	Sch40	50.027	7.981	311.9	779.6	1559.3	2338.9	3118.6	3898.2	4677.8
	Sch160	36.456	6.813	227.3	568.1	1136.3	1704.4	2272.6	2840.7	3408.9

• FLOW IS IN US GALLONS/MIN.



TMI® Pipe - Pressure Rating Guide

Size Range & Maximum Allowable Working Pressure - ^{PSI}
Bore dia.(in)

Carbon Steel (Table 3.)

Pipe	Nominal Pipe Size*												Ref. Page
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	
TMP52CD SCHEDULE 40 PIPE	6200 0.622	5000 0.824	4700 1.049	3900 1.380	3500 1.610	2900 2.067	-	-	-	-	-	-	A6
TMP37CD SCHEDULE 40 PIPE	-	-	-	-	-	-	2600 2.469	2300 3.068	1900 4.026	1700 5.047	1500 6.065	1300 7.981	A7
TMP52CD SCHEDULE 80 PIPE	8600 0.546	7000 0.742	6500 0.957	5400 1.278	4900 1.500	4200 1.939	4500 2.323	3900 2.900	3420 3.826	-	-	-	A6
TMP52CD SCHEDULE 160 PIPE	-	-	-	-	6930 1.338	6750 1.689	6030 2.125	-	-	-	-	-	A6
TMP52CD HEAVY WALL PIPE	-	-	-	-	7400 1.540	6100 1.930	5900 2.360	5900 2.870	6200 3.350	-	-	-	A6
TMP106HR HEAVY WALL PIPE	-	-	-	-	-	-	-	-	-	5200 4.063	5000 4.897	4100 6.813	A7

* FOR SIZES 10" OR LARGER CONSULT FACTORY

- NOTE:
- 1) MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3
 - 2) TYPE 52CD MATERIAL ALLOWABLE STRESS - 24,000 PSI PER ANSI B31.3
 - 3) TYPE 37CD MATERIAL ALLOWABLE STRESS - 20,000 PSI PER ANSI B31.3
 - 4) TYPE 106HR MATERIAL ALLOWABLE STRESS - 20,000 PSI PER ANSI B31.3

Stainless Steel (Table 4.)

Pipe	Nominal Pipe Size*												Ref. Page
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	
TMP304/316SS SCHEDULE 40 PIPE	5000 0.622	4100 0.824	3800 1.049	3100 1.380	2800 1.610	2400 2.067	2600 2.469	2300 3.068	1900 4.026	1700 5.047	1500 6.065	1300 7.981	A8
TMP304/316SS SCHEDULE 80 PIPE	7000 0.546	5700 0.742	5300 0.957	4400 1.278	4000 1.500	3400 1.939	3600 2.323	3200 2.900	2770 3.826	-	-	-	A8
TMP2205SS SCHEDULE 80 PIPE	-	-	-	6600 1.278	6000 1.500	5200 1.939	-	-	-	-	-	-	A9
TMP304/316SS HEAVY WALL PIPE	-	-	-	-	-	-	-	6800 2.300	5800 3.152	5200 4.063	5000 4.897	4000 6.813	A9

* FOR SIZES 10" OR LARGER CONSULT FACTORY

- NOTE:
- 1) MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3
 - 2) TYPE 304/316SS MATERIAL ALLOWABLE STRESS - 20,000 PSI PER ANSI B31.3
 - 2) TYPE 2205SS MATERIAL ALLOWABLE STRESS - 30,000 PSI PER ANSI B31.3



TMI® Pipe Connection - Pressure Rating Guide

Size Range & Maximum Allowable Connection Working Pressure - ^{PSI} Bore dia.(in)

Carbon Steel (Table 5.)

Connection Style	Pipe End Style	Pipe	Nominal Pipe Size*											Ref. Section	
			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"		8"
CARBON STEEL FLANGE	FLARED	TMP52CD SCHEDULE 40 PIPE	6000 0.622	5000 0.824	4700 1.049	3900 1.380	3500 1.610	2900 2.067	-	-	-	-	-	-	B
		TMP37CD SCHEDULE 40 PIPE	-	-	-	-	-	-	2600 2.469	2300 3.068	1900 4.026	1700 5.047	1500 6.065	1300 7.981	B
		TMP52CD SCHEDULE 80 PIPE	6000 0.546	6000 0.742	6000 0.957	5400 1.278	4900 1.500	4200 1.939	4500 2.323	3900 2.900	3420 3.826	-	-	-	B
		TMP52CD SCHEDULE 160 PIPE	-	-	-	-	6930 1.338	6750 1.689	6030 2.125	-	-	-	-	-	B
	RETAIN RING	TMP52CD HEAVY WALL PIPE	-	-	-	-	6000 1.540	6000 1.930	5800 2.360	5800 2.870	5800 3.350	-	-	-	C
		TMP106HR HEAVY WALL PIPE	-	-	-	-	-	-	-	-	-	4000 4.063	3700 4.897	3500 6.813	C
DUCTILE IRON COUPLING	ROLL/CUT GROOVED	TMP37CD SCHEDULE 40 PIPE	-	-	-	-	-	-	750 2.469	750 3.068	750 4.026	750 5.047	700 6.065	600 7.981	E

* FOR SIZES 10" OR LARGER CONSULT FACTORY

- NOTES:
- 1) THE FLARED PIPE SYSTEM IS MORE COST EFFECTIVE THAN THE RETAIN RING SYSTEM.
 - 2) ROLL GROOVED SCHEDULE 40 PIPE IS MOST COMMONLY USED FOR UNRESTRICTED LOW PRESSURE HYDRAULIC RETURN LINES AND LOW PRESSURE LUBRICATION LINES.
 - 3) MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CARBON STEEL/DUCTILE IRON CONNECTION RATING..

Stainless Steel (Table 6.)

Connection Style	Pipe End Style	Pipe	Nominal Pipe Size*											Ref. Section	
			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"		8"
STAINLESS STEEL FLANGE	FLARED	TMP304/316SS SCHEDULE 40 PIPE	5000 0.622	4000 0.824	3800 1.049	3100 1.380	2800 1.610	2400 2.067	2500 2.469	2000 3.068	-	-	-	-	B
		TMP304/316SS SCHEDULE 80 PIPE	6000 0.546	5700 0.742	5300 0.957	4400 1.278	4000 1.500	3400 1.939	3600 2.323	3200 2.900	2770 3.826	-	-	-	B
		TMP2205SS SCHEDULE 80 PIPE	-	-	-	6000 1.278	6000 1.500	5200 1.939	-	-	-	-	-	-	B
	RETAIN RING	TMP304/316SS HEAVY WALL PIPE	-	-	-	-	-	-	-	6800 2.300	5800 3.152	4000 4.063	3700 4.897	3500 6.813	C
DUCTILE IRON COUPLING	ROLL/CUT GROOVED	TMP304/316SS SCHEDULE 40 PIPE	-	-	-	-	-	-	750 2.469	750 3.068	750 4.026	750 5.047	700 6.065	600 7.981	E

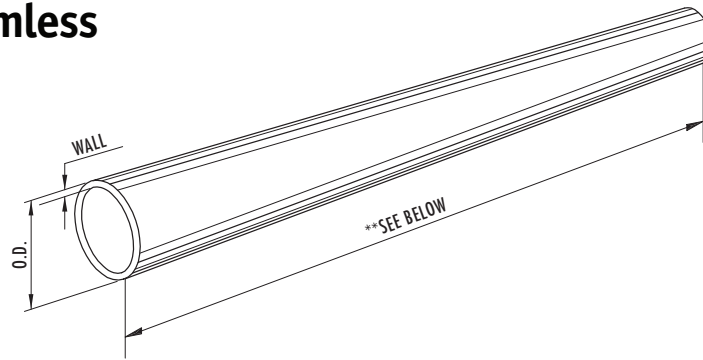
* FOR SIZES 10" OR LARGER CONSULT FACTORY

- NOTES:
- 1) THE FLARED PIPE SYSTEM IS MORE COST EFFECTIVE THAN THE RETAIN RING SYSTEM.
 - 2) ROLL GROOVED SCHEDULE 40 PIPE IS MOST COMMONLY USED FOR UNRESTRICTED LOW PRESSURE HYDRAULIC RETURN LINES AND LOW PRESSURE LUBRICATION LINES.
 - 3) MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CARBON STEEL/DUCTILE IRON CONNECTION RATING.
 - 4) FOR PIPING SYSTEMS CONSISTING OF ALL STAINLESS STEEL COMPONENTS, PRESSURE RATINGS WILL BE LESS THAN THAT SHOWN ABOVE (CONTACT FACTORY).



TMI[®] Carbon Steel Pipe

Cold Drawn Seamless



TMP52CD

A519-DIN 2391c St 52.4 NBK Phosphated High Quality Bendable Cold Drawn Seamless Carbon Steel

Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP52CD-SCH40-050x**	0.840 x 0.109	0.622	0.85	6200 (430)
3/4"	TMP52CD-SCH40-075x**	1.050 x 0.113	0.824	1.13	5000 (345)
1"	TMP52CD-SCH40-100x**	1.315 x 0.133	1.049	1.68	4700 (325)
1 1/4"	TMP52CD-SCH40-125x**	1.660 x 0.140	1.380	2.27	3900 (270)
1 1/2"	TMP52CD-SCH40-150x**	1.900 x 0.145	1.610	2.72	3500 (240)
2"	TMP52CD-SCH40-200x**	2.375 x 0.154	2.067	3.65	2900 (200)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

Schedule 80

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP52CD-SCH80-050x**	0.840 x 0.147	0.546	1.09	8600 (595)
3/4"	TMP52CD-SCH80-075x**	1.050 x 0.154	0.742	1.47	7000 (485)
1"	TMP52CD-SCH80-100x**	1.315 x 0.179	0.957	2.17	6500 (450)
1 1/4"	TMP52CD-SCH80-125x**	1.660 x 0.191	1.278	2.99	5400 (370)
1 1/2"	TMP52CD-SCH80-150x**	1.900 x 0.200	1.500	3.63	4900 (340)
2"	TMP52CD-SCH80-200x**	2.375 x 0.218	1.939	5.02	4200 (290)
2 1/2"	TMP52CD-SCH80-250x**	2.875 x 0.276	2.323	7.65	4500 (310)
3"	TMP52CD-SCH80-300x**	3.500 x 0.300	2.900	10.24	3900 (270)
4"	TMP52CD-SCH80-400x**	4.500 x 0.337	3.826	14.98	3420 (235)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

Schedule 160

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/2"	TMP52CD-SCH160-150x**	1.900 x 0.281	1.338	4.86	6930 (478)
2"	TMP52CD-SCH160-200x**	2.375 x 0.343	1.689	7.44	6750 (465)
2 1/2"	TMP52CD-SCH160-250x**	2.875 x 0.375	2.125	10.01	6030 (415)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

Heavy Wall

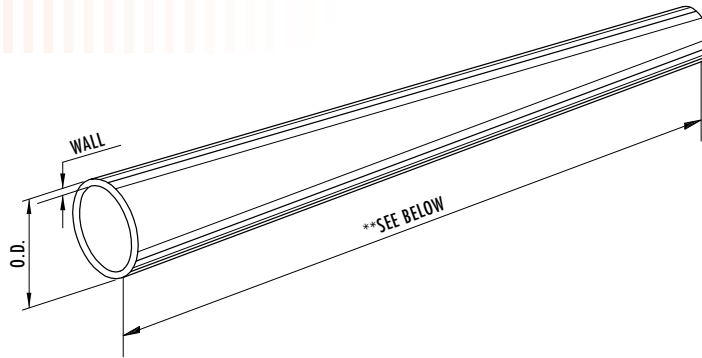
Nominal Size	Pipe Part No.	OD x Wall (mm)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/2"	TMP52CD-56x150x**	56 x 8.5	1.54	6.70	7400 (510)
2"	TMP52CD-66x200x**	66 x 8.5	1.93	8.11	6100 (420)
2 1/2"	TMP52CD-80x250x**	80 x 10	2.36	11.62	5900 (410)
3"	TMP52CD-97x300x**	97 x 12	2.87	16.93	5900 (410)
4"	TMP52CD-115x400x**	115 x 15	3.35	24.90	6200 (430)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 360"

- MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3



TMI® Carbon Steel Pipe



TMP37CD

A519-DIN 2391c St 37.4 NBK Phosphated High Quality Bendable Cold Drawn Seamless Carbon Steel
Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMP37CD-SCH40-250x**	2.875 x 0.203	2.469	5.79	2600 (180)
3"	TMP37CD-SCH40-300x**	3.500 x 0.216	3.068	7.57	2300 (160)
4"	TMP37CD-SCH40-400x**	4.500 x 0.237	4.026	10.78	1900 (130)
5"	TMP37CD-SCH40-500x**	5.563 x 0.258	5.047	14.60	1700 (115)
6"	TMP37CD-SCH40-600x**	6.625 x 0.280	6.065	18.95	1500 (105)
8"	TMP37CD-SCH40-800x**	8.625 x 0.322	7.981	28.52	1300 (90)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), SIZES AVAILABLE IN 240" and 360" LENGTHS.

TMP106HR

A106B - Cleaned Seamless Carbon Steel

Schedule XXS/160

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
5"	TMP106HR-SCHXXS-500x**	5.563 x 0.750	4.063	38.51	5200 (360)
6"	TMP106HR-SCHXXS-600x**	6.625 x 0.864	4.897	53.10	5000 (345)
8"	TMP106HR-SCH160-800x**	8.625 x 0.906	6.813	74.61	4100 (285)

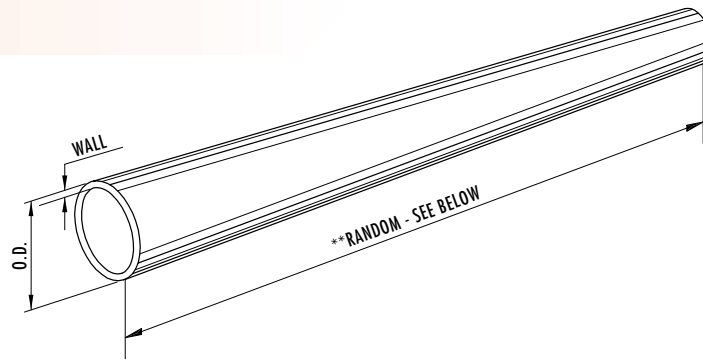
• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 480"

• MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3



TMI[®] Stainless Steel Pipe



TMP304SS/316SS

A312-Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule 40

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP304SS-SCH40-050x**	TMP316SS-SCH40-050x**	0.840 x 0.109	0.622	0.85	5000 (345)
3/4"	TMP304SS-SCH40-075x**	TMP316SS-SCH40-075x**	1.050 x 0.113	0.824	1.13	4100 (285)
1"	TMP304SS-SCH40-100x**	TMP316SS-SCH40-100x**	1.315 x 0.133	1.049	1.68	3800 (260)
1 1/4"	TMP304SS-SCH40-125x**	TMP316SS-SCH40-125x**	1.660 x 0.140	1.380	2.27	3100 (215)
1 1/2"	TMP304SS-SCH40-150x**	TMP316SS-SCH40-150x**	1.900 x 0.145	1.610	2.72	2800 (190)
2"	TMP304SS-SCH40-200x**	TMP316SS-SCH40-200x**	2.375 x 0.154	2.067	3.65	2400 (165)
2 1/2"	TMP304SS-SCH40-250x**	TMP316SS-SCH40-250x**	2.875 x 0.203	2.469	5.79	2600 (180)
3"	TMP304SS-SCH40-300x**	TMP316SS-SCH40-300x**	3.500 x 0.216	3.068	7.58	2300 (160)
4"	TMP304SS-SCH40-400x**	TMP316SS-SCH40-400x**	4.500 x 0.237	4.026	10.79	1900 (130)
5"	TMP304SS-SCH40-500x**	TMP316SS-SCH40-500x**	5.563 x 0.258	5.047	14.62	1700 (115)
6"	TMP304SS-SCH40-600x**	TMP316SS-SCH40-600x**	6.625 x 0.280	6.065	18.97	1500 (105)
8"	TMP304SS-SCH40-800x**	TMP316SS-SCH40-800x**	8.625 x 0.322	7.981	28.55	1300 (90)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

Schedule 80

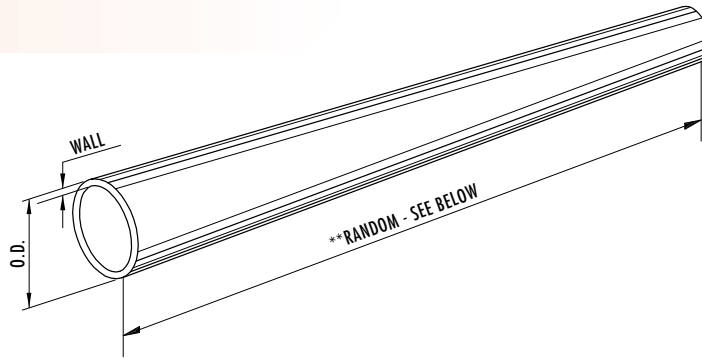
Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP304SS-SCH80-050x**	TMP316SS-SCH80-050x**	0.840 x 0.147	0.546	1.09	7000 (485)
3/4"	TMP304SS-SCH80-075x**	TMP316SS-SCH80-075x**	1.050 x 0.154	0.742	1.47	5700 (390)
1"	TMP304SS-SCH80-100x**	TMP316SS-SCH80-100x**	1.315 x 0.179	0.957	2.17	5300 (365)
1 1/4"	TMP304SS-SCH80-125x**	TMP316SS-SCH80-125x**	1.660 x 0.191	1.278	2.99	4400 (300)
1 1/2"	TMP304SS-SCH80-150x**	TMP316SS-SCH80-150x**	1.900 x 0.200	1.500	3.63	4000 (275)
2"	TMP304SS-SCH80-200x**	TMP316SS-SCH80-200x**	2.375 x 0.218	1.939	5.02	3400 (235)
2 1/2"	TMP304SS-SCH80-250x**	TMP316SS-SCH80-250x**	2.875 x 0.276	2.323	7.65	3600 (250)
3"	TMP304SS-SCH80-300x**	TMP316SS-SCH80-300x**	3.500 x 0.300	2.900	10.24	3200 (220)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

• MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3



TMI® Stainless Steel Pipe



TMP2205SS

A790 - Seamless Duplex Stainless Steel

Schedule 80

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/4"	TMP2205SS-SCH80-125x**	1.660 x 0.191	1.278	2.99	6600 (455)
1 1/2"	TMP2205SS-SCH80-150x**	1.900 x 0.200	1.500	3.63	6000 (420)
2"	TMP2205SS-SCH80-200x**	2.375 x 0.218	1.939	5.02	5200 (360)

** INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

TMP304SS/316SS

A312 - Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule XXS/160

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
4"	TMP304SS-SCHXXS-400x**	TMP316SS-SCHXXS-400x**	4.500 x 0.674	3.152	27.54	5800 (400)
5"	TMP304SS-SCHXXS-500x**	TMP316SS-SCHXXS-500x**	5.563 x 0.750	4.063	38.55	5200 (360)
6"	TMP304SS-SCHXXS-600x**	TMP316SS-SCHXXS-600x**	6.625 x 0.864	4.897	53.16	5000 (345)
8"	TMP304SS-SCH160-800x**	TMP316SS-SCH160-800x**	8.625 x 0.906	6.813	74.69	4000 (275)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

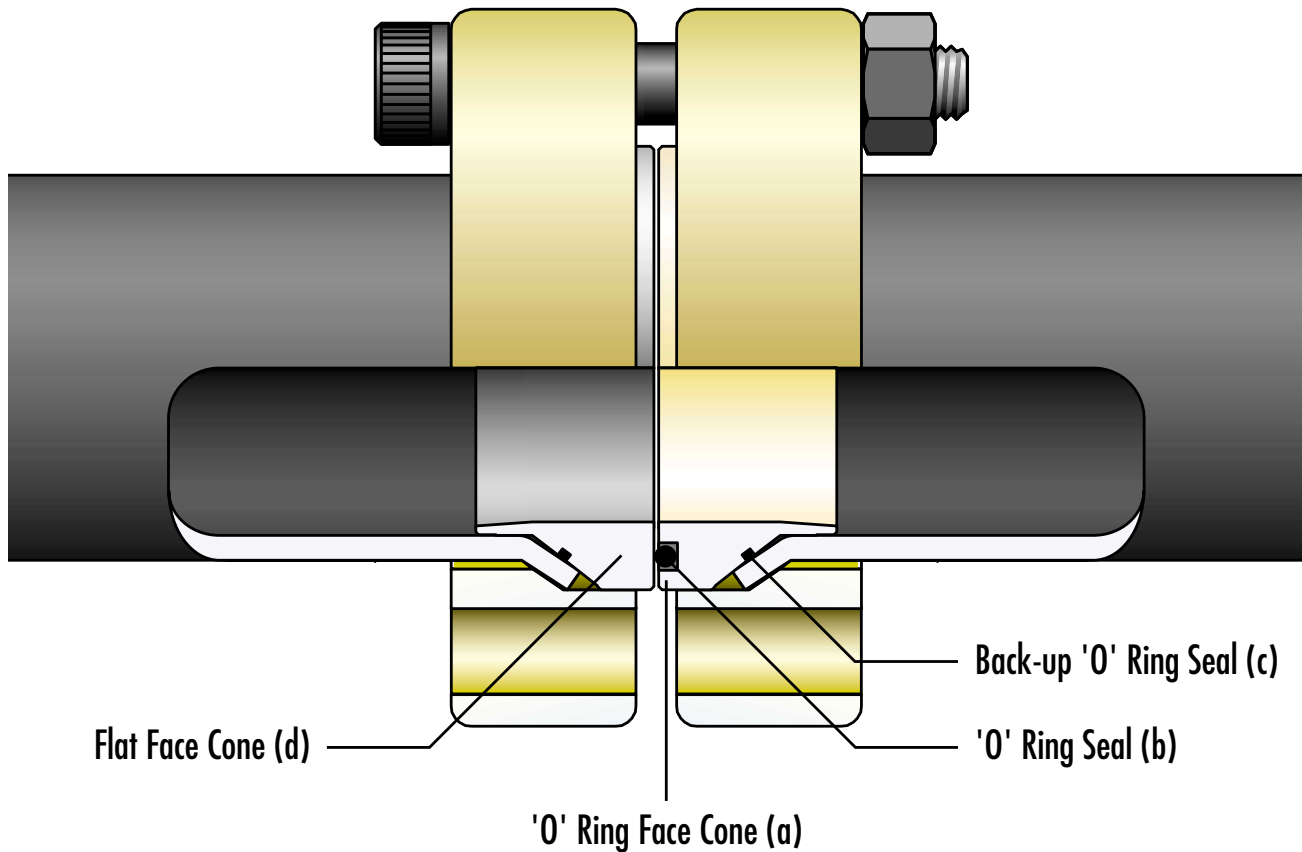
** INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

• MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE PIPE RATING PER ANSI B31.3





Flared System



The flared configuration is based on flaring the pipe ends to 37° and utilizing flanges and internal cones. 'O'ring face cone (a) with 'o'ring seal (b) mating to flat face cone (d). Both internal cones have back-up 'o'rings (c).

PREPARATION:

The flange is slipped onto the pipe before flaring. After flaring, the cone is located into the pipe. Bolting the flanges together draws the flared pipes and cones in contact with each other providing a leakfree connection.

Standard flare flanges and pipe are available from 1/2" - 3" and pressures to 6000 PSI.

The standard connection styles offered conform to SAE and ISO 4-bolt flanges. Other flange patterns may also be available.



TMI® 37° Flaring and Connection Procedure

The Flare Flange connection consists of pipe suitable for cold forming (reference pages B6-B7), flare flanges, flare cones with elastomer seals and bolting hardware.



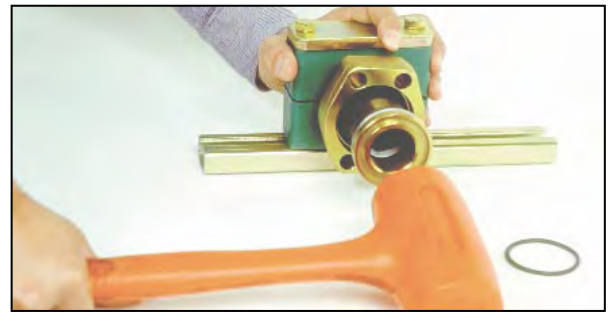
Step 1: Cut pipe end square, deburr and clean. Slip flange onto the pipe before flaring. Place pipe into the flaring machine with the correct dies and flaring cone to suit the pipe size.



Step 2: Pipe is to protrude to the stop on the die. Lubricate the flaring cone, start the machine, flare the pipe end until fully formed against the die. Stop the machine, remove the pipe from the die.



Step 3: Clean and visually inspect the flare. The surface of the flare should be smooth and free of any defects.



Step 4: Select the correct pipe cone style (ref. pgs. B4-B5). Insert pipe cone into the flared end of the pipe (use rubber hammer if required).



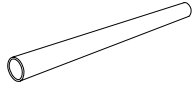
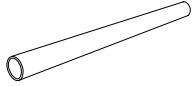
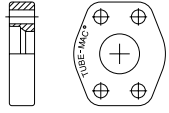
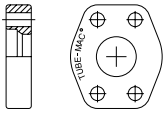
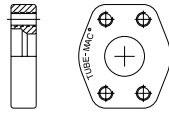
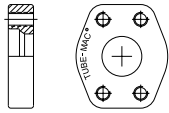
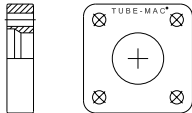
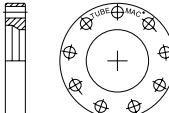

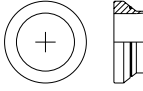
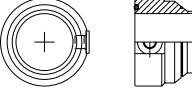
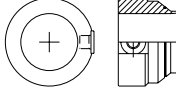
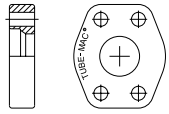
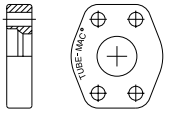
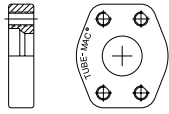
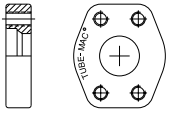
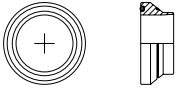
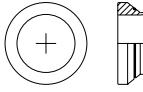
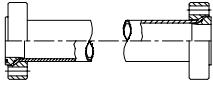
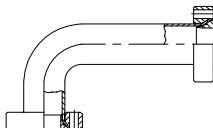
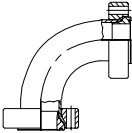
Step 5: Select the required bolting hardware from section Section R of this catalogue.



Step 6: Tighten bolts to the torque values specified. Always tighten bolts in a cross-over sequence and ensure that the flanges are parallel.



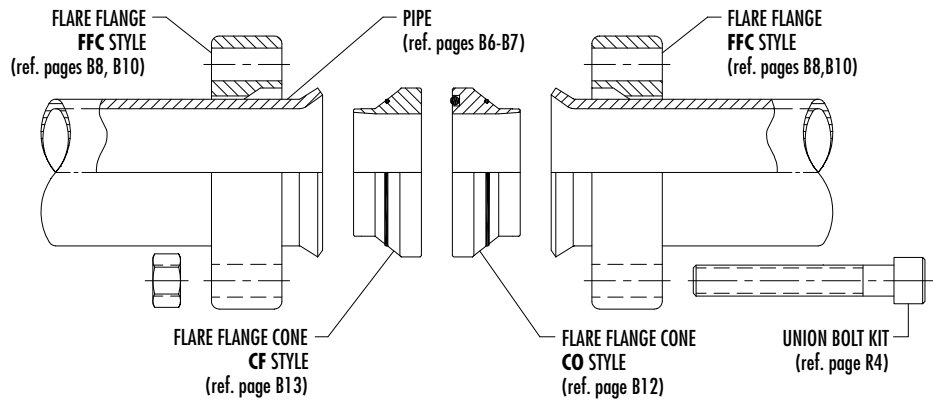
Flared System - Visual Index

<p>PIPES</p>	<p>CARBON STEEL PIPE</p>  <p>1/2" - 3" Page B6</p>	<p>STAINLESS STEEL PIPE</p>  <p>1/2" - 3" Page B7</p>	<p>FLARE FLANGES</p>	<p>FFC34 SAE CODE 61 WITH CLEARANCE HOLES</p>  <p>1/2" - 3" Page B8</p>
<p>FFC64 SAE CODE 62 WITH CLEARANCE HOLES</p>  <p>1/2" - 2" Page B8</p>	<p>FFT34 SAE CODE 61 WITH UNC TAPPED HOLES</p>  <p>1/2" - 3" Page B9</p>	<p>FFT64 SAE CODE 62 WITH UNC TAPPED HOLES</p>  <p>1/2" - 2" Page B9</p>	<p>FFC74 ISO 6164 WITH CLEARANCE HOLES</p>  <p>2 1/2" - 3" Page B10</p>	<p>FFC49 TMI® 9-BOLT WITH CLEARANCE HOLES</p>  <p>2 1/2" - 3" Page B11</p>
<p>FLARE FLANGE CONES</p>	<p>CO CONE-'O' RING FACE</p>  <p>1/2" - 3" Page B12</p>	<p>CF CONE-FLAT FACE</p>  <p>1/2" - 3" Page B13</p>	<p>COP CONE-'O' RING FACE WITH PILOT PORT</p>  <p>1/2" - 3" Page B14</p>	<p>CFP CONE-FLAT FACE WITH PILOT PORT</p>  <p>1/2" - 3" Page B15</p>
<p>FLARE FLANGES Reducing</p>	<p>FFCR34 SAE CODE 61 WITH CLEARANCE HOLES</p>  <p>1/2" - 3" Page B16</p>	<p>FFCR64 SAE CODE 62 WITH CLEARANCE HOLES</p>  <p>1/2" - 2" Page B16</p>	<p>FFTR34 SAE CODE 61 WITH UNC TAPPED HOLES</p>  <p>1/2" - 3" Page B18</p>	<p>FFTR64 SAE CODE 62 WITH UNC TAPPED HOLES</p>  <p>1/2" - 2" Page B18</p>
<p>FLARE FLANGE CONES Reducing</p>	<p>COR CONE-'O' RING FACE REDUCING</p>  <p>1/2" - 3" Page B17</p>	<p>CFR CONE-FLAT FACE REDUCING</p>  <p>1/2" - 3" Page B19</p>		
<p>PIPE ASSEMBLY</p>	<p>PAF FLARE FLANGE PIPE ASSEMBLY</p>  <p>1/2" - 3" Page B20-21</p>	<p>BPAF FLARE FLANGE BENT PIPE ASSEMBLY</p>  <p>1/2" - 3" Page B22-23</p>		
<p>FLARE FLANGE ELBOW ASSEMBLY</p>	<p>A/FFE FLARE FLANGE ELBOW ASSEMBLY</p>  <p>1/2" - 3" Page B24-25</p>			

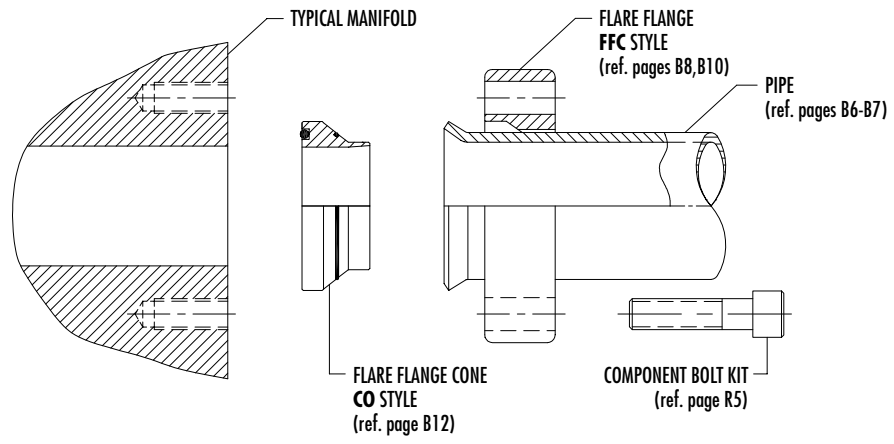


Flare Flange Connections - Schedule 40/80

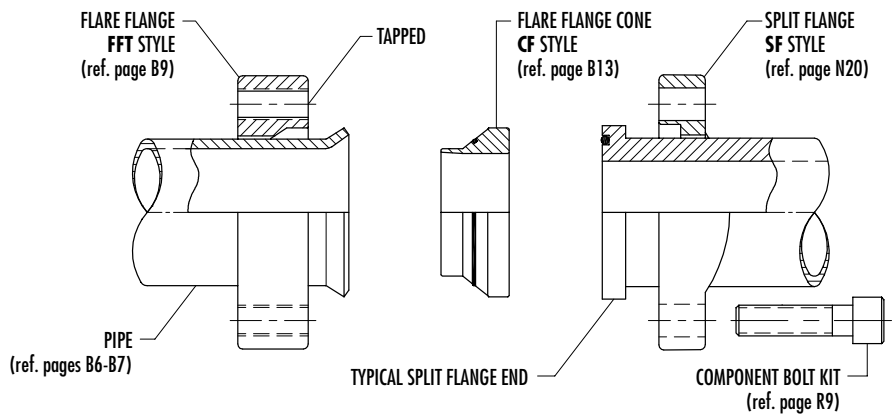
Typical Flare Union Connection



Typical Flare ('O' Ring Face) to Flat Face Component Connection



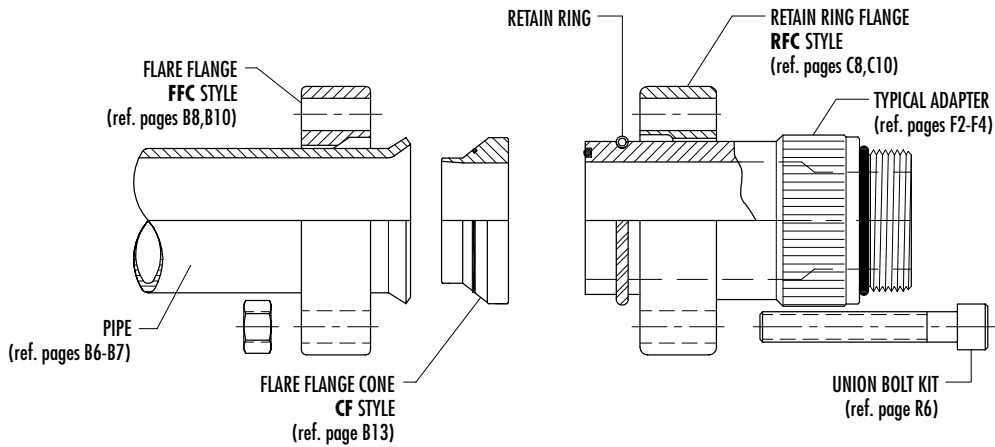
Typical Flare (Flat Face) to Split Flange Connection



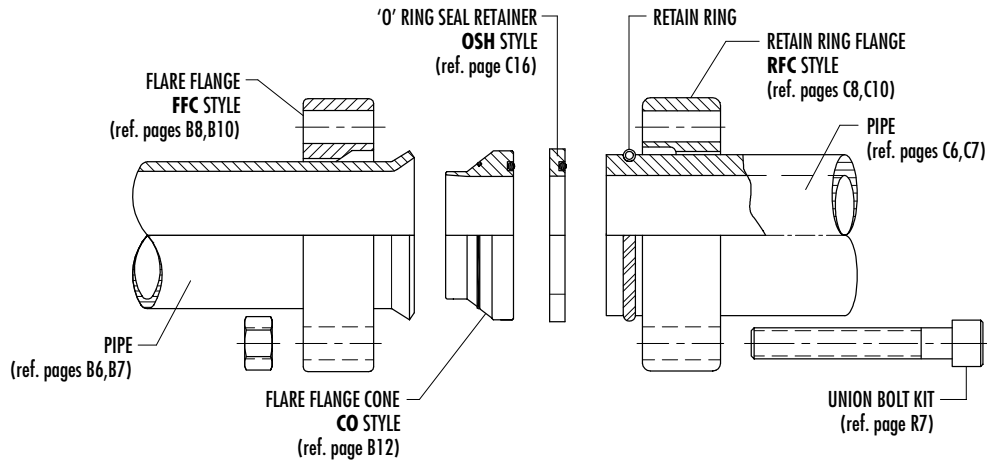


Flare Flange Connections - Schedule 40/80

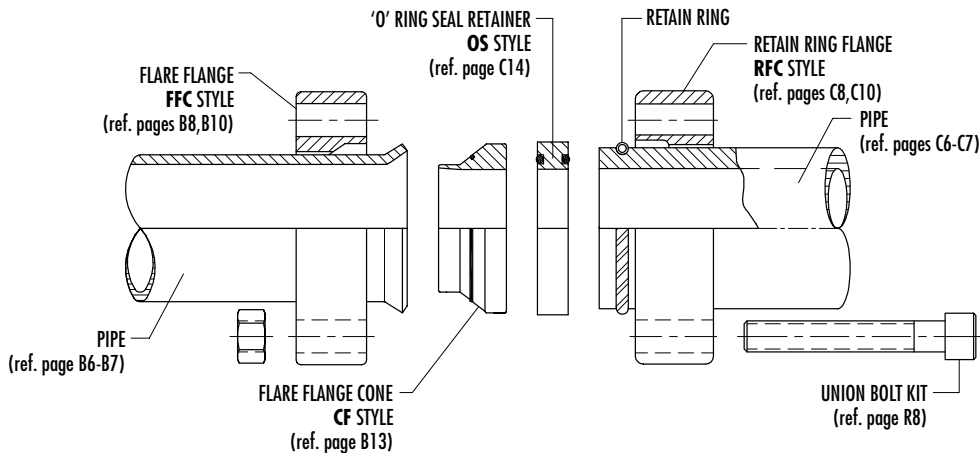
Typical Flare (Flat Face) to 'O' Ring Face Component Connection



Typical Flare ('O' Ring Face) to Retain Ring Pipe Connection



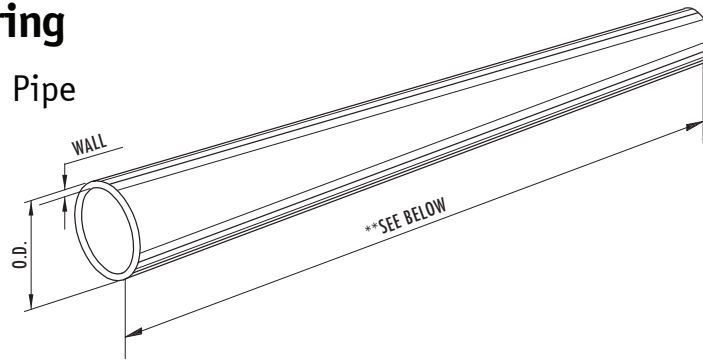
Typical Flare (Flat Face) to Retain Ring Pipe Connection



TMI[®] Carbon Steel Pipe

Suitable for Flaring

Schedule 40/80/160 Pipe



TMP52CD

A519-DIN 2391c St 52.4 NBK Phosphated High Quality Bendable Cold Drawn Seamless Carbon Steel

Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP52CD-SCH40-050x**	0.840 x 0.109	0.622	0.85	6000 (420)
3/4"	TMP52CD-SCH40-075x**	1.050 x 0.113	0.824	1.13	5000 (345)
1"	TMP52CD-SCH40-100x**	1.315 x 0.133	1.049	1.68	4700 (325)
1 1/4"	TMP52CD-SCH40-125x**	1.660 x 0.140	1.380	2.27	3900 (270)
1 1/2"	TMP52CD-SCH40-150x**	1.900 x 0.145	1.610	2.72	3500 (240)
2"	TMP52CD-SCH40-200x**	2.375 x 0.154	2.067	3.65	2900 (200)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

Schedule 80

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP52CD-SCH80-050x**	0.840 x 0.147	0.546	1.09	6000 (420)
3/4"	TMP52CD-SCH80-075x**	1.050 x 0.154	0.742	1.47	6000 (420)
1"	TMP52CD-SCH80-100x**	1.315 x 0.179	0.957	2.17	6000 (420)
1 1/4"	TMP52CD-SCH80-125x**	1.660 x 0.191	1.278	2.99	5400 (370)
1 1/2"	TMP52CD-SCH80-150x**	1.900 x 0.200	1.500	3.63	4900 (340)
2"	TMP52CD-SCH80-200x**	2.375 x 0.218	1.939	5.02	4200 (290)
2 1/2"	TMP52CD-SCH80-250x**	2.875 x 0.276	2.323	7.65	4500 (310)
3"	TMP52CD-SCH80-300x**	3.500 x 0.300	2.900	10.24	3900 (270)
4"	TMP52CD-SCH80-400x**	4.500 x 0.337	3.826	14.98	3420 (235)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

Schedule 160

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/2"	TMP52CD-SCH160-150x**	1.900 x 0.281	1.338	4.86	6930 (478)
2"	TMP52CD-SCH160-200x**	2.375 x 0.343	1.689	7.44	6750 (465)
2 1/2"	TMP52CD-SCH160-250x**	2.875 x 0.375	2.125	10.01	6030 (415)

**INDICATE LENGTH (inches), AVAILABLE IN 240" OR 360" LENGTHS

TMP37CD

A519-DIN 2391c St 37.4 NBK Phosphated High Quality Bendable Cold Drawn Seamless Carbon Steel

Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMP37CD-SCH40-250x**	2.875 x 0.203	2.469	5.79	2600 (180)
3"	TMP37CD-SCH40-300x**	3.500 x 0.216	3.068	7.57	2300 (160)
4"	TMP37CD-SCH40-400x**	4.500 x 0.237	4.026	10.78	1900 (130)
5"	TMP37CD-SCH40-500x**	5.563 x 0.258	5.047	14.60	1700 (115)
6"	TMP37CD-SCH40-600x**	6.625 x 0.280	6.065	18.95	1500 (105)
8"	TMP37CD-SCH40-800x**	8.625 x 0.322	7.981	28.52	1300 (90)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), SIZES AVAILABLE IN 240" and 360" LENGTHS.

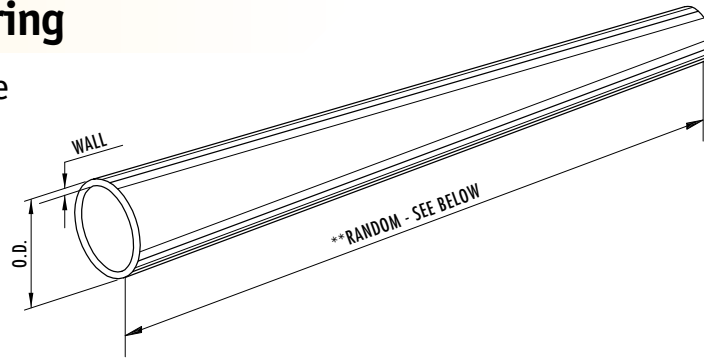
• MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CONNECTION RATING



TMI® Stainless Steel Pipe

Suitable for Flaring

Schedule 40/80 Pipe



TMP304SS/316SS

A312-Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule 40

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP304SS-SCH40-050x**	TMP316SS-SCH40-050x**	0.840 x 0.109	0.622	0.85	5000 (345)
3/4"	TMP304SS-SCH40-075x**	TMP316SS-SCH40-075x**	1.050 x 0.113	0.824	1.13	4000 (275)
1"	TMP304SS-SCH40-100x**	TMP316SS-SCH40-100x**	1.315 x 0.133	1.049	1.68	3800 (260)
1 1/4"	TMP304SS-SCH40-125x**	TMP316SS-SCH40-125x**	1.660 x 0.140	1.380	2.27	3100 (215)
1 1/2"	TMP304SS-SCH40-150x**	TMP316SS-SCH40-150x**	1.900 x 0.145	1.610	2.72	2800 (190)
2"	TMP304SS-SCH40-200x**	TMP316SS-SCH40-200x**	2.375 x 0.154	2.067	3.65	2400 (165)
2 1/2"	TMP304SS-SCH40-250x**	TMP316SS-SCH40-250x**	2.875 x 0.203	2.469	5.79	2500 (175)
3"	TMP304SS-SCH40-300x**	TMP316SS-SCH40-300x**	3.500 x 0.216	3.068	7.58	2000 (140)

Schedule 80

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1/2"	TMP304SS-SCH80-050x**	TMP316SS-SCH80-050x**	0.840 x 0.147	0.546	1.09	6000 (420)
3/4"	TMP304SS-SCH80-075x**	TMP316SS-SCH80-075x**	1.050 x 0.154	0.742	1.47	5700 (390)
1"	TMP304SS-SCH80-100x**	TMP316SS-SCH80-100x**	1.315 x 0.179	0.957	2.17	5300 (365)
1 1/4"	TMP304SS-SCH80-125x**	TMP316SS-SCH80-125x**	1.660 x 0.191	1.278	2.99	4400 (300)
1 1/2"	TMP304SS-SCH80-150x**	TMP316SS-SCH80-150x**	1.900 x 0.200	1.500	3.63	4000 (275)
2"	TMP304SS-SCH80-200x**	TMP316SS-SCH80-200x**	2.375 x 0.218	1.939	5.02	3400 (235)
2 1/2"	TMP304SS-SCH80-250x**	TMP316SS-SCH80-250x**	2.875 x 0.276	2.323	7.65	3600 (250)
3"	TMP304SS-SCH80-300x**	TMP316SS-SCH80-300x**	3.500 x 0.300	2.900	10.24	3200 (220)

TMP2205SS

A790 - Seamless Duplex Stainless Steel

Schedule 80

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/4"	TMP2205SS-SCH80-125x**	1.660 x 0.191	1.278	2.99	6000 (420)
1 1/2"	TMP2205SS-SCH80-150x**	1.900 x 0.200	1.500	3.63	6000 (420)
2"	TMP2205SS-SCH80-200x**	2.375 x 0.218	1.939	5.02	5200 (360)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

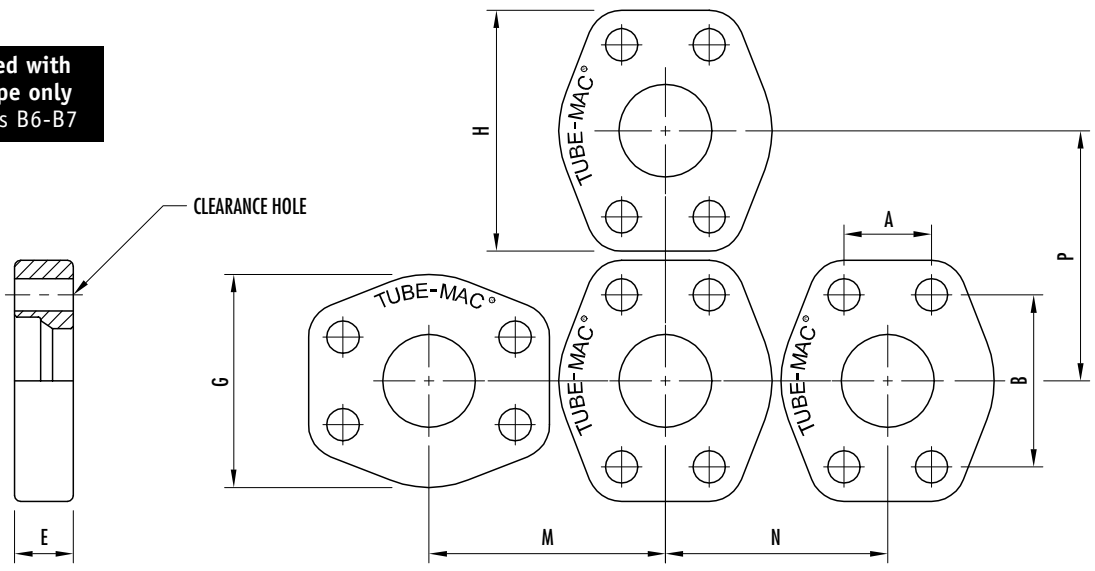
- TO ORDER A FLARE FLANGE PIPE ASSEMBLY REFERENCE PAGES B20-B23
- MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CARBON STEEL CONNECTION RATING
- FOR PIPING SYSTEMS CONSISTING OF ALL STAINLESS STEEL COMPONENTS, PRESSURE RATINGS WILL BE LESS THAN THAT SHOWN ABOVE (CONTACT FACTORY)



Flare Flanges

SAE - Flanges with Clearance Holes

To be used with flared pipe only
Ref. pages B6-B7



FFC34 Flare Flange - SAE Code 61 With Clearance Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size	Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	FFC34-050	0.69	1.50	1.81	2.16	2.05	1.93	2.32	0.81	5/16" UNC	0.56	5000 (350)	15-18
3/4"	FFC34-075	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8" UNC	0.59	5000 (350)	20-30
1"	FFC34-100	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8" UNC	0.64	5000 (350)	20-30
1 1/4"	FFC34-125	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16" UNC	0.85	4000 (275)	40-50
1 1/2"	FFC34-150	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2" UNC	1.49	3000 (210)	80-90
2"	FFC34-200	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2" UNC	2.17	3000 (210)	80-90
2 1/2"	FFC34-250	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2" UNC	3.08	2500 (175)	80-90
3"	FFC34-300	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8" UNC	4.60	2000 (140)	110-120

FFC64 Flare Flange - SAE Code 62 With Clearance Holes

High Pressure Series 6000 PSI (420 bar)

Size	Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	FFC64-050	0.72	1.59	1.88	2.22	2.20	2.09	2.32	0.81	5/16" UNC	0.56	6000 (420)	15-18
3/4"	FFC64-075	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8" UNC	0.97	6000 (420)	20-30
1"	FFC64-100	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16" UNC	1.27	6000 (420)	40-50
1 1/4"	FFC64-125	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2" UNC	1.89	6000 (420)	80-90
1 1/2"	FFC64-150	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8" UNC	3.32	6000 (420)	110-120
2"	FFC64-200	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4" UNC	5.00	6000 (420)	120-130

• FOR BOLT KITS - REFERENCE SECTION R

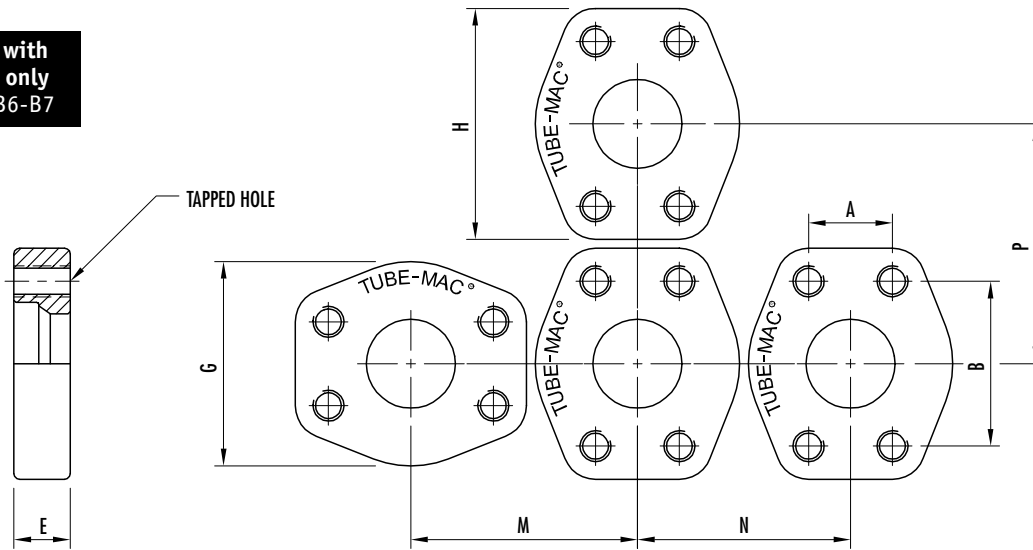
MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flanges

SAE - Flanges with Tapped Holes

To be used with flared pipe only
Ref. pages B6-B7



FFT34 Flare Flange - SAE Code 61 With Tapped Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size	Flange Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	FFT34-050	0.69	1.50	1.81	2.16	2.05	1.93	2.32	0.81	5/16"-18	0.56	5000 (350)	15-18
3/4"	FFT34-075	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8"-16	0.63	5000 (350)	20-30
1"	FFT34-100	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8"-16	0.68	5000 (350)	20-30
1 1/4"	FFT34-125	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16"-14	0.90	4000 (275)	40-50
1 1/2"	FFT34-150	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2"-13	1.56	3000 (210)	80-90
2"	FFT34-200	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2"-13	2.21	3000 (210)	80-90
2 1/2"	FFT34-250	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2"-13	3.14	2500 (175)	80-90
3"	FFT34-300	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8"-11	4.67	2000 (140)	110-120

FFT64 Flare Flange - SAE Code 62 With Tapped Holes

High Pressure Series 6000 PSI (420 bar)

Size	Flange Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	FFT64-050	0.72	1.59	1.88	2.22	2.20	2.09	2.32	0.81	5/16"-18	0.56	6000 (420)	15-18
3/4"	FFT64-075	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8"-16	1.03	6000 (420)	20-30
1"	FFT64-100	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16"-14	1.39	6000 (420)	40-50
1 1/4"	FFT64-125	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2"-13	2.09	6000 (420)	80-90
1 1/2"	FFT64-150	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8"-11	3.85	6000 (420)	110-120
2"	FFT64-200	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4"-10	6.04	6000 (420)	120-130

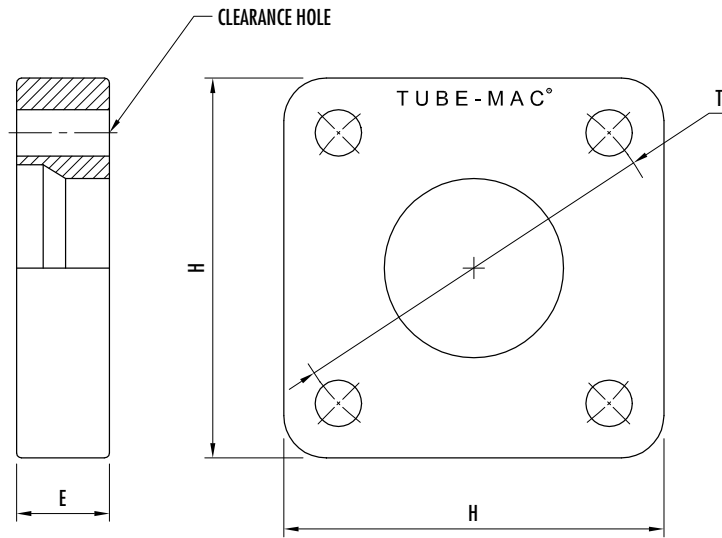
MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange

ISO 6164 - Flanges with Clearance Holes

To be used with
flared pipe only
Ref. pages B6-B7



FFC74 Flare Flange - ISO 6164 With Clearance Holes

5800 PSI (400 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	H	E				
2 1/2"	FFC74-250	4.65	4.72	1.48	3/4" UNC	5.06	5800 (400)	120-130
3"	FFC74-300	5.71	5.91	1.73	1" UNC	8.79	5800 (400)	350-400

• FOR BOLT KITS - REFERENCE SECTION R

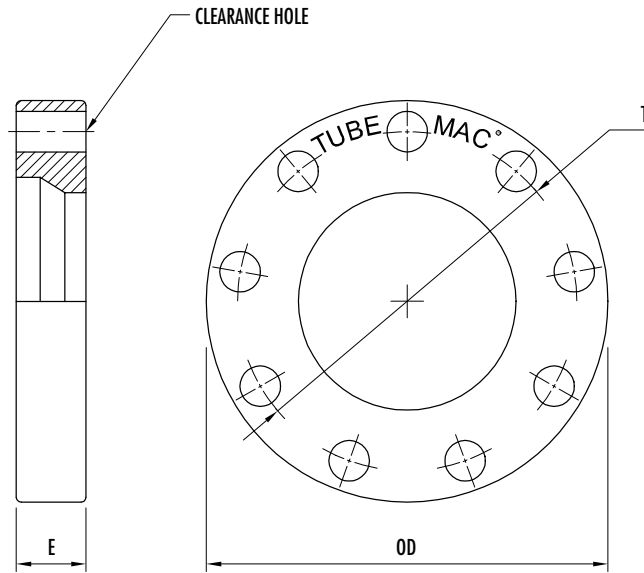
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange

TMI® 9-Bolt - Flanges with Clearance Holes

To be used with
flared pipe only
Ref. pages B6-B7



FFC49 Flare Flange - TMI® 9-Bolt With Clearance Holes

For use with Flared Connection to 9-Bolt Ball Valve **BBVG27** (Ref. page P10)
4100-4200 PSI (280-290 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
2 1/2"	FFC49-250	4.03	4.95	1.48	1/2" UNC	3.04	4200 (290)	80-90
3"	FFC49-300	5.49	6.50	1.73	5/8" UNC	6.01	4100 (280)	110-120

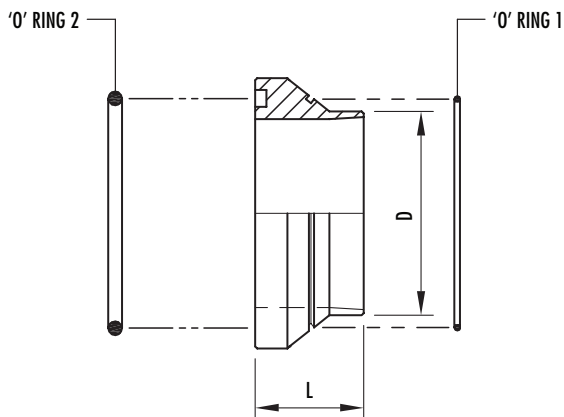
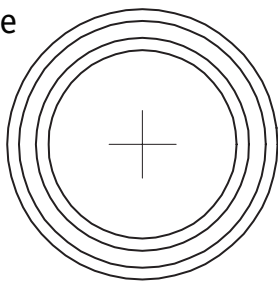
• FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange Cones

'O' Ring Face



CO Cone - 'O' Ring Face

Complete With Buna 'O' Rings (Standard)

Schedule 40

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
1/2"	CO-SCH40-050-*	0.62	0.83	OR*-1915	OR*-2-210	0.10
3/4"	CO-SCH40-075-*	0.82	0.89	OR*-2515	OR*-2-214	0.12
1"	CO-SCH40-100-*	1.04	0.96	OR*-3015	OR*-2-219	0.20
1 1/4"	CO-SCH40-125-*	1.34	0.99	OR*-3815	OR*-2-222	0.25
1 1/2"	CO-SCH40-150-*	1.61	1.12	OR*-4315	OR*-2-225	0.41
2"	CO-SCH40-200-*	2.06	1.10	OR*-5615	OR*-2-228	0.47
2 1/2"	CO-SCH40-250-*	2.46	1.32	OR*-6515	OR*-2-232	0.99
3"	CO-SCH40-300-*	3.06	1.33	OR*-8015	OR*-2-237	1.33
4"	CO-SCH40-400-*	4.02	1.49	OR*-10615	OR*-2-245	1.80

Schedule 80

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
1/2"	CO-SCH80-050-*	0.54	0.83	OR*-1715	OR*-2-210	0.09
3/4"	CO-SCH80-075-*	0.74	0.90	OR*-2315	OR*-2-214	0.12
1"	CO-SCH80-100-*	0.95	0.97	OR*-2815	OR*-2-219	0.21
1 1/4"	CO-SCH80-125-*	1.27	0.99	OR*-3815	OR*-2-222	0.24
1 1/2"	CO-SCH80-150-*	1.50	1.13	OR*-4315	OR*-2-225	0.42
2"	CO-SCH80-200-*	1.93	1.10	OR*-5615	OR*-2-228	0.49
2 1/2"	CO-SCH80-250-*	2.32	1.32	OR*-6515	OR*-2-232	0.99
3"	CO-SCH80-300-*	2.89	1.26	OR*-8015	OR*-2-237	1.21
4"	CO-SCH80-400-*	3.82	1.62	OR*-10615	OR*-2-245	2.17

Schedule 160

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
1 1/2"	CO-SCH160-150-*	1.31	1.20	OR*-3815	OR*-2-225	0.42
2"	CO-SCH160-200-*	1.66	1.26	OR*-5015	OR*-2-228	0.67
2 1/2"	CO-SCH160-250-*	2.12	1.62	OR*-6715	OR*-2-232	1.42

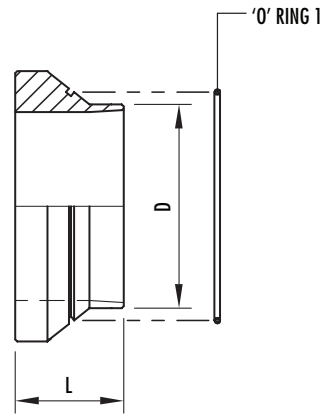
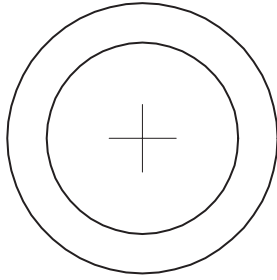
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flange Cones

Flat Face



CF Cone - Flat Face

Complete With Buna 'O' Ring (Standard)

Schedule 40

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	CF-SCH40-050-*	0.62	0.83	OR*-1915	0.11
3/4"	CF-SCH40-075-*	0.82	0.89	OR*-2515	0.14
1"	CF-SCH40-100-*	1.04	0.96	OR*-3015	0.23
1 1/4"	CF-SCH40-125-*	1.34	0.99	OR*-3815	0.27
1 1/2"	CF-SCH40-150-*	1.61	1.12	OR*-4315	0.45
2"	CF-SCH40-200-*	2.06	1.10	OR*-5615	0.52
2 1/2"	CF-SCH40-250-*	2.46	1.32	OR*-6515	1.01
3"	CF-SCH40-300-*	3.06	1.33	OR*-8015	1.39
4"	CF-SCH40-400-*	4.02	1.49	OR*-10615	1.90

Schedule 80

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	CF-SCH80-050-*	0.54	0.83	OR*-1715	0.10
3/4"	CF-SCH80-075-*	0.74	0.90	OR*-2315	0.14
1"	CF-SCH80-100-*	0.95	0.97	OR*-2815	0.23
1 1/4"	CF-SCH80-125-*	1.27	0.99	OR*-3815	0.27
1 1/2"	CF-SCH80-150-*	1.50	1.13	OR*-4315	0.46
2"	CF-SCH80-200-*	1.93	1.10	OR*-5615	0.53
2 1/2"	CF-SCH80-250-*	2.32	1.32	OR*-6515	1.06
3"	CF-SCH80-300-*	2.89	1.26	OR*-8015	1.28
4"	CF-SCH80-400-*	3.82	1.62	OR*-106151	2.20

Schedule 160

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
1 1/2"	CF-SCH160-150-*	1.31	1.20	OR*-3815	0.45
2"	CF-SCH160-200-*	1.66	1.26	OR*-5015	0.71
2 1/2"	CF-SCH160-250-*	2.12	1.62	OR*-6715	1.50

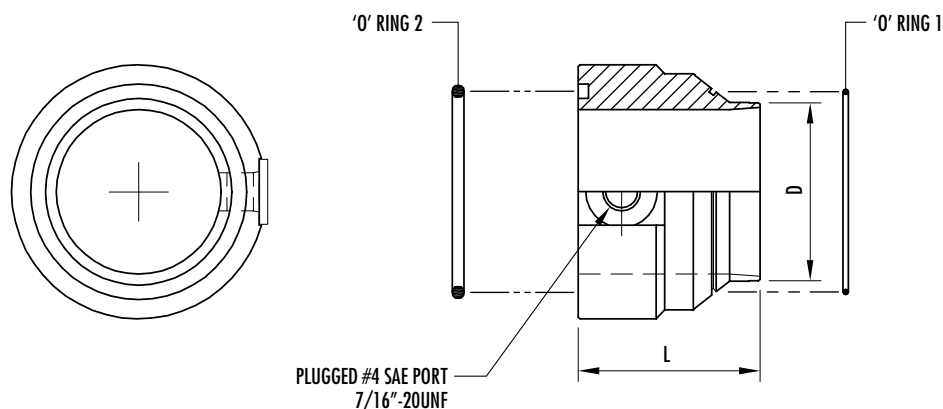
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

MATERIAL: CARBON STEEL, BLACK ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flange Cones

'O' Ring Face With Pilot Port



COP Cone - 'O' Ring Face With Pilot Port

Complete With Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

Schedule 40

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
1/2"	COP-SCH40-050-*	0.62	1.83	OR*-1915	OR*-2-210	0.16
3/4"	COP-SCH40-075-*	0.82	1.89	OR*-2515	OR*-2-214	0.20
1"	COP-SCH40-100-*	1.04	1.96	OR*-3015	OR*-2-219	0.41
1 1/4"	COP-SCH40-125-*	1.34	1.99	OR*-3815	OR*-2-222	0.43
1 1/2"	COP-SCH40-150-*	1.61	2.12	OR*-4315	OR*-2-225	0.73
2"	COP-SCH40-200-*	2.06	2.10	OR*-5615	OR*-2-228	0.82
2 1/2"	COP-SCH40-250-*	2.46	2.32	OR*-6515	OR*-2-232	2.60
3"	COP-SCH40-300-*	3.06	2.33	OR*-8015	OR*-2-237	3.66

Schedule 80

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
1/2"	COP-SCH80-050-*	0.54	1.83	OR*-1715	OR*-2-210	0.16
3/4"	COP-SCH80-075-*	0.74	1.90	OR*-2315	OR*-2-214	0.21
1"	COP-SCH80-100-*	0.95	1.97	OR*-2815	OR*-2-219	0.36
1 1/4"	COP-SCH80-125-*	1.27	1.99	OR*-3815	OR*-2-222	0.43
1 1/2"	COP-SCH80-150-*	1.50	2.13	OR*-4315	OR*-2-225	0.75
2"	COP-SCH80-200-*	1.93	2.10	OR*-5615	OR*-2-228	0.81
2 1/2"	COP-SCH80-250-*	2.32	2.32	OR*-6515	OR*-2-232	1.78
3"	COP-SCH80-300-*	2.89	2.26	OR*-8015	OR*-2-237	2.19

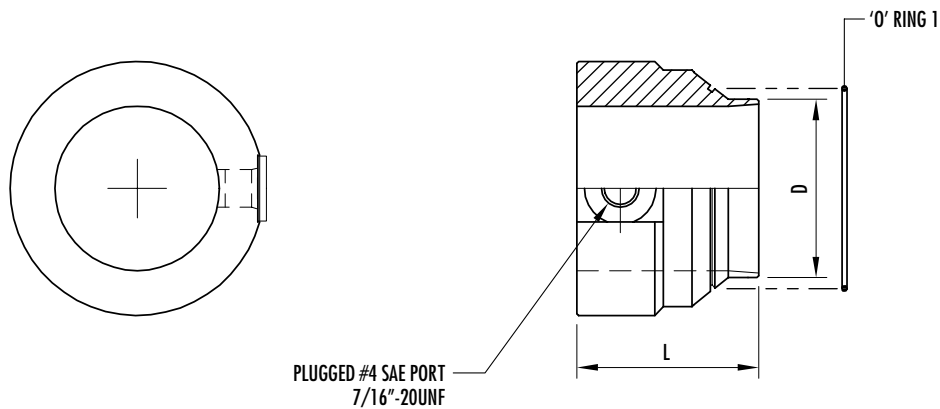
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS AND 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flange Cones

Flat Face With Pilot Port



CFP Cone - Flat Face With Pilot Port

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Schedule 40

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	CFP-SCH40-050-*	0.62	1.83	OR*-1915	0.16
3/4"	CFP-SCH40-075-*	0.82	1.89	OR*-2515	0.20
1"	CFP-SCH40-100-*	1.04	1.96	OR*-3015	0.41
1 1/4"	CFP-SCH40-125-*	1.34	1.99	OR*-3815	0.43
1 1/2"	CFP-SCH40-150-*	1.61	2.12	OR*-4315	0.73
2"	CFP-SCH40-200-*	2.06	2.10	OR*-5615	0.82
2 1/2"	CFP-SCH40-250-*	2.46	2.32	OR*-6515	2.78
3"	CFP-SCH40-300-*	3.06	2.33	OR*-8015	3.86

Schedule 80

Size	Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	CFP-SCH80-050-*	0.54	1.83	OR*-1715	0.16
3/4"	CFP-SCH80-075-*	0.74	1.90	OR*-2315	0.21
1"	CFP-SCH80-100-*	0.95	1.97	OR*-2815	0.36
1 1/4"	CFP-SCH80-125-*	1.27	1.99	OR*-3815	0.43
1 1/2"	CFP-SCH80-150-*	1.50	2.13	OR*-4315	0.75
2"	CFP-SCH80-200-*	1.93	2.10	OR*-5615	0.81
2 1/2"	CFP-SCH80-250-*	2.32	2.32	OR*-6515	1.78
3"	CFP-SCH80-300-*	2.89	2.26	OR*-8015	2.19

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING AND 'O' RING FOR #4 SAE PLUG

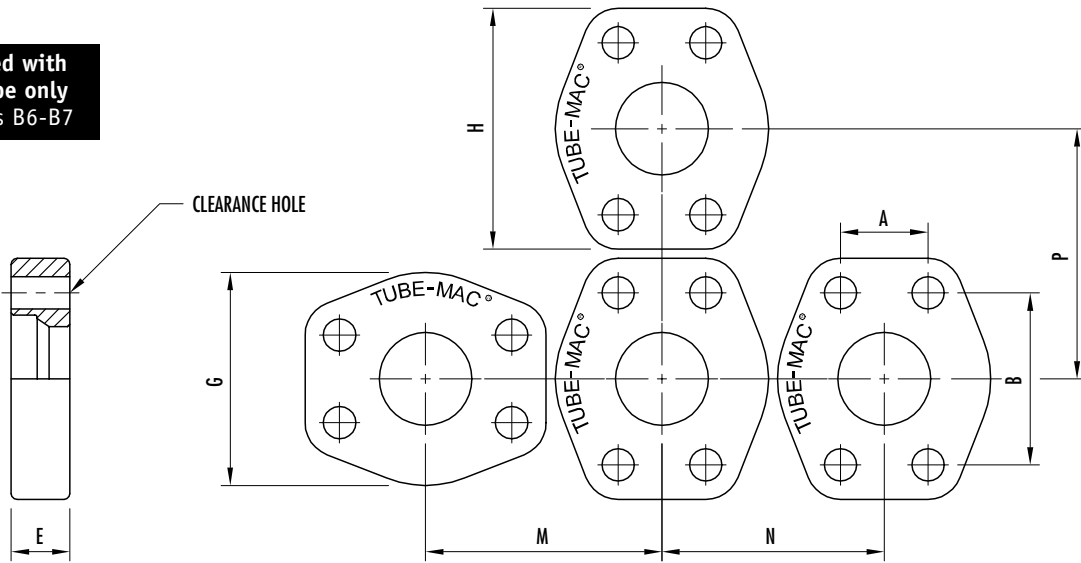
MATERIAL: CARBON STEEL, BLACK ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flanges - Reducing

SAE - Flanges with Clearance Holes

To be used with
flared pipe only
Ref. pages B6-B7



FFCR34 Reducing Flare Flange - SAE Code 61 With Clearance Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size (flange x pipe)	Reducing Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
3/4" x 1/2"	FFCR34-075 x 050	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8" UNC	0.74	5000 (350)	20-30
1" x 3/4"	FFCR34-100 x 075	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8" UNC	0.77	5000 (350)	20-30
1 1/4" x 1"	FFCR34-125 x 100	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16" UNC	1.01	4000 (275)	40-50
1 1/2" x 1 1/4"	FFCR34-150 x 125	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2" UNC	1.76	3000 (210)	80-90
2" x 1 1/2"	FFCR34-200 x 150	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2" UNC	2.41	3000 (210)	80-90
2 1/2" x 2"	FFCR34-250 x 200	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2" UNC	3.54	2500 (175)	80-90
3" x 2 1/2"	FFCR34-300 x 250	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8" UNC	5.37	2000 (140)	110-120

FFCR64 Reducing Flare Flange - SAE Code 62 With Clearance Holes

High Pressure Series 6000 PSI (420 bar)

Size (flange x pipe)	Reducing Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
3/4" x 1/2"	FFCR64-075 x 050	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8" UNC	1.14	6000 (420)	20-30
1" x 3/4"	FFCR64-100 x 075	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16" UNC	1.48	6000 (420)	40-50
1 1/4" x 1"	FFCR64-125 x 100	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2" UNC	2.20	6000 (420)	80-90
1 1/2" x 1 1/4"	FFCR64-150 x 125	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8" UNC	4.05	6000 (420)	110-120
2" x 1 1/2"	FFCR64-200 x 150	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4" UNC	6.24	6000 (420)	120-130

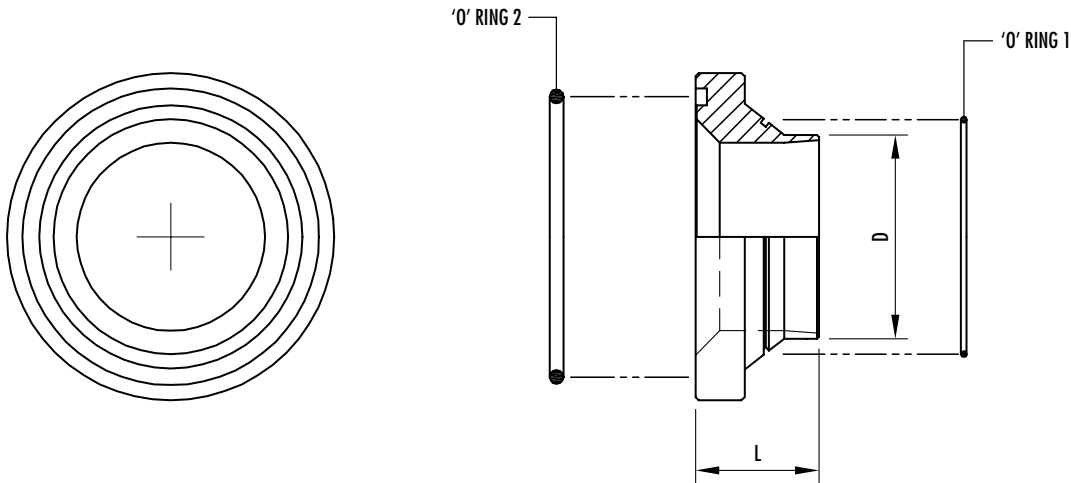
- FOR BOLT KITS - REFERENCE SECTION R
- OTHER REDUCER SIZES ARE AVAILABLE
- TO ORDER COMPLETE ASSEMBLIES REFERENCE PAGES B20-B25

MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange Cones - Reducing

'O' Ring Face



COR Reducing Cone - 'O' Ring Face

Complete With Buna 'O' Rings (Standard)

Schedule 40

Size (flange x pipe)	Reducing Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
3/4" x 1/2"	COR-SCH40-075 x 050-*	0.62	0.89	OR*-1915	OR*-2-214	0.15
1" x 3/4"	COR-SCH40-100 x 075-*	0.82	0.96	OR*-2515	OR*-2-219	0.25
1 1/4" x 1"	COR-SCH40-125 x 100-*	1.04	0.99	OR*-3015	OR*-2-222	0.34
1 1/2" x 1 1/4"	COR-SCH40-150 x 125-*	1.34	1.12	OR*-3815	OR*-2-225	0.51
2" x 1 1/2"	COR-SCH40-200 x 150-*	1.61	1.10	OR*-4315	OR*-2-228	0.59
2 1/2" x 2"	COR-SCH40-250 x 200-*	2.06	1.32	OR*-5715	OR*-2-232	1.17
3" x 2 1/2"	COR-SCH40-300 x 250-*	2.46	1.33	OR*-6515	OR*-2-237	1.59

Schedule 80

Size (flange x pipe)	Reducing Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	L			
3/4" x 1/2"	COR-SCH80-075 x 050-*	0.54	0.90	OR*-1715	OR*-2-214	0.16
1" x 3/4"	COR-SCH80-100 x 075-*	0.74	0.97	OR*-2315	OR*-2-219	0.27
1 1/4" x 1"	COR-SCH80-125 x 100-*	0.95	0.99	OR*-2815	OR*-2-222	0.37
1 1/2" x 1 1/4"	COR-SCH80-150 x 125-*	1.27	1.13	OR*-3815	OR*-2-225	0.56
2" x 1 1/2"	COR-SCH80-200 x 150-*	1.50	1.10	OR*-4315	OR*-2-228	0.66
2 1/2" x 2"	COR-SCH80-250 x 200-*	1.93	1.32	OR*-5715	OR*-2-232	1.24
3" x 2 1/2"	COR-SCH80-300 x 250-*	2.32	1.26	OR*-6515	OR*-2-237	1.68

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

• OTHER REDUCER SIZES ARE AVAILABLE

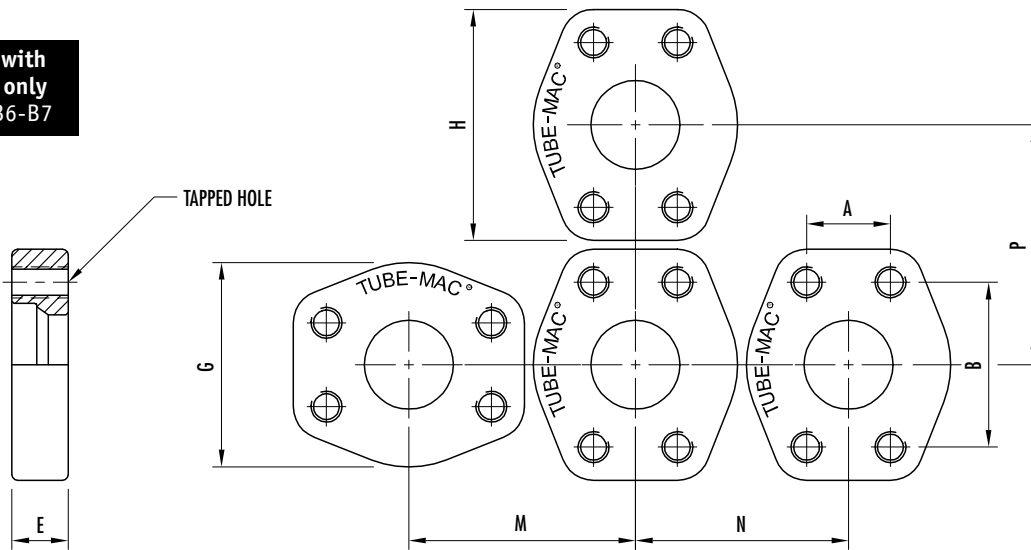
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flanges - Reducing

SAE - Flanges with Tapped Holes

To be used with
flared pipe only
Ref. pages B6-B7



FFTR34 Reducing Flare Flange - SAE Code 61 With Tapped Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size (flange x pipe)	Reducing Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
3/4" x 1/2"	FFTR34-075 x 050	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8"-16	0.74	5000 (350)	20-30
1" x 3/4"	FFTR34-100 x 075	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8"-16	0.77	5000 (350)	20-30
1 1/4" x 1"	FFTR34-125 x 100	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16"-14	1.01	4000 (275)	40-50
1 1/2" x 1 1/4"	FFTR34-150 x 125	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2"-13	1.76	3000 (210)	80-90
2" x 1 1/2"	FFTR34-200 x 150	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2"-13	2.41	3000 (210)	80-90
2 1/2" x 2"	FFTR34-250 x 200	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2"-13	3.54	2500 (175)	80-90
3" x 2 1/2"	FFTR34-300 x 250	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8"-11	5.37	2000 (140)	110-120

FFTR64 Reducing Flare Flange - SAE Code 62 With Tapped Holes

High Pressure Series 6000 PSI (420 bar)

Size (flange x pipe)	Reducing Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
3/4" x 1/2"	FFTR64-075 x 050	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8"-16	1.14	6000 (420)	20-30
1" x 3/4"	FFTR64-100 x 075	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16"-14	1.48	6000 (420)	40-50
1 1/4" x 1"	FFTR64-125 x 100	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2"-13	2.20	6000 (420)	80-90
1 1/2" x 1 1/4"	FFTR64-150 x 125	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8"-11	4.05	6000 (420)	110-120
2" x 1 1/2"	FFTR64-200 x 150	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4"-10	6.24	6000 (420)	120-130

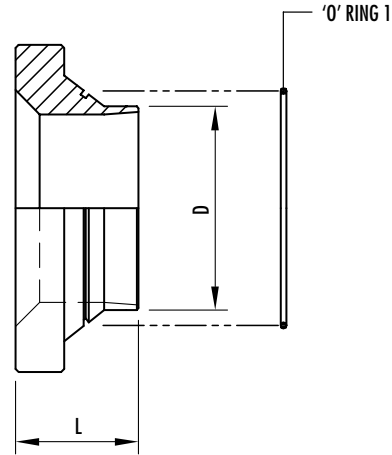
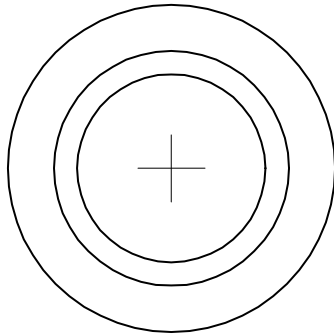
- FOR BOLT KITS - REFERENCE SECTION R
- OTHER REDUCER SIZES ARE AVAILABLE
- TO ORDER COMPLETE ASSEMBLIES REFERENCE PAGES B20-B25

MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange Cones - Reducing

Flat Face



CFR Reducing Cone - Flat Face

Complete With Buna 'O' Ring (Standard)

Schedule 40

Size (flange x pipe)	Reducing Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
3/4" x 1/2"	CFR-SCH40-075 x 050-*	0.62	0.89	OR*-1915	0.17
1" x 3/4"	CFR-SCH40-100 x 075-*	0.82	0.96	OR*-2515	0.28
1 1/4" x 1"	CFR-SCH40-125 x 100-*	1.04	0.99	OR*-3015	0.37
1 1/2" x 1 1/4"	CFR-SCH40-150 x 125-*	1.34	1.12	OR*-3815	0.55
2" x 1 1/2"	CFR-SCH40-200 x 150-*	1.61	1.10	OR*-4315	0.64
2 1/2" x 2"	CFR-SCH40-250 x 200-*	2.06	1.32	OR*-5715	1.22
3" x 2 1/2"	CFR-SCH40-300 x 250-*	2.46	1.33	OR*-6515	1.65

Schedule 80

Size (flange x pipe)	Reducing Cone Part No.	Dimensions (in)		'O' Ring 1 (Buna) Part No.	WT. lbs/pc
		D	L		
3/4" x 1/2"	CFR-SCH80-075 x 050-*	0.54	0.90	OR*-1715	0.18
1" x 3/4"	CFR-SCH80-100 x 075-*	0.74	0.97	OR*-2315	0.30
1 1/4" x 1"	CFR-SCH80-125 x 100-*	0.95	0.99	OR*-2815	0.40
1 1/2" x 1 1/4"	CFR-SCH80-150 x 125-*	1.27	1.13	OR*-3815	0.60
2" x 1 1/2"	CFR-SCH80-200 x 150-*	1.50	1.10	OR*-4315	0.71
2 1/2" x 2"	CFR-SCH80-250 x 200-*	1.93	1.32	OR*-5715	1.28
3" x 2 1/2"	CFR-SCH80-300 x 250-*	2.32	1.26	OR*-6515	1.74

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

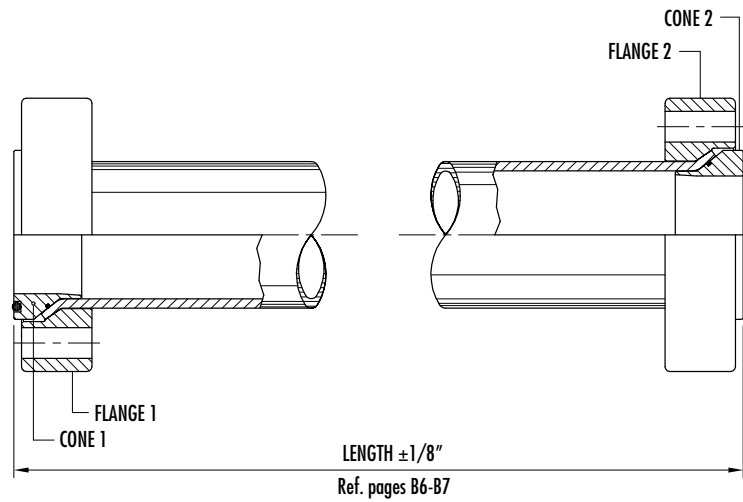
• OTHER REDUCER SIZES ARE AVAILABLE

MATERIAL: CARBON STEEL, BLACK ZINC DICHROMATE PLATED, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Flare Flange Pipe Assembly

Typical PAF Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF CLEAN PIPE
(REF. PAGES B6-B7)
- TWO (2) FLARE FLANGES (REF. PAGES B8-B11)
- TWO (2) CONES
(REF. PGS B12-B15 FOR TYPE OF CONE)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL

PART NO. (EXAMPLE): PAF/52 - SCH40-050 - FC34 - FC34 - CO - CF - 240

• REDUCING FLANGES AND CONES ARE AVAILABLE (REFERENCE PAGES B16-B19)

FOR FLARE FLANGE ASSEMBLIES UTILIZING REDUCING FLANGES AND CONES ADD (R) TO FLANGE AND CONE CODE NUMBERS.

ie. SAE code 61 flare flange with clearance holes - code number FC34 would be FCR34-(flange size)

REDUCING PART NO. (EXAMPLE): PAF/52 - SCH40-050 - FCR34-075 - FC34 - COR - CF - 240

Consult factory for ordering assistance



Flare Flange Pipe Assembly

Complete Assembly Part Number

Code		PAF /	Pipe & Cone Material	Pipe Size & Schedule	Flange 1	Flange 2	Cone 1	Cone 2	Length	Options	
Pipe Assembly - Flared		PAF									
Pipe & Cone Material Carbon Steel Ref. page B6	TMP52CD	52									
	♦♦TMP44HR	44									
	♦TMP46CD	46									
Pipe & Cone Material Stainless Steel Ref. page B7	TMP304SS	304									
	TMP316SS	316									
	♦TMP2205SS	2205									
Pipe Size & Schedule	1/2"	SCH40-050 SCH80-050									
	3/4"	SCH40-075 SCH80-075									
	1"	SCH40-100 SCH80-100									
	1 1/4"	SCH40-125 SCH80-125									
	1 1/2"	SCH40-150 SCH80-150									
	2"	SCH40-200 SCH80-200									
	2 1/2"	SCH40-250 SCH80-250									
	3"	SCH40-300 SCH80-300									
	Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (B8-B11)	FFC34 SAE Code 61 W/Clearance Holes	FC34								
		*FFT34 SAE Code 61 W/Tapped Holes	FT34								
FFC64 SAE Code 62 W/Clearance Holes		FC64									
*FFT64 SAE Code 62 W/Tapped Holes		FT64									
FFC74 ISO 6164 W/Clearance Holes		FC74									
**FFC49 TMI® 9-Bolt W/Clearance Holes		FC49									
Cone Type Ref. pages (B12-B15)	Cone - Flat Face	CF									
	Cone - 'O' Ring Face	CO									
Length	Specify (in.)										
Options	Viton	V									
	Painted (Specify)	P									
Complete Stainless Steel Assembly: (including flanges)	SS										

♦♦TMP44HR PIPE IS ONLY AVAILABLE IN 2 1/2" & 3" SCHEDULE 40 SIZES

♦ TMP46CD PIPE IS ONLY AVAILABLE IN 1 1/4"-2" SCHEDULE 80 SIZES
TMP2205SS PIPE IS ONLY AVAILABLE IN 1 1/4"-2" SCHEDULE 80 SIZES

**FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REF. PAGE P10)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

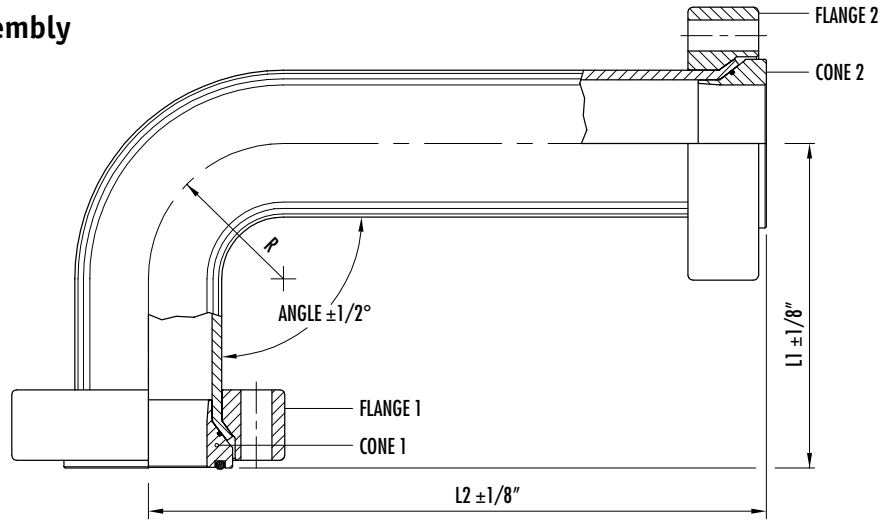
PART NO. (EXAMPLE): PAF/52 - SCH40-050 - FC34 - FC34 - CO - CF - 240

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR PIPE RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Flare Flange Bent Pipe Assembly

Typical BPAF Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF BENT CLEAN PIPE (REF. PAGES B6-B7)
- TWO (2) FLARE FLANGES (REF. PAGES B8-B11)
- TWO (2) CONES (REF. PGS B12-B15 FOR TYPE OF CONE)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL

PART NO. (EXAMPLE): BPAF/52 - SCH80-100 - FC34 - FC34 - CO - CF - R1 - 125 - 90 - 115

Size	R1		R2	
	Field Manufactured		Factory Manufactured	
	Dimensions (in)		Dimensions (in)	
	L(min.)	R	L(min.)	R**
1/2"	6.00	3.875	5.00	2.625
3/4"	6.50	4.281	5.00	3.125
1"	7.00	4.875	5.00	2.625
1 1/4"	8.50	5.625	6.00	3.375
1 1/2"	11.50	8.188	6.50	3.815
2"	13.00	9.438	8.00	4.750
2 1/2"	16.00	12.500	11.00	7.500
3"	19.00	15.000	12.50	9.000

**OTHER RADII AVAILABLE (CONSULT FACTORY)

- FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

- **REDUCING FLANGES AND CONES ARE AVAILABLE (REFERENCE PAGES B16-B19)**

FOR FLARE FLANGE ASSEMBLIES UTILIZING REDUCING FLANGES AND CONES ADD (R) TO FLANGE AND CONE CODE NUMBERS.

ie. SAE code 61 flare flange with clearance holes - code number FC34 would be FCR34-(flange size)

REDUCING PART NO. (EXAMPLE): BPAF/52 - SCH80-100 - FCR34-125 - FC34 - COR - CF - R1 - 125 - 90 - 115

Consult factory for ordering assistance



Flare Flange Bent Pipe Assembly

Complete Assembly Part Number

		Code	BPAF	Pipe & Cone Material	Pipe Size & Schedule	Flange 1	Flange 2	Cone 1	Cone 2	Radius	Length L1	Angle	Length L2	Options
Bent Pipe Assembly - Flared		BPAF												
Pipe & Cone Material Carbon Steel Ref. page B6	TMP52CD	52												
	♦♦ TMP44HR	44												
	♦ TMP46CD	46												
Pipe & Cone Material Stainless Steel Ref. page B7	TMP304SS	304												
	TMP316SS	316												
	♦ TMP2205SS	2205												
Pipe Size & Schedule	1/2"	SCH40-050 SCH80-050												
	3/4"	SCH40-075 SCH80-075												
	1"	SCH40-100 SCH80-100												
	1 1/4"	SCH40-125 SCH80-125												
	1 1/2"	SCH40-150 SCH80-150												
	2"	SCH40-200 SCH80-200												
	2 1/2"	SCH40-250 SCH80-250												
	3"	SCH40-300 SCH80-300												
	Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (B8-B11)	FFC34 SAE Code 61 W/Clearance Holes	FC34											
* FFT34 SAE Code 61 W/Tapped Holes		FT34												
FFC64 SAE Code 62 W/Clearance Holes		FC64												
* FFT64 SAE Code 62 W/Tapped Holes		FT64												
FFC74 ISO 6164 W/Clearance Holes		FC74												
** FFC49 TMI® 9-Bolt W/Clearance Holes		FC49												
Cone Type Ref. pages (B12-B15)	Cone - Flat Face	CF												
	Cone - 'O' Ring Face	CO												
Radius Ref. page (B22)	Field Manufactured	R1												
	Factory Manufactured	R2												
Length	L1	Specify (in.)												
Angle	Max. 90°	Specify (°)												
Length	L2	Specify (in.)												
Options	Viton	V												
	Painted (Specify)	P												
Complete Stainless Steel Assembly: (including flanges)		SS												

♦♦TMP44HR PIPE IS ONLY AVAILABLE IN 2 1/2" & 3" SCHEDULE 40 SIZES

♦ TMP46CD PIPE IS ONLY AVAILABLE IN 1 1/4"-2" SCHEDULE 80 SIZES

TMP2205SS PIPE IS ONLY AVAILABLE IN 1 1/4"-2" SCHEDULE 80 SIZES

**FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REFERENCE PAGE P10)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

PART NO. (EXAMPLE): BPAF/52 - SCH80-100 - FC34 - FC34 - CO - CF - R1 - 125 - 90 - 115

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR PIPE RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Flare Flange Elbow Assembly

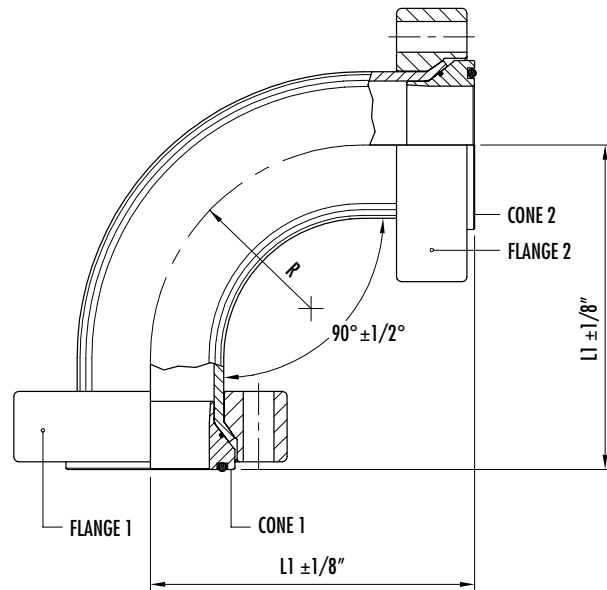
Short Radius Bent Elbow

Typical A/FFE Assembly

For field bent pipe assemblies
Ref. page B22

COMPLETE ASSEMBLY CONSISTS OF:

- FLARE FLANGE 90° ELBOW BODY
- TWO (2) FLARE FLANGES (REF. PAGES B8-B11)
- TWO (2) CONES
(REF. PAGES B12-B15 FOR TYPE OF CONE)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL



PART NO. (EXAMPLE): A/FFE - SCH40-050 - FC34 - FC34 - CO - CO

FFE Flare Flange Elbow Body

Size	Dimensions (in)		WT. *(Body Only) lbs/pc		Working Pressure *(Body Only) PSI (bar)	
	L1	R	SCH 40	SCH 80	SCH 40	SCH 80
1/2"	5.00	2.625	0.63	0.81	6000 (420)	6000 (420)
3/4"	5.00	3.125	0.81	1.06	5000 (350)	6000 (420)
1"	5.00	2.625	1.24	1.60	4700 (325)	6000 (420)
1 1/4"	6.00	3.375	2.00	2.63	3900 (270)	6000 (420)
1 1/2"	6.50	3.815	2.57	3.45	3500 (240)	6000 (420)
2"	8.00	4.750	4.23	5.82	2900 (200)	5800 (400)
2 1/2"	11.00	7.500	9.08	12.01	2600 (180)	4500 (310)
3"	12.50	9.000	13.30	18.02	2300 (160)	3900 (270)

* BODY ONLY CONSISTS OF BENT FLARED PIPE SECTION AND CONES. FOR TOTAL ASSEMBLY WEIGHT, ADD APPROPRIATE FLANGE WEIGHTS TO BODY WEIGHT.

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE B25
- OTHER RADII AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)

• REDUCING FLANGES AND CONES ARE AVAILABLE (REFERENCE PAGES B16-B19)

FOR FLARE FLANGE ASSEMBLIES UTILIZING REDUCING FLANGES AND CONES ADD (R) TO FLANGE AND CONE CODE NUMBERS.

ie. SAE code 61 flare flange with clearance holes - code number FC34 would be FCR34-(flange size)

REDUCING PART NO. (EXAMPLE): A/FFE - SCH40-050 - FCR34-075 - FC34 - COR - CO

Consult factory for ordering assistance



Flare Flange Elbow Assembly

Complete Assembly Part Number

Code		A	/	FFE	-	Body & Cone Material	-	Size & Schedule	-	Flange 1	-	Flange 2	-	Cone 1	-	Cone 2	-	Options	
Assembly		A																	
Flare Flange Elbow		FFE																	
Body & Cone Material Carbon Steel (Standard) Ref. page (B24)	No Designation Required																		
Body & Cone Material Stainless Steel (Optional) Ref. page (B7)	TMP304SS	304																	
	TMP316SS	316																	
	†TMP2205SS	2205																	
Body Size & Schedule	1/2"	SCH40-050 SCH80-050																	
	3/4"	SCH40-075 SCH80-075																	
	1"	SCH40-100 SCH80-100																	
	1 1/4"	SCH40-125 SCH80-125																	
	1 1/2"	SCH40-150 SCH80-150																	
	2"	SCH40-200 SCH80-200																	
	2 1/2"	SCH40-250 SCH80-250																	
	3"	SCH40-300 SCH80-300																	
	Flange Type Carbon Steel Yellow Zinc Dichromate Plated Ref. pages (B8-B11)	FFC34 SAE Code 61 W/Clearance Holes	FC34																
		*FFT34 SAE Code 61 W/Tapped Holes	FT34																
FFC64 SAE Code 62 W/Clearance Holes		FC64																	
*FFT64 SAE Code 62 W/Tapped Holes		FT64																	
FFC74 ISO 6164 W/Clearance Holes		FC74																	
**FFC49 TMI® 9-Bolt W/Clearance Holes		FC49																	
Cone Type Ref. pages (B12-B15)	Cone - Flat Face	CF																	
	Cone - 'O' Ring Face	CO																	
Options	Viton	V																	
	Painted (Specify)	P																	
Complete Stainless Steel Assembly: (including flanges)	SS																		

† TMP2205SS PIPE IS ONLY AVAILABLE IN 1 1/4"-2" SCHEDULE 80 SIZES

** FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REF. PG P10)

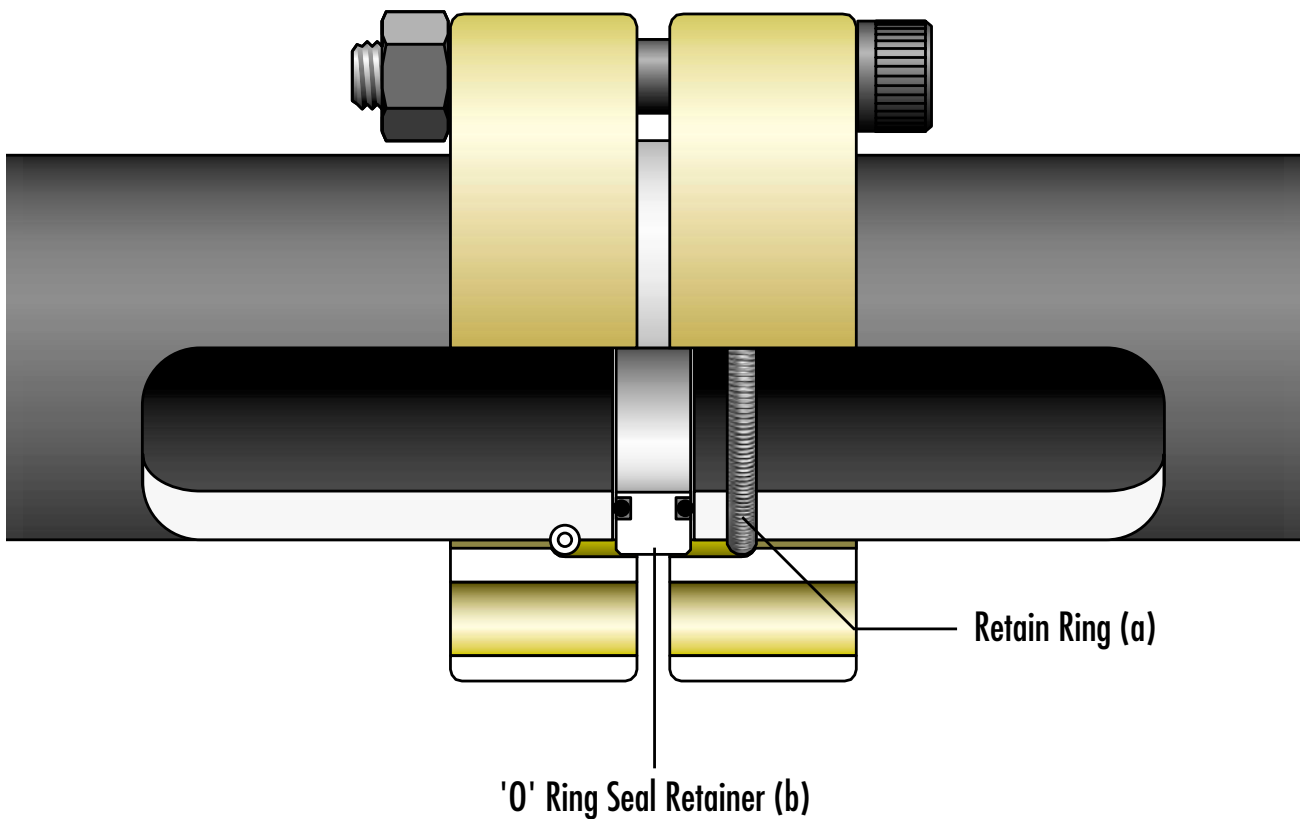
* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

PART NO. (EXAMPLE): A/FFE - SCH40-050 - FC34 - FC34 - CF - CO

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Retain Ring System



The retain ring configuration uses heavy wall pipe and has a machined butt end face, along with an annular groove on the outside diameter.

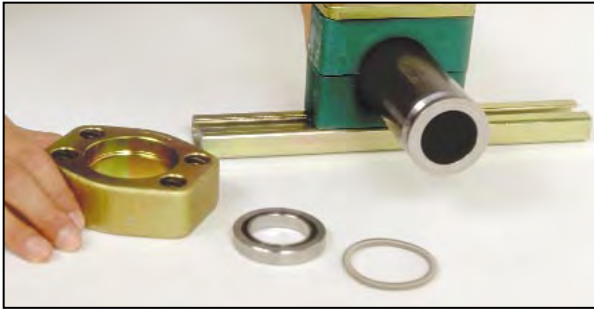
After machining, the flange is slipped onto the pipe and a retain ring (a) which consists of a segmented stainless steel ring bound by a spiral wound stainless steel spring is sprung over the pipe's outside diameter nesting in the annular groove. Bolting the flanges together draws them against the retain rings with the 'o'ring seal retainer (b) captive within the connection.

Pipe sizes 1 1/2" through 10" are available for use with retain ring flanges.

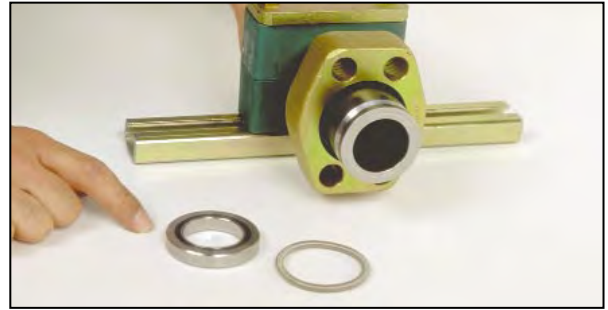
The standard connection styles offered conform to SAE and ISO 4-bolt flanges along with Tube-Mac® Industries 8-bolt/12-bolt proprietary flanges. Other flange patterns may also be available.

TMI[®] Retain Ring Flange Connection Procedure

The retain ring flange connection consists of machined pipe, retain ring flanges, retain rings, 'o' ring seal retainer and bolting hardware.



Step 1: Pipe supplied with butt end machined along with an annular groove on the outside diameter.



Step 2: Slip flange onto the pipe.



Step 3: Retain ring is sprung over the pipe's outside diameter nesting in the annular groove.



Step 4: Select the correct 'o' ring seal retainer style (reference pages C4 -C5). The 'o' ring provides a seal against the butt end of the pipe.



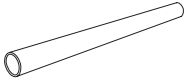
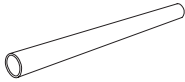
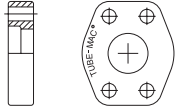
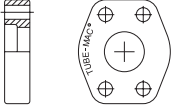
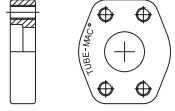
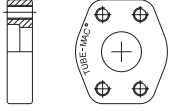
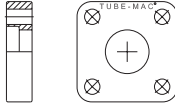
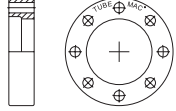


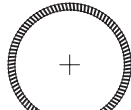
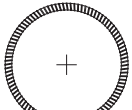

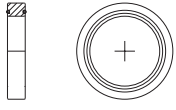
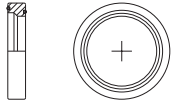
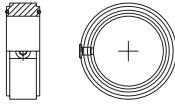
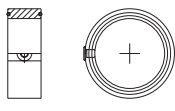
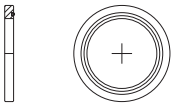
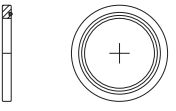
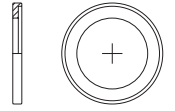
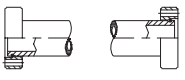
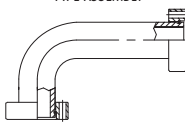
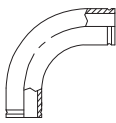
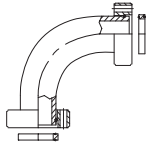
Step 5: Select the required bolting hardware from Section R of this catalogue. Carefully place the 'o' ring seal retainer in between the pipe ends. Slide the flanges forward and the 'o' ring seal retainer becomes captive within the flanges.



Step 6: Tighten bolts to the torque values specified. Always tighten bolts in a cross-over sequence and ensure that the flanges are parallel.



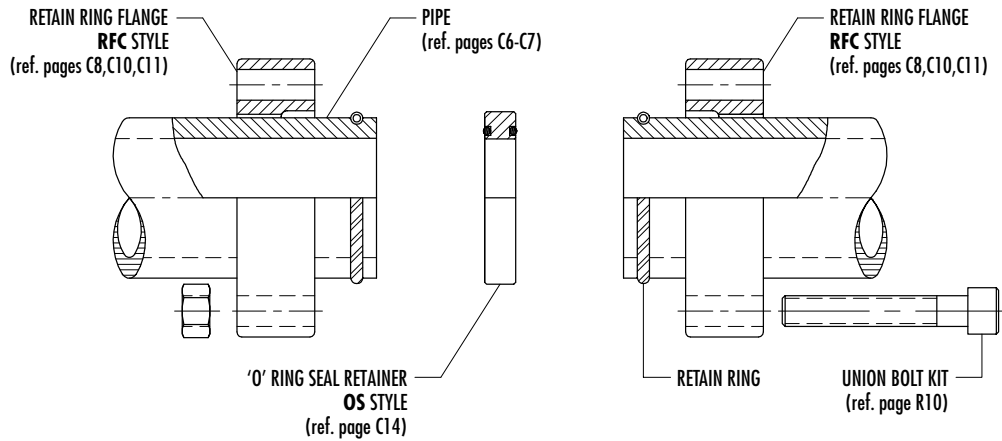
Retain Ring System - Visual Index

<p>PIPES</p>	<p>CARBON STEEL PIPE</p>  <p>1 1/2" - 10" Page C6</p>	<p>STAINLESS STEEL PIPE</p>  <p>4" - 10" Page C7</p>	<p>RETAIN RING FLANGES</p>	<p>RFC34 SAE CODE 61 WITH CLEARANCE HOLES</p>  <p>1/2" - 3" Page C8</p>
<p>RFC64 SAE CODE 62 WITH CLEARANCE HOLES</p>  <p>1/2" - 2" Page C8</p>	<p>RFT34 SAE CODE 61 WITH UNC TAPPED HOLES</p>  <p>1/2" - 3" Page C9</p>	<p>RFT64 SAE CODE 62 WITH UNC TAPPED HOLES</p>  <p>1/2" - 2" Page C9</p>	<p>RFC74 ISO 6164 WITH CLEARANCE HOLES</p>  <p>2 1/2" - 4" Page C10</p>	<p>RFAC48/RFAC412 TMI® 8-BOLT/12-BOLT WITH CLEARANCE HOLES</p>  <p>5" - 10" Page C11</p>
<p>RFC49 TMI® 9-BOLT WITH CLEARANCE HOLES</p>  <p>2 1/2" - 4" Page C12</p>	<p>RFAC49 TMI® 9-BOLT WITH CLEARANCE HOLES</p>  <p>5" Page C12</p>	<p>RETAIN RING</p>	<p>R</p>  <p>1/2" - 4" Page C13</p>	<p>RA</p>  <p>5" - 10" Page C13</p>
<p>'O' RING SEAL RETAINER</p>	<p>OS</p>  <p>1/2" - 4" Page C14</p>	<p>OSA</p>  <p>5" - 10" Page C14</p>	<p>OSS</p>  <p>4" Page C14</p>	<p>OSP</p>  <p>1/2" - 4" Page C15</p>
<p>OSAP</p>  <p>5" - 10" Page C15</p>	<p>OSH</p>  <p>1/2" - 4" Page C16</p>	<p>OSHS</p>  <p>4" Page C16</p>	<p>'O' RING CONNECTOR PLATE</p>	<p>OCP</p>  <p>1/2" - 4" Page C17</p>
<p>PIPE ASSEMBLIES</p>	<p>PAR RETAIN RING FLANGE PIPE ASSEMBLY</p>  <p>1 1/2" - 8" Page C18-19</p>	<p>BPAP RETAIN RING FLANGE BENT PIPE ASSEMBLY</p>  <p>1 1/2" - 8" Page C20-21</p>		
<p>RETAIN RING FLANGE ELBOW</p>	<p>RFE BODY ONLY</p>  <p>1 1/2" - 8" Page C22</p>	<p>A/RFE ASSEMBLY</p>  <p>1 1/2" - 8" Page C23</p>		

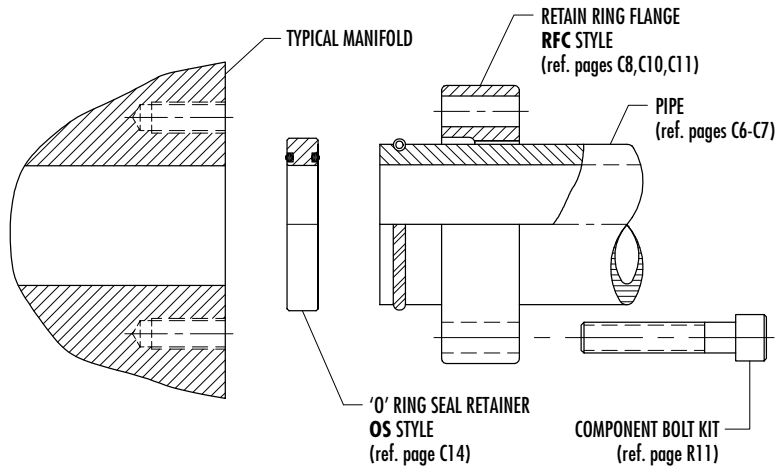


Retain Ring Flange Connections - Heavy Wall Pipe

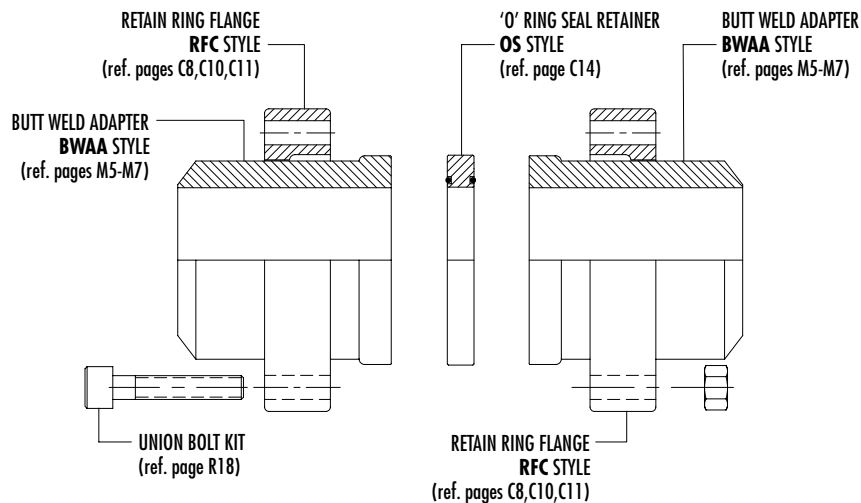
Typical Pipe Union Connection



Typical Pipe to Flat Face Connection



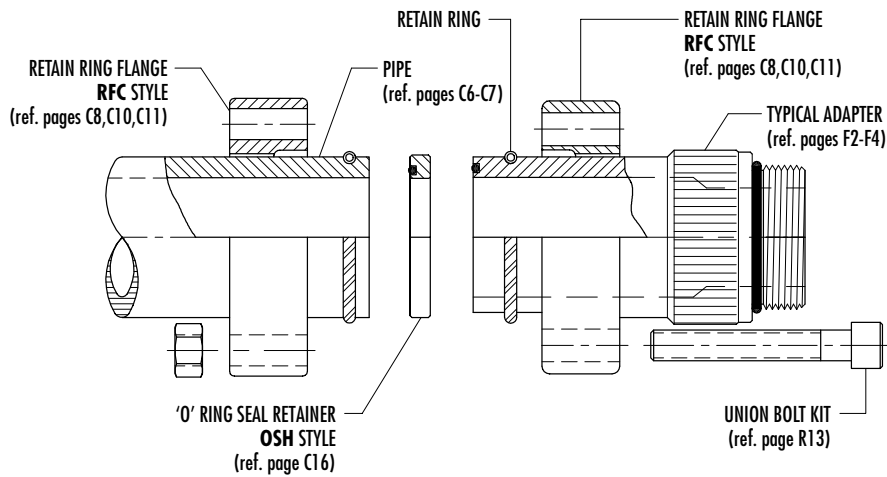
Typical Butt Weld Adapter Union Connection



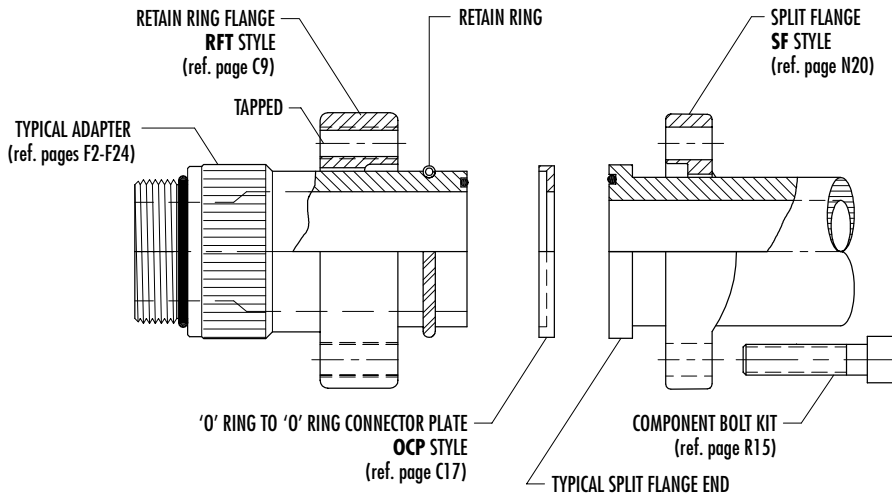


Retain Ring Flange Connections - Heavy Wall Pipe

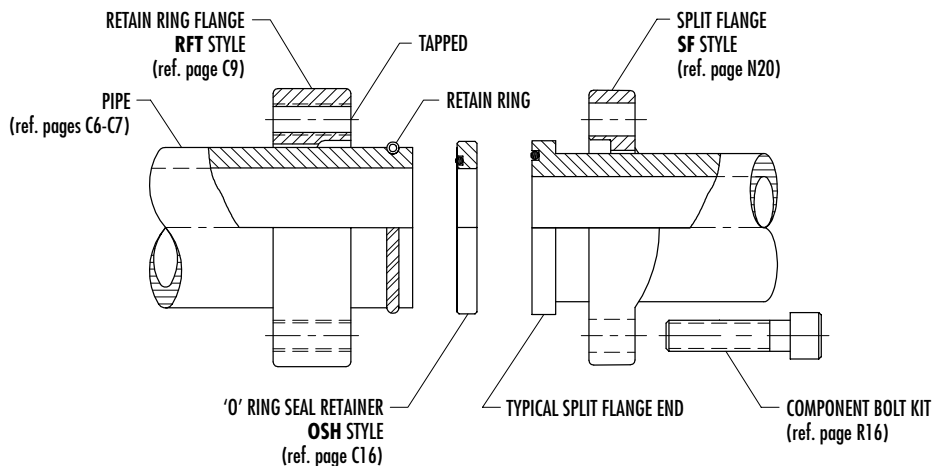
Typical Pipe to 'O' Ring Face Retain Ring Component Connection



Typical 'O' Ring Face Retain Ring Component to SAE Split Flange Connection



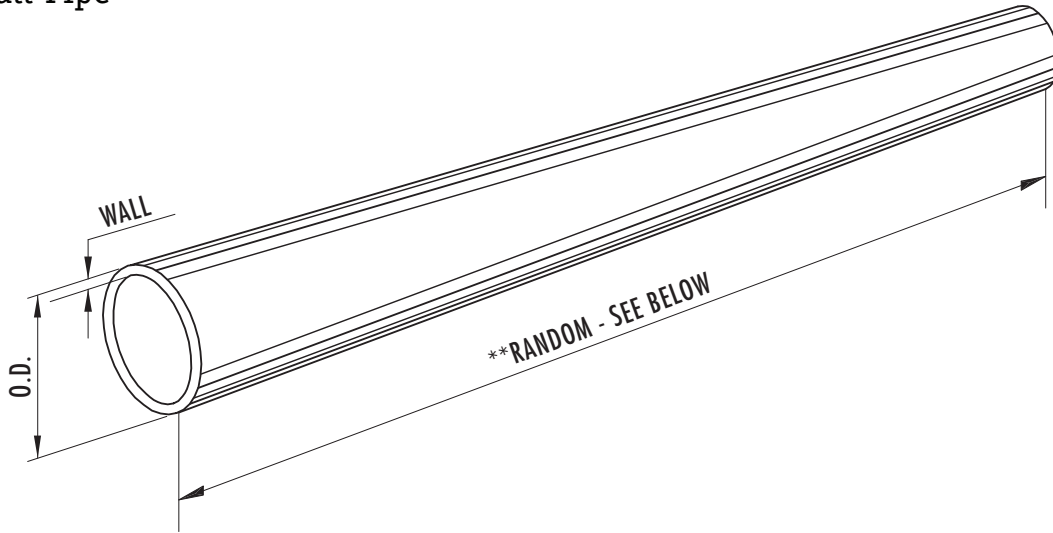
Typical Pipe to SAE Split Flange Connection



TMI[®] Carbon Steel Pipe

Suitable for High Pressure Retain Ring

Heavy Wall Pipe



TMP52CD

A519 - DIN 2391c St 52.4 NBK Ph osphated High Quality Bendable Cold Drawn Seamless Carbon Steel

Nominal Size	Pipe Part No.	OD x Wall (mm)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
1 1/2"	TMP52CD-56x150x**	56 x 8.5	1.54	6.70	6000 (420)
2"	TMP52CD-66x200x**	66 x 8.5	1.93	8.11	6000 (420)
2 1/2"	TMP52CD-80x250x**	80 x 10	2.36	11.62	5800 (400)
3"	TMP52CD-97x300x**	97 x 12	2.87	16.93	5800 (400)
4"	TMP52CD-115x400x**	115 x 15	3.35	24.90	5800 (400)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 360".

TMP106HR

A106B - Cleaned Seamless Carbon Steel

Schedule XXS/160

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
5"	TMP106HR-SCHXXS-500x**	5.563 x 0.750	4.063	38.51	5000 (350)
6"	TMP106HR-SCHXXS-600x**	6.625 x 0.864	4.897	53.10	5000 (350)
8"	TMP106HR-SCH160-800x**	8.625 x 0.906	6.813	74.61	4000 (275)
10"	TMP106HR-SCH160-1000x**	10.750 x 1.125	8.50	115.60	4000 (275)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 480"

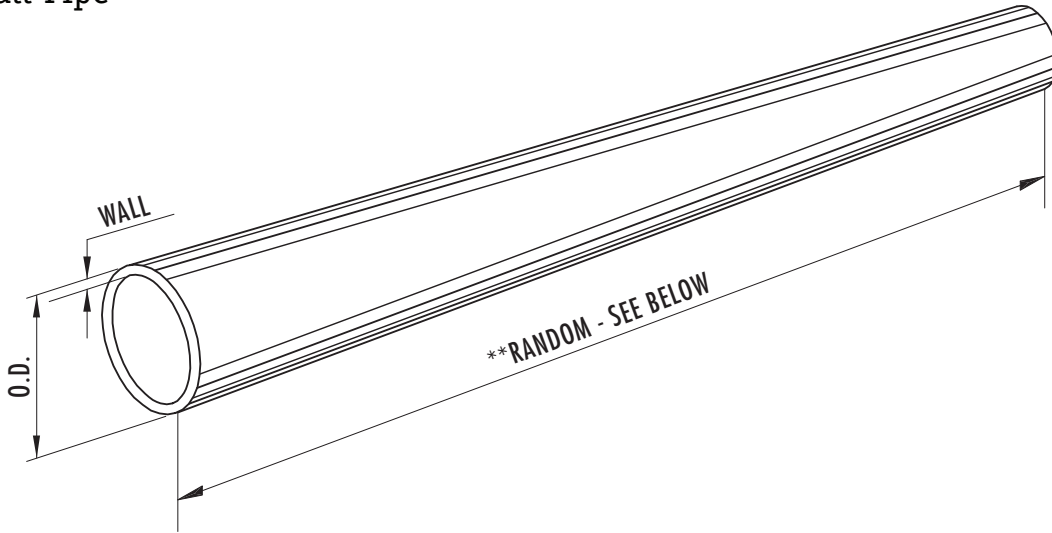
- TO ORDER A RETAIN RING FLANGE PIPE ASSEMBLY REFERENCE PAGE C18-C21
- MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CONNECTION RATING



TMI® Stainless Steel Pipe

Suitable for High Pressure Retain Ring

Heavy Wall Pipe



TMP304SS/316SS

A312 - Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule XXS/160

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
4"	TMP304SS-SCHXXS-400x**	TMP316SS-SCHXXS-400x**	4.500 x 0.674	3.152	27.54	5800 (400)
5"	TMP304SS-SCHXXS-500x**	TMP316SS-SCHXXS-500x**	5.563 x 0.750	4.063	38.55	5000 (350)
6"	TMP304SS-SCHXXS-600x**	TMP316SS-SCHXXS-600x**	6.625 x 0.864	4.897	53.16	5000 (350)
8"	TMP304SS-SCH160-800x**	TMP316SS-SCH160-800x**	8.625 x 0.906	6.813	74.69	4000 (275)
10"	TMP304SS-SCH160-1000x**	TMP316SS-SCH160-1000x**	10.750 x 1.125	8.50	115.60	4000 (275)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

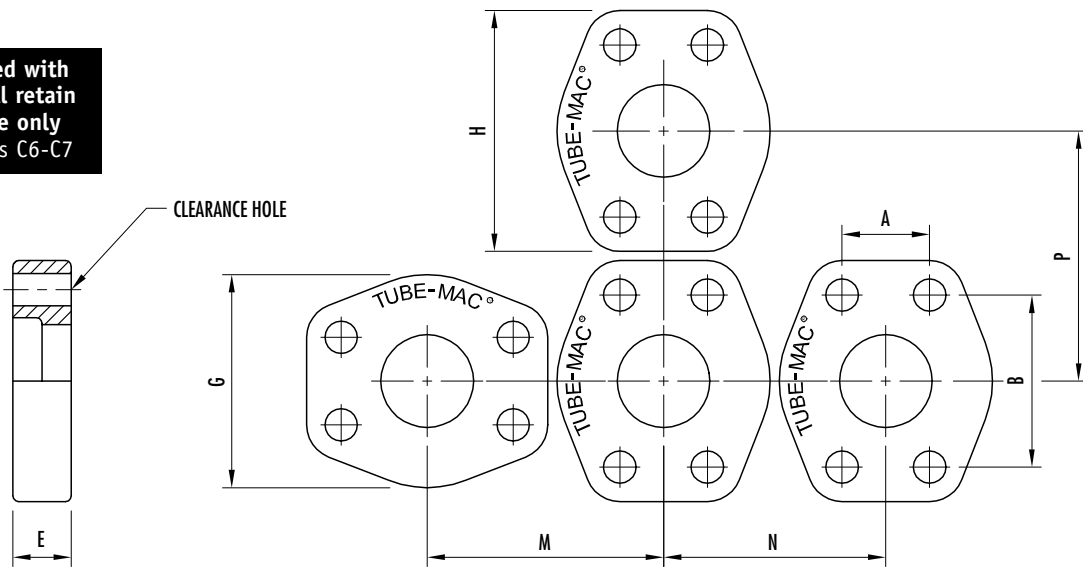
- TO ORDER A RETAIN RING FLANGE PIPE ASSEMBLY REFERENCE PAGE C18-C21
- MAXIMUM ALLOWABLE WORKING PRESSURES ARE BASED ON THE LOWER OF THE PIPE RATING PER ANSI B31.3 OR THE CARBON STEEL CONNECTION RATING
- FOR PIPING SYSTEMS CONSISTING OF ALL STAINLESS STEEL COMPONENTS, PRESSURE RATINGS WILL BE LESS THAN THAT SHOWN ABOVE (CONTACT FACTORY)



Retain Ring Flanges

SAE - Flanges with Clearance Holes

To be used with heavy wall retain ring pipe only
Ref. pages C6-C7



RFC34 Retain Ring Flange - SAE Code 61 With Clearance Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size	Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	RFC34-050	0.69	1.50	1.81	2.16	2.20	2.09	2.32	0.81	5/16" UNC	0.40	5000 (350)	15-18
3/4"	RFC34-075	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8" UNC	0.46	5000 (350)	20-30
1"	RFC34-100	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8" UNC	0.58	5000 (350)	20-30
1 1/4"	RFC34-125	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16" UNC	0.79	4000 (275)	40-50
1 1/2"	RFC34-150	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2" UNC	1.41	3000 (210)	80-90
2"	RFC34-200	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2" UNC	2.01	3000 (210)	80-90
2 1/2"	RFC34-250	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2" UNC	3.28	2500 (175)	80-90
3"	RFC34-300	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8" UNC	5.14	2000 (140)	110-120

RFC64 Retain Ring Flange - SAE Code 62 With Clearance Holes

High Pressure Series 6000 PSI (420 bar)

Size	Flange Part No.	Dimensions (in)								Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	RFC64-050	0.72	1.59	1.88	2.22	2.20	2.09	2.32	0.81	5/16" UNC	0.43	6000 (420)	15-18
3/4"	RFC64-075	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8" UNC	0.83	6000 (420)	20-30
1"	RFC64-100	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16" UNC	1.16	6000 (420)	40-50
1 1/4"	RFC64-125	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2" UNC	1.86	6000 (420)	80-90
1 1/2"	RFC64-150	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8" UNC	3.14	6000 (420)	110-120
2"	RFC64-200	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4" UNC	4.82	6000 (420)	120-130

• FOR BOLT KITS - REFERENCE SECTION R

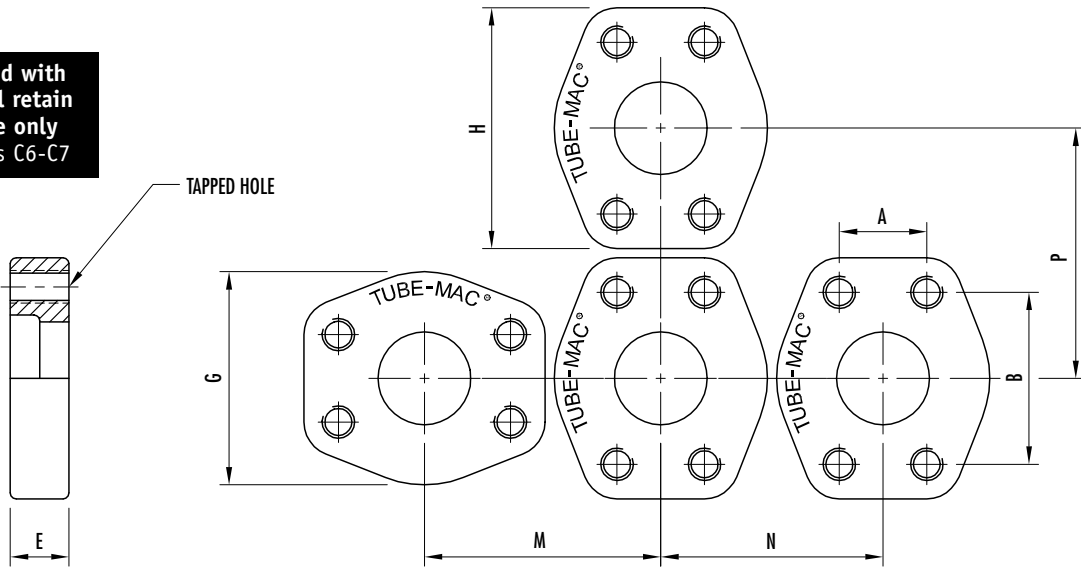
MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flanges

SAE - Flanges with Tapped Holes

To be used with heavy wall retain ring pipe only
Ref. pages C6-C7



RFT34 Retain Ring Flange - SAE Code 61 With Tapped Holes

Standard Pressure Series 2000-5000 PSI (140-350 bar)

Size	Flange Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	RFT34-050	0.69	1.50	1.81	2.16	2.20	2.09	2.32	0.81	5/16"-18	0.44	5000 (350)	15-18
3/4"	RFT34-075	0.88	1.88	2.06	2.56	2.40	2.17	2.68	0.82	3/8"-16	0.62	5000 (350)	20-30
1"	RFT34-100	1.03	2.06	2.31	2.76	2.64	2.44	2.87	0.87	3/8"-16	0.75	5000 (350)	20-30
1 1/4"	RFT34-125	1.19	2.31	2.88	3.11	3.11	2.99	3.23	0.91	7/16"-14	1.15	4000 (275)	40-50
1 1/2"	RFT34-150	1.41	2.75	3.25	3.66	3.58	3.35	3.78	1.06	1/2"-13	2.15	3000 (210)	80-90
2"	RFT34-200	1.69	3.06	3.81	4.02	4.02	3.94	4.13	1.22	1/2"-13	2.65	3000 (210)	80-90
2 1/2"	RFT34-250	2.00	3.50	4.28	4.49	4.49	4.37	4.61	1.40	1/2"-13	3.75	2500 (175)	80-90
3"	RFT34-300	2.44	4.19	5.16	5.28	5.35	5.24	5.39	1.67	5/8"-11	6.10	2000 (140)	110-120

RFT64 Retain Ring Flange - SAE Code 62 With Tapped Holes

High Pressure Series 6000 PSI (420 bar)

Size	Flange Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	M	N	P	E				
1/2"	RFT64-050	0.72	1.59	1.88	2.22	2.20	2.09	2.32	0.81	5/16"-18	0.52	6000 (420)	15-18
3/4"	RFT64-075	0.94	2.00	2.38	2.81	2.76	2.68	2.95	1.02	3/8"-16	0.79	6000 (420)	20-30
1"	RFT64-100	1.09	2.25	2.75	3.19	3.19	2.99	3.35	1.03	7/16"-14	0.88	6000 (420)	40-50
1 1/4"	RFT64-125	1.25	2.63	3.06	3.75	3.58	3.27	3.90	1.25	1/2"-13	2.18	6000 (420)	80-90
1 1/2"	RFT64-150	1.44	3.13	3.75	4.44	4.25	3.98	4.57	1.38	5/8"-11	3.16	6000 (420)	110-120
2"	RFT64-200	1.75	3.81	4.50	5.25	5.04	4.72	5.39	1.68	3/4"-10	5.10	6000 (420)	120-130

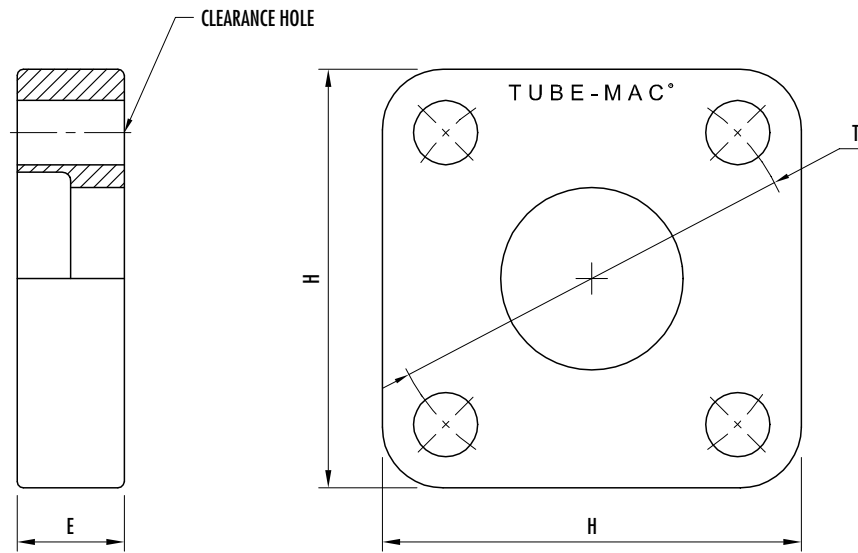
MATERIAL: FORGED CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flanges

ISO 6164 - Flanges with Clearance Holes

To be used with heavy wall retain ring pipe only
Ref. pages C6-C7



RFC74 Retain Ring Flange - ISO 6164 With Clearance Holes

5800 PSI (400 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	H	E				
2 1/2"	RFC74-250	4.65	4.72	1.48	3/4" UNC	4.79	5800 (400)	120-130
3"	RFC74-300	5.71	5.91	1.73	1" UNC	7.88	5800 (400)	350-400
4"	RFC74-400	6.89	7.00	1.98	1 1/8" UNC	14.41	5800 (400)	500-550

• FOR BOLT KITS - REFERENCE SECTION R

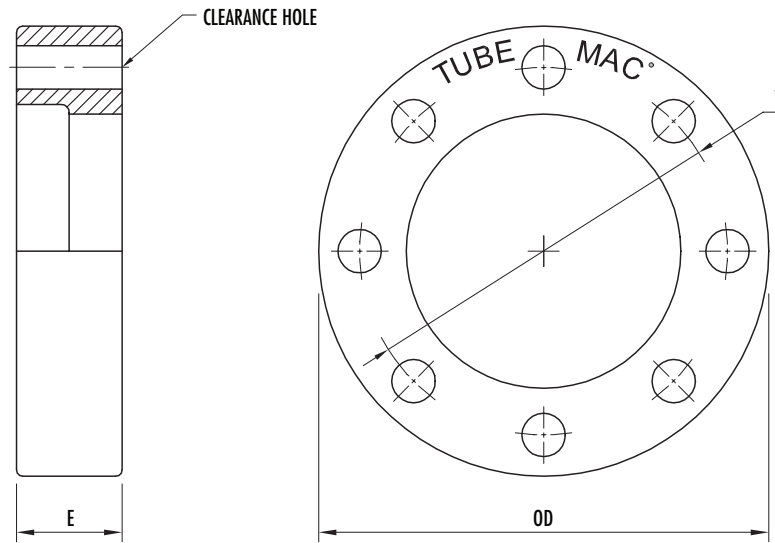
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flanges

TMI® 8-Bolt/12-Bolt - Flanges with Clearance Holes

To be used with heavy wall retain ring pipe only
Ref. pages C6-C7



RFAC48 Retain Ring Flange - TMI® 8-Bolt With Clearance Holes

5000 PSI (350 bar)

Size	Flange Part No.	Dimensions (in)			Bolt/Stud	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
5"	RFAC48-500	7.88	9.65	2.00	1" UNC	20.85	5000 (350)	350-400
6"	RFAC48-600	9.65	11.81	2.31	1 1/8" B7 stud	44.25	5000 (350)	500-550
8"	RFAC48-800	12.40	15.13	3.00	1 1/2" B7 stud	87.06	5000 (350)	1100-1200

• FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

RFAC412 Retain Ring Flange - TMI® 12-Bolt With Clearance Holes

4000 PSI (275 bar)

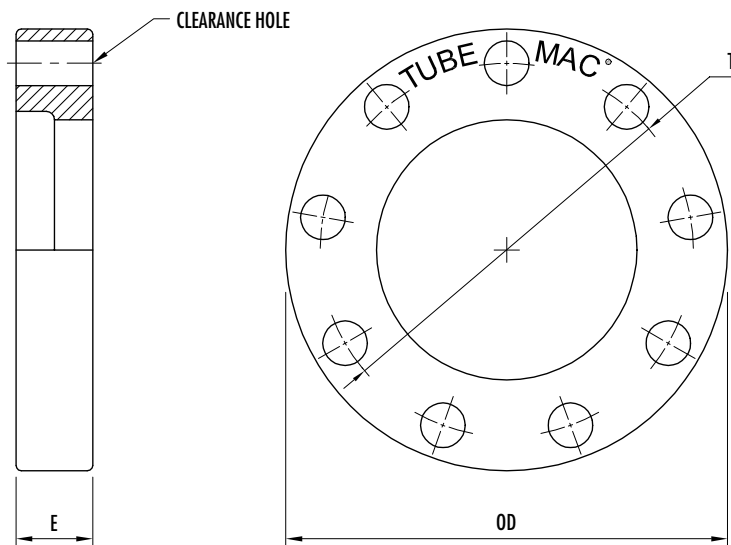
Size	Flange Part No.	Dimensions (in)			Bolt/Stud	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
10"	RFAC412-1000	14.76	17.75	3.80	1 1/2" B7 stud	127.60	4000 (275)	1100-1200



Retain Ring Flanges

TMI® 9-Bolt - Flanges with Clearance Holes

To be used with heavy wall retain ring pipe only
Ref. pages C6-C7



RFC49 Retain Ring Flange - TMI® 9-Bolt With Clearance Holes

For use with Retain Ring Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)
4000-4200 PSI (275-290 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
2 1/2"	RFC49-250	4.03	4.95	1.48	1/2" UNC	2.65	4200 (290)	80-90
3"	RFC49-300	5.49	6.50	1.73	5/8" UNC	5.77	4100 (280)	110-120
4"	RFC49-400	6.14	7.38	1.98	5/8" UNC	7.97	4000 (275)	110-120

RFAC49 Retain Ring Flange - TMI® 9-Bolt With Clearance Holes

For use with Retain Ring Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)
3860 PSI (265 bar)

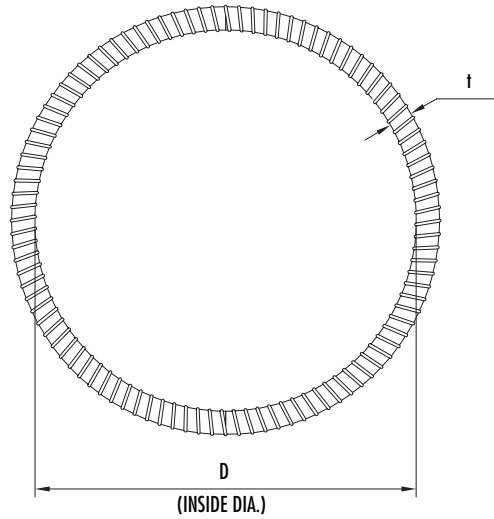
Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
5"	RFAC49-500	7.56	9.00	2.00	3/4" UNC	22.37	3860 (265)	120-130

• FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring



R Retain Ring - 1/2" - 4"

RA Retain Ring - 5" - 10"

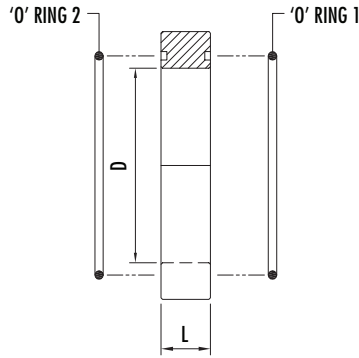
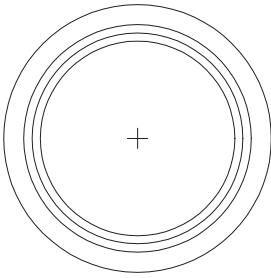
Size	Retain Ring Part No.	Dimensions (in)		WT. lbs/pc
		D	t	
1/2"	R-050	0.85	0.16	0.01
3/4"	R-075	1.24	0.16	0.02
1"	R-100	1.32	0.20	0.03
1 1/4"	R-125	1.59	0.20	0.04
1 1/2"	R-150	1.99	0.20	0.05
2"	R-200	2.38	0.20	0.06
2 1/2"	R-250	2.93	0.20	0.07
3"	R-300	3.56	0.24	0.12
4"	R-400	4.19	0.31	0.27
5"	RA-500	5.23	0.31	0.34
6"	RA-600	6.21	0.39	0.64
8"	RA-800	8.13	0.47	1.18
10"	RA-1000	10.26	0.47	2.41

MATERIAL: STAINLESS STEEL - AISI 302/304 SPRING TEMPER

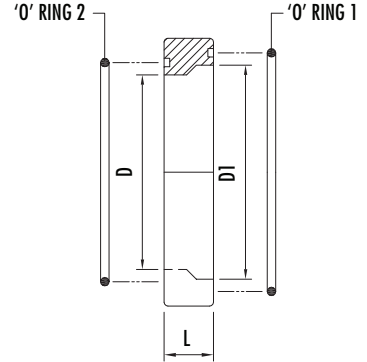


'O' Ring Seal Retainer

OS/OSA



OSS (4" only)



OS 'O' Ring Seal Retainer for Retain Ring Pipe - 1/2"- 4"

Complete with Buna 'O' Rings (Standard)

OSA 'O' Ring Seal Retainer for Retain Ring Pipe - 5"-10"

Complete with Buna 'O' Rings (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Rings 1&2 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	OS-050-*	0.55	0.50	OR*-3-909	0.08
3/4"	OS-075-*	0.79	0.50	OR*-3-913	0.13
1"	OS-100-*	0.91	0.50	OR*-3-916	0.15
1 1/4"	OS-125-*	1.18	0.50	OR*-3-918	0.19
1 1/2"	OS-150-*	1.54	0.50	OR*-3-924	0.24
2"	OS-200-*	1.93	0.50	OR*-3-928	0.29
2 1/2"	OS-250-*	2.36	1.00	OR*-2-232	0.53
3"	OS-300-*	2.88	1.00	OR*-2-237	0.78
4"	OS-400-*	3.35	1.00	OR*-2-241	1.22
5"	OSA-500-*	4.06	1.50	OR*-2-353	5.73
6"	OSA-600-*	4.90	1.50	OR*-2-359	6.80
8"	OSA-800-*	6.81	1.50	OR*-2-368	10.34
10"	OSA-1000-*	8.50	2.00	OR*-2-377	21.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

◆ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSS-400 (SEE BELOW)

OSS 'O' Ring Seal Retainer for Retain Ring Pipe - 4"

For use with Retain Ring Connection to 9-Bolt Ball Valve BBVG27 (reference page p10)

Complete with Buna 'O' Rings (Standard)

Size	Retainer Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	D1	L			
4"	OSS-400-*	3.35	3.80	1.00	OR*-2-243	OR*-2-241	1.22

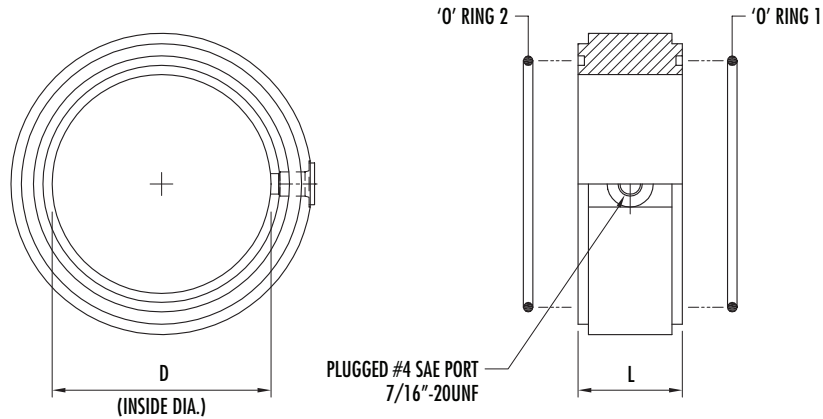
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Seal Retainer

With Pilot Port



OSP 'O' Ring Seal Retainer with Pilot Port for Retain Ring Pipe - 1/2"-4"
Complete with Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

OSAP 'O' Ring Seal Retainer with Pilot Port for Retain Ring Pipe - 5"-10"
Complete with Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

Size	Retainer Part No.	Dimensions (in)		'O' Rings 1&2 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	OSP-050-*	0.55	1.50	OR*-3-909	0.41
3/4"	OSP-075-*	0.79	1.50	OR*-3-913	0.65
1"	OSP-100-*	0.91	1.50	OR*-3-916	0.82
1 1/4"	OSP-125-*	1.18	1.50	OR*-3-918	0.94
1 1/2"	OSP-150-*	1.54	1.50	OR*-3-924	1.25
2"	OSP-200-*	1.93	1.50	OR*-3-928	1.53
2 1/2"	OSP-250-*	2.36	1.50	OR*-2-232	1.98
3"	OSP-300-*	2.88	1.50	OR*-2-237	2.80
◆4"	OSP-400-*	3.35	1.50	OR*-2-241	6.21
5"	OSAP-500-*	4.06	1.50	OR*-2-353	8.76
6"	OSAP-600-*	4.90	1.50	OR*-2-359	12.62
8"	OSAP-800-*	6.81	1.50	OR*-2-368	19.70
10"	OSAP-1000-*	8.50	2.00	OR*-2-377	21.60

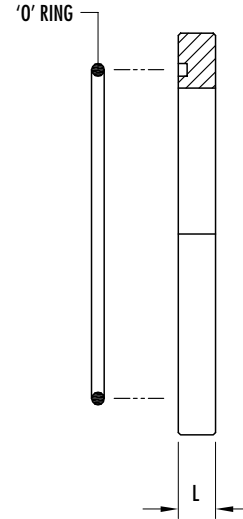
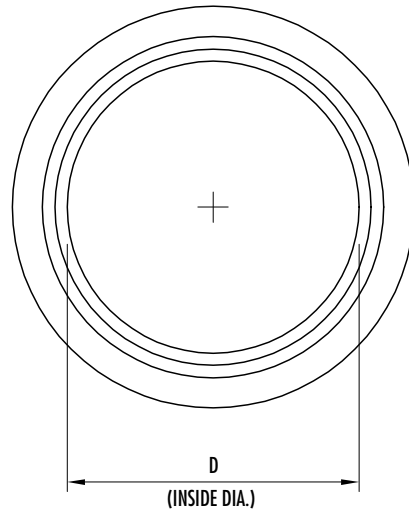
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

◆ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSS-400 (REFERENCE PREVIOUS PAGE, C14)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Seal Retainer



OSH 'O' Ring Seal Retainer for Retain Ring Pipe

Complete with Buna 'O' Ring (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	OSH-050-*	0.55	0.25	OR*-3-909	0.04
3/4"	OSH-075-*	0.79	0.25	OR*-3-913	0.07
1"	OSH-100-*	0.91	0.25	OR*-3-916	0.08
1 1/4"	OSH-125-*	1.18	0.25	OR*-3-918	0.09
1 1/2"	OSH-150-*	1.54	0.25	OR*-3-924	0.12
2"	OSH-200-*	1.93	0.25	OR*-3-928	0.15
2 1/2"	OSH-250-*	2.36	0.50	OR*-2-232	0.26
3"	OSH-300-*	2.88	0.50	OR*-2-237	0.39
4"	OSH-400-*	3.35	0.50	OR*-2-241	0.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

♦ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 (SEE BELOW)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

OSHS 'O' Ring Seal Retainer for Retain Ring Component - 4"

For use with Retain Ring Component Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)

Complete with Buna 'O' Ring (Standard)

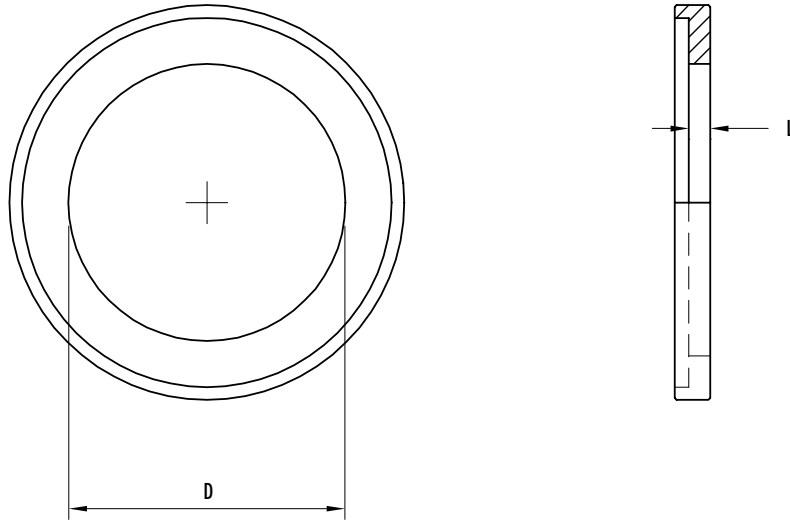
Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
4"	OSHS-400-*	3.80	0.50	OR*-2-243	0.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Connector Plate



OCP 'O' Ring Connector Plate for Retain Ring Components

Size	Retainer Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
1/2"	OCP-050	0.50	0.13	0.04
3/4"	OCP-075	0.75	0.13	0.06
1"	OCP-100	0.94	0.13	0.07
1 1/4"	OCP-125	1.20	0.13	0.08
1 1/2"	OCP-150	1.50	0.13	0.11
2"	OCP-200	1.94	0.13	0.13
2 1/2"	OCP-250	2.36	0.13	0.17
3"	OCP-300	2.88	0.13	0.25
4"	OCP-400	3.35	0.13	0.34

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Pipe Assembly

Heavy Wall Pipe

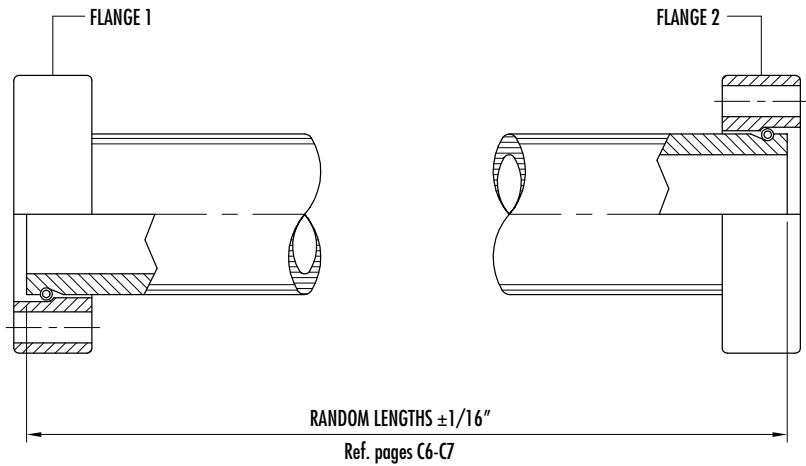
Typical PAR Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF CLEAN PIPE (REF. PAGES C6-C7)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C12)
- TWO (2) RETAIN RINGS
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (1 1/2" - 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4" - 8")

TO BE ORDERED SEPARATELY:

- 'O' RING SEAL RETAINER(S) (REF. PAGES C14-C16)



PART NO. (EXAMPLE): PAR/56 x 8.5 - FC34 - FC34 - 360



Retain Ring Flange Pipe Assembly

Complete Assembly Part Number

Code		PAR	Pipe Material	Pipe Size & Wall/Schedule	Flange 1	Flange 2	Length	Options
Pipe Assembly - Retain Ring		PAR						
Pipe Material Carbon Steel (Standard)	No Designation Required							
Pipe Material ♦Stainless Steel (Optional) Ref. page (C7)	TMP304SS	304						
	TMP316SS	316						
Pipe Size & Wall Ref. page (C6) Phosphated Cold Drawn Seamless Carbon Steel A519-DIN 2391c St. 52.4 NBK	1 1/2"	56x8.5						
	2"	66x8.5						
	2 1/2"	80x10						
	3"	97x12						
	4"	115x15						
Pipe Size & Schedule Ref. page (C6) Cleaned Seamless Carbon Steel A106B	5"	SCHXXS-500						
	6"	SCHXXS-600						
	8"	SCH160-800						
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C12)	RFC34 SAE Code 61 W/Clearance Holes	FC34						
	*RFT34 SAE Code 61 W/Tapped Holes	FT34						
	RFC64 SAE Code 62 W/Clearance Holes	FC64						
	*RFT64 SAE Code 62 W/Tapped Holes	FT64						
	RFC74 ISO 6164 W/Clearance Holes	FC74						
	RFAC48 TMI® 8-Bolt W/Clearance Holes	FAC48						
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49						
	**RFAC49 TMI® 9-Bolt W/Clearance Holes	FAC49						
Length	Specify (in.)							
Options	Painted (Specify)	P						
♦ Complete Stainless Steel Assembly: (including flanges)		SS						

'O' Ring seal retainers are to be ordered separately (reference pages C14-C16)

- ♦ STAINLESS STEEL IS AVAILABLE (CONSULT FACTORY)
- ** FOR USE WITH 9-BOLT BALL VALVE CONNECTIONS (REFERENCE PAGE P10)
- * NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

PART NO. (EXAMPLE): PAR/56 x 8.5 - FC34 - FC34 - 360

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR PIPE RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Retain Ring Flange Bent Pipe Assembly

Heavy Wall Pipe

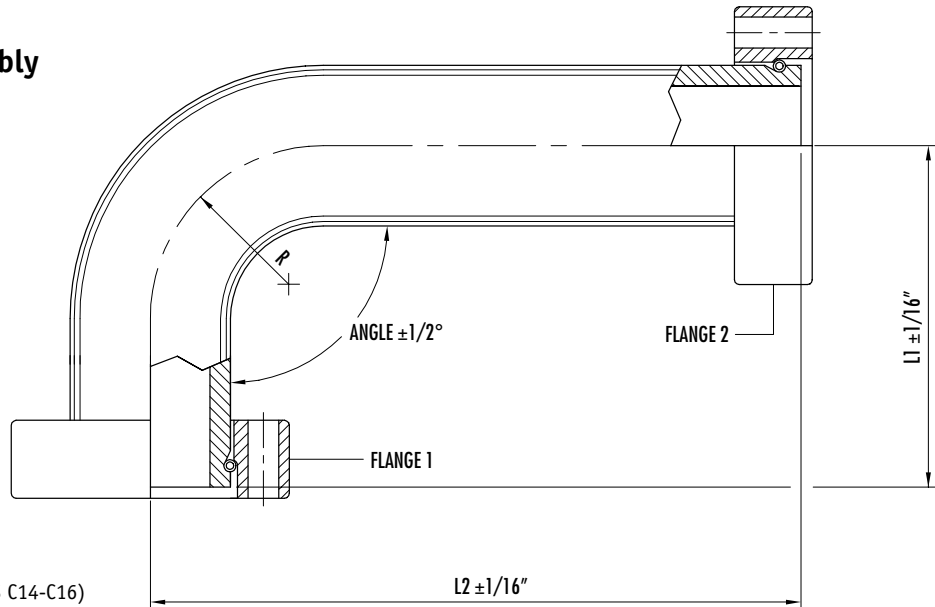
Typical BPAR Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF BENT CLEAN PIPE (REF. PAGES C6-C7)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C12)
- TWO (2) RETAIN RINGS
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (1 1/2" - 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4" - 8")

TO BE ORDERED SEPARATELY:

- 'O' RING SEAL RETAINER(S) (REF. PAGES C14-C16)



PART NO. (EXAMPLE): BPAR/56 x 8.5 - FC34 - FC34 - 230 - 90 - 130

Size	Dimensions (in)	
	L(min)	R
1 1/2"	12.50	8.25
2"	14.00	9.50
2 1/2"	17.00	12.50
3"	20.00	15.00
4"	25.00	20.00
5"	25.00	20.00
6"	30.00	24.00
8"	40.00	32.00



Retain Ring Flange Bent Pipe Assembly

Complete Assembly Part Number

Code		BP	AR	/	Pipe Material	-	Pipe Size & Wall/Schedule	-	Flange 1	-	Flange 2	-	Length L1	-	Angle	-	Length L2	-	Options	
Bent Pipe Assembly - Retain Ring		BP																		
Pipe Material Carbon Steel (Standard)	No Designation Required																			
Pipe Material ♦Stainless Steel (Optional) Ref. page (C7)	TMP304SS	304																		
	TMP316SS	316																		
Pipe Size & Wall Ref. page (C6) Phosphated Cold Drawn Seamless Carbon Steel A519-DIN 2391c St. 52.4 NBK	1 1/2"	56x8.5																		
	2"	66x8.5																		
	2 1/2"	80x10																		
	3"	97x12																		
Pipe Size & Schedule Ref. page (C6) Cleaned Seamless Carbon Steel A106B	4"	115x15																		
	5"	SCHXXS-500																		
	6"	SCHXXS-600																		
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C12)	RFC34 SAE Code 61 W/Clearance Holes	FC34																		
	*RFT34 SAE Code 61 W/Tapped Holes	FT34																		
	RFC64 SAE Code 62 W/Clearance Holes	FC64																		
	*RFT64 SAE Code 62 W/Tapped Holes	FT64																		
	RFC74 ISO 6164 W/Clearance Holes	FC74																		
	RFAC48 TMI® 8-Bolt W/Clearance Holes	FAC48																		
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49																		
	**RFAC49 TMI® 9-Bolt W/Clearance Holes	FAC49																		
Length	L1	Specify (in.)																		
Angle	Max. 90°	Specify (°)																		
Length	L2	Specify (in.)																		
Options	Painted (Specify)	P																		
♦ Complete Stainless Steel Assembly: (including flanges)		SS																		

'O' Ring seal retainers are to be ordered separately (reference pages C14-C16)

♦ STAINLESS STEEL IS AVAILABLE (CONSULT FACTORY)

**FOR USE WITH 9-BOLT BALL VALVE CONNECTIONS (REFERENCE PAGE P10)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

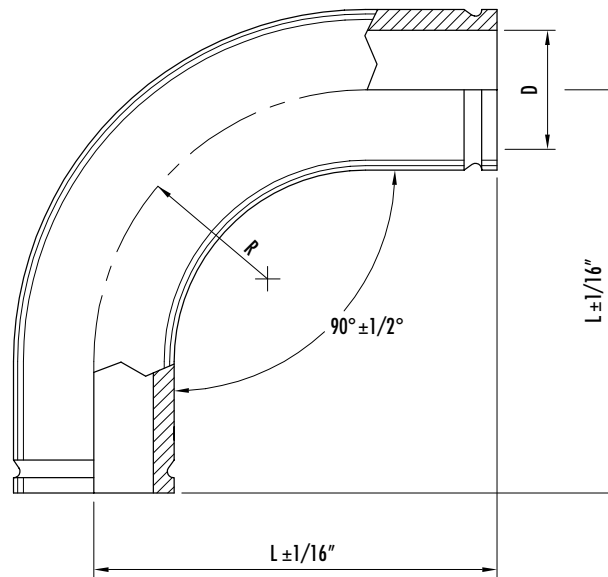
PART NO. (EXAMPLE): BPAR/56 x 8.5 - FC34 - FC34 - 230 - 90 - 130

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR PIPE RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Retain Ring Flange Elbow

Long Radius Bent Elbow - Body Only



RFE Retain Ring Flange Elbow - Body Only

Size	Body Only Part No.	Dimensions (in)			WT. (Body Only) lbs/pc	Working Pressure (Body Only) PSI (bar)
		L	R	D		
1 1/2"	RFE-150	12.50	8.25	1.54	11.50	6000 (420)
2"	RFE-200	14.00	9.50	1.93	15.59	6000 (420)
2 1/2"	RFE-250	17.00	12.50	2.36	26.67	5800 (400)
3"	RFE-300	20.00	15.00	2.88	45.80	5800 (400)
4"	RFE-400	25.00	20.00	3.35	83.51	5800 (400)
5"	RFE-500	25.00	20.00	4.06	121.49	4000 (275)
6"	RFE-600	30.00	24.00	4.90	206.32	3700 (255)
8"	RFE-800	40.00	32.00	6.81	391.35	3500 (240)

- OTHER RADII AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE C23

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE - CONSULT FACTORY)



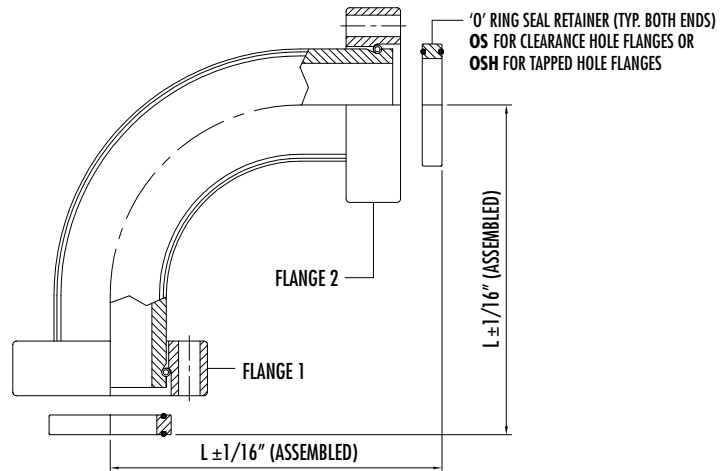
Retain Ring Flange Elbow Assembly

Complete Assembly Part Number

Typical A/RFE Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) RETAIN RING FLANGE ELBOW BODY (REF. PAGE C22)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C12)
- TWO (2) RETAIN RINGS
- TWO (2) 'O' RING SEAL RETAINERS (REF. PAGES C14-C16)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (1 1/2" - 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4" - 8")



Code		A	/	RFE	-	Body Material	-	Size	-	Flange 1	-	Flange 2	-	Options
Assembly		A												
Retain Ring Flange Elbow		RFE												
Body Material Carbon Steel (Standard)	No Designation Required													
Body Material Stainless Steel (Optional) Ref. page (C7)	TMP304SS	304												
	TMP316SS	316												
Body Size	1 1/2"	150												
	2"	200												
	2 1/2"	250												
	3"	300												
	4"	400												
	5"	500												
	6"	600												
	8"	800												
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C12)	RFC34 SAE Code 61 W/Clearance Holes	FC34												
	*RFT34 SAE Code 61 W/Tapped Holes	FT34												
	RFC64 SAE Code 62 W/Clearance Holes	FC64												
	*RFT64 SAE Code 62 W/Tapped Holes	FT64												
	RFC74 ISO 6164 W/Clearance Holes	FC74												
	RFAC48 TMI® 8-Bolt W/Clearance Holes	FAC48												
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49												
	**RFAC49 TMI® 9-Bolt W/Clearance Holes	FAC49												
Options	Viton	V												
	Painted (Specify)	P												
♦ Complete Stainless Steel Assembly: (including flanges, 'O' Ring seal retainers)		SS												

L Dimension will vary if OSH 'O' Ring Seal Retainer is used. (reference page C16)

Size	Dimensions (in)
	L (OS/OSA)
1 1/2"	13.00
2"	14.50
2 1/2"	18.00
3"	21.00
4"	26.00
5"	26.50
6"	31.50
8"	41.50

♦ STAINLESS STEEL IS AVAILABLE (CONSULT FACTORY)

**FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REFERENCE PAGE P10)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS (SUPPLIED WITH OSH STYLE 'O' RING SEAL RETAINER)

PART NO. (EXAMPLE):
A/RFE - 250 - FC34 - FC34

• ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS

• SEE REFERENCE PAGE INDICATED ABOVE FOR PRESSURE RATINGS

• FOR BOLT KITS - REFERENCE SECTION R

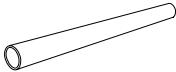
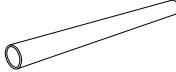
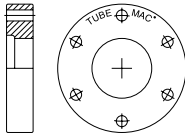
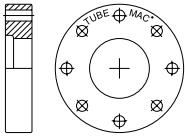
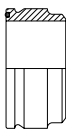

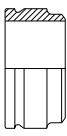
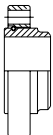
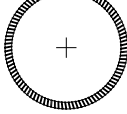
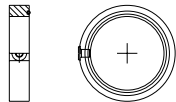
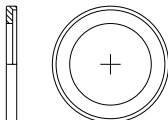
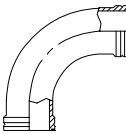
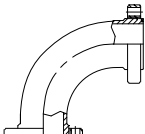
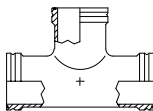
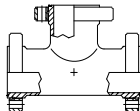
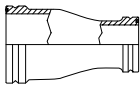
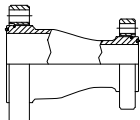
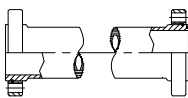
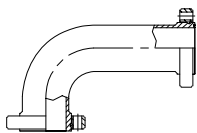


Notes

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Low Pressure Retain Ring System - Visual Index

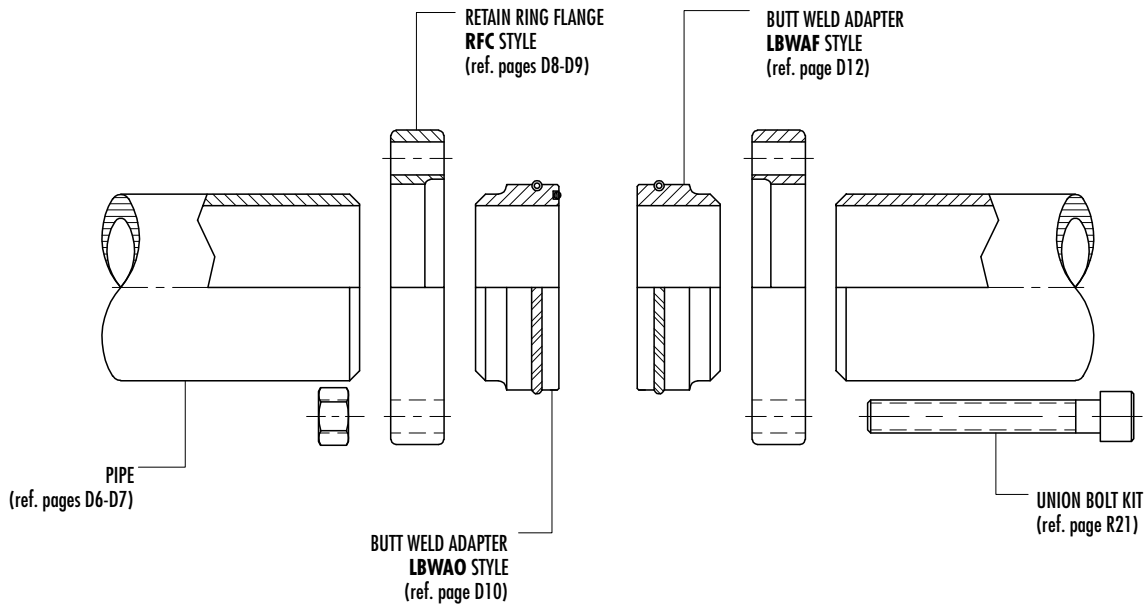
<p>PIPES</p>	<p>CARBON STEEL PIPE</p>  <p>2 1/2" - 8" Page D6</p>	<p>STAINLESS STEEL PIPE</p>  <p>2 1/2" - 8" Page D7</p>	<p>LOW PRESSURE RETAIN RING FLANGES</p>	<p>RFC16 TMI® 6-BOLT WITH CLEARANCE HOLES</p>  <p>2 1/2" - 6" Page D8</p>
<p>RFC18 TMI® 8-BOLT WITH CLEARANCE HOLES</p>  <p>8" Page D9</p>	<p>LOW PRESSURE BUTT WELD RETAIN RING ADAPTER</p>	<p>LBWAO ADAPTER-'O' RING FACE</p>  <p>2 1/2" - 8" Page D10</p>	<p>A/LBWAO ADAPTER ASSEMBLY-'O' RING FACE</p>  <p>2 1/2" - 8" Page D11</p>	<p>LBWAF ADAPTER-FLAT FACE</p>  <p>2 1/2" - 8" Page D12</p>
<p>A/LBWAF ADAPTER ASSEMBLY-FLAT FACE</p>  <p>2 1/2" - 8" Page D13</p>	<p>LOW PRESSURE RETAIN RING</p>	<p>LR</p>  <p>2 1/2" - 8" Page D14</p>	<p>LOW PRESSURE PILOT TEE</p>	<p>LPT</p>  <p>2 1/2" - 8" Page D15</p>
<p>LOW PRESSURE 'O' RING CONNECTOR PLATE</p>	<p>LOCP</p>  <p>2 1/2" - 8" Page D14</p>	<p>LOW PRESSURE RETAIN RING FLANGE ELBOW</p>	<p>LRE BODY ONLY</p>  <p>2 1/2" - 8" Page D16</p>	<p>A/LRE ASSEMBLY</p>  <p>2 1/2" - 8" Page D17</p>
<p>LOW PRESSURE RETAIN RING FLANGE TEE</p>	<p>LRT BODY ONLY</p>  <p>2 1/2" - 8" Page D18</p>	<p>A/LRT ASSEMBLY</p>  <p>2 1/2" - 8" Page D19</p>		
<p>LOW PRESSURE RETAIN RING FLANGE REDUCER</p>	<p>LRR BODY ONLY</p>  <p>2 1/2" - 8" Page D20</p>	<p>A/LRR ASSEMBLY</p>  <p>2 1/2" - 8" Page D21</p>		
<p>LOW PRESSURE RETAIN RING FLANGE PIPE ASSEMBLY</p>	<p>LPAR LOW PRESSURE PIPE ASSEMBLY</p>  <p>2 1/2" - 8" Page D22</p>	<p>LBPAP LOW PRESSURE BENT PIPE ASSEMBLY</p>  <p>2 1/2" - 8" Page D23</p>		



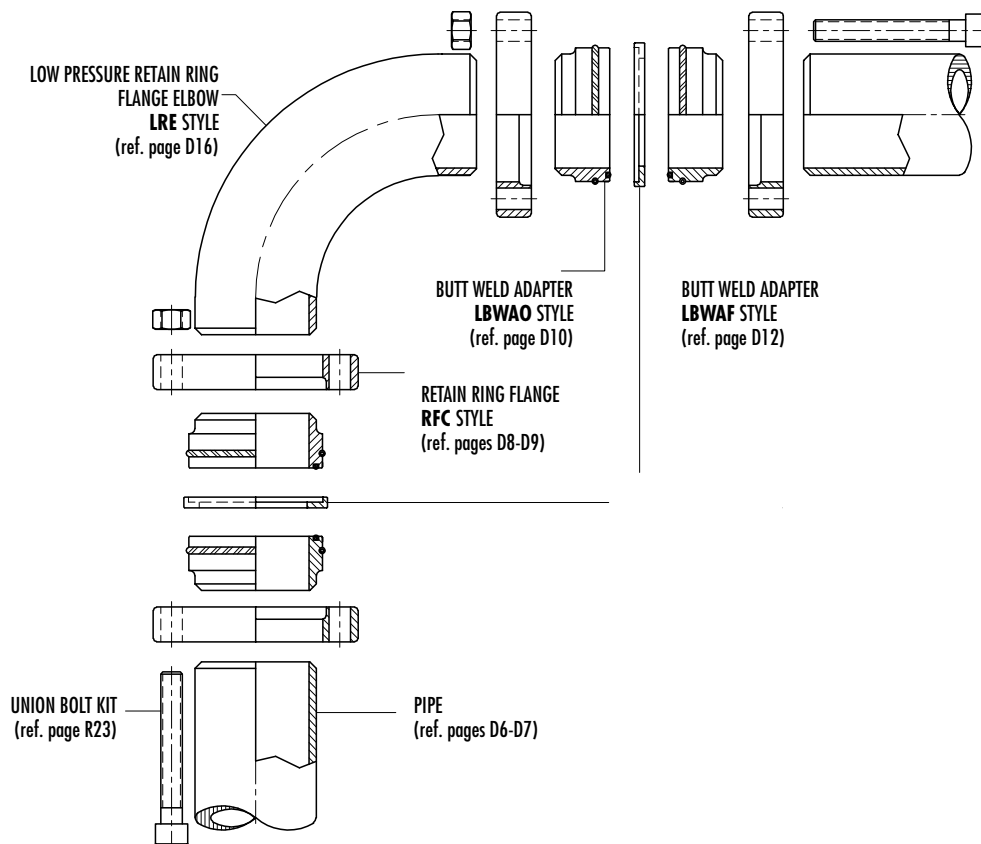
Low Pressure Retain Ring Flange Connections

Schedule 40 Pipe

Typical Pipe Union Connection



Typical Pipe to Component Connection

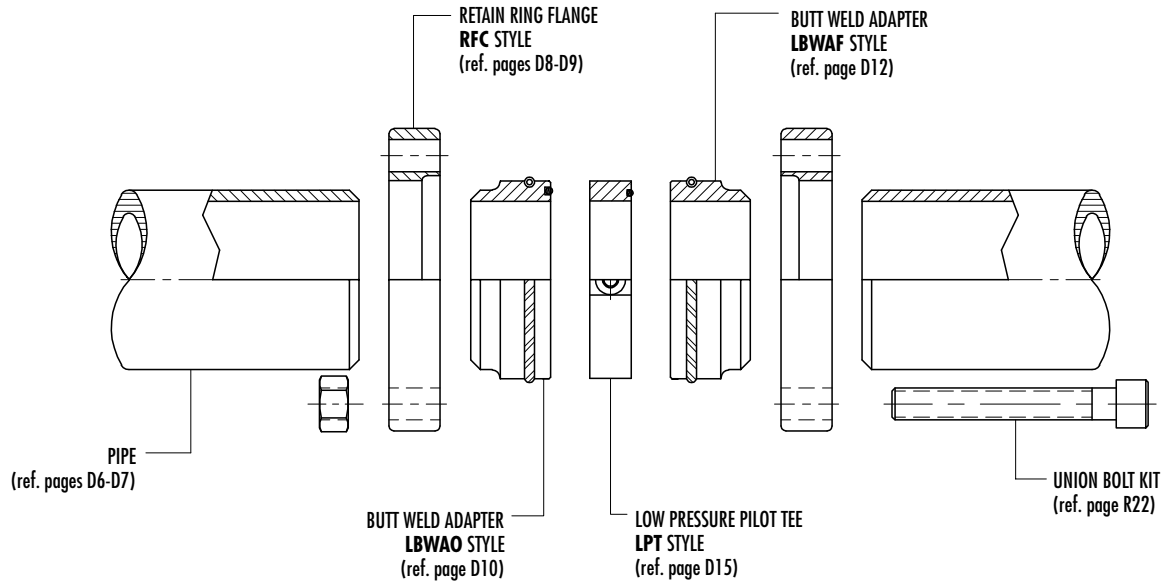




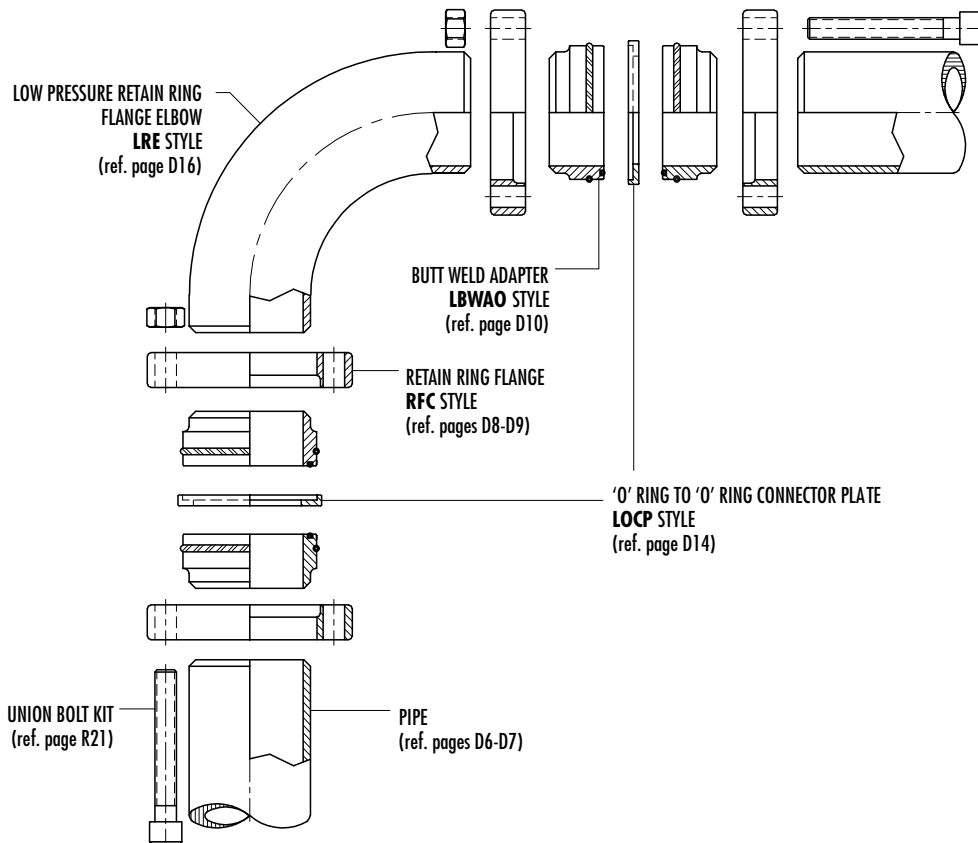
Low Pressure Retain Ring Flange Connections

Schedule 40 Pipe

Typical Pipe Union Connection with Pilot Tee



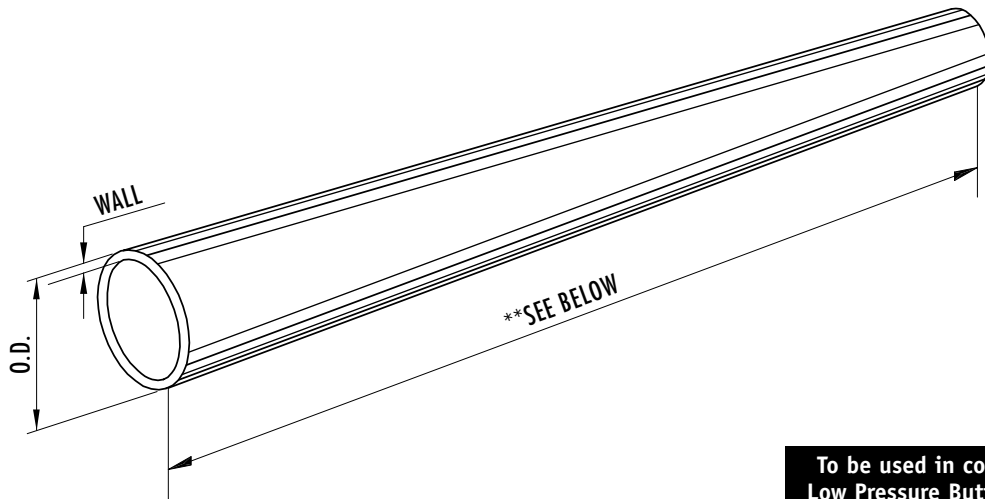
Typical 'O' Ring Face to 'O' Ring Face Connection



TMI[®] Carbon Steel Pipe

Suitable For Low Pressure Retain Ring

Schedule 40 Pipe



To be used in conjunction with
Low Pressure Butt Weld Adapters
Ref. pages D10-D13

TMP44HR

A519 - Cleaned & Phosphated Seamless Carbon Steel

Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMP44HR-SCH40-250x**	2.875 x 0.203	2.469	5.79	750 (52)
3"	TMP44HR-SCH40-300x**	3.500 x 0.216	3.068	7.57	750 (52)
4"	TMP44HR-SCH40-400x**	4.500 x 0.237	4.026	10.78	750 (52)
5"	TMP44HR-SCH40-500x**	5.563 x 0.258	5.047	14.60	750 (52)
6"	TMP44HR-SCH40-600x**	6.625 x 0.280	6.065	18.95	700 (48)
8"	TMP44HR-SCH40-800x**	8.625 x 0.322	7.981	28.52	600 (40)

**INDICATE LENGTH (inches), SIZES 2 1/2" & 3" AVAILABLE IN 360" LENGTHS, SIZES 4" - 8" AVAILABLE UP TO 480" LENGTHS

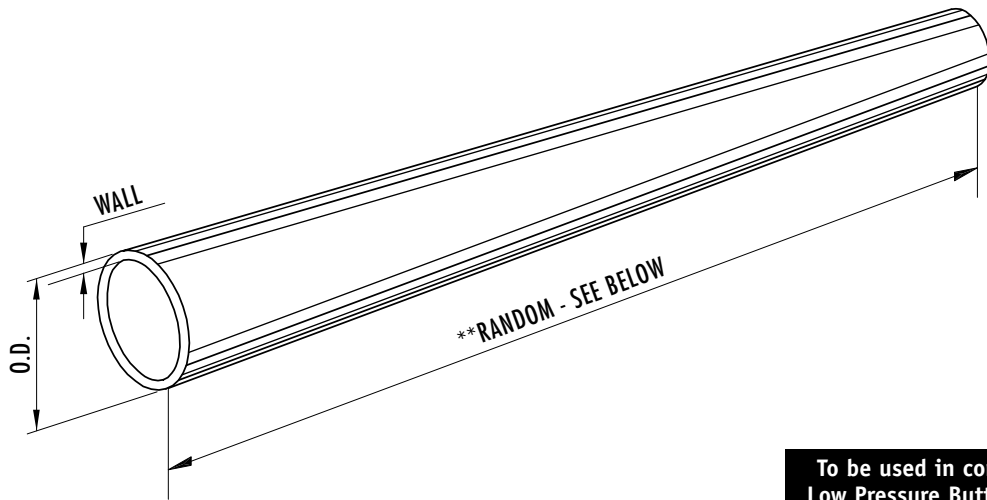
- TO ORDER A RETAIN RING FLANGE PIPE ASSEMBLY REFERENCE PAGES D22-D23
- WORKING PRESSURE RATINGS ARE PER FLANGE CONNECTION RATINGS



TMI[®] Stainless Steel Pipe

Suitable For Low Pressure Retain Ring

Schedule 40 Pipe



To be used in conjunction with
Low Pressure Butt Weld Adapters
Ref. pages D10-D13

TMP304SS/316SS

A312 - Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule 40

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMP304SS-SCH40-250x**	TMP316SS-SCH40-250x**	2.875 x 0.203	2.469	5.79	750 (52)
3"	TMP304SS-SCH40-300x**	TMP316SS-SCH40-300x**	3.500 x 0.216	3.068	7.58	750 (52)
4"	TMP304SS-SCH40-400x**	TMP316SS-SCH40-400x**	4.500 x 0.237	4.026	10.79	750 (52)
5"	TMP304SS-SCH40-500x**	TMP316SS-SCH40-500x**	5.563 x 0.258	5.047	14.62	750 (52)
6"	TMP304SS-SCH40-600x**	TMP316SS-SCH40-600x**	6.625 x 0.280	6.065	18.97	700 (48)
8"	TMP304SS-SCH40-800x**	TMP316SS-SCH40-800x**	8.625 x 0.322	7.981	28.55	600 (40)

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240"

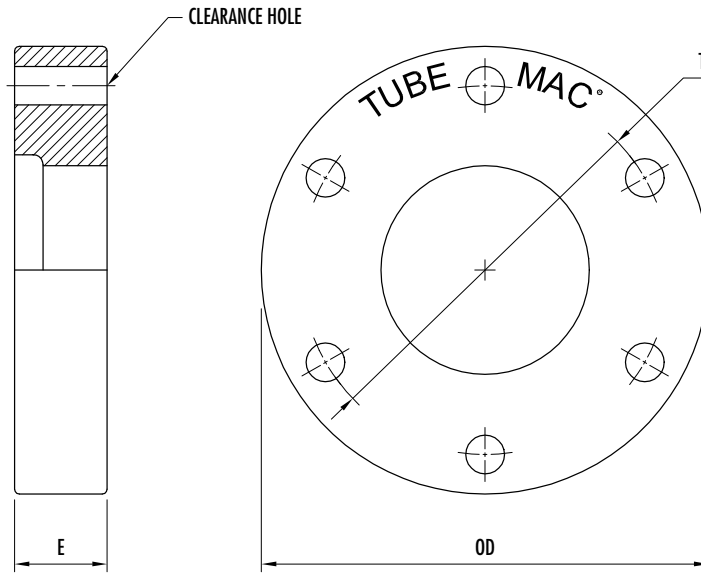
- TO ORDER A RETAIN RING FLANGE PIPE ASSEMBLY REFERENCE PAGES D22-D23
- WORKING PRESSURE RATINGS ARE PER CARBON STEEL FLANGE CONNECTION RATINGS
- FOR PIPING SYSTEMS CONSISTING OF ALL STAINLESS STEEL COMPONENTS, PRESSURE RATINGS WILL BE LESS THAN THAT SHOWN ABOVE (CONTACT FACTORY)



Low Pressure Retain Ring Flange

TMI® 6-Bolt Flanges with Clearance Holes

To be used with low pressure retain ring pipe only
Ref. pages D6-D7



RFC16 Low Pressure Retain Ring Flange - TMI® 6-Bolt With Clearance Holes

700-750 PSI (48-52 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
2 1/2"	RFC16-250	4.03	5.00	0.80	1/2" UNC	2.17	750 (52)	80-90
3"	RFC16-300	4.85	5.90	1.00	5/8" UNC	3.80	750 (52)	110-120
4"	RFC16-400	5.97	7.00	1.00	5/8" UNC	6.61	750 (52)	110-120
5"	RFC16-500	7.01	8.27	1.19	5/8" UNC	8.61	750 (52)	110-120
6"	RFC16-600	8.19	9.29	1.38	5/8" UNC	9.80	700 (48)	110-120

• FOR BOLT KITS - REFERENCE SECTION R

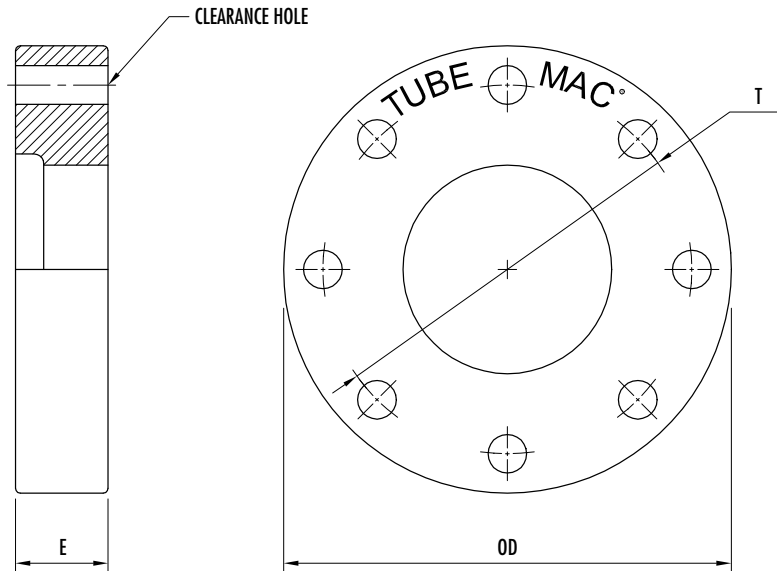
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange

TMI® 8-Bolt Flanges with Clearance Holes

To be used with low pressure retain ring pipe only
Ref. pages D6-D7



RFC18 Low Pressure Retain Ring Flange - TMI® 8-Bolt With Clearance Holes

600 PSI (40 bar)

Size	Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
8"	RFC18-800	10.83	12.48	1.58	3/4" UNC	19.25	600 (40)	120-130

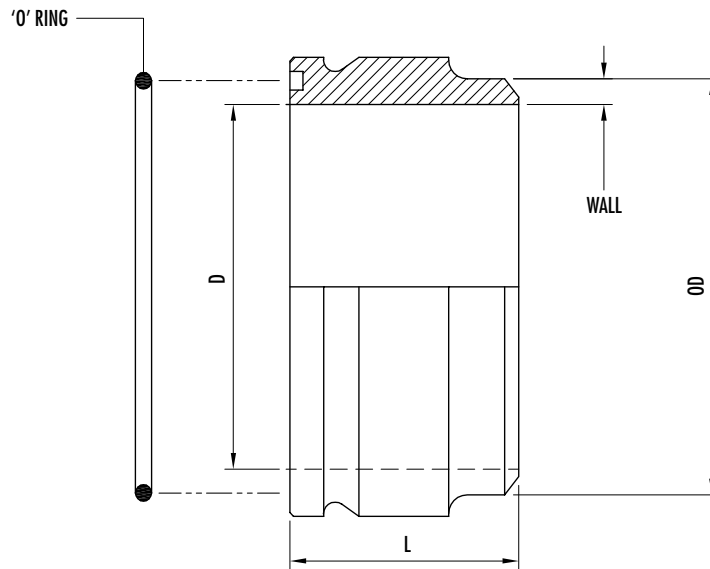
• FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Body

'O' Ring Face



LBWAO Low Pressure Butt Weld Retain Ring Adapter Body - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Schedule 40

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		D	L				
2 1/2"	LBWAO-SCH40-250-*	2.47	1.38	2.875 x 0.203	OR*-2-232	1.02	750 (52)
3"	LBWAO-SCH40-300-*	3.07	1.57	3.500 x 0.216	OR*-2-237	1.43	750 (52)
4"	LBWAO-SCH40-400-*	4.03	1.58	4.500 x 0.237	OR*-2-245	2.12	750 (52)
5"	LBWAO-SCH40-500-*	5.05	1.77	5.563 x 0.258	OR*-2-253	3.32	750 (52)
6"	LBWAO-SCH40-600-*	6.07	1.97	6.625 x 0.280	OR*-2-259	5.44	700 (48)
8"	LBWAO-SCH40-800-*	7.98	2.36	8.625 x 0.322	OR*-2-372	9.98	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

• FOR COMPLETE ASSEMBLY REFERENCE PAGE D11

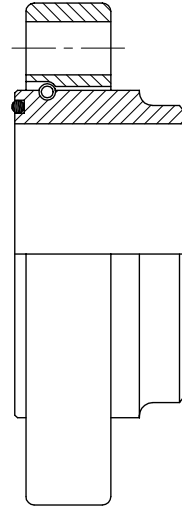
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Assembly

'O' Ring Face

Typical A/LBWA0 Assembly:



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE 'O' RING FACE BUTT WELD ADAPTER
- ONE (1) LOW PRESSURE RETAIN RING FLANGE (REF. PAGES D8-D9)
- ONE (1) LOW PRESSURE RETAIN RING (REF. PAGE D14)
- ONE (1) BUNA 'O' RING (STANDARD)

A/LBWA0 Low Pressure Butt Weld Retain Ring Adapter Assembly - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

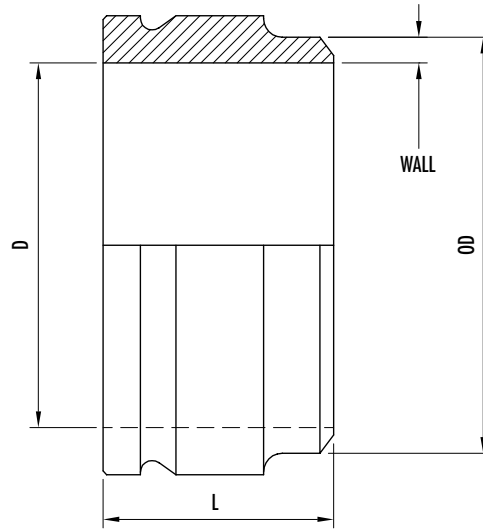
Nominal Size	Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LBWA0-250-*	3.19	750 (52)
3"	A/LBWA0-300-*	5.22	750 (52)
4"	A/LBWA0-400-*	8.73	750 (52)
5"	A/LBWA0-500-*	11.93	750 (52)
6"	A/LBWA0-600-*	15.23	700 (48)
8"	A/LBWA0-800-*	29.23	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)

Low Pressure Butt Weld Retain Ring Adapter Body

Flat Face



LBWAF Low Pressure Butt Weld Retain Ring Adapter Body - Flat Face

Schedule 40

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
2 1/2"	LBWAF-SCH40-250	2.47	1.38	2.875 x 0.203	1.07	750 (52)
3"	LBWAF-SCH40-300	3.07	1.57	3.500 x 0.216	1.48	750 (52)
4"	LBWAF-SCH40-400	4.03	1.58	4.500 x 0.237	2.14	750 (52)
5"	LBWAF-SCH40-500	5.05	1.77	5.563 x 0.258	3.36	750 (52)
6"	LBWAF-SCH40-600	6.07	1.97	6.625 x 0.280	5.49	700 (48)
8"	LBWAF-SCH40-800	7.98	2.36	8.625 x 0.322	10.55	600 (40)

• FOR COMPLETE ASSEMBLY REFERENCE PAGE D13

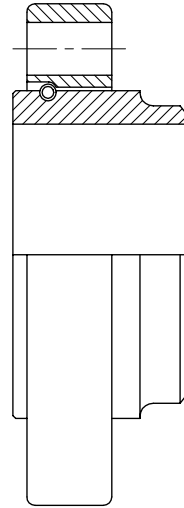
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Assembly

Flat Face

Typical A/LBWAF Assembly:



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE FLAT FACE BUTT WELD ADAPTER
- ONE (1) LOW PRESSURE RETAIN RING FLANGE (REF. PAGES D8-D9)
- ONE (1) LOW PRESSURE RETAIN RING (REF. PAGE D14)

A/LBWAF Low Pressure Butt Weld Retain Ring Adapter Assembly - Flat Face

Nominal Size	Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LBWAF-250	3.24	750 (52)
3"	A/LBWAF-300	5.27	750 (52)
4"	A/LBWAF-400	8.75	750 (52)
5"	A/LBWAF-500	11.97	750 (52)
6"	A/LBWAF-600	15.29	700 (48)
8"	A/LBWAF-800	29.80	600 (40)

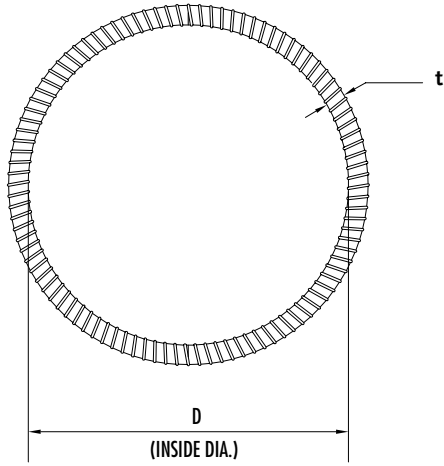
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



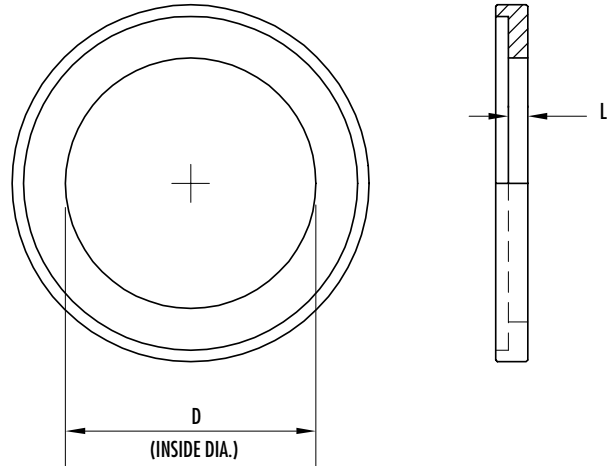
Low Pressure Retain Ring

Low Pressure 'O' Ring Connector Plate

LR Low Pressure Retain Ring



LOCP Low Pressure 'O' Ring Connector Plate



LR Low Pressure Retain Ring

Size	Retain Ring Part No.	Dimensions (in)		WT. lbs/pc
		D	t	
2 1/2"	LR-250	2.99	0.16	0.04
3"	LR-300	3.62	0.20	0.09
4"	LR-400	4.68	0.20	0.11
5"	LR-500	5.62	0.24	0.19
6"	LR-600	6.81	0.24	0.21
8"	LR-800	9.09	0.31	0.59

MATERIAL: STAINLESS STEEL - AISI 302/304 SPRING TEMPER

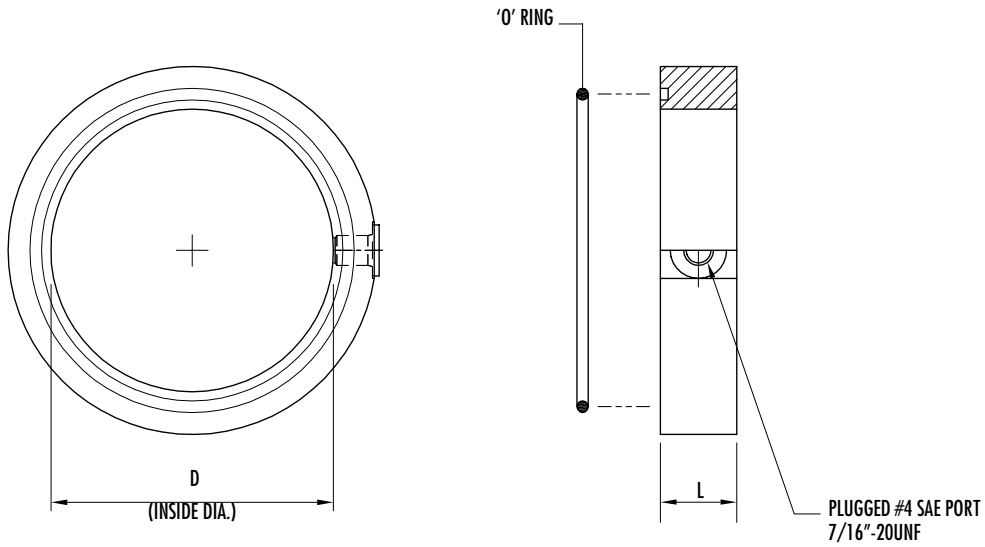
LOCP Low Pressure 'O' Ring Connector Plate

Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
2 1/2"	LOCP-250	2.47	0.13	0.15
3"	LOCP-300	3.07	0.13	0.21
4"	LOCP-400	4.03	0.13	0.32
5"	LOCP-500	5.05	0.19	0.58
6"	LOCP-600	6.07	0.19	0.79
8"	LOCP-800	7.98	0.19	1.35

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Pilot Tee



LPT Low Pressure Pilot Tee Between
 Complete with Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Pilot Tee Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
2 1/2"	LPT-250-*	2.38	1.00	OR*-2-232	1.47
3"	LPT-300-*	3.00	1.00	OR*-2-237	1.92
4"	LPT-400-*	4.00	1.00	OR*-2-245	2.69
5"	LPT-500-*	4.88	1.00	OR*-2-253	3.54
6"	LPT-600-*	5.91	1.00	OR*-2-259	4.08
8"	LPT-800-*	7.88	1.25	OR*-2-372	10.55

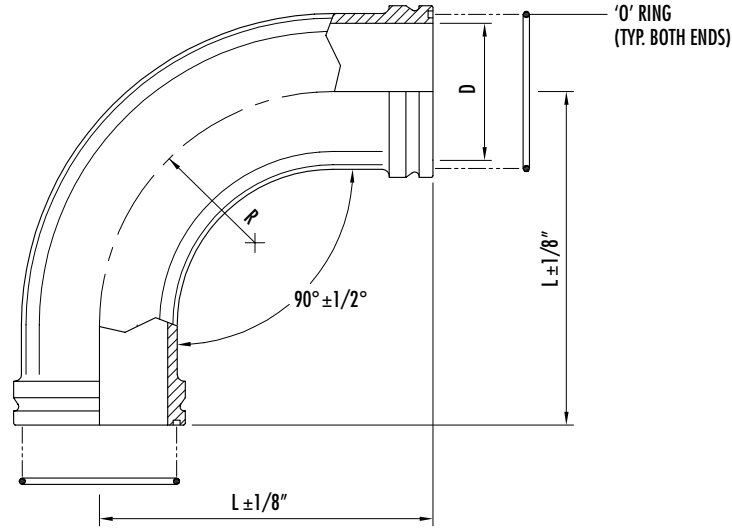
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Elbow

Body Only



LRE Low Pressure Retain Ring Flange Elbow - Body Only (segmentally welded)
Complete with Buna 'O' Rings (Standard)

Size	Elbow Body Part No.	Dimensions (in)			'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	R	D			
2 1/2"	LRE-250-*	5.22	3.75	2.47	OR*-2-232	5.29	750 (52)
3"	LRE-300-*	6.17	4.50	3.07	OR*-2-237	7.85	750 (52)
4"	LRE-400-*	7.67	6.00	4.03	OR*-2-245	13.24	750 (52)
5"	LRE-500-*	9.36	7.50	5.05	OR*-2-253	22.14	750 (52)
6"	LRE-600-*	11.06	9.00	6.07	OR*-2-259	35.37	700 (48)
8"	LRE-800-*	14.45	12.00	7.98	OR*-2-372	69.95	600 (40)

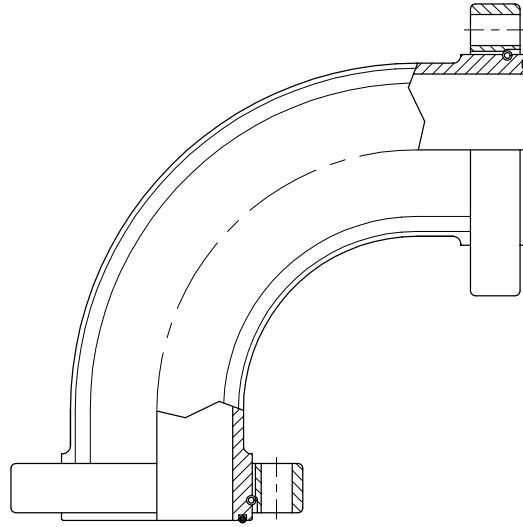
- * INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS
 - TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE D17
 - ELBOW BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)
- MATERIAL:** CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Elbow Assembly

Complete Assembly Part Number

Typical A/LRE Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE ELBOW BODY
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- TWO (2) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRE Low Pressure Retain Ring Flange Elbow Assembly

Size	Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LRE-250-*	9.62	750 (52)
3"	A/LRE-300-*	11.65	750 (52)
4"	A/LRE-400-*	19.85	750 (52)
5"	A/LRE-500-*	30.75	750 (52)
6"	A/LRE-600-*	45.17	700 (48)
8"	A/LRE-800-*	89.20	600 (40)

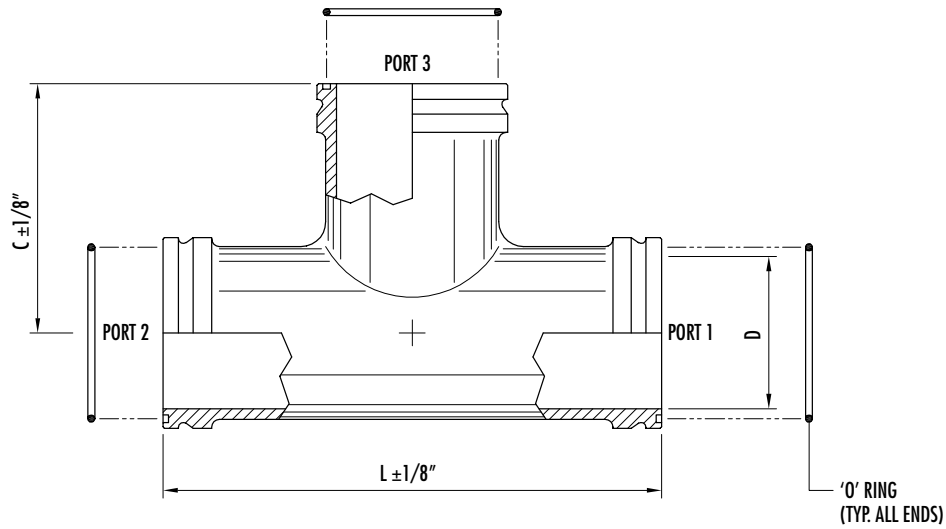
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Tee

Body Only



LRT Low Pressure Retain Ring Flange Tee - Body Only (segmentally welded)

Complete with Buna 'O' Rings (Standard)

Size	Tee Body Part No.	Dimensions (in)			'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	C	D			
2 1/2"	LRT-250-*	8.95	4.47	2.47	OR*-2-232	9.06	750 (52)
3"	LRT-300-*	10.10	5.05	3.07	OR*-2-237	11.28	750 (52)
4"	LRT-400-*	11.60	5.80	4.03	OR*-2-245	18.63	750 (52)
5"	LRT-500-*	13.48	6.74	5.05	OR*-2-253	30.96	750 (52)
6"	LRT-600-*	15.38	7.69	6.07	OR*-2-259	50.31	700 (48)
8"	LRT-800-*	18.91	9.45	7.98	OR*-2-372	84.93	600 (40)

- * INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE D19
- TEE BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)

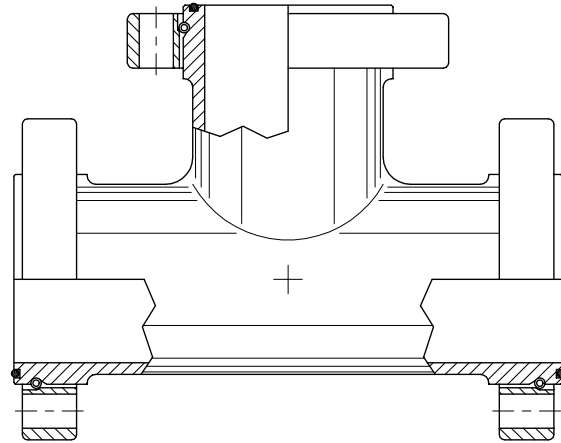
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Tee Assembly

Complete Assembly Part Number

Typical A/LRT Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE TEE BODY
- THREE (3) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- THREE (3) LOW PRESSURE RETAIN RINGS
- THREE (3) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRT Low Pressure Retain Ring Flange Tee Assembly

Size	Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LRT-250-*	15.56	750 (52)
3"	A/LRT-300-*	22.66	750 (52)
4"	A/LRT-400-*	38.46	750 (52)
5"	A/LRT-500-*	56.78	750 (52)
6"	A/LRT-600-*	79.70	700 (48)
8"	A/LRT-800-*	142.68	600 (40)

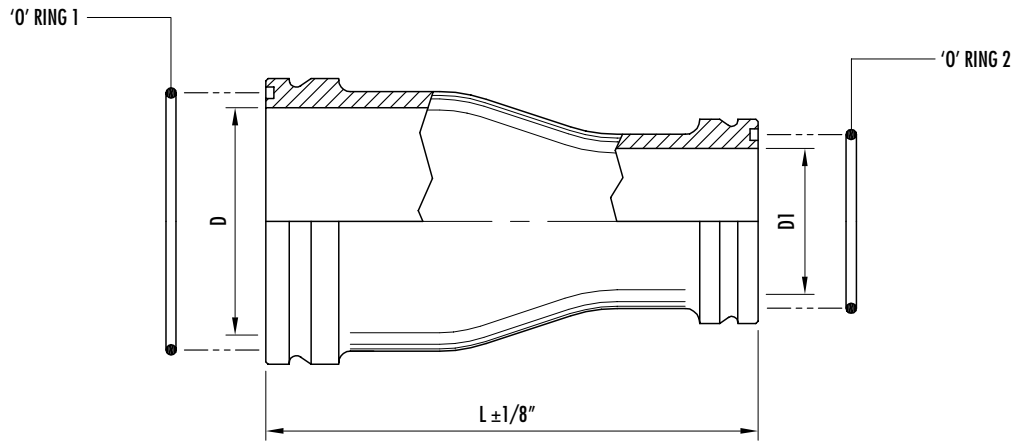
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Reducer

Concentric Style - Body Only



LRR Low Pressure Retain Ring Flange Reducer - Body Only (segmentally welded)
Complete with Buna 'O' Rings (Standard)

Size	Reducer Body Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	D	D1				
3" x 2 1/2"	LRR-300 x 250-*	6.64	3.07	2.47	OR*-2-237	OR*-2-232	4.45	750 (52)
4" x 2 1/2"	LRR-400 x 250-*	7.14	4.03	2.47	OR*-2-245	OR*-2-232	6.39	750 (52)
4" x 3"	LRR-400 x 300-*	7.35	4.03	3.07	OR*-2-245	OR*-2-237	6.93	750 (52)
5" x 3"	LRR-500 x 300-*	8.54	5.05	3.07	OR*-2-253	OR*-2-237	10.25	750 (52)
5" x 4"	LRR-500 x 400-*	8.54	5.05	4.03	OR*-2-253	OR*-2-245	11.44	750 (52)
6" x 4"	LRR-600 x 400-*	9.24	6.07	4.03	OR*-2-259	OR*-2-245	15.81	700 (48)
6" x 5"	LRR-600 x 500-*	9.43	6.07	5.05	OR*-2-259	OR*-2-253	17.26	700 (48)
8" x 5"	LRR-800 x 500-*	10.32	7.98	5.05	OR*-2-372	OR*-2-253	25.30	600 (40)
8" x 6"	LRR-800 x 600-*	10.52	7.98	6.07	OR*-2-372	OR*-2-259	28.66	600 (40)

- * INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE D21
- REDUCER BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)

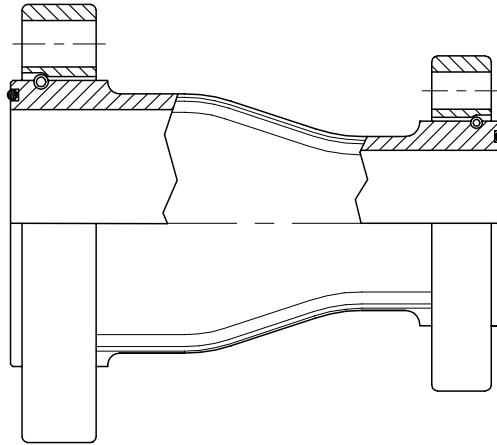
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Reducer Assembly

Complete Assembly Part Number

Typical A/LRR Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE REDUCER BODY
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- TWO (2) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRR Low Pressure Retain Ring Flange Reducer Assembly

Size	Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
3" x 2 1/2"	A/LRR-300 x 250-*	10.41	750 (52)
4" x 2 1/2"	A/LRR-400 x 250-*	13.23	750 (52)
4" x 3"	A/LRR-400 x 300-*	17.34	750 (52)
5" x 3"	A/LRR-500 x 300-*	22.65	750 (52)
5" x 4"	A/LRR-500 x 400-*	26.66	750 (52)
6" x 4"	A/LRR-600 x 400-*	32.22	700 (48)
6" x 5"	A/LRR-600 x 500-*	35.66	700 (48)
8" x 5"	A/LRR-800 x 500-*	53.16	600 (40)
8" x 6"	A/LRR-800 x 600-*	57.71	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



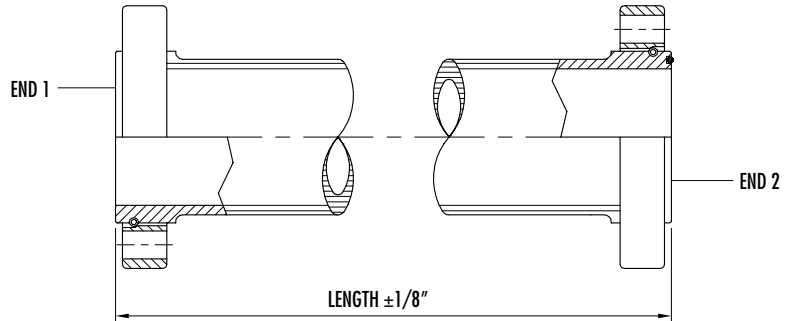
Low Pressure Retain Ring Flange Pipe Assembly

Complete Assembly Part Number

Typical LPAR Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF CLEAN PIPE (REF. PAGES D6-D7)
- TWO (2) LOW PRESSURE BUTT WELD ADAPTERS (SEGMENTALLY WELDED)
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- BUNA 'O' RING(S) (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")



Code		LPAR /	Pipe Material	Pipe Size & Schedule	End 1	End 2	Length	Options
Low Pressure Pipe Assembly		LPAR						
Pipe Material Carbon Steel (Standard) Ref. page (D6)	No Designation Required							
Pipe Material Stainless Steel (Optional) Ref. page (D7)	TMP304SS	304						
	TMP316SS	316						
Pipe Size & Schedule	2 1/2"	SCH40-250						
	3"	SCH40-300						
	4"	SCH40-400						
	5"	SCH40-500						
	6"	SCH40-600						
	8"	SCH40-800						
End Style	Flat Face	LF						
	'O' Ring Face	LO						
Length	Specify (in.)							
Options	Viton	V						
	Painted (Specify)	P						
Complete Stainless Steel Assembly: (including flanges)		SS						

PART NO. (EXAMPLE): LPAR/ SCH40-250 - LF - LO - 360

- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



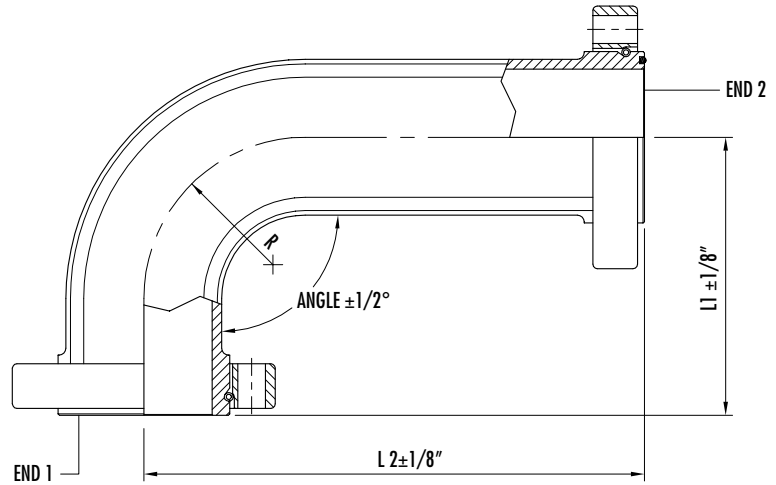
Low Pressure Retain Ring Flange Bent Pipe Assembly

Complete Assembly Part Number

Typical LBPARG Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LENGTH OF BENT CLEAN PIPE (REF. PAGES D6-D7)
- TWO (2) LOW PRESSURE BUTT WELD ADAPTERS (SEGMENTALLY WELDED)
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- BUNA 'O' RING(S) (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")



Code		LPAR	Pipe Material	Pipe Size & Schedule	End 1	End 2	Length	Options
Low Pressure Pipe Assembly		LPAR						
Pipe Material Carbon Steel (Standard) Ref. page (D6)	No Designation Required							
Pipe Material Stainless Steel (Optional) Ref. page (D7)	TMP304SS	304						
	TMP316SS	316						
Pipe Size & Schedule	2 1/2"	SCH40-250						
	3"	SCH40-300						
	4"	SCH40-400						
	5"	SCH40-500						
	6"	SCH40-600						
	8"	SCH40-800						
End Style	Flat Face	LF						
	'O' Ring Face	LO						
Length	Specify (in.)							
Options	Viton	V						
	Painted (Specify)	P						
Complete Stainless Steel Assembly: (including flanges)		SS						

Size	Dimensions (in)	
	L(min)	R
2 1/2"	12.00	7.50
3"	13.00	9.00
4"	16.00	12.00
5"	19.00	15.00
6"	22.00	18.00
8"	28.00	24.00

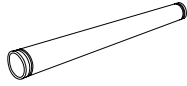
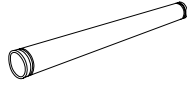
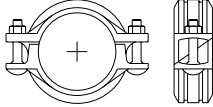
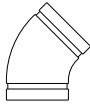
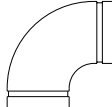
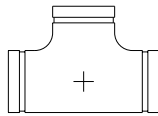
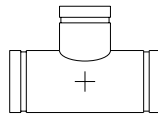
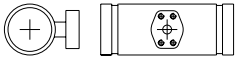
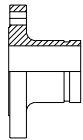
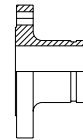
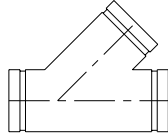
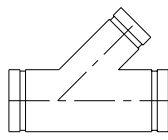
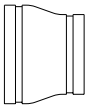
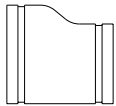

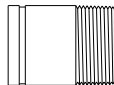
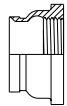
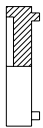
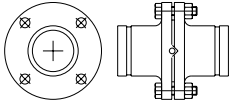
PART NO. (EXAMPLE): LBPARG / SCH40-250 - LF - LO - 215 - 90 - 145

- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R





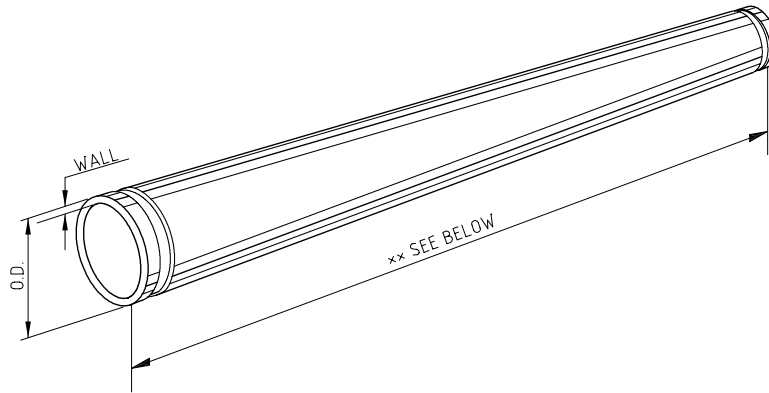
TMI[®] Roll/Cut Grooved System - Visual Index

<p>PIPES</p>	<p>CARBON STEEL PIPE</p>  <p>2 1/2" - 8" Page E4</p>	<p>STAINLESS STEEL PIPE</p>  <p>2 1/2" - 8" Page E4</p>	<p>GROOVED COUPLING</p>	<p>GC07</p>  <p>2 1/2" - 8" Page E5</p>
<p>GROOVED END FITTINGS</p>	<p>GE45 ELBOW-45°</p>  <p>2 1/2" - 8" Page E6</p>	<p>GE90 ELBOW-90°</p>  <p>2 1/2" - 8" Page E6</p>	<p>GT TEE</p>  <p>2 1/2" - 8" Page E7</p>	<p>GRT REDUCING TEE</p>  <p>2 1/2" - 8" Page E8</p>
<p>GRTF REDUCING TEE-FLANGED</p>  <p>2 1/2" - 8" Page E9</p>	<p>GAF150 ANSI FLANGE ADAPTER-150#</p>  <p>2 1/2" - 8" Page E10</p>	<p>GAF300 ANSI FLANGE ADAPTER-300#</p>  <p>2 1/2" - 8" Page E10</p>	<p>GL LATERAL-45°</p>  <p>2 1/2" - 8" Page E11</p>	<p>GRL REDUCING LATERAL-45°</p>  <p>2 1/2" - 8" Page E12</p>
<p>GCR CONCENTRIC REDUCER</p>  <p>2 1/2" - 8" Page E13</p>	<p>GER ECCENTRIC REDUCER</p>  <p>2 1/2" - 8" Page E14</p>	<p>GSN SHORT NIPPLE</p>  <p>2 1/2" - 8" Page E15</p>	<p>GTN THREADED NIPPLE</p>  <p>2 1/2" - 6" Page E15</p>	<p>GFTA FEMALE THREAD ADAPTER</p>  <p>2 1/2" - 4" Page E16</p>
<p>GCC CAP</p>  <p>2 1/2" - 8" Page E16</p>	<p>GROOVED END CHECK VALVE</p>	<p>GCV</p>  <p>2 1/2" - 8" Page E17</p>		



TMI[®] Carbon/Stainless Steel Grooved Pipe

Schedule 40 Pipe



TMPG44HR

A519 - Cleaned & Phosphated Seamless Carbon Steel

Schedule 40

Nominal Size	Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMPG44HR-SCH40-250x**	2.875 x 0.203	2.469	5.79	750 (52)
3"	TMPG44HR-SCH40-300x**	3.500 x 0.216	3.068	7.57	750 (52)
4"	TMPG44HR-SCH40-400x**	4.500 x 0.237	4.026	10.78	750 (52)
5"	TMPG44HR-SCH40-500x**	5.563 x 0.258	5.047	14.60	750 (52)
6"	TMPG44HR-SCH40-600x**	6.625 x 0.280	6.065	18.95	700 (48)
8"	TMPG44HR-SCH40-800x**	8.625 x 0.322	7.981	28.52	600 (40)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), SIZES 2 1/2" & 3" AVAILABLE IN 360" LENGTHS, SIZES 4" - 8" AVAILABLE UP TO 480" LENGTHS

- WORKING PRESSURES RATINGS ARE PER COUPLING RATINGS
- ENDS CAPPED

TMPG304SS/316SS

A312 - Seamless Stainless Steel (supplied as dual certification ie. 304/304L or 316/316L)

Schedule 40 (also available in Schedule 10*)

Nominal Size	304/304L Stainless Steel Pipe Part No.	316/316L Stainless Steel Pipe Part No.	OD x Wall (in)	Bore Dia. (in)	WT. lbs/ft	Working Pressure PSI (bar)
2 1/2"	TMPG304SS-SCH40-250x**	TMPG316SS-SCH40-250x**	2.875 x 0.203	2.469	5.79	750 (52)
3"	TMPG304SS-SCH40-300x**	TMPG316SS-SCH40-300x**	3.500 x 0.216	3.068	7.58	750 (52)
4"	TMPG304SS-SCH40-400x**	TMPG316SS-SCH40-400x**	4.500 x 0.237	4.026	10.79	750 (52)
5"	TMPG304SS-SCH40-500x**	TMPG316SS-SCH40-500x**	5.563 x 0.258	5.047	14.62	750 (52)
6"	TMPG304SS-SCH40-600x**	TMPG316SS-SCH40-600x**	6.625 x 0.280	6.065	18.97	700 (48)
8"	TMPG304SS-SCH40-800x**	TMPG316SS-SCH40-800x**	8.625 x 0.322	7.981	28.55	600 (40)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

**INDICATE LENGTH (inches), AVAILABLE IN RANDOM LENGTHS UP TO 240" LENGTHS

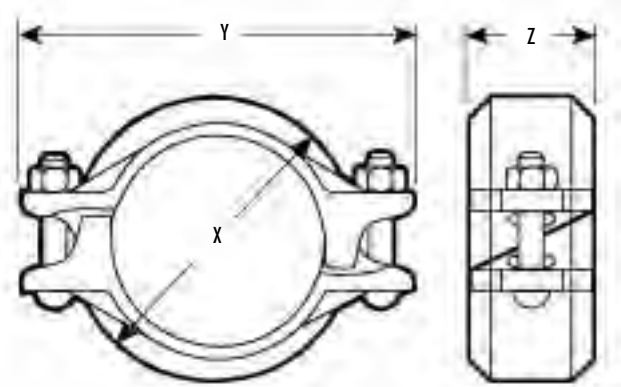
- WORKING PRESSURES RATINGS ARE PER COUPLING RATINGS
- ENDS CAPPED

* PART NO. (EXAMPLE) FOR SCHEDULE 10:
TMPG304SS - SCH10 - 250 x 240



Grooved Coupling

Zero-Flex® Standard Rigid Coupling



COMPLETE ASSEMBLY CONSISTS OF:

- TWO (2) COUPLING HALVES
- ONE (1) BUNA GASKET (STANDARD)
- TWO (2) BOLTS AND NUTS - (SPECIAL STYLE)

GC07 Standard Rigid Grooved Coupling (Ductile Iron)

Complete With FlushSeal® Gasket

Nominal Pipe Size	Coupling Assembly Part No.	Gasket (Buna) Part No.	Dimensions (in)			Maximum End Load (lbs)	Allowable Pipe End # Separation	WT. lbs/pc	Working Pressure PSI (bar)
			X	Y	Z				
2 1/2"	GC07-250	G07-250-*	3.88	6.13	1.88	4875	0.07"	2.8	750 (50)
3"	GC07-300	G07-300-*	4.56	6.81	1.88	7215	0.07"	3.1	750 (50)
4"	GC07-400	G07-400-*	5.81	8.25	2.06	11925	0.16"	4.8	750 (50)
5"	GC07-500	G07-500-*	7.06	9.75	2.06	18225	0.16"	7.1	750 (50)
6"	GC07-600	G07-600-*	8.00	10.75	2.06	24130	0.16"	8.7	700 (48)
8"	GC07-800	G07-800-*	10.25	13.50	2.50	35000	0.19"	14.9	600 (40)

• FOR SIZES 10" OR LARGER CONSULT FACTORY

* INSERT 'V' TO INDICATE OPTIONAL VITON GASKET

FOR FIELD INSTALLATION ONLY. ZERO-FLEX COUPLINGS ARE ESSENTIALLY RIGID AND DO NOT PERMIT EXPANSION/CONTRACTION, AND CAN BE CONSIDERED TO HAVE SYSTEM BEHAVIOR CHARACTERISTICS SIMILAR TO THOSE OF WELDED OR FLANGED SYSTEMS

- WORKING PRESSURE AND END LOAD ARE TOTAL, FROM ALL INTERNAL AND EXTERNAL LOADS, BASED ON STANDARD WEIGHT STEEL PIPE, STANDARD ROLL OR CUT GROOVED IN ACCORDANCE WITH SPECIFICATIONS
- STAINLESS STEEL TYPE 316 OR GALVANIZED AVAILABLE
- FOR BOLT KITS - REFERENCE SECTION R

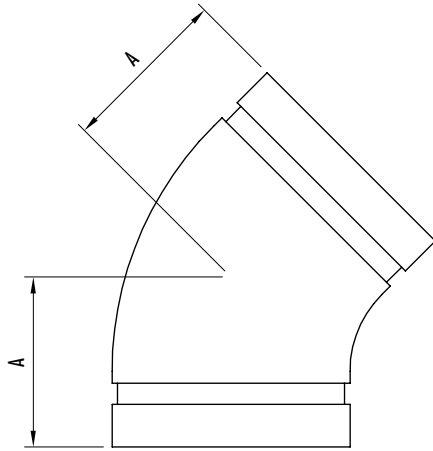
WARNING: FOR ONE TIME FIELD TEST ONLY, THE MAXIMUM JOINT WORKING PRESSURE MAY BE INCREASED TO 1 1/2 TIMES THE FIGURES SHOWN.



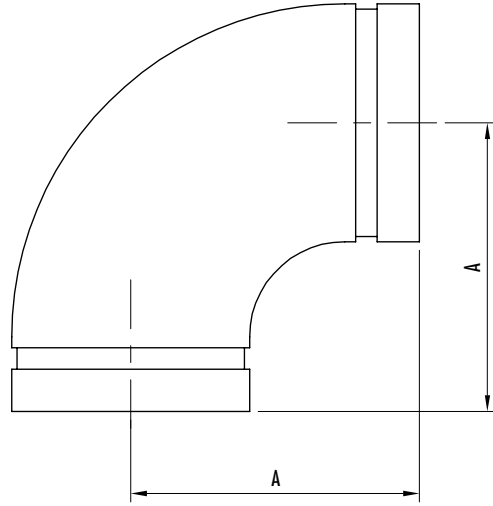
Grooved End Fittings

Elbows

GE45 45° Elbow



GE90 90° Elbow



GE45 45° Elbow (Ductile Iron)

Size	Elbow Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
2 1/2"	GE45-250	2.25	2.2	750 (50)
3"	GE45-300	2.50	3.1	750 (50)
4"	GE45-400	3.00	5.6	750 (50)
5"	GE45-500	3.25	8.3	750 (50)
6"	GE45-600	3.50	11.7	700 (48)
8"	GE45-800	4.25	20.4	600 (40)

GE90 90° Elbow (Ductile Iron)

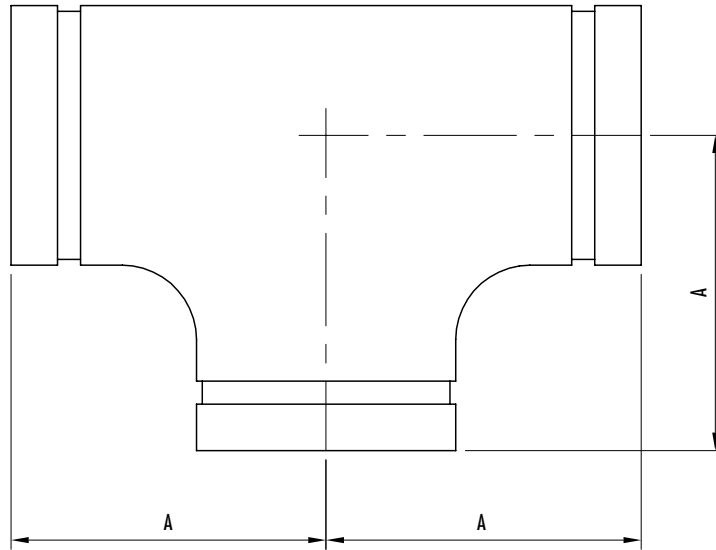
Size	Elbow Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
2 1/2"	GE90-250	3.75	4.9	750 (50)
3"	GE90-300	4.25	4.9	750 (50)
4"	GE90-400	5.00	8.5	750 (50)
5"	GE90-500	5.50	11.4	750 (50)
6"	GE90-600	6.50	18.4	700 (48)
8"	GE90-800	7.75	35.1	600 (40)

- **FOR SIZES 10" OR LARGER CONSULT FACTORY**
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Fittings

Tee



GT Tee (Ductile Iron)

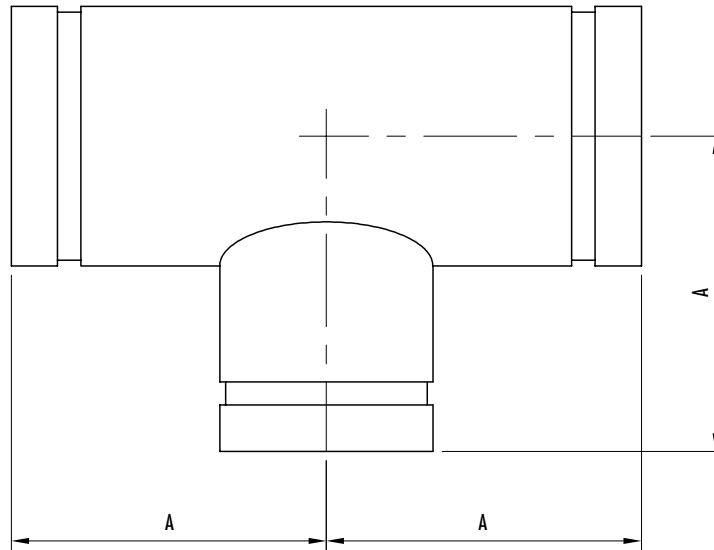
Size	Tee Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
2 1/2"	GT-250	3.75	4.8	750 (50)
3"	GT-300	4.25	6.1	750 (50)
4"	GT-400	5.00	12.6	750 (50)
5"	GT-500	5.50	17.8	750 (50)
6"	GT-600	6.50	27.3	700 (48)
8"	GT-800	7.75	47.6	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Fittings

Reducing Tee



GRT Reducing Tee (Segmentally Welded Carbon Steel)

Size	Reducing Tee Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
3" x 3" x 2 1/2"	GRT-300 x 300 x 250	4.25	6.4	750 (50)
4" x 4" x 2 1/2"	GRT-400 x 400 x 250	5.00	11.4	750 (50)
4" x 4" x 3"	GRT-400 x 400 x 300	5.00	11.6	750 (50)
5" x 5" x 3"	GRT-500 x 500 x 300	5.50	16.6	750 (50)
5" x 5" x 4"	GRT-500 x 500 x 400	5.50	16.7	750 (50)
6" x 6" x 2 1/2"	GRT-600 x 600 x 250	6.50	21.4	700 (48)
6" x 6" x 3"	GRT-600 x 600 x 300	6.50	26.5	700 (48)
6" x 6" x 4"	GRT-600 x 600 x 400	6.50	27.5	700 (48)
6" x 6" x 5"	GRT-600 x 600 x 500	6.50	22.8	700 (48)
8" x 8" x 3"	GRT-800 x 800 x 300	7.75	33.6	600 (40)
8" x 8" x 4"	GRT-800 x 800 x 400	7.75	42.8	600 (40)
8" x 8" x 5"	GRT-800 x 800 x 500	7.75	34.0	600 (40)
8" x 8" x 6"	GRT-800 x 800 x 600	7.75	42.3	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)

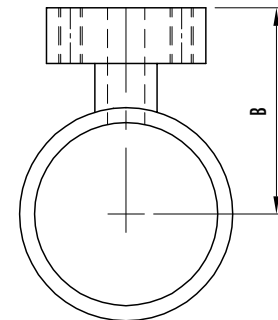
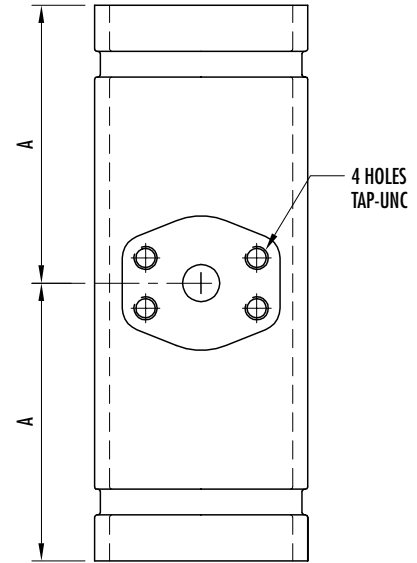


Grooved End Fittings

Reducing Tee-Flanged

GRTF Reducing Tee-Flanged SAE Code 61 4-Bolt Style (Segmentally Welded Carbon Steel)

Nominal Size	Tee Part No.	Dimensions (in)		Tap UNC-2B	WT. lbs/pc
		A	B		
2 1/2" x 2 1/2" x 1/2"	GRTF250-FF050	3.75	2.50	7/16"-18	4.5
x 3/4"	GRTF250-FF075	3.75	2.75	3/8"-16	4.6
x 1"	GRTF250-FF100	3.75	2.75	3/8"-16	4.7
x 1 1/4"	GRTF250-FF125	3.75	2.75	7/16"-14	4.9
x 1 1/2"	GRTF250-FF150	3.75	2.75	1/2"-13	5.6
x 2"	GRTF250-FF200	3.75	2.75	1/2"-13	6.6
3" x 3" x 1/2"	GRTF300-FF050	4.25	3.00	7/16"-18	6.3
x 3/4"	GRTF300-FF075	4.25	3.00	3/8"-16	6.4
x 1"	GRTF300-FF100	4.25	3.00	3/8"-16	6.5
x 1 1/4"	GRTF300-FF125	4.25	3.00	7/16"-14	6.7
x 1 1/2"	GRTF300-FF150	4.25	3.00	1/2"-13	7.4
x 2"	GRTF300-FF200	4.25	3.00	1/2"-13	8.4
4" x 4" x 1/2"	GRTF400-FF050	5.00	3.50	7/16"-18	9.9
x 3/4"	GRTF400-FF075	5.00	3.50	3/8"-16	10.0
x 1"	GRTF400-FF100	5.00	3.50	3/8"-16	10.1
x 1 1/4"	GRTF400-FF125	5.00	3.50	7/16"-14	10.3
x 1 1/2"	GRTF400-FF150	5.00	3.50	1/2"-13	10.6
x 2"	GRTF400-FF200	5.00	3.50	1/2"-13	11.6
5" x 5" x 1/2"	GRTF500-FF050	5.50	4.00	7/16"-18	14.3
x 3/4"	GRTF500-FF075	5.50	4.00	3/8"-16	14.4
x 1"	GRTF500-FF100	5.50	4.00	3/8"-16	14.5
x 1 1/4"	GRTF500-FF125	5.50	4.00	7/16"-14	14.7
x 1 1/2"	GRTF500-FF150	5.50	4.25	1/2"-13	15.4
x 2"	GRTF500-FF200	5.50	4.25	1/2"-13	16.4
6" x 6" x 1/2"	GRTF600-FF050	6.50	4.25	7/16"-18	19.76
x 3/4"	GRTF600-FF075	6.50	4.25	3/8"-16	21.6
x 1"	GRTF600-FF100	6.50	4.25	3/8"-16	21.7
x 1 1/4"	GRTF600-FF125	6.50	4.25	7/16"-14	21.9
x 1 1/2"	GRTF600-FF150	6.50	4.75	1/2"-13	22.6
x 2"	GRTF600-FF200	6.50	4.75	1/2"-13	23.6
8" x 8" x 1/2"	GRTF800-FF050	7.75	5.75	7/16"-18	36.6
x 3/4"	GRTF800-FF075	7.75	5.75	3/8"-16	36.7
x 1"	GRTF800-FF100	7.75	5.75	3/8"-16	36.8
x 1 1/4"	GRTF800-FF125	7.75	5.75	7/16"-14	37.0
x 1 1/2"	GRTF800-FF150	7.75	5.75	1/2"-13	37.7
x 2"	GRTF800-FF200	7.75	5.75	1/2"-13	38.7



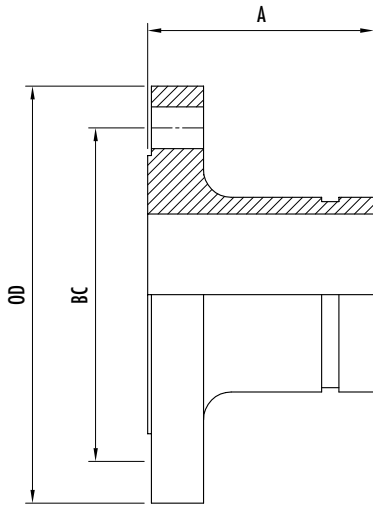
- FOR SIZES 10" OR LARGER CONSULT FACTORY
- FOR WORKING PRESSURE RATING, REFER TO COUPLING PRESSURE RATING ON PAGE E5
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE



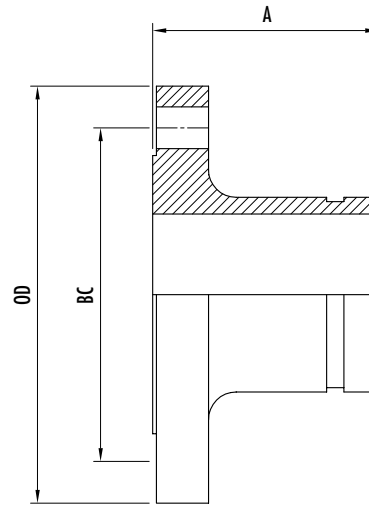
Grooved End Fittings

ANSI Flange Adapters

GAF A150



GAF A300



GAF A150 ANSI Flange Adapter - 150# (Carbon Steel)

Size	Flange Adapter Part No.	Dimensions (in)			No. Bolts	Bolt Size	WT. lbs/pc	Working Pressure PSI (bar)
		A	OD	BC				
2 1/2"	GAF A150-250	2.50	7.00	5.50	4	5/8" UNC	9.9	260 (18)
3"	GAF A150-300	2.50	7.50	6.00	4	5/8" UNC	11.4	260 (18)
4"	GAF A150-400	2.75	9.00	7.50	8	5/8" UNC	18.4	260 (18)
5"	GAF A150-500	3.25	10.00	8.50	8	3/4" UNC	21.3	260 (18)
6"	GAF A150-600	3.25	11.00	9.50	8	3/4" UNC	27.5	260 (18)
8"	GAF A150-800	3.74	13.50	11.75	8	3/4" UNC	41.3	260 (18)

GAF A300 ANSI Flange Adapter - 300# (Carbon Steel)

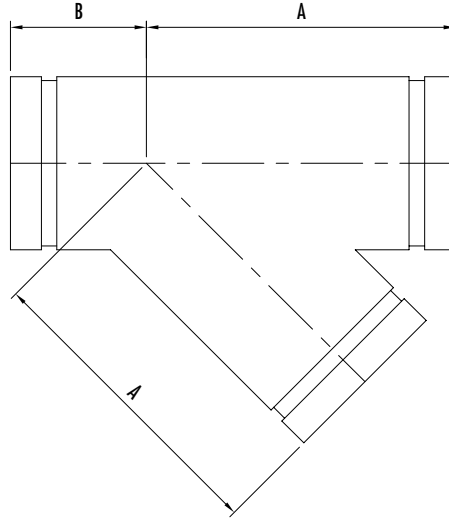
Size	Flange Adapter Part No.	Dimensions (in)			No. Bolts	Bolt Size	WT. lbs/pc	Working Pressure PSI (bar)
		A	OD	BC				
2 1/2"	GAF A300-250	2.75	7.50	5.88	8	3/4" UNC	11.9	750 (50)
3"	GAF A300-300	2.87	8.25	6.63	8	3/4" UNC	16.5	750 (50)
4"	GAF A300-400	3.13	10.00	7.88	8	3/4" UNC	27.4	750 (50)
5"	GAF A300-500	3.63	11.00	9.25	8	3/4" UNC	35.3	750 (50)
6"	GAF A300-600	3.63	12.50	10.63	12	3/4" UNC	47.5	700 (48)
8"	GAF A300-800	4.13	15.00	13.00	12	7/8" UNC	70.3	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
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- STANDARD COMPOSITE GASKET MATERIAL
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE



Grooved End Fittings

45° Lateral



GL 45° Lateral (Segmentally Welded Carbon Steel)

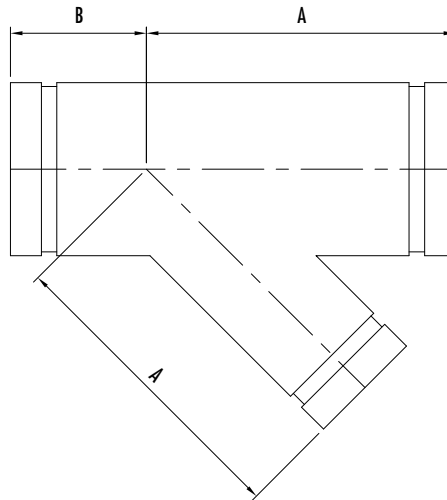
Size	Lateral Part No.	Dimensions (in)		WT. lbs/pc	Working Pressure PSI (bar)
		A	B		
2 1/2"	GL-250	7.75	3.00	9.0	750 (50)
3"	GL-300	8.50	3.25	11.7	750 (50)
4"	GL-400	10.50	3.75	22.2	750 (50)
5"	GL-500	12.50	4.00	29.8	750 (50)
6"	GL-600	14.00	4.50	43.6	700 (48)
8"	GL-800	18.00	6.00	72.0	600 (40)

- **FOR SIZES 10" OR LARGER CONSULT FACTORY**
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- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Fittings

Reducing Lateral



GRL Reducing Lateral (Segmentally Welded Carbon Steel)

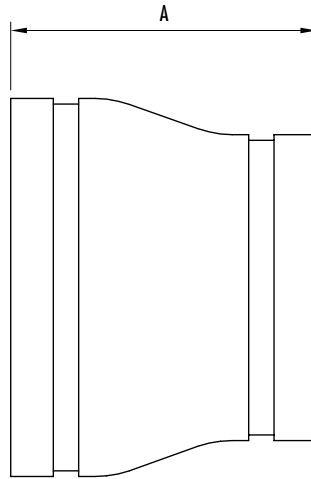
Size	Reducing Lateral Part No.	Dimensions (in)		WT. lbs/pc	Working Pressure PSI (bar)
		A	B		
3" x 3" x 2 1/2"	GRL-300 x 300 x 250	8.50	3.25	9.8	750 (50)
4" x 4" x 2 1/2"	GRL-400 x 400 x 250	10.50	3.75	10.0	750 (50)
4" x 4" x 3"	GRL-400 x 400 x 300	10.50	3.75	18.3	750 (50)
5" x 5" x 3"	GRL-500 x 500 x 300	12.50	4.00	27.0	750 (50)
5" x 5" x 4"	GRL-500 x 500 x 400	12.50	4.00	26.5	750 (50)
6" x 6" x 3"	GRL-600 x 600 x 300	14.00	4.50	37.0	700 (48)
6" x 6" x 4"	GRL-600 x 600 x 400	14.00	4.50	36.0	700 (48)
6" x 6" x 5"	GRL-600 x 600 x 500	14.00	4.50	44.7	700 (48)
8" x 8" x 4"	GRL-800 x 800 x 400	18.00	6.00	62.0	600 (40)
8" x 8" x 5"	GRL-800 x 800 x 500	18.00	6.00	75.5	600 (40)
8" x 8" x 6"	GRL-800 x 800 x 600	18.00	6.00	82.0	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Fittings

Concentric Reducer



GCR Concentric Reducer (Segmentally Welded Carbon Steel Except as Noted)

Size	Concentric Reducer Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
3" x 2 1/2"	GCR-300 x 250	2.50	1.8	750 (50)
4" x 2 1/2"	GCR-400 x 250 (d)	3.00	2.7	750 (50)
4" x 3"	GCR-400 x 300 (d)	3.00	2.5	750 (50)
5" x 2 1/2"	GCR-500 x 250	11.00	11.0	750 (50)
5" x 3"	GCR-500 x 300	4.00	4.9	750 (50)
5" x 4"	GCR-500 x 400	3.50	4.3	750 (50)
6" x 2 1/2"	GCR-600 x 250	11.50	14.2	700 (48)
6" x 3"	GCR-600 x 300 (d)	4.00	6.4	700 (48)
6" x 4"	GCR-600 x 400	4.00	6.5	700 (48)
6" x 5"	GCR-600 x 500	4.00	6.4	700 (48)
8" x 3"	GCR-800 x 300	5.00	9.3	600 (40)
8" x 4"	GCR-800 x 400	5.00	10.4	600 (40)
8" x 5"	GCR-800 x 500	5.00	11.6	600 (40)
8" x 6"	GCR-800 x 600	5.00	11.9	600 (40)

- **FOR SIZES 10" OR LARGER CONSULT FACTORY**

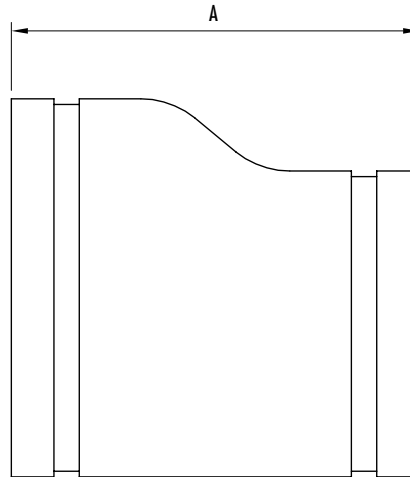
(d) DUCTILE IRON - NOT WELDED

- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Fittings

Eccentric Reducer



GER Eccentric Reducer (Segmentally Welded Carbon Steel Except as Noted)

Size	Eccentric Reducer Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
3" x 2 1/2"	GER-300 x 250 (d)	3.50	2.3	750 (50)
4" x 2 1/2"	GER-400 x 250 (d)	4.00	3.4	750 (50)
4" x 3"	GER-400 x 300 (d)	4.00	3.5	750 (50)
5" x 2 1/2"	GER-500 x 250	11.00	10.8	750 (50)
5" x 3"	GER-500 x 300	11.00	11.1	750 (50)
5" x 4"	GER-500 x 400 (d)	5.00	6.0	750 (50)
6" x 2 1/2"	GER-600 x 250	11.50	14.2	700 (48)
6" x 3"	GER-600 x 300 (d)	5.50	6.8	700 (48)
6" x 4"	GER-600 x 400 (d)	5.50	7.4	700 (48)
6" x 5"	GER-600 x 500 (d)	5.50	8.5	700 (48)
8" x 2 1/2"	GER-800 x 250	12.00	26.1	600 (40)
8" x 3"	GER-800 x 300	12.00	22.0	600 (40)
8" x 4"	GER-800 x 400	12.00	23.0	600 (40)
8" x 5"	GER-800 x 500	12.00	23.0	600 (40)
8" x 6"	GER-800 x 600 (d)	6.00	12.0	600 (40)

- **FOR SIZES 10" OR LARGER CONSULT FACTORY**

(d) DUCTILE IRON - NOT WELDED

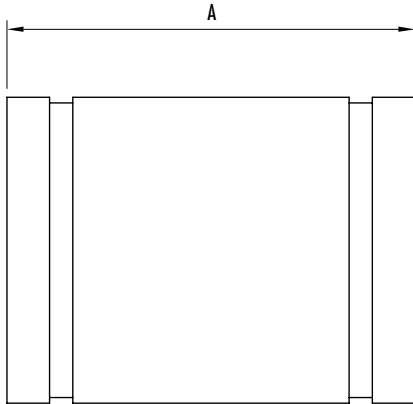
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



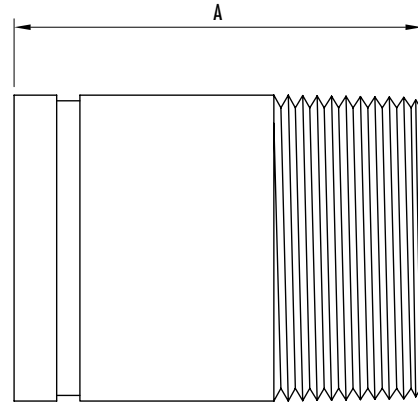
Grooved End Fittings

Nipples

GSN Short Nipple



GTN Threaded Nipple



GSN Short Nipple (Carbon Steel)

Size	Nipple Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
2 1/2"	GSN-250	4.00	1.9	750 (50)
3"	GSN-300	4.00	2.5	750 (50)
4"	GSN-400	6.00	5.5	750 (50)
5"	GSN-500	6.00	7.4	750 (50)
6"	GSN-600	6.00	9.5	700 (48)
8"	GSN-800	6.00	14.2	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY

GTN Threaded Nipple (Carbon Steel)

Size	Nipple Part No.	Dimensions (in)	NPTF Thread (dry seal)	WT. lbs/pc	Working Pressure PSI (bar)
		A			
2 1/2"	GTN-250	4.00	2 1/2" - 8	1.9	750 (50)
3"	GTN-300	4.00	3" - 8	2.5	750 (50)
4"	GTN-400	6.00	4" - 8	5.5	750 (50)
5"	GTN-500	6.00	5" - 8	7.4	750 (50)
6"	GTN-600	6.00	6" - 8	9.5	700 (48)

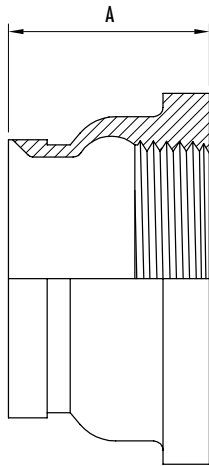
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



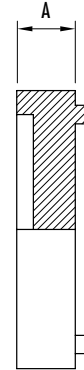
Grooved End Fittings

Female Thread Adapter & Blanking Cap

GFTA Female Thread Adapter



GCC Cap



GFTA Female Thread Adapter (Ductile Iron)

Size	Adapter Part No.	Dimensions (in)	NPTF Thread (dry seal)	WT. lbs/pc	Working Pressure PSI (bar)
		A			
2 1/2"	GFTA-250	*	2 1/2" - 8	1.5	750 (50)
3"	GFTA-300	2.75	3" - 8	2.9	750 (50)
4"	GFTA-400	3.25	4" - 8	4.5	750 (50)

* CONTACT TUBE-MAC® INDUSTRIES FOR DETAILS

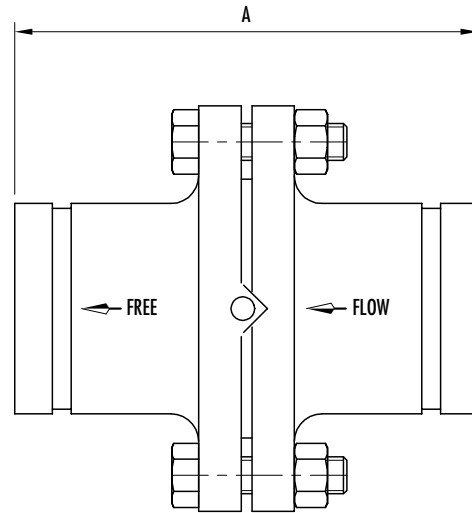
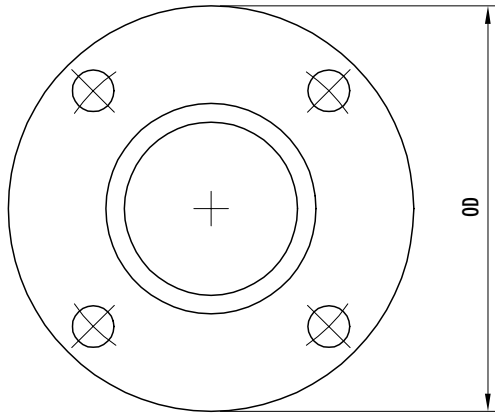
GCC Cap (Ductile Iron)

Size	Cap Part No.	Dimensions (in)	WT. lbs/pc	Working Pressure PSI (bar)
		A		
2 1/2"	GCC-250	0.88	1.0	750 (50)
3"	GCC-300	0.88	1.2	750 (50)
4"	GCC-400	1.00	2.5	750 (50)
5"	GCC-500	1.00	4.6	750 (50)
6"	GCC-600	1.00	6.1	700 (48)
8"	GCC-800	1.19	13.1	600 (40)

- **FOR SIZES 10" OR LARGER CONSULT FACTORY**
- TUBE-MAC® SUPPLIED GROOVED END FITTINGS ARE MECHANICALLY CLEANED INTERNALLY AND EXTERNALLY TO REMOVE FACTORY PAINT, THEN ZINC PHOSPHATE COATED, INTERNALLY OILED, EXTERNALLY PAINTED GREY WITH PLASTIC CAPS ON ALL OPEN ENDS. THIS ENSURES FITTINGS ARE SUPPLIED CLEAN AND READILY IDENTIFIABLE ON THE JOB SITE FOR HYDRAULIC AND LUBRICATION PIPING APPLICATIONS.
- STAINLESS STEEL TYPE 304 OR 316 AVAILABLE (DIMENSIONS MAY VARY)



Grooved End Check Valve



GCV Check Valve (Carbon Steel) Complete with Composite Gasket (Standard)

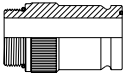
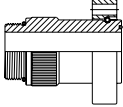
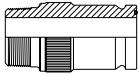
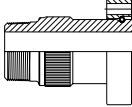
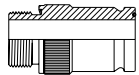
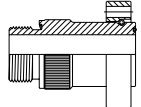
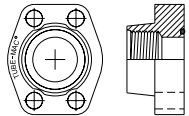
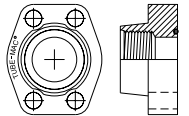
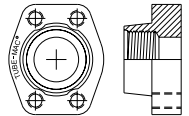
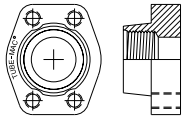
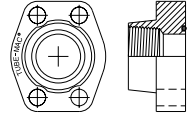
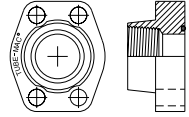
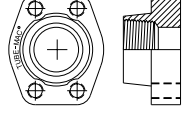
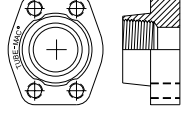
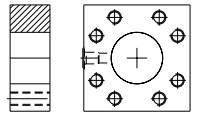
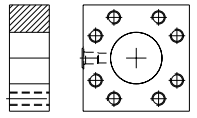
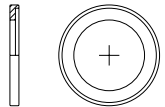
Size	Check Valve Part No.	Dimensions (in)		WT. lbs/pc	Working Pressure PSI (bar)
		A	OD		
2 1/2"	GCV-250	5.81	7.50	26.0	675 (47)
3"	GCV-300	6.05	8.25	35.0	675 (47)
4"	GCV-400	6.64	10.00	68.0	675 (47)
5"	GCV-500	7.76	11.00	78.0	675 (47)
6"	GCV-600	7.64	12.50	106.0	675 (47)
8"	GCV-800	8.76	15.00	155.0	600 (40)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
- VARIOUS GASKET MATERIALS ARE AVAILABLE
- ALL CHECK VALVES ARE SUPPLIED WITH SOFT VALVE SEATS (BUNA 'O' RINGS)
- CRACKING PRESSURE IS 0.5 PSI \pm 15% - OTHER CRACKING PRESSURES ARE AVAILABLE
- STAINLESS STEEL TYPE 316 AVAILABLE





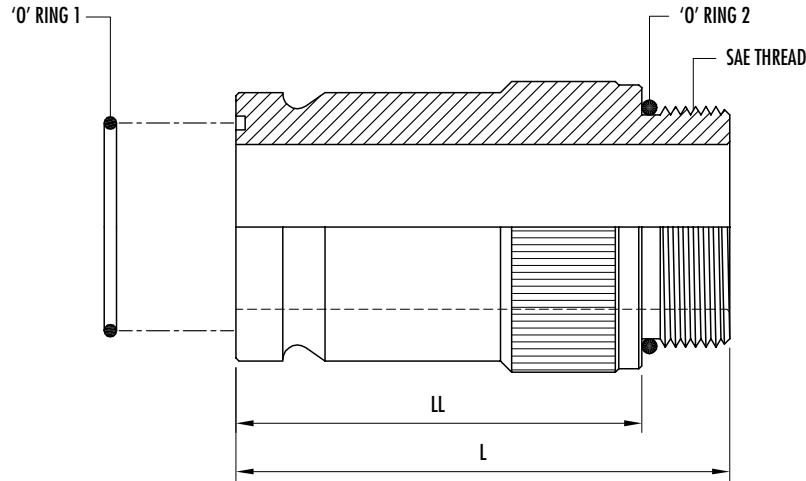
Adapters - Visual Index

<p>RETAIN RING FLANGE STYLE</p>	<p>STA SAE MALE THREAD BODY ONLY</p>  <p>$\frac{1}{2}$" - 2" Page F2</p>	<p>A/STA SAE MALE THREAD ASSEMBLY</p>  <p>$\frac{1}{2}$" - 2" Page F6</p>	<p>NTA NPTF MALE THREAD BODY ONLY</p>  <p>$\frac{1}{2}$" - 2" Page F3</p>	<p>A/NTA NPTF MALE THREAD ASSEMBLY</p>  <p>$\frac{1}{2}$" - 2" Page F6</p>
<p>BTA BSPP MALE THREAD BODY ONLY</p>  <p>$\frac{1}{2}$" - 2" Page F4</p>	<p>A/BTA BSPP MALE THREAD ASSEMBLY</p>  <p>$\frac{1}{2}$" - 2" Page F6</p>			
<p>SAE FEMALE THREAD FLANGE</p>	<p>STF034 SAE CODE 61 'O' RING FACE</p>  <p>$\frac{1}{2}$" - 1$\frac{1}{2}$" Page F8</p>	<p>STF064 SAE CODE 62 'O' RING FACE</p>  <p>$\frac{1}{2}$" - 1$\frac{1}{2}$" Page F8</p>	<p>STFF34 SAE CODE 61 FLAT FACE</p>  <p>$\frac{1}{2}$" - 1$\frac{1}{2}$" Page F9</p>	<p>STFF64 SAE CODE 62 FLAT FACE</p>  <p>$\frac{1}{2}$" - 1$\frac{1}{2}$" Page F9</p>
<p>NPTF FEMALE THREAD FLANGE</p>	<p>NTF034 SAE CODE 61 'O' RING FACE</p>  <p>$\frac{1}{2}$" - 3" Page F10</p>	<p>NTF064 SAE CODE 62 'O' RING FACE</p>  <p>$\frac{1}{2}$" - 2" Page F10</p>	<p>NTFF34 SAE CODE 61 FLAT FACE</p>  <p>$\frac{1}{2}$" - 3" Page F11</p>	<p>NTFF64 SAE CODE 62 FLAT FACE</p>  <p>$\frac{1}{2}$" - 2" Page F11</p>
<p>ADAPTER PLATE UNION STYLE</p>	<p>AP34 SAE CODE 61</p>  <p>$\frac{1}{2}$" - 2" Page F12</p>	<p>AP64 SAE CODE 62</p>  <p>$\frac{1}{2}$" - 2" Page F13</p>		
<p>'O' RING CONNECTOR PLATE</p>	<p>OCP CONNECTOR PLATE</p>  <p>$\frac{1}{2}$" - 2" Page F5</p>			



SAE Male Thread Adapter

Body Only



STA SAE Male Thread Adapter Body - Retain Ring Flange Style

Complete With Buna 'O' Rings (Standard)

Size (flange x thread)	Body Only Part No.	Dimensions (in)		Thread Size UNF/UN-2A	'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	LL					
1/2" x 3/8"	STA-050x038*	3.10	2.63	9/16"-18	OR*-3-909	OR*-3-906	0.50	6000 (420)
1/2" x 1/2"	STA-050x050*	3.18	2.63	3/4"-16	OR*-3-909	OR*-3-908	0.54	6000 (420)
1/2" x 5/8"	STA-050x063*	3.26	2.63	7/8"-14	OR*-3-909	OR*-3-910	0.60	6000 (420)
1/2" x 3/4"	STA-050x075*	3.36	2.63	1 1/16"-12	OR*-3-909	OR*-3-912	0.69	6000 (420)
3/4" x 1/2"	STA-075x050*	3.30	2.75	3/4"-16	OR*-3-913	OR*-3-908	1.06	6000 (420)
3/4" x 3/4"	STA-075x075*	3.47	2.75	1 1/16"-12	OR*-3-913	OR*-3-912	1.07	6000 (420)
3/4" x 1"	STA-075x100*	3.47	2.75	1 5/16"-12	OR*-3-913	OR*-3-916	1.10	6000 (420)
1" x 3/4"	STA-100x075*	3.72	3.00	1 1/16"-12	OR*-3-916	OR*-3-912	1.10	6000 (420)
1" x 1"	STA-100x100*	3.72	3.00	1 5/16"-12	OR*-3-916	OR*-3-916	1.25	6000 (420)
1" x 1 1/4"	STA-100x125*	3.72	3.00	1 5/8"-12	OR*-3-916	OR*-3-920	1.45	6000 (420)
1 1/4" x 1"	STA-125x100*	3.97	3.25	1 5/16"-12	OR*-3-918	OR*-3-916	1.44	6000 (420)
1 1/4" x 1 1/4"	STA-125x125*	3.97	3.25	1 5/8"-12	OR*-3-918	OR*-3-920	1.81	6000 (420)
1 1/4" x 1 1/2"	STA-125x150*	3.97	3.25	1 7/8"-12	OR*-3-918	OR*-3-924	2.03	6000 (420)
1 1/2" x 1 1/4"	STA-150x125*	4.97	4.25	1 5/8"-12	OR*-3-924	OR*-3-920	2.17	6000 (420)
1 1/2" x 1 1/2"	STA-150x150*	4.97	4.25	1 7/8"-12	OR*-3-924	OR*-3-924	2.95	6000 (420)
1 1/2" x 2"	STA-150x200*	4.97	4.25	2 1/2"-12	OR*-3-924	OR*-3-932	3.53	6000 (420)
2" x 1 1/2"	STA-200x150*	4.97	4.25	1 7/8"-12	OR*-3-928	OR*-3-924	3.02	6000 (420)
2" x 2"	STA-200x200*	4.97	4.25	2 1/2"-12	OR*-3-928	OR*-3-932	3.95	6000 (420)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

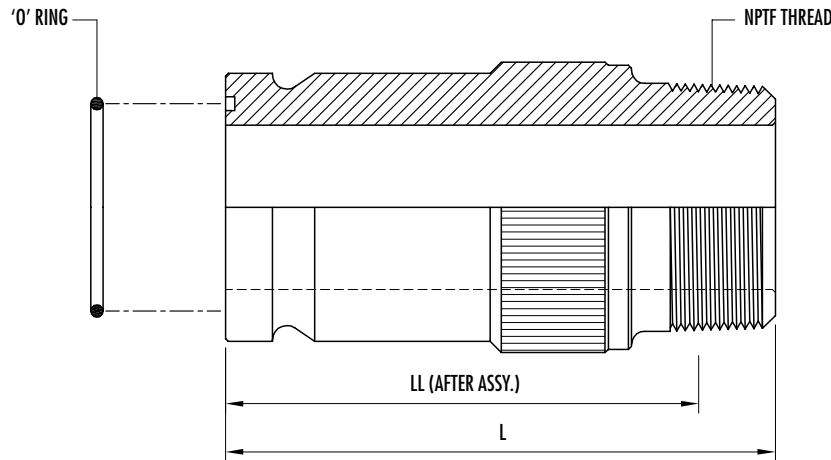
- OTHER JUMP SIZES AND LONGER LL DIMENSIONS ARE AVAILABLE UPON REQUEST
- THREADS PER SAE J1926/2 (ISO 11926-2)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES F6-F7

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL-316 AVAILABLE)



NPTF Male Thread Adapter

Body Only



NTA NPTF Male Thread Adapter Body - Retain Ring Flange Style Complete With Buna 'O' Ring (Standard)

Size (flange x thread)	Body Only Part No.	Dimensions (in)		NPTF Thread (Dryseal)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	LL				
1/2" x 1/2"	NTA-050x050*	3.38	2.84	1/2"-14	OR*-3-909	0.54	6000 (420)
1/2" x 3/4"	NTA-050x075*	3.38	2.84	3/4"-14	OR*-3-909	0.69	6000 (420)
3/4" x 1/2"	NTA-075x050*	3.50	2.96	1/2"-14	OR*-3-913	1.06	6000 (420)
3/4" x 3/4"	NTA-075x075*	3.50	2.96	3/4"-14	OR*-3-913	1.07	6000 (420)
3/4" x 1"	NTA-075x100*	3.69	3.01	1"-11 1/2	OR*-3-913	1.10	6000 (420)
1" x 3/4"	NTA-100x075*	3.75	3.21	3/4"-14	OR*-3-916	1.10	6000 (420)
1" x 1"	NTA-100x100*	3.94	3.26	1"-11 1/2	OR*-3-916	1.25	6000 (420)
1" x 1 1/4"	NTA-100x125*	3.97	3.26	1 1/4"-11 1/2	OR*-3-916	1.45	6000 (420)
1 1/4" x 1"	NTA-125x100*	4.19	3.51	1"-11 1/2	OR*-3-918	1.44	6000 (420)
1 1/4" x 1 1/4"	NTA-125x125*	4.22	3.51	1 1/4"-11 1/2	OR*-3-918	1.81	6000 (420)
1 1/4" x 1 1/2"	NTA-125x150*	4.25	3.51	1 1/2"-11 1/2	OR*-3-918	2.03	6000 (420)
1 1/2" x 1 1/4"	NTA-150x125*	5.22	4.51	1 1/4"-11 1/2	OR*-3-924	2.17	6000 (420)
1 1/2" x 1 1/2"	NTA-150x150*	5.25	4.51	1 1/2"-11 1/2	OR*-3-924	2.95	6000 (420)
1 1/2" x 2"	NTA-150x200*	5.28	4.51	2"-11 1/2	OR*-3-924	3.53	6000 (420)
2" x 1 1/2"	NTA-200x150*	5.25	4.51	1 1/2"-11 1/2	OR*-3-928	3.02	6000 (420)
2" x 2"	NTA-200x200*	5.28	4.51	2"-11 1/2	OR*-3-928	3.95	6000 (420)

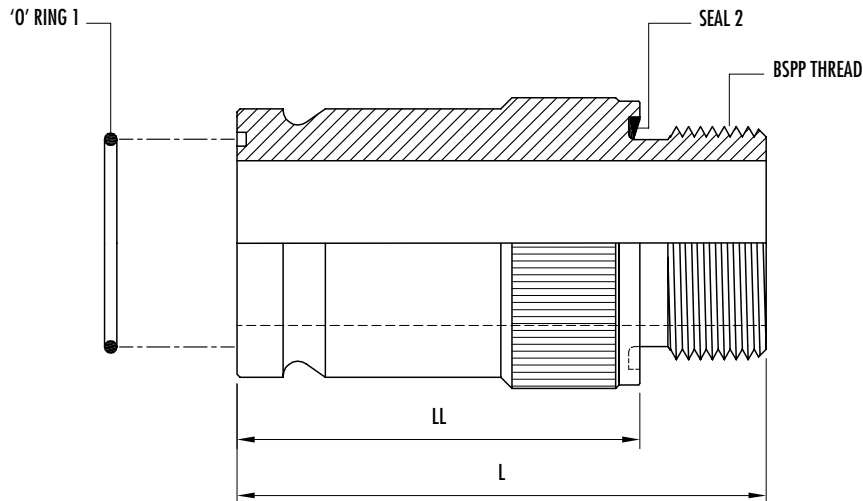
- * INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING
- OTHER JUMP SIZES AND LONGER LL DIMENSIONS ARE AVAILABLE UPON REQUEST
- THREADS PER ANSI-B2.1
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES F6-F7

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL-316 AVAILABLE)



BSPP Male Thread Adapter

Body Only



BTA BSPP Male Thread Adapter Body - Retain Ring Flange Style

Complete With Buna 'O' Rings (Standard)

Size (flange x thread)	Body Only Part No.	Dimensions (in)		Thread Size	'O' Ring 1 (Buna) Part No.	Seal 2 (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	LL					
1/2" x 1/2"	BTA-050x050*	3.18	2.63	1/2"-14	OR*-3-909	DR*-G050	0.54	6000 (420)
1/2" x 3/4"	BTA-050x075*	3.26	2.63	3/4"-14	OR*-3-909	DR*-G075	0.69	6000 (420)
3/4" x 1/2"	BTA-075x050*	3.30	2.75	1/2"-14	OR*-3-913	DR*-G050	1.06	6000 (420)
3/4" x 3/4"	BTA-075x075*	3.38	2.75	3/4"-14	OR*-3-913	DR*-G075	1.07	6000 (420)
3/4" x 1"	BTA-075x100*	3.46	2.75	1"-11	OR*-3-913	DR*-G100	1.10	6000 (420)
1" x 3/4"	BTA-100x075*	3.63	3.00	3/4"-14	OR*-3-916	DR*-G075	1.10	6000 (420)
1" x 1"	BTA-100x100*	3.71	3.00	1"-11	OR*-3-916	DR*-G100	1.25	6000 (420)
1" x 1 1/4"	BTA-100x125*	3.79	3.00	1 1/4"-11	OR*-3-916	DR*-G125	1.45	6000 (420)
1 1/4" x 1"	BTA-125x100*	3.96	3.25	1"-11	OR*-3-918	DR*-G100	1.44	6000 (420)
1 1/4" x 1 1/4"	BTA-125x125*	4.04	3.25	1 1/4"-11	OR*-3-918	DR*-G125	1.81	6000 (420)
1 1/4" x 1 1/2"	BTA-125x150*	4.12	3.25	1 1/2"-11	OR*-3-918	DR*-G150	2.03	6000 (420)
1 1/2" x 1 1/4"	BTA-150x125*	5.04	4.25	1 1/4"-11	OR*-3-924	DR*-G125	2.17	6000 (420)
1 1/2" x 1 1/2"	BTA-150x150*	5.12	4.25	1 1/2"-11	OR*-3-924	DR*-G150	2.95	6000 (420)
♦ 1 1/2" x 2"	BTA-150x200*	5.37	4.25	2"-11	OR*-3-924	BS*-3236	3.53	6000 (420)
2" x 1 1/2"	BTA-200x150*	5.12	4.25	1 1/2"-11	OR*-3-928	DR*-G150	3.02	6000 (420)
♦ 2" x 2"	BTA-200x200*	5.37	4.25	2"-11	OR*-3-928	BS*-3236	3.95	6000 (420)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

♦ 2" SEAL 2 CONSISTS OF A METAL BONDED LIP

• OTHER JUMP SIZES AND LONGER LL DIMENSIONS ARE AVAILABLE UPON REQUEST

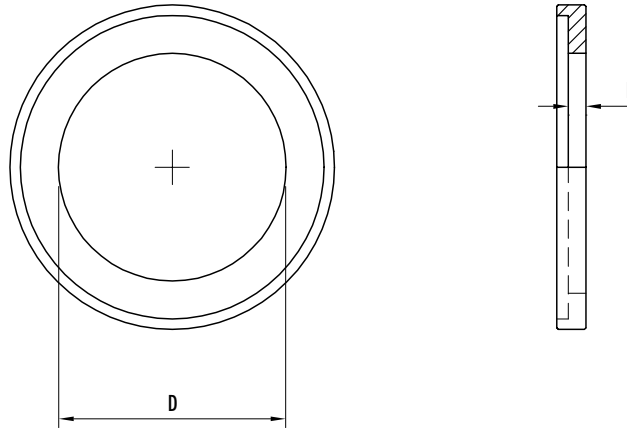
• THREADS PER ISO 1179-2

• TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES F6-F7

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL-316 AVAILABLE)



'O' Ring Connector Plate



OCP 'O' Ring Connector Plate for Retain Ring Components

Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
1/2"	OCP-050	0.50	0.13	0.04
3/4"	OCP-075	0.75	0.13	0.06
1"	OCP-100	0.94	0.13	0.07
1 1/4"	OCP-125	1.20	0.13	0.08
1 1/2"	OCP-150	1.50	0.13	0.11
2"	OCP-200	1.94	0.13	0.13

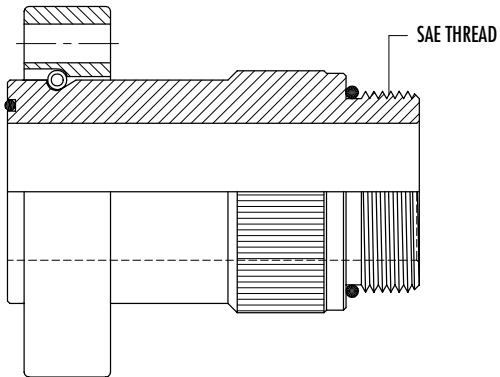
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



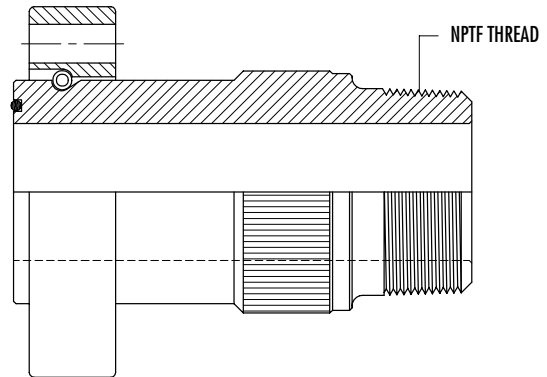
Male Thread Adapter Assemblies

Retain Ring Flange Style

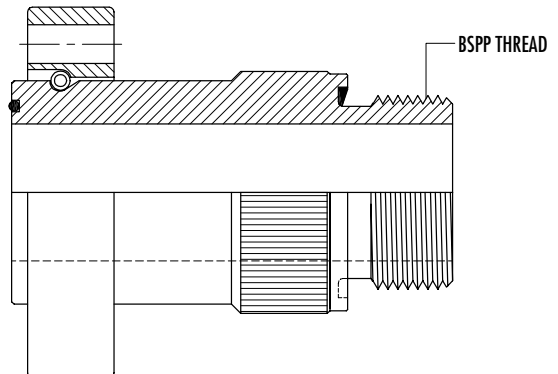
Typical A/STA Assembly



Typical A/NTA Assembly



Typical A/BTA Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) ADAPTER BODY (REF. PAGES F2-F4)
- ONE (1) RETAIN RING FLANGE (REF. PAGES C8-C9)
- ONE (1) RETAIN RING
- BUNA 'O' RING(S) (STANDARD)
- END SEALED WITH 6 MIL HEAT SHRINK MATERIAL

PART NO. (EXAMPLE): A/STA - 100 - 100 - FC34



Male Thread Adapter Assembly

Complete Assembly Part Number - Retain Ring Flange Style

		Code	A	Body	Body Material	Flange End Size	Thread End Size	Flange	Options
Assembly			A						
Adapter Body Ref. pages (F2-F4)	SAE Male Thread Flange Adapter	STA							
	NPTF Male Thread Flange Adapter	NTA							
	BSPP Male Thread Flange Adapter	BTA							
Body Material Carbon Steel (Standard)	No Designation Required								
Body Material Stainless Steel (Optional) Ref. page (...)	TMP316SS	316							
Size Ref. pages (F2-F4)	1/2"	050							
	3/4"	075							
	1"	100							
	1 1/4"	125							
	1 1/2"	150							
	2"	200							
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C9)	RFC34 SAE Code 61 W/Clearance Holes	FC34							
	*RFT34 SAE Code 61 W/Tapped Holes	FT34							
	RFC64 SAE Code 62 W/Clearance Holes	FC64							
	*RFT64 SAE Code 62 W/Tapped Holes	FT64							
Options	Viton	V							
Complete Stainless Steel Assembly: (including flanges)		SS							

- * NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS
- FOR CONNECTION TO HOSE USE CONNECTOR PLATE **OCP** (TO BE ORDERED SEPARATELY) REF. PAGE F5

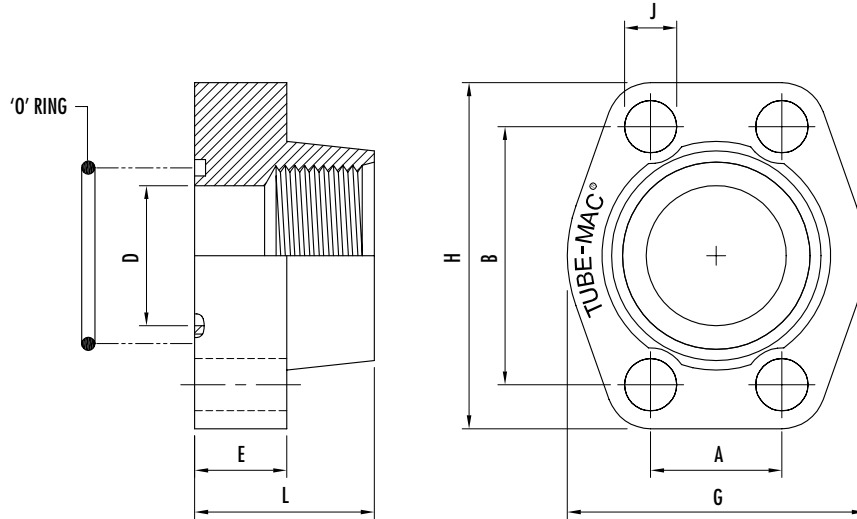
PART NO. (EXAMPLE): A/STA - 100 - 100 - FC34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



SAE Female Thread Flange Adapters

'O' Ring Face With Clearance Holes



STF034 SAE Female Thread Flange - SAE Code 61 'O' Ring Face With Clearance Holes Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)							SAE Thread UNF-2A	Drill Dia.(in) J	Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H							
1/2"	STF034-050-*	0.69	1.50	0.51	0.63	1.42	1.81	2.16	3/4"-16	0.35	5/16" UNC	OR*-2-210	0.55	5000 (350)	15-18
3/4"	STF034-075-*	0.88	1.88	0.75	0.71	1.42	2.06	2.56	1 1/16"-12	0.43	3/8" UNC	OR*-2-214	0.86	5000 (350)	20-30
1"	STF034-100-*	1.03	2.06	0.98	0.71	1.50	2.31	2.76	1 5/16"-12	0.43	3/8" UNC	OR*-2-219	1.00	5000 (350)	20-30
1 1/4"	STF034-125-*	1.19	2.31	1.26	0.83	1.61	2.88	3.11	1 5/8"-12	0.45	7/16" UNC	OR*-2-222	1.46	4000 (275)	40-50
1 1/2"	STF034-150-*	1.41	2.75	1.50	0.98	1.77	3.25	3.66	1 7/8"-12	0.53	1/2" UNC	OR*-2-225	2.31	3000 (210)	80-90

STF064 SAE Female Thread Flange - SAE Code 62 'O' Ring Face With Clearance Holes Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)							SAE Thread UNF-2A	Drill Dia.(in) J	Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H							
1/2"	STF064-050-*	0.72	1.59	0.51	0.63	1.42	1.88	2.22	3/4"-16	0.35	5/16" UNC	OR*-2-210	0.57	6000 (420)	15-18
3/4"	STF064-075-*	0.94	2.00	0.75	0.83	1.34	2.38	2.81	1 1/16"-12	0.43	3/8" UNC	OR*-2-214	1.10	6000 (420)	20-30
1"	STF064-100-*	1.09	2.25	0.98	0.98	1.65	2.75	3.19	1 5/16"-12	0.51	7/16" UNC	OR*-2-219	1.68	6000 (420)	40-50
1 1/4"	STF064-125-*	1.25	2.63	1.26	1.06	1.77	3.06	3.75	1 5/8"-12	0.53	1/2" UNC	OR*-2-222	2.65	6000 (420)	80-90
1 1/2"	STF064-150-*	1.44	3.13	1.50	1.18	1.97	3.75	4.44	1 7/8"-12	0.67	5/8" UNC	OR*-2-225	3.64	6000 (420)	110-120

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

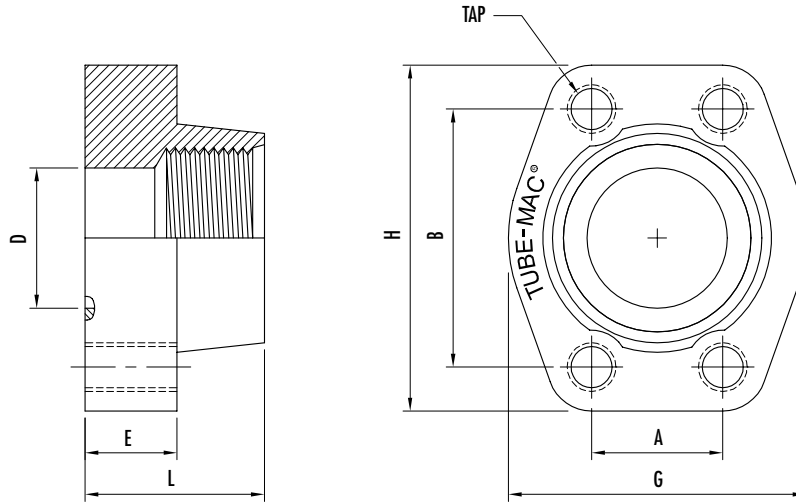
- SAE PORT FORM PER SAE J1926/1 (ISO 11926-1)
- FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



SAE Female Thread Flange Adapters

Flat Face With Tapped Holes



STFF34 SAE Female Thread Flange - SAE Code 61 Flat Face With Tapped Holes

Size	Flange Part No.	Dimensions (in)							SAE Thread UNF-2A	Bolt Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H					
1/2"	STFF34-050	0.69	1.50	0.51	0.63	1.42	1.81	2.16	3/4"-16	5/16"	0.55	5000 (350)	15-18
3/4"	STFF34-075	0.88	1.88	0.75	0.71	1.42	2.06	2.56	1 1/16"-12	3/8"	0.86	5000 (350)	20-30
1"	STFF34-100	1.03	2.06	0.98	0.71	1.50	2.31	2.76	1 5/16"-12	3/8"	1.00	5000 (350)	20-30
1 1/4"	STFF34-125	1.19	2.31	1.26	0.83	1.61	2.88	3.11	1 5/8"-12	7/16"	1.46	4000 (275)	40-50
1 1/2"	STFF34-150	1.41	2.75	1.50	0.98	1.77	3.25	3.66	1 7/8"-12	1/2"	2.31	3000 (210)	80-90

STFF64 SAE Female Thread Flange - SAE Code 62 Flat Face With Tapped Holes

Size	Flange Part No.	Dimensions (in)							SAE Thread UNF-2A	Bolt Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H					
1/2"	STFF64-050	0.72	1.59	0.51	0.63	1.42	1.88	2.22	3/4"-16	5/16"	0.57	6000 (420)	15-18
3/4"	STFF64-075	0.94	2.00	0.75	0.83	1.34	2.38	2.81	1 1/16"-12	3/8"	1.10	6000 (420)	20-30
1"	STFF64-100	1.09	2.25	0.98	0.98	1.65	2.75	3.19	1 5/16"-12	7/16"	1.68	6000 (420)	40-50
1 1/4"	STFF64-125	1.25	2.63	1.26	1.06	1.77	3.06	3.75	1 5/8"-12	1/2"	2.65	6000 (420)	80-90
1 1/2"	STFF64-150	1.44	3.13	1.50	1.18	1.97	3.75	4.44	1 7/8"-12	5/8"	3.64	6000 (420)	110-120

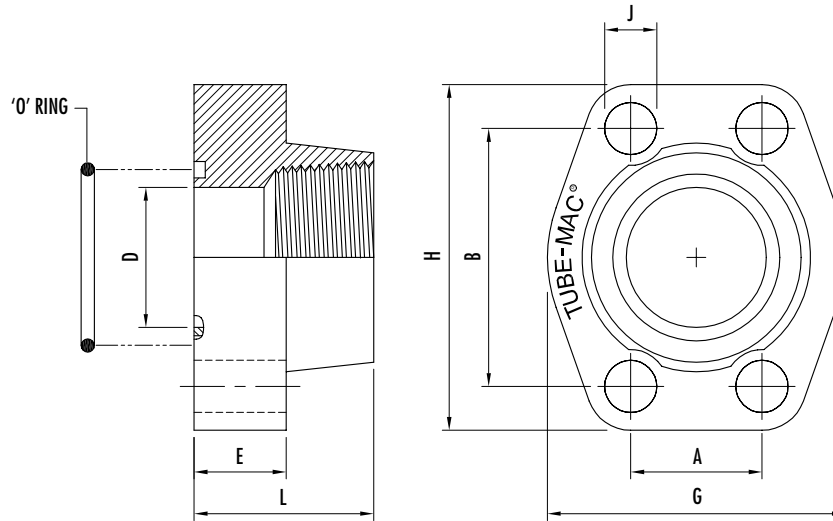
- SAE PORT FORM PER SAE J1926/1 ISO (11926-1)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



NPTF Female Thread Flange Adapters

'O' Ring Face With Clearance Holes



NTF034 NPTF Female Thread Flange - SAE Code 61 'O' Ring Face With Clearance Holes Complete with Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)							NPTF Thread	Drill Dia.(in) J	Bolt Min. Gade 5 UNC	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H							
1/2"	NTF034-050-*	0.69	1.50	0.51	0.63	1.42	1.81	2.16	1/2"-14	0.35	5/16"	OR*-2-210	0.55	5000 (350)	15-18
3/4"	NTF034-075-*	0.88	1.88	0.75	0.71	1.42	2.06	2.56	3/4"-14	0.43	3/8"	OR*-2-214	0.86	5000 (350)	20-30
1"	NTF034-100-*	1.03	2.06	0.98	0.71	1.50	2.31	2.76	1"-11 1/2	0.43	3/8"	OR*-2-219	1.00	5000 (350)	20-30
1 1/4"	NTF034-125-*	1.19	2.31	1.26	0.83	1.61	2.88	3.11	1 1/4"-11 1/2	0.45	7/16"	OR*-2-222	1.46	4000 (275)	40-50
1 1/2"	NTF034-150-*	1.41	2.75	1.50	0.98	1.77	3.25	3.66	1 1/2"-11 1/2	0.53	1/2"	OR*-2-225	2.31	3000 (210)	80-90
2"	NTF034-200-*	1.69	3.06	2.01	0.98	1.77	3.81	4.02	2"-11 1/2	0.53	1/2"	OR*-2-228	2.62	3000 (210)	80-90
2 1/2"	NTF034-250-*	2.00	3.50	2.48	0.98	1.97	4.28	4.49	2 1/2"-8	0.53	1/2"	OR*-2-232	3.09	2500 (175)	80-90
3"	NTF034-300-*	2.44	4.19	2.87	1.06	1.97	5.16	5.28	3"-8	0.69	5/8"	OR*-2-237	4.74	2000 (140)	110-120

NTF064 NPTF Female Thread Flange - SAE Code 62 'O' Ring Face With Clearance Holes Complete with Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)							NPTF Thread	Drill Dia.(in) J	Bolt Min. Gade 5 UNC	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H							
1/2"	NTF064-050-*	0.72	1.59	0.51	0.63	1.42	1.88	2.22	1/2"-14	0.35	5/16"	OR*-2-210	0.57	6000 (420)	15-18
3/4"	NTF064-075-*	0.94	2.00	0.75	0.83	1.34	2.38	2.81	3/4"-14	0.43	3/8"	OR*-2-214	1.10	6000 (420)	20-30
1"	NTF064-100-*	1.09	2.25	0.98	0.98	1.65	2.75	3.19	1"-11 1/2	0.51	7/16"	OR*-2-219	1.68	6000 (420)	40-50
1 1/4"	NTF064-125-*	1.25	2.63	1.26	1.06	1.77	3.06	3.75	1 1/4"-11 1/2	0.53	1/2"	OR*-2-222	2.65	6000 (420)	80-90
1 1/2"	NTF064-150-*	1.44	3.13	1.50	1.18	1.97	3.75	4.44	1 1/2"-11 1/2	0.67	5/8"	OR*-2-225	3.64	6000 (420)	110-120
2"	NTF064-200-*	1.75	3.81	2.01	1.46	2.56	4.50	5.25	2"-11 1/2	0.83	3/4"	OR*-2-228	5.40	6000 (420)	120-130

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING.

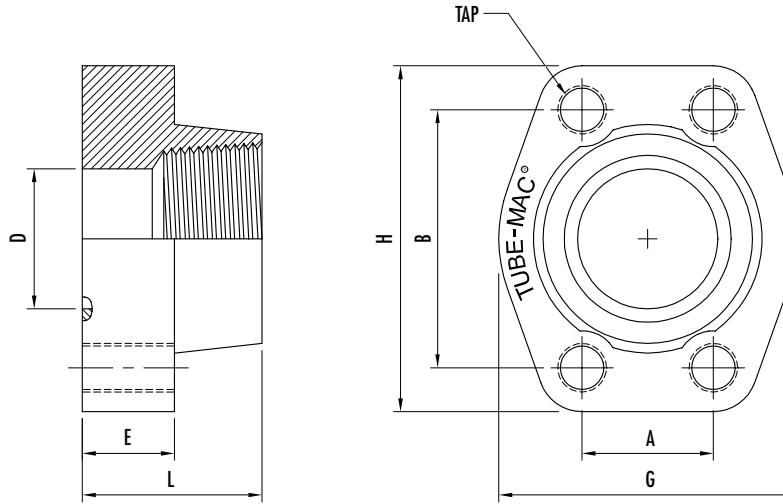
- NPTF PORT FORM PER ANSI-B2.1
- FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



NPTF Female Thread Flange Adapters

Flat Face With Tapped Holes



NTFF34 NPTF Female Thread Flange - SAE Code 61 Flat Face With Tapped Holes

Size	Flange Part No.	Dimensions (in)							NPTF Thread	Bolt Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H					
1/2"	NTFF34-050	0.69	1.50	0.51	0.63	1.42	1.81	2.16	1/2"-14	5/16"	0.55	5000 (350)	15-18
3/4"	NTFF34-075	0.88	1.88	0.75	0.71	1.42	2.06	2.56	3/4"-14	3/8"	0.86	5000 (350)	20-30
1"	NTFF34-100	1.03	2.06	0.98	0.71	1.50	2.31	2.76	1"-11 1/2	3/8"	1.00	5000 (350)	20-30
1 1/4"	NTFF34-125	1.19	2.31	1.26	0.83	1.61	2.88	3.11	1 1/4"-11 1/2	7/16"	1.46	4000 (275)	40-50
1 1/2"	NTFF34-150	1.41	2.75	1.50	0.98	1.77	3.25	3.66	1 1/2"-11 1/2	1/2"	2.31	3000 (210)	80-90
2"	NTFF34-200	1.69	3.06	2.01	0.98	1.77	3.81	4.02	2"-11 1/2	1/2"	2.62	3000 (210)	80-90
2 1/2"	NTFF34-250	2.00	3.50	2.48	0.98	1.97	4.28	4.49	2 1/2"-8	1/2"	3.09	2500 (175)	80-90
3"	NTFF34-300	2.44	4.19	2.87	1.06	1.97	5.16	5.28	3"-8	5/8"	4.74	2000 (140)	110-120

NTFF64 NPTF Female Thread Flange - SAE Code 62 Flat Face With Tapped Holes

Size	Flange Part No.	Dimensions (in)							NPTF Thread	Bolt Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	D	E	L	G	H					
1/2"	NTFF64-050	0.72	1.59	0.51	0.63	1.42	1.88	2.22	1/2"-14	5/16"	0.57	6000 (420)	15-18
3/4"	NTFF64-075	0.94	2.00	0.75	0.83	1.34	2.38	2.81	3/4"-14	3/8"	1.10	6000 (420)	20-30
1"	NTFF64-100	1.09	2.25	0.98	0.98	1.65	2.75	3.19	1"-11 1/2	7/16"	1.68	6000 (420)	40-50
1 1/4"	NTFF64-125	1.25	2.63	1.26	1.06	1.77	3.06	3.75	1 1/4"-11 1/2	1/2"	2.65	6000 (420)	80-90
1 1/2"	NTFF64-150	1.44	3.13	1.50	1.18	1.97	3.75	4.44	1 1/2"-11 1/2	5/8"	3.64	6000 (420)	110-120
2"	NTFF64-200	1.75	3.81	2.01	1.46	2.56	4.50	5.25	2"-11 1/2	3/4"	5.40	6000 (420)	120-130

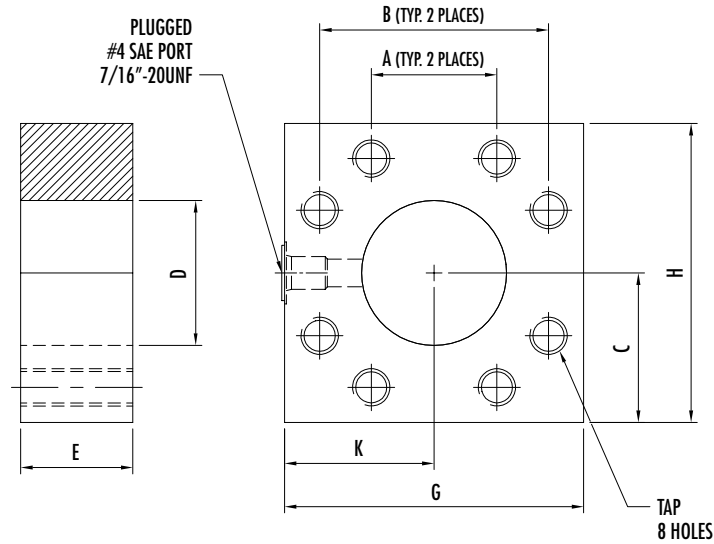
• NPTF PORT FORM PER ANSI-B2.1

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Adapter Plate

SAE Code 61 Flange Union Style



AP34 Adapter Plate - SAE Code 61 Flat Face With Tapped Holes

Complete with #4 SAE Port (Plugged)

Size	Adapter Plate Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	G	H	K			
1/2"	AP34-050-*	0.69	1.50	1.25	0.50	1.00	2.75	2.50	1.38	5/16"-18	1.66	5000 (350)
3/4"	AP34-075-*	0.88	1.88	1.50	0.75	1.00	3.00	3.00	1.50	3/8"-16	2.19	5000 (350)
1"	AP34-100-*	1.03	2.06	1.50	0.94	1.00	3.00	3.00	1.50	3/8"-16	2.15	5000 (350)
1 1/4"	AP34-125-*	1.19	2.31	1.50	1.25	1.25	3.00	3.00	1.50	7/16"-14	2.36	4000 (275)
1 1/2"	AP34-150-*	1.41	2.75	2.00	1.50	1.50	4.00	4.00	2.00	1/2"-13	5.40	3000 (210)
2"	AP34-200-*	1.69	3.06	2.00	1.94	1.50	4.00	4.00	2.00	1/2"-13	4.92	3000 (210)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PORT

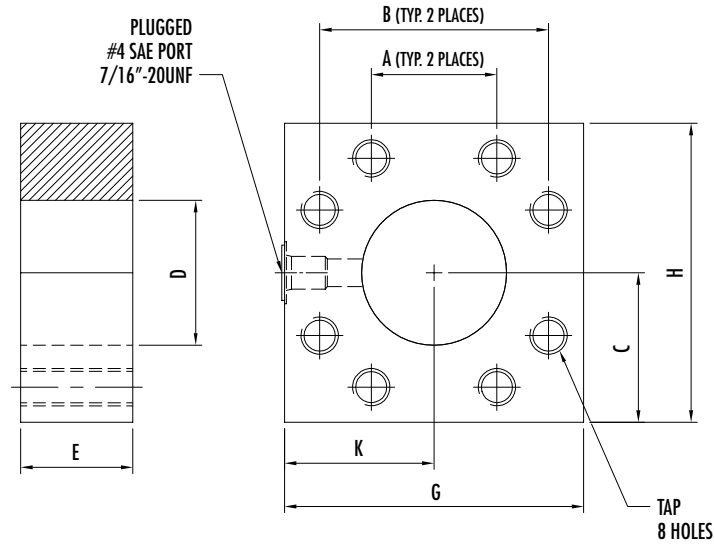
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Adapter Plate

SAE Code 62 Flange Union Style



AP64 Adapter Plate - SAE Code 62 Flat Face With Tapped Holes

Complete with #4 SAE Port (Plugged)

Size	Adapter Plate Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	G	H	K			
1/2"	AP64-050-*	0.72	1.59	1.25	0.50	1.00	2.75	2.50	1.38	5/16"-18	1.66	6000 (420)
3/4"	AP64-075-*	0.94	2.00	1.50	0.75	1.00	3.00	3.00	1.50	3/8"-16	2.19	6000 (420)
1"	AP64-100-*	1.09	2.25	1.50	0.94	1.25	3.00	3.00	1.50	7/16"-14	2.10	6000 (420)
1 1/4"	AP64-125-*	1.25	2.63	2.00	1.25	1.25	4.00	4.00	2.00	1/2"-13	5.40	6000 (420)
1 1/2"	AP64-150-*	1.44	3.13	2.00	1.50	1.50	4.00	4.00	2.00	5/8"-11	5.08	6000 (420)
2"	AP64-200-*	1.75	3.81	2.50	1.94	1.50	5.00	5.00	2.50	3/4"-10	8.10	6000 (420)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PORT

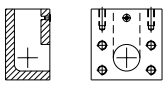
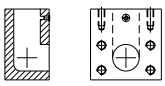
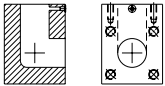
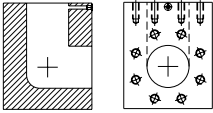
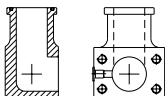
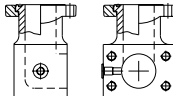
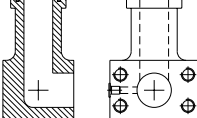
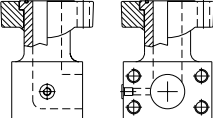
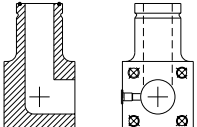
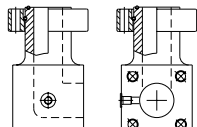
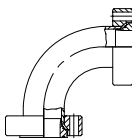
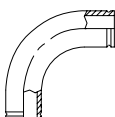
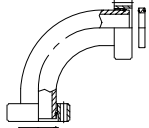
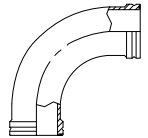
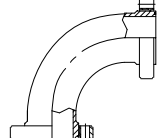

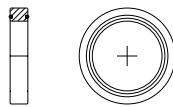
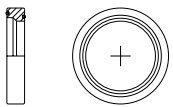
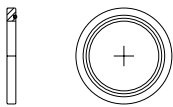
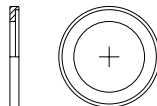
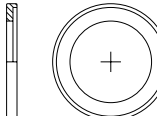
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Elbows - Visual Index



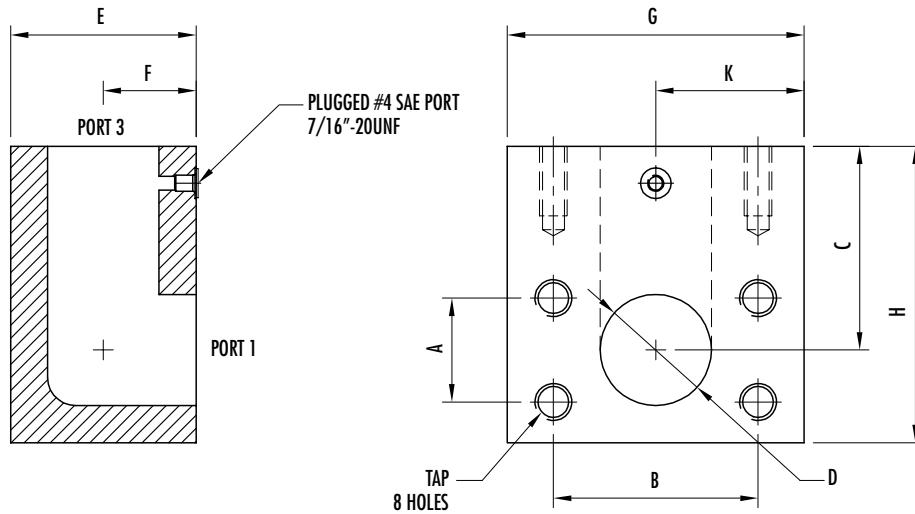
<p>BLOCK STYLE</p>	<p>BE34 SAE CODE 61</p>  <p>1/2" - 3" Page G3</p>	<p>BE64 SAE CODE 62</p>  <p>1/2" - 2" Page G3</p>	<p>BE74 ISO 6164</p>  <p>2 1/2" - 4" Page G4</p>	<p>BE48 TMI® 8-BOLT</p>  <p>5" - 8" Page G5</p>
<p>SPLIT FLANGE BLOCK STYLE</p>	<p>SFE34 SAE CODE 61</p>  <p>1/2" - 3" Page G6</p>	<p>A/SFE34 SAE CODE 61 ASSEMBLY</p>  <p>1/2" - 3" Page G7</p>	<p>SFE64 SAE CODE 62</p>  <p>1/2" - 2" Page G8</p>	<p>A/SFE64 SAE CODE 62 ASSEMBLY</p>  <p>1/2" - 2" Page G9</p>
<p>RETAIN RING FLANGE BLOCK STYLE</p>	<p>RE74 ISO 6164</p>  <p>2 1/2" - 4" Page G10</p>	<p>A/RE74 ISO 6164 ASSEMBLY</p>  <p>2 1/2" - 4" Page G11</p>	<p>FLARE FLANGE BENT STYLE</p>	<p>A/FFE FLARE FLANGE ELBOW ASSEMBLY</p>  <p>1/2" - 3" Page G12-13</p>
<p>RETAIN RING FLANGE BENT STYLE</p>	<p>RFE BODY ONLY</p>  <p>1 1/2" - 8" Page G14</p>	<p>A/RFE ASSEMBLY</p>  <p>1 1/2" - 8" Page G15</p>		
<p>LOW PRESSURE RETAIN RING FLANGE BENT STYLE</p>	<p>LRE LOW PRESSURE-BODY ONLY</p>  <p>2 1/2" - 8" Page G16</p>	<p>A/LRE LOW PRESSURE-ASSEMBLY</p>  <p>2 1/2" - 8" Page G17</p>		
<p>'O' RING SEAL RETAINERS</p>	<p>OS</p>  <p>1 1/2" - 4" Page G18</p>	<p>OSA</p>  <p>5" - 8" Page G18</p>	<p>OSS</p>  <p>4" Page G18</p>	<p>OSH OSHS</p>  <p>1 1/2" - 4" Page G19</p>
<p>'O' RING CONNECTOR PLATES</p>	<p>OCP CONNECTOR PLATE</p>  <p>1/2" - 4" Page G20</p>	<p>LOCP LOW PRESSURE-CONNECTOR PLATE</p>  <p>2 1/2" - 8" Page G21</p>		





Block Elbow

SAE Flange Style



BE34 Block Elbow - SAE Code 61 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Block Elbow Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	F	G	H	K			
1/2"	BE34-050-*	0.69	1.50	1.88	0.50	2.00	1.00	2.50	2.50	1.25	5/16"-18	3.10	5000 (350)
3/4"	BE34-075-*	0.88	1.88	2.25	0.75	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.78	5000 (350)
1"	BE34-100-*	1.03	2.06	2.25	0.94	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.52	5000 (350)
1 1/4"	BE34-125-*	1.19	2.31	2.75	1.25	2.25	1.13	3.00	4.00	1.50	7/16"-14	5.78	4000 (275)
1 1/2"	BE34-150-*	1.41	2.75	2.75	1.50	2.50	1.25	4.00	4.00	2.00	1/2"-13	8.42	3000 (210)
2"	BE34-200-*	1.69	3.06	3.00	1.94	3.00	1.50	4.00	4.50	2.00	1/2"-13	10.66	3000 (210)
2 1/2"	BE34-250-*	2.00	3.50	3.25	2.38	3.50	1.75	5.00	5.00	2.50	1/2"-13	17.65	2500 (175)
3"	BE34-300-*	2.44	4.19	3.75	2.88	4.00	2.00	5.50	6.00	2.75	5/8"-11	24.95	2000 (140)

BE64 Block Elbow - SAE Code 62 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Block Elbow Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	F	G	H	K			
1/2"	BE64-050-*	0.72	1.59	1.88	0.50	2.00	1.00	2.50	2.50	1.25	5/16"-18	3.10	6000 (420)
3/4"	BE64-075-*	0.94	2.00	2.25	0.75	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.74	6000 (420)
1"	BE64-100-*	1.09	2.25	2.50	0.94	2.25	1.13	3.00	4.00	1.50	7/16"-14	6.42	6000 (420)
1 1/4"	BE64-125-*	1.25	2.63	2.75	1.25	2.50	1.25	4.00	4.00	2.00	1/2"-13	9.18	6000 (420)
1 1/2"	BE64-150-*	1.44	3.13	3.00	1.50	3.00	1.50	4.00	4.50	2.00	5/8"-11	11.66	6000 (420)
2"	BE64-200-*	1.75	3.81	3.38	1.94	3.00	1.50	5.00	5.00	2.50	3/4"-10	14.97	6000 (420)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

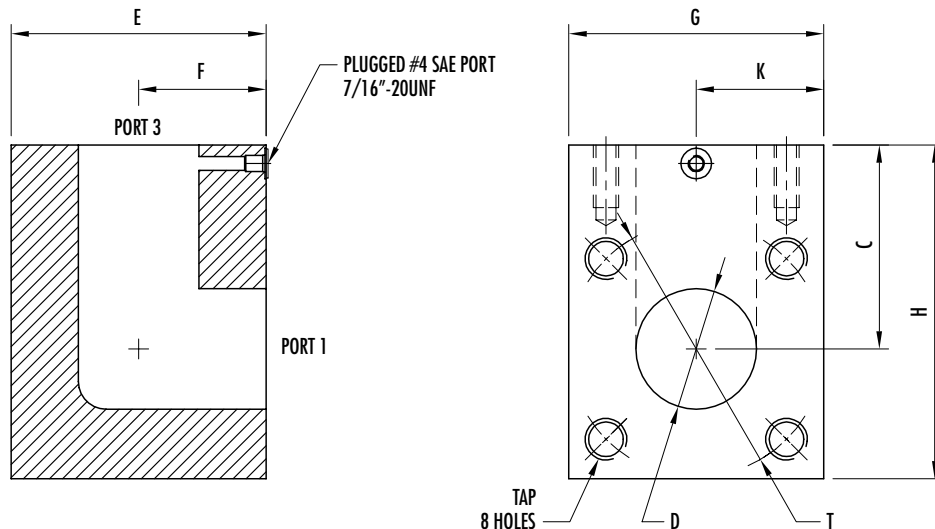
• OTHER BLOCK ELBOWS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Block Elbow

ISO 6164 Flange Style



BE74 Block Elbow - ISO 6164 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size	Block Elbow Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	E	F	G	H	K			
2 1/2"	BE74-250-*	4.65	4.13	2.38	5.00	2.50	5.00	6.50	2.50	3/4"-10	36.82	5800 (400)
3"	BE74-300-*	5.71	5.00	2.88	6.00	3.00	6.00	8.00	3.00	1"-8	65.40	5800 (400)
4"	BE74-400-*	6.89	5.50	3.50	7.00	3.50	7.00	9.00	3.50	1 1/8"-7	92.60	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

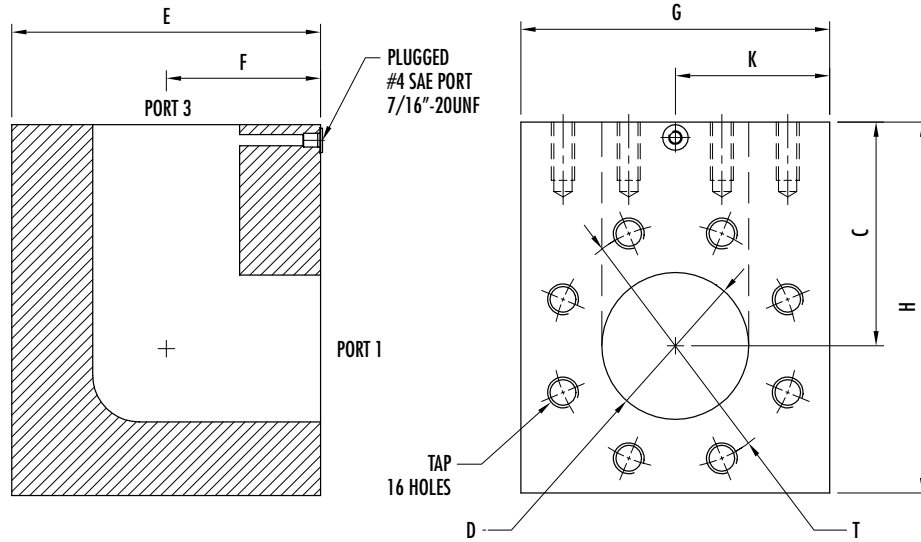
• OTHER BLOCK ELBOWS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Block Elbow

TMI® 8-Bolt Flange Style



BE48 Block Elbow - TMI® 8-Bolt Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

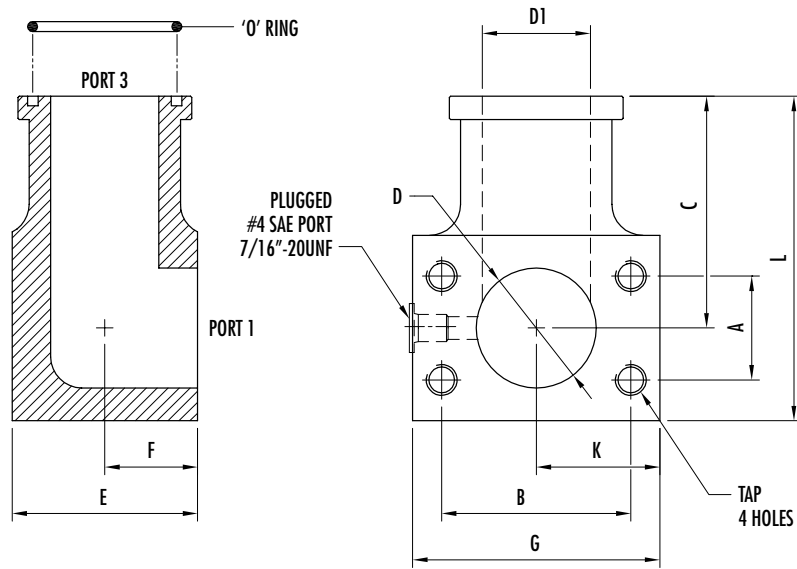
Size	Block Elbow Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	E	F	G	H	K			
5"	BE48-500-*	7.88	7.13	4.00	9.75	4.88	9.75	12.00	4.88	1"-8	274.50	4000 (275)
6"	BE48-600-*	9.65	8.00	4.90	11.88	5.94	11.88	14.00	5.94	1 1/8"-7	475.10	3700 (255)
8"	BE48-800-*	12.40	10.25	6.81	15.00	7.50	15.00	18.00	7.50	1 1/2"-6	980.00	3500 (240)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
 - * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG
 - OTHER BLOCK ELBOWS ARE AVAILABLE (CONSULT FACTORY)
- MATERIAL:** CARBON STEEL, PRIME PAINTED, (STAINLESS STEEL AVAILABLE)



Split Flange Elbow

SAE Code 61 Flange Style - Body Only



SFE34 Split Flange Elbow - SAE Code 61 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Elbow Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFE34-050-*	0.69	1.50	2.50	0.50	0.38	2.00	1.00	2.50	1.25	3.50	5/16"-18	OR*-2-210	2.87	5000 (350)
3/4"	SFE34-075-*	0.88	1.88	2.75	0.75	0.63	2.00	1.00	3.00	1.50	3.75	3/8"-16	OR*-2-214	3.42	5000 (350)
1"	SFE34-100-*	1.03	2.06	2.75	0.94	0.88	2.00	1.00	3.00	1.50	3.75	3/8"-16	OR*-2-219	3.45	5000 (350)
1 1/4"	SFE34-125-*	1.19	2.31	3.13	1.25	1.13	2.25	1.13	3.00	1.50	4.25	7/16"-14	OR*-2-222	3.89	4000 (275)
1 1/2"	SFE34-150-*	1.41	2.75	3.25	1.50	1.38	2.50	1.25	4.00	2.00	4.50	1/2"-13	OR*-2-225	6.11	3000 (210)
2"	SFE34-200-*	1.69	3.06	3.50	1.94	1.88	3.00	1.50	4.00	2.00	5.00	1/2"-13	OR*-2-228	8.00	3000 (210)
2 1/2"	SFE34-250-*	2.00	3.50	4.00	2.38	2.38	3.50	1.75	4.50	2.25	5.75	1/2"-13	OR*-2-232	11.50	2500 (175)
3"	SFE34-300-*	2.44	4.19	4.50	2.88	2.88	4.00	2.00	5.50	2.75	6.50	5/8"-11	OR*-2-237	18.04	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

- OTHER SPLIT FLANGE ELBOWS ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G7
- FOR SPLIT FLANGES REFERENCE PAGE N20

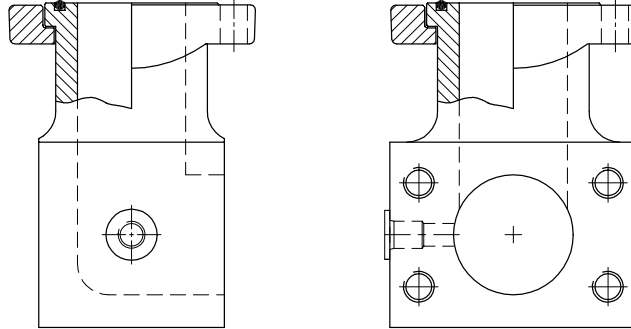
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Elbow Assembly

SAE Code 61 Flange Style

Typical A/SFE34 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 61 SPLIT FLANGE ELBOW BODY (REF. PAGE G6)
- ONE SET (2 HALVES) SAE CODE 61 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) Buna 'O' RING (STANDARD)
- ONE (1) COMPONENT BOLT KIT

A/SFE34 Split Flange Elbow - SAE Code 61 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFE34-050-*	3.25
3/4"	A/SFE34-075-*	3.99
1"	A/SFE34-100-*	4.10
1 1/4"	A/SFE34-125-*	4.78
1 1/2"	A/SFE34-150-*	7.55
2"	A/SFE34-200-*	9.56
2 1/2"	A/SFE34-250-*	13.64
3"	A/SFE34-300-*	21.69

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

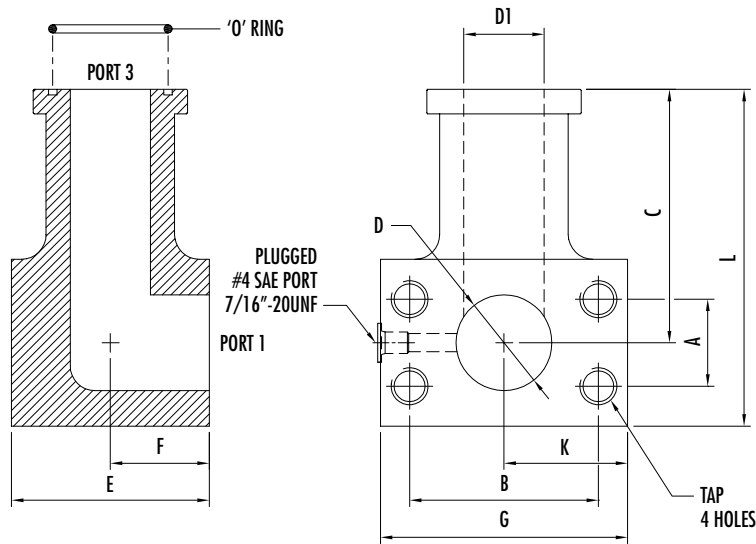
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Elbow

SAE Code 62 Flange Style - Body Only



SFE64 Split Flange Elbow - SAE Code 62 Flat Face With Tapped Holes

Complete With Buna 'O' Ring and #4 SAE Port (Plugged)

Size	Elbow Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFE64-050-*	0.72	1.59	2.75	0.50	0.38	2.00	1.00	2.50	1.25	3.75	5/16"-18	OR*-2-210	2.91	6000 (420)
3/4"	SFE64-075-*	0.94	2.00	3.00	0.75	0.63	2.00	1.00	3.00	1.50	4.00	3/8"-16	OR*-2-214	3.53	6000 (420)
1"	SFE64-100-*	1.09	2.25	3.38	0.94	0.88	2.25	1.13	3.00	1.50	4.50	7/16"-14	OR*-2-219	4.40	6000 (420)
1 1/4"	SFE64-125-*	1.25	2.63	3.50	1.25	1.13	2.50	1.25	4.00	2.00	4.75	1/2"-13	OR*-2-222	6.52	6000 (420)
1 1/2"	SFE64-150-*	1.44	3.13	4.25	1.50	1.38	3.00	1.50	4.00	2.00	5.75	5/8"-11	OR*-2-225	9.40	6000 (420)
2"	SFE64-200-*	1.75	3.81	4.75	1.94	1.88	3.00	1.50	5.00	2.50	6.25	3/4"-10	OR*-2-228	11.78	6000 (420)

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING
- OTHER SPLIT FLANGE ELBOWS ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G9
- FOR SPLIT FLANGES REFERENCE PAGE N20

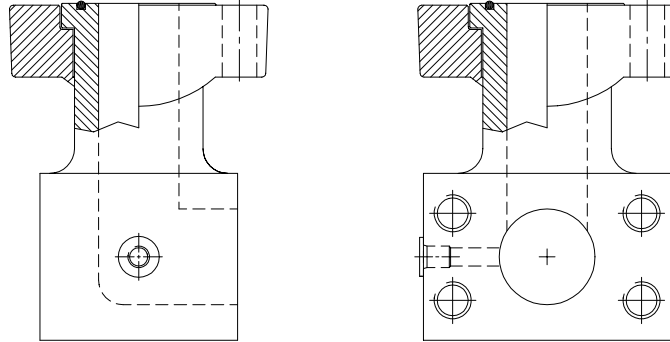
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Elbow Assembly

SAE Code 62 Flange Style

Typical A/SFE64 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 62 SPLIT FLANGE ELBOW BODY (REF. PAGE G8)
- ONE SET (2 HALVES) SAE CODE 62 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) BUNA 'O' RING (STANDARD)
- ONE (1) COMPONENT BOLT KIT

A/SFE64 Split Flange Elbow - SAE Code 62 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFE64-050-*	3.46
3/4"	A/SFE64-075-*	4.46
1"	A/SFE64-100-*	5.86
1 1/4"	A/SFE64-125-*	8.78
1 1/2"	A/SFE64-150-*	13.31
2"	A/SFE64-200-*	18.26

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

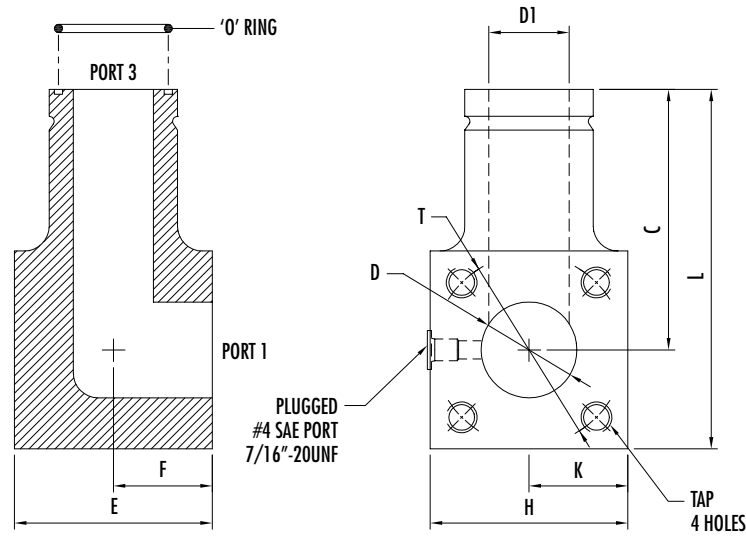
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Elbow

ISO 6164 Flange Style - Body Only



RE74 Retain Ring Flange Elbow - ISO 6164 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Elbow Part No.	Dimensions (in)									Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	D1	E	F	H	K	L				
2 1/2"	RE74-250-*	4.65	6.75	2.38	2.25	5.00	2.50	5.00	2.50	9.25	3/4"-10	OR*-2-232	31.37	5800 (400)
3"	RE74-300-*	5.71	8.00	2.88	2.75	6.00	3.00	6.00	3.00	11.00	1"-8	OR*-2-237	44.26	5800 (400)
4"	RE74-400-*	6.89	8.50	3.50	3.25	7.00	3.50	7.00	3.50	12.00	1 1/8"-7	OR*-2-241	81.02	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19

• OTHER RETAIN RING FLANGE ELBOWS ARE AVAILABLE (CONSULT FACTORY)

• TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G11

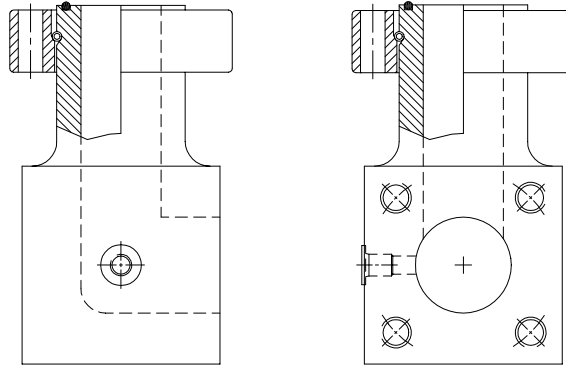
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Elbow Assembly

ISO 6164 Flange Style

Typical A/RE74 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ISO 6164 RETAIN RING FLANGE ELBOW BODY (REF. PAGE G10)
- ONE (1) ISO 6164 RETAIN RING FLANGE (REF. PAGE C10)
- ONE (1) RETAIN RING
- ONE (1) BUNA 'O' RING (STANDARD)

A/RE74 Retain Ring Flange Elbow - ISO 6164 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
2 1/2"	A/RE74-250-*	36.16
3"	A/RE74-300-*	52.14
4"	A/RE74-400-*	95.43

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

- ♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Flare Flange Elbow Assembly

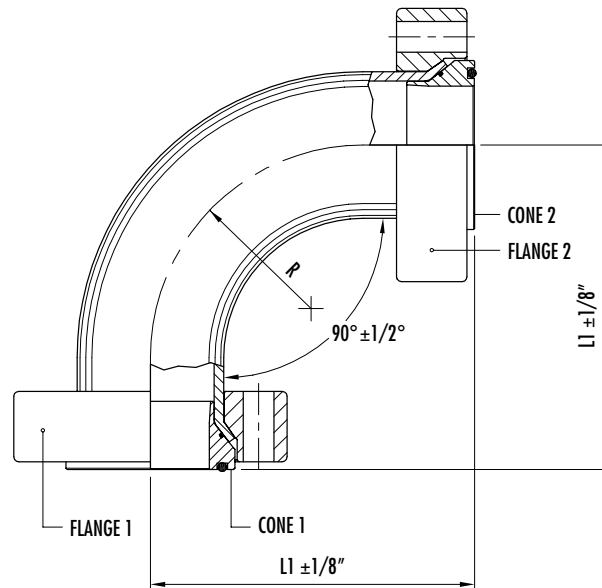
Short Radius Bent Elbow

Typical A/FFE Assembly

For field bent pipe assemblies
Ref. page B22

COMPLETE ASSEMBLY CONSISTS OF:

- FLARE FLANGE 90° ELBOW BODY
- TWO (2) FLARE FLANGES
- TWO (2) CONES
(REF. PGS B12-B15 FOR TYPE OF CONE)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL



PART NO. (EXAMPLE): A/FFE - SCH40-050 - FC34 - FC34 - CO - CO

FFE Flare Flange Elbow Body

Size	Dimensions (in)		WT. *(Body Only) lbs/pc		Working Pressure *(Body Only) PSI (bar)	
	L1	R	SCH 40	SCH 80	SCH 40	SCH 80
1/2"	5.00	2.625	0.63	0.81	6000 (420)	6000 (420)
3/4"	5.00	3.125	0.81	1.06	5000 (350)	6000 (420)
1"	5.00	2.625	1.24	1.60	4700 (325)	6000 (420)
1 1/4"	6.00	3.375	2.00	2.63	3900 (270)	6000 (420)
1 1/2"	6.50	3.815	2.57	3.45	3500 (240)	6000 (420)
2"	8.00	4.750	4.23	5.82	2900 (200)	5800 (400)
2 1/2"	11.00	7.500	9.08	12.01	2600 (180)	4500 (310)
3"	12.50	9.000	13.30	18.02	2300 (160)	3900 (270)

* BODY ONLY CONSISTS OF BENT FLARED PIPE SECTION AND CONES. FOR TOTAL ASSEMBLY WEIGHT, ADD APPROPRIATE FLANGE WEIGHTS TO BODY WEIGHT.

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G13
- OTHER RADII AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)

• REDUCING FLANGES AND CONES ARE AVAILABLE (REFERENCE PAGES B16-B19)

FOR FLARE FLANGE ASSEMBLIES UTILIZING REDUCING FLANGES AND CONES ADD (R) TO FLANGE AND CONE CODE NUMBERS.

ie. SAE code 61 flare flange with clearance holes - code number FC34 would be FCR34-(flange size)

REDUCING PART NO. (EXAMPLE): A/FFE - SCH40-050 - FCR34-075 - FC34 - COR - CO

Consult factory for ordering assistance



Flare Flange Elbow Assembly

Complete Assembly Part Number

Code		A	/	FFE	-	Body & Cone Material	-	Size & Schedule	-	Flange 1	-	Flange 2	-	Cone 1	-	Cone 2	-	Options	
Assembly		A																	
Flare Flange Elbow		FFE																	
Body & Cone Material Carbon Steel (Standard) Ref. page (G12)	No Designation Required																		
Body & Cone Material Stainless Steel (Optional) Ref. page (B7)	TMP304SS	304																	
	TMP316SS	316																	
	†TMP2205SS	2205																	
Body Size & Schedule	1/2"	SCH40-050 SCH80-050																	
	3/4"	SCH40-075 SCH80-075																	
	1"	SCH40-100 SCH80-100																	
	1 1/4"	SCH40-125 SCH80-125																	
	1 1/2"	SCH40-150 SCH80-150																	
	2"	SCH40-200 SCH80-200																	
	2 1/2"	SCH40-250 SCH80-250																	
	3"	SCH40-300 SCH80-300																	
	Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (B8-B11)	FFC34 SAE Code 61 W/Clearance Holes	FC34																
		*FFT34 SAE Code 61 W/Tapped Holes	FT34																
FFC64 SAE Code 62 W/Clearance Holes		FC64																	
*FFT64 SAE Code 62 W/Tapped Holes		FT64																	
FFC74 ISO 6164 W/Clearance Holes		FC74																	
**FFC49 TMI® 9-Bolt W/Clearance Holes		FC49																	
Cone Type Ref. pages (B12-B15)	Cone - Flat Face	CF																	
	Cone - 'O' Ring Face	CO																	
Options	Viton	V																	
	Painted (Specify)	P																	
Complete Stainless Steel Assembly: (including flanges)	SS																		

† TMP2205SS PIPE IS ONLY AVAILABLE IN 1 1/4" - 2" SCHEDULE 80 SIZES

** FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REF. PAGE P10)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

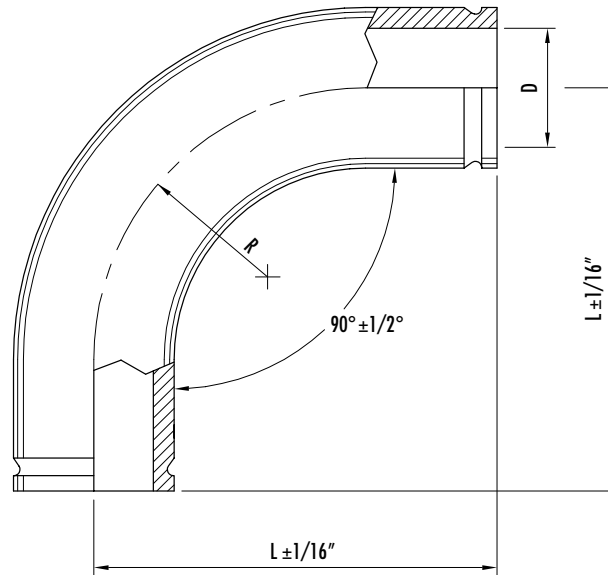
PART NO. (EXAMPLE): A/FFE - SCH40-050 - FC34 - FC34 - CO - CO

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Retain Ring Flange Elbow

Long Radius Bent Elbow - Body Only



RFE Retain Ring Flange Elbow - Body Only

Size	Body Only Part No.	Dimensions (in)			WT. (Body Only) lbs/pc	Working Pressure (Body Only) PSI (bar)
		L	R	D		
1 1/2"	RFE-150	12.50	8.25	1.54	11.50	6000 (420)
2"	RFE-200	14.00	9.50	1.93	15.59	6000 (420)
2 1/2"	RFE-250	17.00	12.50	2.36	26.67	5800 (400)
3"	RFE-300	20.00	15.00	2.88	45.80	5800 (400)
4"	RFE-400	25.00	20.00	3.35	83.51	5800 (400)
5"	RFE-500	25.00	20.00	4.06	121.49	4000 (275)
6"	RFE-600	30.00	24.00	4.90	206.32	3700 (255)
8"	RFE-800	40.00	32.00	6.81	391.35	3500 (240)

- OTHER RADII AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G15

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE - CONSULT FACTORY)



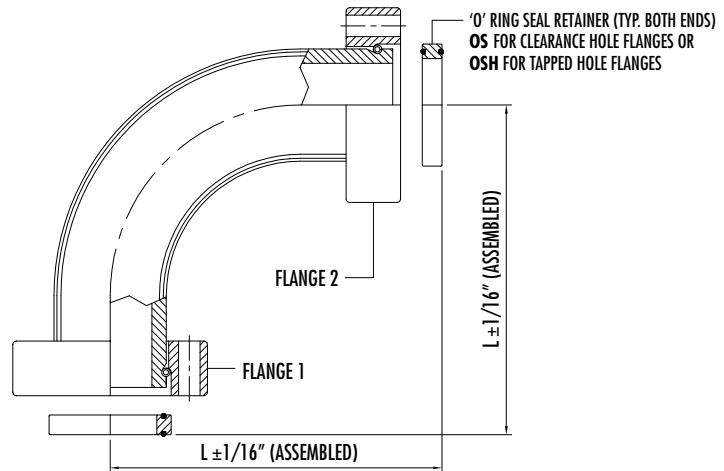
Retain Ring Flange Elbow Assembly

Complete Assembly Part Number

Typical A/RFE Assembly

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) RETAIN RING FLANGE ELBOW BODY (REF. PAGE G14)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C12)
- TWO (2) RETAIN RINGS
- TWO (2) 'O' RING SEAL RETAINERS (REF. PAGES G18-G19)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (1 1/2" - 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4" - 8")



Code		A	/	RFE	-	Body Material	-	Size	-	Flange 1	-	Flange 2	-	Options
Assembly		A												
Retain Ring Flange Elbow		RFE												
Body Material Carbon Steel (Standard)	No Designation Required													
Body Material Stainless Steel (Optional) Ref. page (C7)	TMP304SS	304												
	TMP316SS	316												
Body Size	1 1/2"	150												
	2"	200												
	2 1/2"	250												
	3"	300												
	4"	400												
	5"	500												
	6"	600												
	8"	800												
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C12)	RFC34 SAE Code 61 W/Clearance Holes	FC34												
	*RFT34 SAE Code 61 W/Tapped Holes	FT34												
	RFC64 SAE Code 62 W/Clearance Holes	FC64												
	*RFT64 SAE Code 62 W/Tapped Holes	FT64												
	RFC74 ISO 6164 W/Clearance Holes	FC74												
	RFAC48 TMI® 8-Bolt W/Clearance Holes	FAC48												
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49												
	**RFAC49 TMI® 9-Bolt W/Clearance Holes	FAC49												
Options	Viton	V												
	Painted (Specify)	P												
♦ Complete Stainless Steel Assembly: (including flanges, 'O' Ring seal retainers)		SS												

L Dimension will vary if OSH 'O' Ring Seal Retainer is used. (reference page G19)

Size	Dimensions (in)
	L (OS/OSA)
1 1/2"	13.00
2"	14.50
2 1/2"	18.00
3"	21.00
4"	26.00
5"	26.50
6"	31.50
8"	41.50

- ♦ STAINLESS STEEL IS AVAILABLE (CONSULT FACTORY)
- ** FOR USE ONLY WITH 9-BOLT BALL VALVE CONNECTION (REFERENCE PAGE P10)
- * NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS (SUPPLIED WITH OSH STYLE 'O' RING SEAL RETAINER)

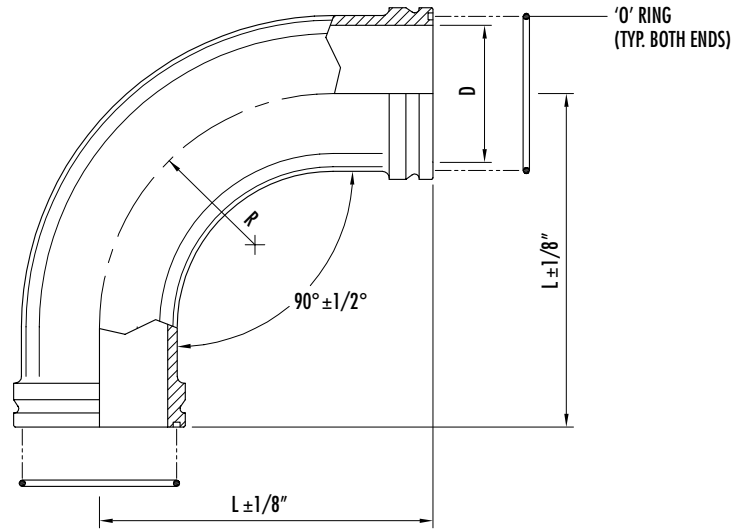
PART NO. (EXAMPLE):
A/RFE - 250 - FC34 - FC34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGE INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KITS - REFERENCE SECTION R



Low Pressure Retain Ring Flange Elbow

Body Only



LRE Low Pressure Retain Ring Flange Elbow - Body Only (segmentally welded)

Complete with Buna 'O' Rings (Standard)

Size	Elbow Body Part No.	Dimensions (in)			'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	R	D			
2 1/2"	LRE-250-*	5.22	3.75	2.47	OR*-2-232	5.29	750 (52)
3"	LRE-300-*	6.17	4.50	3.07	OR*-2-237	7.85	750 (52)
4"	LRE-400-*	7.67	6.00	4.03	OR*-2-245	13.24	750 (52)
5"	LRE-500-*	9.36	7.50	5.05	OR*-2-253	22.14	750 (52)
6"	LRE-600-*	11.06	9.00	6.07	OR*-2-259	35.37	700 (48)
8"	LRE-800-*	14.45	12.00	7.98	OR*-2-372	69.95	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE G17
- ELBOW BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)

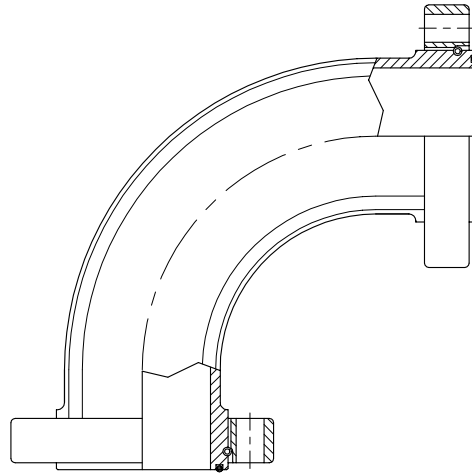
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Elbow Assembly

Complete Assembly Part Number

Typical A/LRE Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE ELBOW BODY
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- TWO (2) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRE Low Pressure Retain Ring Flange Elbow Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LRE-250-*	9.62	750 (52)
3"	A/LRE-300-*	11.65	750 (52)
4"	A/LRE-400-*	19.85	750 (52)
5"	A/LRE-500-*	30.75	750 (52)
6"	A/LRE-600-*	45.17	700 (48)
8"	A/LRE-800-*	89.20	600 (40)

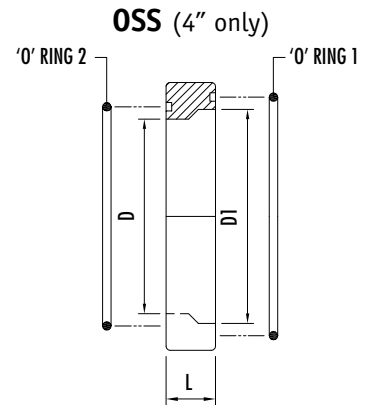
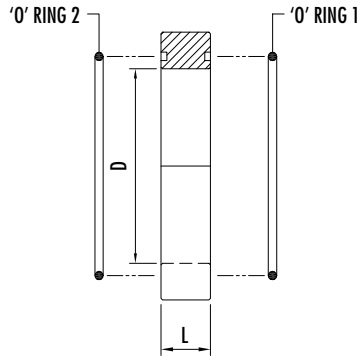
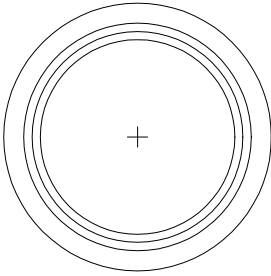
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



'O' Ring Seal Retainer

OS/OSA



OS 'O' Ring Seal Retainer for Retain Ring Pipe - 1 1/2" - 4"

Complete with Buna 'O' Rings (Standard)

OSA 'O' Ring Seal Retainer for Retain Ring Pipe - 5" - 8"

Complete with Buna 'O' Rings (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Rings 1&2 (Buna) Part No.	WT. lbs/pc
		D	L		
1 1/2"	OS-150-*	1.54	0.50	OR*-3-924	0.24
2"	OS-200-*	1.93	0.50	OR*-3-928	0.29
2 1/2"	OS-250-*	2.36	1.00	OR*-2-232	0.53
3"	OS-300-*	2.88	1.00	OR*-2-237	0.78
4"	OS-400-*	3.35	1.00	OR*-2-241	1.22
5"	OSA-500-*	4.06	1.50	OR*-2-353	5.73
6"	OSA-600-*	4.90	1.50	OR*-2-359	6.80
8"	OSA-800-*	6.81	1.50	OR*-2-368	10.34

• FOR SIZES 10" OR LARGER CONSULT FACTORY

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

♦ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSS-400 (SEE BELOW)

OSS 'O' Ring Seal Retainer for Retain Ring Pipe - 4"

For use with Retain Ring Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)

Complete with Buna 'O' Rings (Standard)

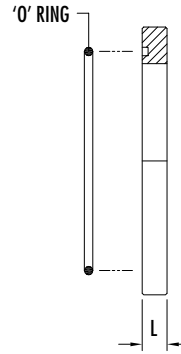
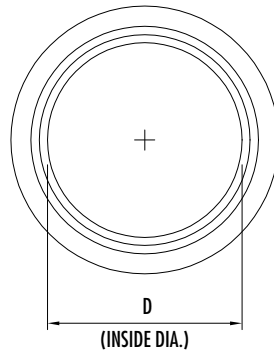
Size	Retainer Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	D1	L			
4"	OSS-400-*	3.35	3.80	1.00	OR*-2-243	OR*-2-241	1.22

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Seal Retainer



OSH 'O' Ring Seal Retainer for Retain Ring Pipe Complete with Buna 'O' Ring (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
1 1/2"	OSH-150-*	1.54	0.25	OR*-3-924	0.12
2"	OSH-200-*	1.93	0.25	OR*-3-928	0.15
2 1/2"	OSH-250-*	2.36	0.50	OR*-2-232	0.26
3"	OSH-300-*	2.88	0.50	OR*-2-237	0.39
4"	OSH-400-*	3.35	0.50	OR*-2-241	0.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

♦ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 (SEE BELOW)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

OSHS 'O' Ring Seal Retainer for Retain Ring Component - 4"

For use with Retain Ring Component Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)
Complete with Buna 'O' Ring (Standard)

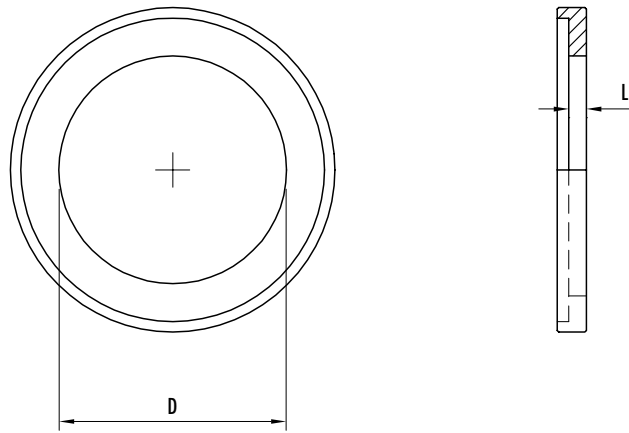
Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
4"	OSHS-400-*	3.80	0.50	OR*-2-243	0.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Connector Plate



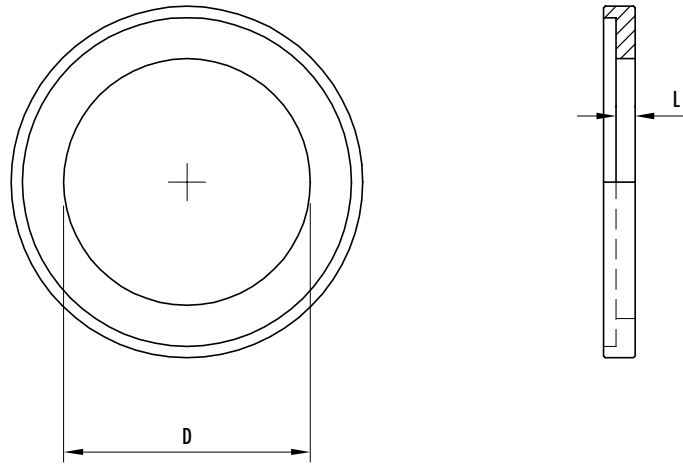
OCP 'O' Ring Connector Plate

Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
1/2"	OCP-050	0.50	0.13	0.04
3/4"	OCP-075	0.75	0.13	0.06
1"	OCP-100	0.94	0.13	0.07
1 1/4"	OCP-125	1.20	0.13	0.08
1 1/2"	OCP-150	1.50	0.13	0.11
2"	OCP-200	1.94	0.13	0.13
2 1/2"	OCP-250	2.36	0.13	0.17
3"	OCP-300	2.88	0.13	0.25
4"	OCP-400	3.35	0.13	0.34

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure 'O' Ring Connector Plate



LOCP Low Pressure 'O' Ring Connector Plate

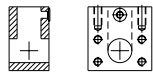
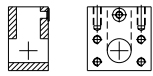
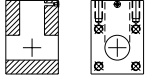
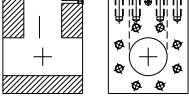
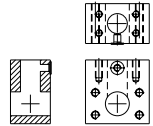
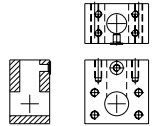
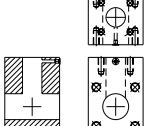
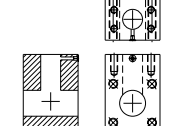
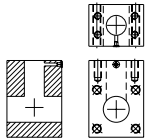
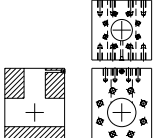
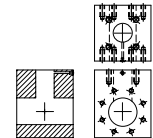
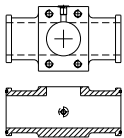
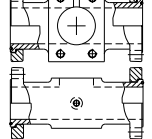
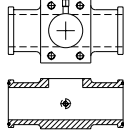
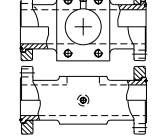
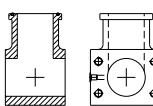
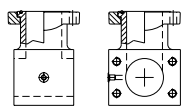
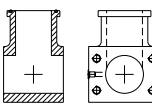
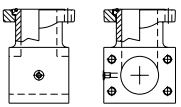
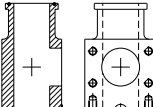
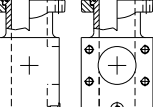
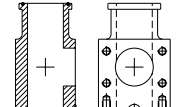
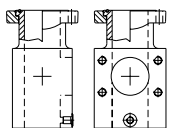
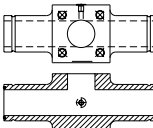
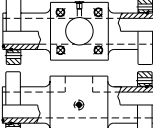
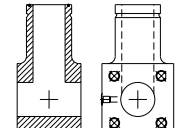
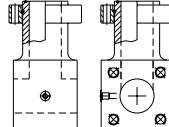
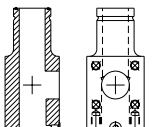
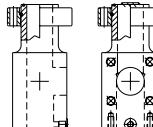
Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
2 1/2"	LOCP-250	2.47	0.13	0.15
3"	LOCP-300	3.07	0.13	0.21
4"	LOCP-400	4.03	0.13	0.32
5"	LOCP-500	5.05	0.19	0.58
6"	LOCP-600	6.07	0.19	0.79
8"	LOCP-800	7.98	0.19	1.35

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



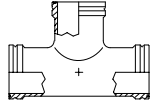
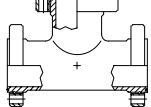
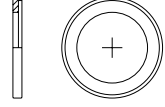
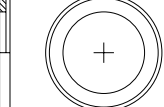


Tees - Visual Index (page 1 of 2)

<p>BLOCK STYLE</p>	<p>BT34 SAE CODE 61</p>  <p>1/2" - 3" Page H3</p>	<p>BT64 SAE CODE 62</p>  <p>1/2" - 2" Page H3</p>	<p>BT74 ISO 6164</p>  <p>2 1/2" - 4" Page H4</p>	<p>BT48 TMI® 8-BOLT</p>  <p>5" - 8" Page H5</p>
<p>REDUCING BRANCH BLOCK STYLE</p>	<p>BTR34 SAE CODE 61</p>  <p>1/2" - 3" Page H6</p>	<p>BTR64 SAE CODE 62</p>  <p>1/2" - 2" Page H7</p>	<p>BTR74 ISO 6164</p>  <p>2 1/2" - 4" Page H8</p>	<p>BTR7-34 ISO 6164/SAE CODE 61</p>  <p>2" - 4" Page H9</p>
<p>BTR7-64 ISO 6164/SAE CODE 62</p>  <p>2" - 4" Page H9</p>	<p>BTR48 TMI® 8-BOLT</p>  <p>5" - 8" Page H10</p>	<p>BTR4-74 TMI® 8-BOLT/ISO 6164</p>  <p>4" - 8" Page H11</p>	<p>SPLIT FLANGE BLOCK STYLE</p>	<p>SFT34 SAE CODE 61 BODY ONLY</p>  <p>1/2" - 3" Page H12</p>
<p>A/SFT34 SAE CODE 61 ASSEMBLY</p>  <p>1/2" - 3" Page H13</p>	<p>SFT64 SAE CODE 62 BODY ONLY</p>  <p>1/2" - 2" Page H14</p>	<p>A/SFT64 SAE CODE 62 ASSEMBLY</p>  <p>1/2" - 2" Page H15</p>	<p>SFBT34 SAE CODE 61 BODY ONLY</p>  <p>1/2" - 3" Page H16</p>	<p>A/SFBT34 SAE CODE 61 ASSEMBLY</p>  <p>1/2" - 3" Page H17</p>
<p>SFBT64 SAE CODE 62 BODY ONLY</p>  <p>1/2" - 2" Page H18</p>	<p>A/SFBT64 SAE CODE 62 ASSEMBLY</p>  <p>1/2" - 2" Page H19</p>	<p>SFRT34 SAE CODE 61 BODY ONLY</p>  <p>1/2" - 3" Page H20</p>	<p>A/SFRT34 SAE CODE 61 ASSEMBLY</p>  <p>1/2" - 3" Page H21</p>	<p>SFRT64 SAE CODE 62 BODY ONLY</p>  <p>1/2" - 2" Page H22</p>
<p>A/SFRT64 SAE CODE 62 ASSEMBLY</p>  <p>1/2" - 2" Page H23</p>	<p>RETAIN RING FLANGE BLOCK STYLE</p>	<p>RT74 ISO 6164 BODY ONLY</p>  <p>2 1/2" - 4" Page H24</p>	<p>A/RT74 ISO 6164 ASSEMBLY</p>  <p>2 1/2" - 4" Page H25</p>	<p>RBT74 ISO 6164 BODY ONLY</p>  <p>2 1/2" - 4" Page H26</p>
<p>A/RBT74 ISO 6164 ASSEMBLY</p>  <p>2 1/2" - 4" Page H27</p>	<p>RRT74 ISO 6164 BODY ONLY</p>  <p>2 1/2" - 4" Page H28</p>	<p>A/RRT74 ISO 6164 ASSEMBLY</p>  <p>2 1/2" - 4" Page H29</p>		



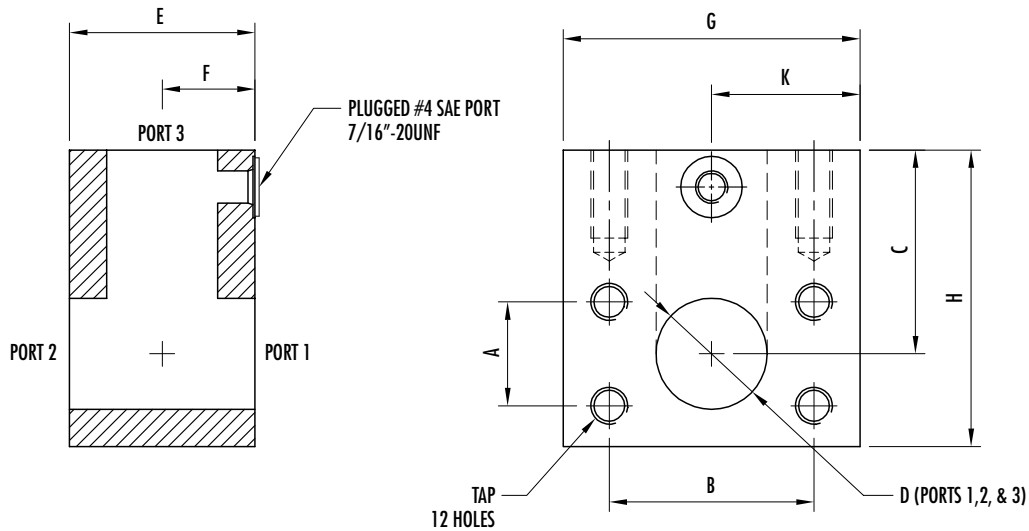
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<p>LOW PRESSURE RETAIN RING FLANGE STYLE</p>	<p>LRT BODY ONLY</p>  <p>2 1/2" - 8" Page H30</p>	<p>A/LRT ASSEMBLY</p>  <p>2 1/2" - 8" Page H31</p>		
<p>'O' RING CONNECTOR PLATES</p>	<p>OCP CONNECTOR PLATE</p>  <p>1/2" - 4" Page H32</p>	<p>LOCP LOW PRESSURE-CONNECTOR PLATE</p>  <p>2 1/2" - 8" Page H33</p>		



Block Tee

SAE Flange Style



BT34 Block Tee - SAE Code 61 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	F	G	H	K			
1/2"	BT34-050-*	0.69	1.50	1.88	0.50	2.00	1.00	2.50	2.50	1.25	5/16"-18	3.05	5000 (350)
3/4"	BT34-075-*	0.88	1.88	2.25	0.75	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.71	5000 (350)
1"	BT34-100-*	1.03	2.06	2.25	0.94	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.41	5000 (350)
1 1/4"	BT34-125-*	1.19	2.31	2.75	1.25	2.25	1.13	3.00	4.00	1.50	7/16"-14	5.66	4000 (275)
1 1/2"	BT34-150-*	1.41	2.75	2.75	1.50	2.50	1.25	4.00	4.00	2.00	1/2"-13	8.25	3000 (210)
2"	BT34-200-*	1.69	3.06	3.00	1.94	3.00	1.50	4.00	4.50	2.00	1/2"-13	10.13	3000 (210)
2 1/2"	BT34-250-*	2.00	3.50	3.25	2.38	3.50	1.75	5.00	5.00	2.50	1/2"-13	16.63	2500 (175)
3"	BT34-300-*	2.44	4.19	3.75	2.88	4.00	2.00	5.50	6.00	2.75	5/8"-11	23.65	2000 (140)

BT64 Block Tee - SAE Code 62 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	F	G	H	K			
1/2"	BT64-050-*	0.72	1.59	1.88	0.50	2.00	1.00	2.50	2.50	1.25	5/16"-18	3.05	6000 (420)
3/4"	BT64-075-*	0.94	2.00	2.25	0.75	2.00	1.00	3.00	3.25	1.50	3/8"-16	4.66	6000 (420)
1"	BT64-100-*	1.09	2.25	2.50	0.94	2.25	1.13	3.00	4.00	1.50	7/16"-14	6.20	6000 (420)
1 1/4"	BT64-125-*	1.25	2.63	2.75	1.25	2.50	1.25	4.00	4.00	2.00	1/2"-13	8.86	6000 (420)
1 1/2"	BT64-150-*	1.44	3.13	3.00	1.50	3.00	1.50	4.00	4.50	2.00	5/8"-11	11.04	6000 (420)
2"	BT64-200-*	1.75	3.81	3.38	1.94	3.00	1.50	5.00	5.00	2.50	3/4"-10	14.41	6000 (420)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

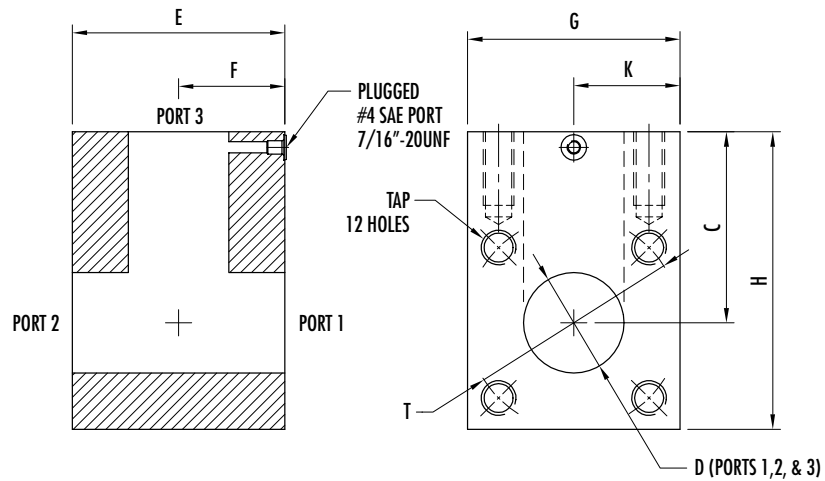
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Block Tee

ISO 6164 Flange Style



BT74 Block Tee - ISO 6164 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	E	F	G	H	K			
2 1/2"	BT74-250-*	4.65	4.00	2.38	5.00	2.50	5.00	6.50	2.50	3/4"-10	33.60	5800 (400)
3"	BT74-300-*	5.71	5.00	2.88	6.00	3.00	6.00	8.00	3.00	1"-8	58.30	5800 (400)
4"	BT74-400-*	6.89	5.50	3.50	7.00	3.50	7.00	9.00	3.50	1 1/8"-7	86.00	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

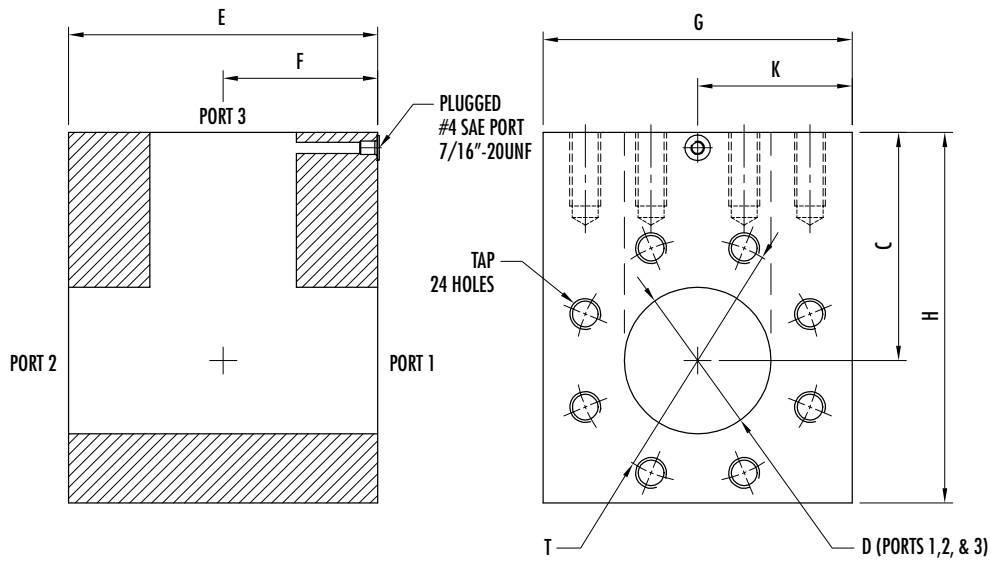
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Block Tee

TMI® 8-Bolt Flange Style



BT48 Block Tee - TMI® 8-Bolt Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

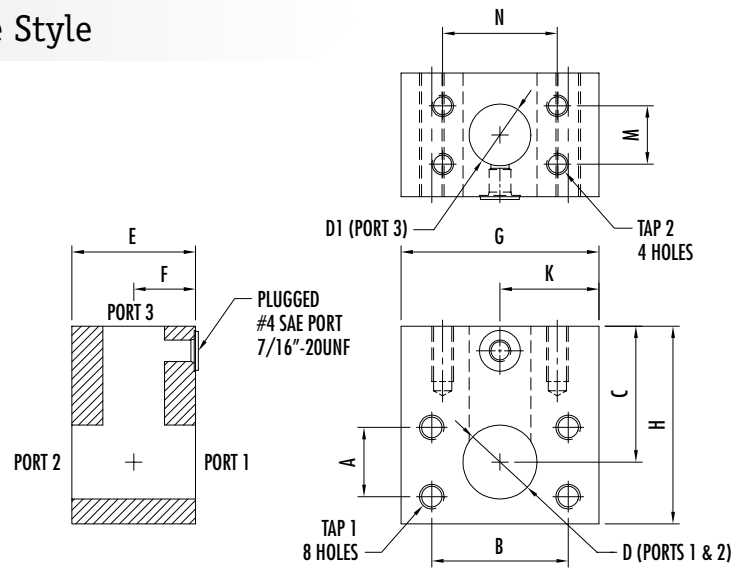
Size	Tee Part No.	Dimensions (in)								Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	E	F	G	H	K			
5"	BT48-500-*	7.88	7.13	4.00	9.75	4.88	9.75	12.00	4.88	1"-8	257.00	4000 (275)
6"	BT48-600-*	9.65	8.00	4.90	11.88	5.94	11.88	14.00	5.94	1 1/8"-7	456.00	3700 (255)
8"	BT48-800-*	12.40	10.25	6.81	15.00	7.50	15.00	18.00	7.50	1 1/2"-6	940.00	3500 (240)

- FOR SIZES 10" OR LARGER CONSULT FACTORY
 - * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG
 - OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)
- MATERIAL:** CARBON STEEL, PRIME PAINTED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

SAE Code 61 Flange Style



BTR34 Reducing Branch Block Tee - SAE Code 61 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)											Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	
		A	B	C	D	D1	E	F	G	H	K	M					N
3/4"x1/2"	BTR34-075x050-*	0.88	1.88	2.25	0.75	0.50	2.00	1.00	3.00	3.25	1.50	0.69	1.50	3/8"-16	5/16"-18	5.00	5000 (350)
1"x1/2"	BTR34-100x050-*	1.03	2.06	2.25	0.94	0.50	2.00	1.00	3.00	3.25	1.50	0.69	1.50	3/8"-16	5/16"-18	5.00	5000 (350)
1"x3/4"	BTR34-100x075-*	1.03	2.06	2.25	0.94	0.75	2.00	1.00	3.00	3.25	1.50	0.88	1.88	3/8"-16	3/8"-16	5.00	5000 (350)
1 1/4"x1/2"	BTR34-125x050-*	1.19	2.31	2.75	1.25	0.50	2.25	1.13	3.00	4.00	1.50	0.69	1.50	7/16"-14	5/16"-18	5.80	4000 (275)
1 1/4"x3/4"	BTR34-125x075-*	1.19	2.31	2.75	1.25	0.75	2.25	1.13	3.00	4.00	1.50	0.88	1.88	7/16"-14	3/8"-16	5.80	4000 (275)
1 1/4"x1"	BTR34-125x100-*	1.19	2.31	2.75	1.25	0.94	2.25	1.13	3.00	4.00	1.50	1.03	2.06	7/16"-14	3/8"-16	5.80	4000 (275)
1 1/2"x1/2"	BTR34-150x050-*	1.41	2.75	2.75	1.50	0.50	2.50	1.25	4.00	4.00	2.00	0.69	1.50	1/2"-13	5/16"-18	8.90	3000 (210)
1 1/2"x3/4"	BTR34-150x075-*	1.41	2.75	2.75	1.50	0.75	2.50	1.25	4.00	4.00	2.00	0.88	1.88	1/2"-13	3/8"-16	8.75	3000 (210)
1 1/2"x1"	BTR34-150x100-*	1.41	2.75	2.75	1.50	0.94	2.50	1.25	4.00	4.00	2.00	1.03	2.06	1/2"-13	3/8"-16	8.60	3000 (210)
1 1/2"x1 1/4"	BTR34-150x125-*	1.41	2.75	2.75	1.50	1.25	2.50	1.25	4.00	4.00	2.00	1.19	2.31	1/2"-13	7/16"-14	8.50	3000 (210)
2"x1/2"	BTR34-200x050-*	1.69	3.06	3.00	1.94	0.50	3.00	1.50	4.00	4.50	2.00	0.69	1.50	1/2"-13	5/16"-18	10.00	3000 (210)
2"x3/4"	BTR34-200x075-*	1.69	3.06	3.00	1.94	0.75	3.00	1.50	4.00	4.50	2.00	0.88	1.88	1/2"-13	3/8"-16	10.00	3000 (210)
2"x1"	BTR34-200x100-*	1.69	3.06	3.00	1.94	0.94	3.00	1.50	4.00	4.50	2.00	1.03	2.06	1/2"-13	3/8"-16	10.00	3000 (210)
2"x1 1/4"	BTR34-200x125-*	1.69	3.06	3.00	1.94	1.25	3.00	1.50	4.00	4.50	2.00	1.19	2.31	1/2"-13	7/16"-14	10.00	3000 (210)
2"x1 1/2"	BTR34-200x150-*	1.69	3.06	3.00	1.94	1.50	3.00	1.50	4.00	4.50	2.00	1.41	2.75	1/2"-13	1/2"-13	10.00	3000 (210)
2 1/2"x1/2"	BTR34-250x050-*	2.00	3.50	3.25	2.38	0.50	3.50	1.75	5.00	5.00	2.50	0.69	1.50	1/2"-13	5/16"-18	14.00	2500 (175)
2 1/2"x3/4"	BTR34-250x075-*	2.00	3.50	3.25	2.38	0.75	3.50	1.75	5.00	5.00	2.50	0.88	1.88	1/2"-13	3/8"-16	13.70	2500 (175)
2 1/2"x1"	BTR34-250x100-*	2.00	3.50	3.25	2.38	0.94	3.50	1.75	5.00	5.00	2.50	1.03	2.06	1/2"-13	3/8"-16	16.10	2500 (175)
2 1/2"x1 1/4"	BTR34-250x125-*	2.00	3.50	3.25	2.38	1.25	3.50	1.75	5.00	5.00	2.50	1.19	2.31	1/2"-13	7/16"-14	15.90	2500 (175)
2 1/2"x1 1/2"	BTR34-250x150-*	2.00	3.50	3.25	2.38	1.50	3.50	1.75	5.00	5.00	2.50	1.41	2.75	1/2"-13	1/2"-13	15.70	2500 (175)
2 1/2"x2"	BTR34-250x200-*	2.00	3.50	3.25	2.38	1.94	3.50	1.75	5.00	5.00	2.50	1.69	3.06	1/2"-13	1/2"-13	14.90	2500 (175)
3"x1/2"	BTR34-300x050-*	2.44	4.19	3.75	2.88	0.50	4.00	2.00	5.50	6.00	2.75	0.69	1.50	5/8"-11	5/16"-18	22.42	2000 (140)
3"x3/4"	BTR34-300x075-*	2.44	4.19	3.75	2.88	0.75	4.00	2.00	5.50	6.00	2.75	0.88	1.88	5/8"-11	3/8"-16	22.12	2000 (140)
3"x1"	BTR34-300x100-*	2.44	4.19	3.75	2.88	0.94	4.00	2.00	5.50	6.00	2.75	1.03	2.06	5/8"-11	3/8"-16	21.86	2000 (140)
3"x1 1/4"	BTR34-300x125-*	2.44	4.19	3.75	2.88	1.25	4.00	2.00	5.50	6.00	2.75	1.19	2.31	5/8"-11	7/16"-14	21.55	2000 (140)
3"x1 1/2"	BTR34-300x150-*	2.44	4.19	3.75	2.88	1.50	4.00	2.00	5.50	6.00	2.75	1.41	2.75	5/8"-11	1/2"-13	21.10	2000 (140)
3"x2"	BTR34-300x200-*	2.44	4.19	3.75	2.88	1.94	4.00	2.00	5.50	6.00	2.75	1.69	3.06	5/8"-11	1/2"-13	31.78	2000 (140)
3"x2 1/2"	BTR34-300x250-*	2.44	4.19	3.75	2.88	2.38	4.00	2.00	5.50	6.00	2.75	2.00	3.50	5/8"-11	1/2"-13	26.55	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

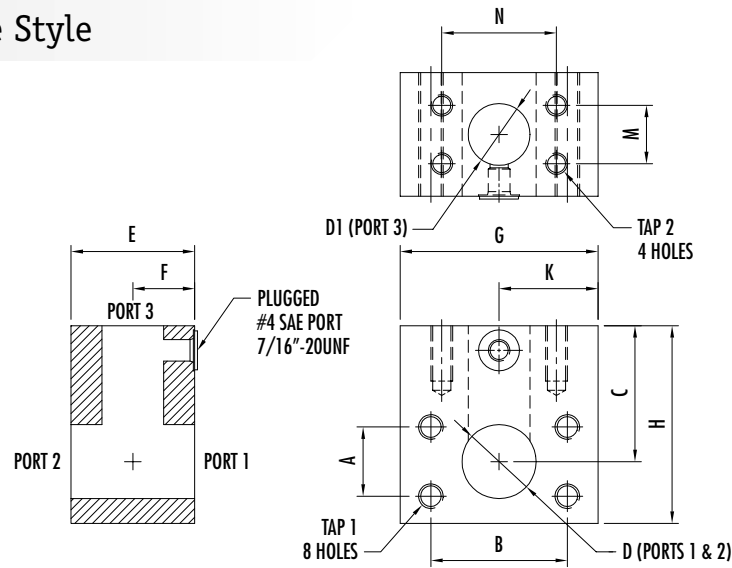
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

SAE Code 62 Flange Style



BTR64 Reducing Branch Block Tee - SAE Code 62 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)											Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	
		A	B	C	D	D1	E	F	G	H	K	M					N
3/4"x1/2"	BTR64-075x050-*	0.94	2.00	2.25	0.75	0.50	2.00	1.00	3.00	3.25	1.50	0.72	1.59	3/8"-16	5/16"-18	5.20	6000 (420)
1"x1/2"	BTR64-100x050-*	1.09	2.25	2.50	0.94	0.50	2.25	1.13	3.00	4.00	1.50	0.72	1.59	7/16"-14	5/16"-18	5.20	6000 (420)
1"x3/4"	BTR64-100x075-*	1.09	2.25	2.50	0.94	0.75	2.25	1.13	3.00	4.00	1.50	0.94	2.00	7/16"-14	3/8"-16	5.20	6000 (420)
1 1/4"x1/2"	BTR64-125x050-*	1.25	2.63	2.75	1.25	0.50	2.50	1.25	4.00	4.00	2.00	0.72	1.59	1/2"-13	5/16"-18	10.00	6000 (420)
1 1/4"x3/4"	BTR64-125x075-*	1.25	2.63	2.75	1.25	0.75	2.50	1.25	4.00	4.00	2.00	0.94	2.00	1/2"-13	3/8"-16	10.00	6000 (420)
1 1/4"x1"	BTR64-125x100-*	1.25	2.63	2.75	1.25	0.94	2.50	1.25	4.00	4.00	2.00	1.09	2.25	1/2"-13	7/16"-14	10.00	6000 (420)
1 1/2"x1/2"	BTR64-150x050-*	1.44	3.13	3.00	1.50	0.50	3.00	1.50	4.00	4.50	2.00	0.72	1.59	5/8"-11	5/16"-18	11.30	6000 (420)
1 1/2"x3/4"	BTR64-150x075-*	1.44	3.13	3.00	1.50	0.75	3.00	1.50	4.00	4.50	2.00	0.94	2.00	5/8"-11	3/8"-16	11.30	6000 (420)
1 1/2"x1"	BTR64-150x100-*	1.44	3.13	3.00	1.50	0.94	3.00	1.50	4.00	4.50	2.00	1.09	2.25	5/8"-11	7/16"-14	11.30	6000 (420)
1 1/2"x1 1/4"	BTR64-150x125-*	1.44	3.13	3.00	1.50	1.25	3.00	1.50	4.00	4.50	2.00	1.25	2.63	5/8"-11	1/2"-13	11.30	6000 (420)
2"x1/2"	BTR64-200x050-*	1.75	3.81	3.38	1.94	0.50	3.00	1.50	5.00	5.00	2.50	0.72	1.59	3/4"-10	5/16"-18	14.80	6000 (420)
2"x3/4"	BTR64-200x075-*	1.75	3.81	3.38	1.94	0.75	3.00	1.50	5.00	5.00	2.50	0.94	2.00	3/4"-10	3/8"-16	14.80	6000 (420)
2"x1"	BTR64-200x100-*	1.75	3.81	3.38	1.94	0.94	3.00	1.50	5.00	5.00	2.50	1.09	2.25	3/4"-10	7/16"-14	14.80	6000 (420)
2"x1 1/4"	BTR64-200x125-*	1.75	3.81	3.38	1.94	1.25	3.00	1.50	5.00	5.00	2.50	1.25	2.63	3/4"-10	1/2"-13	14.80	6000 (420)
2"x1 1/2"	BTR64-200x150-*	1.75	3.81	3.38	1.94	1.50	3.00	1.50	5.00	5.00	2.50	1.44	3.13	3/4"-10	5/8"-11	14.80	6000 (420)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

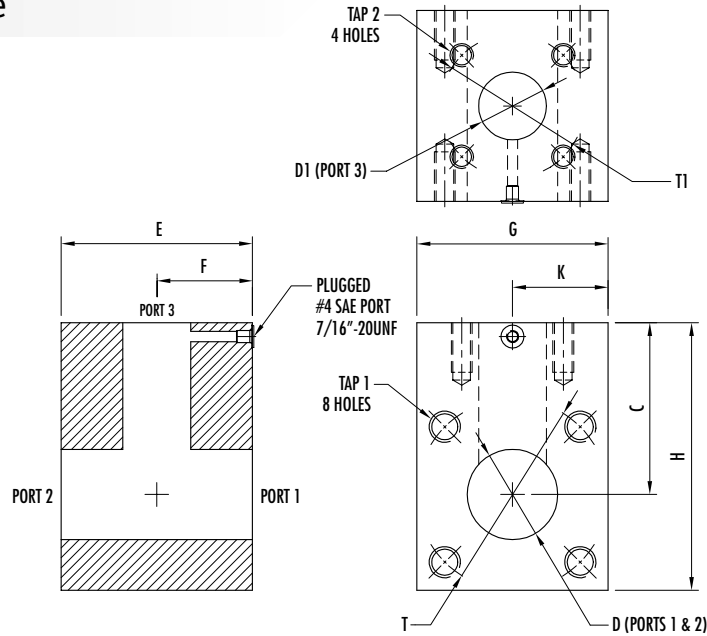
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

ISO 6164 Flange Style



BTR74 Reducing Branch Block Tee - ISO 6164 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)										Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	TI	C	D	D1	E	F	G	H	K				
3"x2 1/2"	BTR74-300x250-*	5.71	4.65	5.00	2.88	2.38	6.00	3.00	6.00	8.00	3.00	1"-8	3/4"-10	60.25	5800 (400)
4"x2 1/2"	BTR74-400x250-*	6.89	4.65	5.50	3.50	2.38	7.00	3.50	7.00	9.00	3.50	1 1/8"-7	3/4"-10	91.03	5800 (400)
4"x3"	BTR74-400x300-*	6.89	5.71	5.50	3.50	2.88	7.00	3.50	7.00	9.00	3.50	1 1/8"-7	1"-8	89.50	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

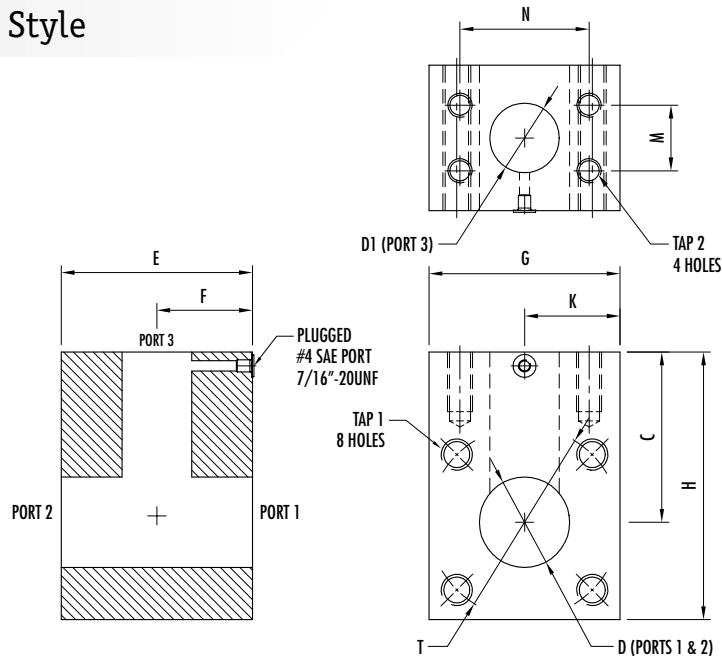
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

ISO 6164/SAE Flange Style



BTR7-34 Reducing Branch Block Tee - ISO 6164/SAE Code 61 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)											Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	DI	E	F	G	H	K	M	N				
2 1/2"x2"	BTR7-34-250x200-*	4.65	4.00	2.38	1.94	5.00	2.50	5.00	6.50	2.50	1.69	3.06	3/4"-10	1/2"-13	35.88	3000 (210)
3"x2"	BTR7-34-300x200-*	5.71	5.00	2.88	1.94	6.00	3.00	6.00	8.00	3.00	1.69	3.06	1"-8	1/2"-13	61.40	3000 (210)
4"x2"	BTR7-34-400x200-*	6.89	5.50	3.50	1.94	7.00	3.50	7.00	9.00	3.50	1.69	3.06	1 1/8"-7	1/2"-13	93.50	3000 (210)

BTR7-64 Reducing Branch Block Tee - ISO 6164/SAE Code 62 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)											Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	DI	E	F	G	H	K	M	N				
2 1/2"x2"	BTR7-64-250x200-*	4.65	4.00	2.38	1.94	5.00	2.50	5.00	6.50	2.50	1.75	3.81	3/4"-10	3/4"-10	35.88	5800 (400)
3"x2"	BTR7-64-300x200-*	5.71	5.00	2.88	1.94	6.00	3.00	6.00	8.00	3.00	1.75	3.81	1"-8	3/4"-10	61.40	5800 (400)
4"x2"	BTR7-64-400x200-*	6.89	5.50	3.50	1.94	7.00	3.50	7.00	9.00	3.50	1.75	3.81	1 1/8"-7	3/4"-10	93.50	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

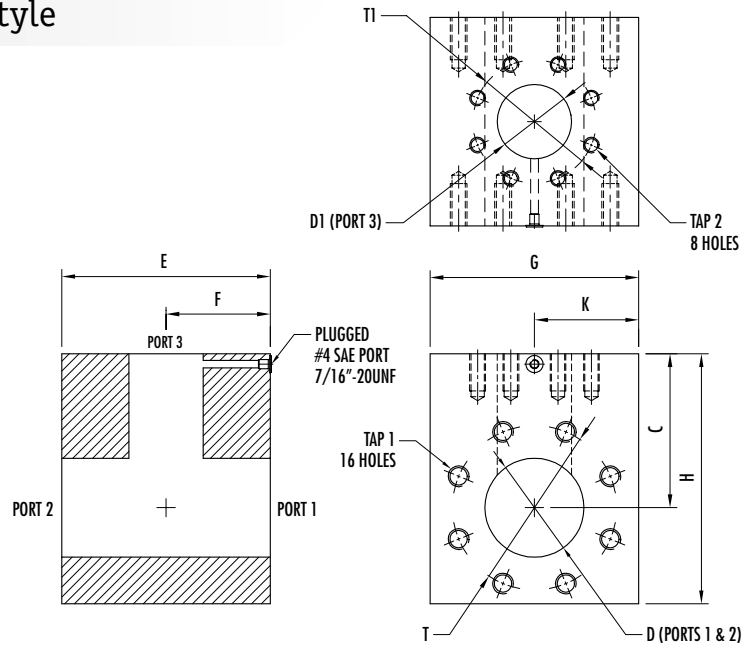
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

TMI® 8-Bolt Flange Style



BTR48 Reducing Branch Block Tee - TMI® 8-Bolt Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)										Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	C	D	D1	E	F	G	H	K				
6"x5"	BTR48-600x500-*	9.65	7.88	8.00	4.90	4.00	10.00	5.00	11.88	14.00	5.94	1 1/8"-7	1"-8	445.20	3700 (255)
8"x5"	BTR48-800x500-*	12.40	7.88	9.25	6.81	4.00	10.00	5.00	15.00	17.00	7.50	1 1/2"-6	1"-8	731.90	3500 (240)
8"x6"	BTR48-800x600-*	12.40	9.65	9.25	6.81	4.90	12.00	6.00	15.00	17.00	7.50	1 1/2"-6	1 1/8"-7	845.60	3500 (240)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

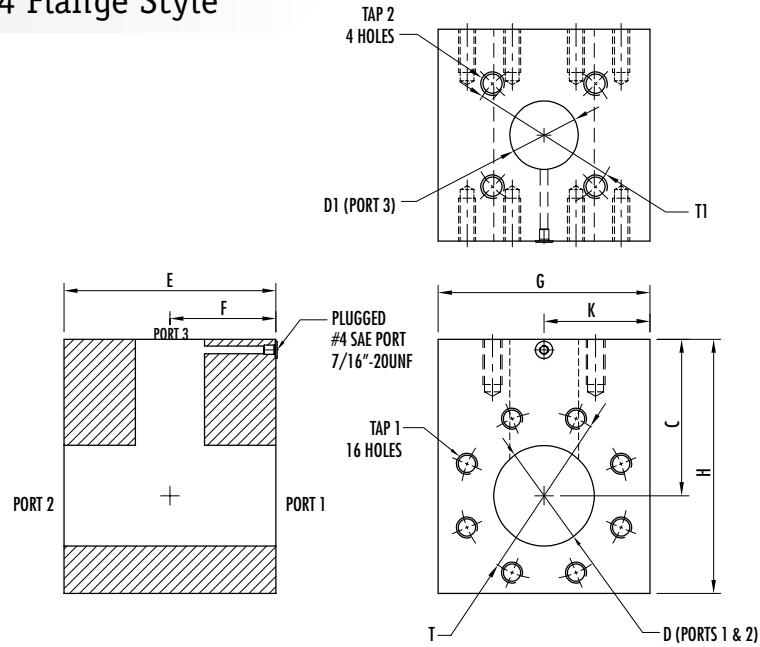
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, PRIME PAINTED, (STAINLESS STEEL AVAILABLE)



Reducing Branch Block Tee

TMI® 8-Bolt/ISO 6164 Flange Style



BTR4-74 Reducing Branch Block Tee - TMI® 8-Bolt/ISO 6164 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (run x branch)	Tee Part No.	Dimensions (in)										Tap 1 UNC-2B	Tap 2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	C	D	D1	E	F	G	H	K				
5"x3"	BTR4-74-500x300-*	7.88	5.71	6.13	4.00	2.88	7.00	3.50	9.75	11.00	4.88	1"-8	1"-8	243.00	4000 (275)
5"x4"	BTR4-74-500x400-*	7.88	6.89	6.13	4.00	3.50	8.00	4.00	9.75	11.00	4.88	1"-8	1 1/8"-7	240.00	4000 (275)
6"x4"	BTR4-74-600x400-*	9.65	6.89	8.00	4.90	3.50	8.00	4.00	11.88	14.00	5.94	1 1/8"-7	1 1/8"-7	460.30	3700 (255)
8"x4"	BTR4-74-800x400-*	12.40	6.89	9.25	6.81	3.50	9.00	4.50	15.00	17.00	7.50	1 1/2"-6	1 1/8"-7	785.60	3500 (240)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

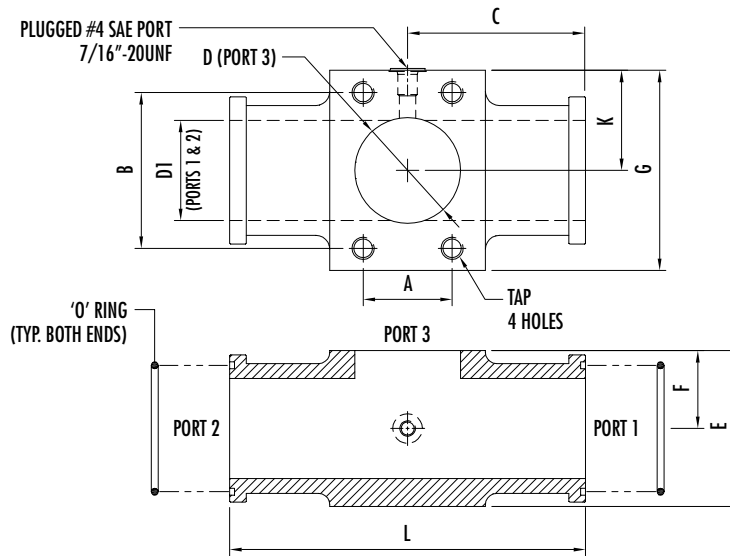
• OTHER BLOCK TEES ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, PRIME PAINTED, (STAINLESS STEEL AVAILABLE)



Split Flange Tee

SAE Code 61 Flange Style - Body Only



SFT34 Split Flange Tee - SAE Code 61 Flat Face With Tapped Holes

Complete With Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFT34-050-*	0.69	1.50	2.50	0.50	0.38	2.00	1.00	2.50	1.25	5.00	5/16"-18	OR*-2-210	3.72	5000 (350)
3/4"	SFT34-075-*	0.88	1.88	2.75	0.75	0.63	2.00	1.00	3.00	1.50	5.50	3/8"-16	OR*-2-214	4.46	5000 (350)
1"	SFT34-100-*	1.03	2.06	2.75	0.94	0.88	2.00	1.00	3.00	1.50	5.50	3/8"-16	OR*-2-219	4.10	5000 (350)
1 1/4"	SFT34-125-*	1.19	2.31	3.13	1.25	1.13	2.25	1.13	3.00	1.50	6.25	7/16"-14	OR*-2-222	4.75	4000 (275)
1 1/2"	SFT34-150-*	1.41	2.75	3.25	1.50	1.38	2.50	1.25	4.00	2.00	6.50	1/2"-13	OR*-2-225	7.25	3000 (210)
2"	SFT34-200-*	1.69	3.06	3.50	1.94	1.88	3.00	1.50	4.00	2.00	7.00	1/2"-13	OR*-2-228	9.70	3000 (210)
2 1/2"	SFT34-250-*	2.00	3.50	4.00	2.38	2.38	3.50	1.75	4.50	2.25	8.00	1/2"-13	OR*-2-232	14.25	2500 (175)
3"	SFT34-300-*	2.44	4.19	4.50	2.88	2.88	4.00	2.00	5.50	2.75	9.00	5/8"-11	OR*-2-237	22.70	2000 (140)

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS
- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H13
- FOR SPLIT FLANGES REFERENCE PAGE N20

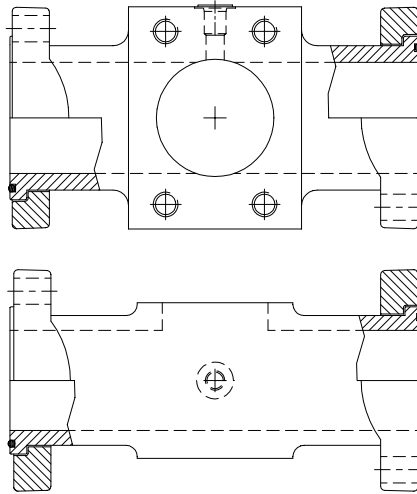
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Tee Assembly

SAE Code 61 Flange Style

Typical A/SFT34 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 61 SPLIT FLANGE TEE BODY (REF. PAGE H12)
- TWO SETS (4 HALVES) SAE CODE 61 SPLIT FLANGES (REF. PAGE N20)
- TWO (2) BUNA 'O' RINGS (STANDARD)
- TWO (2) COMPONENT BOLT KITS

A/SFT34 Split Flange Tee - SAE Code 61 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFT34-050-*	4.48
3/4"	A/SFT34-075-*	5.60
1"	A/SFT34-100-*	5.40
1 1/4"	A/SFT34-125-*	6.53
1 1/2"	A/SFT34-150-*	10.13
2"	A/SFT34-200-*	12.82
2 1/2"	A/SFT34-250-*	18.51
3"	A/SFT34-300-*	30.00

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

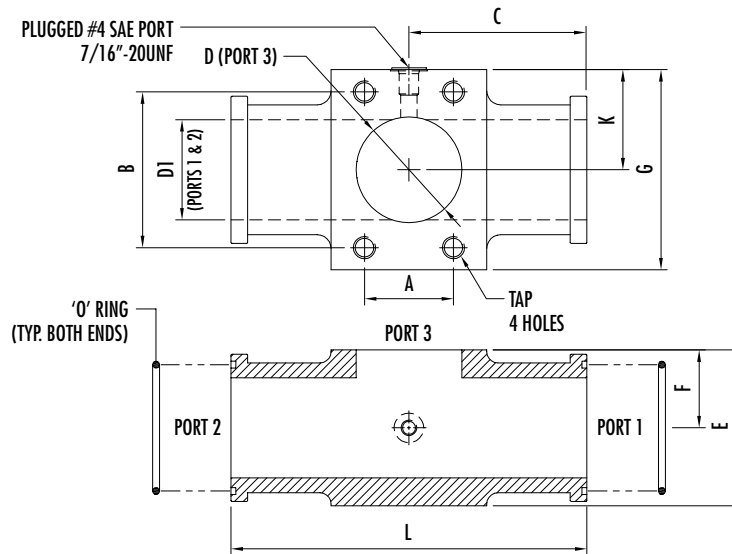
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Tee

SAE Code 62 Flange Style - Body Only



SFT64 Split Flange Tee - SAE Code 62 Flat Face With Tapped Holes

Complete With Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFT64-050-*	0.72	1.59	2.75	0.50	0.38	2.00	1.00	2.50	1.25	5.50	5/16"-18	OR*-2-210	3.80	6000 (420)
3/4"	SFT64-075-*	0.94	2.00	3.00	0.75	0.63	2.00	1.00	3.00	1.50	6.00	3/8"-16	OR*-2-214	4.70	6000 (420)
1"	SFT64-100-*	1.09	2.25	3.38	0.94	0.88	2.25	1.13	3.00	1.50	6.75	7/16"-14	OR*-2-219	5.30	6000 (420)
1 1/4"	SFT64-125-*	1.25	2.63	3.50	1.25	1.13	2.50	1.25	4.00	2.00	7.00	1/2"-13	OR*-2-222	7.55	6000 (420)
1 1/2"	SFT64-150-*	1.44	3.13	4.25	1.50	1.38	3.00	1.50	4.00	2.00	8.50	5/8"-11	OR*-2-225	11.05	6000 (420)
2"	SFT64-200-*	1.75	3.81	4.75	1.94	1.88	3.00	1.50	5.00	2.50	9.50	3/4"-10	OR*-2-228	15.05	6000 (420)

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS
- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H15
- FOR SPLIT FLANGES REFERENCE PAGE N20

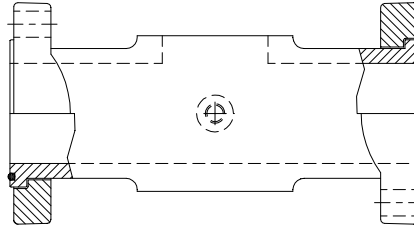
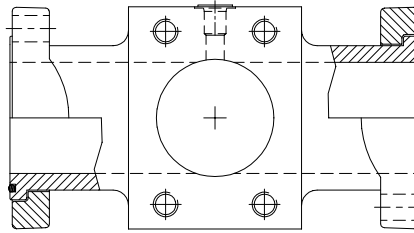
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Tee Assembly

SAE Code 62 Flange Style

Typical A/SFT64 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 62 SPLIT FLANGE TEE BODY (REF. PAGE H14)
- TWO SETS (4 HALVES) SAE CODE 62 SPLIT FLANGES (REF. PAGE N20)
- TWO (2) BUNA 'O' RINGS (STANDARD)
- TWO (2) COMPONENT BOLT KITS

A/SFT64 Split Flange Tee - SAE Code 62 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFT64-050-*	4.90
3/4"	A/SFT64-075-*	6.56
1"	A/SFT64-100-*	8.22
1 1/4"	A/SFT64-125-*	12.07
1 1/2"	A/SFT64-150-*	18.87
2"	A/SFT64-200-*	28.01

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

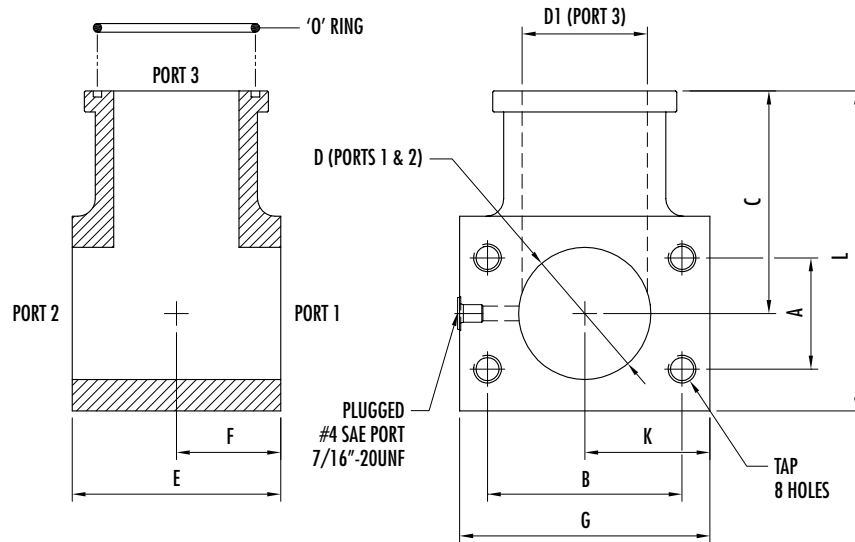
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Branch Tee

SAE Code 61 Flange Style - Body Only



SFBT34 Split Flange Branch Tee - SAE Code 61 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFBT34-050-*	0.69	1.50	2.50	0.50	0.38	2.00	1.00	2.50	1.25	3.50	5/16"-18	OR*-2-210	2.90	5000 (350)
3/4"	SFBT34-075-*	0.88	1.88	2.75	0.75	0.63	2.00	1.00	3.00	1.50	3.75	3/8"-16	OR*-2-214	3.40	5000 (350)
1"	SFBT34-100-*	1.03	2.06	2.75	0.94	0.88	2.00	1.00	3.00	1.50	3.75	3/8"-16	OR*-2-219	3.40	5000 (350)
1 1/4"	SFBT34-125-*	1.19	2.31	3.13	1.25	1.13	2.25	1.13	3.00	1.50	4.25	7/16"-14	OR*-2-222	3.90	4000 (275)
1 1/2"	SFBT34-150-*	1.41	2.75	3.25	1.50	1.38	2.50	1.25	4.00	2.00	4.50	1/2"-13	OR*-2-225	6.15	3000 (210)
2"	SFBT34-200-*	1.69	3.06	3.50	1.94	1.88	3.00	1.50	4.00	2.00	5.00	1/2"-13	OR*-2-228	8.25	3000 (210)
2 1/2"	SFBT34-250-*	2.00	3.50	4.00	2.38	2.38	3.50	1.75	4.50	2.25	5.75	1/2"-13	OR*-2-232	12.15	2500 (175)
3"	SFBT34-300-*	2.44	4.19	4.50	2.88	2.88	4.00	2.00	5.50	2.75	6.50	5/8"-11	OR*-2-237	19.40	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H17
- FOR SPLIT FLANGES REFERENCE PAGE N20

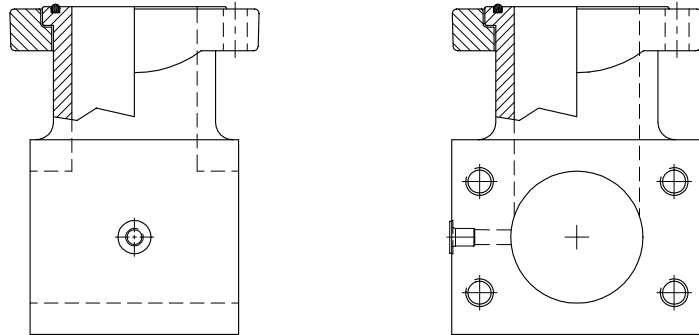
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Branch Tee Assembly

SAE Code 61 Flange Style

Typical A/SFBT34 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 61 SPLIT FLANGE BRANCH TEE BODY (REF. PAGE H16)
- ONE SET (2 HALVES) SAE CODE 61 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) BUNA 'O' RING (STANDARD)
- TWO (2) COMPONENT BOLT KITS

A/SFBT34 Split Flange Branch Tee - SAE Code 61 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFBT34-050-*	3.28
3/4"	A/SFBT34-075-*	3.97
1"	A/SFBT34-100-*	4.05
1 1/4"	A/SFBT34-125-*	4.79
1 1/2"	A/SFBT34-150-*	7.59
2"	A/SFBT34-200-*	9.81
2 1/2"	A/SFBT34-250-*	14.28
3"	A/SFBT34-300-*	23.05

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

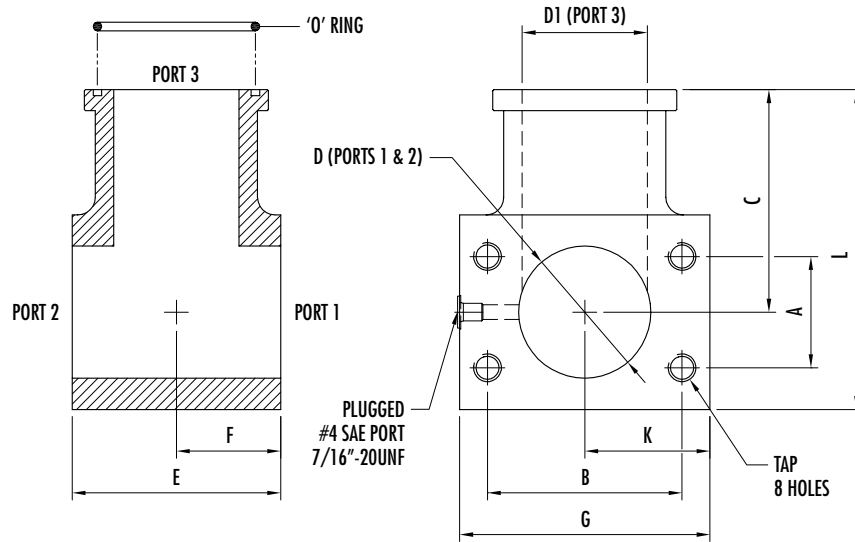
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Branch Tee

SAE Code 62 Flange Style - Body Only



SFBT64 Split Flange Branch Tee - SAE Code 62 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFBT64-050-*	0.72	1.59	2.75	0.50	0.38	2.00	1.00	2.50	1.25	3.75	5/16"-18	OR*-2-210	2.90	6000 (420)
3/4"	SFBT64-075-*	0.94	2.00	3.00	0.75	0.63	2.00	1.00	3.00	1.50	4.00	3/8"-16	OR*-2-214	3.50	6000 (420)
1"	SFBT64-100-*	1.09	2.25	3.38	0.94	0.88	2.25	1.13	3.00	1.50	4.50	7/16"-14	OR*-2-219	4.35	6000 (420)
1 1/4"	SFBT64-125-*	1.25	2.63	3.50	1.25	1.13	2.50	1.25	4.00	2.00	4.75	1/2"-13	OR*-2-222	6.50	6000 (420)
1 1/2"	SFBT64-150-*	1.44	3.13	4.25	1.50	1.38	3.00	1.50	4.00	2.00	5.75	5/8"-11	OR*-2-225	9.35	6000 (420)
2"	SFBT64-200-*	1.75	3.81	4.75	1.94	1.88	3.50	1.75	5.00	2.50	6.25	3/4"-10	OR*-2-228	12.00	6000 (420)

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS
- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H19
- FOR SPLIT FLANGES REFERENCE PAGE N20

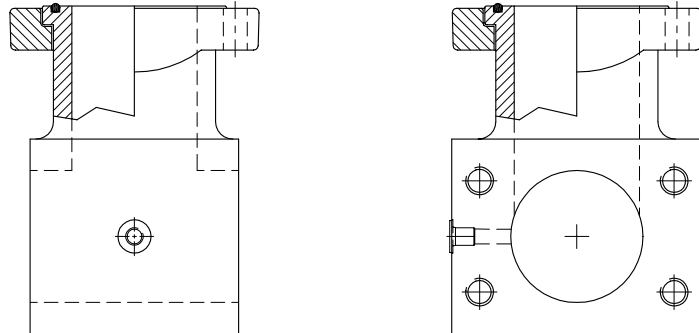
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Branch Tee Assembly

SAE Code 62 Flange Style

Typical A/SFBT64 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 62 SPLIT FLANGE BRANCH TEE BODY (REF. PAGE H18)
- ONE SET (2 HALVES) SAE CODE 62 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) BUNA 'O' RING (STANDARD)
- ONE (1) COMPONENT BOLT KIT

A/SFBT64 Split Flange Branch Tee - SAE Code 62 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFBT64-050-*	3.45
3/4"	A/SFBT64-075-*	4.43
1"	A/SFBT64-100-*	5.81
1 1/4"	A/SFBT64-125-*	8.76
1 1/2"	A/SFBT64-150-*	13.26
2"	A/SFBT64-200-*	18.48

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

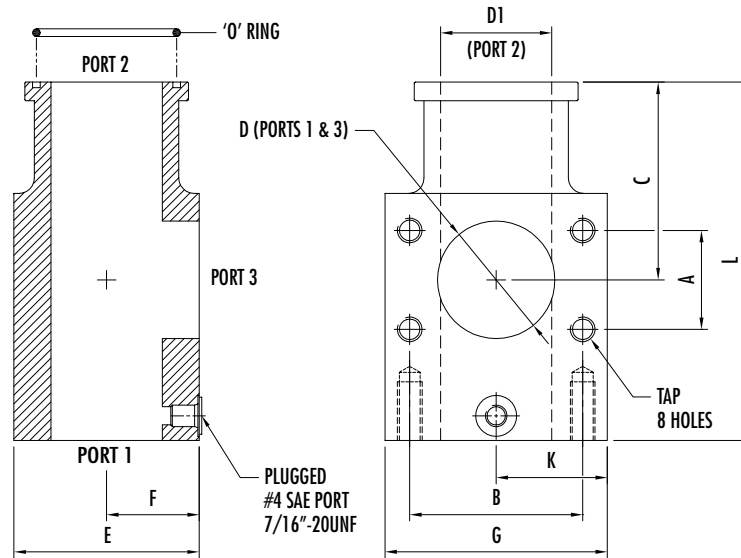
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Run Tee

SAE Code 61 Flange Style - Body Only



SFRT34 Split Flange Run Tee - SAE Code 61 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFRT34-050-*	0.69	1.50	2.12	0.50	0.38	2.00	1.00	2.50	1.25	4.00	5/16"-18	OR*-2-210	3.50	5000 (350)
3/4"	SFRT34-075-*	0.88	1.88	2.75	0.75	0.63	2.00	1.00	3.00	1.50	5.00	3/8"-16	OR*-2-214	5.10	5000 (350)
1"	SFRT34-100-*	1.03	2.06	2.75	0.94	0.88	2.00	1.00	3.00	1.50	5.00	3/8"-16	OR*-2-219	5.00	5000 (350)
1 1/4"	SFRT34-125-*	1.19	2.31	3.25	1.25	1.13	2.25	1.13	3.00	1.50	6.00	7/16"-14	OR*-2-222	6.20	4000 (275)
1 1/2"	SFRT34-150-*	1.41	2.75	3.25	1.50	1.38	2.50	1.25	4.00	2.00	6.00	1/2"-13	OR*-2-225	9.00	3000 (210)
2"	SFRT34-200-*	1.69	3.06	3.50	1.94	1.88	3.00	1.50	4.00	2.00	6.50	1/2"-13	OR*-2-228	11.35	3000 (210)
2 1/2"	SFRT34-250-*	2.00	3.50	4.00	2.38	2.38	3.50	1.75	4.50	2.25	7.25	1/2"-13	OR*-2-232	16.10	2500 (175)
3"	SFRT34-300-*	2.44	4.19	4.75	2.88	2.88	4.00	2.00	5.50	2.75	8.50	5/8"-11	OR*-2-237	27.25	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H21
- FOR SPLIT FLANGES REFERENCE PAGE N20

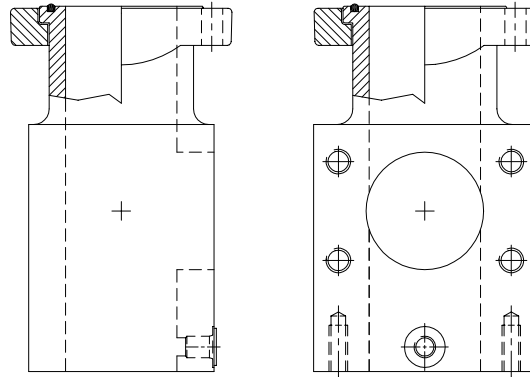
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Run Tee Assembly

SAE Code 61 Flange Style

Typical A/SFRT34 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 61 SPLIT FLANGE RUN TEE BODY (REF. PAGE H20)
- ONE SET (2 HALVES) SAE CODE 61 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) BUNA 'O' RING (STANDARD)
- ONE (1) COMPONENT BOLT KIT

A/SFRT34 Split Flange Run Tee - SAE Code 61 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFRT34-050-*	3.88
3/4"	A/SFRT34-075-*	5.67
1"	A/SFRT34-100-*	5.65
1 1/4"	A/SFRT34-125-*	7.09
1 1/2"	A/SFRT34-150-*	10.44
2"	A/SFRT34-200-*	12.91
2 1/2"	A/SFRT34-250-*	18.23
3"	A/SFRT34-300-*	30.90

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

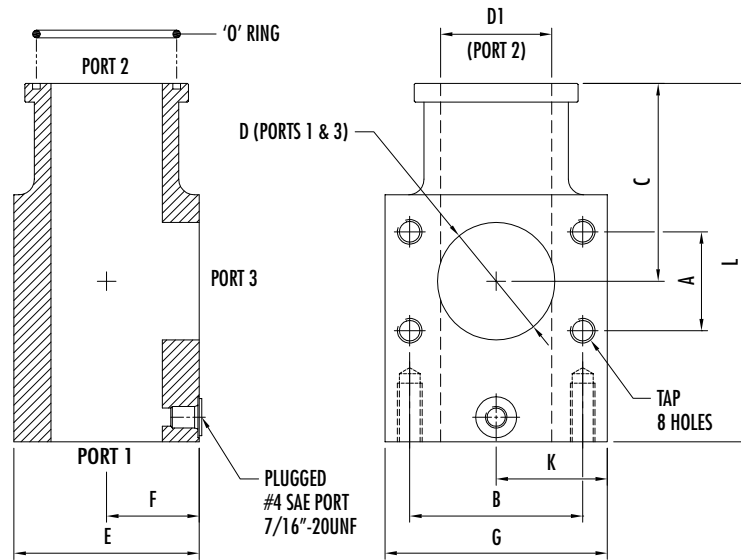
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Run Tee

SAE Code 62 Flange Style - Body Only



SFRT64 Split Flange Run Tee - SAE Code 62 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)										Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	F	G	K	L				
1/2"	SFRT64-050-*	0.72	1.59	2.37	0.50	0.38	2.00	1.00	2.50	1.25	4.25	5/16"-18	OR*-2-210	3.30	6000 (420)
3/4"	SFRT64-075-*	0.94	2.00	3.00	0.75	0.63	2.00	1.00	3.00	1.50	5.25	3/8"-16	OR*-2-214	5.40	6000 (420)
1"	SFRT64-100-*	1.09	2.25	3.75	0.94	0.88	2.25	1.13	3.00	1.50	6.25	7/16"-14	OR*-2-219	7.00	6000 (420)
1 1/4"	SFRT64-125-*	1.25	2.63	3.50	1.25	1.13	2.50	1.25	4.00	2.00	6.25	1/2"-13	OR*-2-222	9.55	6000 (420)
1 1/2"	SFRT64-150-*	1.44	3.13	4.25	1.50	1.38	3.00	1.50	4.00	2.00	7.25	5/8"-11	OR*-2-225	13.00	6000 (420)
2"	SFRT64-200-*	1.75	3.81	4.75	1.94	1.88	3.50	1.75	5.00	2.50	8.25	3/4"-10	OR*-2-228	17.75	6000 (420)

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS
- OTHER SPLIT FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)
- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H23
- FOR SPLIT FLANGES REFERENCE PAGE N20

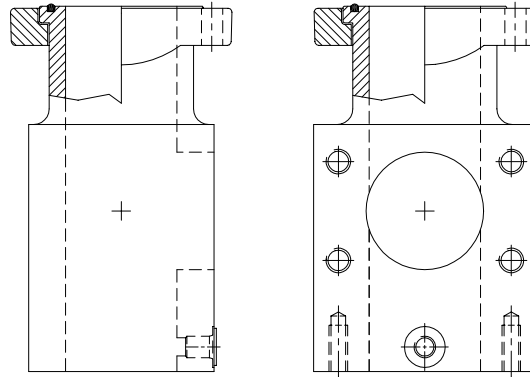
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Run Tee Assembly

SAE Code 62 Flange Style

Typical A/SFRT64 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- SAE CODE 62 SPLIT FLANGE RUN TEE BODY (REF. PAGE H22)
- ONE SET (2 HALVES) SAE CODE 62 SPLIT FLANGES (REF. PAGE N20)
- ONE (1) BUNA 'O' RING (STANDARD)
- ONE (1) COMPONENT BOLT KIT

A/SFRT64 Split Flange Run Tee - SAE Code 62 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
1/2"	A/SFRT64-050-*	3.85
3/4"	A/SFRT64-075-*	6.33
1"	A/SFRT64-100-*	8.46
1 1/4"	A/SFRT64-125-*	11.81
1 1/2"	A/SFRT64-150-*	16.91
2"	A/SFRT64-200-*	24.23

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

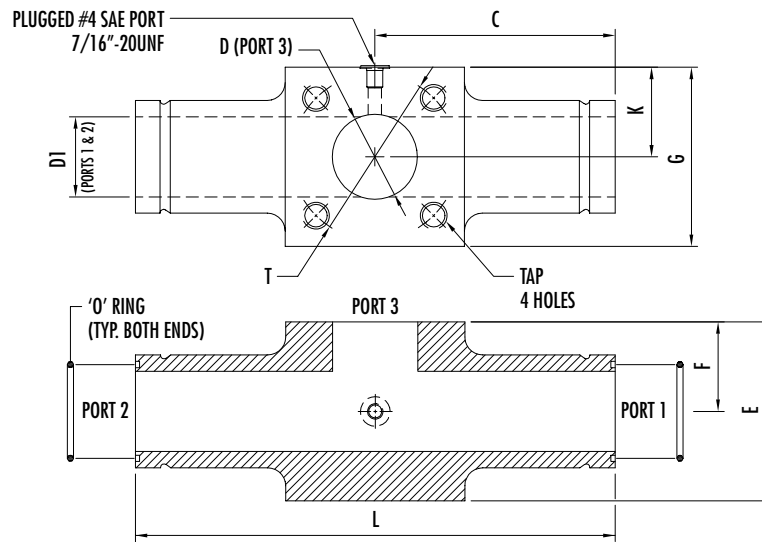
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Tee

ISO 6164 Flange Style - Body Only



RT74 Retain Ring Flange Tee - ISO 6164 Flat Face With Tapped Holes

Complete With Buna 'O' Rings (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)									Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	D1	E	F	G	K	L				
2 1/2"	RT74-250-*	4.65	6.75	2.38	2.25	5.00	2.50	5.00	2.50	13.50	3/4"-10	OR*-2-232	34.05	5800 (400)
3"	RT74-300-*	5.71	8.00	2.88	2.75	6.00	3.00	6.00	3.00	16.00	1"-8	OR*-2-237	48.76	5800 (400)
4"	RT74-400-*	6.89	8.50	3.50	3.25	7.00	3.50	7.00	3.50	17.00	1 1/8"-7	OR*-2-241	85.74	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19

• OTHER RETAIN RING FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)

• TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H25

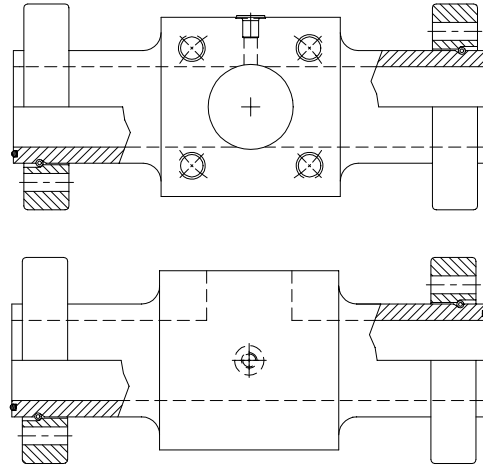
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Tee Assembly

ISO 6164 Flange Style

Typical A/RT74 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ISO 6164 RETAIN RING FLANGE TEE BODY (REF. PAGE H24)
- TWO (2) ISO 6164 RETAIN RING FLANGES (REF. PAGE C10)
- TWO (2) RETAIN RINGS
- TWO (2) BUNA 'O' RINGS (STANDARD)

A/RT74 Retain Ring Flange Tee - ISO 6164 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
2 1/2"	A/RT74-250-*	43.63
3"	A/RT74-300-*	63.52
4"	A/RT74-400-*	114.56

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

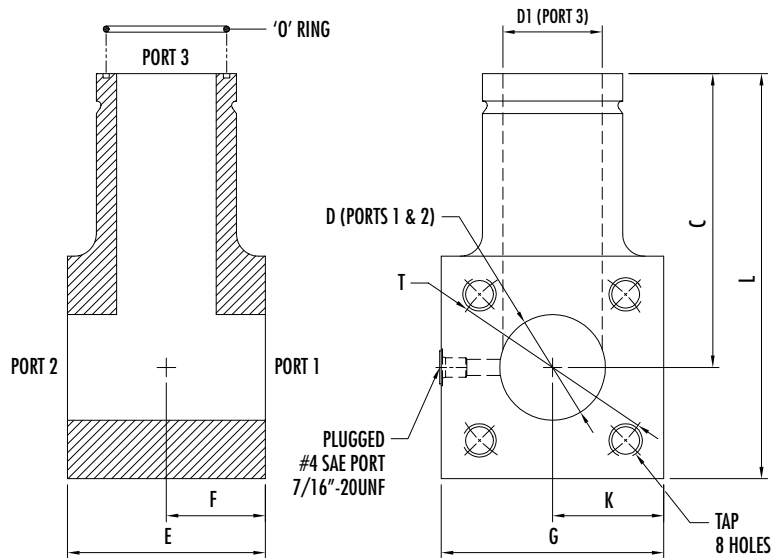
- ♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Branch Tee

ISO 6164 Flange Style - Body Only



RBT74 Retain Ring Flange Branch Tee - ISO 6164 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)									Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	D1	E	F	G	K	L				
2 1/2"	RBT74-250-*	4.65	6.75	2.38	2.25	5.00	2.50	5.00	2.50	9.25	3/4"-10	OR*-2-232	28.80	5800 (400)
3"	RBT74-300-*	5.71	8.00	2.88	2.75	6.00	3.00	6.00	3.00	11.00	1"-8	OR*-2-237	40.36	5800 (400)
4"	RBT74-400-*	6.89	8.50	3.50	3.25	7.00	3.50	7.00	3.50	12.00	1 1/8"-7	OR*-2-241	66.36	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19

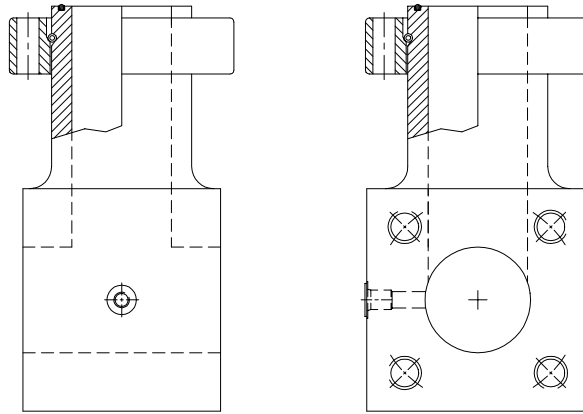
• OTHER RETAIN RING FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)



Retain Ring Flange Branch Tee Assembly

ISO 6164 Flange Style

Typical A/RBT74 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ISO 6164 RETAIN RING FLANGE BRANCH TEE BODY (REF. PAGE H26)
- ONE (1) ISO 6164 RETAIN RING FLANGE (REF. PAGE C10)
- ONE (1) RETAIN RING
- ONE (1) BUNA 'O' RING (STANDARD)

A/RBT74 Retain Ring Flange Branch Tee - ISO 6164 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
2 1/2"	A/RBT74-250-*	33.59
3"	A/RBT74-300-*	48.24
4"	A/RBT74-400-*	87.77

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

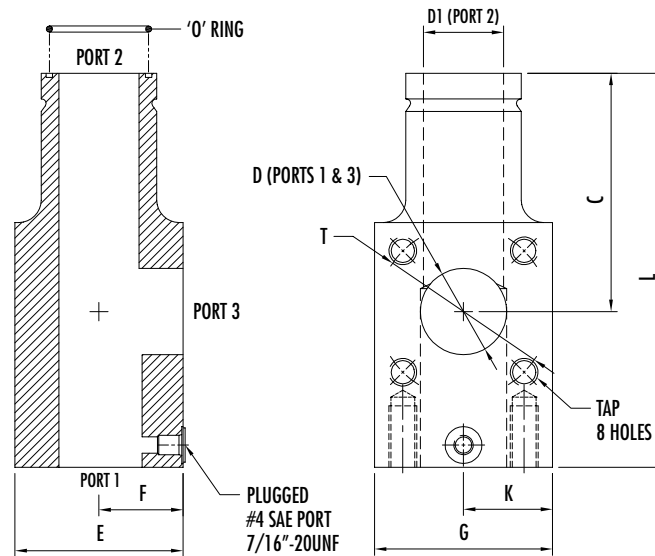
- ♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Run Tee

ISO 6164 Flange Style - Body Only



RRT74 Retain Ring Flange Run Tee - ISO 6164 Flat Face With Tapped Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Tee Part No.	Dimensions (in)									Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	C	D	D1	E	F	G	K	L				
2 1/2"	RRT74-250-*	4.65	6.75	2.38	2.25	5.00	2.50	5.00	2.50	10.75	3/4"-10	OR*-2-232	37.13	5800 (400)
3"	RRT74-300-*	5.71	8.00	2.88	2.75	6.00	3.00	6.00	3.00	13.00	1"-8	OR*-2-237	64.96	5800 (400)
4"	RRT74-400-*	6.89	8.50	3.50	3.25	7.00	3.50	7.00	3.50	14.00	1 1/8"-7	OR*-2-241	95.19	5800 (400)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

◆ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19

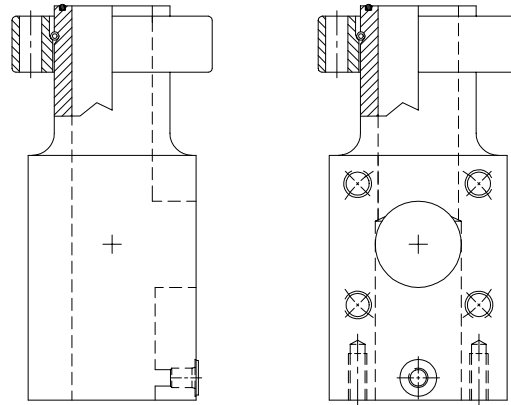
• OTHER RETAIN RING FLANGE TEES ARE AVAILABLE (CONSULT FACTORY)



Retain Ring Flange Run Tee Assembly

ISO 6164 Flange Style

Typical A/RRT74 Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ISO 6164 RETAIN RING FLANGE RUN TEE BODY (REF. PAGE H28)
- ONE (1) ISO 6164 RETAIN RING FLANGE (REF. PAGE C10)
- ONE (1) RETAIN RING
- ONE (1) BUNA 'O' RING (STANDARD)

A/RRT74 Retain Ring Flange Run Tee - ISO 6164 Assembly

Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc
2 1/2"	A/RRT74-250-*	41.92
3"	A/RRT74-300-*	72.84
4"	A/RRT74-400-*	109.56

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

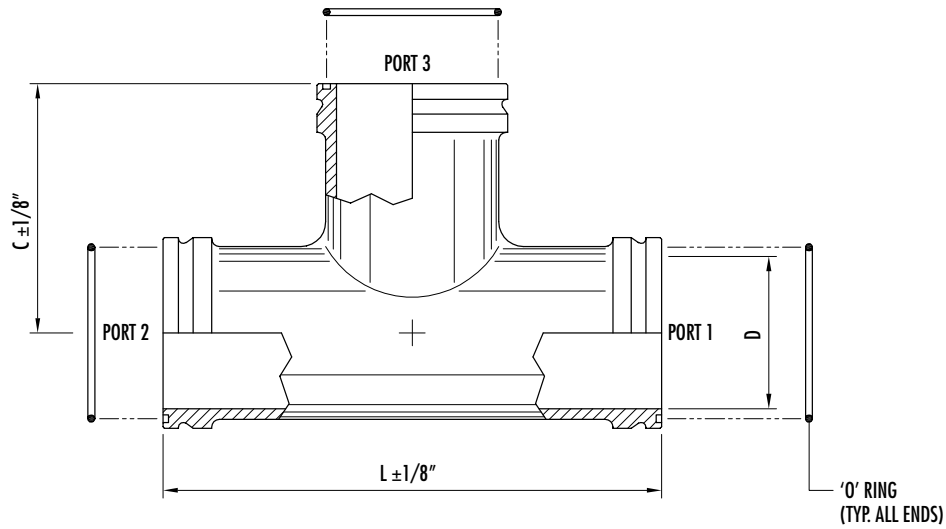
- ♦ MUST BE USED WITH OSHS 'O' RING SEAL RETAINER FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 PAGE G19
- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Tee

Body Only



LRT Low Pressure Retain Ring Flange Tee - Body Only (segmentally welded)

Complete with Buna 'O' Rings (Standard)

Size	Tee Body Part No.	Dimensions (in)			'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	C	D			
2 1/2"	LRT-250-*	8.95	4.47	2.47	OR*-2-232	9.06	750 (52)
3"	LRT-300-*	10.10	5.05	3.07	OR*-2-237	11.28	750 (52)
4"	LRT-400-*	11.60	5.80	4.03	OR*-2-245	18.63	750 (52)
5"	LRT-500-*	13.48	6.74	5.05	OR*-2-253	30.96	750 (52)
6"	LRT-600-*	15.38	7.69	6.07	OR*-2-259	50.31	700 (48)
8"	LRT-800-*	18.91	9.45	7.98	OR*-2-372	84.93	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE H31
- TEE BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)

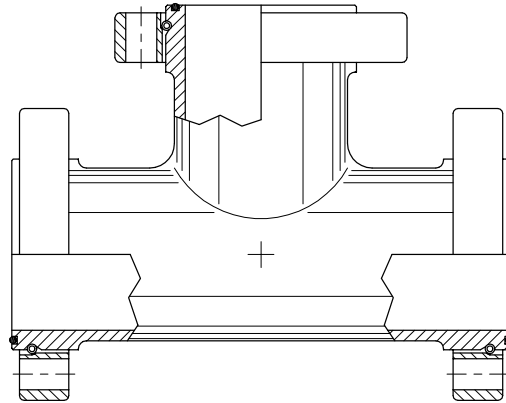
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Tee Assembly

Complete Assembly Part Number

Typical A/LRT Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE TEE BODY
- THREE (3) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- THREE (3) LOW PRESSURE RETAIN RINGS
- THREE (3) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRT Low Pressure Retain Ring Flange Tee Assembly

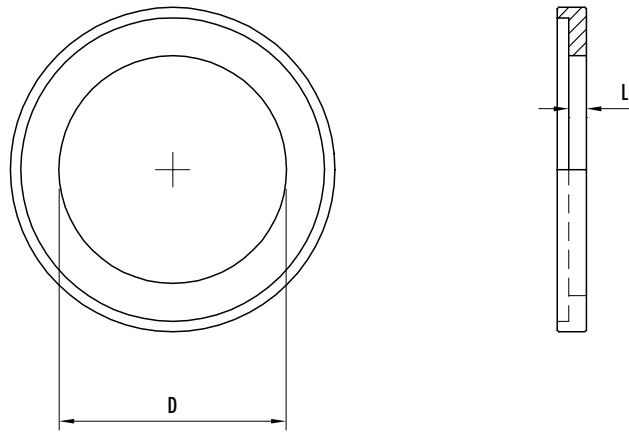
Size	Complete Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LRT-250-*	15.56	750 (52)
3"	A/LRT-300-*	22.66	750 (52)
4"	A/LRT-400-*	38.46	750 (52)
5"	A/LRT-500-*	56.78	750 (52)
6"	A/LRT-600-*	79.70	700 (48)
8"	A/LRT-800-*	142.68	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



'O' Ring Connector Plate



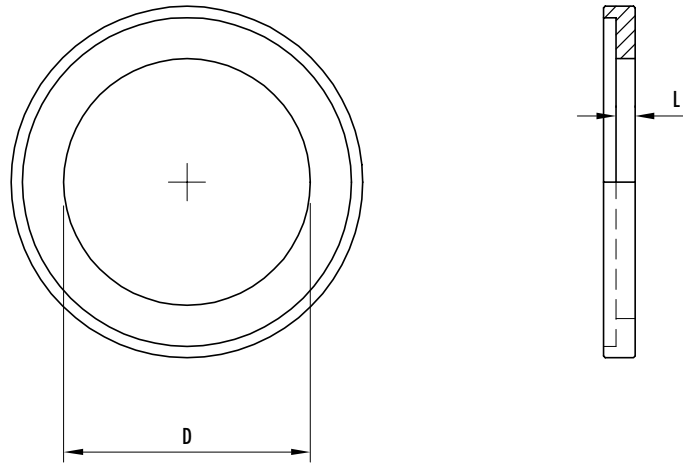
OCP 'O' Ring Connector Plate for Retain Ring Components

Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
1/2"	OCP-050	0.50	0.13	0.04
3/4"	OCP-075	0.75	0.13	0.06
1"	OCP-100	0.94	0.13	0.07
1 1/4"	OCP-125	1.20	0.13	0.08
1 1/2"	OCP-150	1.50	0.13	0.11
2"	OCP-200	1.94	0.13	0.13
2 1/2"	OCP-250	2.36	0.13	0.17
3"	OCP-300	2.88	0.13	0.25
4"	OCP-400	3.35	0.13	0.34

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure 'O' Ring Connector Plate



LOCP Low Pressure 'O' Ring Connector Plate

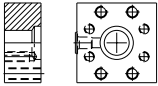
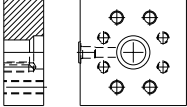
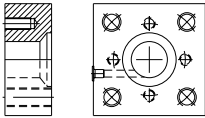
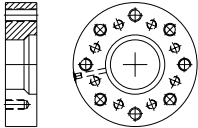
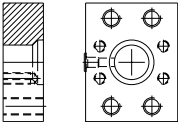
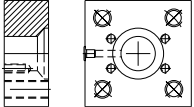
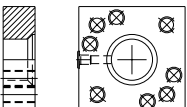
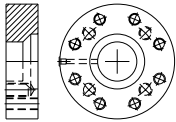
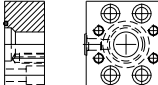
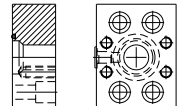
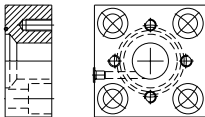
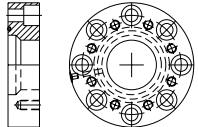
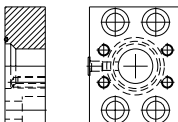
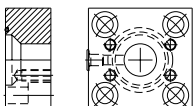
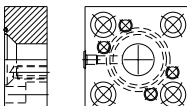
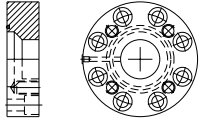
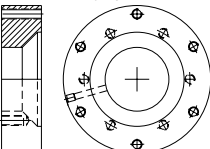
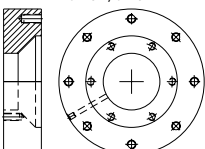
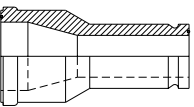
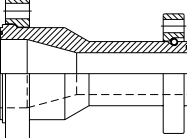
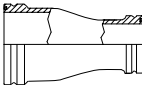
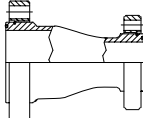
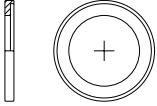
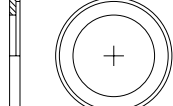
Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
2 1/2"	LOCP-250	2.47	0.13	0.15
3"	LOCP-300	3.07	0.13	0.21
4"	LOCP-400	4.03	0.13	0.32
5"	LOCP-500	5.05	0.19	0.58
6"	LOCP-600	6.07	0.19	0.79
8"	LOCP-800	7.98	0.19	1.35

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Reducers - Visual Index

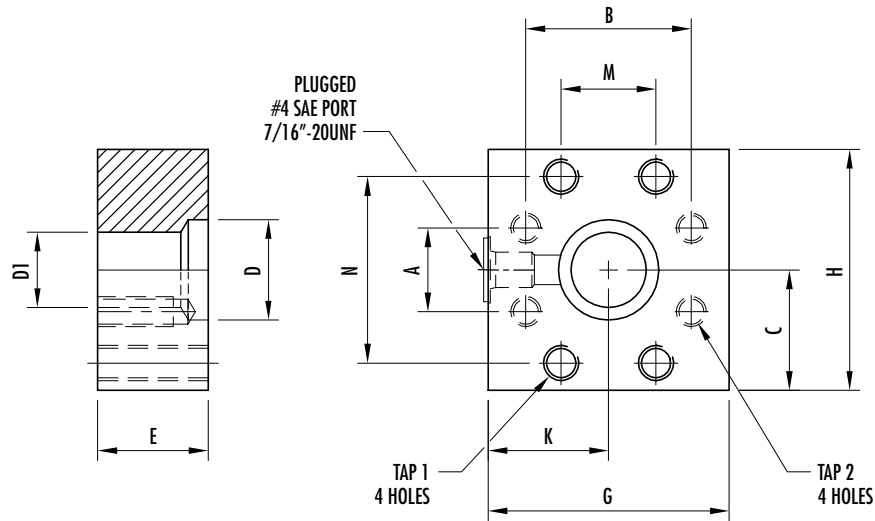


<p>UNION STYLE</p>	<p>TPR34 SAE CODE 61</p>  <p>1/2" - 3" Page J2</p>	<p>TPR64 SAE CODE 62</p>  <p>1/2" - 2" Page J4</p>	<p>TPR74 ISO 6164</p>  <p>2 1/2" - 4" Page J6</p>	<p>TPR48 TMI® 8-BOLT</p>  <p>5" - 8" Page J8</p>
<p>TPR6-34 SAE CODE 62/CODE 61</p>  <p>1/2" - 3" Page J10</p>	<p>TPR7-34 ISO 6164/SAE CODE 61</p>  <p>1 1/2" - 4" Page J12</p>	<p>TPR7-64 ISO 6164/SAE CODE 62</p>  <p>1 1/2" - 4" Page J14</p>	<p>TPR4-74 TMI® 8-BOLT/ISO 6164</p>  <p>4" - 5" Page J16</p>	
<p>MANIFOLD MOUNT STYLE</p>	<p>TPR034 SAE CODE 61</p>  <p>1/2" - 3" Page J3</p>	<p>TPR064 SAE CODE 62</p>  <p>1/2" - 2" Page J5</p>	<p>TPR074 ISO 6164</p>  <p>2 1/2" - 4" Page J7</p>	<p>TPR048 TMI® 8-BOLT</p>  <p>5" - 8" Page J9</p>
<p>TPR06-34 SAE CODE 62/CODE 61</p>  <p>1/2" - 2" Page J11</p>	<p>TPR07-34 ISO 6164/SAE CODE 61</p>  <p>1 1/2" - 4" Page J13</p>	<p>TPR07-64 ISO 6164/SAE CODE 62</p>  <p>1 1/2" - 4" Page J15</p>	<p>TPR04-74 TMI® 8-BOLT/ISO 6164</p>  <p>4" - 5" Page J17</p>	
<p>LOW PRESSURE UNION STYLE</p>	<p>TPR16 TMI® 6-BOLT</p>  <p>2 1/2" - 6" Page J18</p>	<p>TPR1-16 TMI® 8-BOLT/6-BOLT</p>  <p>5" - 8" Page J19</p>		
<p>RETAIN RING FLANGE STYLE</p>	<p>CR REDUCER BODY</p>  <p>1/2" - 4" Page J20</p>	<p>A/CR REDUCER ASSEMBLY</p>  <p>1/2" - 4" Page J21</p>	<p>LRR LOW PRESSURE REDUCER BODY</p>  <p>2 1/2" - 8" Page J22</p>	<p>A/LRR LOW PRESSURE REDUCER ASSEMBLY</p>  <p>2 1/2" - 8" Page J23</p>
<p>'O' RING CONNECTOR PLATES</p>	<p>OCP</p>  <p>1/2" - 4" Page J24</p>	<p>LOCP LOW PRESSURE</p>  <p>2 1/2" - 8" Page J25</p>		



Transition Plate Reducer

SAE Code 61 Flange Union Style



TPR34 Transition Plate Reducer - SAE Code 61 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)											Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	DI	E	G	H	K	M	N				
3/4" x 1/2"	TPR34-075 x 050-*	0.69	1.50	1.69	0.75	0.50	1.00	3.00	3.00	1.50	0.88	1.88	3/8"-16	5/16"-18	2.24	5000 (350)
1" x 1/2"	TPR34-100 x 050-*	0.69	1.50	1.50	0.94	0.50	1.50	3.00	3.00	1.50	1.03	2.06	3/8"-16	5/16"-18	3.36	5000 (350)
1" x 3/4"	TPR34-100 x 075-*	0.88	1.88	1.50	0.94	0.75	1.00	3.00	3.00	1.50	1.03	2.06	3/8"-16	3/8"-16	2.17	5000 (350)
1 1/4" x 3/4"	TPR34-125 x 075-*	0.88	1.88	1.50	1.25	0.75	1.50	3.00	3.00	1.50	1.19	2.31	7/16"-14	3/8"-16	3.19	5000 (350)
1 1/4" x 1"	TPR34-125 x 100-*	1.03	2.06	1.50	1.25	0.94	1.25	3.00	3.00	1.50	1.19	2.31	7/16"-14	3/8"-16	2.54	5000 (350)
1 1/2" x 1"	TPR34-150 x 100-*	1.03	2.06	2.00	1.50	0.94	1.50	3.00	4.00	1.50	1.41	2.75	1/2"-13	3/8"-16	4.24	5000 (350)
1 1/2" x 1 1/4"	TPR34-150 x 125-*	1.19	2.31	2.00	1.50	1.25	1.50	3.00	4.00	1.50	1.41	2.75	1/2"-13	7/16"-14	3.98	4000 (275)
2" x 1 1/4"	TPR34-200 x 125-*	1.19	2.31	2.00	1.94	1.25	1.75	3.00	4.00	1.50	1.69	3.06	1/2"-13	7/16"-14	4.65	4000 (275)
2" x 1 1/2"	TPR34-200 x 150-*	1.41	2.75	2.00	1.94	1.50	1.75	4.00	4.00	2.00	1.69	3.06	1/2"-13	1/2"-13	6.27	3000 (210)
2 1/2" x 1 1/2"	TPR34-250 x 150-*	1.41	2.75	2.50	2.38	1.50	2.00	4.00	5.00	2.00	2.00	3.50	1/2"-13	1/2"-13	8.25	3000 (210)
2 1/2" x 2"	TPR34-250 x 200-*	1.69	3.06	2.50	2.38	1.94	1.75	4.00	5.00	2.00	2.00	3.50	1/2"-13	1/2"-13	7.57	3000 (210)
3" x 2"	TPR34-300 x 200-*	1.69	3.06	3.00	2.88	1.94	2.00	4.00	6.00	2.00	2.44	4.19	5/8"-11	1/2"-13	10.67	3000 (210)
3" x 2 1/2"	TPR34-300 x 250-*	2.00	3.50	3.00	2.88	2.38	1.75	4.50	6.00	2.25	2.44	4.19	5/8"-11	1/2"-13	9.82	2500 (175)

* INSERT ' V ' TO INDICATE OPTIONAL VITON ' O ' RING FOR #4 SAE PLUG

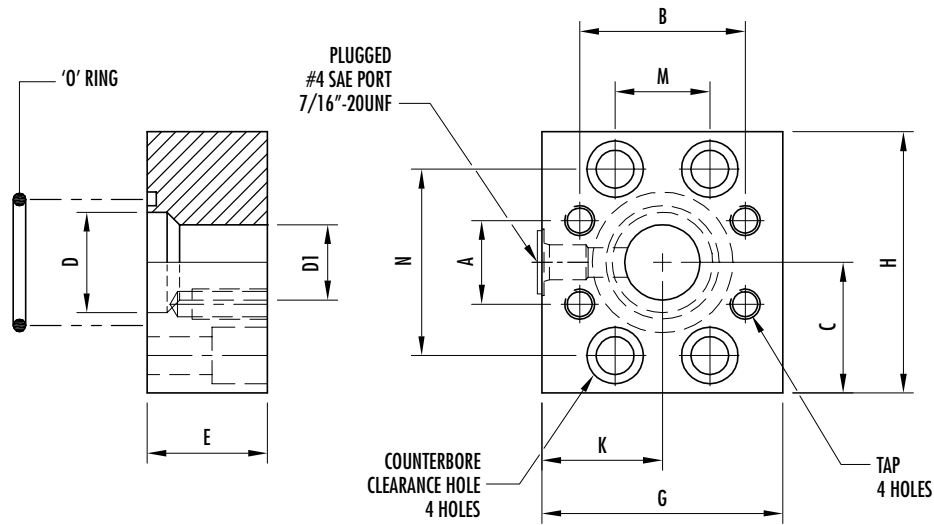
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

SAE Code 61 Flange Manifold Mount Style



TPR034 Transition Plate Reducer - SAE Code 61 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)											C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	G	H	K	M	N					
3/4" x 1/2"	TPR034-075 x 050-*	0.69	1.50	1.69	0.75	0.50	1.00	3.00	3.00	1.50	0.88	1.88	3/8"-16	5/16"-18	OR*-2-214	2.16	5000 (350)
1" x 1/2"	TPR034-100 x 050-*	0.69	1.50	1.50	0.94	0.50	1.50	3.00	3.00	1.50	1.03	2.06	3/8"-16	5/16"-18	OR*-2-219	3.30	5000 (350)
1" x 3/4"	TPR034-100 x 075-*	0.88	1.88	1.50	0.94	0.75	1.50	3.00	3.00	1.50	1.03	2.06	3/8"-16	3/8"-16	OR*-2-219	2.06	5000 (350)
1 1/4" x 3/4"	TPR034-125 x 075-*	0.88	1.88	1.50	1.25	0.75	1.50	3.00	3.25	1.50	1.19	2.31	7/16"-14	3/8"-16	OR*-2-222	3.14	5000 (350)
1 1/4" x 1"	TPR034-125 x 100-*	1.03	2.06	1.50	1.25	0.94	1.25	3.00	3.25	1.50	1.19	2.31	7/16"-14	3/8"-16	OR*-2-222	2.38	5000 (350)
1 1/2" x 1"	TPR034-150 x 100-*	1.03	2.06	2.00	1.50	0.94	1.50	3.00	4.00	1.50	1.41	2.75	1/2"-13	3/8"-16	OR*-2-225	3.99	5000 (350)
1 1/2" x 1 1/4"	TPR034-150 x 125-*	1.19	2.31	2.00	1.50	1.25	1.50	3.00	4.00	1.50	1.41	2.75	1/2"-13	7/16"-14	OR*-2-225	3.74	4000 (275)
2" x 1 1/4"	TPR034-200 x 125-*	1.19	2.31	2.00	1.94	1.25	2.00	3.00	4.00	1.50	1.69	3.06	1/2"-13	7/16"-14	OR*-2-228	4.39	4000 (275)
2" x 1 1/2"	TPR034-200 x 150-*	1.41	2.75	2.00	1.94	1.50	1.75	4.00	4.00	2.00	1.69	3.06	1/2"-13	1/2"-13	OR*-2-228	6.02	3000 (210)
2 1/2" x 1 1/2"	TPR034-250 x 150-*	1.41	2.75	2.50	2.38	1.50	2.00	4.00	5.00	2.00	2.00	3.50	1/2"-13	1/2"-13	OR*-2-232	8.00	3000 (210)
2 1/2" x 2"	TPR034-250 x 200-*	1.69	3.06	2.50	2.38	1.94	1.75	4.00	5.00	2.00	2.00	3.50	1/2"-13	1/2"-13	OR*-2-232	7.32	3000 (210)
3" x 2"	TPR034-300 x 200-*	1.69	3.06	3.00	2.88	1.94	2.00	4.00	6.00	2.00	2.44	4.19	5/8"-11	1/2"-13	OR*-2-237	10.21	3000 (210)
3" x 2 1/2"	TPR034-300 x 250-*	2.00	3.50	3.00	2.88	2.38	1.75	4.50	6.00	2.25	2.44	4.19	5/8"-11	1/2"-13	OR*-2-237	9.40	2500 (175)

* INSERT ' V ' TO INICATE OPTIONAL VITON 'O' RING

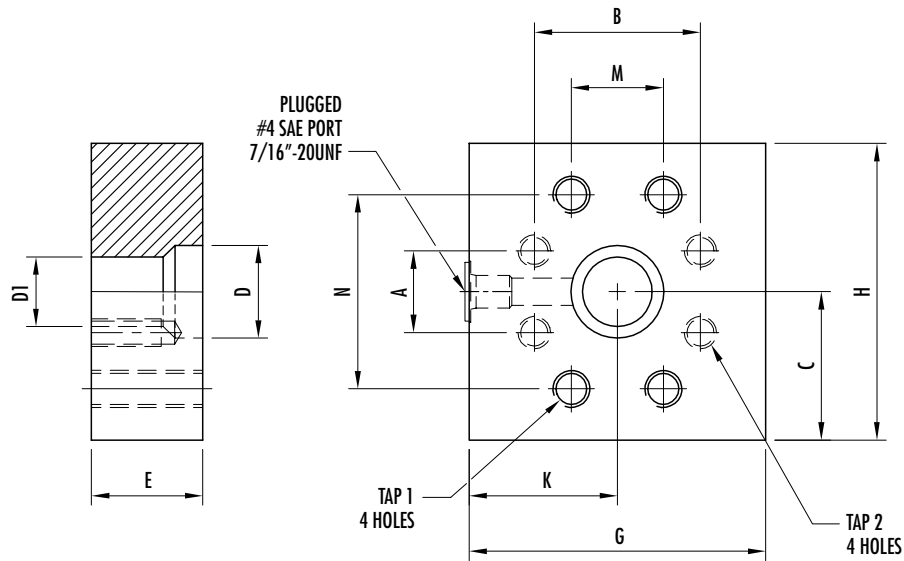
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

SAE Code 62 Flange Union Style



TPR64 Transition Plate Reducer - SAE Code 62 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)											Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	DI	E	G	H	K	M	N				
3/4" x 1/2"	TPR64-075 x 050-*	0.72	1.59	1.88	0.75	0.50	1.38	3.00	3.25	1.50	0.94	2.00	3/8"-16	5/16"-18	3.43	6000 (420)
1" x 1/2"	TPR64-100 x 050-*	0.72	1.59	1.50	0.94	0.50	1.38	3.00	3.00	1.50	1.09	2.25	7/16"-14	5/16"-18	3.09	6000 (420)
1" x 3/4"	TPR64-100 x 075-*	0.94	2.00	1.50	0.94	0.75	1.25	3.00	3.00	1.50	1.09	2.25	7/16"-14	3/8"-16	2.66	6000 (420)
1 1/4" x 3/4"	TPR64-125 x 075-*	0.94	2.00	2.00	1.25	0.75	1.50	3.00	4.00	1.50	1.25	2.63	1/2"-13	3/8"-16	3.11	6000 (420)
1 1/4" x 1"	TPR64-125 x 100-*	1.09	2.25	2.00	1.25	0.94	1.25	3.00	4.00	1.50	1.25	2.63	1/2"-13	7/16"-14	3.37	6000 (420)
1 1/2" x 1"	TPR64-150 x 100-*	1.09	2.25	2.25	1.50	0.94	1.50	3.00	4.50	1.50	1.44	3.13	5/8"-11	7/16"-14	4.62	6000 (420)
1 1/2" x 1 1/4"	TPR64-150 x 125-*	1.25	2.63	2.25	1.50	1.25	1.50	4.00	4.50	2.00	1.44	3.13	5/8"-11	1/2"-13	6.27	6000 (420)
2" x 1 1/4"	TPR64-200 x 125-*	1.25	2.63	2.50	1.94	1.25	1.75	4.00	5.00	2.00	1.75	3.81	3/4"-10	1/2"-13	8.03	6000 (420)
2" x 1 1/2"	TPR64-200 x 150-*	1.44	3.13	2.50	1.94	1.50	1.75	4.00	5.00	2.00	1.75	3.81	3/4"-10	5/8"-11	7.55	6000 (420)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

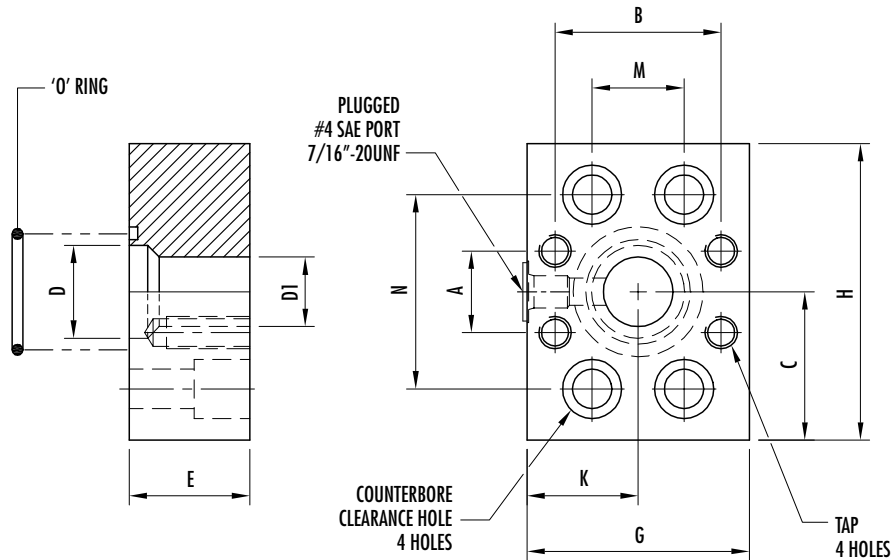
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

SAE Code 62 Flange Manifold Mount Style



TPR064 Transition Plate Reducer - SAE Code 62 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)											C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	G	H	K	M	N					
3/4" x 1/2"	TPR064-075 x 050-*	0.72	1.59	1.50	0.75	0.50	1.00	2.50	3.00	1.25	0.94	2.00	3/8"-16	5/16"-18	OR*-2-214	1.75	6000 (420)
1" x 1/2"	TPR064-100 x 050-*	0.72	1.59	1.50	0.94	0.50	1.50	2.50	3.00	1.25	1.09	2.25	7/16"-14	5/16"-18	OR*-2-219	2.34	6000 (420)
1" x 3/4"	TPR064-100 x 075-*	0.94	2.00	1.50	0.94	0.75	1.25	3.00	3.00	1.50	1.09	2.25	7/16"-14	3/8"-16	OR*-2-219	2.49	6000 (420)
1 1/4" x 3/4"	TPR064-125 x 075-*	0.94	2.00	2.00	1.25	0.75	1.50	3.00	4.00	1.50	1.25	2.63	1/2"-13	3/8"-16	OR*-2-222	4.14	6000 (420)
1 1/4" x 1"	TPR064-125 x 100-*	1.09	2.25	2.00	1.25	0.94	1.25	3.00	4.00	1.50	1.25	2.63	1/2"-13	7/16"-14	OR*-2-222	3.24	6000 (420)
1 1/2" x 1"	TPR064-150 x 100-*	1.09	2.25	2.25	1.50	0.94	1.50	3.00	4.50	1.50	1.44	3.13	5/8"-11	7/16"-14	OR*-2-225	4.18	6000 (420)
1 1/2" x 1 1/4"	TPR064-150 x 125-*	1.25	2.63	2.25	1.50	1.25	1.50	4.00	4.50	2.00	1.44	3.13	5/8"-11	1/2"-13	OR*-2-225	5.12	6000 (420)
2" x 1 1/4"	TPR064-200 x 125-*	1.25	2.63	2.50	1.94	1.25	1.75	4.00	5.50	2.00	1.75	3.81	3/4"-10	1/2"-13	OR*-2-228	7.21	6000 (420)
2" x 1 1/2"	TPR064-200 x 150-*	1.44	3.13	2.50	1.94	1.50	1.75	5.00	5.50	2.00	1.75	3.81	3/4"-10	5/8"-11	OR*-2-228	7.28	6000 (420)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

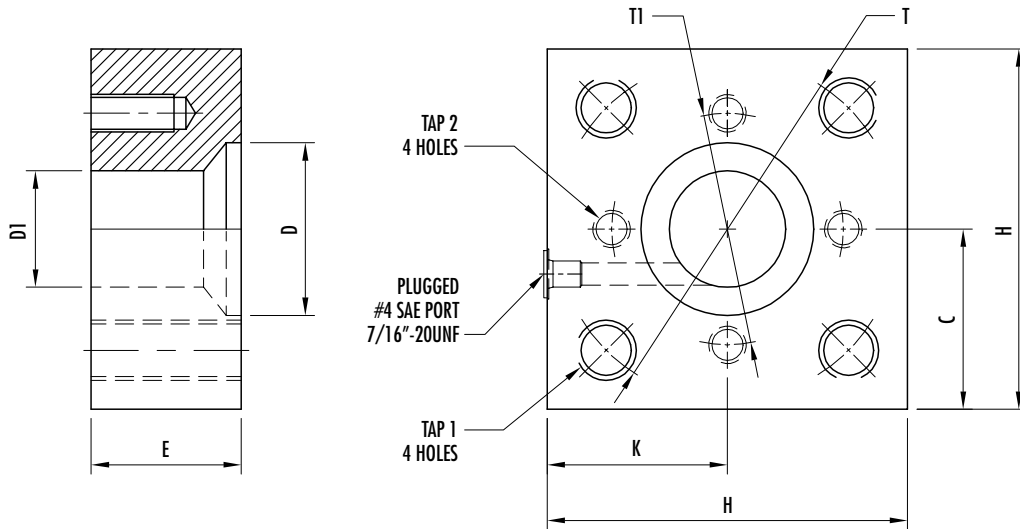
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164 Flange Union Style



TPR74 Transition Plate Reducer - ISO 6164 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)								Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	C	D	D1	E	H	K				
3" x 2 1/2"	TPR74-300 x 250-*	5.71	4.65	3.00	2.88	2.38	2.25	6.00	3.00	1"-8	3/4"-10	16.63	5800 (400)
4" x 2 1/2"	TPR74-400 x 250-*	6.89	4.65	3.50	3.38	2.38	2.25	7.00	3.50	1 1/8"-7	3/4"-10	24.10	5800 (400)
4" x 3"	TPR74-400 x 300-*	6.89	5.71	3.75	3.50	2.88	2.50	7.50	3.75	1 1/8"-7	1"-8	30.70	5800 (400)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

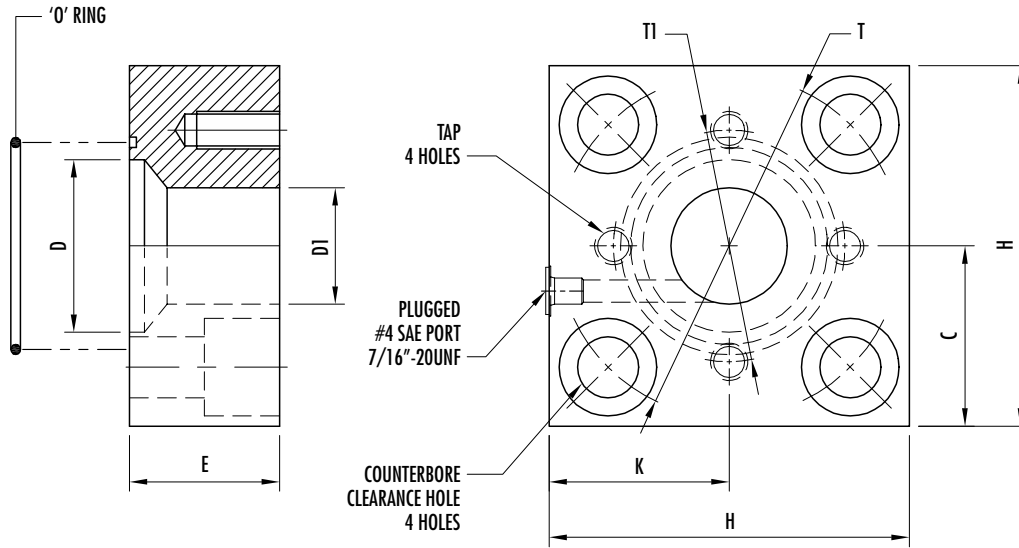
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164 Flange Manifold Mount Style



TPR074 Transition Plate Reducer - ISO 6164 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)								C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	TI	C	D	DI	E	H	K					
3" x 2 1/2"	TPR074-300 x 250-*	5.71	4.65	3.00	2.88	2.38	1.75	6.00	3.00	1"-8	3/4"-10	OR*-2-237	11.27	5800 (400)
4" x 2 1/2"	TPR074-400 x 250-*	6.89	4.65	3.50	3.50	2.38	2.25	7.00	3.50	1 1/8"-7	3/4"-10	OR*-2-241	12.16	5800 (400)
4" x 3"	TPR074-400 x 300-*	6.89	5.71	3.75	3.50	2.88	2.00	7.50	3.75	1 1/8"-7	1"-8	OR*-2-241	21.39	5800 (400)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

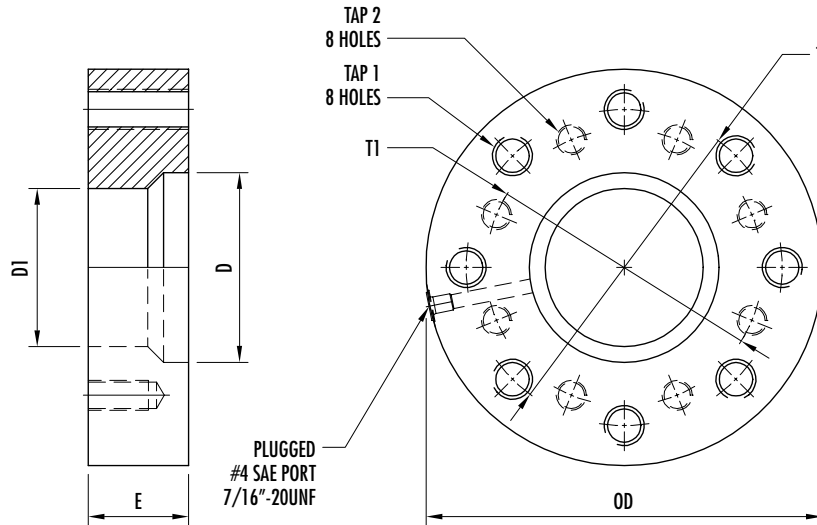
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

TMI® 8-Bolt Flange Union Style



TPR48 Transition Plate Reducer - TMI® 8-Bolt Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)						Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E				
6" x 5"	TPR48-600 x 500-*	9.65	7.88	4.90	4.00	11.81	2.00	1 1/8"-7	1"-8	50.39	3700 (255)
8" x 5"	TPR48-800 x 500-*	12.40	7.88	6.81	4.00	15.50	3.00	1 1/2"-6	1"-8	132.19	3500 (240)
8" x 6"	TPR48-800 x 600-*	12.40	9.65	6.81	4.90	15.50	2.50	1 1/2"-6	1 1/8"-7	104.53	3500 (240)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

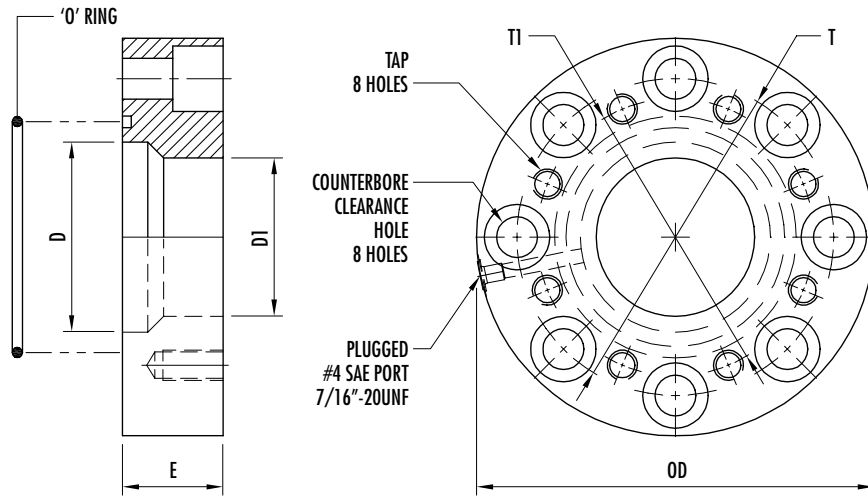
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

TMI® 8-Bolt Flange Manifold Mount Style



TPR048 Transition Plate Reducer - TMI® 8-Bolt 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)						C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E					
6" x 5"	TPR048-600 x 500-*	9.65	7.88	4.90	4.00	11.81	2.00	1 1/8"-7	1"-8	OR*-2-359	42.00	3700 (255)
8" x 5"	TPR048-800 x 500-*	12.40	7.88	6.81	4.00	15.50	3.00	1 1/2"-6	1"-8	OR*-2-368	120.30	3500 (240)
8" x 6"	TPR048-800 x 600-*	12.40	9.65	6.81	4.90	15.50	2.50	1 1/2"-6	1 1/8"-7	OR*-2-368	93.81	3500 (240)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

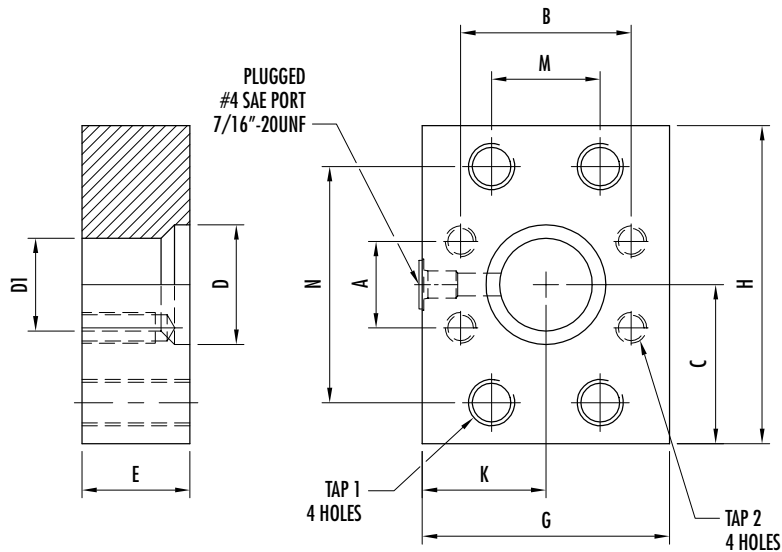
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

SAE Code 62/Code 61 Flange Union Style



TPR6-34 Transition Plate Reducer - SAE Code 62/Code 61 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (SAE Code 62 x 61)	Reducer Part No.	Dimensions (in)											Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/ pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	G	H	K	M	N				
3/4" x 1/2"	TPR6-34-075 x 050-*	0.69	1.50	1.88	0.75	0.50	1.00	2.50	3.25	1.25	0.94	2.00	3/8"-16	5/16"-18	2.03	5000 (350)
1" x 1/2"	TPR6-34-100 x 050-*	0.69	1.50	1.50	0.94	0.50	1.50	3.00	3.00	1.50	1.09	2.25	7/16"-14	5/16"-18	3.35	5000 (350)
1" x 3/4"	TPR6-34-100 x 075-*	0.88	1.88	1.50	0.94	0.75	1.25	3.00	3.00	1.50	1.09	2.25	7/16"-14	3/8"-16	2.66	5000 (350)
1 1/4" x 3/4"	TPR6-34-125 x 075-*	0.88	1.88	1.75	1.25	0.75	1.50	3.00	3.50	1.50	1.25	2.63	1/2"-13	3/8"-16	3.75	5000 (350)
1 1/4" x 1"	TPR6-34-125 x 100-*	1.03	2.06	1.75	1.25	0.94	1.25	3.00	3.50	1.50	1.25	2.63	1/2"-13	3/8"-16	3.00	5000 (350)
1 1/2" x 1"	TPR6-34-150 x 100-*	1.03	2.06	2.00	1.50	0.94	1.50	3.00	4.00	1.50	1.44	3.13	5/8"-11	3/8"-16	4.05	5000 (350)
1 1/2" x 1 1/4"	TPR6-34-150 x 125-*	1.19	2.31	2.00	1.50	1.25	1.25	4.00	4.00	2.00	1.44	3.13	5/8"-11	7/16"-14	4.58	4000 (275)
2" x 1 1/4"	TPR6-34-200 x 125-*	1.19	2.31	2.50	1.94	1.25	1.75	4.00	5.00	2.00	1.75	3.81	3/4"-10	7/16"-14	8.12	4000 (275)
2" x 1 1/2"	TPR6-34-200 x 150-*	1.41	2.75	2.50	1.94	1.50	1.50	5.00	5.00	2.50	1.75	3.81	3/4"-10	1/2"-13	8.78	3000 (210)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

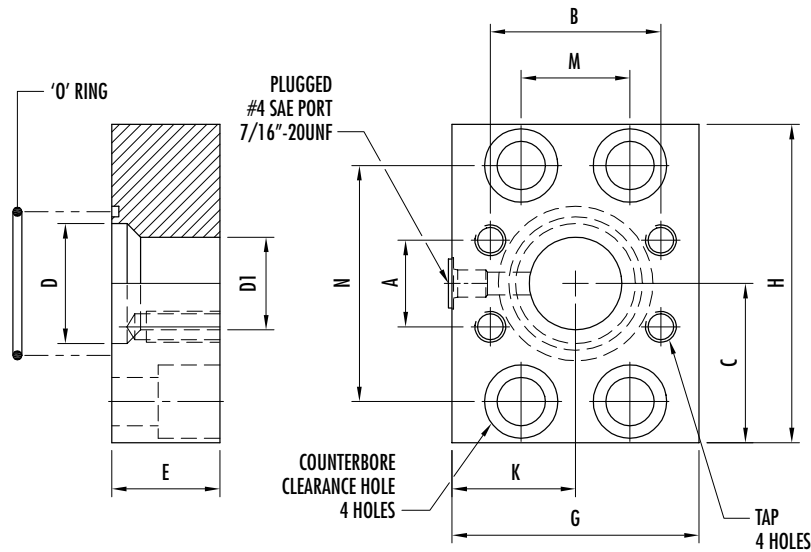
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

SAE Code 62/Code 61 Flange Manifold Mount Style



TPR06-34 Transition Plate Reducer - SAE Code 62/Code 61 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size (SAE Code 62 x 61)	Reducer Part No.	Dimensions (in)											C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/ pc	Working Pressure PSI (bar)
		A	B	C	D	D1	E	G	H	K	M	N					
3/4" x 1/2"	TPR06-34-075 x 050-*	0.69	1.50	1.38	0.75	0.50	1.50	3.00	2.75	1.75	0.94	2.00	3/8"-16	5/16"-18	OR*-2-214	3.00	5000 (350)
1" x 1/2"	TPR06-34-100 x 050-*	0.69	1.50	1.50	0.94	0.50	1.50	3.00	3.00	1.75	1.09	2.25	7/16"-14	5/16"-18	OR*-2-219	3.18	5000 (350)
1" x 3/4"	TPR06-34-100 x 075-*	0.88	1.88	1.50	0.94	0.75	1.50	3.00	3.00	1.75	1.09	2.25	7/16"-14	3/8"-16	OR*-2-219	3.02	5000 (350)
1 1/4" x 3/4"	TPR06-34-125 x 075-*	0.88	1.88	1.75	1.25	0.75	1.50	3.00	3.50	1.75	1.25	2.63	1/2"-13	3/8"-16	OR*-2-222	3.50	5000 (350)
1 1/4" x 1"	TPR06-34-125 x 100-*	1.03	2.06	1.75	1.25	0.94	1.00	3.00	3.50	1.50	1.25	2.63	1/2"-13	3/8"-16	OR*-2-222	2.17	5000 (350)
1 1/2" x 1"	TPR06-34-150 x 100-*	1.03	2.06	2.25	1.50	0.94	1.75	3.50	4.50	2.00	1.44	3.13	5/8"-11	3/8"-16	OR*-2-225	6.13	5000 (350)
1 1/2" x 1 1/4"	TPR06-34-150 x 125-*	1.19	2.31	2.25	1.50	1.25	1.75	3.00	4.50	1.50	1.44	3.13	5/8"-11	7/16"-14	OR*-2-225	4.72	4000 (275)
2" x 1 1/4"	TPR06-34-200 x 125-*	1.19	2.31	2.63	1.94	1.25	1.75	4.00	5.25	2.00	1.75	3.81	3/4"-10	7/16"-14	OR*-2-228	7.83	4000 (275)
2" x 1 1/2"	TPR06-34-200 x 150-*	1.41	2.75	2.63	1.94	1.50	1.75	4.00	5.25	2.00	1.75	3.81	3/4"-10	1/2"-13	OR*-2-228	7.48	3000 (210)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

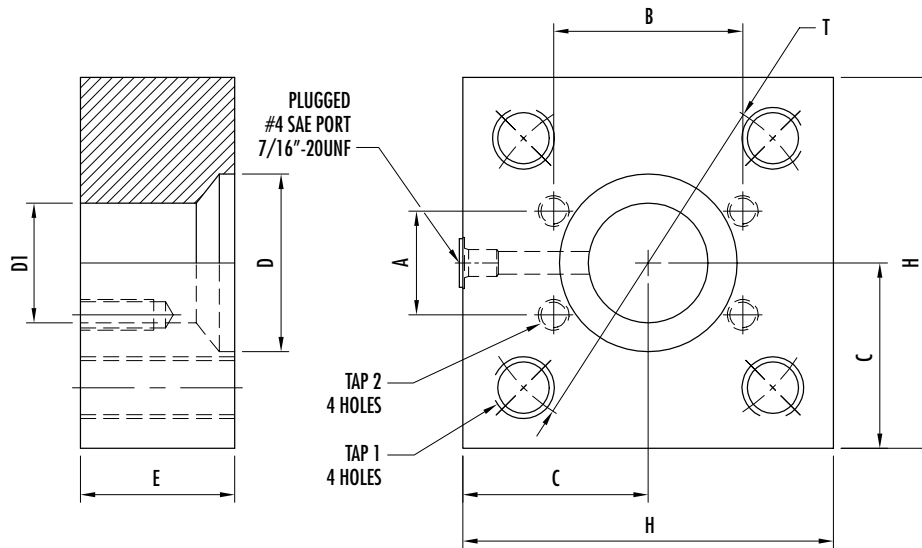
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164/SAE Code 61 Flange Union Style



TPR7-34 Transition Plate Reducer - ISO 6164/SAE Code 61 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (ISO 6164 x SAE Code 61)	Reducer Part No.	Dimensions (in)								Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	A	B	C	D	D1	E	H				
2 1/2" x 1 1/2"	TPR7-34-250 x 150-*	4.65	1.41	2.75	2.50	2.38	1.50	1.75	5.00	3/4"-10	1/2"-13	10.40	3000 (210)
2 1/2" x 2"	TPR7-34-250 x 200-*	4.65	1.69	3.06	2.50	2.38	1.94	1.75	5.00	3/4"-10	1/2"-13	10.30	3000 (210)
3" x 2"	TPR7-34-300 x 200-*	5.71	1.69	3.06	3.00	2.88	1.94	2.00	6.00	1"-8	1/2"-13	16.50	3000 (210)
3" x 2 1/2"	TPR7-34-300 x 250-*	5.71	2.00	3.50	3.00	2.88	2.38	2.00	6.00	1"-8	1/2"-13	15.50	2500 (175)
4" x 2 1/2"	TPR7-34-400 x 250-*	6.89	2.00	3.50	3.50	3.50	2.38	2.00	7.00	1 1/8"-7	1/2"-13	22.70	2500 (175)
4" x 3"	TPR7-34-400 x 300-*	6.89	2.44	4.19	3.50	3.50	2.88	2.00	7.00	1 1/8"-7	5/8"-11	22.20	2000 (140)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

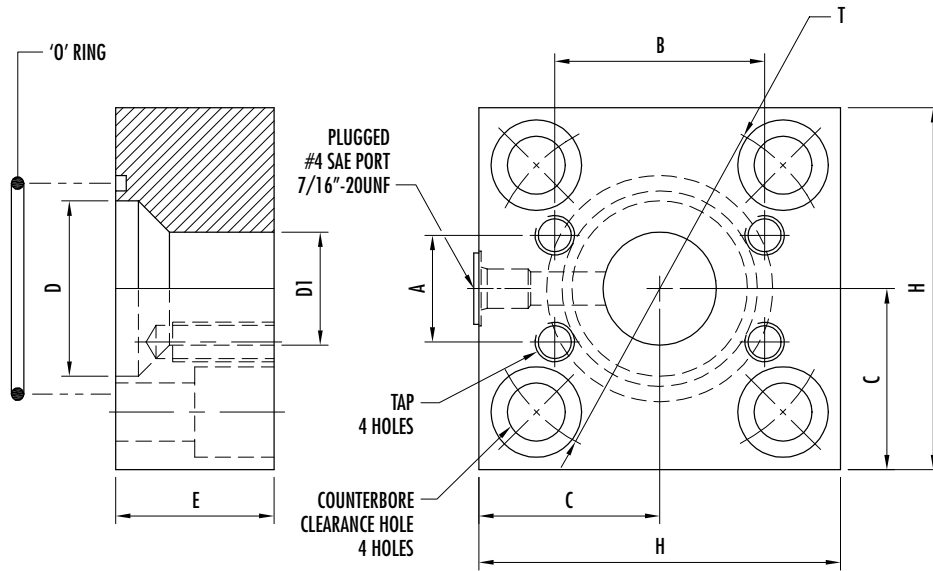
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164/SAE Code 61 Flange Manifold Mount Style



TPR07-34 Transition Plate Reducer - ISO 6164/SAE Code 61 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size (ISO 6164 x SAE Code 61)	Reducer Part No.	Dimensions (in)								C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/ pc	Working Pressure PSI (bar)
		T	A	B	C	D	DI	E	H					
2 1/2" x 1 1/2"	TPR07-34-250 x 150-*	4.65	1.41	2.75	2.50	2.38	1.50	1.88	5.00	3/4"-10	1/2"-13	OR*-2-232	12.20	3000 (210)
2 1/2" x 2"	TPR07-34-250 x 200-*	4.65	1.69	3.06	2.50	2.38	1.94	1.75	5.00	3/4"-10	1/2"-13	OR*-2-232	9.90	3000 (210)
3" x 2"	TPR07-34-300 x 200-*	5.71	1.69	3.06	3.00	2.88	1.94	2.00	6.00	1"-8	1/2"-13	OR*-2-237	16.40	3000 (210)
3" x 2 1/2"	TPR07-34-300 x 250-*	5.71	2.00	3.50	3.00	2.88	2.38	2.00	6.00	1"-8	1/2"-13	OR*-2-237	15.40	2500 (175)
4" x 2 1/2"	TPR07-34-400 x 250-*	6.89	2.00	3.50	3.50	3.50	2.38	2.00	7.00	1 1/8"-7	1/2"-13	OR*-2-241	22.20	2500 (175)
4" x 3"	TPR07-34-400 x 300-*	6.89	2.44	4.19	3.50	3.50	2.88	2.00	7.00	1 1/8"-7	5/8"-11	OR*-2-241	21.70	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

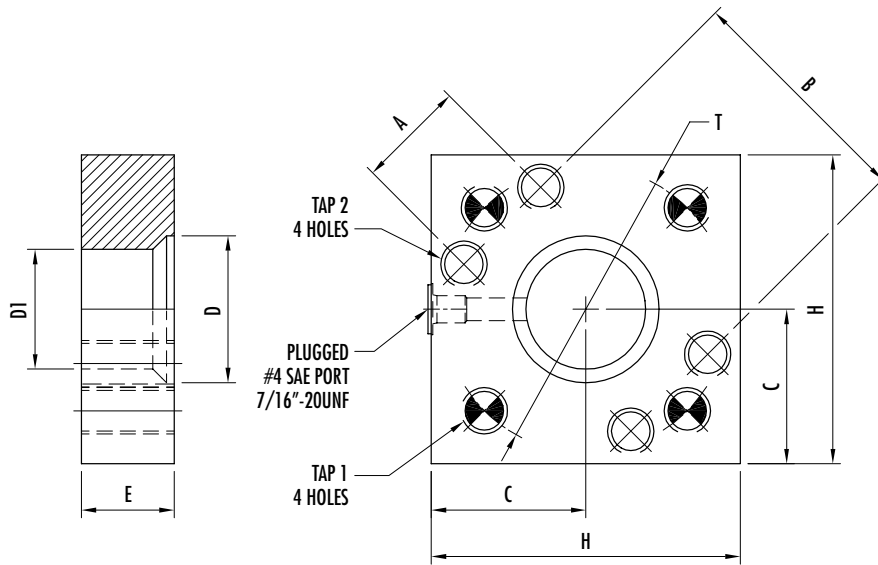
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164/SAE Code 62 Flange Union Style



TPR7-64 Transition Plate Reducer - ISO 6164/SAE Code 62 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (ISO 6164 x SAE Code 62)	Reducer Part No.	Dimensions (in)								Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	A	B	C	D	D1	E	H				
2 1/2" x 1 1/2"	TPR7-64-250 x 150-*	4.65	1.44	3.13	2.50	2.38	1.50	2.00	5.00	3/4"-10	5/8"-11	11.46	5800 (400)
2 1/2" x 2"	TPR7-64-250 x 200-*	4.65	1.75	3.81	3.00	2.38	1.94	1.50	6.00	3/4"-10	3/4"-10	8.65	5800 (400)
3" x 2"	TPR7-64-300 x 200-*	5.71	1.75	3.81	3.00	2.88	1.94	2.25	6.00	1"-8	3/4"-10	17.80	5800 (400)
4" x 2"	TPR7-64-400 x 200-*	6.89	1.75	3.81	3.50	3.50	1.94	2.25	7.00	1 1/8"-7	3/4"-10	25.54	5800 (400)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

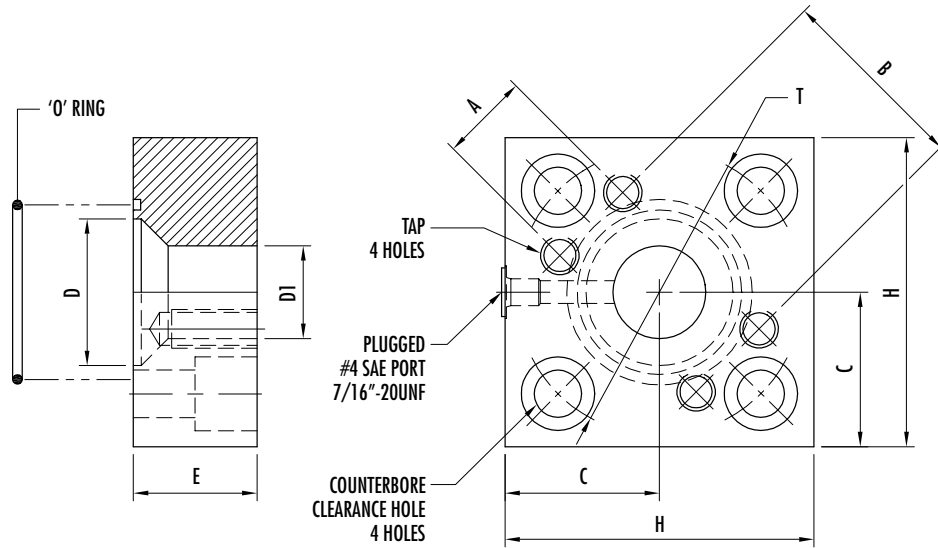
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

ISO 6164/SAE Code 62 Flange Manifold Mount Style



TPR07-64 Transition Plate Reducer - ISO 6164/SAE Code 62 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size (ISO 6164 x SAE Code 62)	Reducer Part No.	Dimensions (in)								C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/ pc	Working Pressure PSI (bar)
		T	A	B	C	D	D1	E	H					
2 1/2" x 1 1/2"	TPR07-64-250 x 150-*	4.65	1.44	3.13	2.50	2.38	1.50	2.00	5.00	3/4"-10	5/8"-11	OR*-2-232	10.61	5800 (400)
3" x 2"	TPR07-64-300 x 200-*	5.71	1.75	3.81	3.00	2.88	1.94	2.25	6.00	1"-8	3/4"-10	OR*-2-237	16.05	5800 (400)
4" x 2"	TPR07-64-400 x 200-*	6.89	1.75	3.81	3.50	3.50	1.94	2.50	7.00	1 1/8"-7	3/4"-10	OR*-2-241	23.09	5800 (400)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

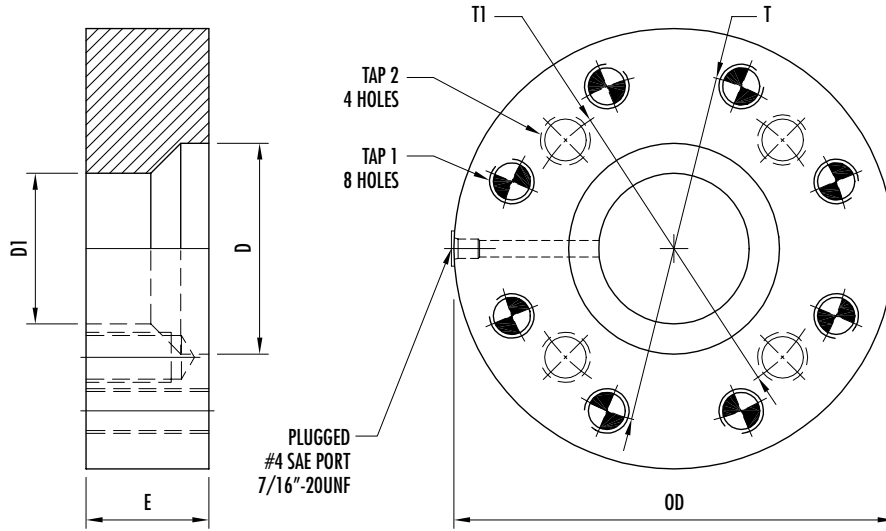
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

TMI® 8-Bolt/ISO 6164 Flange Union Style



TPR4-74 Transition Plate Reducer - TMI® 8-Bolt/ISO 6164 Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size (TMI® 8-Bolt x ISO 6164)	Reducer Part No.	Dimensions (in)						Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E				
5" x 4"	TPR4-74-500 x 400-*	7.88	6.89	4.00	3.50	9.88	2.00	1"-8	1 1/8"-7	31.67	4000 (275)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

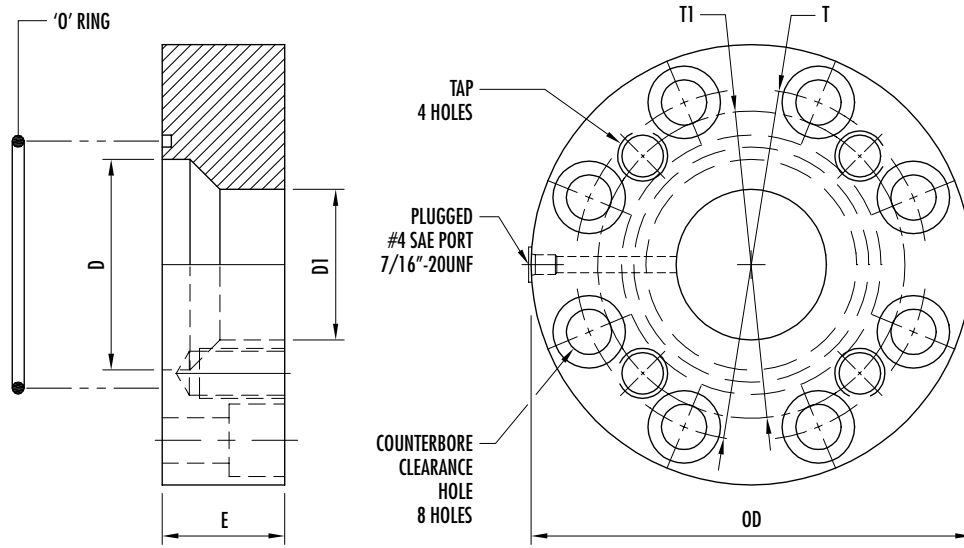
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate Reducer

TMI® 8-Bolt/ISO 6164 Flange Mount Style



TPRO4-74 Transition Plate Reducer - TMI® 8-Bolt/ISO 6164 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size (TMI® 8-Bolt x ISO 6164)	Reducer Part No.	Dimensions (in)						C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/ pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E					
5" x 4"	TPRO4-74-500 x 400-*	7.88	6.89	4.00	3.50	9.88	2.00	1"-8	1 1/8"-7	OR*-2-353	28.70	4000 (275)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

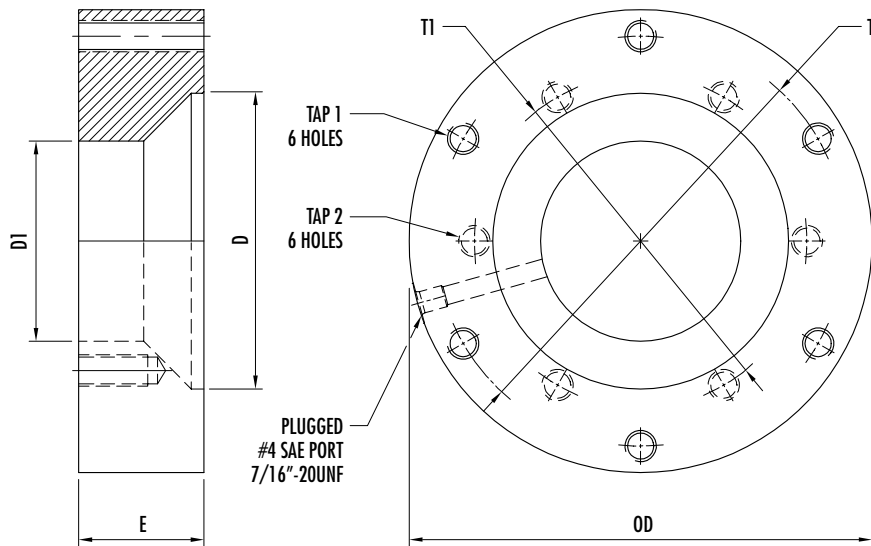
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Transition Plate Reducer

TMI® 6-Bolt Flange Union Style



TPR16 Low Pressure Transition Plate Reducer - TMI® 6-Bolt Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)						Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E				
3" x 2 1/2"	TPR16-300 x 250-*	4.85	4.03	3.07	2.47	6.00	1.75	5/8"-11	1/2"-13	10.08	750 (52)
4" x 2 1/2"	TPR16-400 x 250-*	5.97	4.03	4.03	2.47	7.00	2.25	5/8"-11	1/2"-13	19.46	750 (52)
4" x 3"	TPR16-400 x 300-*	5.97	4.85	4.03	3.07	7.00	2.25	5/8"-11	5/8"-11	17.66	750 (52)
5" x 3"	TPR16-500 x 300-*	7.01	4.85	5.05	3.07	8.25	2.50	5/8"-11	5/8"-11	30.21	750 (52)
5" x 4"	TPR16-500 x 400-*	7.01	5.97	5.05	4.03	8.25	2.25	5/8"-11	5/8"-11	23.69	750 (52)
6" x 4"	TPR16-600 x 400-*	8.19	5.97	6.07	4.03	9.25	2.50	5/8"-11	5/8"-11	36.05	700 (48)
6" x 5"	TPR16-600 x 500-*	8.19	7.01	6.07	5.05	9.25	2.25	5/8"-11	5/8"-11	28.54	700 (48)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

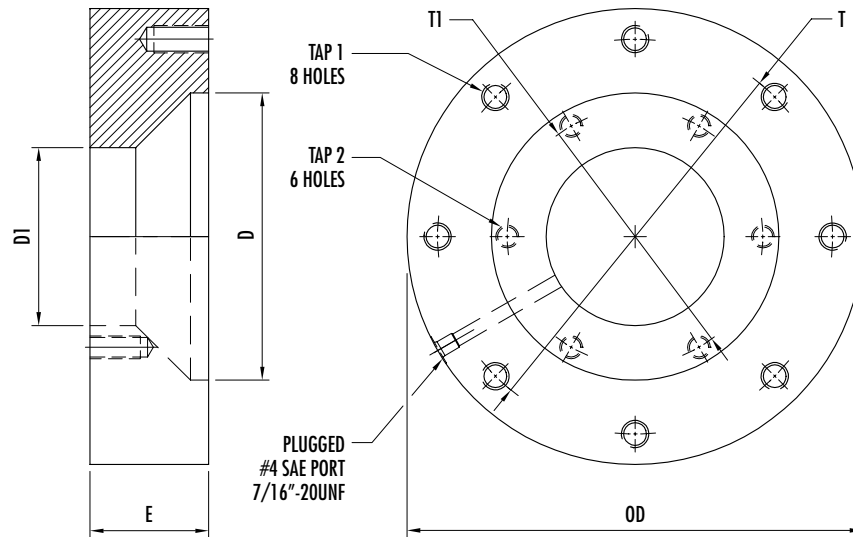
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Transition Plate Reducer

TMI® 8-Bolt/6-Bolt Flange Union Style



TPR1-16 Low Pressure Transition Plate Reducer - TMI® 8-Bolt/6-Bolt Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size	Reducer Part No.	Dimensions (in)						Tap1 UNC-2B	Tap2 UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)
		T	T1	D	D1	OD	E				
8" x 5"	TPR1-16-800 x 500-*	10.83	7.01	7.98	5.05	12.50	3.25	3/4"-10	5/8"-11	90.72	600 (40)
8" x 6"	TPR1-16-800 x 600-*	10.83	8.19	7.98	6.07	12.50	3.25	3/4"-10	5/8"-11	82.70	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

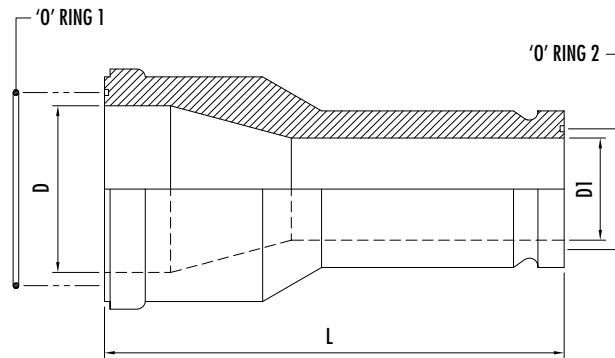
• OTHER REDUCTIONS ARE AVAILABLE (CONSULT FACTORY)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Reducer

Concentric Style - Body Only



CR Concentric Reducer

Complete With Buna 'O' Rings (Standard)

Size	Reducer Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	D	D1				
3/4" x 1/2"	CR-075 x 050-*	3.72	0.79	0.42	OR*-3-913	OR*-3-909	0.86	Note 1.
1" x 1/2"	CR-100 x 050-*	3.72	0.91	0.42	OR*-3-916	OR*-3-909	0.95	
1" x 3/4"	CR-100 x 075-*	4.50	0.91	0.62	OR*-3-916	OR*-3-913	1.46	
1 1/4" x 3/4"	CR-125 x 075-*	4.50	1.18	0.62	OR*-3-918	OR*-3-913	1.68	
1 1/4" x 1"	CR-125 x 100-*	4.50	1.18	0.78	OR*-3-918	OR*-3-916	1.73	
1 1/2" x 1"	CR-150 x 100-*	4.50	1.54	0.78	OR*-3-924	OR*-3-916	2.08	
1 1/2" x 1 1/4"	CR-150 x 125-*	5.26	1.54	1.06	OR*-3-924	OR*-3-918	2.53	
2" x 1 1/4"	CR-200 x 125-*	5.26	1.93	1.06	OR*-3-928	OR*-3-918	3.22	
2" x 1 1/2"	CR-200 x 150-*	5.26	1.93	1.41	OR*-3-928	OR*-3-924	3.43	
2 1/2" x 1 1/2"	CR-250 x 150-*	6.06	2.36	1.41	OR*-2-232	OR*-3-924	4.85	
2 1/2" x 2"	CR-250 x 200-*	6.06	2.36	1.80	OR*-2-232	OR*-3-928	5.07	
3" X 2"	CR-300 x 200-*	6.98	2.88	1.80	OR*-2-237	OR*-3-928	-	
3" x 2 1/2"	CR-300 x 250-*	6.98	2.88	2.36	OR*-2-237	OR*-2-232	-	
4" x 2 1/2"	CR-400 x 250-*	7.76	3.35	2.36	OR*-2-241	OR*-2-232	-	
4" x 3"	CR-400 x 300-*	7.76	3.35	2.88	OR*-2-241	OR*-2-237	-	

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

Note: 1) BODY ONLY WORKING PRESSURE RATING MEETS OR EXCEEDS FLANGE RATINGS SELECTED FOR AN ASSEMBLY - REFERENCE PAGE J21

• TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE J21

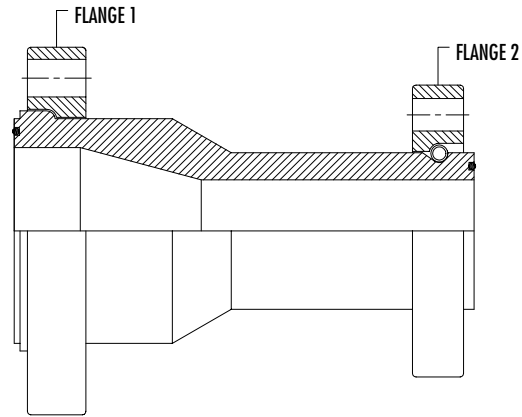
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Retain Ring Flange Reducer Assembly

Complete Assembly Part Number

Typical A/CR Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) CONCENTRIC REDUCER BODY (ref. page J20)
- TWO (2) RETAIN RING FLANGES (ref. pages C8-C10)
- ONE (1) RETAIN RING
- TWO (2) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (1/2"-3")
- ENDS SEALED WITH POSITIVE CLOSURE (4")

		Code	A	/	CR	-	Body Material	-	Body Size	-	Flange 1	-	Flange 2	-	Options
Assembly		A													
Concentric Reducer		CR													
Body Material Carbon Steel (Standard)	No Designation Required														
Body Material Stainless Steel (Optional) Ref. page (C7)	TMP304SS	304													
	TMP316SS	316													
Body Size Ref. page (J20)	3/4" x 1/2"	075 x 050													
	1" x 1/2"	100 x 050													
	1" x 3/4"	100 x 075													
	1 1/4" x 3/4"	125 x 075													
	1 1/4" x 1"	125 x 100													
	1 1/2" x 1"	150 x 100													
	1 1/2" x 1 1/4"	150 x 125													
	2" x 1 1/4"	200 x 125													
	2" x 1 1/2"	200 x 150													
	2 1/2" x 1 1/2"	250 x 150													
	2 1/2" x 2"	250 x 200													
	3" x 2"	300 x 200													
	3" x 2 1/2"	300 x 250													
	4" x 2 1/2"	400 x 250													
4" x 3"	400 x 300														
Flange Type Ref. pages (C8-C10)	RFC34 SAE Code 61 W/Clearance Holes	FC34													
	*RFT34 SAE Code 61 W/Tapped Holes	FT34													
	RFC64 SAE Code 62 W/Clearance Holes	FC64													
	*RFT64 SAE Code 62 W/Tapped Holes	FT64													
	RFC74 ISO 6164 W/Clearance Holes	FC74													
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49													
Options	Viton	V													
	Painted (Specify)	P													
Complete Stainless Steel Assembly: (including flanges)		SS													

- * NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS.
- FOR CONNECTION TO HOSE USE CONNECTOR PLATE **OCP** (TO BE ORDERED SEPARATELY) REF. PAGE J24
- **FOR USE WITH 9-BOLT BALL VALVE CONNECTIONS (REF. PAGE P10)

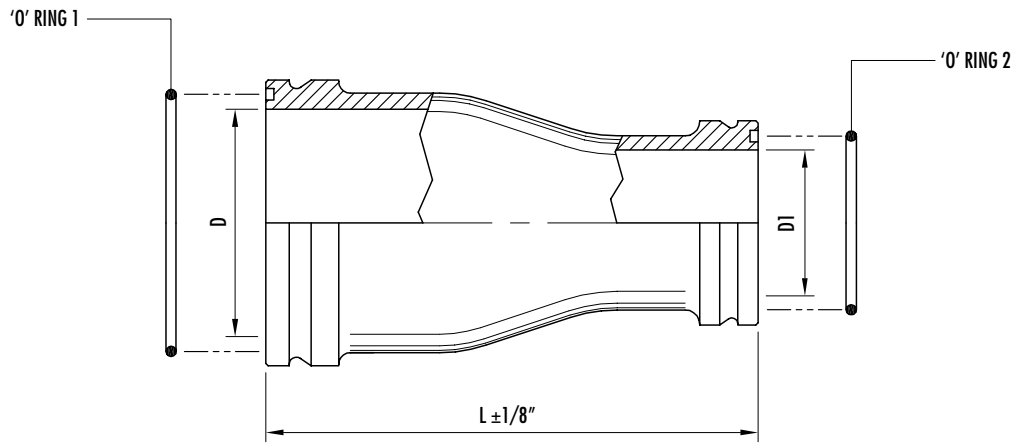
PART NO. (EXAMPLE):
A/CR - 100 x 050 - FC34 - FC34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE FLANGE RATINGS.
- SEE REFERENCE PAGE INDICATED ABOVE FOR PRESSURE RATINGS.
- FOR BOLT KITS - REFERENCE SECTION R



Low Pressure Retain Ring Flange Reducer

Concentric Style - Body Only



LRR Low Pressure Retain Ring Flange Reducer - Body Only (segmentally welded) Complete with Buna 'O' Rings (Standard)

Size	Reducer Body Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L	D	D1				
3" x 2 1/2"	LRR-300 x 250-*	6.64	3.07	2.47	OR*-2-237	OR*-2-232	4.45	750 (52)
4" x 2 1/2"	LRR-400 x 250-*	7.14	4.03	2.47	OR*-2-245	OR*-2-232	6.39	750 (52)
4" x 3"	LRR-400 x 300-*	7.35	4.03	3.07	OR*-2-245	OR*-2-237	6.93	750 (52)
5" x 3"	LRR-500 x 300-*	8.54	5.05	3.07	OR*-2-253	OR*-2-237	10.25	750 (52)
5" x 4"	LRR-500 x 400-*	8.54	5.05	4.03	OR*-2-253	OR*-2-245	11.44	750 (52)
6" x 4"	LRR-600 x 400-*	9.24	6.07	4.03	OR*-2-259	OR*-2-245	15.81	700 (48)
6" x 5"	LRR-600 x 500-*	9.43	6.07	5.05	OR*-2-259	OR*-2-253	17.26	700 (48)
8" x 5"	LRR-800 x 500-*	10.32	7.98	5.05	OR*-2-372	OR*-2-253	25.30	600 (40)
8" x 6"	LRR-800 x 600-*	10.52	7.98	6.07	OR*-2-372	OR*-2-259	28.66	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE J23
- REDUCER BODY INCLUDES BUTT WELD ADAPTERS (REF. PAGES D10-D13)

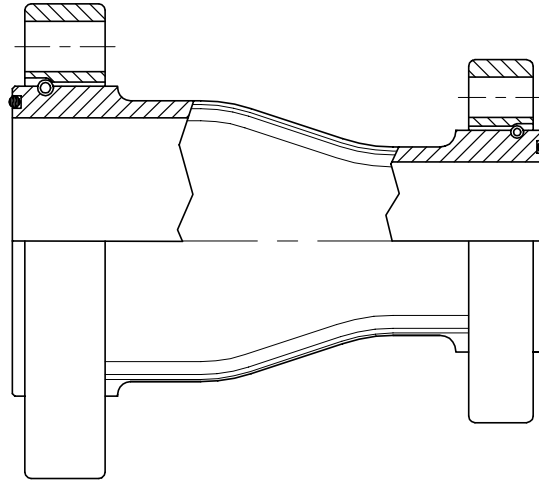
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Low Pressure Retain Ring Flange Reducer Assembly

Complete Assembly Part Number

Typical A/LRR Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE RETAIN RING FLANGE REDUCER BODY
- TWO (2) LOW PRESSURE RETAIN RING FLANGES (REF. PAGES D8-D9)
- TWO (2) LOW PRESSURE RETAIN RINGS
- TWO (2) BUNA 'O' RINGS (STANDARD)
- ENDS SEALED WITH 6 MIL HEAT SHRINK MATERIAL (2 1/2" & 3")
- ENDS SEALED WITH POSITIVE CLOSURE (4"-8")

A/LRR Low Pressure Retain Ring Flange Reducer Assembly

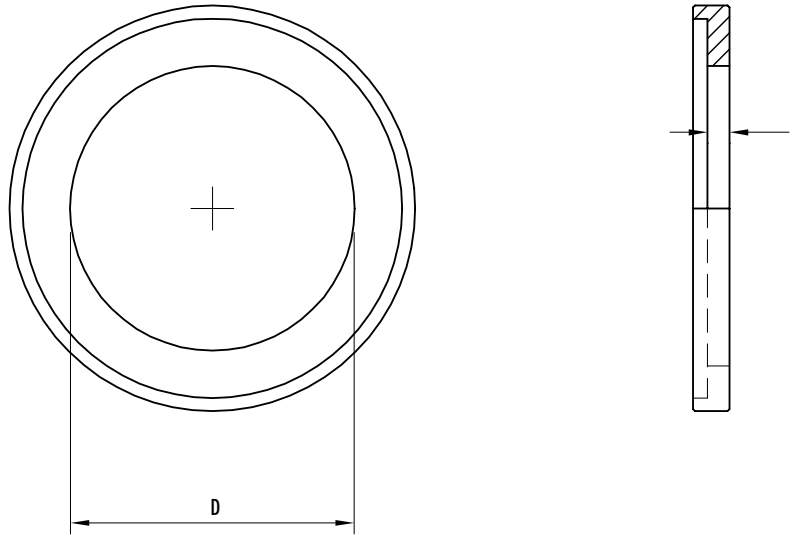
Size	Reducer Assembly Part No.	WT. (Assembly) lbs/pc	Working Pressure PSI (bar)
3" x 2 1/2"	A/LRR-300 x 250-*	10.41	750 (52)
4" x 2 1/2"	A/LRR-400 x 250-*	13.23	750 (52)
4" x 3"	A/LRR-400 x 300-*	17.34	750 (52)
5" x 3"	A/LRR-500 x 300-*	22.65	750 (52)
5" x 4"	A/LRR-500 x 400-*	26.66	750 (52)
6" x 4"	A/LRR-600 x 400-*	32.22	700 (48)
6" x 5"	A/LRR-600 x 500-*	35.66	700 (48)
8" x 5"	A/LRR-800 x 500-*	53.16	600 (40)
8" x 6"	A/LRR-800 x 600-*	57.71	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



'O' Ring Connector Plate



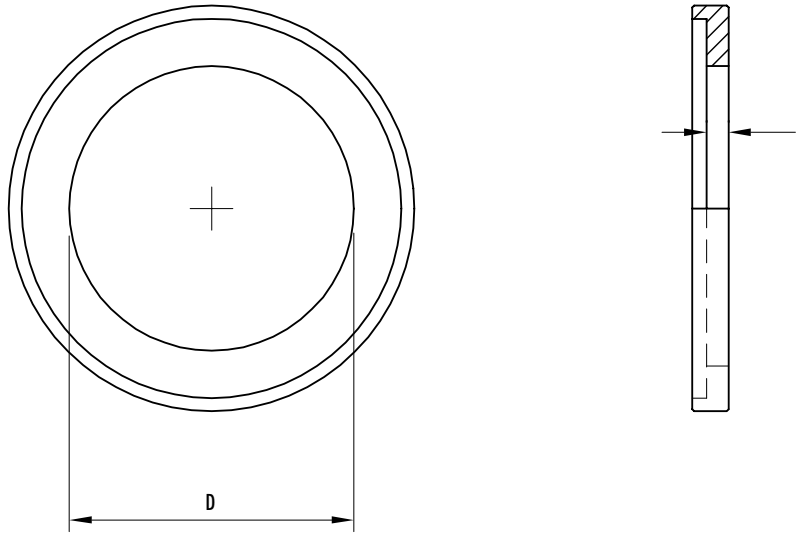
OCP 'O' Ring Connector Plate for Retain Ring Components

Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
1/2"	OCP-050	0.50	0.13	0.04
3/4"	OCP-075	0.75	0.13	0.06
1"	OCP-100	0.94	0.13	0.07
1 1/4"	OCP-125	1.20	0.13	0.08
1 1/2"	OCP-150	1.50	0.13	0.11
2"	OCP-200	1.94	0.13	0.13
2 1/2"	OCP-250	2.36	0.13	0.17
3"	OCP-300	2.88	0.13	0.25
4"	OCP-400	3.35	0.13	0.34

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure 'O' Ring Connector Plate



LOCP Low Pressure 'O' Ring Connector Plate

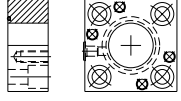
Size	Connector Plate Part No.	Dimensions (in)		WT. lbs/pc
		D	L	
2 1/2"	LOCP-250	2.47	1.13	0.15
3"	LOCP-300	3.07	1.13	0.21
4"	LOCP-400	4.03	1.13	0.32
5"	LOCP-500	5.05	1.19	0.58
6"	LOCP-600	6.07	1.19	0.79
8"	LOCP-800	7.98	1.19	1.35

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)





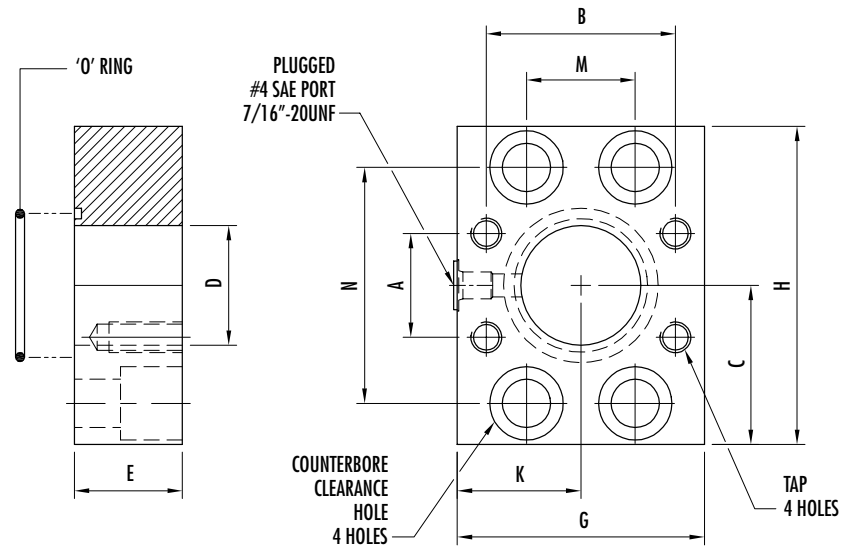
Transition Plates - Visual Index

TRANSITION PLATE MANIFOLD MOUNT STYLE	TP06-34 SAE CODE 62/CODE 61  $\frac{1}{2}$ " - 2" Page K2	TP07-34 ISO 6164/CODE 61  $2\frac{1}{2}$ " - 3" Page K3		



Transition Plate

SAE Code 62/Code 61 Flange Manifold Mount Style



TP06-34 Transition Plate - SAE Code 62/61 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Transition Plate Part No.	Dimensions (in)										C'Thore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	G	H	K	M	N					
1/2"	TP06-34-050-*	0.69	1.50	1.25	0.50	1.00	2.50	2.50	1.50	0.72	1.59	5/16"-18	5/16"-18	OR*-2-210	1.47	5000 (350)
3/4"	TP06-34-075-*	0.88	1.88	1.50	0.75	1.00	3.00	3.00	1.75	0.94	2.00	3/8"-16	3/8"-16	OR*-2-214	2.05	5000 (350)
1"	TP06-34-100-*	1.03	2.06	1.50	0.94	1.00	3.00	3.00	1.50	1.09	2.25	7/16"-14	3/8"-16	OR*-2-219	1.81	5000 (350)
1 1/4"	TP06-34-125-*	1.19	2.31	2.00	1.25	1.25	3.00	4.00	1.50	1.25	2.63	1/2"-13	7/16"-14	OR*-2-222	3.08	4000 (275)
1 1/2"	TP06-34-150-*	1.41	2.75	2.25	1.50	1.50	4.00	4.50	2.00	1.44	3.13	5/8"-11	1/2"-13	OR*-2-225	4.60	3000 (210)
2"	TP06-34-200-*	1.69	3.06	2.75	1.94	1.75	4.00	5.50	2.00	1.75	3.81	3/4"-10	1/2"-13	OR*-2-228	6.94	3000 (210)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

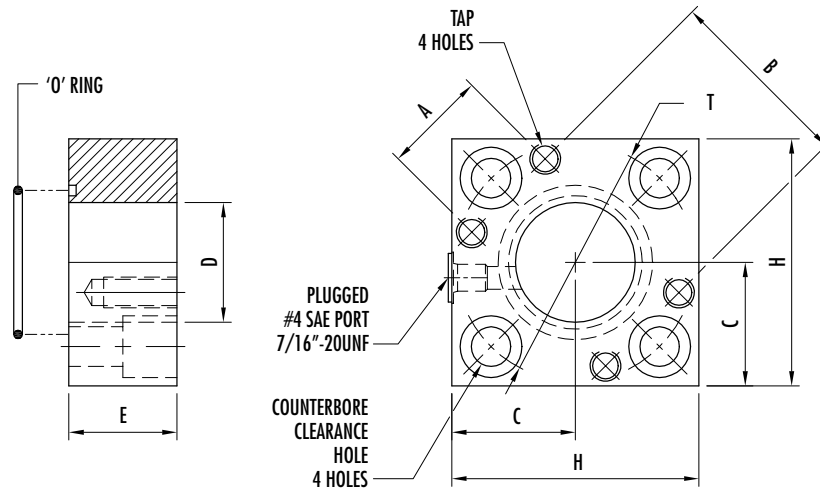
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Transition Plate

ISO 6164/SAE Code 61 Flange Manifold Mount Style



TP07-34 Transition Plate - ISO 6164/SAE Code 61 'O' Ring Face With Countersunk Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Transition Plate Part No.	Dimensions (in)							C'Tbore Bolt	Tap UNC-2B	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		A	B	C	D	E	H	T					
2 1/2"	TP07-34-250-*	2.00	3.50	2.50	2.38	1.50	5.00	4.65	3/4"-10	1/2"-13	OR*-2-232	5.43	2500 (175)
3"	TP07-34-300-*	2.44	4.19	3.00	2.88	1.75	6.00	5.71	1"-8	5/8"-11	OR*-2-237	10.47	2000 (140)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

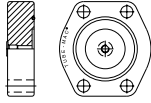
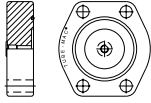
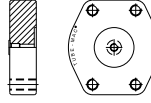
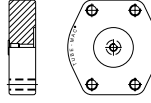
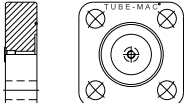
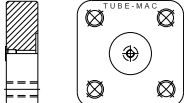
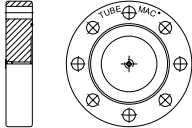
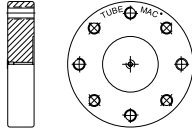
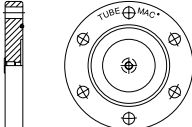
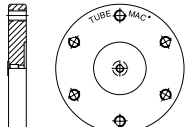
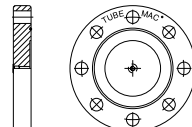
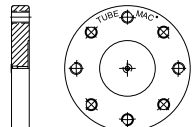
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flanges - Visual Index

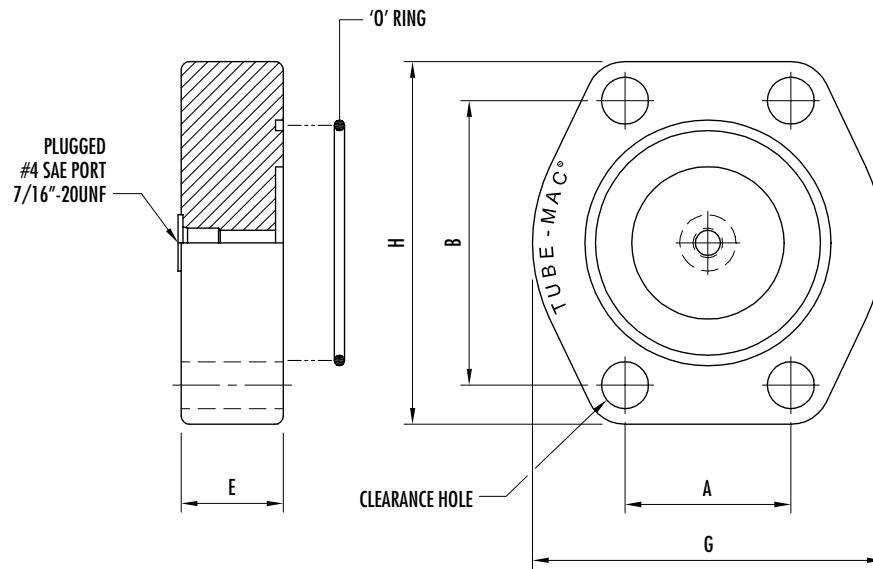


BLANKING FLANGES	<p>BF034 SAE CODE 61 WITH 'O' RING FACE</p>  <p>1/2" - 4" Page L2</p>	<p>BF064 SAE CODE 62 WITH 'O' RING FACE</p>  <p>1/2" - 2" Page L2</p>	<p>BFF34 SAE CODE 61 WITH FLAT FACE</p>  <p>1/2" - 4" Page L3</p>	<p>BFF64 SAE CODE 62 WITH FLAT FACE</p>  <p>1/2" - 2" Page L3</p>
	<p>BF074 ISO 6164 WITH 'O' RING FACE</p>  <p>2 1/2" - 4" Page L4</p>	<p>BFF74 ISO 6164 WITH FLAT FACE</p>  <p>2 1/2" - 4" Page L5</p>	<p>BF048 TMI® 8-BOLT WITH 'O' RING FACE</p>  <p>5" - 8" Page L6</p>	<p>BFF48 TMI® 8-BOLT WITH FLAT FACE</p>  <p>5" - 8" Page L7</p>
LOW PRESSURE BLANKING FLANGES	<p>BF016 TMI® 6-BOLT WITH 'O' RING FACE</p>  <p>2 1/2" - 6" Page L8</p>	<p>BFF16 TMI® 6-BOLT WITH FLAT FACE</p>  <p>2 1/2" - 6" Page L9</p>	<p>BF018 TMI® 8-BOLT WITH 'O' RING FACE</p>  <p>8" Page L10</p>	<p>BFF18 TMI® 8-BOLT WITH FLAT FACE</p>  <p>8" Page L11</p>



Blanking Flange

SAE Flanges - 'O' Ring Face



BF034 Blanking Flange - SAE Code 61 'O' Ring Face With Clearance Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)					Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	E					
1/2"	BF034-050-*	0.69	1.50	1.81	2.16	0.81	5/16" UNC	OR*-2-210	0.53	5000 (350)	15-18
3/4"	BF034-075-*	0.88	1.88	2.06	2.56	0.82	3/8" UNC	OR*-2-214	0.66	5000 (350)	20-30
1"	BF034-100-*	1.03	2.06	2.31	2.76	0.87	3/8" UNC	OR*-2-219	1.00	5000 (350)	20-30
1 1/4"	BF034-125-*	1.19	2.31	2.88	3.11	0.91	7/16" UNC	OR*-2-222	1.28	4000 (275)	40-50
1 1/2"	BF034-150-*	1.41	2.75	3.25	3.66	1.06	1/2" UNC	OR*-2-225	1.87	3000 (210)	80-90
2"	BF034-200-*	1.69	3.06	3.81	4.02	1.22	1/2" UNC	OR*-2-228	2.38	3000 (210)	80-90
2 1/2"	BF034-250-*	2.00	3.50	4.28	4.49	1.40	1/2" UNC	OR*-2-232	3.03	2500 (175)	80-90
3"	BF034-300-*	2.44	4.19	5.16	5.28	1.67	5/8" UNC	OR*-2-237	5.23	2000 (140)	110-120
4"	BF034-400-*	3.06	5.13	6.00	6.38		5/8" UNC	OR*-2-241	7.70	500 (35)	110-120

BF064 Blanking Flange - SAE Code 62 'O' Ring Face With Clearance Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)					Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	E					
1/2"	BF064-050-*	0.72	1.59	1.88	2.22	0.81	5/16" UNC	OR*-2-210	0.53	6000 (420)	15-18
3/4"	BF064-075-*	0.94	2.00	2.38	2.81	1.02	3/8" UNC	OR*-2-214	1.08	6000 (420)	20-30
1"	BF064-100-*	1.09	2.25	2.75	3.19	1.03	7/16" UNC	OR*-2-219	1.70	6000 (420)	40-50
1 1/4"	BF064-125-*	1.25	2.63	3.06	3.75	1.25	1/2" UNC	OR*-2-222	2.63	6000 (420)	80-90
1 1/2"	BF064-150-*	1.44	3.13	3.75	4.44	1.38	5/8" UNC	OR*-2-225	3.90	6000 (420)	110-120
2"	BF064-200-*	1.75	3.81	4.50	5.25	1.68	3/4" UNC	OR*-2-228	5.66	6000 (420)	120-130

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

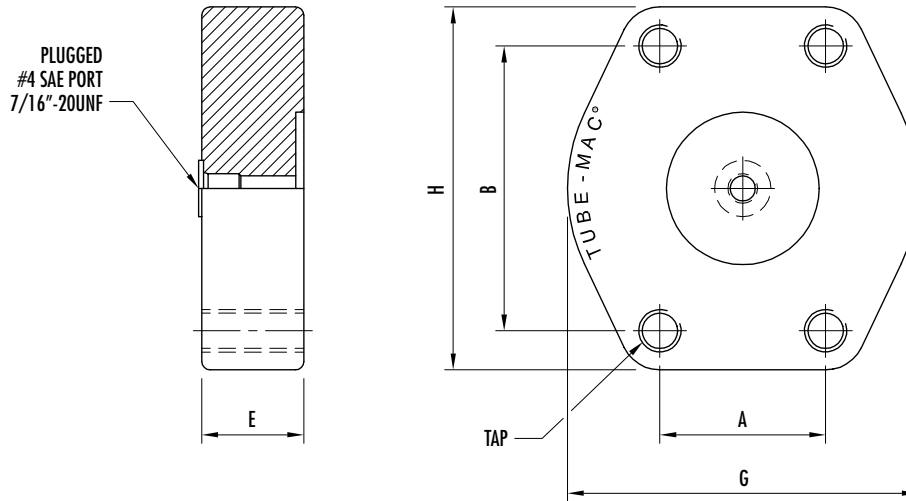
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

SAE Flanges - Flat Face



BFF34 Blanking Flange - SAE Code 61 Flat Face With UNC Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)					Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	E				
1/2"	BFF34-050-*	0.69	1.50	1.81	2.16	0.81	5/16"-18	0.56	5000 (350)	15-18
3/4"	BFF34-075-*	0.88	1.88	2.06	2.56	0.82	3/8"-16	0.72	5000 (350)	20-30
1"	BFF34-100-*	1.03	2.06	2.31	2.76	0.87	3/8"-16	1.33	5000 (350)	20-30
1 1/4"	BFF34-125-*	1.19	2.31	2.88	3.11	0.91	7/16"-14	1.43	4000 (275)	40-50
1 1/2"	BFF34-150-*	1.41	2.75	3.25	3.66	1.06	1/2"-13	2.23	3000 (210)	80-90
2"	BFF34-200-*	1.69	3.06	3.81	4.02	1.22	1/2"-13	2.86	3000 (210)	80-90
2 1/2"	BFF34-250-*	2.00	3.50	4.28	4.49	1.40	1/2"-13	3.46	2500 (175)	80-90
3"	BFF34-300-*	2.44	4.19	5.16	5.28	1.67	5/8"-11	5.82	2000 (140)	110-120
4"	BFF34-400-*	3.06	5.13	6.00	6.38		5/8"-11	8.40	500 (35)	110-120

BFF64 Blanking Flange - SAE Code 62 Flat Face With UNC Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)					Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	G	H	E				
1/2"	BFF64-050-*	0.72	1.59	1.88	2.22	0.81	5/16"-18	0.56	6000 (420)	15-18
3/4"	BFF64-075-*	0.94	2.00	2.38	2.81	1.02	3/8"-16	1.08	6000 (420)	20-30
1"	BFF64-100-*	1.09	2.25	2.75	3.19	1.03	7/16"-14	1.79	6000 (420)	40-50
1 1/4"	BFF64-125-*	1.25	2.63	3.06	3.75	1.25	1/2"-13	2.74	6000 (420)	80-90
1 1/2"	BFF64-150-*	1.44	3.13	3.75	4.44	1.38	5/8"-11	4.01	6000 (420)	110-120
2"	BFF64-200-*	1.75	3.81	4.50	5.25	1.68	3/4"-10	5.82	6000 (420)	120-130

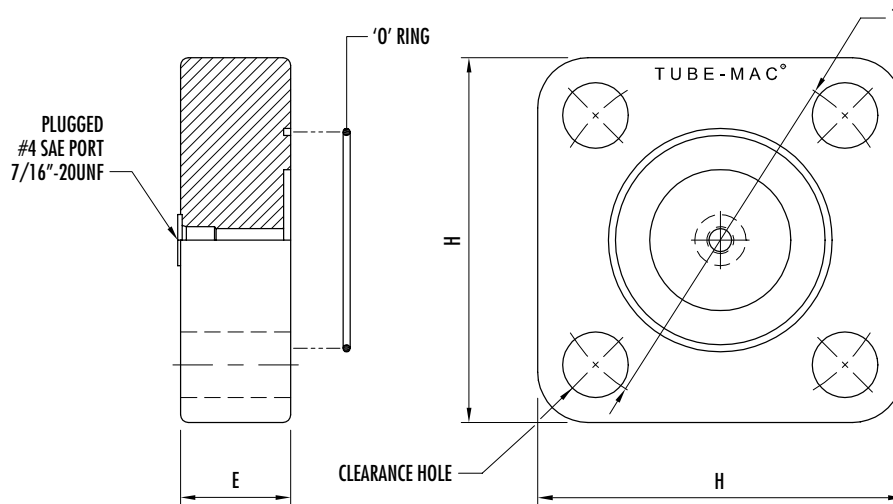
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

ISO 6164 - 'O' Ring Face



BF074 Blanking Flange - ISO 6164 'O' Ring Face With Clearance Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	H	E					
2 1/2"	BF074-250-*	4.65	4.72	1.48	3/4" UNC	OR*-2-232	8.71	5800 (400)	120-130
3"	BF074-300-*	5.71	5.91	1.73	1" UNC	OR*-2-237	16.01	5800 (400)	350-400
4"	BF074-400-*	6.89	7.00	1.98	1 1/8" UNC	OR*-2-241	25.23	5800 (400)	500-550

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

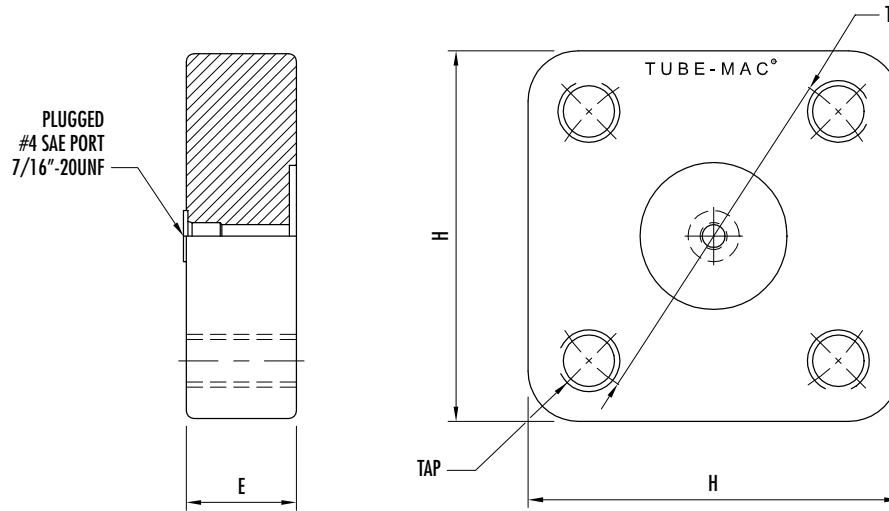
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

ISO 6164 - Flat Face



BFF74 Blanking Flange - ISO 6164 Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	H	E				
2 1/2"	BFF74-250-*	4.65	4.72	1.48	3/4"-10	8.76	5800 (400)	120-130
3"	BFF74-300-*	5.71	5.91	1.73	1"-8	16.07	5800 (400)	350-400
4"	BFF74-400-*	6.89	7.00	1.98	1 1/8"-7	25.31	5800 (400)	500-550

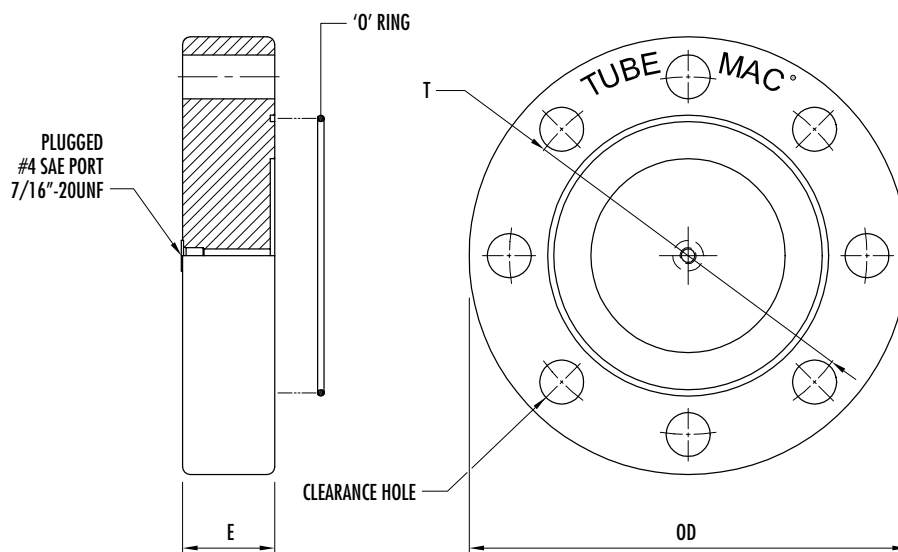
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

TMI® 8-Bolt - 'O' Ring Face



BF048 Blanking Flange - TMI® 8-Bolt 'O' Ring Face With Clearance Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E					
5"	BF048-500-*	7.88	9.65	2.00	1" UNC	OR*-2-353	37.84	4000 (275)	350-400
6"	BF048-600-*	9.65	11.81	2.31	♦	OR*-2-359	71.30	3700 (255)	500-550
8"	BF048-800-*	12.40	15.13	3.00	♦	OR*-2-368	126.11	3500 (240)	1100-1200

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

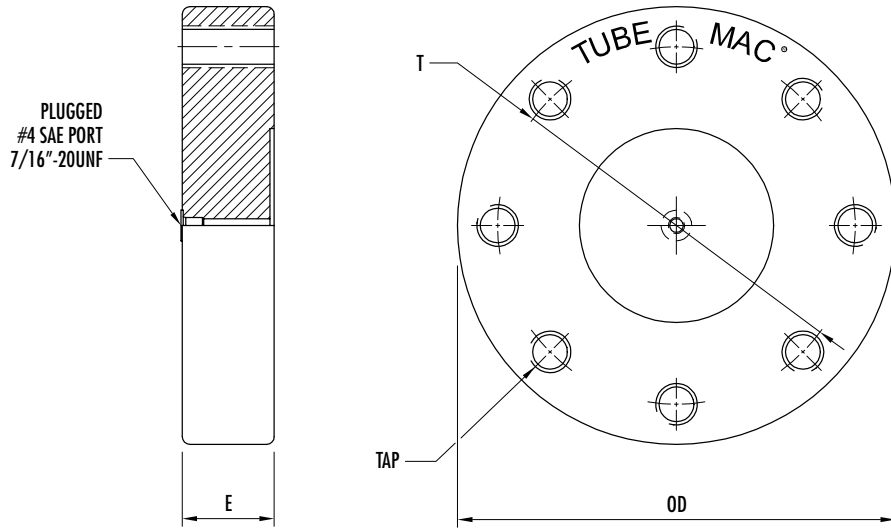
♦ FOR BOLT SIZE AND BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

TMI® 8-Bolt - Flat Face



BFF48 Blanking Flange - TMI® 8-Bolt Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
5"	BFF48-500-*	7.88	9.65	2.00	1"-8	38.10	4000 (275)	350-400
6"	BFF48-600-*	9.65	11.81	2.31	1 1/8"-7	72.20	3700 (255)	500-550
8"	BFF48-800-*	12.40	15.13	3.00	1 1/2"-6	127.40	3500 (240)	1100-1200

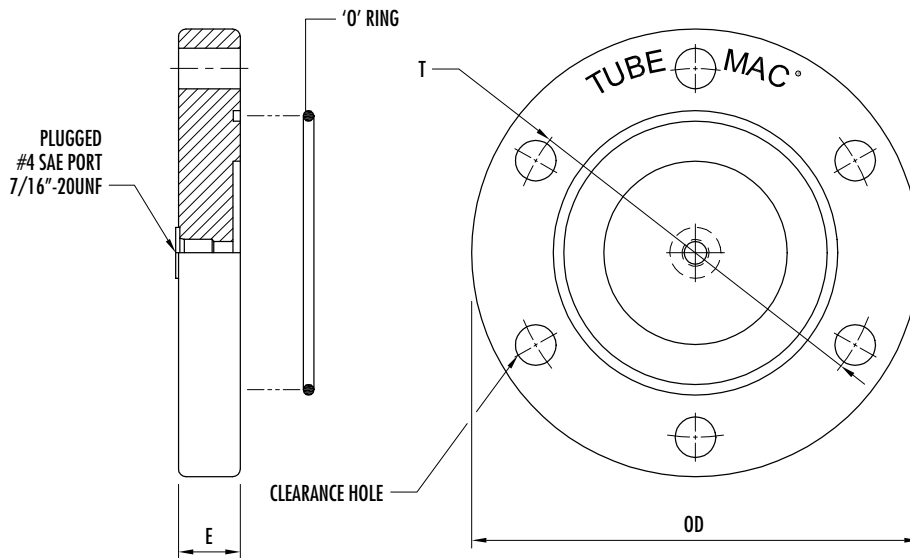
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Blanking Flange

TMI® 6-Bolt - 'O' Ring Face



BF016 Low Pressure Blanking Flange - TMI® 6-Bolt 'O' Ring Face With Clearance Holes

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E					
2 1/2"	BF016-250-*	4.03	5.00	0.80	1/2" UNC	OR*-2-232	4.18	750 (52)	80-90
3"	BF016-300-*	4.85	5.90	1.00	5/8" UNC	OR*-2-237	7.22	750 (52)	110-120
4"	BF016-400-*	5.97	7.00	1.00	5/8" UNC	OR*-2-245	10.37	750 (52)	110-120
5"	BF016-500-*	7.01	8.27	1.19	5/8" UNC	OR*-2-353	17.47	750 (52)	110-120
6"	BF016-600-*	8.19	9.29	1.38	5/8" UNC	OR*-2-359	25.75	700 (48)	110-120

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

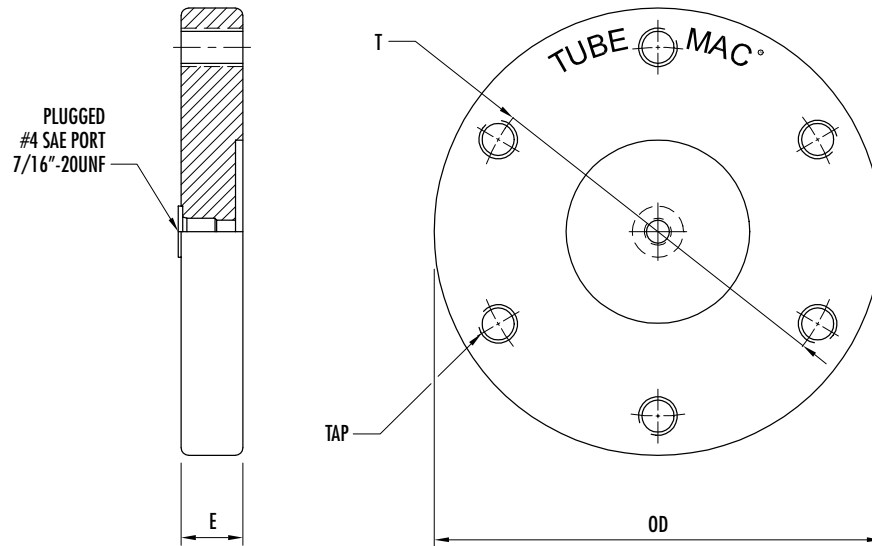
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Blanking Flange

TMI® 6-Bolt - Flat Face



BFF16 Low Pressure Blanking Flange - TMI® 6-Bolt Flat Face With Tapped Holes

Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
2 1/2"	BFF16-250-*	4.03	5.00	0.80	1/2"-13	4.24	750 (52)	80-90
3"	BFF16-300-*	4.85	5.90	1.00	5/8"-11	7.30	750 (52)	110-120
4"	BFF16-400-*	5.97	7.00	1.00	5/8"-11	10.45	750 (52)	110-120
5"	BFF16-500-*	7.01	8.27	1.19	5/8"-11	17.56	750 (52)	110-120
6"	BFF16-600-*	8.19	9.29	1.38	5/8"-11	25.85	700 (48)	110-120

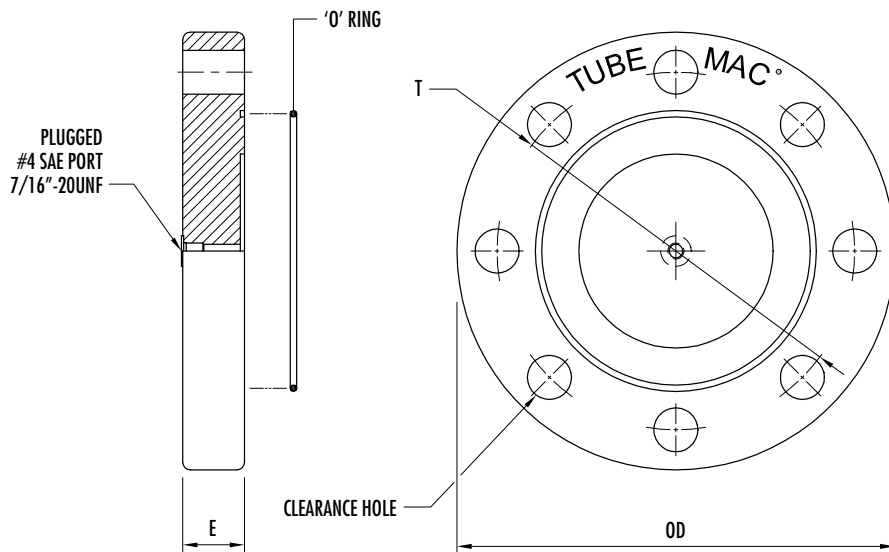
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Blanking Flange

TMI® 8-Bolt - 'O' Ring Face



BF018 Low Pressure Blanking Flange - TMI® 8-Bolt 'O' Ring Face With Clearance Holes Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E					
8"	BF018-800-*	10.83	12.48	1.58	3/4" UNC	OR*-2-372	53.12	600 (40)	120-130

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

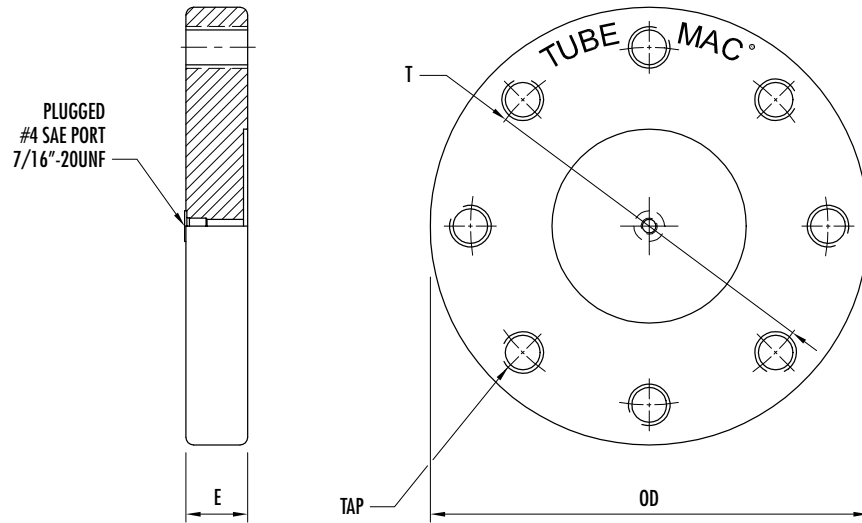
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Blanking Flange

TMI® 8-Bolt - Flat Face



BFF18 Low Pressure Blanking Flange - TMI® 8-Bolt Flat Face With Tapped Holes Complete With #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E				
8"	BFF18-800-*	10.83	12.48	1.58	3/4"-10	53.51	600 (40)	120-130

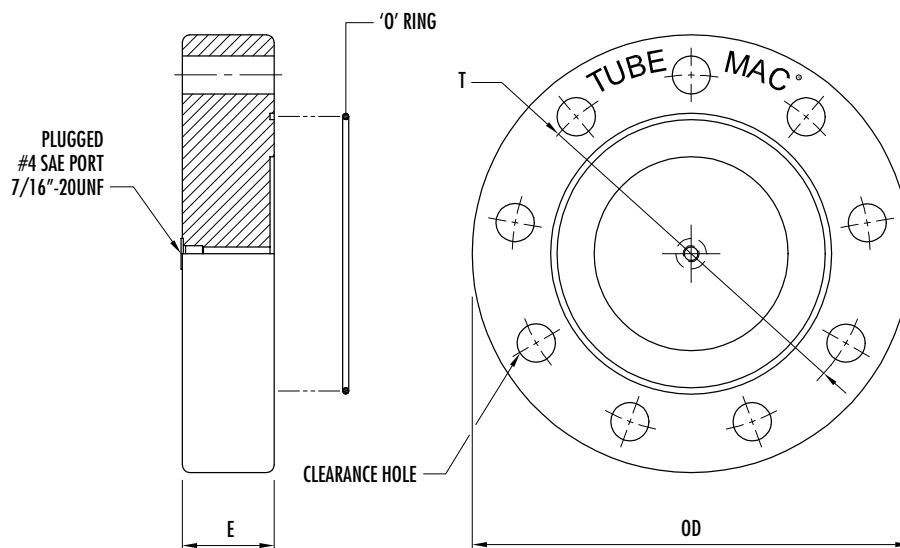
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING FOR #4 SAE PLUG

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Blanking Flange

TMI® 9-Bolt - 'O' Ring Face



BF049 Blanking Flange - TMI® 9-Bolt 'O' Ring Face with Clearance Holes

Only for use with 9-Bolt Ball Valve BBVG27 (reference page P10)

Complete with Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E					
2 1/2"	BF049-250-*	4.03	4.95	1.48	1/2" UNC	OR*-2-232	4.55	4200 (290)	80-90
3"	BF049-300-*	5.49	6.50	1.73	5/8" UNC	OR*-2-237	8.78	4100 (280)	110-120
4"	BF049-400-*	6.14	7.38	1.98	5/8" UNC	OR*-2-243	11.53	4000 (275)	110-120
5"	BF049-500-*	7.56	9.00	2.00	3/4" UNC	OR*-2-353	18.90	3860 (265)	120-130

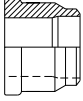
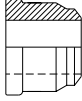
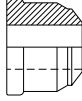
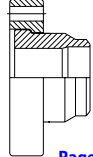
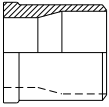
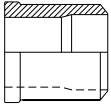
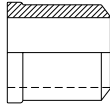
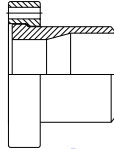
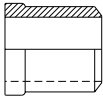
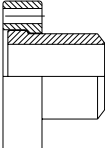



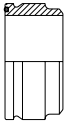
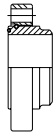
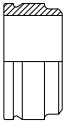
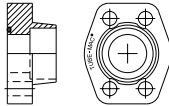
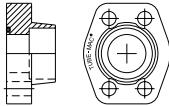
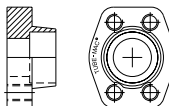
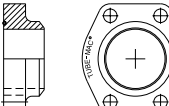
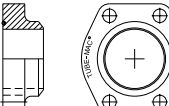
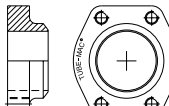
* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



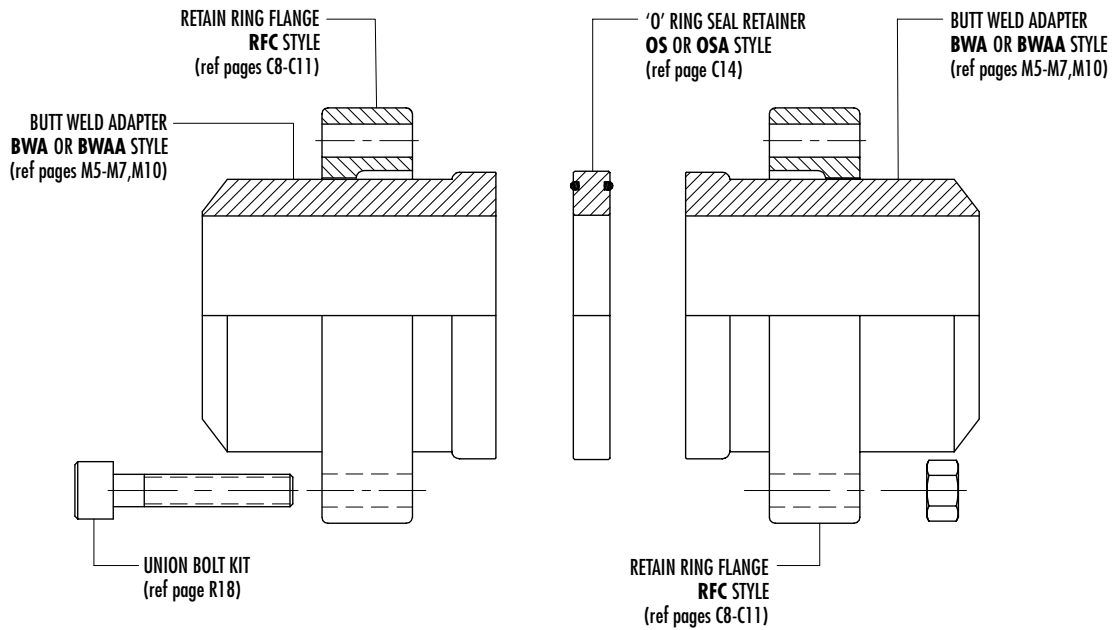
Weld Adapters - Visual Index

BUTT WELD RETAIN RING FLANGE STYLE (ANSI pipe connection)	BWA-SCH80 SCHEDULE 80 BODY ONLY  1/2" - 4" Page M5	BWA-SCH160 SCHEDULE 160 BODY ONLY  1/2" - 4" Page M6	BWA-SCHXXS SCHEDULE XXS BODY ONLY  1/2" - 4" Page M7	A/BWA ANSI PIPE ASSEMBLY  1/2" - 4" Page M8-M9
	BWAA-SCH80 SCHEDULE 80 BODY ONLY  5" - 8" Page M5	BWAA-SCH160 SCHEDULE 160 BODY ONLY  5" - 8" Page M6	BWAA-SCHXXS SCHEDULE XXS BODY ONLY  5" - 8" Page M7	A/BWAA ANSI PIPE ASSEMBLY  5" - 8" Page M8-M9
BUTT WELD RETAIN RING FLANGE STYLE (metric heavy wall pipe connection)	BWA METRIC PIPE BODY ONLY  1/2" - 4" Page M10	A/BWA METRIC PIPE ASSEMBLY  1/2" - 4" Page M11		
	'O' RING SEAL RETAINERS	OS  1/2" - 4" Page M12	OSA  5" - 8" Page M12	OSS  4" Page M12
LOW PRESSURE BUTT WELD RETAIN RING FLANGE STYLE		LBWAO 'O' RING FACE BODY ONLY  2 1/2" - 8" Page M14	A/LBWAO 'O' RING FACE ASSEMBLY  2 1/2" - 8" Page M15	LBWAF FLAT FACE BODY ONLY  2 1/2" - 8" Page M16
	SOCKET WELD FLANGES	SWF034 SAE CODE 61 WITH 'O' RING FACE  1/2" - 4" Page M18	SWF064 SAE CODE 62 WITH 'O' RING FACE  1/2" - 2" Page M18	SWFF34 SAE CODE 61 WITH FLAT FACE  1/2" - 4" Page M19
BUTT WELD FLANGES		BWF034 SAE CODE 61 WITH 'O' RING FACE  1/2" - 4" Page M20	BWF064 SAE CODE 62 WITH 'O' RING FACE  1/2" - 2" Page M20	BWFF34 SAE CODE 61 WITH FLAT FACE  1/2" - 4" Page M21

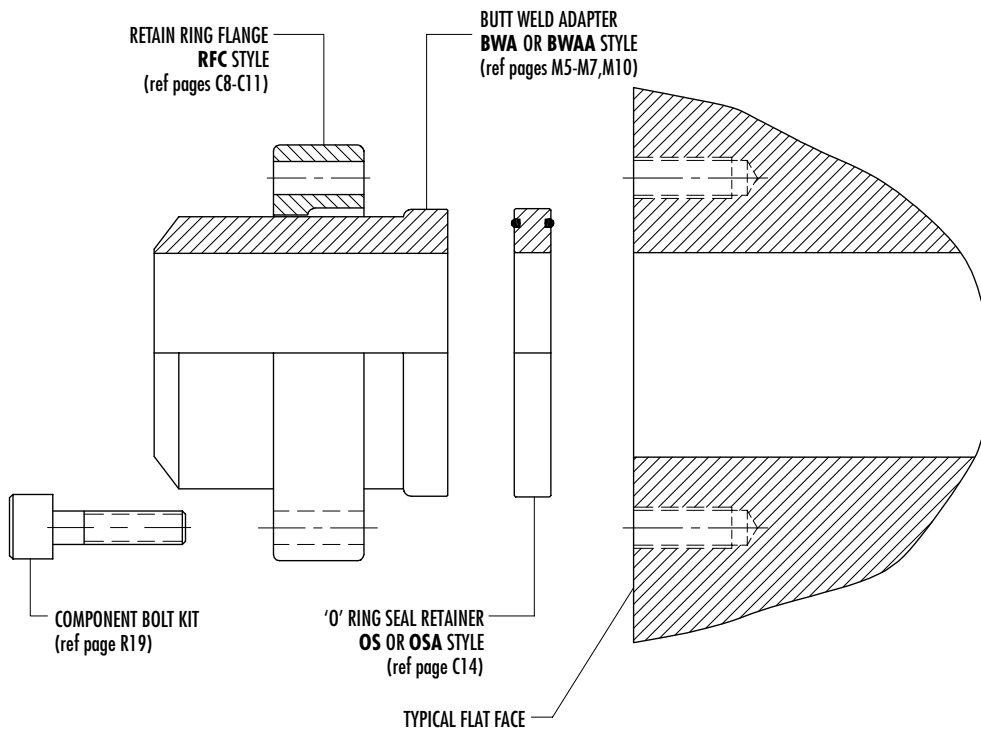


Butt Weld Adapter Connections

Typical Butt Weld Adapter Union Connection



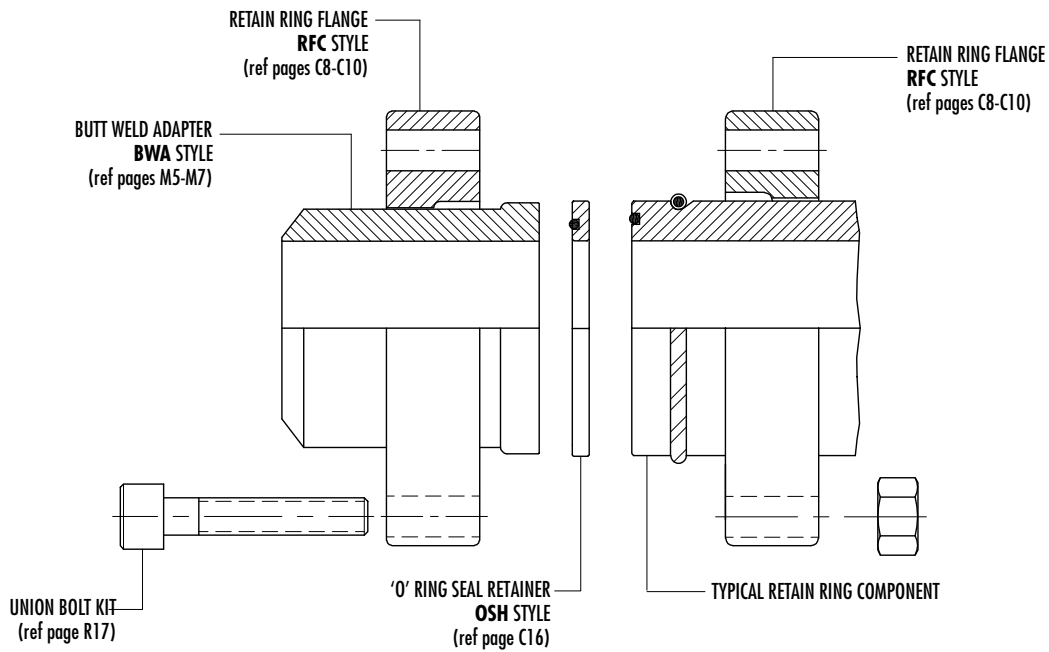
Typical Butt Weld Adapter to Flat Face Connection



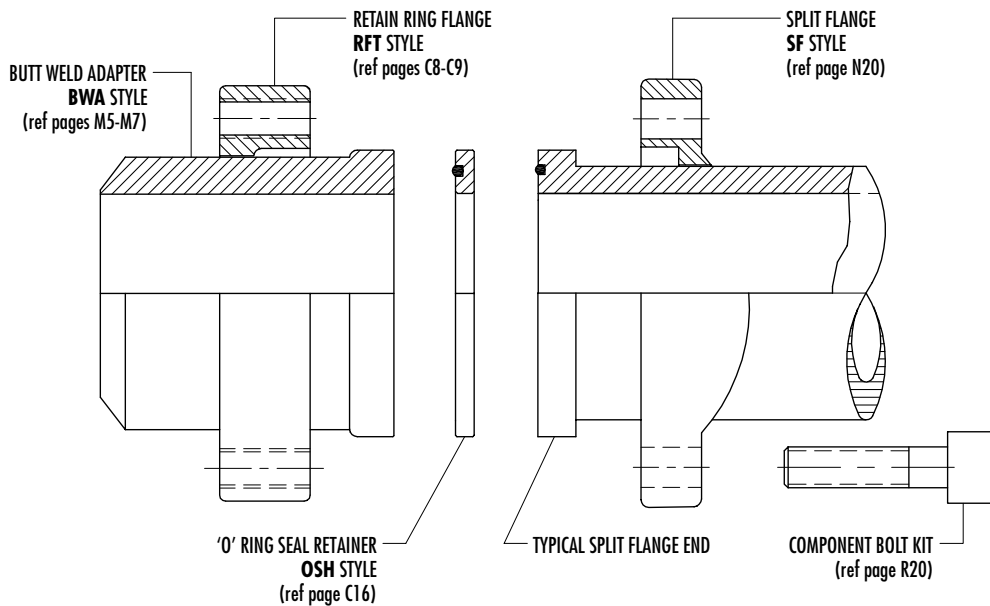


Butt Weld Adapter Connections

Typical Butt Weld Adapter to 'O' Ring Face Retain Ring Component Connection



Typical Butt Weld Adapter to SAE Split Flange Connection

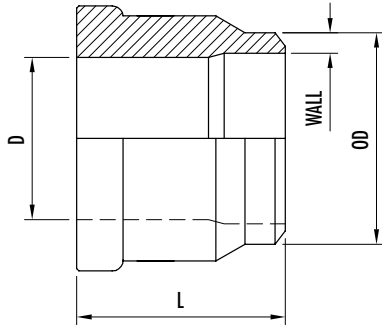




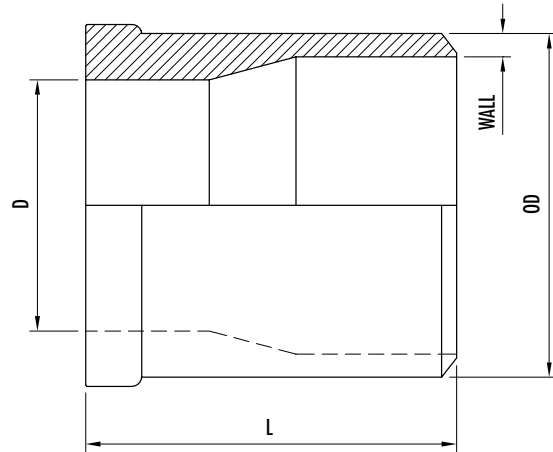
Butt Weld Adapter Body

Retain Ring Flange Style - Schedule 80 ANSI Pipe

BWA-SCH80 - 1/2"-4"



BWAA-SCH80 - 5"-8"



BWA-SCH80 Butt Weld Adapter Body - 1/2"-4" Schedule 80 ANSI Pipe Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
1/2"	BWA-SCH80-050	0.55	1.50	0.840 x 0.147	0.25	Note 1.
3/4"	BWA-SCH80-075	0.79	1.75	1.050 x 0.154	0.44	
1"	BWA-SCH80-100	0.91	1.75	1.315 x 0.179	0.47	
1 1/4"	BWA-SCH80-125	1.18	2.00	1.660 x 0.191	0.75	
1 1/2"	BWA-SCH80-150	1.54	2.25	1.900 x 0.200	0.96	
2"	BWA-SCH80-200	1.93	2.50	2.375 x 0.218	1.20	
2 1/2"	BWA-SCH80-250	2.36	2.50	2.875 x 0.276	1.70	
3"	BWA-SCH80-300	2.88	2.75	3.500 x 0.300	3.00	
4"	BWA-SCH80-400	3.35	4.00	4.500 x 0.337	5.80	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

BWAA-SCH80 Butt Weld Adapter Body - 5"-8" Schedule 80 ANSI Pipe Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
5"	BWAA-SCH80-500	4.06	6.00	5.563 x 0.375	15.00	Note 1.
6"	BWAA-SCH80-600	4.90	6.00	6.625 x 0.432	20.50	
8"	BWAA-SCH80-800	6.81	6.00	8.625 x 0.500	30.20	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

Note: 1) WORKING PRESSURE RATING IS DEPENDANT ON THE PIPE THAT THE ADAPTER IS WELDED TO

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES M8-M9
- JUMP SIZES ARE AVAILABLE

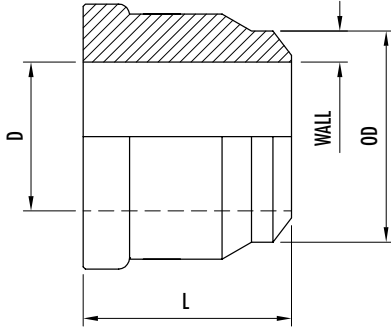
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE) OTHER MATERIALS ARE AVAILABLE



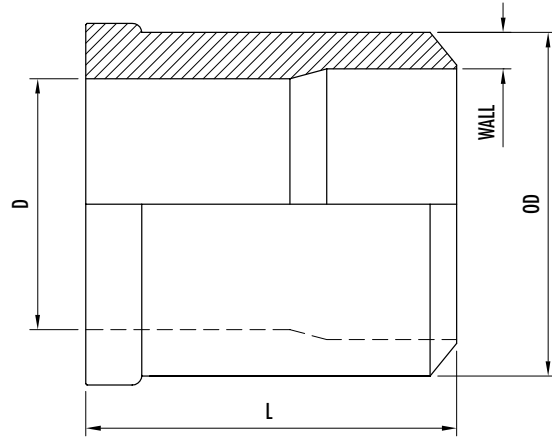
Butt Weld Adapter Body

Retain Ring Flange Style - Schedule 160 ANSI Pipe

BWA-SCH160 - 1/2"-4"



BWAA-SCH160 - 5"-8"



BWA-SCH160 Butt Weld Adapter Body - 1/2"-4" Schedule 160 ANSI Pipe Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
1/2"	BWA-SCH160-050	0.47	1.50	0.840 x 0.187	0.27	Note 1.
3/4"	BWA-SCH160-075	0.61	1.75	1.050 x 0.218	0.49	
1"	BWA-SCH160-100	0.82	1.75	1.315 x 0.250	0.55	
1 1/4"	BWA-SCH160-125	1.16	2.00	1.660 x 0.250	0.79	
1 1/2"	BWA-SCH160-150	1.34	2.25	1.900 x 0.281	1.20	
2"	BWA-SCH160-200	1.69	2.50	2.375 x 0.343	1.50	
2 1/2"	BWA-SCH160-250	2.13	2.50	2.875 x 0.375	2.00	
3"	BWA-SCH160-300	2.62	2.75	3.500 x 0.438	3.60	
4"	BWA-SCH160-400	3.44	4.00	4.500 x 0.531	6.70	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

BWAA-SCH160 Butt Weld Adapter Body - 5"-8" Schedule 160 ANSI Pipe Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
5"	BWAA-SCH160-500	4.06	6.00	5.563 x 0.625	18.20	Note 1.
6"	BWAA-SCH160-600	4.90	6.00	6.625 x 0.718	24.20	
8"	BWAA-SCH160-800	6.81	6.00	8.625 x 0.906	37.20	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

Note: 1) WORKING PRESSURE RATING IS DEPENDANT ON THE PIPE THAT THE ADAPTER IS WELDED TO

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES M8-M9
- JUMP SIZES ARE AVAILABLE

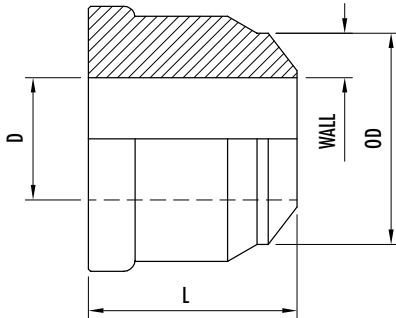
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE) OTHER MATERIALS ARE AVAILABLE



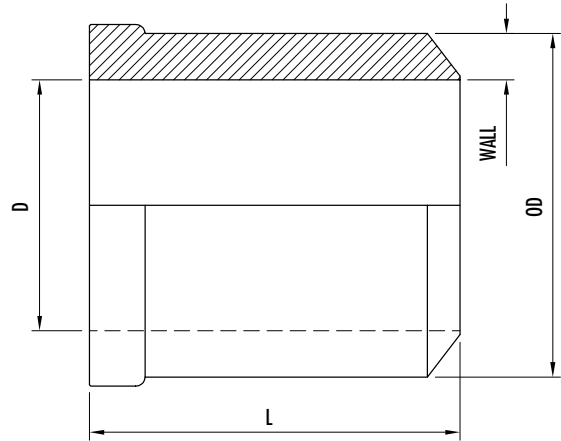
Butt Weld Adapter Body

Retain Ring Flange Style - Schedule XXS ANSI Pipe

BWA-SCHXXS - 1/2"-4"



BWAA-SCHXXS - 5\"/>



BWA-SCHXXS Butt Weld Adapter Body - 1/2"-4" Schedule XXS ANSI Pipe

Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
1/2"	BWA-SCHXXS-050	0.25	1.50	0.840 x 0.294	0.31	Note 1.
3/4"	BWA-SCHXXS-075	0.43	1.75	1.050 x 0.308	0.54	
1"	BWA-SCHXXS-100	0.60	1.75	1.315 x 0.358	0.63	
1 1/4"	BWA-SCHXXS-125	0.90	2.00	1.660 x 0.382	0.97	
1 1/2"	BWA-SCHXXS-150	1.10	2.25	1.900 x 0.400	1.36	
2"	BWA-SCHXXS-200	1.50	2.50	2.375 x 0.436	1.70	
2 1/2"	BWA-SCHXXS-250	1.77	2.50	2.875 x 0.552	2.40	
3"	BWA-SCHXXS-300	2.30	2.75	3.500 x 0.600	4.20	
4"	BWA-SCHXXS-400	3.15	4.00	4.500 x 0.674	8.00	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

BWAA-SCHXXS Butt Weld Adapter Body - 5"-8" Schedule XXS ANSI Pipe

Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
5"	BWAA-SCHXXS-500	4.06	6.00	5.563 x 0.750	19.40	Note 1.
6"	BWAA-SCHXXS-600	4.90	6.00	6.625 x 0.864	26.00	
8"	BWAA-SCHXXS-800	6.81	6.00	8.625 x 0.875	36.70	

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

Note: 1) WORKING PRESSURE RATING IS DEPENDANT ON THE PIPE THAT THE ADAPTER IS WELDED TO

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGES M8-M9
- JUMP SIZES ARE AVAILABLE

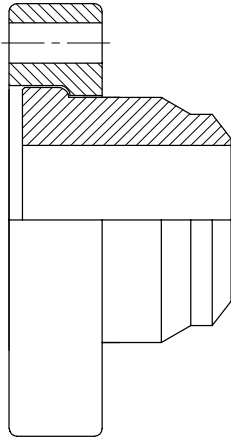
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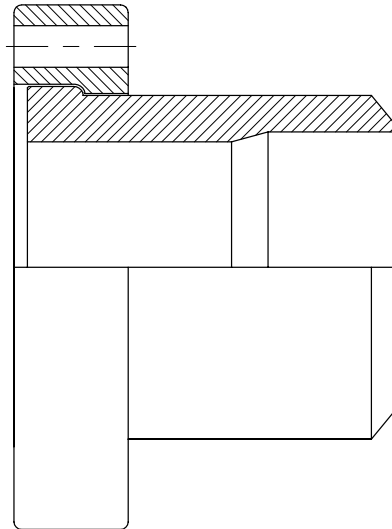
Butt Weld Adapter Assembly

1/2"-8" ANSI Pipe Connection

Typical A/BWA Assembly - 1/2"-4"



Typical A/BWAA Assembly - 5"-8"



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) BUTT WELD ADAPTER BODY (REF. PAGES M5-M7)
- ONE (1) RETAIN RING FLANGE (REF. PAGES C8-C12)

TO BE ORDERED SEPARATELY:

- 'O' RING SEAL RETAINER (REF. PAGES M2-M3)



Butt Weld Adapter Assembly

Complete Assembly Part Number - ANSI Pipe Connection

		Code	A	Body	Body Material	Pipe Schedule	Adapter Size	Flange	Option
Assembly		A							
Butt Weld Adapter Body <small>Ref. page (M8)</small>	1/2"-4"	BWA							
	5"-8"	BWAA							
Body Material <small>Carbon Steel (Standard)</small>	No Designation Required								
Body Material <small>Stainless Steel (Optional)</small>	TMP304SS	304							
	TMP316SS	316							
Pipe Schedule	Schedule 80	SCH80							
	Schedule 160	SCH160							
	Schedule XXS	SCHXXS							
Adapter Size	1/2"	050							
	3/4"	075							
	1"	100							
	1 1/4"	125							
	1 1/2"	150							
	2"	200							
	2 1/2"	250							
	3"	300							
	4"	400							
	5"	500							
6"	600								
8"	800								
Flange Type <small>Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C12)</small>	RFC34 <small>SAE Code 61 W/Clearance Holes</small>	FC34		To be used with 'O' Ring Seal Retainer Ref. pages M12-M13					
	*RFT34 <small>SAE Code 61 W/Tapped Holes</small>	FT34							
	RFC64 <small>SAE Code 62 W/Clearance Holes</small>	FC64							
	*RFT64 <small>SAE Code 62 W/Tapped Holes</small>	FT64							
	RFC74 <small>ISO 6164 W/Clearance Holes</small>	FC74							
	RFAC48 <small>TMI® 8-Bolt W/Clearance Holes</small>	FAC48							
	**RFC49 <small>TMI® 9-Bolt W/Clearance Holes</small>	FC49							
	**RFAC49 <small>TMI® 9-Bolt W/Clearance Holes</small>	FAC49							
Options	Complete Stainless Steel Assembly: (including flange)	SS							

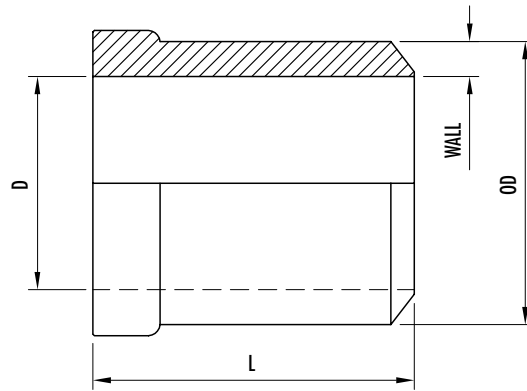
* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS
 **FOR USE WITH 9-BOLT BALL VALVE CONNECTION (REF. PAGE P10)
PART NO. (EXAMPLE): A/BWA - SCH80 - 050 - FC34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KIT - REFERENCE SECTION R



Butt Weld Adapter Body

Retain Ring Flange Style - Metric Heavy Wall Pipe



BWA Butt Weld Adapter Body - Metric Heavy Wall Pipe

Retain Ring Flange Style

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (mm)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
1 1/2"	BWA-56 x 8.5	1.54	2.31	56 x 8.5	1.29	6000 (420)
2"	BWA-66 x 8.5	1.93	3.00	66 x 8.5	2.03	6000 (420)
2 1/2"	BWA-80 x 10	2.36	3.50	80 x 10	3.39	5800 (400)
3"	BWA-97 x 12	2.88	4.25	97 x 12	6.00	5800 (400)
4"	BWA-115 X 15	3.35	5.50	115 x 15	11.41	5800 (400)

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

- TO ORDER COMPLETE ASSEMBLY REFERENCE PAGE M11
- JUMP SIZES ARE AVAILABLE

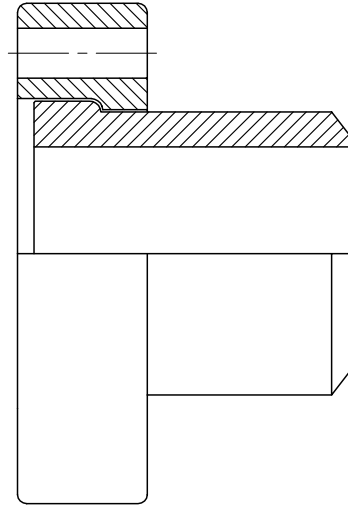
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE) OTHER MATERIALS ARE AVAILABLE



Butt Weld Adapter Assembly

Complete Assembly Part Number - Metric Heavy Wall Pipe Connection

Typical A/BWA Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) BUTT WELD ADAPTER BODY (REF. PAGE M10)
- ONE (1) RETAIN RING FLANGE (REF. PAGES C8-C12)

TO BE ORDERED SEPARATELY:

- 'O' RING SEAL RETAINER (REF. PAGES M2-M3)

Code		A	/	BWA	-	Body Material	-	Adapter Size	-	Flange	-	Option
Assembly		A										
Butt Weld Adapter		BWA										
Body Material Carbon Steel (Standard)	No Designation Required											
Body Material Stainless Steel (Optional)	TMP304SS	304										
	TMP316SS	316										
Adapter Size	1 1/2"	56x8.5										
	2"	66x8.5										
	2 1/2"	80x10										
	3"	97x12										
	4"	115x15										
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C10)	RFC34 SAE Code 61 W/Clearance Holes	FC34										
	*RFT34 SAE Code 61 W/Tapped Holes	FT34										
	RFC64 SAE Code 62 W/Clearance Holes	FC64										
	*RFT64 SAE Code 62 W/Tapped Holes	FT64										
	RFC74 ISO 6164 W/Clearance Holes	FC74										
	**RFC49 TMI® 9-Bolt W/Clearance Holes	FC49										
Options	Complete Stainless Steel Assembly: (including flange)	SS										

To be used with 'O' Ring Seal Retainer Ref. pages M12-M13

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

** FOR USE WITH 9-BOLT BALL VALVE CONNECTION (REF. PAGE P10)

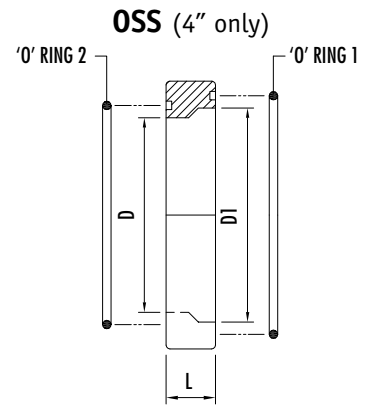
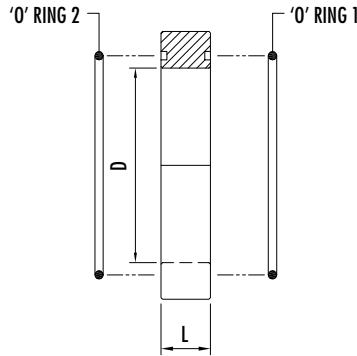
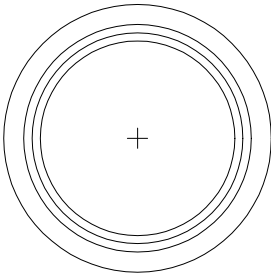
PART NO. (EXAMPLE):
A/BWA - 56x8.5 - FC34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BODY RATINGS
- SEE REFERENCE PAGES INDICATED ABOVE FOR PRESSURE RATINGS
- FOR BOLT KIT - REFERENCE SECTION R



'O' Ring Seal Retainer

OS/OSA



OS 'O' Ring Seal Retainer for Retain Ring Pipe - 1/2" - 4"

Complete with Buna 'O' Rings (Standard)

OSA 'O' Ring Seal Retainer for Retain Ring Pipe - 5" - 8"

Complete with Buna 'O' Rings (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Rings 1&2 (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	OS-050-*	0.55	0.50	OR*-3-909	0.08
3/4"	OS-075-*	0.79	0.50	OR*-3-913	0.13
1"	OS-100-*	0.91	0.50	OR*-3-916	0.15
1 1/4"	OS-125-*	1.18	0.50	OR*-3-918	0.19
1 1/2"	OS-150-*	1.54	0.50	OR*-3-924	0.24
2"	OS-200-*	1.93	0.50	OR*-3-928	0.29
2 1/2"	OS-250-*	2.36	1.00	OR*-2-232	0.53
3"	OS-300-*	2.88	1.00	OR*-2-237	0.78
4"	OS-400-*	3.35	1.00	OR*-2-241	1.22
5"	OSA-500-*	4.06	1.50	OR*-2-353	5.73
6"	OSA-600-*	4.90	1.50	OR*-2-359	6.80
8"	OSA-800-*	6.81	1.50	OR*-2-368	10.34

• FOR SIZES 10" OR LARGER CONSULT FACTORY

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

♦ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSS-400 (SEE BELOW)

OSS 'O' Ring Seal Retainer for Retain Ring Pipe - 4"

For use with Retain Ring Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)

Complete with Buna 'O' Rings (Standard)

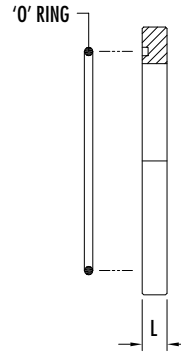
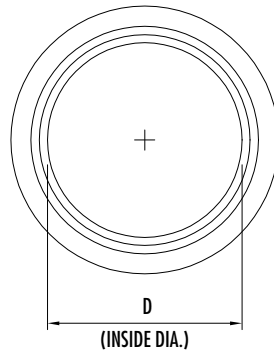
Size	Retainer Part No.	Dimensions (in)			'O' Ring 1 (Buna) Part No.	'O' Ring 2 (Buna) Part No.	WT. lbs/pc
		D	D1	L			
4"	OSS-400-*	3.35	3.80	1.00	OR*-2-243	OR*-2-241	1.22

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



'O' Ring Seal Retainer



OSH 'O' Ring Seal Retainer for Retain Ring Pipe Complete with Buna 'O' Ring (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
1/2"	OSH-050-*	0.55	0.25	OR*-3-909	0.04
3/4"	OSH-075-*	0.79	0.25	OR*-3-913	0.07
1"	OSH-100-*	0.91	0.25	OR*-3-916	0.08
1 1/4"	OSH-125-*	1.18	0.25	OR*-3-918	0.09
1 1/2"	OSH-150-*	1.54	0.25	OR*-3-924	0.12
2"	OSH-200-*	1.93	0.25	OR*-3-928	0.15
2 1/2"	OSH-250-*	2.36	0.50	OR*-2-232	0.26
3"	OSH-300-*	2.88	0.50	OR*-2-237	0.39
4"	OSH-400-*	3.35	0.50	OR*-2-241	0.60

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

♦ CANNOT BE USED FOR CONNECTION TO STAUFF BALL VALVE (BBVG27), REFERENCE OSHS-400 (SEE BELOW)

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

OSHS 'O' Ring Seal Retainer for Retain Ring Component - 4"

For use with Retain Ring Component Connection to 9-Bolt Ball Valve BBVG27 (reference page P10)
Complete with Buna 'O' Ring (Standard)

Size	Retainer Part No.	Dimensions (in)		'O' Ring (Buna) Part No.	WT. lbs/pc
		D	L		
4"	OSHS-400-*	3.80	0.50	OR*-2-243	0.60

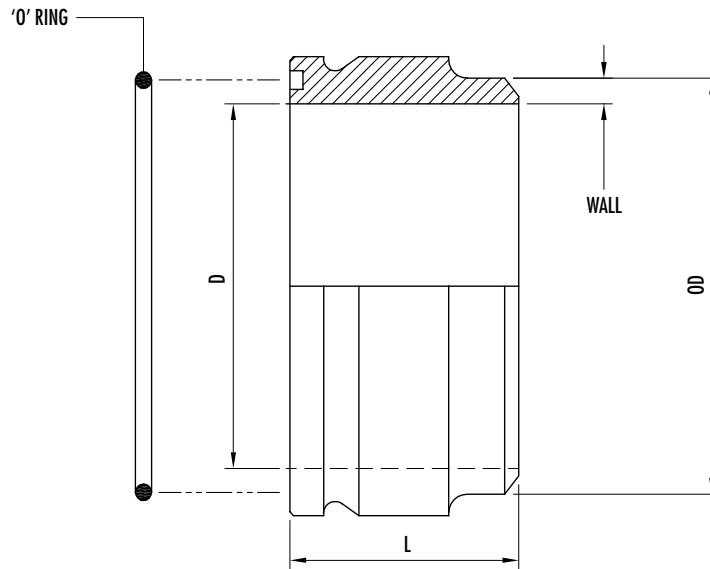
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RINGS

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Body

'O' Ring Face



LBWAO Low Pressure Butt Weld Retain Ring Adapter Body - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Schedule 40

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		D	L				
2 1/2"	LBWAO-SCH40-250-*	2.47	1.38	2.875 x 0.203	OR*-2-232	1.02	750 (52)
3"	LBWAO-SCH40-300-*	3.07	1.57	3.500 x 0.216	OR*-2-237	1.43	750 (52)
4"	LBWAO-SCH40-400-*	4.03	1.58	4.500 x 0.237	OR*-2-245	2.12	750 (52)
5"	LBWAO-SCH40-500-*	5.05	1.77	5.563 x 0.258	OR*-2-353	3.32	750 (52)
6"	LBWAO-SCH40-600-*	6.07	1.97	6.625 x 0.280	OR*-2-359	5.44	700 (48)
8"	LBWAO-SCH40-800-*	7.98	2.36	8.625 x 0.322	OR*-2-372	9.98	600 (40)

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

• FOR COMPLETE ASSEMBLY REFERENCE PAGE M15

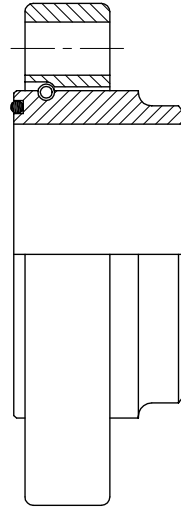
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Assembly

'O' Ring Face

Typical A/LBWA0 Assembly:



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE 'O' RING FACE BUTT WELD ADAPTER
- ONE (1) LOW PRESSURE RETAIN RING FLANGE (REF. PAGES D8-D9)
- ONE (1) LOW PRESSURE RETAIN RING
- ONE (1) BUNA 'O' RING (STANDARD)

A/LBWA0 Low Pressure Butt Weld Retain Ring Adapter Assembly - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Nominal Size	Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LBWA0-250-*	3.19	750 (52)
3"	A/LBWA0-300-*	5.22	750 (52)
4"	A/LBWA0-400-*	8.73	750 (52)
5"	A/LBWA0-500-*	11.93	750 (52)
6"	A/LBWA0-600-*	15.23	700 (48)
8"	A/LBWA0-800-*	29.23	600 (40)

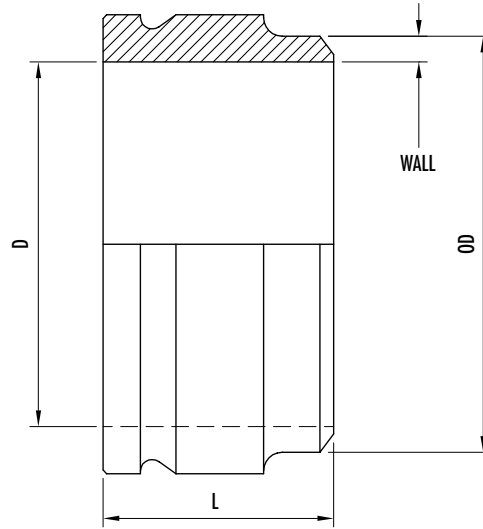
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Body

Flat Face



LBWAF Low Pressure Butt Weld Retain Ring Adapter Body - Flat Face

Schedule 40

Nominal Size	Adapter Part No.	Dimensions (in)		OD x Wall (in)	WT. lbs/pc	Working Pressure PSI (bar)
		D	L			
2 1/2"	LBWAF-SCH40-250	2.47	1.38	2.875 x 0.203	1.07	750 (52)
3"	LBWAF-SCH40-300	3.07	1.57	3.500 x 0.216	1.48	750 (52)
4"	LBWAF-SCH40-400	4.03	1.58	4.500 x 0.237	2.14	750 (52)
5"	LBWAF-SCH40-500	5.05	1.77	5.563 x 0.258	3.36	750 (52)
6"	LBWAF-SCH40-600	6.07	1.97	6.625 x 0.280	5.49	700 (48)
8"	LBWAF-SCH40-800	7.98	2.36	8.625 x 0.322	10.55	600 (40)

• FOR COMPLETE ASSEMBLY REFERENCE PAGE M17

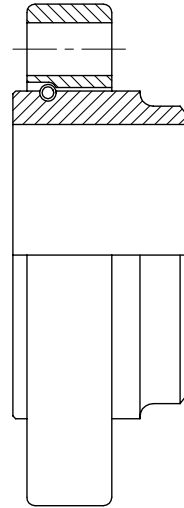
MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Low Pressure Butt Weld Retain Ring Adapter Assembly

Flat Face

Typical A/LBWAF Assembly:



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) LOW PRESSURE FLAT FACE BUTT WELD ADAPTER
- ONE (1) LOW PRESSURE RETAIN RING FLANGE (REF. PAGES D8-D9)
- ONE (1) LOW PRESSURE RETAIN RING

A/LBWAF Low Pressure Butt Weld Retain Ring Adapter Assembly - Flat Face

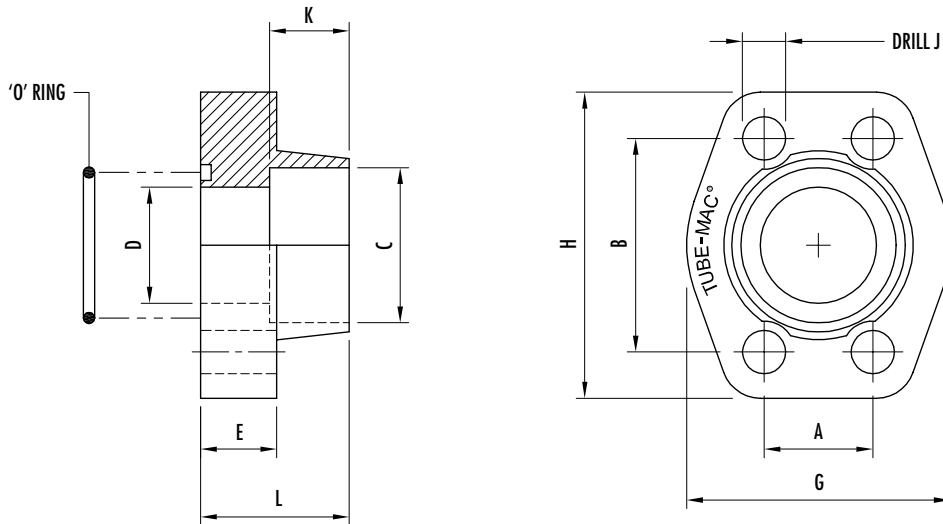
Nominal Size	Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/LBWAF-250	3.24	750 (52)
3"	A/LBWAF-300	5.27	750 (52)
4"	A/LBWAF-400	8.75	750 (52)
5"	A/LBWAF-500	11.97	750 (52)
6"	A/LBWAF-600	15.29	700 (48)
8"	A/LBWAF-800	29.80	600 (40)

MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE)



Socket Weld Flanges

SAE Flanges - 'O' Ring Face



SWF034 Socket Weld Flange - SAE Code 61 'O' Ring Face With Clearance Holes for ANSI Pipe Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)									Drill Dia.(in) J	Bolt Min. Grade 5 UNC	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	G	H	K	L						
1/2"	SWF034-050-*	0.69	1.50	0.85	0.51	0.63	1.81	2.16	0.75	1.42	0.35	5/16"	OR*-2-210	0.59	5000 (350)	15-18
3/4"	SWF034-075-*	0.88	1.88	1.07	0.75	0.71	2.06	2.56	0.75	1.42	0.43	3/8"	OR*-2-214	0.82	5000 (350)	20-30
1"	SWF034-100-*	1.03	2.06	1.34	0.98	0.71	2.31	2.76	0.75	1.50	0.43	3/8"	OR*-2-219	0.99	5000 (350)	20-30
1 1/4"	SWF034-125-*	1.19	2.31	1.69	1.26	0.83	2.88	3.11	0.87	1.61	0.45	7/16"	OR*-2-222	1.48	4000 (275)	40-50
1 1/2"	SWF034-150-*	1.41	2.75	1.91	1.50	0.98	3.25	3.66	0.95	1.77	0.53	1/2"	OR*-2-225	2.29	3000 (210)	80-90
2"	SWF034-200-*	1.69	3.06	2.40	2.01	0.98	3.81	4.02	1.02	1.77	0.53	1/2"	OR*-2-228	2.60	3000 (210)	80-90
2 1/2"	SWF034-250-*	2.00	3.50	3.02	2.48	0.98	4.28	4.49	1.18	1.97	0.53	1/2"	OR*-2-232	3.37	2500 (170)	80-90
3"	SWF034-300-*	2.44	4.19	3.56	2.87	1.06	5.16	5.28	1.34	1.97	0.69	5/8"	OR*-2-237	4.69	2000 (140)	110-120
4"	SWF034-400-*	3.06	5.13	4.55	3.90	1.06	6.00	6.38	1.34	1.89	0.69	5/8"	OR*-2-245	5.70	500 (35)	110-120

SWF064 Socket Weld Flange - SAE Code 62 'O' Ring Face With Clearance Holes for ANSI Pipe Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)									Drill Dia.(in) J	Bolt Min. Grade 5 UNC	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	G	H	K	L						
1/2"	SWF064-050-*	0.72	1.59	0.85	0.51	0.63	1.88	2.22	0.75	1.42	0.35	5/16"	OR*-2-210	0.59	6000 (420)	15-18
3/4"	SWF064-075-*	0.94	2.00	1.07	0.75	0.83	2.38	2.81	0.87	1.38	0.43	3/8"	OR*-2-214	1.16	6000 (420)	20-30
1"	SWF064-100-*	1.09	2.25	1.34	0.98	0.98	2.75	3.19	0.87	1.65	0.51	7/16"	OR*-2-219	1.73	6000 (420)	40-50
1 1/4"	SWF064-125-*	1.25	2.63	1.69	1.26	1.06	3.06	3.75	0.98	1.77	0.53	1/2"	OR*-2-222	2.61	6000 (420)	80-90
1 1/2"	SWF064-150-*	1.44	3.13	1.91	1.50	1.18	3.75	4.44	1.10	1.97	0.67	5/8"	OR*-2-225	3.92	6000 (420)	110-120
2"	SWF064-200-*	1.75	3.81	2.40	2.01	1.46	4.50	5.25	0.95	2.56	0.83	3/4"	OR*-2-228	7.23	6000 (420)	110-120

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

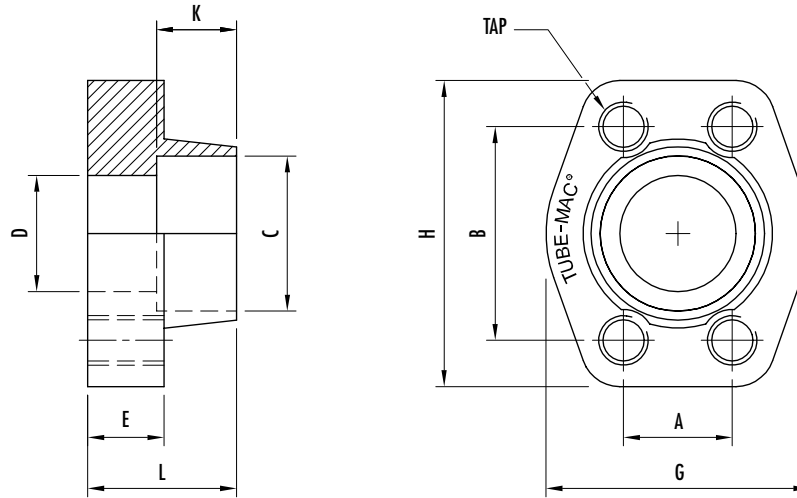
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Socket Weld Flanges

SAE Flanges - Flat Face



SWFF34 Socket Weld Flange - SAE Code 61 Flat Face With UNC Tapped Holes for ANSI Pipe

Size	Flange Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	G	H	K	L				
1/2"	SWFF34-050	0.69	1.50	0.85	0.51	0.63	1.81	2.16	0.75	1.42	5/16"-18	0.59	5000 (350)	15-18
3/4"	SWFF34-075	0.88	1.88	1.07	0.75	0.71	2.06	2.56	0.75	1.42	3/8"-16	0.90	5000 (350)	20-30
1"	SWFF34-100	1.03	2.06	1.34	0.98	0.71	2.31	2.76	0.75	1.50	3/8"-16	1.07	5000 (350)	20-30
1 1/4"	SWFF34-125	1.19	2.31	1.69	1.26	0.83	2.88	3.11	0.87	1.61	7/16"-14	1.58	4000 (275)	40-50
1 1/2"	SWFF34-150	1.41	2.75	1.91	1.50	0.98	3.25	3.66	0.95	1.77	1/2"-13	2.35	3000 (210)	80-90
2"	SWFF34-200	1.69	3.06	2.40	2.01	0.98	3.81	4.02	1.02	1.77	1/2"-13	3.47	3000 (210)	80-90
2 1/2"	SWFF34-250	2.00	3.50	3.02	2.48	0.98	4.28	4.49	1.18	1.97	1/2"-13	3.49	2500 (175)	80-90
3"	SWFF34-300	2.44	4.19	3.56	2.87	1.06	5.16	5.28	1.34	1.97	5/8"-11	4.76	2000 (140)	110-120
4"	SWFF34-400	3.06	5.13	4.55	3.90	1.06	6.00	6.38	1.34	1.89	5/8"-11	5.94	500 (35)	110-120

SWFF64 Socket Weld Flange - SAE Code 62 Flat Face With UNC Tapped Holes for ANSI Pipe

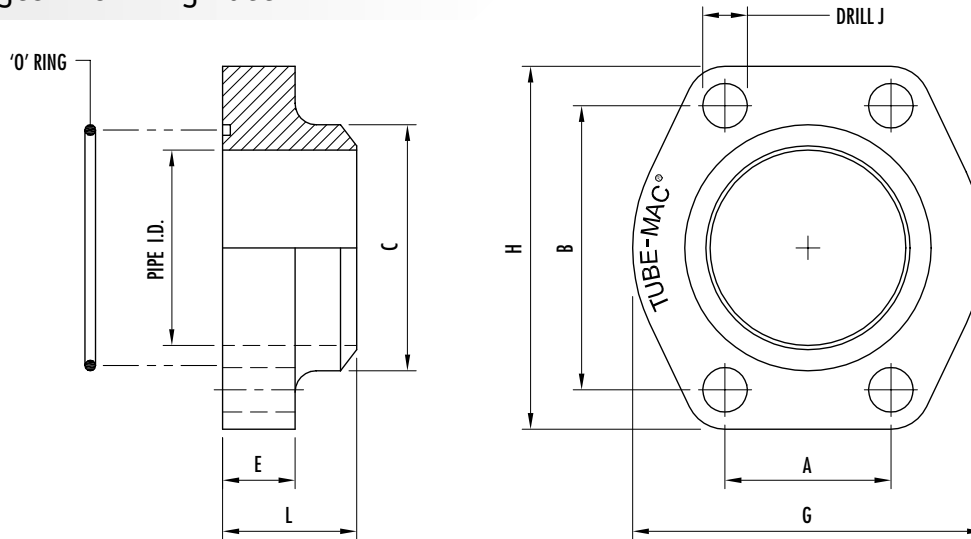
Size	Flange Part No.	Dimensions (in)									Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	G	H	K	L				
1/2"	SWFF64-050	0.72	1.59	0.85	0.51	0.63	1.88	2.22	0.75	1.42	5/16"-18	0.59	6000 (420)	15-18
3/4"	SWFF64-075	0.94	2.00	1.07	0.75	0.83	2.38	2.81	0.87	1.38	3/8"-16	1.23	6000 (420)	20-30
1"	SWFF64-100	1.09	2.25	1.34	0.98	0.98	2.75	3.19	0.87	1.65	7/16"-14	1.83	6000 (420)	40-50
1 1/4"	SWFF64-125	1.25	2.63	1.69	1.26	1.06	3.06	3.75	0.98	1.77	1/2"-13	2.70	6000 (420)	80-90
1 1/2"	SWFF64-150	1.44	3.13	1.91	1.50	1.18	3.75	4.44	1.10	1.97	5/8"-11	4.25	6000 (420)	110-120
2"	SWFF64-200	1.75	3.81	2.40	2.01	1.46	4.50	5.25	0.95	2.56	3/4"-10	7.49	6000 (420)	120-130

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Butt Weld Flanges

SAE Flanges - 'O' Ring Face



BWF034 Butt Weld Flange - SAE Code 61 'O' Ring Face With Clearance Holes Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)						Drill Dia.(in) J	Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.	
		A	B	C	E	L	G							H
1/2"	BWF034-**-050-*	0.69	1.50	0.85	0.63	1.42	1.81	2.16	0.35	5/16" UNC	OR*-2-210	0.62	5000 (350)	15-18
3/4"	BWF034-**-075-*	0.88	1.88	1.10	0.71	1.42	2.06	2.56	0.43	3/8" UNC	OR*-2-214	0.86	5000 (350)	20-30
1"	BWF034-**-100-*	1.03	2.06	1.34	0.71	1.50	2.31	2.76	0.43	3/8" UNC	OR*-2-219	1.01	5000 (350)	20-30
1 1/4"	BWF034-**-125-*	1.19	2.31	1.69	0.83	1.61	2.88	3.11	0.45	7/16" UNC	OR*-2-222	1.46	4000 (275)	40-50
1 1/2"	BWF034-**-150-*	1.41	2.75	1.91	0.98	1.73	3.25	3.66	0.53	1/2" UNC	OR*-2-225	2.31	3000 (210)	80-90
2"	BWF034-**-200-*	1.69	3.06	2.40	0.98	1.77	3.81	4.02	0.53	1/2" UNC	OR*-2-228	2.62	3000 (210)	80-90
2 1/2"	BWF034-**-250-*	2.00	3.50	3.03	0.98	1.97	4.28	4.49	0.53	1/2" UNC	OR*-2-232	3.09	2500 (175)	80-90
3"	BWF034-**-300-*	2.44	4.19	3.62	1.06	1.97	5.16	5.28	0.69	5/8" UNC	OR*-2-237	4.74	2000 (140)	110-120
4"	BWF034-**-400-*	3.06	5.13	4.55	1.06	1.89	6.00	6.38	0.69	5/8" UNC	OR*-2-245	6.28	500 (35)	110-120

** - INDICATE SCHEDULE REQUIRED - SCH40, SCH80, SCH160

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

BWF064 Butt Weld Flange - SAE Code 62 'O' Ring Face With Clearance Holes Complete With Buna 'O' Ring (Standard)

Size	Flange Part No.	Dimensions (in)						Drill Dia.(in) J	Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.	
		A	B	C	E	L	G							H
1/2"	BWF064-**-050-*	0.72	1.59	0.85	0.63	1.42	1.88	2.22	0.35	5/16" UNC	OR*-2-210	0.64	6000 (420)	15-18
3/4"	BWF064-**-075-*	0.94	2.00	1.10	0.83	1.38	2.38	2.81	0.43	3/8" UNC	OR*-2-214	1.10	6000 (420)	20-30
1"	BWF064-**-100-*	1.09	2.25	1.34	0.83	1.61	2.75	3.19	0.51	7/16" UNC	OR*-2-219	1.68	6000 (420)	40-50
1 1/4"	BWF064-**-125-*	1.25	2.63	1.69	0.98	1.73	3.06	3.75	0.53	1/2" UNC	OR*-2-222	2.65	6000 (420)	80-90
1 1/2"	BWF064-**-150-*	1.44	3.13	1.91	1.18	2.17	3.75	4.44	0.67	5/8" UNC	OR*-2-225	3.64	6000 (420)	110-120
2"	BWF064-**-200-*	1.75	3.81	2.40	1.46	2.56	4.50	5.25	0.83	3/4" UNC	OR*-2-228	5.40	6000 (420)	120-130

** - INDICATE SCHEDULE REQUIRED - SCH80, SCH160, SCHXXS

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

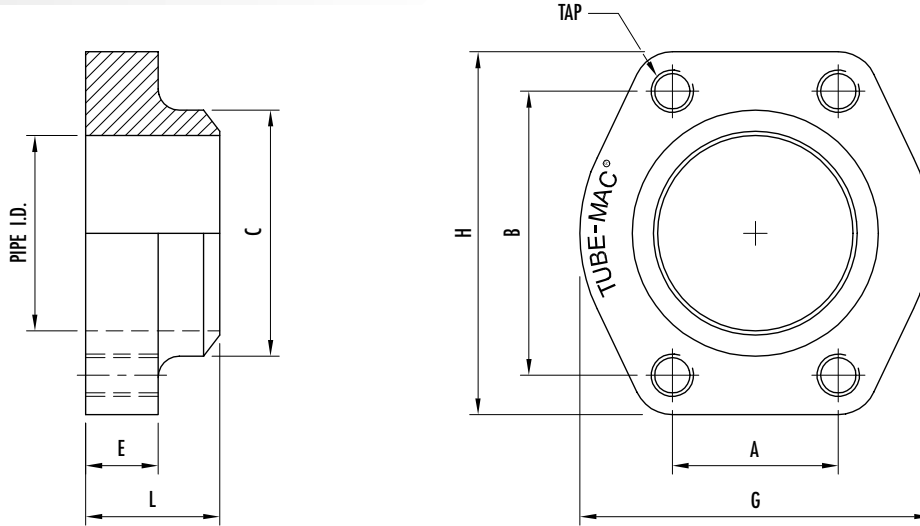
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Butt Weld Flanges

SAE Flanges - Flat Face



BWFF34 Butt Weld Flange - SAE Code 61 Flat Face With UNC Tapped Holes

Size	Flange Part No.	Dimensions (in)							Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	E	L	G	H				
1/2"	BWFF34-**-050	0.69	1.50	0.85	0.63	1.42	1.81	2.16	5/16"-18	0.55	5000 (350)	15-18
3/4"	BWFF34-**-075	0.88	1.88	1.10	0.71	1.42	2.06	2.56	3/8"-16	0.86	5000 (350)	20-30
1"	BWFF34-**-100	1.03	2.06	1.34	0.71	1.50	2.31	2.76	3/8"-16	1.01	5000 (350)	20-30
1 1/4"	BWFF34-**-125	1.19	2.31	1.69	0.83	1.61	2.88	3.11	7/16"-14	1.46	4000 (275)	40-50
1 1/2"	BWFF34-**-150	1.41	2.75	1.91	0.98	1.73	3.25	3.66	1/2"-13	2.31	3000 (210)	80-90
2"	BWFF34-**-200	1.69	3.06	2.40	0.98	1.77	3.81	4.02	1/2"-13	2.62	3000 (210)	80-90
2 1/2"	BWFF34-**-250	2.00	3.50	3.03	0.98	1.97	4.28	4.49	1/2"-13	3.09	2500 (175)	80-90
3"	BWFF34-**-300	2.44	4.19	3.62	1.06	1.97	5.16	5.28	5/8"-11	4.74	2000 (140)	110-120
4"	BWFF34-**-400	3.06	5.13	4.55	1.06	1.89	6.00	6.38	5/8"-11	6.28	500 (35)	110-120

** - INDICATE SCHEDULE REQUIRED - SCH40, SCH80, SCH160

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

BWFF64 Butt Weld Flange - SAE Code 62 Flat Face With UNC Tapped Holes

Size	Flange Part No.	Dimensions (in)							Tap UNC-2B	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	E	L	G	H				
1/2"	BWFF64-**-050	0.72	1.59	0.85	0.63	1.42	1.88	2.22	5/16"-18	0.57	6000 (420)	15-18
3/4"	BWFF64-**-075	0.94	2.00	1.10	0.83	1.38	2.38	2.81	3/8"-16	1.10	6000 (420)	20-30
1"	BWFF64-**-100	1.09	2.25	1.34	0.83	1.61	2.75	3.19	7/16"-14	1.68	6000 (420)	40-50
1 1/4"	BWFF64-**-125	1.25	2.63	1.69	0.98	1.73	3.06	3.75	1/2"-13	2.65	6000 (420)	80-90
1 1/2"	BWFF64-**-150	1.44	3.13	1.91	1.18	2.17	3.75	4.44	5/8"-11	3.64	6000 (420)	110-120
2"	BWFF64-**-200	1.75	3.81	2.40	1.46	2.56	4.50	5.25	3/4"-10	5.40	6000 (420)	120-130

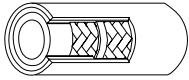
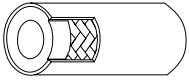
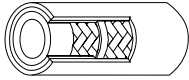
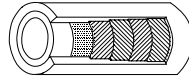
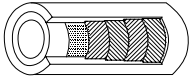
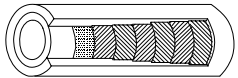
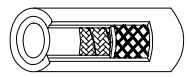

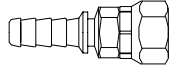
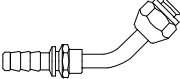
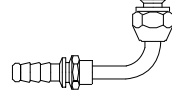
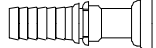
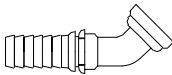
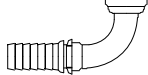
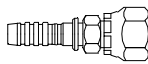
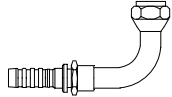

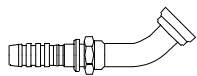
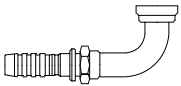
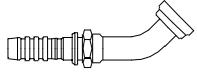
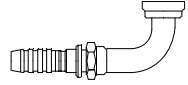
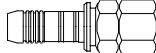
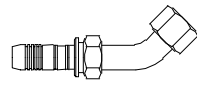
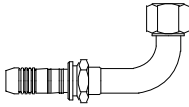
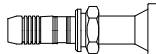
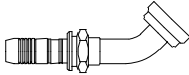
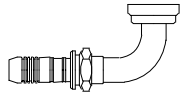
** - INDICATE SCHEDULE REQUIRED - SCH80, SCH160, SCHXXS

MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



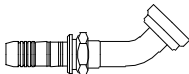
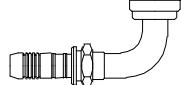
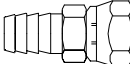
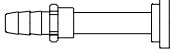
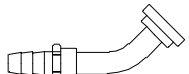
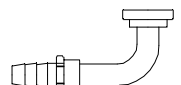
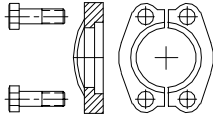
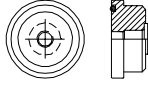
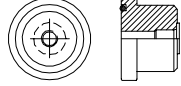
Hose and Fittings - Visual Index (page 1 of 2)



HOSES	M2T®  1/4" - 1/2" Page N4	ΔM3K  5/8" - 1" Page N5	C2ATH  1 1/4" - 2" Page N6	C12M (FORMERLY C12)  3/8" - 1 1/4" Page N7
	G3K  1 1/2" - 2" Page N8	G5K (FORMERLY C13)  5/8" - 2" Page N9	C4  3/4" - 3" Page N10	COMPLETE HOSE ASSEMBLY  Page N3
COUPLINGS FOR M2T, ΔM3K, C2ATH HOSES	FJX JIC SWIVEL FEMALE  1/4" - 2" Page N11	FJX45 45° JIC SWIVEL FEMALE  1/4" - 1 1/4" Page N11	FJX90 90° JIC SWIVEL FEMALE  1/4" - 1 1/4" Page N11	FL SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N12
	FL45 45° SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N12	FL90 90° SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N12	COUPLINGS FOR C12M, G3K AND 1" ΔM3K HOSES	PCS-FJX JIC SWIVEL FEMALE  3/8" - 2" Page N13
PCS-FJX90 90° JIC SWIVEL FEMALE  3/8" - 1 1/4" Page N13	PCS-FL SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N14	PCS-FL45 45° SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N14		PCS-FL90 90° SAE CODE 61 SPLIT FLANGE STYLE  1/2" - 2" Page N14
PCS-FLH45 45° SAE CODE 62 SPLIT FLANGE STYLE  1/2" - 2" Page N15	PCS-FLH90 90° SAE CODE 62 SPLIT FLANGE STYLE  1/2" - 2" Page N15	COUPLINGS FOR G5K (FORMERLY C13) HOSE	PCM-FJX JIC SWIVEL FEMALE  5/8" - 2" Page N16	PCM-FJX45 45° JIC SWIVEL FEMALE  3/4" Page N16
PCM-FJX90 90° JIC SWIVEL FEMALE  5/8" - 1 1/4" Page N16	PCM-FL SAE CODE 61 SPLIT FLANGE STYLE  3/4" - 2" Page N17		PCM-FL45 45° SAE CODE 61 SPLIT FLANGE STYLE  3/4" - 2" Page N17	PCM-FL90 90° SAE CODE 61 SPLIT FLANGE STYLE  3/4" - 2" Page N17



Hose and Fittings - Visual Index (page 2 of 2)

<p>PCM-FLH45 45° SAE CODE 62 SPLIT FLANGE STYLE</p>  <p>$\frac{3}{4}$" - 2" Page N18</p>	<p>PCM-FLH90 90° SAE CODE 62 SPLIT FLANGE STYLE</p>  <p>$\frac{3}{4}$" - 2" Page N18</p>	<p>COUPLINGS FOR C4 HOSE</p>	<p>C4-FJX JIC SWIVEL FEMALE</p>  <p>$\frac{3}{4}$" - 2" Page N19</p>	<p>C4-FL SAE CODE 61 SPLIT FLANGE STYLE</p>  <p>$\frac{3}{4}$" - 3" Page N19</p>
<p>C4-FL45 45° SAE CODE 61 SPLIT FLANGE STYLE</p>  <p>$\frac{3}{4}$" - 3" Page N19</p>	<p>C4-FL90 90° SAE CODE 61 SPLIT FLANGE STYLE</p>  <p>$\frac{3}{4}$" - 3" Page N19</p>		<p>SPLIT FLANGE KITS</p>	<p>SFK34 SAE CODE 61</p>  <p>$\frac{1}{2}$" - 4" Page N20</p>
<p>SPLIT FLANGE PLUGS</p>	<p>SFP34 SAE CODE 61</p>  <p>$\frac{1}{2}$" - 4" Page N21</p>	<p>SFP64 SAE CODE 62</p>  <p>$\frac{1}{2}$" - 2" Page N21</p>		



Gates Hydraulic Hose Selection Guide

Size Range & Maximum Allowable Working Pressure - ^{PSI}
(bar)

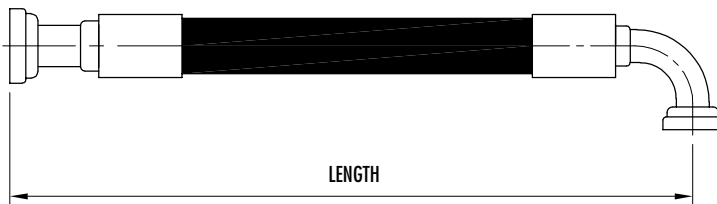
Pressure Hose

Hose Type	Nominal Hose Size									Hose Ref. Page	Coupling Ref. Page
	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"		
M2T®	5000 (350)	4000 (275)	3500 (240)	-	-	-	-	-	-	N4	N11 - N12
ΔM3K	-	-	-	3000 (210)	3000 (210)	3000 (210)	-	-	-	N5	
C2ATH	-	-	-	-	-	-	1625 (112)	1250 (86)	1125 (78)	N6	
C12M (formerly C12)	-	4000 (275)	4000 (275)	-	4000 (275)	4000 (275)	3000 (210)	-	-	N7	N13 - N15
G3K	-	-	-	-	-	-	-	3000 (210)	3000 (210)	N8	
G5K (formerly C13)	-	-	-	5000 (350)	5000 (350)	5000 (350)	5000 (350)	5000 (350)	5000 (350)	N9	N16 - N18

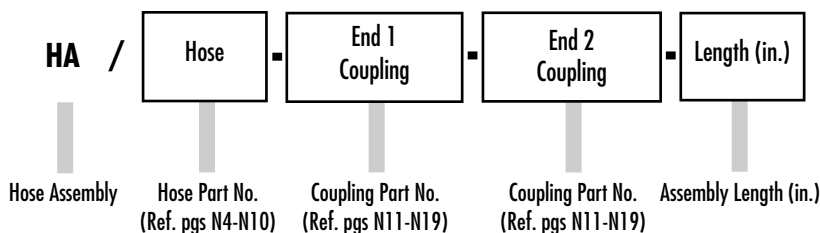
Return Line and Suction Hose

Hose Type	Nominal Hose Size							Hose Ref. Page	Coupling Ref. Page
	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"		
C4	300 (21)	250 (17)	200 (14)	150 (10)	100 (7)	62 (4)	56 (4)	N10	N19

Complete Hose Assembly Part Number

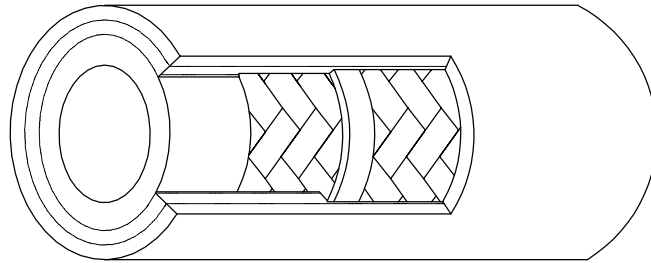


PART NO. (EXAMPLE):
HA/20C2ATH - 20-20FJX - 20-20FJX90 - 72



Hose and Ferrules - Power Crimp® Series

Megaflex® 2-Wire Braid - 5000-3500 PSI (350-240 bar)



M2T® Megaflex® 2-Wire Braid Hose

5000-3500 PSI (350-240 bar)

Size	Hose Part No.	Hose O.D. (in)	Minimum Bend (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
1/4"	4M2T	0.54	2.00	25.0	5000 (350)	20000 (1380)
3/8"	6M2T	0.69	2.50	32.0	4000 (275)	16000 (1103)
1/2"	8M2T	0.81	3.50	37.0	3500 (240)	14000 (965)

RECOMMENDED FOR: HIGH PRESSURE HYDRAULIC OIL LINES. MEETS OR EXCEEDS PERFORMANCE OF SAE 100R2 REQUIREMENTS WITH SMALLER EXTERIOR DIMENSIONS AND 1/2 SAE 100R2 BEND RADIUS.

TUBE: TYPE C (NITRILE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.

REINFORCEMENT: TWO BRAIDS OF HIGH TENSILE STEEL WIRE.

COVER: TYPE C₂ (MODIFIED NITRILE). BLACK. OIL, ABRASION AND WEATHER RESISTANT SYNTHETIC RUBBER. NO SKIVING REQUIRED ON PC1F-M2 FERRULES.

TEMPERATURE RANGE: -40°C TO +100°C (-40°F TO +212°F).

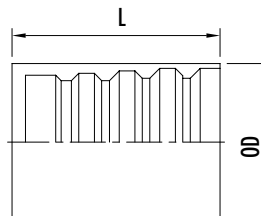
- HOSE MEETS FLAME RESISTANCE ACCEPTANCE DESIGNATION U.S. MSHA 2G.

COUPLINGS: POWER CRIMP STEMS, REF. PAGES N11-N12 FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PC1F-M2S (Non-Skive) Ferrule For M2T® Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
1/4"	4PC1F-M2S	1.20	0.83
3/8"	6PC1F-M2S	1.20	1.06
1/2"	8PC1F-M2S	1.47	1.20

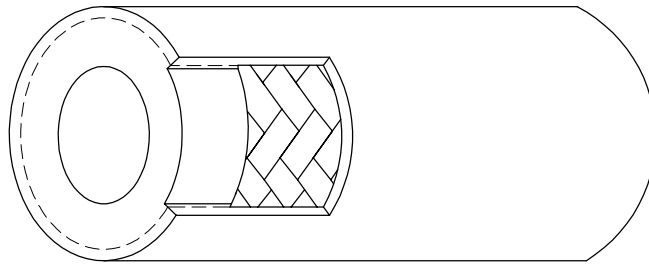


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

Megaflex® Wire Braid - 3000 PSI (210 bar)



ΔM3K Mega3000™ Wire Braid Hose 3000 PSI (210 bar)

Size	Hose Part No.	Hose O.D. (in)	Miniumum Bend (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
5/8"	10M3K	0.98	4.00	41.0	3000 (210)	12000 (830)
3/4"	12M3K	1.14	4.75	60.0	3000 (210)	12000 (830)
*1"	16M3K	1.48	6.00	105.0	3000 (210)	12000 (830)

RECOMMENDED FOR: HIGH PRESSURE HYDRAULIC OIL LINES. EXCEEDS SAE PERFORMANCE REQUIREMENTS BECAUSE ΔM3K HOSE HAS SMALLER EXTERIOR DIMENSIONS AND **SIGNIFICANTLY TIGHTER BEND RADIUS ... UP TO HALF SAE RATING.**

TUBE: BLACK, OIL RESISTANT, SYNTHETIC RUBBER. (NITRILE).

REINFORCEMENT: BRAIDED HIGH TENSILE STEEL WIRE.

COVER: BLACK. OIL, ABRASION AND WEATHER RESISTANT, SYNTHETIC RUBBER. (MODIFIED NITRILE).

TEMPERATURE RANGE: -40°C TO +100°C (-40°F TO +212°F).

- HOSE MEETS FLAME RESISTANCE ACCEPTANCE DESIGNATION U.S. MSHA 2G.

COUPLINGS: POWERCRIMP STEMS, REF. PAGES N11-N12

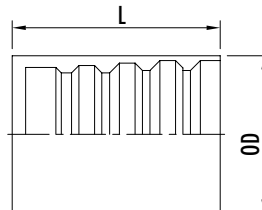
- * 1" SIZE ONLY, PCS STEMS REF. PAGES N13-N15

FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PC1FS-M3K (Non-Skive) Ferrule For ΔM3K Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
5/8"	10PC1FS-ΔM3K	1.47	1.32
3/4"	12PC1FS-ΔM3K	1.69	1.53
*1"	16PCS1F-ΔM3K	2.20	1.98

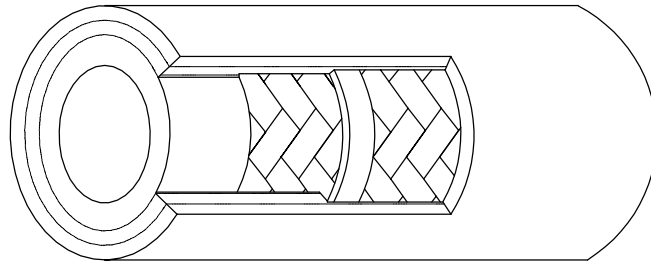


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

2-Wire Braid - SAE 100R2 Type AT - 1625-1125 PSI (112-78 bar)



C2ATH Hi-Temp 2-Wire Braid Hose - SAE 100R2 Type AT 1625-1125 PSI (112-78 bar)

Size	Hose Part No.	Hose O.D. Bend (in)	Minimum (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
1 1/4"	20C2ATH	1.87	16.50	145.0	1625 (112)	6500 (450)
1 1/2"	24C2ATH	2.15	20.00	164.0	1250 (86)	5000 (345)
2"	32C2ATH	2.65	25.00	205.0	1125 (78)	4500 (310)

NO-SKIVE TYPE HYDRAULIC HOSE. MEETS OR EXCEEDS REQUIREMENTS OF SAE 100R2, TYPE AT. USED WITH THE GATES POWER CRIMP SYSTEM WHERE "NO-SKIVE" HOSE IS REQUIRED. EXCELLENT HIGH AND LOW TEMPERATURE RESISTANCE.

RECOMMENDED FOR: HIGH PRESSURE HYDRAULIC OIL LINES, FUEL OIL, OR WATER. USED ON ALL TYPES OF HYDRAULIC SYSTEMS FOR MOBILE AND STATIONARY EQUIPMENT.

TUBE: TYPE C (NITRILE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.

REINFORCEMENT: TWO BRAIDS OF HIGH TENSILE STEEL WIRE.

COVER: TYPE C₂ (NITRILE). BLACK. OIL AND ABRASION RESISTANT, THIN SYNTHETIC RUBBER.

TEMPERATURE RANGE: -40°C TO +121°C (-40°F TO +250°F), CONSTANT; +149°C (+300°F), INTERMITTENT (UP TO 10% OF OPERATING TIME).

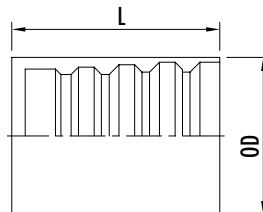
- HOSE MEETS FLAME RESISTANCE ACCEPTANCE DESIGNATION U.S. MSHA 2G.

COUPLINGS: POWERCRIMP STEMS, REF. PAGES N11-N12 FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PC1FS (Non-Skive) Ferrule For C2ATH Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
1 1/4"	20PC1FS	2.41	2.38
1 1/2"	24PC1FS	2.69	2.69
2"	32PC1FS	3.56	3.25

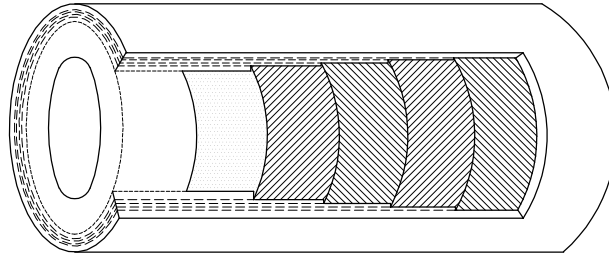


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

4-Spiral Wire - SAE 100R12 - 4000-3000 PSI (275-210 bar)



C12M (Formerly C12) MegaSpiral™ 4-Spiral Wire Hose - SAE 100R12 4000-3000 PSI (275-210 bar)

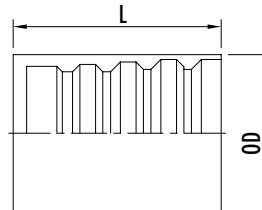
Size	Hose Part No.	Hose O.D. Bend (in)	Miniumum (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
3/8"	6C12M	0.80	2.50	48.0	4000 (275)	16000 (1103)
1/2"	8C12M	0.94	3.50	58.0	4000 (275)	16000 (1103)
3/4"	12C12M	1.21	4.75	92.0	4000 (275)	16000 (1103)
1"	16C12M	1.50	6.00	127.0	4000 (275)	16000 (1103)
1 1/4"	20C12M	1.85	8.25	179.0	3000 (210)	12000 (830)

RECOMMENDED FOR: VERY HIGH PRESSURE HYDRAULIC APPLICATIONS.
EXCELLENT IMPULSE LIFE; SURPASSED 1,000,000 IMPULSE CYCLES WHEN TESTED WITH PCS SERIES COUPLINGS AT 250°F (AT SAE 100R12 CONDITIONS) AND AT 133% OF RATED WORKING PRESSURE.
HALF THE BEND RADIUS AND MORE FLEXIBLE THAN SAE 100R12.
TUBE: TYPE A (NEOPRENE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.
REINFORCEMENT: FOUR ALTERNATING LAYERS OF SPIRALED HIGH TENSILE STEEL WIRE OVER A FABRIC LAYER.

COVER: TYPE A (NEOPRENE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.
TEMPERATURE RANGE: -40°C TO +121°C (-40°F TO +250°F).
• HOSE MEETS MSHA FLAME RESISTANCE ACCEPTANCE REQUIREMENTS - MSHA 2G.
COUPLINGS: PCS STEMS, REF. PAGES N13-N15.
FERRULES AS INDICATED BELOW.
TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PCS1F (Non-Skive) PCS Ferrule For C12M Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
3/8"	6PCS1F	1.10	1.23
1/2"	8PCS1F	1.50	1.35
3/4"	12PCS1F	1.97	1.65
1"	16PCS1F	2.20	1.98
1 1/4"	20PCS1F	2.77	2.43

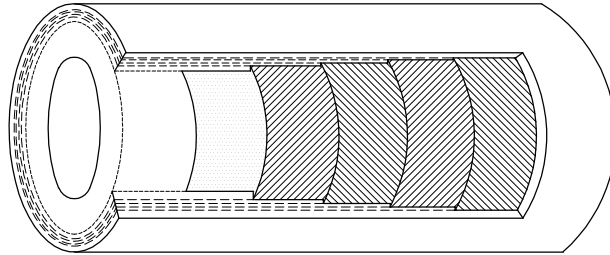


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

4-Spiral Wire -3000 PSI (210 bar)



G3K 4-Spiral Wire Hose

3000 PSI (210 bar)

Size	Hose Part No.	Hose O.D. Bend (in)	Minimum Bend (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
1 1/2"	24G3K	2.11	20.00	26.8	3000 (210)	12000 (830)
2"	32G3K	2.63	25.00	33.6	3000 (210)	12000 (830)

RECOMMENDED FOR: EXTREMELY HIGH PRESSURE, HIGH IMPULSE APPLICATIONS. EXCEEDS ALL PERFORMANCE REQUIREMENTS FOR SAE 100R11 OR SAE 100R12.

TUBE: BLACK. OIL RESISTANT SYNTHETIC RUBBER. (NEOPRENE).

REINFORCEMENT: FOUR ALTERNATING LAYERS OF SPIRALED HIGH TENSILE STEEL WIRE AND FABRIC.

COVER: BLACK. OIL RESISTANT SYNTHETIC RUBBER. (NEOPRENE). WHITE STRIPE LAYLINE.

TEMPERATURE RANGE: -40°C TO +121°C (-40°F TO +250°F).

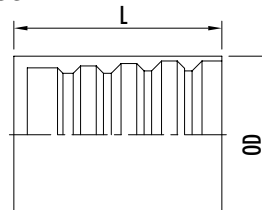
- HOSE MEETS FLAME RESISTANCE ACCEPTANCE DESIGNATION U.S. MSHA 2G.

COUPLINGS: PCS STEMS, REF. PAGES N13-N15
FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PCS1F (Non-Skive) PCS Ferrule For G3K Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
1 1/2"	24PCS1F	3.50	2.77
2"	32PCS1F	3.43	3.34

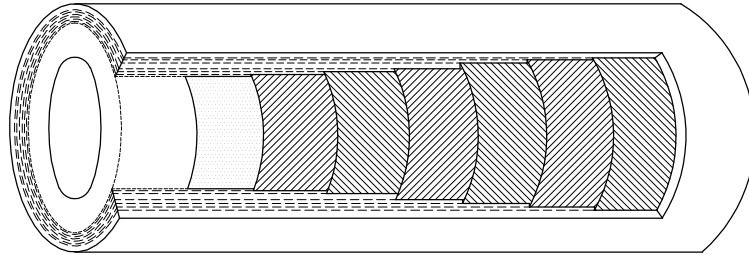


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

4 & 6 Spiral Wire - SAE 100R13 - 5000 PSI (350 bar)



G5K (formerly C13) 4 & 6 Spiral Wire Hose - SAE 100R13 5000 PSI (350 bar)

Size	Hose Part No.	Hose O.D. (in)	Miniumum Bend (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
5/8"	10G5K	1.11	8.00	73.0	5000 (350)	20000 (1380)
3/4"	12G5K	1.26	9.50	99.0	5000 (350)	20000 (1380)
1"	16G5K	1.53	12.00	151.0	5000 (350)	20000 (1380)
1 1/4"	20G5K	1.97	16.50	271.0	5000 (350)	20000 (1380)
1 1/2"	24G5K	2.26	20.00	319.0	5000 (350)	20000 (1380)
2"	32G5K	2.81	25.00	471.0	5000 (350)	20000 (1380)

RECOMMENDED FOR: EXTREMELY HIGH PRESSURE HYDRAULIC APPLICATIONS. MEETS ALL REQUIREMENTS OF THE SAE 100R13 SPECIFICATIONS.

TUBE: TYPE A (NEOPRENE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.

REINFORCEMENT: FOUR ALTERNATING LAYERS OF SPIRALED HIGH TENSILE STEEL WIRE OVER A FABRIC LAYER ON 5/8", 3/4" AND 1" SIZES; SIX ALTERNATING LAYERS OF SPIRALED HIGH TENSILE STEEL WIRE OVER A FABRIC LAYER ON 1 1/4", 1 1/2" AND 2" SIZES.

COVER: TYPE A (NEOPRENE). BLACK. OIL RESISTANT SYNTHETIC RUBBER.

TEMPERATURE RANGE: -40°C TO +121°C (-40°F TO +250°F).

- HOSE MEETS FLAME RESISTANCE ACCEPTANCE DESIGNATION U.S. MSHA 2G.

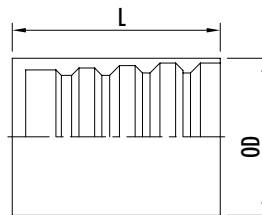
COUPLINGS: PCM STEMS, REF. PAGES N16-N18
SKIVING REQUIRED

FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PCM2F PCM Ferrule For G5K (formerly C13) Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
5/8"	10PCM2F	1.81	1.41
3/4"	12PCM2F	2.05	1.74
1"	16PCM2F	2.28	1.90
1 1/4"	20PCM2F	2.82	2.39
1 1/2"	24PCM2F	3.50	2.76
2"	32PCM2F	3.68	3.44

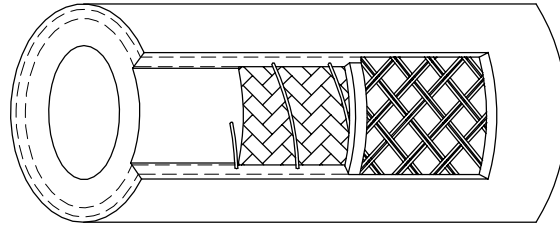


MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Hose and Ferrules - Power Crimp® Series

Return Line And Suction - SAE 100R4 300-56 PSI (21-4 bar)



C4 Large-Diameter Return Line and Suction Hose - SAE 100R4 300-56 PSI (21-4 bar)

Size	Hose Part No.	Hose O.D. (in)	Minimum Bend (in)	WT. lbs/100ft.	Working Pressure PSI (bar)	Minimum Burst PSI (bar)
3/4"	12C4	1.25	5.00	48.0	300 (21)	1200 (83)
1"	16C4	1.50	6.00	60.0	250 (17)	1000 (69)
1 1/4"	20C4	1.78	8.00	82.0	200 (14)	800 (55)
1 1/2"	24C4	2.08	10.00	114.0	150 (10)	600 (41)
2"	32C4	2.50	12.00	131.0	100 (7)	400 (28)
2 1/2"	40C4	3.12	14.00	201.0	62 (4)	250 (17)
3"	48C4	3.63	16.00	233.0	56 (4)	225 (16)

WIRE INSERTED LARGE DIAMETER RETURN AND SUCTION HOSE.
VACUUM RATING OF 25" Hg (635 mm Hg) FOR ALL SIZES SHOWN.
MEETS OR EXCEEDS REQUIREMENTS OF SAE 100 R4.

RECOMMENDED FOR: PETROLEUM BASE HYDRAULIC OILS FOR SUCTION OR LOW PRESSURE RETURN LINES.

TUBE: TYPE C (NITRILE). BLACK. SYNTHETIC RUBBER.

REINFORCEMENT: BRAIDED FIBRE, REINFORCED WITH A SPIRAL WIRE TO PREVENT COLLAPSING UNDER VACUUM CONDITIONS.

COVER: TYPE A (NEOPRENE). BLACK. OIL AND ABRASION RESISTANT SYNTHETIC RUBBER.

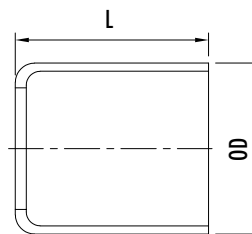
TEMPERATURE RANGE: -40°C TO +100°C (-40°F TO +212°F).

COUPLINGS: POWERCRIMP STEMS, REF. PAGE N19
FERRULES AS INDICATED BELOW.

TO ORDER A COMPLETE HOSE ASSEMBLY REF. PAGE N3

PC1F-C4 (Non-Skive) Ferrule For C4 Hose

Size	Ferrule Part No.	Dimensions (in)	
		L	OD
3/4"	†12PC1F-C4	1.01	1.50
1"	†16PC1F-C4	1.07	1.75
1 1/4"	†20PC1F-C4	1.52	2.00
1 1/2"	24PC1F-C4	1.56	2.25
2"	32PC1F-C4	2.00	2.75
2 1/2"	*40PC1F-C4	2.50	3.50
3"	*48PC1F-C4	3.00	4.00



† ALUMINUM

* FACTORY CRIMPED ASSEMBLIES ONLY

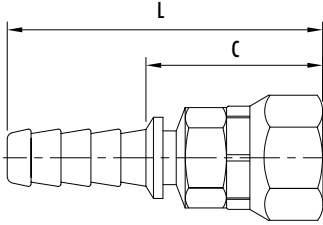
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Stems

JIC Swivel Female - For M2T®, ΔM3K and C2ATH Hoses

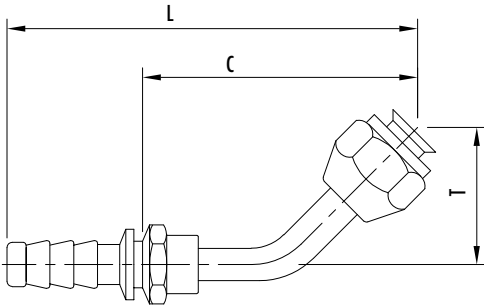
FJX



FJX Straight JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)		Thread Size	Hex Size (in)	Bore Size (in)
		L	C			
1/4"	4-4FJX	2.13	1.04	7/16"-20	0.56	0.156
3/8"	6-6FJX	2.24	1.22	9/16"-18	0.75	0.295
1/2"	8-8FJX	2.76	1.32	3/4"-16	0.88	0.406
5/8"	10-10FJX	3.04	1.60	7/8"-14	1.06	0.500
3/4"	12-12FJX	3.39	1.68	1 1/16"-12	1.25	0.625
1"	16-16FJX	3.63	1.92	1 5/16"-12	1.50	0.844
1 1/4"	20-20FJX	4.58	2.28	1 5/8"-12	2.00	1.062
1 1/2"	24-24FJX	5.10	2.46	1 7/8"-12	2.25	1.312
2"	32-32FJX	6.45	2.92	2 1/2"-12	2.88	1.656

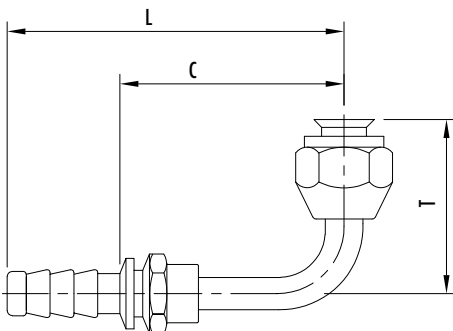
FJX45



FJX45 45° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size
		L	C	T	
1/4"	4-4FJX45	2.79	1.70	0.33	7/16"-20
3/8"	6-6FJX45	3.12	2.10	0.39	9/16"-18
1/2"	8-8FJX45	3.68	2.24	0.55	3/4"-16
5/8"	10-10FJX45	4.02	2.58	0.78	7/8"-14
3/4"	12-12FJX45	4.62	2.91	0.78	1 1/16"-12
1"	16-16FJX45	5.53	3.82	0.89	1 5/16"-12
1 1/4"	20-20FJX45	7.94	5.64	1.38	1 5/8"-12

FJX90



FJX90 90° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size
		L	C	T	
1/4"	4-4FJX90	2.53	1.44	0.68	7/16"-20
3/8"	6-6FJX90	2.83	1.81	0.85	9/16"-18
1/2"	8-8FJX90	3.37	1.93	1.09	3/4"-16
5/8"	10-10FJX90	3.63	2.19	1.82	7/8"-14
3/4"	12-12FJX90	4.52	2.81	1.82	1 1/16"-12
1"	16-16FJX90	5.28	3.55	2.14	1 5/16"-12
1 1/4"	20-20FJX90	5.50	3.20	3.50	1 5/8"-12

• JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

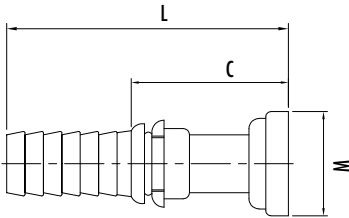
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Stems

SAE Code 61 Split Flange Style - For M2T®, ΔM3K and C2ATH Hoses

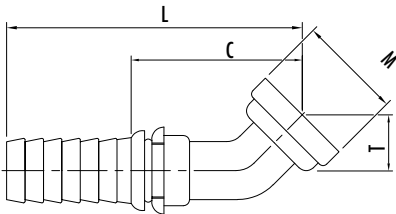
FL



FL Straight SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
1/2"	8-8FL-*	3.29	1.86	1.19	OR*-2-210
3/4"	12-12FL-*	3.74	2.04	1.50	OR*-2-214
1"	16-16FL-*	3.62	1.91	1.75	OR*-2-219
1 1/4"	20-20FL-*	4.63	2.33	2.00	OR*-2-222
1 1/2"	24-24FL-*	4.94	2.30	2.38	OR*-2-225
2"	32-32FL-*	6.08	2.54	2.81	OR*-2-228

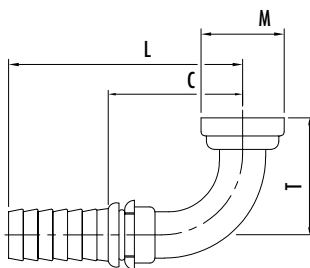
FL45



FL45 45° SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8-8FL45-*	3.66	2.23	0.78	1.19	OR*-2-210
3/4"	12-12FL45-*	4.42	2.72	1.00	1.50	OR*-2-214
1"	16-16FL45-*	4.62	2.91	1.06	1.75	OR*-2-219
1 1/4"	20-20FL45-*	5.54	3.24	1.15	2.00	OR*-2-222
1 1/2"	24-24FL45-*	6.53	3.89	1.41	2.38	OR*-2-225
2"	32-32FL45-*	8.52	4.98	2.00	2.81	OR*-2-228

FL90



FL90 90° SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8-8FL90-*	3.54	2.11	1.63	1.19	OR*-2-210
3/4"	12-12FL90-*	4.14	2.44	2.13	1.50	OR*-2-214
1"	16-16FL90-*	4.56	2.85	2.38	1.75	OR*-2-219
1 1/4"	20-20FL90-*	5.38	3.08	2.62	2.00	OR*-2-222
1 1/2"	24-24FL90-*	6.19	3.55	3.12	2.38	OR*-2-225
2"	32-32FL90-*	8.52	4.98	4.50	2.81	OR*-2-228

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

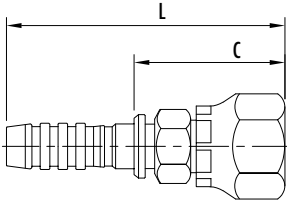
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Spiral Stems

JIC Swivel Female - For C12M, G3K and 1"ΔM3K® Hoses

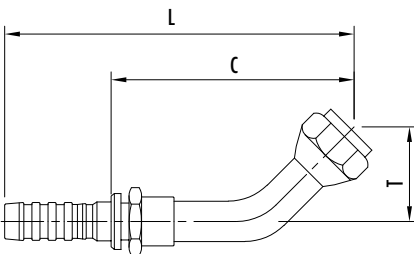
PCS-FJX



PCS-FJX Straight JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)		Thread Size	Hex Size (in)	Bore Size (in)
		L	C			
3/8"	6PCS-6FJX	2.27	1.25	9/16"-18	0.75	0.27
1/2"	8PCS-8FJX	2.80	1.33	3/4"-16	0.88	0.41
3/4"	12PCS-12FJX	3.77	1.76	1 1/16"-12	1.25	0.59
1"	16PCS-16FJX	4.13	1.90	1 5/16"-12	1.00	0.83
1 1/4"	20PCS-20FJX	5.29	2.49	1 5/8"-12	2.00	1.06
1 1/2"	24PCS-24FJX	5.42	2.62	1 7/8"-12	2.37	1.28
2"	32PCS-32FJX	6.58	3.03	2 1/2"-12	3.00	1.75

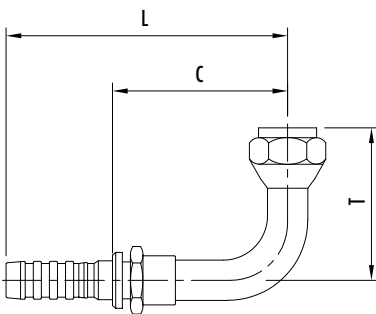
PCS-FJX45



PCS-FJX45 45° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size
		L	C	T	
3/8"	6PCS-6FJX45S	2.72	1.70	0.39	9/16"-18
1/2"	8PCS-8FJX45S	3.64	2.16	0.55	3/4"-16
3/4"	12PCS-12FJX45M	4.93	2.92	1.25	1 1/16"-12
1"	16PCS-16FJX45M	5.68	3.44	1.50	1 5/16"-12
1 1/4"	20PCS-20FJX45M	8.15	5.35	1.60	1 5/8"-12
1 1/2"	24PCS-24FJX45M	9.02	6.22	2.00	1 7/8"-12

PCS-FJX90



PCS-FJX90 90° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size
		L	C	T	
3/8"	6PCS-6FJX90S	2.67	1.65	0.85	9/16"-18
1/2"	8PCS-8FJX90S	3.46	1.98	1.71	3/4"-16
3/4"	12PCS-12FJX90S	4.39	2.38	1.82	1 1/16"-12
1"	16PCS-16FJX90S	5.50	3.26	2.14	1 5/16"-12
1 1/4"	20PCS-20FJX90S	6.16	3.36	3.00	1 5/8"-12

• JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

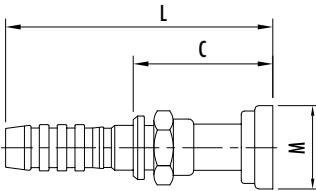
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Spiral Stems

SAE Code 61 Split Flange Style - For C12M, G3K and 1"ΔM3K® Hoses

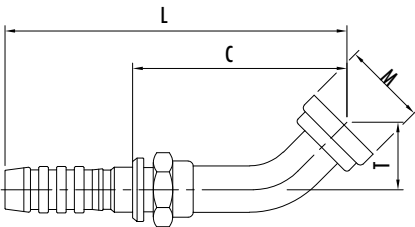
PCS-FL



PCS-FL Straight SAE Code 61 - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
1/2"	8PCS-8FL-*	3.63	1.92	1.19	OR*-2-210
3/4"	12PCS-12FL-*	4.37	2.36	1.50	OR*-2-214
1"	16PCS-16FL-*	4.48	2.24	1.75	OR*-2-219
1 1/4"	20PCS-20FL-*	5.71	2.91	2.00	OR*-2-222
1 1/2"	24PCS-24FL-*	5.79	2.99	2.38	OR*-2-225
2"	32PCS-32FL-*	6.08	2.54	2.81	OR*-2-228

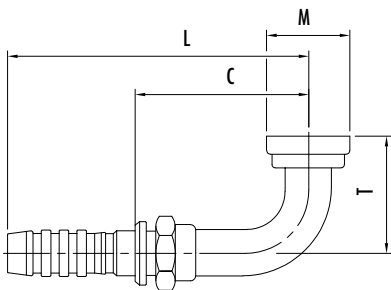
PCS-FL45



PCS-FL45 45° SAE Code 61 - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8PCS-8FL45-*	3.58	2.11	0.78	1.19	OR*-2-210
3/4"	12PCS-12FL45-*	4.67	2.67	1.00	1.50	OR*-2-214
1"	16PCS-16FL45-*	5.31	3.07	1.12	1.75	OR*-2-219
1 1/4"	20PCS-20FL45-*	6.41	3.61	1.27	2.00	OR*-2-222
1 1/2"	24PCS-24FL45-*	7.03	4.23	1.44	2.38	OR*-2-225
2"	32PCS-32FL45-*	8.52	4.98	2.00	2.81	OR*-2-228

PCS-FL90



PCS-FL90 90° SAE Code 61 - 'O' Ring Face Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8PCS-8FL90-*	3.46	2.99	1.63	1.19	OR*-2-210
3/4"	12PCS-12FL90-*	4.39	2.38	2.13	1.50	OR*-2-214
1"	16PCS-16FL90-*	5.21	2.97	2.60	1.75	OR*-2-219
1 1/4"	20PCS-20FL90-*	6.16	3.36	2.81	2.00	OR*-2-222
1 1/2"	24PCS-24FL90-*	6.67	3.88	3.12	2.38	OR*-2-225
2"	32PCS-32FL90-*	8.52	4.98	4.50	2.81	OR*-2-228

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

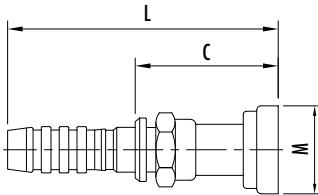
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Spiral Stems

SAE Code 62 Split Flange Style - For C12M, G3K and 1"ΔM3K® Hoses

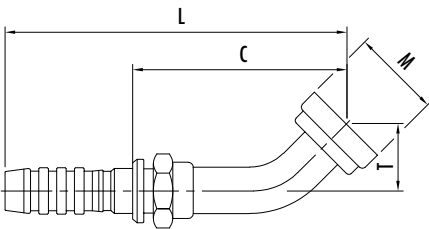
PCS-FLH



PCS-FLH Straight SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
1/2"	8PCS-8FLH-*	3.63	1.92	1.19	OR*-2-210
3/4"	12PCS-12FLH-*	4.50	2.49	1.63	OR*-2-214
1"	16PCS-16FLH-*	4.73	2.49	1.88	OR*-2-219
1 1/4"	20PCS-20FLH-*	6.15	3.35	2.13	OR*-2-222
1 1/2"	24PCS-24FLH-*	6.36	3.56	2.50	OR*-2-225
2"	32PCS-32FLH-*	6.96	3.42	3.13	OR*-2-228

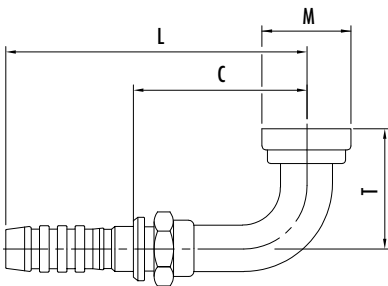
PCS-FLH45



PCS-FLH45 45° SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8PCS-8FLH45-*	3.58	2.11	0.78	1.19	OR*-2-210
3/4"	12PCS-12FLH45-*	4.76	2.76	1.09	1.63	OR*-2-214
1"	16PCS-16FLH45-*	5.48	3.24	1.29	1.88	OR*-2-219
1 1/4"	20PCS-20FLH45-*	6.72	3.92	1.58	2.13	OR*-2-222
1 1/2"	24PCS-24FLH45-*	7.43	4.63	1.84	2.50	OR*-2-225
2"	32PCS-32FLH45-*	9.14	5.60	2.62	3.13	OR*-2-228

PCS-FLH90



PCS-FLH90 90° SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
1/2"	8PCS-8FLH90-*	3.46	1.99	1.63	1.19	OR*-2-210
3/4"	12PCS-12FLH90-*	4.39	2.38	2.26	1.63	OR*-2-214
1"	16PCS-16FLH90-*	5.21	2.97	2.85	1.88	OR*-2-219
1 1/4"	20PCS-20FLH90-*	6.16	3.36	3.25	2.13	OR*-2-222
1 1/2"	24PCS-24FLH90-*	6.67	3.88	3.69	2.50	OR*-2-225
2"	32PCS-32FLH90-*	8.52	4.98	5.38	3.13	OR*-2-228

- * INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING
- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

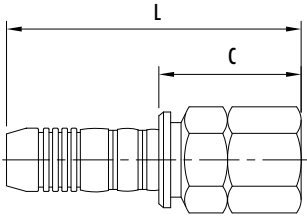
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® (PCM) Stems

JIC Swivel Female - For G5K (Formerly C13) Hose

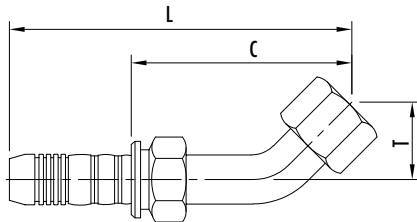
PCM-FJX



PCM-FJX Straight JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)		Thread Size	Hex Size (in)	Bore Size (in)
		L	C			
5/8"	10PCM-10FJX	2.91	1.04	7/8"-14	1.00	0.50
3/4"	12PCM-12FJX	3.83	1.77	1 1/16"-12	1.25	0.59
1"	16PCM-16FJX	4.15	1.93	1 15/16"-12	1.50	0.83
1 1/4"	20PCM-20FJX	5.24	2.49	1 5/8"-12	2.00	1.06
1 1/2"	24PCM-24FJX	6.24	2.72	1 7/8"-12	2.38	1.23
2"	32PCM-32FJX	7.00	3.14	2 1/2"-12	3.00	1.63

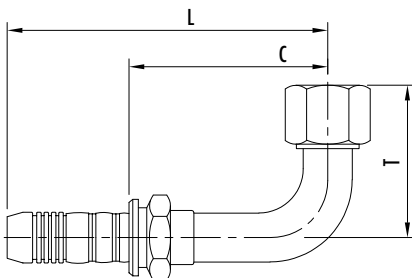
PCM-FJX45



PCM-FJX45 45° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size	Hex Size (in)
		L	C	T		
3/4"	12PCM-12FJX45	5.46	3.40	1.82	1 1/16"-12	1.25

PCM-FJX90



PCM-FJX90 90° JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)			Thread Size	Hex Size (in)
		L	C	T		
5/8"	10PCM-10FJX90S	5.05	3.25	1.82	7/8"-14	1.00
3/4"	12PCM-12FJX90	5.38	3.32	1.82	1 1/16"-12	1.25
1"	16PCM-16FJX90	4.97	2.75	2.85	1 5/16"-12	1.50
1 1/4"	20PCM-20FJX90M	7.86	5.11	3.50	1 5/8"-12	2.00

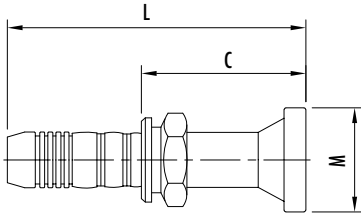
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE
- MATERIAL:** CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp[®] (PCM) Stems

SAE Code 61 Split Flange Style - For G5K (Formerly C13) Hose

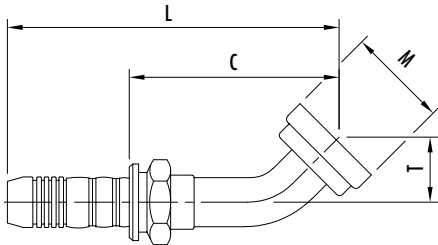
PCM-FL



PCM-FL Straight SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
3/4"	12PCM-12FL-*	4.50	2.43	1.50	OR*-2-214
1"	16PCM-16FL-*	5.10	2.88	1.75	OR*-2-219
1 1/4"	20PCM-20FL-*	5.75	3.12	2.00	OR*-2-222
1 1/2"	24PCM-24FL-*	7.15	3.98	2.38	OR*-2-225
2"	32PCM-32FL-*	8.00	4.18	2.81	OR*-2-228

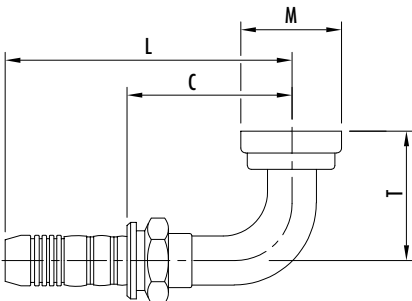
PCM-FL45



PCM-FL45 45° SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12PCM-12FL45-*	5.59	3.52	1.13	1.50	OR*-2-214
1"	16PCM-16FL45-*	5.63	3.41	1.19	1.75	OR*-2-219
1 1/4"	20PCM-20FL45-*	6.85	4.10	1.41	2.00	OR*-2-222
1 1/2"	24PCM-24FL45-*	8.52	5.00	1.77	2.38	OR*-2-225
2"	32PCM-32FL45-*	9.96	6.14	2.51	2.81	OR*-2-228

PCM-FL90



PCM-FL90 90° SAE Code 61 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12PCM-12FL90-*	5.25	3.19	2.44	1.50	OR*-2-214
1"	16PCM-16FL90-*	5.33	3.11	3.00	2.00	OR*-2-219
1 1/4"	20PCM-20FL90-*	6.39	3.64	3.00	2.00	OR*-2-222
1 1/2"	24PCM-24FL90-*	7.84	4.31	3.68	2.38	OR*-2-225
2"	32PCM-32FL90-*	9.07	5.24	5.12	2.81	OR*-2-228

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

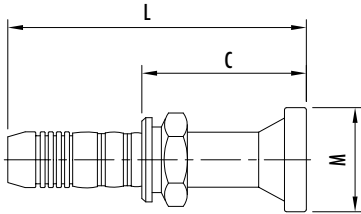
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® (PCM) Stems

SAE Code 62 Split Flange Style - For G5K (Formerly C13) Hose

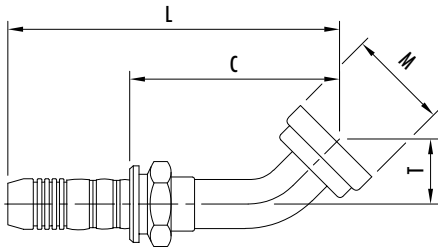
PCM-FLH



PCM-FLH Straight SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
3/4"	12PCM-12FLH-*	4.50	2.43	1.63	OR*-2-214
1"	16PCM-16FLH-*	5.10	2.88	1.88	OR*-2-219
1 1/4"	20PCM-20FLH-*	5.75	3.00	2.13	OR*-2-222
1 1/2"	24PCM-24FLH-*	7.15	3.62	2.50	OR*-2-225
2"	32PCM-32FLH-*	8.00	4.17	3.13	OR*-2-228

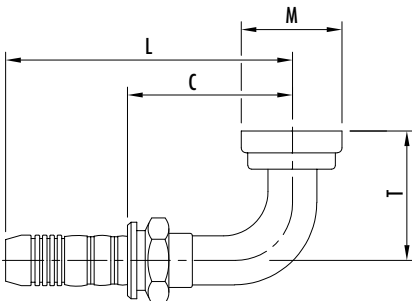
PCM-FLH45



PCM-FLH45 45° SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12PCM-12FLH45-*	5.59	3.52	1.13	1.63	OR*-2-214
1"	16PCM-16FLH45-*	5.63	3.41	1.19	1.88	OR*-2-219
1 1/4"	20PCM-20FLH45-*	6.84	4.09	1.41	2.13	OR*-2-222
1 1/2"	24PCM-24FLH45-*	8.52	5.00	1.77	2.50	OR*-2-225
2"	32PCM-32FLH45-*	9.96	6.14	2.51	3.13	OR*-2-228

PCM-FLH90



PCM-FLH90 90° SAE Code 62 - 'O' Ring Face
Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12PCM-12FLH90-*	5.25	3.19	2.44	1.63	OR*-2-214
1"	16PCM-16FLH90-*	5.22	3.00	2.85	1.88	OR*-2-219
1 1/4"	20PCM-20FLH90-*	6.39	3.64	3.00	2.13	OR*-2-222
1 1/2"	24PCM-24FLH90-*	7.84	4.31	3.68	2.50	OR*-2-225
2"	32PCM-32FLH90-*	9.07	5.24	5.12	3.13	OR*-2-228

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

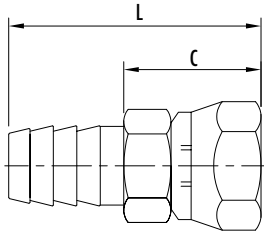
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Couplings - Power Crimp® Stems

For C4 Hose

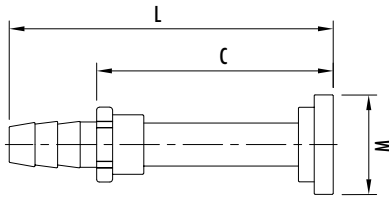
C4-FJX



C4-FJX Straight JIC Swivel Female

Size	Coupling Part No.	Dimensions (in)		Thread Size	Hex Size (in)	Bore Size (in)
		L	C			
3/4"	12C4-12FJX	2.82	1.50	1 1/16"-12	1.25	0.62
1"	16C4-16FJX	3.06	1.68	1 5/16"-12	1.50	0.81
1 1/4"	20C4-20FJX	3.67	1.79	1 5/8"-12	2.00	1.06
1 1/2"	24C4-24FJX	3.98	2.03	1 7/8"-12	2.25	1.25
2"	32C4-32FJX	4.94	2.50	2 1/2"-12	2.88	1.69

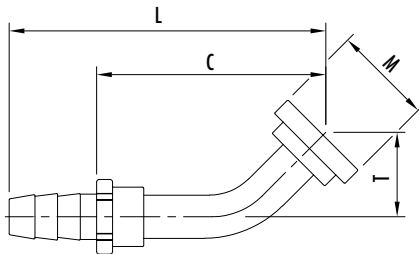
C4-FL



C4-FL Straight SAE Code 61 - Split Flange Style Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)			'O' Ring (Buna) Part No.
		L	C	M	
3/4"	12C4-12FL-*	2.98	1.73	1.50	OR*-2-214
1"	16C4-16FL-*	3.08	1.77	1.75	OR*-2-219
1 1/4"	20C4-20FL-*	3.65	1.84	2.00	OR*-2-222
1 1/2"	24C4-24FL-*	3.75	1.86	2.38	OR*-2-225
2"	32C4-32FL-*	4.44	2.06	2.81	OR*-2-228
2 1/2"	40C4-40FL-*	5.60	2.72	3.31	OR*-2-232
3"	48C4-48FL-*	6.54	3.06	4.00	OR*-2-237

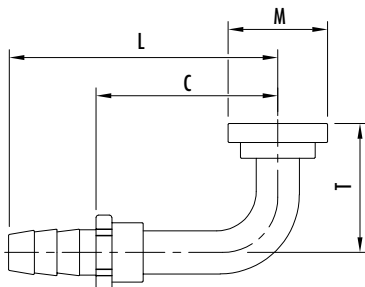
C4-FL45



C4-FL45 45° SAE Code 61 - Split Flange Style Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12C4-12FL45-*	3.66	2.41	1.00	1.50	OR*-2-214
1"	16C4-16FL45-*	3.81	2.50	1.06	1.75	OR*-2-219
1 1/4"	20C4-20FL45-*	4.57	2.75	1.14	2.00	OR*-2-222
1 1/2"	24C4-24FL45-*	5.29	3.40	1.41	2.38	OR*-2-225
2"	32C4-32FL45-*	6.88	4.50	2.00	2.81	OR*-2-228
2 1/2"	40C4-40FL45-*	7.72	4.84	1.72	3.31	OR*-2-232
3"	48C4-48FL45-*	9.10	5.62	2.03	4.00	OR*-2-237

C4-FL90



C4-FL90 90° SAE Code 61 - Split Flange Style Complete With Buna 'O' Ring (Standard)

Size	Coupling Part No.	Dimensions (in)				'O' Ring (Buna) Part No.
		L	C	T	M	
3/4"	12C4-12FL90-*	3.38	2.13	2.13	1.50	OR*-2-214
1"	16C4-16FL90-*	3.75	2.44	2.38	1.75	OR*-2-219
1 1/4"	20C4-20FL90-*	4.41	2.59	2.62	2.00	OR*-2-222
1 1/2"	24C4-24FL90-*	4.95	3.06	3.12	2.38	OR*-2-225
2"	32C4-32FL90-*	6.88	4.50	4.50	2.81	OR*-2-228
2 1/2"	40C4-40FL90-*	8.06	5.18	4.62	3.31	OR*-2-232
3"	48C4-48FL90-*	9.70	6.22	5.50	4.00	OR*-2-237

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

- REFERENCE PAGE N20 FOR SPLIT FLANGE KITS
- JUMP SIZES AND STAINLESS STEEL ARE AVAILABLE

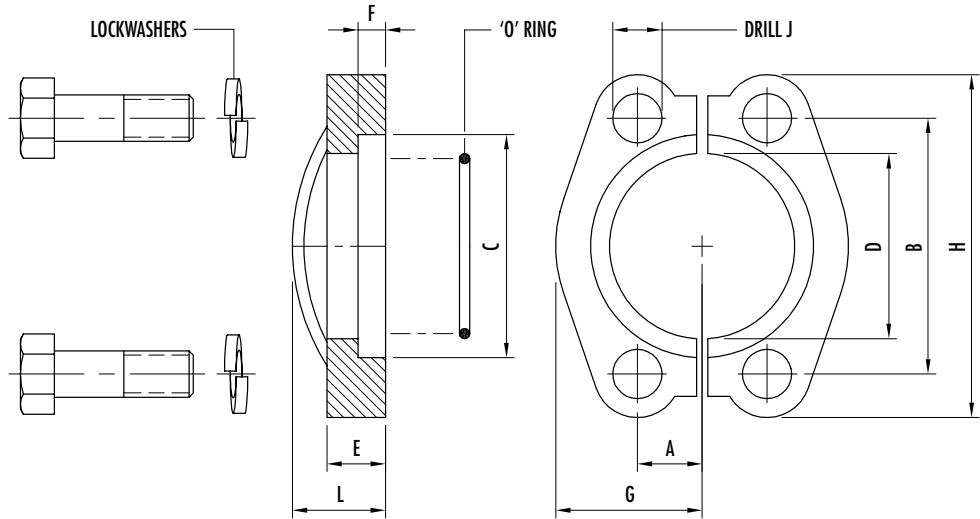
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED



Split Flange Kits

SAE Code 61, SAE Code 62

Typical Split Flange Kit



COMPLETE KIT CONSISTS OF:

- ONE (1) SPLIT FLANGE (2 HALVES)
- FOUR (4) UNC HEX HEAD BOLTS
- FOUR (4) LOCK WASHERS
- ONE (1) BUNA 'O' RING (STANDARD)

SFK34 Split Flange Kit - SAE Code 61

Size	Split Flange Kit Part No.	Dimensions (in)									Drill Dia.(in) J	HHCS Min. Grade 5 UNC-2A	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	F	G	H	I						
1/2"	SFK34-050-*	0.34	1.50	1.21	0.96	0.51	0.24	0.90	2.12	0.75	0.34	5/16"-18 x 1.25	OR*-2-210	0.42	5000 (350)	15-18
3/4"	SFK34-075-*	0.44	1.88	1.53	1.26	0.55	0.24	1.03	2.56	0.87	0.42	3/8"-16 x 1.25	OR*-2-214	0.51	5000 (350)	20-30
1"	SFK34-100-*	0.51	2.06	1.78	1.51	0.63	0.29	1.15	2.75	0.94	0.42	3/8"-16 x 1.25	OR*-2-219	0.65	5000 (350)	20-30
1 1/4"	SFK34-125-*	0.59	2.31	2.03	1.72	0.55	0.29	1.44	3.12	0.87	0.47	7/16"-14 x 1.50	OR*-2-222	0.89	4000 (275)	40-50
1 1/2"	SFK34-150-*	0.70	2.75	2.41	2.00	0.63	0.29	1.62	3.69	0.98	0.53	1/2"-13 x 1.50	OR*-2-225	1.44	3000 (210)	80-90
2"	SFK34-200-*	0.84	3.06	2.84	2.47	0.63	0.36	1.90	4.00	1.02	0.53	1/2"-13 x 1.50	OR*-2-228	1.56	3000 (210)	80-90
2 1/2"	SFK34-250-*	1.00	3.50	3.34	2.95	0.75	0.36	2.14	4.50	1.50	0.53	1/2"-13 x 1.75	OR*-2-232	2.13	2500 (175)	80-90
3"	SFK34-300-*	1.22	4.19	4.03	3.58	0.87	0.36	2.58	5.31	1.61	0.66	5/8"-11 x 1.75	OR*-2-237	3.65	2000 (140)	110-120
4"	SFK34-400-*	1.53	5.13	5.03	4.53	0.98	0.42	2.99	6.38	1.38	0.67	5/8"-11 x 2.00	OR*-2-245	4.42	500 (35)	110-120

SFK64 Split Flange Kit - SAE Code 62

Size	Split Flange Kit Part No.	Dimensions (in)									Drill Dia.(in) J	HHCS Min. Grade 5 UNC-2A	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		A	B	C	D	E	F	G	H	I						
1/2"	SFK64-050-*	0.36	1.59	1.28	0.97	0.63	0.29	0.94	2.22	0.87	0.34	5/16"-18 x 1.25	OR*-2-210	0.55	6000 (420)	15-18
3/4"	SFK64-075-*	0.47	2.00	1.66	1.28	0.75	0.33	1.19	2.81	1.10	0.43	3/8"-16 x 1.50	OR*-2-214	0.93	6000 (420)	20-30
1"	SFK64-100-*	0.55	2.25	1.91	1.53	0.94	0.36	1.37	3.19	1.30	0.51	7/16"-14 x 1.75	OR*-2-219	1.46	6000 (420)	40-50
1 1/4"	SFK64-125-*	0.63	2.63	2.16	1.75	1.06	0.39	1.53	3.75	1.50	0.59	1/2"-13 x 1.75	OR*-2-222	2.26	6000 (420)	80-90
1 1/2"	SFK64-150-*	0.72	3.13	2.53	2.03	1.18	0.48	1.87	4.44	1.69	0.67	5/8"-11 x 2.25	OR*-2-225	3.91	6000 (420)	110-120
2"	SFK64-200-*	0.88	3.81	3.16	2.66	1.46	0.48	2.25	5.25	2.05	0.83	3/4"-10 x 2.75	OR*-2-228	6.48	6000 (420)	120-130

* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

• SPLIT FLANGE HALVES CAN BE ORDERED SEPARATELY (DELETE THE K FROM THE PART NUMBER) i.e. SF34-050

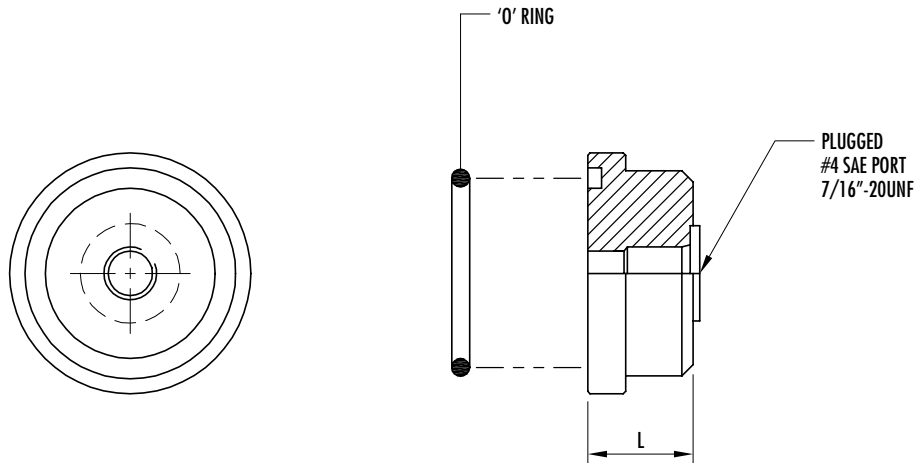
• FOR BOLT KIT - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)



Split Flange Plugs

SAE Code 61, SAE Code 62



SFP34 Split Flange Plug - SAE Code 61 'O' Ring Face

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Split Flange Plug Part No.	Dimensions (in)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L			
1/2"	SFP34-050-*	0.75	OR*-2-210	0.12	5000 (350)
3/4"	SFP34-075-*	0.88	OR*-2-214	0.27	5000 (350)
1"	SFP34-100-*	1.00	OR*-2-219	0.42	5000 (350)
1 1/4"	SFP34-125-*	0.88	OR*-2-222	0.59	4000 (275)
1 1/2"	SFP34-150-*	1.00	OR*-2-225	0.60	3000 (210)
2"	SFP34-200-*	1.00	OR*-2-228	0.87	3000 (210)
2 1/2"	SFP34-250-*	1.00	OR*-2-232	2.88	2500 (175)
3"	SFP34-300-*	1.00	OR*-2-237	4.01	2000 (140)
4"	SFP34-400-*	1.00	OR*-2-245	5.50	500 (35)

SFP64 Split Flange Plug - SAE Code 62 'O' Ring Face

Complete With Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Split Flange Plug Part No.	Dimensions (in)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)
		L			
1/2"	SFP64-050-*	0.88	OR*-2-210	0.14	6000 (420)
3/4"	SFP64-075-*	1.12	OR*-2-214	0.42	6000 (420)
1"	SFP64-100-*	1.38	OR*-2-219	0.44	6000 (420)
1 1/4"	SFP64-125-*	1.44	OR*-2-222	0.96	6000 (420)
1 1/2"	SFP64-150-*	1.62	OR*-2-225	1.58	6000 (420)
2"	SFP64-200-*	1.51	OR*-2-228	2.53	6000 (420)





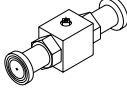
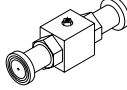
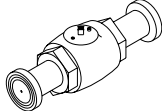
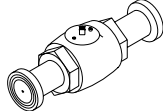
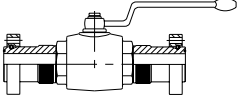
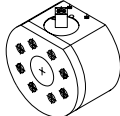
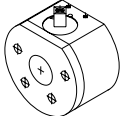
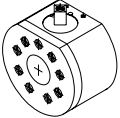
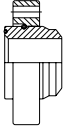
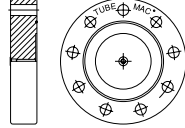
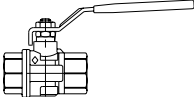
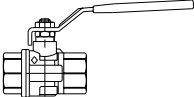
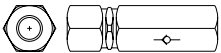
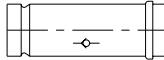
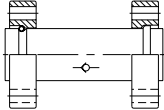
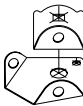
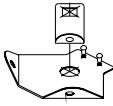
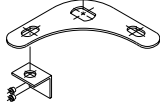
* INSERT ' V ' TO INDICATE OPTIONAL VITON 'O' RING

MATERIAL: CARBON STEEL, YELLOW ZINC DICROMATE PLATED, (STAINLESS STEEL AVAILABLE)





Valves - Visual Index

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<p>BALL VALVE SAE SPLIT FLANGE STYLE</p>	<p>BBV22 SAE CODE 61</p>  <p>1/2" - 1" Page P6</p>	<p>BBV23 SAE CODE 62</p>  <p>1/2" - 1" Page P6</p>	<p>FBV22 SAE CODE 61</p>  <p>1 1/4" - 2" Page P7</p>	<p>FBV23 SAE CODE 62</p>  <p>1 1/4" - 2" Page P7</p>
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<p>CHECK VALVES</p>	<p>6C/3C INLINE FEMALE THREAD 3000-6000PSI</p>  <p>1/4" - 2" Page P14</p>	<p>CV RETAIN RING FLANGE STYLE</p>  <p>1/2" - 2" Page P16</p>	<p>A/CV RETAIN RING FLANGE STYLE ASSEMBLY</p>  <p>1/2" - 2" Page P17</p>	
<p>LOCKOUT KITS</p>	<p>LOK</p>  <p>1/2" - 2" Page P13</p>	<p>LOK-FF</p>  <p>1/2" - 2" Page P13</p>	<p>LOK-FF</p>  <p>2 1/2" - 5" Page P13</p>	

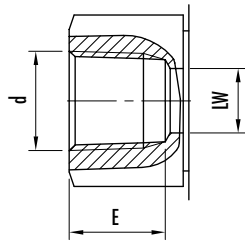




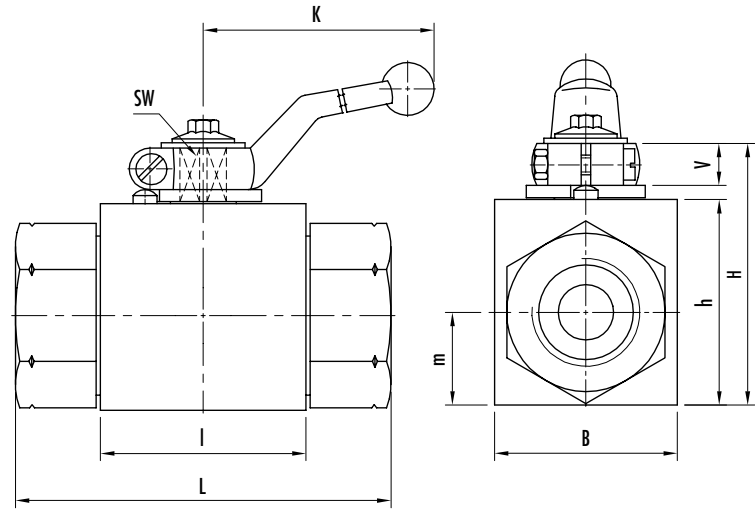
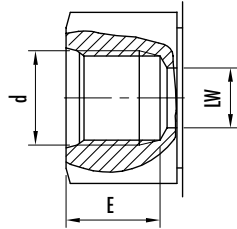
Ball Valves

Threaded Port Style - Block Body 1/4"-1"

NPT
BBV20



SAE
BBV21



BBV20 NPT Female Thread Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)											WT. lbs/pc	Working Pressure PSI (bar)	
		d	E	L	I	B	H	h	m	V	SW	K			LW
1/4"	BBV20040001M-*	1/4"-18	0.67	2.72	1.57	1.02	1.85	1.30	0.53	0.43	0.35	4.53	0.24	0.66	7250 (500)
3/8"	BBV20060001M-*	3/8"-18	0.69	3.07	1.69	1.26	2.05	1.50	0.69	0.43	0.35	4.53	0.39	1.10	7250 (500)
1/2"	BBV20080001M-*	1/2"-14	0.93	4.09	1.89	1.38	2.13	1.57	0.75	0.55	0.35	4.53	0.51	1.65	7250 (500)
3/4"	BBV20120001M-*	3/4"-14	0.91	4.02	2.44	1.93	2.95	2.24	0.90	0.55	0.55	6.30	0.79	3.65	4500 (310)
1"	BBV20160001M-*	1"-11 1/2	1.09	4.69	2.60	2.28	3.27	2.56	1.15	0.55	0.55	6.30	0.98	5.06	4500 (310)

BBV21 SAE Female Thread Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)											WT. lbs/pc	Working Pressure PSI (bar)	
		d	E	L	I	B	H	h	m	V	SW	K			LW
1/4"	BBV21040001M-*	7/16"-20	0.55	2.72	1.57	1.02	1.85	1.30	0.53	0.43	0.35	4.53	0.20	0.66	7250 (500)
3/8"	BBV21060001M-*	9/16"-18	0.61	2.83	1.69	1.02	2.05	1.50	0.69	0.43	0.35	4.53	0.39	1.10	7250 (500)
1/2"	BBV21080001M-*	3/4"-16	0.69	3.27	1.89	1.38	2.13	1.57	0.75	0.55	0.35	4.53	0.51	1.65	7250 (500)
3/4"	BBV21120001M-*	1 1/16"-12	0.91	3.74	2.44	1.93	2.95	2.24	0.90	0.55	0.55	6.81	0.79	3.65	4500 (310)
1"	BBV21160001M-*	1 5/16"-12	0.91	4.45	2.60	2.28	3.27	2.56	1.15	0.55	0.55	6.81	0.98	5.06	4500 (310)

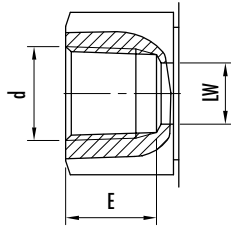
- * INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE
 - VITON SEALS (STANDARD)
 - TO ORDER A COMPLETE FLANGED BALL VALVE ASSEMBLY REF. PAGE P5
- MATERIAL:** CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



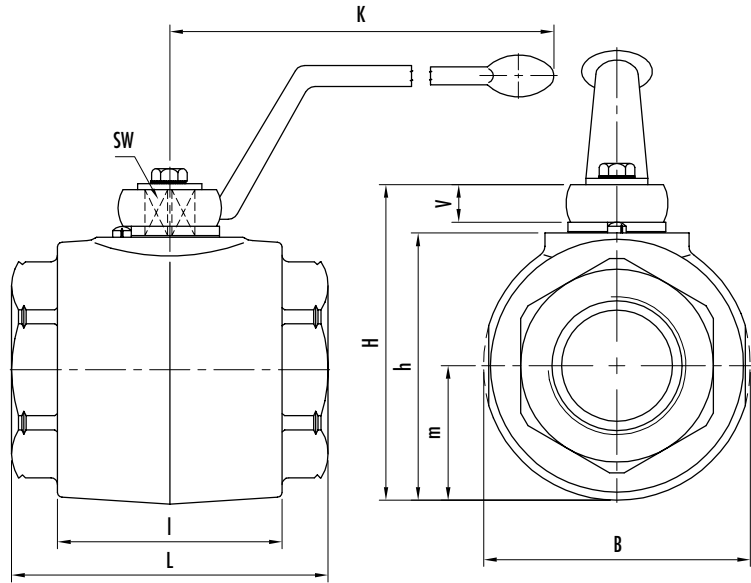
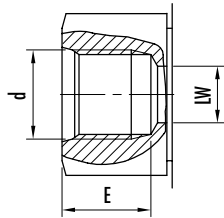
Ball Valves

Threaded Port Style - Forged Body 1 1/4"-2"

NPT
FBV20



SAE
FBV21



FBV20 NPT Female Thread Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)											WT. lbs/pc	Working Pressure PSI (bar)	
		d	E	L	I	B	H	h	m	V	SW	K			LW
1 1/4"	FBV20200001M-*	1 1/4"-11 1/2"	0.87	4.33	3.15	2.99	4.09	3.29	1.50	0.59	0.67	12.00	1.25	8.04	5000 (350)
1 1/2"	FBV20240001M-*	1 1/2"-11 1/2"	0.94	5.22	3.35	3.62	4.69	3.90	1.81	0.59	0.67	12.00	1.50	13.00	5000 (350)
2"	FBV20320001M-*	2"-11 1/2"	0.94	5.51	3.94	4.17	5.16	4.37	2.09	0.59	0.67	12.00	1.77	19.00	5000 (350)

FBV21 SAE Female Thread Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)											WT. lbs/pc	Working Pressure PSI (bar)	
		d	E	L	I	B	H	h	m	V	SW	K			LW
1 1/4"	FBV21200001M-*	1 5/8"-12"	0.91	4.36	3.15	2.99	4.09	3.29	1.50	0.59	0.67	12.00	1.25	8.04	5000 (350)
1 1/2"	FBV21240001M-*	1 7/8"-12"	0.91	5.12	3.35	3.62	4.69	3.90	1.81	0.59	0.67	12.00	1.50	13.00	5000 (350)
2"	FBV21320001M-*	2 1/2"-12"	0.91	5.51	3.94	4.17	5.16	4.37	2.09	0.59	0.67	12.00	1.77	19.00	5000 (350)

* INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE

- VITON SEALS (STANDARD)
- TO ORDER A COMPLETE FLANGED BALL VALVE ASSEMBLY REF. PAGE P5

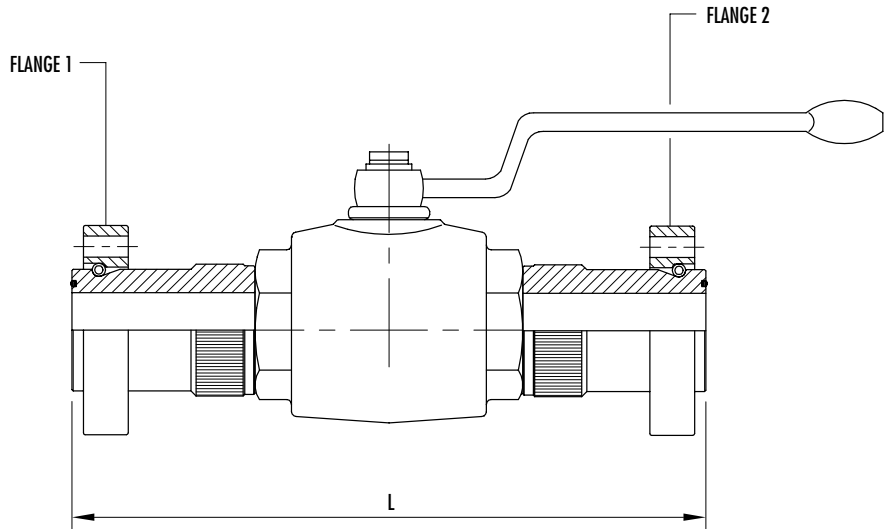
MATERIAL: CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



Retain Ring Flanged Ball Valve Assembly

Complete Assembly Part Number

Typical A/BV Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) FEMALE SAE THREADED BALL VALVE BODY (REF. PAGES P3-P4)
- TWO (2) MALE SAE THREAD ADAPTERS (REF. PAGE F2)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C9)
- TWO (2) RETAIN RINGS
- BUNA 'O' RINGS (FLANGE ENDS)

		Code	A	/	BV	-	Ball Valve Size	-	Flange 1	-	Flange 2	-	Options
Assembly		A											
Ball Valve		BV											
Ball Valve Size	1/2"	050											
	3/4"	075											
	1"	100											
	1 1/4"	125											
	1 1/2"	150											
	2"	200											
Flange Type <small>Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C9)</small>	RFC34 SAE Code 61 W/Clearance Holes	FC34											
	*RFT34 SAE Code 61 W/Tapped Holes	FT34											
	RFC64 SAE Code 62 W/Clearance Holes	FC64											
	*RFT64 SAE Code 62 W/Tapped Holes	FT64											
Options	LOK-Locking Device	LOK											
	Viton	V											

Size	Dimensions (in)
	L
1/2"	8.53
3/4"	9.24
1"	10.45
1 1/4"	10.86
1 1/2"	13.62
2"	14.01

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

• FOR CONNECTION TO HOSE USE CONNECTOR PLATE **OCP** (TO BE ORDERED SEPARATELY) REFERENCE PAGE C17

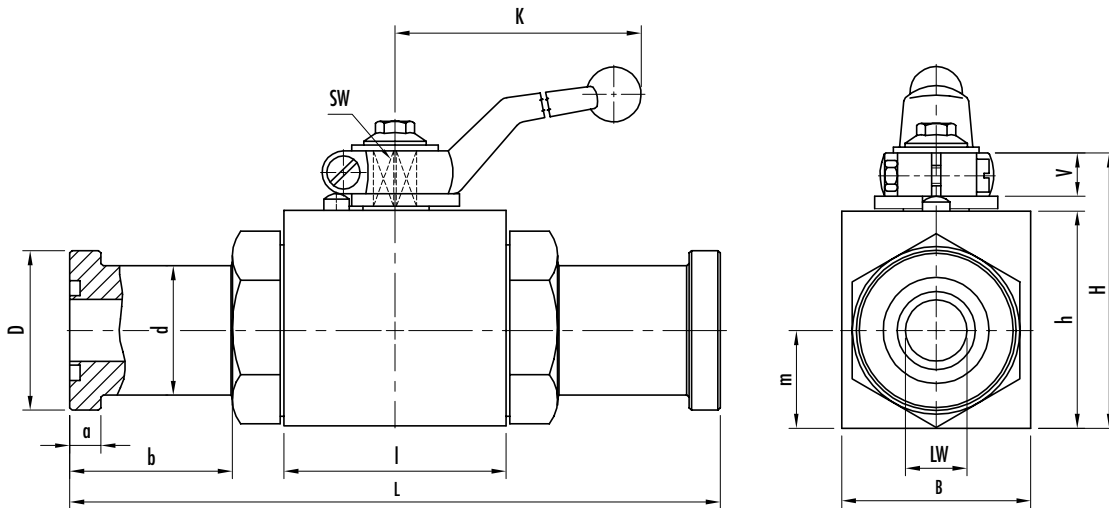
PART NO. (EXAMPLE): A/BV - 050 - FC34 - FT34

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR BALL VALVE RATINGS
- SEE REFERENCE PAGE INDICATED ABOVE FOR PRESSURE RATINGS
- OTHER MATERIALS ARE AVAILABLE
- FOR BOLT KITS - REFERENCE SECTION R



Ball Valves

SAE Split Flange Style - Block Body 1/2"-1"



BBV22 SAE Code 61 Split Flange Style Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)														WT. lbs/pc	Working Pressure PSI (bar)
		LW	L	I	B	H	h	m	V	SW	K	D	d	a	b		
1/2"	BBV22080001M-*	0.51	5.94	1.89	2.38	2.13	1.57	0.75	0.43	0.35	4.53	1.19	0.94	0.27	1.73	2.00	5000 (350)
3/4"	BBV22120001M-*	0.75	6.38	2.44	1.93	2.95	2.24	0.96	0.55	0.55	6.81	1.40	1.25	0.27	1.79	3.50	5000 (350)
1"	BBV22160001M-*	0.98	7.01	2.62	2.28	3.27	2.56	1.16	0.55	0.55	6.81	1.75	1.50	0.32	1.57	5.00	5000 (350)

BBV23 SAE Code 62 Split Flange Style Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)														WT. lbs/pc	Working Pressure PSI (bar)
		LW	L	I	B	H	h	m	V	SW	K	D	d	a	b		
1/2"	BBV23080001M-*	0.51	5.94	1.89	1.38	2.13	1.57	0.75	0.43	0.35	4.53	1.25	0.94	0.31	1.57	2.00	6000 (420)
3/4"	BBV23120001M-*	0.75	6.38	2.44	1.93	2.95	2.24	0.96	0.55	0.55	6.81	1.63	1.25	0.35	1.85	3.50	5000 (350)
1"	BBV23160001M-*	0.98	7.80	2.62	2.28	3.27	2.56	1.16	0.55	0.55	6.81	1.87	1.50	0.38	1.97	5.00	5000 (350)

* INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE

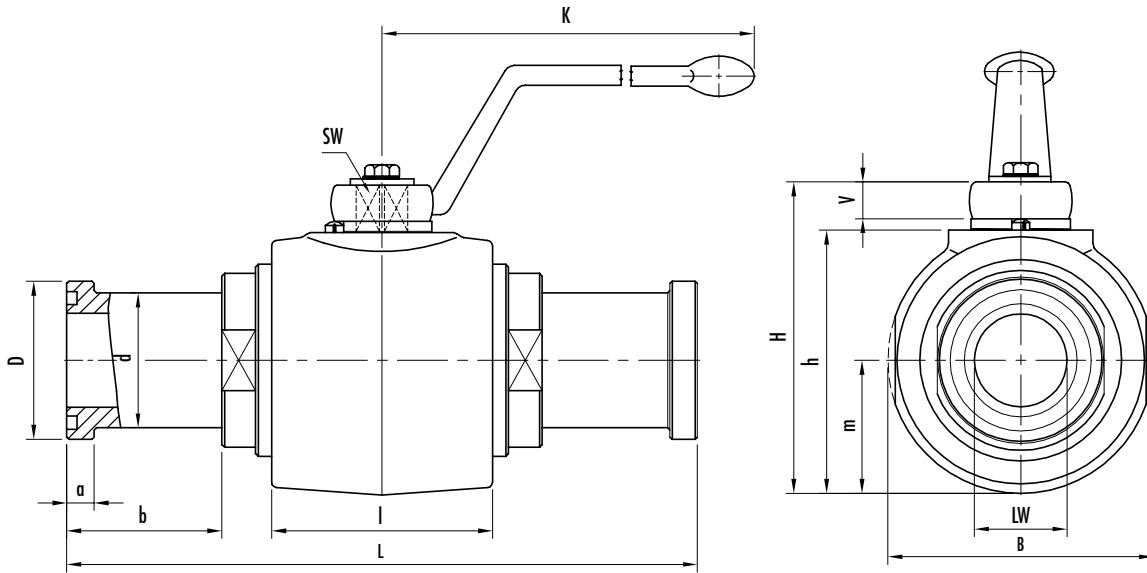
- VITON SEALS (STANDARD)
- FOR SPLIT FLANGES REFERENCE PAGE N20

MATERIAL: CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



Ball Valves

SAE Split Flange Style - Forged Body 1 1/4"-2"



FBV22 SAE Code 61 Split Flange Style Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)														WT. lbs/pc	Working Pressure PSI (bar)
		LW	L	I	B	H	h	m	V	SW	K	D	d	a	b		
1 1/4"	FBV22200001M-*	1.18	7.52	3.15	3.19	4.21	3.39	1.59	0.65	0.67	11.81	2.00	1.70	0.36	1.38	8.00	4000 (275)
1 1/2"	FBV22240001M-*	1.50	9.09	3.35	3.94	4.88	4.06	1.97	0.65	0.67	11.81	2.37	1.98	0.32	2.09	14.00	3000 (210)
2"	FBV22320001M-*	1.89	9.13	3.94	4.65	5.43	4.61	2.32	0.65	0.67	11.81	2.81	2.45	0.38	1.81	20.00	3000 (210)

FBV23 SAE Code 62 Split Flange Style Ball Valve - Two Way Inline Valve

Size	Ball Valve Part No.	Dimensions (in)														WT. lbs/pc	Working Pressure PSI (bar)
		LW	L	I	B	H	h	m	V	SW	K	D	d	a	b		
1 1/4"	FBV23200001M-*	1.06	8.78	3.15	3.19	4.21	3.39	1.59	0.65	0.67	11.81	2.13	1.73	0.41	3.07	8.50	6000 (420)
1 1/2"	FBV23240001M-*	1.26	11.06	3.35	3.94	4.88	4.06	1.97	0.65	0.67	11.81	2.50	2.01	0.50	3.07	15.00	6000 (420)
2"	FBV23320001M-*	1.77	12.44	3.94	4.65	5.43	4.61	2.32	0.65	0.67	11.81	3.13	2.64	0.50	3.46	21.00	6000 (420)

* INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE

- VITON SEALS (STANDARD)
- FOR SPLIT FLANGES REFERENCE PAGE N20

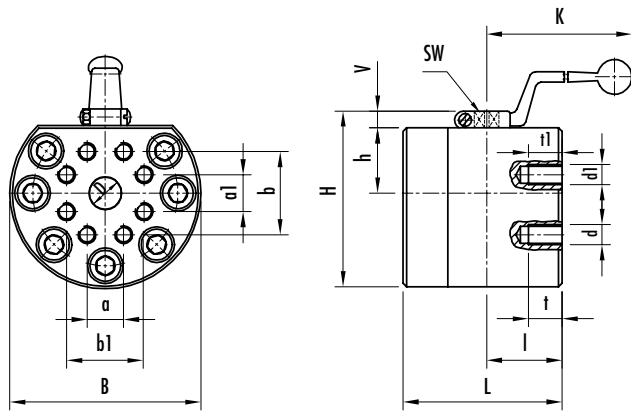
MATERIAL: CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



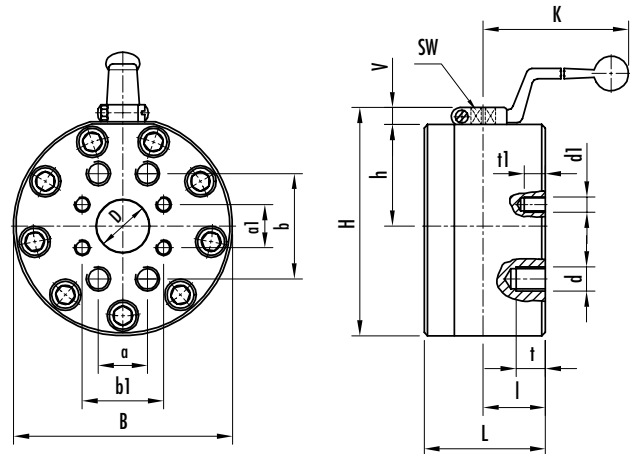
Ball Valves

SAE Code 61/Code 62 Dual Pattern - Flat Face Style 1/2"-2"

1/2"-1"



1 1/4"-2"



BBV29 SAE Code 61/Code 62 Dual Pattern - Two Way Inline Flat Face Ball Valve

Size	Ball Valve Part No.	Dimensions (in)												
		D	L	I	B	H	h	V	SW	K	SAE CODE 62		SAE CODE 61	
											a	b	a1	b1
1/2"	BBV29080001M-*	0.59	2.95	1.38	3.46	3.46	1.22	0.47	0.47	6.30	0.72	1.59	0.69	1.50
3/4"	BBV29120001M-*	0.79	3.15	1.38	3.86	3.95	1.43	0.49	0.55	6.30	0.94	2.00	0.87	1.87
1"	BBV29160001M-*	0.98	3.46	1.50	4.65	4.45	1.55	0.53	0.55	6.30	1.03	2.06	1.09	2.25
1 1/4"	BBV29200001M-*	1.26	3.94	1.97	5.71	6.22	2.68	0.67	0.67	11.81	1.25	2.63	1.19	2.31
1 1/2"	BBV29240001M-*	1.50	4.33	2.17	6.50	7.01	3.07	0.67	0.67	11.81	1.44	3.13	1.40	2.75
2"	BBV29320001M-*	1.89	4.57	2.28	7.80	8.26	3.70	0.67	0.67	11.81	1.75	3.81	1.69	3.06

Size	UNC Thread d	UNC Thread d1	Dimensions (in)		WT. lbs/pc	Working Pressure Code 61 PSI (bar)	Working Pressure Code 62 PSI (bar)
			t	t1			
1/2"	5/16"	5/16"	0.71	0.71	5.50	5000 (350)	6000 (420)
3/4"	3/8"	3/8"	0.71	0.71	8.58	5000 (350)	6000 (420)
1"	7/16"	3/8"	0.79	0.79	13.20	5000 (350)	6000 (420)
1 1/4"	1/2"	7/16"	0.87	0.87	25.52	4000 (275)	6000 (420)
1 1/2"	5/8"	1/2"	0.94	0.75	35.64	3000 (210)	6000 (420)
2"	3/4"	1/2"	1.10	0.75	54.78	3000 (210)	6000 (420)

* INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE

• VITON SEALS (STANDARD)

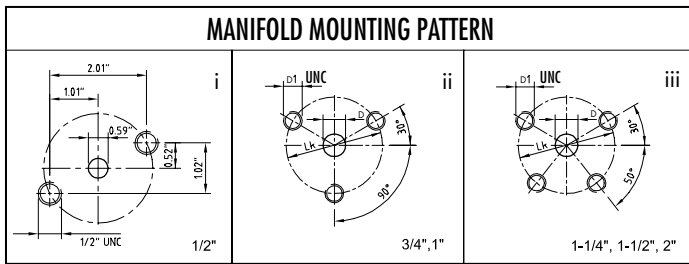
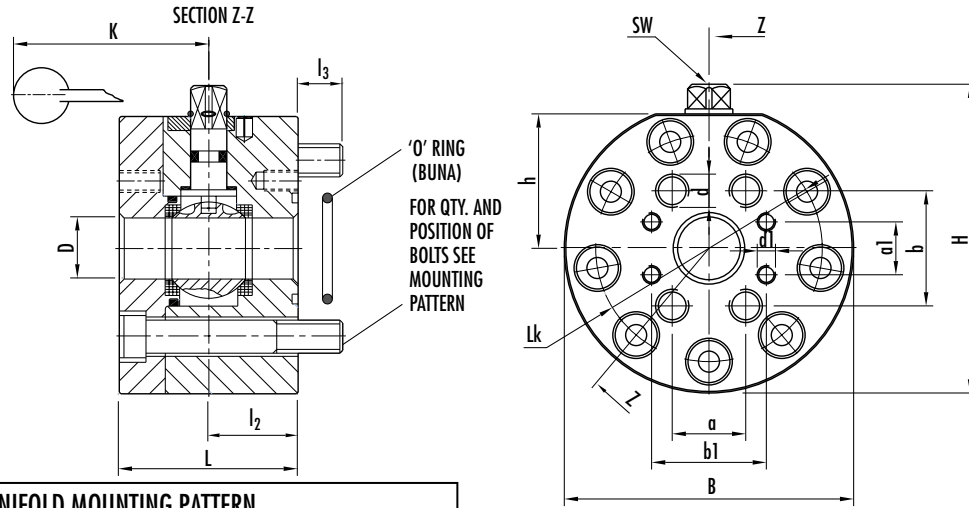
NOTE: Code 62, 2" size - use lock washers for Split Flange Connection

MATERIAL: CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



Ball Valves

SAE Code 61/ Code 62 Dual Pattern - Manifold Mount Style 1/2"-2"



Pattern	Size	D	D1	Lk
i	1/2"	see left		
ii	3/4"	0.79	1/2"	3.03
	1"	0.98	1/2"	3.54
iii	1 1/4"	1.26	1/2"	4.56
	1 1/2"	1.50	5/8"	5.31
	2"	1.89	3/4"	6.49

BBVD29 SAE Code 61/Code 62 Dual Pattern - Two Way Flat Face Ball Valve

Size	Ball Valve Part No.	Dimensions (in)												
		D	L	l ₂	B	H	h	l ₃	SW	K	SAE CODE 62		SAE CODE 61	
											a	b	a1	b1
1/2"	BBVD29080001M-*	0.59	2.95	1.38	3.46	3.46	1.22	0.61	0.47	6.30	0.72	1.59	0.69	1.50
3/4"	BBVD29120001M-*	0.79	3.15	1.38	3.86	3.95	1.43	0.90	0.55	6.30	0.94	2.00	0.87	1.87
1"	BBVD29160001M-*	0.98	3.46	1.50	4.65	4.45	1.55	0.66	0.55	6.30	1.03	2.06	1.09	2.25
1 1/4"	BBVD29200001M-*	1.26	3.94	1.97	5.71	6.22	2.68	0.86	0.67	11.81	1.25	2.63	1.19	2.31
1 1/2"	BBVD29240001M-*	1.50	4.33	2.17	6.50	7.01	3.07	0.86	0.67	11.81	1.44	3.13	1.40	2.75
2"	BBVD29320001M-*	1.89	4.57	2.28	7.80	8.26	3.70	0.74	0.67	11.81	1.75	3.81	1.69	3.06

Size	UNC Thread d	UNC Thread d1	Thread Depth (in)		Mounting Bolt	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure Code 61 PSI (bar)	Working Pressure Code 62 PSI (bar)
			SAE Code 62	SAE Code 61					
1/2"	5/16"	5/16"	0.71	0.71	1/2" x 3"	OR*-2-210	5.50	5000 (350)	6000 (420)
3/4"	3/8"	3/8"	0.71	0.71	1/2" x 3 1/2"	OR*-2-214	8.58	5000 (350)	6000 (420)
1"	7/16"	3/8"	0.79	0.79	1/2" x 3 1/2"	OR*-2-219	13.20	5000 (350)	6000 (420)
1 1/4"	1/2"	7/16"	0.87	0.87	1/2" x 4 1/4"	OR*-2-222	25.52	4000 (275)	6000 (420)
1 1/2"	5/8"	1/2"	0.94	0.75	5/8" x 4 1/2"	OR*-2-225	35.64	3000 (210)	6000 (420)
2"	3/4"	1/2"	1.10	0.75	3/4" x 4 1/2"	OR*-2-228	54.78	3000 (210)	6000 (420)

* INSERT "V" TO INDICATE OPTIONAL VITON 'O' RING
 INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE

• INTERNAL SEALS - VITON (STANDARD)

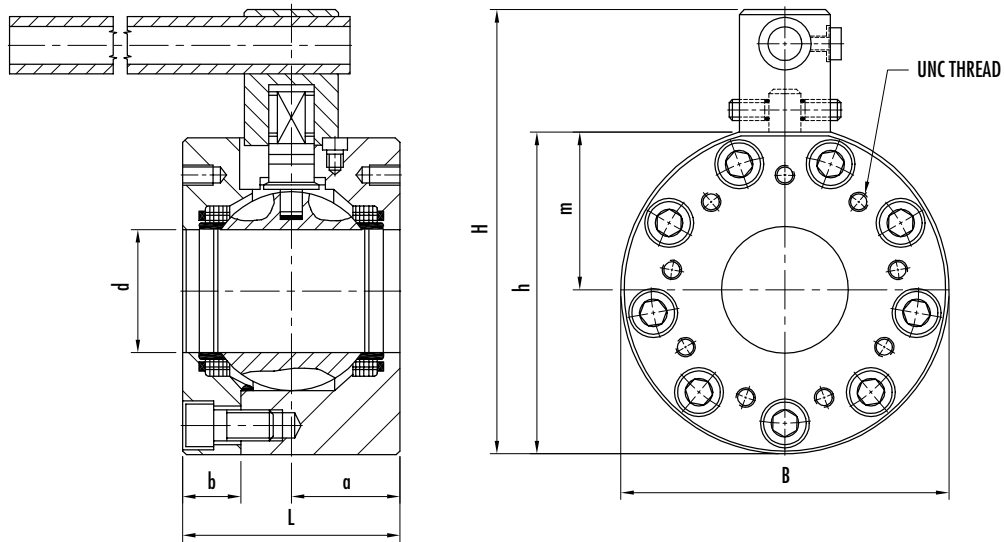
NOTE: Code 62, 2" size - use lock washers for Split Flange Connection

MATERIAL: CARBON STEEL BODY



Ball Valves

9-Bolt Pattern Direct Mount Flat Face Style 2 1/2"-5"



BBVG27 9-Bolt Pattern - Direct Mount Two Way Inline Flat Face Ball Valve

Size	Ball Valve Part No.	Dimensions (in)								UNC Thread	WT. lbs/pc	Working Pressure PSI (bar)
		d	a	b	L	H	h	m	B			
2 1/2"	BBVG27400001M-*	2.48	2.95	1.69	5.90	10.15	7.59	3.70	7.79	1/2"	84.00	4200 (290)
3"	BBVG27480001M-*	2.99	2.79	1.37	5.51	10.82	8.07	3.93	8.26	5/8"	94.00	4100 (285)
4"	BBVG27640001M-*	3.93	3.34	1.77	6.69	12.83	9.88	4.80	10.51	5/8"	155.00	4000 (275)
5"	BBVG27800001M-*	4.64	4.13	1.88	8.26	15.00	11.31	5.51	11.61	3/4"	257.00	3860 (266)

- * INSERT ' LOK ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE
- REFERENCE PAGE P11 FOR BUTT WELD RETAIN RING FLANGE ADAPTER ASSEMBLIES
- VITON SEALS (STANDARD)

MATERIAL: CARBON STEEL BODY, (STAINLESS STEEL AVAILABLE)



Ball Valve Butt Weld Adapter Assemblies

TMI® 9-Bolt Retain Ring Flange to ANSI Pipe

Typical A/BWA Assembly:

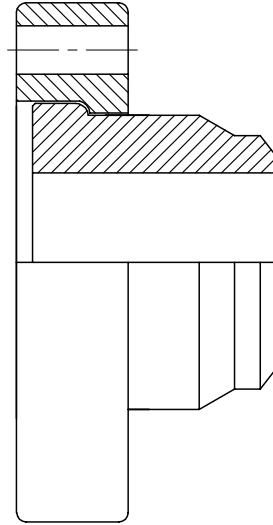
To be used with 'O' Ring Seal Retainer Ref. page M12

COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) BUTT WELD ADAPTER BODY (REF. PAGE M5 - M7)
- ONE (1) TMI® 9-BOLT RETAIN RING FLANGE (REF. PAGE C12)

TO BE ORDERED SEPARATELY:

- ONE (1) 'O' RING SEAL RETAINER (REF. PAGE M12)



A/BWA Butt Weld Adapter Assembly - Retain Ring Flange Style

Only for use with 9-Bolt Ball Valve BBVG27 (reference page P10)

Schedule 80

Nominal Size	Complete Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/BWA-SCH80-250-FC49	6.25	4200 (290)
3"	A/BWA-SCH80-300-FC49	11.78	4100 (280)
4"	A/BWA-SCH80-400-FC49	17.33	4000 (275)
5"	A/BWAA-SCH80-500-FAC49	33.90	3860 (265)

Schedule 160

Nominal Size	Complete Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/BWA-SCH160-250-FC49	6.55	4200 (290)
3"	A/BWA-SCH160-300-FC49	12.38	4100 (280)
4"	A/BWA-SCH160-400-FC49	18.23	4000 (275)
5"	A/BWAA-SCH160-500-FAC49	37.10	3860 (265)

Schedule XXS

Nominal Size	Complete Assembly Part No.	WT. lbs/pc	Working Pressure PSI (bar)
2 1/2"	A/BWA-SCHXXS-250-FC49	6.95	4200 (290)
3"	A/BWA-SCHXXS-300-FC49	12.98	4100 (280)
4"	A/BWA-SCHXXS-400-FC49	19.53	4000 (275)
5"	A/BWAA-SCHXXS-500-FAC49	38.30	3860 (265)

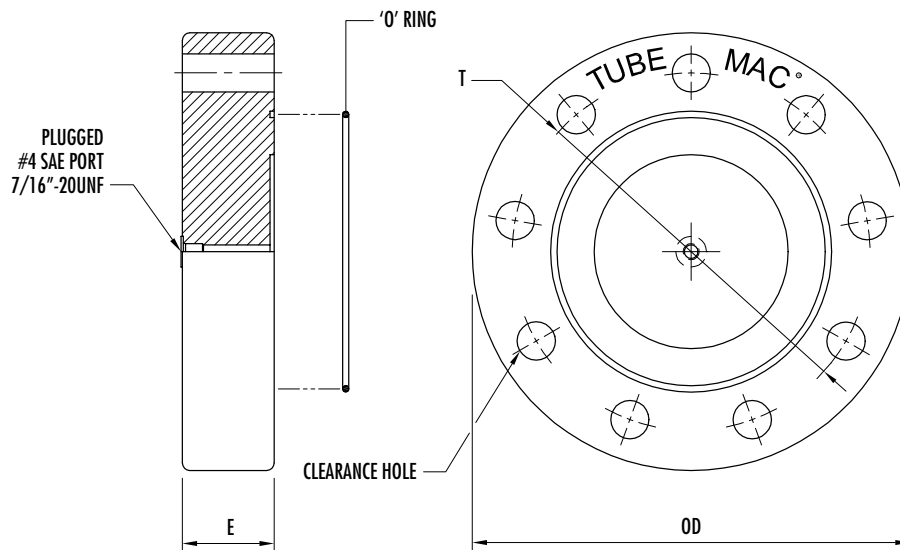
- FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, (STAINLESS STEEL STANDARD-316 AVAILABLE) OTHER MATERIALS ARE AVAILABLE



Blanking Flange

TMI® 9-Bolt - 'O' Ring Face



BF049 Blanking Flange - TMI® 9-Bolt 'O' Ring Face with Clearance Holes

Only for use with 9-Bolt Ball Valve BBVG27 (reference page P10)

Complete with Buna 'O' Ring (Standard) and #4 SAE Port (Plugged)

Size	Blanking Flange Part No.	Dimensions (in)			Bolt Minimum Grade 5	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure PSI (bar)	Bolt Torque ft.lbs.
		T	OD	E					
2 1/2"	BF049-250-*	4.03	4.95	1.48	1/2" UNC	OR*-2-232	4.55	4200 (290)	80-90
3"	BF049-300-*	5.49	6.50	1.73	5/8" UNC	OR*-2-237	8.78	4100 (280)	110-120
4"	BF049-400-*	6.14	7.38	1.98	5/8" UNC	OR*-2-243	11.53	4000 (275)	110-120
5"	BF049-500-*	7.56	9.00	2.00	3/4" UNC	OR*-2-353	18.90	3860 (265)	120-130

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RING

• FOR BOLT KITS - REFERENCE SECTION R

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

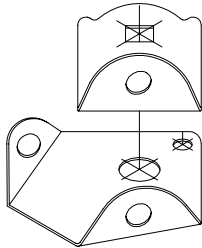


Ball Valve

Locking Devices

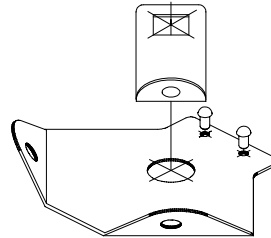
LOK - Ball Valve Lockout Kit

1/4"-2"

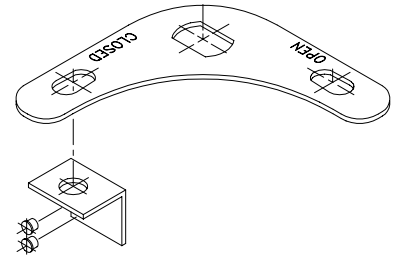


LOK-FF - Flat Face Ball Valve Lockout Kit

1/2"-2"



2 1/2"-5"



LOK Ball Valve Lockout Kit

Size	Lockout Part No.	WT. lbs/pc
1/4"	LOK-025	0.12
3/8"	LOK-038	0.12
1/2"	LOK-050	0.12
3/4"	LOK-075	0.21
1"	LOK-100	0.21
1 1/4"	LOK-125	0.30
1 1/2"	LOK-150	0.30
2"	LOK-200	0.38

LOK-FF Flat Face Ball Valve Lockout Kit

Size	Lockout Part No.	WT. lbs/pc
1/2"	LOK-FF-050	0.23
3/4"	LOK-FF-075	0.29
1"	LOK-FF-100	0.29
1 1/4"	LOK-FF-125	0.35
1 1/2"	LOK-FF-150	0.35
2"	LOK-FF-200	0.35
2 1/2"	LOK-FF-250	0.49
3"	LOK-FF-300	0.57
4"	LOK-FF-400	0.69
5"	LOK-FF-500	0.76

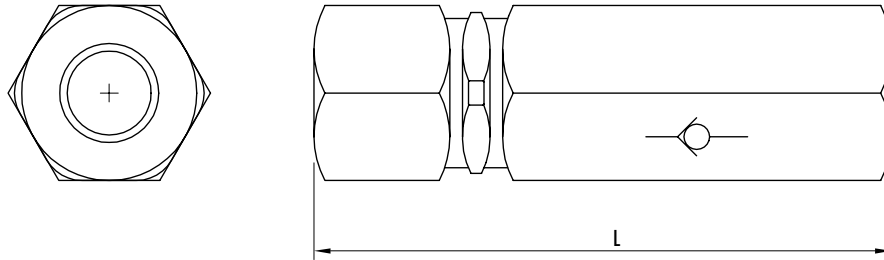
- LOK IS USED WITH BBV20, BBV21, BBV22, BBV23, FBV20, FBV21, FBV22 & FBV23 B ALL VALVES
- LOK-FF IS USED WITH BBV29, BBVD27, BBVD28 & BBVG27 B ALL VALVES
- INSTALLATION INSTRUCTIONS ARE AVAILABLE UPON REQUEST

MATERIAL: STAINLESS STEEL



Check Valves

Inline Female Thread - Poppet Style 3000-6000 PSI



6C/3C Inline Check Valve - Female Threaded Port Style

Poppet Style Soft Seat - 3000-6000 PSI (210-420 bar)

Size	*Dimensions (in)		Cv	WT. lbs/pc	Flow gpm	Working Pressure PSI (bar)
	L	HEX				
1/4"	2.82	0.75	0.45	0.29	3.00	6000 (420)
3/8"	3.38	1.12	1.80	0.81	8.00	6000 (420)
1/2"	3.73	1.25	3.40	1.20	12.00	6000 (420)
3/4"	4.91	1.62	7.40	2.05	20.00	6000 (420)
1"	6.07	1.88	9.50	3.40	30.00	6000 (420)
1 1/4"	5.76	2.00	12.30	3.75	90.00	3000 (210)
1 1/2"	6.51	2.50	16.15	7.80	125.00	3000 (210)
2"	7.28	3.25	21.80	13.00	175.00	3000 (210)

* Dimensions shown are for NPTF ported valves; for other end-fitting configurations - consult factory.

Complete Part Number

	Code	Valve Body	Port Size	Inlet	Outlet	Spring Pressure	Option
Valve Body	6C	6000 PSI 1/4" - 1"					
	3C	3000 PSI 1 1/4" - 2"					
Port Size	4	1/4"					
	6	3/8"					
	8	1/2"					
	12	3/4"					
	16	1"					
	20	*1 1/4"					
	24	*1 1/2"					
	32	*2"					
Thread Type	EF	Female SAE					
	F	Female NPTF					
	RP	Female British Parallel BS 2779					
Spring Pressure	05	5 PSI (.35 bar)					
	25	25 PSI (1.75 bar)					
	65	65 PSI (4.5 bar)					
Option	A	Buna					

- * ONLY AVAILABLE IN 3000 PSI
- VITON 'O' RINGS (STANDARD)
- FOR PRESSURE/DROP CHARTS
REFERENCE PAGE P15

PART NO. (EXAMPLE):
6C - 4 - F - F - 05

MATERIAL: CARBON STEEL, CLEAR ZINC DICHROMATE PLATED, (316 STAINLESS STEEL AVAILABLE)

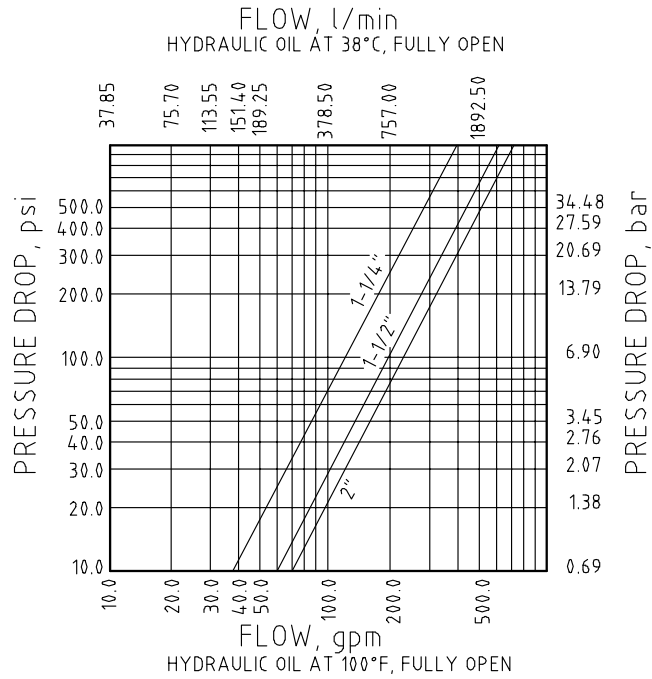
Note: To order 316 stainless steel check valve insert S into the beginning of the assembly part number
PART NO. (EXAMPLE): S 6C - 4 - F - F - 05



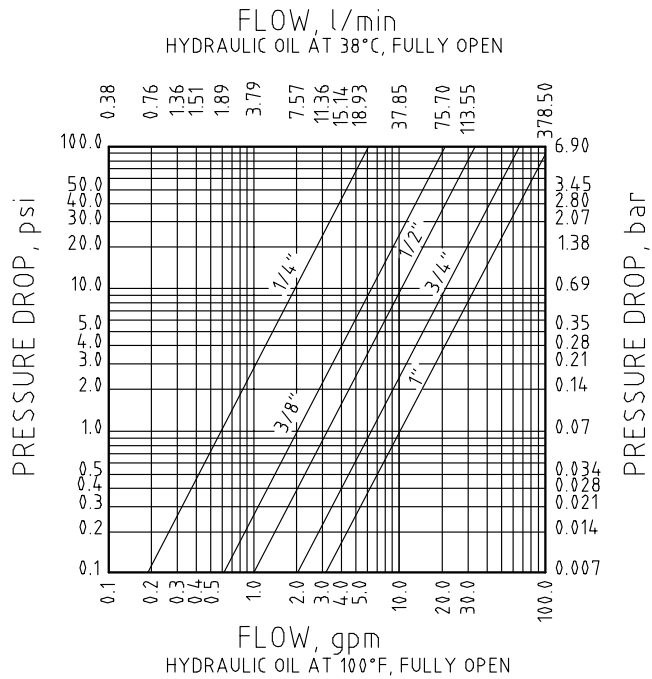
Check Valves

Pressure Drop Charts

3C 3000 PSI

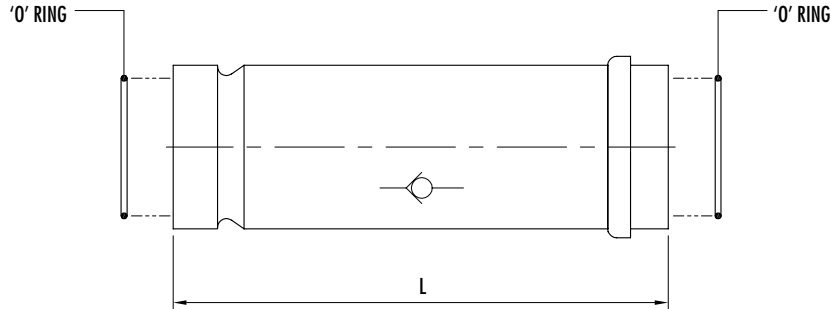


6C 6000 PSI



Check Valve

Retain Ring Flange Style - Body Only



CV Check Valve Body - Poppet Style

Complete with Buna 'O' Rings (Standard)

Size	Check Valve Part No.	Dimensions (in)	'O' Ring (Buna) Part No.	WT. lbs/pc	Working Pressure (Body Only) PSI (bar)
		L			
3/4"	CV-075-07-*	3.60	OR*-3-913	1.30	5000 (350)
1"	CV-100-07-*	4.40	OR*-3-916	1.67	5000 (350)
1 1/4"	CV-125-07-*	5.18	OR*-3-918	2.50	5000 (350)
1 1/2"	CV-150-07-*	5.76	OR*-3-924	4.25	5000 (350)
2"	CV-200-07-*	6.74	OR*-3-928	5.62	5000 (350)
2 1/2"	CV-250-07-*	7.14	OR*-2-232	8.99	5000 (350)
3"	CV-300-07-*	7.53	OR*-2-237	13.66	5000 (350)

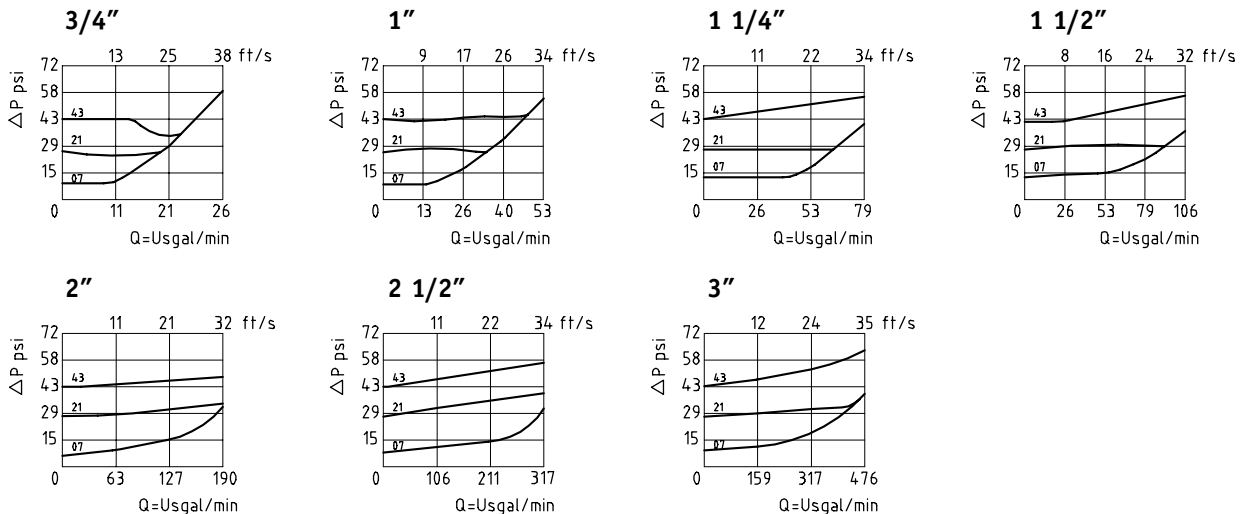
Opening Pressure		
	PSI	(bar)
Standard	7	(0.5)
Optional	21	(1.5)
Optional	43	(3.0)

* INSERT 'V' TO INDICATE OPTIONAL VITON 'O' RINGS

• TO ORDER A COMPLETE CHECK VALVE ASSEMBLY REFERENCE PAGE P17

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED, (STAINLESS STEEL AVAILABLE)

Performance Curves: Measured using oil at 190SUS and 122°F

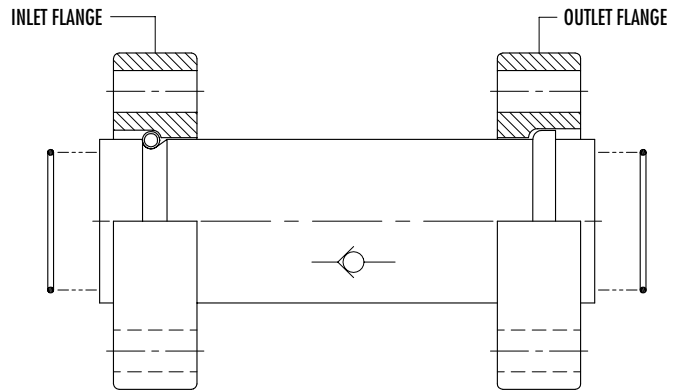




Check Valve Assembly

Complete Assembly Part Number

Typical A/CV Assembly



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) CHECK VALVE BODY - POPPET STYLE (REF. PAGE P16)
- TWO (2) RETAIN RING FLANGES (REF. PAGES C8-C10)
- ONE (1) RETAIN RING
- BUNA 'O' RINGS (STANDARD)

Assembly		Code	A / CV	Valve Size	Inlet Flange	Outlet Flange	Opening Pressure	Options
Assembly		A						
Valve Body Ref. page (P16)	Check Valve	CV						
Valve Size	3/4"	075						
	1"	100						
	1 1/4"	125						
	1 1/2"	150						
	2"	200						
	2 1/2"	250						
	3"	300						
Flange Type Carbon Steel Yellow Zinc Dicromate Plated Ref. pages (C8-C10)	RFC34 SAE Code 61 W/Clearance Holes	FC34						
	*RFT34 SAE Code 61 W/Tapped Holes	FT34						
	RFC64 SAE Code 62 W/Clearance Holes	FC64						
	*RFT64 SAE Code 62 W/Tapped Holes	FT64						
	RFC74 ISO 6164 W/Clearance Holes	FC74						
Opening Pressure	7 PSI - Standard	07						
	21 PSI - Optional	21						
	43 PSI - Optional	43						
Options	Viton	V						

Opening Pressure		
	PSI	(bar)
Standard	7	(0.5)
Optional	21	(1.5)
Optional	43	(3.0)

* NORMALLY USED FOR CONNECTION TO SPLIT FLANGE TYPE ENDS

• FOR CONNECTION TO HOSE USE CONNECTOR PLATE **OCP** (TO BE ORDERED SEPARATELY) REFERENCE PAGE C17

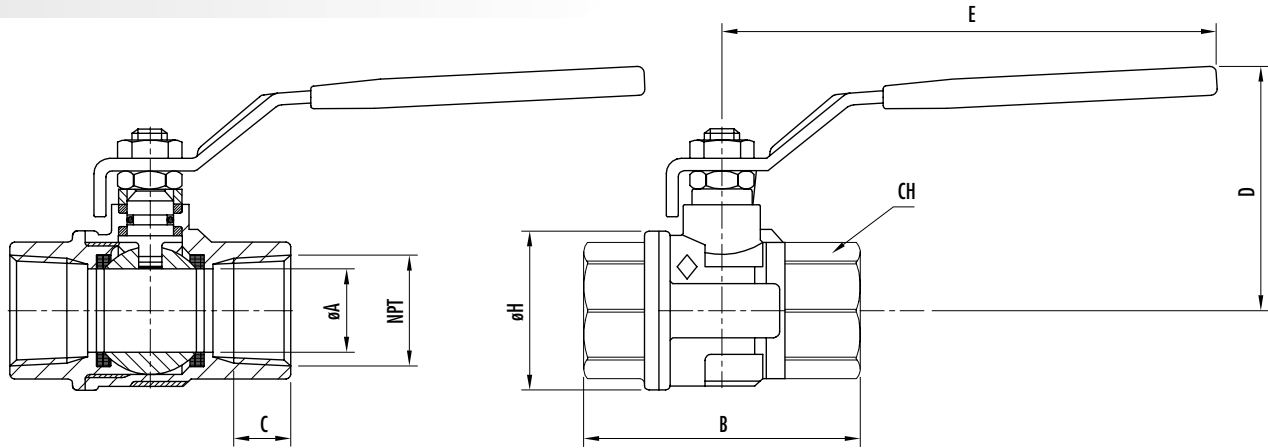
PART NO. (EXAMPLE): A/CV - 075 - FC64 - FT64 - 07

- ASSEMBLY WORKING PRESSURE RATINGS ARE SUBJECT TO THE LESSER OF THE FLANGE OR THE CHECK VALVE RATINGS
- SEE REFERENCE PAGE INDICATED ABOVE FOR PRESSURE RATINGS
- OTHER MATERIALS ARE AVAILABLE
- FOR BOLT KITS - REFERENCE SECTION R



Ball Valves

Low Pressure



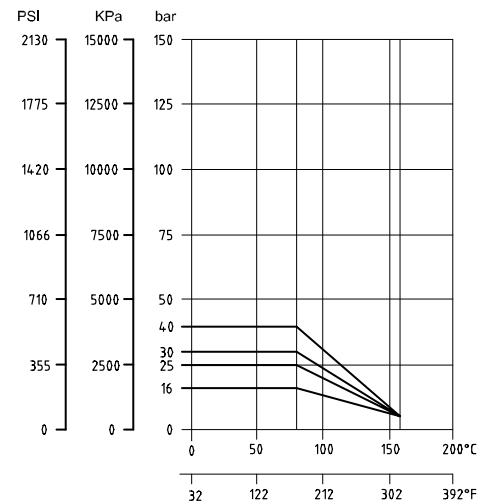
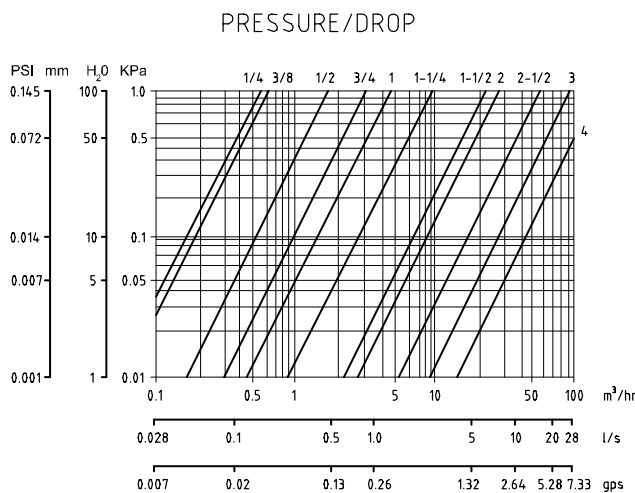
2BVL Female Thread Ball Valve - Low Pressure

Size	NPT Ball Valve Part No.	SAE Ball Valve Part No.	Dimensions (in)							Cv	WT. lbs/pc	Working Pressure PSI (bar)
			A	B	C	D	E	H	ch			
1/4"	2BVL20-04-B*	2BVL21-04-B*	0.39	2.02	0.39	1.75	3.85	0.90	0.78	6.29	0.30	600 (40)
3/8"	2BVL20-06-B*	2BVL21-06-B*	0.39	2.02	0.40	1.75	3.85	0.90	0.78	6.99	0.28	600 (40)
1/2"	2BVL20-08-B*	2BVL21-08-B*	0.59	2.44	0.53	1.88	3.85	1.25	0.98	19.00	0.41	600 (40)
3/4"	2BVL20-12-B*	2BVL21-12-B*	0.78	2.71	0.55	2.28	4.80	1.53	1.22	34.42	0.67	600 (40)
1"	2BVL20-16-B*	2BVL21-16-B*	0.98	3.07	0.66	2.44	4.80	1.92	1.49	50.18	1.09	600 (40)
1 1/4"	2BVL20-20-B*	2BVL21-20-B*	1.25	3.42	0.68	3.07	6.02	2.32	1.88	103.70	2.01	600 (40)
1 1/2"	2BVL20-24-B*	2BVL21-24-B*	1.57	3.89	0.68	3.34	6.02	2.87	2.12	268.41	3.08	600 (40)
2"	2BVL20-32-B*	2BVL21-32-B*	1.96	4.33	0.69	3.79	6.37	3.38	2.63	309.20	4.18	600 (40)
2 1/2"	2BVL20-40-B*	2BVL21-40-B*	2.56	5.59	1.19	5.02	8.07	4.37	3.54	629.00	8.00	600 (40)
3"	2BVL20-48-B*	2BVL21-48-B*	3.15	6.45	1.31	5.45	8.07	5.35	4.13	1018.17	12.90	600 (40)
4"	2BVL20-64-B*	2BVL21-64-B*	3.94	7.60	1.55	6.34	10.23	6.35	5.12	1622.00	22.04	600 (40)

* INSERT ' L ' TO INDICATE OPTIONAL ASSEMBLED LOCKING DEVICE







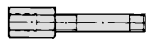

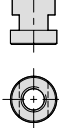









- VALVES ARE FULL PORT
- BUNA SEALS (STANDARD)

PRESSURE/TEMPERATURE RATINGS





Pipe Supports - Visual Index

<p>HEAVY SERIES CLAMP</p>	<p>S-PP CLAMP BODY</p>  <p>1/4" - 8" Page Q3</p>	<p>DPAL SINGLE COVER PLATE</p>  <p>1/4" - 8" Page Q4</p>	<p>DPAS DOUBLE COVER PLATE</p>  <p>1/4" - 8" Page Q4</p>	<p>SPAL SINGLE WELD PLATE</p>  <p>1/4" - 8" Page Q5</p>
<p>SPAS DOUBLE WELD PLATE</p>  <p>1/4" - 8" Page Q5</p>	<p>ASS HEX HEAD BOLT</p>  <p>1/4" - 8" Page Q6</p>	<p>AFS STACKING BOLT</p>  <p>1/4" - 8" Page Q6</p>	<p>SIP SAFETY PLATE</p>  <p>1/4" - 8" Page Q6</p>	<p>RNH RAIL NUT</p>  <p>1/4" - 3" Page Q7</p>
<p>STSV100 MOUNTING RAIL</p>  <p>1/4" - 3" Page Q7</p>	<p>CLAMP ASSEMBLIES</p>	<p>SPAL-***S**-DPAL-AS SINGLE CLAMP ASSEMBLY</p>  <p>1/4" - 8" Page Q8</p>	<p>SPAS-***S**-DPAS-AS DOUBLE CLAMP ASSEMBLY</p>  <p>1/4" - 8" Page Q8</p>	<p>AF-***S**-SIP SINGLE STACKING ASSEMBLY</p>  <p>1/4" - 8" Page Q9</p>
<p>RNH-***S**-DPAL-AS RAIL MOUNTED SINGLE CLAMP ASS'Y</p>  <p>1/4" - 2 1/2" Page Q9</p>	<p>RUBBER INSERT SERIES CLAMP</p>	<p>RI-*S** RUBBER INSERT CLAMP BODY</p>  <p>1/2" - 4" Page Q10</p>	<p>SPAL-***S**-DPAL-AS-RI RUBBER INSERT CLAMP ASSEMBLY</p>  <p>1/2" - 4" Page Q11</p>	<p>RNH-***S**-DPAL-AS-RI RAIL MOUNTED RI CLAMP ASSEMBLY</p>  <p>1/2" - 2" Page Q11</p>
		<p>***S-RI RUBBER INSERT</p>  <p>1/2" - 4" Page Q10</p>		

Note: Other sizes in heavy series are available as well as light series standard and twin supports - contact factory.

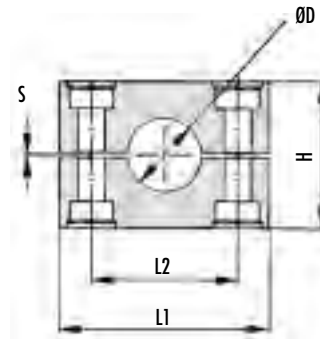




Pipe Supports

Heavy Series Clamp Body

Material Code	Materials and Designs of clamp bodies
PP	Polypropylene, profiled inside, with tension clearance
PPH*	Polypropylene, smooth inside, without tension clearance
PA	Polyamide, profiled inside, with tension clearance
PAH*	Polyamide, smooth inside, without tension clearance
AL	Aluminum, profiled inside, with tension clearance



* RECOMMENDED FOR HOSE CLAMPING, SPECIFY OUTSIDE DIAMETER OF HOSE AVAILABLE UP TO GROUP 6S

SPP Clamp Body (2 Halves)

Group	Pipe Nominal Bore	Hose	Metric (mm)	Clamp Body Part No. **- specify material code	Dimensions (in)						WT. lbs/pc	
					L1		L2	Inside Surface		Width		
					PP/PA	AL		Profiled				Smooth
								H	S (min.)			
4s		1/4"		4150S **	2.75	2.75	1.77	-	-	1.83	1.20	0.08
		3/8"		4198S **	2.75	2.75	1.77	-	-	1.83	1.20	0.08
		1/2"		4213S **	2.75	2.75	1.77	1.88	0.02	-	1.20	0.08
		1/2"		4221S **	2.75	2.75	1.77	-	-	1.83	1.20	0.08
		3/4"		4267S **	2.75	2.75	1.77	1.88	0.02	-	1.20	0.08
		3/4"		4292S **	2.75	2.75	1.77	-	-	1.83	1.20	0.08
5s		1"		5334S **	3.34	3.34	2.36	2.36	0.02	-	1.20	0.12
		1 1/4"		5422S **	3.34	3.34	2.36	2.36	0.02	-	1.20	0.10
6s		1"		6378S **	4.52	4.72	3.54	-	-	3.42	1.77	0.44
		1 1/4"		6422S **	4.52	4.72	3.54	3.50	0.07	-	1.77	0.45
		1 1/2"		6483S **	4.52	4.72	3.54	3.50	0.07	-	1.77	0.42
		1 1/4"		6484S **	4.52	4.72	3.54	-	-	3.42	1.77	0.42
		1 1/2"		6544S **	4.52	4.72	3.54	-	-	3.42	1.77	0.44
			56	6560S **	4.52	4.72	3.54	3.50	0.07	-	1.77	0.44
				6603S **	4.52	4.72	3.54	3.50	0.07	-	1.77	0.38
			66	6660S **	4.52	4.72	3.54	3.50	0.07	-	1.77	0.44
7s		2 1/2"		7730S **	5.98	5.90	4.80	4.72	0.07	-	2.36	0.95
			80	7800S **	5.98	5.90	4.80	4.72	0.07	-	2.36	0.78
		3"		7889S **	5.98	5.90	4.80	4.72	0.07	-	2.36	0.80
8s		3"		8889S **	8.11	8.19	6.61	6.57	0.07	-	3.14	2.34
			97	8970S **	8.11	8.19	6.61	6.57	0.07	-	3.14	2.34
		4"	115	8114S **	8.11	8.19	6.61	6.57	0.07	-	3.14	2.05
9s		5"		9141S **	9.88	10.04	8.07	7.87	0.11	-	3.58	3.38
		6"		9168S **	9.88	10.04	8.07	7.87	0.11	-	3.58	2.72
10s		6"		10168S **	13.23	12.83	10.43	10.63	0.11	-	4.72	9.40
		8"		10219S **	13.23	12.83	10.43	10.63	0.11	-	4.72	7.49
11s		8"		11219S **	18.50	18.50	15.55	16.14	0.31	-	6.38	31.20

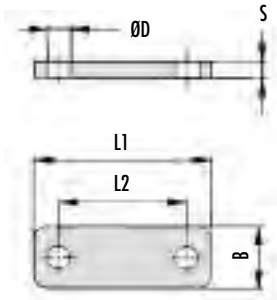
- FOR COMPLETE CLAMP ASSEMBLY REFERENCE PAGES Q8-9
- OTHER THERMOPLASTICS AND O.D. ON REQUEST
- RUBBER INSERT CLAMPS ARE AVAILABLE REFERENCE PAGE Q10-11



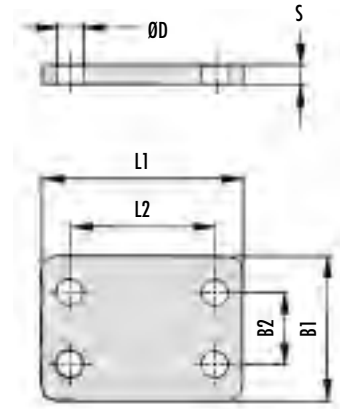
Pipe Supports

Heavy Series Cover Plates

DPAL Single Cover Plate



DPAS Double Cover Plate



DPAL Single Cover Plate

Group	Plate Part No.	Dimensions (in)					WT. lbs/pc
		L1	L2	B	S	D	
4s	DPAL 4s	2.75	1.77	1.18	0.31	0.43	0.26
5s	DPAL 5s	3.34	2.36	1.18	0.31	0.43	0.31
6s	DPAL 6s	4.52	3.54	1.77	0.39	0.55	0.82
7s	DPAL 7s	5.98	4.80	2.36	0.30	0.74	1.46
8s	DPAL 8s	8.11	6.61	3.14	0.59	0.86	3.08
9s	DPAL 9s	9.88	8.07	3.54	0.59	1.02	5.35
10s	DPAL 10s	12.60	10.43	4.72	0.98	1.37	11.56
11s	DPAL 11s	18.50	15.55	6.29	1.18	1.37	30.60

DPAS Double Cover Plate

Group	Plate Part No.	Dimensions (in)						WT. lbs/pc
		L1	L2	B1	B2	S	D	
4s	DPAS 4s	2.75	1.77	2.36	1.18	0.31	0.43	0.52
5s	DPAS 5s	3.30	2.36	2.36	1.18	0.39	0.55	0.62
6s	DPAS 6s	4.57	3.54	3.54	1.81	0.31	0.43	1.64
7s	DPAS 7s	6.02	4.80	4.72	2.40	0.39	0.74	2.92
8s	DPAS 8s	8.11	6.61	6.29	3.18	0.59	0.86	6.16
9s	DPAS 9s	9.88	8.07	7.06	3.58	0.59	1.02	10.70
10s	DPAS 10s	12.60	10.43	9.45	4.72	0.98	1.37	23.12
11s	DPAS 11s	18.50	15.55	12.64	6.29	1.18	1.37	61.20

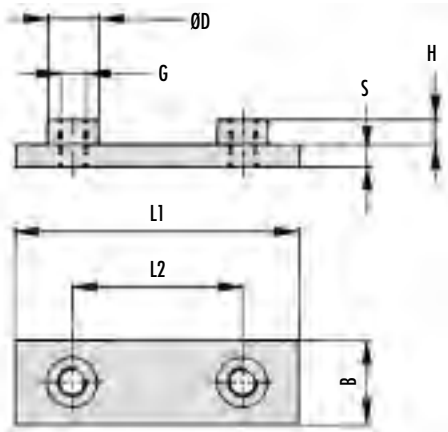
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED (STAINLESS STEEL AVAILABLE)



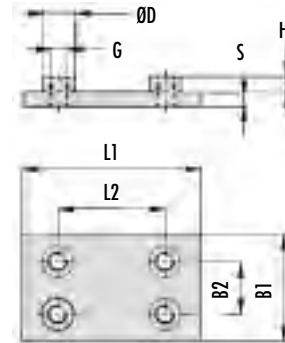
Pipe Supports

Heavy Series Weld Plates

SPAL Single Weld Plate



SPAS Double Weld Plate



SPAL Single Weld Plate

Group	Plate Part No.	Dimensions (in)							WT. lbs/pc
		L1	L2	B	S	H	D	G	
4s	SPAL 4s	3.38	1.77	1.18	0.31	0.31	0.70	3/8"-16 x 2 1/4"	0.39
5s	SPAL 5s	3.93	2.36	1.18	0.31	0.31	0.70	3/8"-16 x 2 3/4"	0.43
6s	SPAL 6s	5.51	3.54	1.77	0.39	0.31	0.78	7/16"-14 x 4"	1.07
7s	SPAL 7s	7.06	4.80	2.36	0.39	0.47	0.94	5/8"-11 x 5 1/4"	1.89
8s	SPAL 8s	8.90	6.61	3.64	0.59	0.70	1.18	3/4"-10 x 7 1/2"	4.19
9s	SPAL 9s	10.63	8.07	3.54	0.59	0.82	1.37	7/8"-9 x 8 3/4"	5.77
10s	SPAL 10s	13.39	10.43	4.72	0.98	0.82	1.77	1 1/8"-7 x 12"	13.48
11s	SPAL 11s	20.47	15.55	6.30	1.18	1.46	1.96	1 1/4"-7 x 17 1/2"	35.70

SPAS Double Weld Plate

Group	Plate Part No.	Dimensions (in)								WT. lbs/pc
		L1	L2	B1	B2	S	H	D	G	
4s	SPAS 4s	3.38	1.77	2.36	1.20	0.31	0.31	0.70	3/8"-16 x 2 1/4"	0.78
5s	SPAS 5s	3.93	2.36	2.36	1.20	0.31	0.31	0.70	3/8"-16 x 2 3/4"	0.86
6s	SPAS 6s	5.51	3.54	3.54	1.81	0.39	0.31	0.78	7/16"-14 x 4"	2.14
7s	SPAS 7s	7.06	4.80	4.72	2.40	0.39	0.47	0.94	5/8"-11 x 5 1/4"	3.78
8s	SPAS 8s	8.86	6.61	6.29	3.18	0.59	0.70	1.18	3/4"-10 x 7 1/2"	8.38
9s	SPAS 9s	10.63	8.07	7.06	3.58	0.59	0.82	1.37	7/8"-9 x 8 3/4"	11.54
10s	SPAS 10s	13.39	10.43	9.44	4.76	0.98	0.82	1.77	1 1/8"-7 x 12"	26.96
11s	SPAS 11s	20.47	15.55	12.76	6.54	1.18	1.46	1.96	1 1/4"-7 x 17 1/2"	71.40

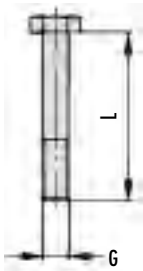
MATERIAL: CARBON STEEL, (STAINLESS STEEL AVAILABLE)



Pipe Supports

Heavy Series Hex Head Bolt, Stacking Bolt & Safety Plate

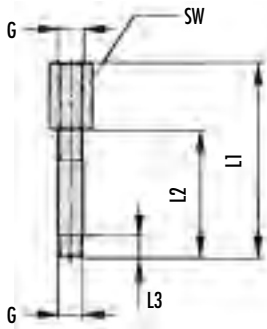
ASS Hex Head Bolt



ASS Hex Head Bolt

Group	Bolt Part No.	Dimensions (in)		WT. lbs/pc
		G	L	
4s	ASS 4s	3/8"-16	2 1/4"	0.08
5s	ASS 5s	3/8"-16	2 3/4"	0.10
6s	ASS 6s	7/16"-14	4"	0.18
7s	ASS 7s	5/8"-11	5 1/4"	0.50
8s	ASS 8s	3/4"-10	7 1/2"	1.01
9s	ASS 9s	7/8"-9	8 3/4"	1.56
10s	ASS 10s	1 1/8"-7	12"	3.64
11s	ASS 11s	1 1/4"-7	17 1/2"	6.58

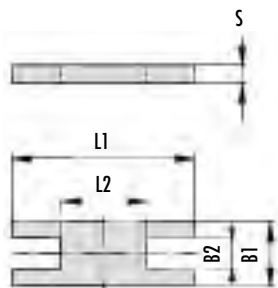
AFS Stacking Bolt



AFS Stacking Bolt

Group	Bolt Part No.	Dimensions (in)					WT. lbs/pc
		L1	L2	L3	SW	G	
4s	AFS 4s	2.55	1.57	0.59	0.59	3/8"-16	0.11
5s	AFS 5s	3.03	2.00	0.59	0.59	3/8"-16	0.14
6s	AFS 6s	4.33	3.22	0.70	0.69	7/16"-14	0.20
7s	AFS 7s	5.67	4.33	0.94	0.82	5/8"-11	0.50
8s	AFS 8s	7.87	5.90	1.18	1.00	3/4"-10	1.03
9s	AFS 9s	9.44	7.06	1.96	1.18	7/8"-9	1.81
10s	AFS 10s	13.03	10.08	2.44	1.81	1 1/8"-7	4.54

SIP Safety Plate



SIP Safety Plate

Group	Plate Part No.	Dimensions (in)					WT. lbs/pc
		L1	L2	B1	B2	S	
4s	SIP 4s	2.75	1.02	1.18	0.59	0.31	0.14
5s	SIP 5s	3.34	1.57	1.18	0.59	0.31	0.26
6s	SIP 6s	4.57	2.71	1.77	0.66	0.39	0.68
7s	SIP 7s	6.02	3.81	2.36	0.86	0.39	1.34
8s	SIP 8s	8.11	5.11	3.14	1.10	0.59	3.47
9s	SIP 9s	9.88	6.54	3.54	1.22	0.59	4.40
10s	SIP 10s	12.48	8.07	4.72	1.92	0.98	10.32

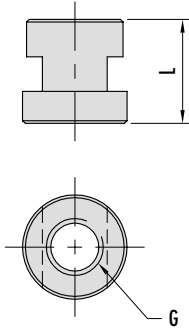
MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED (STAINLESS STEEL AVAILABLE)



Pipe Supports

Heavy Series Rail Nut & Mounting Rail

RNH Rail Nut

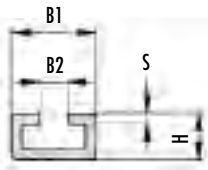


RNH Rail Nut

Group	Rail Nut Part No.	Dimensions (in)		WT. lbs/pc
		L	G	
3s-5s	RNH 345	0.75	3/8"-16 UNC	0.06
6s	RNH 6	0.88	7/16"-14 UNC	0.09

- FOR GROUP 7s RAIL NUT/PLATE CONTACT FACTORY

STSV Mounting Rail



STSV100 Mounting Rail

Group	Rail Part No.	Dimensions (in)					WT. lbs/pc
		L	B1	B2	H	S	
3s-6s	STSV100/6	6.56 ft.	1.57	0.55	0.86	0.19	14.80

MATERIAL: CARBON STEEL, YELLOW ZINC DICHROMATE PLATED (STAINLESS STEEL AVAILABLE)



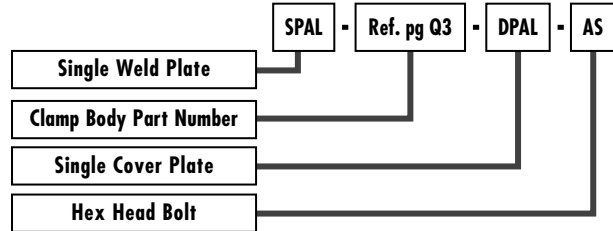
Heavy Series Pipe Support Assemblies

Complete Assembly Part Number

Single Clamp Assembly



Complete Part Number



COMPLETE ASSEMBLY CONSISTS OF:

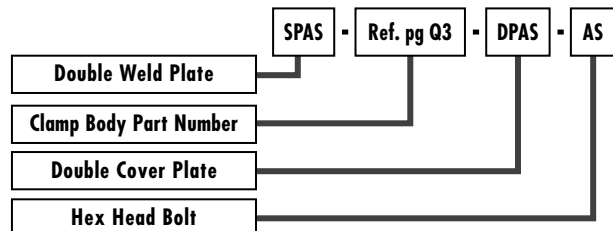
- ONE (1) SINGLE WELD PLATE
- ONE (1) CLAMP BODY (2 HALVES) REF. PAGE Q3
- ONE (1) SINGLE COVER PLATE
- TWO (2) HEX HEAD BOLTS

PART NO. (EXAMPLE): SPAL - 6603S PP - DPAL - AS

Double Clamp Assembly



Complete Part Number



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) DOUBLE WELD PLATE
- TWO (2) CLAMP BODY (4 HALVES) REF. PAGE Q3
- ONE (1) DOUBLE COVER PLATE
- FOUR (4) HEX HEAD BOLTS

PART NO. (EXAMPLE): SPAS - 6603S PP - DPAS - AS



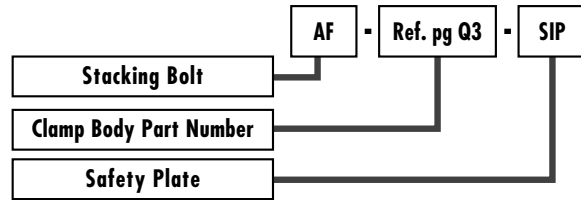
Heavy Series Pipe Support Assemblies

Complete Assembly Part Number

Single Stacking Assembly



Complete Part Number



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) CLAMP BODY (2 HALVES) REF. PAGE Q3
- ONE (1) SAFETY PLATE
- TWO (2) STACKING BOLTS

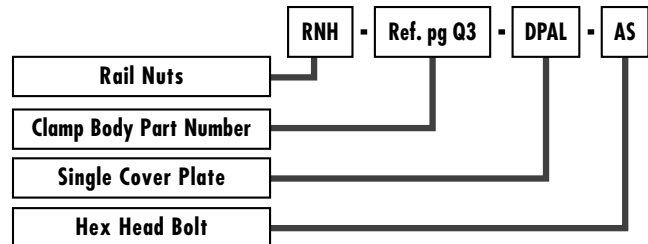
PART NO. (EXAMPLE): AF - 6603S PP - SIP

- AVAILABLE UP TO GROUP 10s ONLY

Rail Mounted Single Clamp Assembly



Complete Part Number



COMPLETE ASSEMBLY CONSISTS OF:

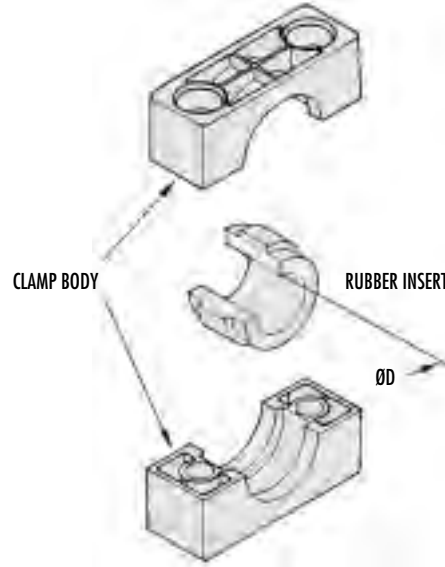
- TWO (2) MOUNTING RAIL NUTS
- ONE (1) CLAMP BODY (2 HALVES) REF. PAGE Q3
- ONE (1) SINGLE COVER PLATE
- TWO (2) HEX HEAD BOLTS

PART NO. (EXAMPLE): RNH - 6603S PP - DPAL - AS

- AVAILABLE UP TO GROUP 6s ONLY

Pipe Supports

Heavy Series Rubber Insert Clamp Body



Material Code	Material of clamp bodies
PP	Polypropylene
PA	Polyamide

RI Clamp Body with Rubber Inserts

Group	Pipe Nominal Bore	Dimension (in) OD	Clamp Body Part No. **-specify material code	Rubber Insert Part No.
5s	1/2"	0.84	RI 5S**	5213S RI
	3/4"	1.05	RI 5S**	5267S RI
6s	1"	1.32	RI 6S**	6334S RI
	1 1/4"	1.66	RI 6S**	6422S RI
	1 1/2"	1.90	RI 6S**	6483S RI
	1 1/2"	1.90	RI 6S**-TMI	6483S RI-TMI
	2"	2.38	RI 6S**-TMI	6603S RI-TMI
7s	2"	2.38	RI 7S**	7603S RI
	2 1/2"	2.88	RI 7S**	7730S RI
8s	3"	3.50	RI 8S**	8889S RI
9s	4"	4.50	RI 9S**	9114S RI

- RUBBER INSERT AND CLAMP BODY ARE ORDERED SEPARATELY
- FOR COMPLETE RUBBER INSERT CLAMP ASSEMBLY REFERENCE PAGE Q11
- FOR RI CLAMPS THE RELATIONSHIP BETWEEN THE DIAMETER AND THE GROUP IS NOT THE SAME AS IN THE PROFILE OR THE H CLAMP



Heavy Series Rubber Insert Assemblies

Complete Assembly Part Number

Typical Rubber Insert Assembly

Material Code	Material of clamp bodies
PP	Polypropylene
PA	Polyamide

Group	Pipe Nominal Bore	Complete Rubber Insert Assembly Part No. **-specify material code
5s	1/2"	SPAL-5213S **-DPAL-AS-RI
	3/4"	SPAL-5267S **-DPAL-AS-RI
6s	1"	SPAL-6334S **-DPAL-AS-RI
	1 1/4"	SPAL-6422S **-DPAL-AS-RI
	1 1/2"	SPAL-6483S **-DPAL-AS-RI
	1 1/2"	SPAL-6483S **-DPAL-AS-RI-TMI
	2"	SPAL-6603S **-DPAL-AS-RI-TMI
7s	2"	SPAL-7603S **-DPAL-AS-RI
	2 1/2"	SPAL-7730S **-DPAL-AS-RI
8s	3"	SPAL-8889S **-DPAL-AS-RI
9s	4"	SPAL-9114S **-DPAL-AS-RI



COMPLETE ASSEMBLY CONSISTS OF:

- ONE (1) SINGLE WELD PLATE
- ONE (1) CLAMP BODY (2 HALVES) REF. PAGE Q10
- ONE (1) RUBBER INSERT (2 HALVES) REF. PAGE Q10
- ONE (1) SINGLE COVER PLATE
- TWO (2) HEX HEAD BOLTS

PART NO. (EXAMPLE):

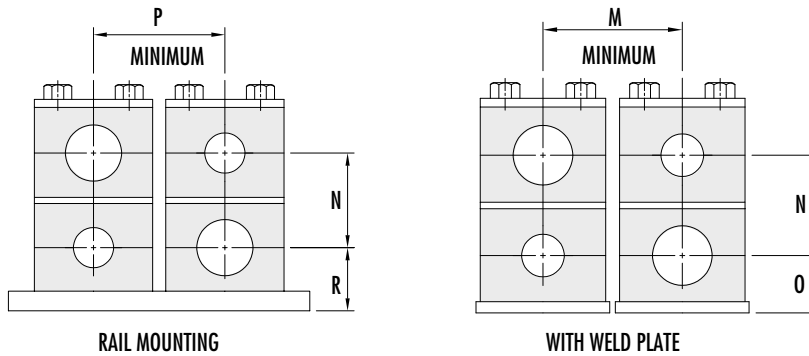
SPAL - 5213S PP - DPAL - AS - RI

Note: To order rubber insert clamps using rail nuts (RNH) - replace the **SPAL** in the assembly part number with **RNH**. [Only available in groups 5s and 6s]
PART NO. (EXAMPLE): RNH - 5213S PP - DPAL - AS - RI



Layout Data for Pipe and Hose

Heavy Series



Group	Size Range Ød	Installation Dimensions (in)					WT. (lbs)
		M	N	O	P	R	
4s	3/4" - 1 3/16"	3 1/2	2 3/16	1 1/4	2 7/8	1 13/16	.92
5s	1 3/16" - 1 37/64"	4 1/16	2 11/16	1 1/2	3 7/16	2 1/16	1.12
6s	1 1/2" - 2 3/4"	5 7/8	3 7/8	2 1/8	4 5/8	2 5/8	2.86
7s	2 9/16" - 3 1/2"	7 1/8	5 1/16	2 3/4	*		5.35
8s	3 1/2" - 5 15/64"	10 5/8	7 1/16	3 13/16	N/A		13.11
9s	5 15/64" - 6 5/8"	11 1/8	8 3/8	4 7/16	N/A		17.16
10s	6 5/8" - 8 5/8"	13 7/8	11 3/8	6 1/16	N/A		46.20
11s	8 5/8" - 12 3/4"	21 1/16	17 1/8	9 1/16	N/A		108.90

* For Group 7s Rail Mounting - Contact Factory

Max. tightening torque (Inch lbs)

Group	Bolt Size	Material Properties		
		Poly-propylene PP	Polyamide PA	Aluminum AL
4s	3/8"-UNC	106	177	265
5s	3/8"-UNC	133	222	310
6s	7/16"-UNC	265	354	487
7s	5/8"-UNC	399	487	1062
8s	3/4"-UNC	796	1593	2478
9s	7/8"-UNC	1327	2655	3097
10s	1 1/8"-UNC	2212	4425	6195
11s	1 1/4"-UNC	3097	5310	7522

Support Spacing

Pipe (Nom. Bore)	Spacing (ft)
1"	7
1 1/2"	9
2"	10
2 1/2"	11
3"	12
3 1/2"	13
4"	14
5"	16
6"	17
8"	19



Pipe Spacing

Heavy Series

Assumption:

Easy to read center line spacing for side to side and staggered installation when placing same or various size pipe on drawings or installing.

Inline clamping - Minimum spacing C between weld-plates:

Group 4s to 5s 1/4" (6.5 mm)

Group 6s to 7s 1/2" (13 mm)

Group 8s to 9s 5/8" (16 mm)

Group 10s to 11s 1" (26 mm)

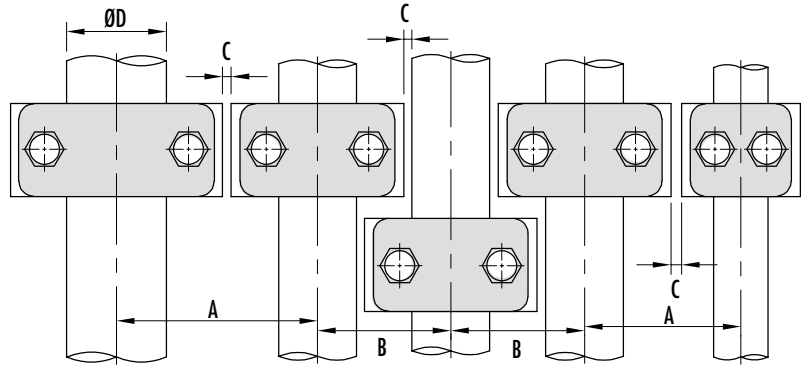
Staggered clamping - Minimum spacing between Tube OD and clamp body:

Group 4s to 5s 1/4" (6.5 mm)

Group 6s to 7s 1/2" (13 mm)

Group 8s to 9s 5/8" (16 mm)

Group 10s to 11s 1" (26 mm)



Note:

The minimum Center Distances referred to above don't take into account space requirement for union connections, valves and other fittings.

		A = Inline - Side to Side clamping																	
Group	Group	4s		5s	6s			7s		8s		9s		10s	11s				
	d=Size in inch and mm	1/2 21.3	3/4 26.9	1 33.7	1 1/4 42	1 1/2 48.3	2 60.3	2 1/2 73	3 88.9	3 1/2 102	4 114	5 140	6 168	8 219	10 273	12 324			
B = Staggered clamping	4s	1/2 213	3 5/8 91.5		315/16 99	5 127			6 152		7 1/8 181		9 203		9 9/16 242	12 3/8 314			
		3/4 26.9	2 1/16 52	2 3/16	4 3/16 2 9/16			5 9/16 135		6 5/16 160		7 3/8 188		8 1/4 210		9 7/8 250	12 11/16 332		
	6s	1 1/4 42	3 1/16 78	3 3/16 81	3 5/16 84	3 5/8 3 3/4 95			6 7/16 163		7 1/16 188		8 9/16 217		9 7/16 239		10 15/16 278	13 3/4 350	
		2 60.3				4 101			8 3/8 213		9 9/16 242		10 7/16 264		11 15/16 303		14 13/16 375		
		2 1/2 73				3 13/16 96.5	3 1/8 99	4 1/16 103	4 3/8 110	4 1/2 113	4 11/16 119	5 134	8 3/8 213		9 9/16 242		10 7/16 264		11 15/16 303
	8s	3 1/2 102	4 7/8	5 128	5 1/8 138	5 7/16 138	5 9/16 141	5 3/4 147	6 1/16 154	6 3/8 161	10 5/8 270		11 1/2 292		13 1/16 332		15 7/8 404		
		4 114	6 5/8 174		6 7/8 174		10 5/8 270		11 1/2 292		13 1/16 332		15 7/8 404						
	9s	5 140	5 13/16 147	5 15/16 150	6 1/16 153	6 3/16 153	6 5/16 160	6 9/16 166	6 13/16 154	7 1/8 181	7 9/16 192	7 13/16 198	12 3/8 314		13 15/16 354		16 3/4 426		
		6 168	8 5/16 225		8 7/8 225		12 3/8 314		13 15/16 354		16 3/4 426								
	10s	8 219	7 7/8 200		8 1/8 205	8 5/16 210			8 1/2 216	8 7/8 224	9 1/8 232	9 3/8 238	9 7/8 250	10 7/16 265	15 1/2 11 5/8		18 5/16 465		
		10 273	10 13/16 275		11 280	10 13/16 275	10 15/16 278	11 3/16 284	11 1/2 292	11 13/16 300	12 1/16 306	12 5/16 312	12 13/16 325	13 3/8 339	14 9/16 370	21 3/16 537			
	11s	12 324	15 5/8 422		15 5/8 422		21 3/16 537		21 3/16 537		21 3/16 537		21 3/16 537		21 3/16 537		21 3/16 537		

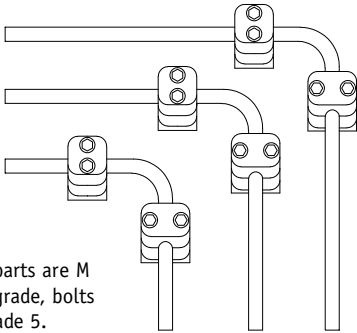


Technical Data

Pipe Installation - Simple and reliable

With the exception of the Construction Series KS Clamps and the Clamps of the Light Series, there is no difference between the top and bottom halves.

As it is impossible to confuse them, much time is saved during handling. This also applies to their mounting onto the weld plates or mounting-rails, as the lower half of the pipe clamp only needs to be slid onto either welded-on nuts (weld plate) or insert nuts (mounting rail). Therefore, only a few instructions are required for the correct mounting of pipes with STAUFF Pipe Clamps:

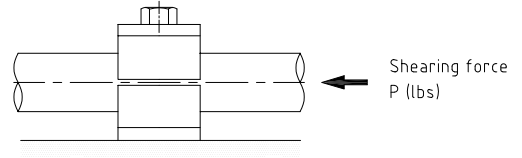


Note:
Steel parts are M 1020 grade, bolts are grade 5.

1. Please ensure that weld plates or mounting-rails are firmly supported according to individual stress. Minimum welding length is = to minimum welding plate width.
2. It is recommended that STAUFF Pipe Clamps be installed at intervals according to support spacing charts.
3. Pipe bends should be supported by STAUFF Pipe Clamps as near to the bends as possible (see illustration).

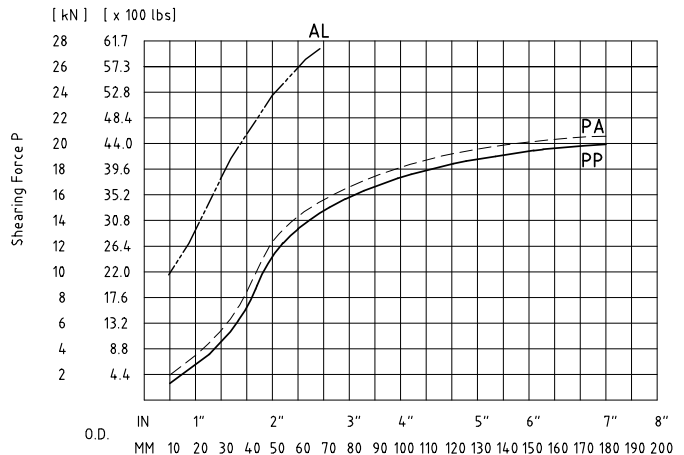
Shearing Force Diagram

The forces shown in these diagrams are those taken up by the clamps in the axial direction. The sliding friction starts, when the shown values are reached.



Clamp Body Material Properties			
	Polypropylene PP	Polyamide PA	Aluminum AL
Mechanical Properties			
Density	.906 g/cc	1.15 g/cc	2.65 g/cc
Tensile Strength	28 MPa (4000 psi)	140 MPa (20000 psi)	180 MPa (26000 psi)
Flexural Modulus	1150 MPa (165000 psi)	3000 MPa (435000 psi)	70000 MPa (10.15x10 ⁶ psi)
Compressive Strength (Resistance)	90 MPa (13050 psi)	120 MPa (17400 psi)	HB 500-600
Notched IZOD Impact Strength	14 ft - lb/in	1.3 ft - lb/in	
Thermal Properties			
Max. Temperature Resistance	-29 to +102°C -20 to +215°F	-40 to + 180°C -40 to +356°F	+400°C +752°F
Electrical Properties			
Specific Volume Resistivity Ohm x Inch	3.9 x 10 ¹⁷	3.9 x 10 ¹⁴	
Chemical Properties			
Light Acids, Solvents	stable	stable	
Fuels, Mineral Oils	stable	stable	
Alcohol, Paints, Saltwater	stable	stable	

Heavy Series SPAL (for SPAS double Shearing Force)





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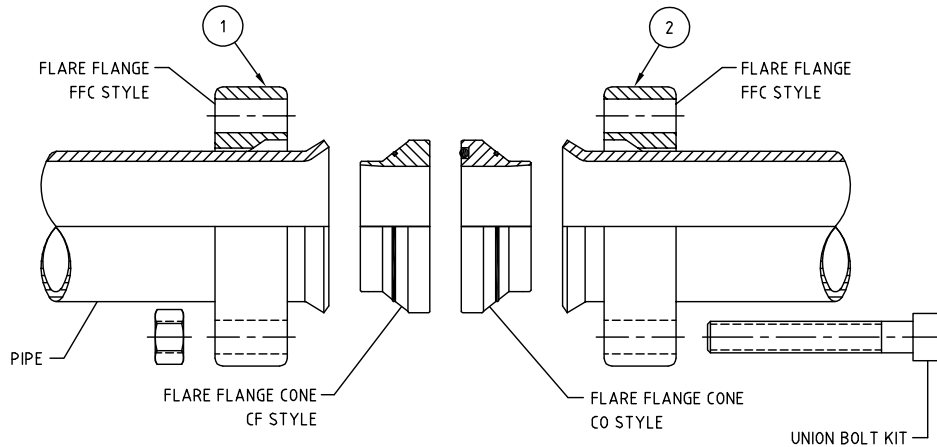
Bolt Kit Order Example

	Bolt Kit	Flange #1	Seal (if necessary)	Flange #2 or Connection	Flange Code	Flange Size	NUT	Bolt Style	Lock-washer	Design number
Bolt Kit part number example: BK - FFC - OS - RFC - 34 - 100 - N - SC - LW										
Bolt Kit	BK BKM (insert 'M' to indicate Metric threads)									
Flange #1	FFC Flare Flg Clearance RFC Retain Ring Flg Clearance (1/2"-4") RFAC Retain Ring Flg Clearance (5"-8") BWFO Buttweld Flg Oring Face NTFO NPT Thread Flg Oring Face STFO SAE Thread Flg Oring Face SWFO Socket Weld Flg Oring Face SF SAE Split Flange BFO Blanking Flange TPRO Transition Plate Reducer TPO Transition Plate									
Seal	OS Oring Seal Retainer (1/2"-4") OSA Oring Seal Retainer (5"-8") OSP Oring Seal Retainer with Pilot Port OSAP Oring Seal Retainer with Pilot Port OSS Oring Seal Retainer -4" BV only OSH Oring Seal Retainer OSHS Oring Seal Retainer -4" BV only OCF Oring Connector Plate LPT Low Pressure Pilot Tee LOCP Low Pressure Oring Connector Plate COP Cone-O'Ring Face with Pilot Port CFP Cone-Flat Face with pilot Port									
Flange or connection #2	FFC Flare Flg Clearance FFT Flare Flg Tapped RFC Retain Ring Flg Clearance (1/2"-4") RFAC Retain Ring Flg Clearance (5"-8") RFT Retain Ring Flg Tapped BWFF Buttweld Flg Flat Face NTFF NTP Thread Flg Flat Face STFF SAE Thread Flg Flat Face SWFF Socket Weld Flg Flat Face COMP Component BV Ball Valve									
Flange code	34 (SAE Code 61) 64 (SAE Code 62) 74 (ISO 6164) 48 (TMI 8-Bolt) 49 (TMI 9-Bolt) 16 (low pressure 6-Bolt) 18 (low pressure 8-Bolt) 6-34 (SAE Code 62/Code 61) 7-34 (ISO 6164/SAE Code 61) 7-64 (ISO 6164/SAE Code 62) 4-74 (TMI 8-Bolt/ISO 6164) 1-16 (low pressure TMI 8-Bolt/6-Bolt)									
Flange size	050 1/2" 075 3/4" 100 1" 125 1 1/4" 150 1 1/2" 200 2" 250 2 1/2" 300 3" 400 4" 500 5" 600 6" 800 8"									
NUT	N Nut N-N (to be used with stud)									
Bolt Style	SC Socket Cap HH Hex Head									
Lock Washer	LW Lockwasher HLW High Collar Lockwasher									
Design Number	Indicate if design changes									



Bolt Kits - Flare Flange

Union Style



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-FFC-34-050-N-SC	16 - 18
3/4"	BK-FFC-FFC-34-075-N-SC	25 - 30
1"	BK-FFC-FFC-34-100-N-SC	25 - 30
1 1/4"	BK-FFC-FFC-34-125-N-SC	45 - 50
1 1/2"	BK-FFC-FFC-34-150-N-SC	85 - 90
2"	BK-FFC-FFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-FFC-34-250-N-SC	85 - 90
3"	BK-FFC-FFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-FFC-64-050-N-SC	16 - 18
3/4"	BK-FFC-FFC-64-075-N-SC	25 - 30
1"	BK-FFC-FFC-64-100-N-SC	45 - 50
1 1/4"	BK-FFC-FFC-64-125-N-SC	85 - 90
1 1/2"	BK-FFC-FFC-64-150-N-SC	110 - 120
2"	BK-FFC-FFC-64-200-N-SC	120 - 130

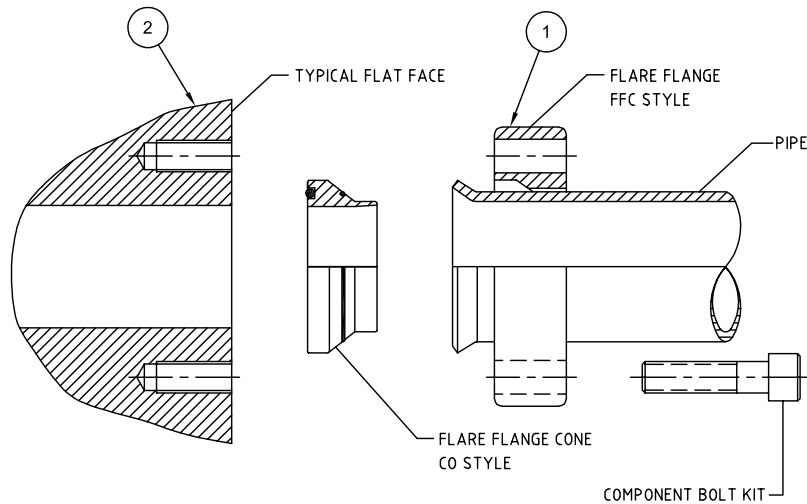
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-FFC-74-250-N-SC	120 - 130
3"	BK-FFC-FFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange

Flare 'O' Ring Face to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COMP-34-050-SC	16 - 18
3/4"	BK-FFC-COMP-34-075-SC	25 - 30
1"	BK-FFC-COMP-34-100-SC	25 - 30
1 1/4"	BK-FFC-COMP-34-125-SC	45 - 50
1 1/2"	BK-FFC-COMP-34-150-SC	85 - 90
2"	BK-FFC-COMP-34-200-SC	85 - 90
2 1/2"	BK-FFC-COMP-34-250-SC	85 - 90
3"	BK-FFC-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COMP-64-050-SC	16 - 18
3/4"	BK-FFC-COMP-64-075-SC	25 - 30
1"	BK-FFC-COMP-64-100-SC	45 - 50
1 1/4"	BK-FFC-COMP-64-125-SC	85 - 90
1 1/2"	BK-FFC-COMP-64-150-SC	110 - 120
2"	BK-FFC-COMP-64-200-SC	120 - 130

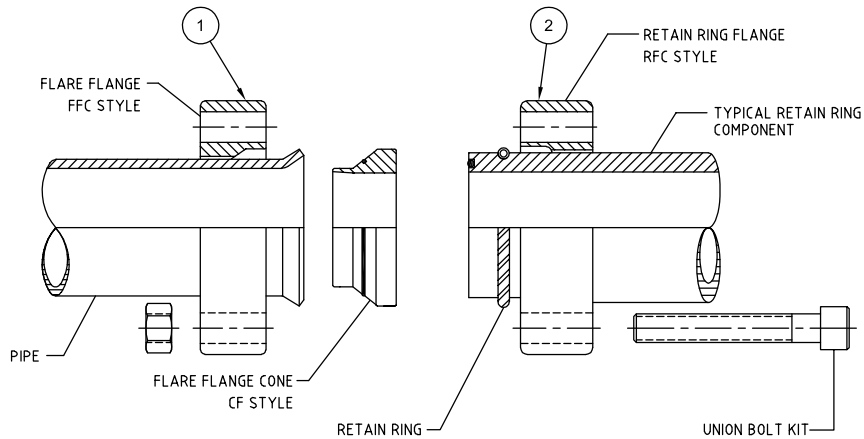
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-COMP-74-250-SC	120 - 130
3"	BK-FFC-COMP-74-300-HH	350 - 400



Bolt Kits - Flare Flange

Flare Flat Face to 'O' Ring Face Retain Ring Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-RFC-34-050-N-SC	16 - 18
3/4"	BK-FFC-RFC-34-075-N-SC	25 - 30
1"	BK-FFC-RFC-34-100-N-SC	25 - 30
1 1/4"	BK-FFC-RFC-34-125-N-SC	45 - 50
1 1/2"	BK-FFC-RFC-34-150-N-SC	85 - 90
2"	BK-FFC-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-RFC-34-250-N-SC	85 - 90
3"	BK-FFC-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-RFC-64-050-N-SC	16 - 18
3/4"	BK-FFC-RFC-64-075-N-SC	25 - 30
1"	BK-FFC-RFC-64-100-N-SC	45 - 50
1 1/4"	BK-FFC-RFC-64-125-N-SC	85 - 90
1 1/2"	BK-FFC-RFC-64-150-N-SC	110 - 120
2"	BK-FFC-RFC-64-200-N-SC	120 - 130

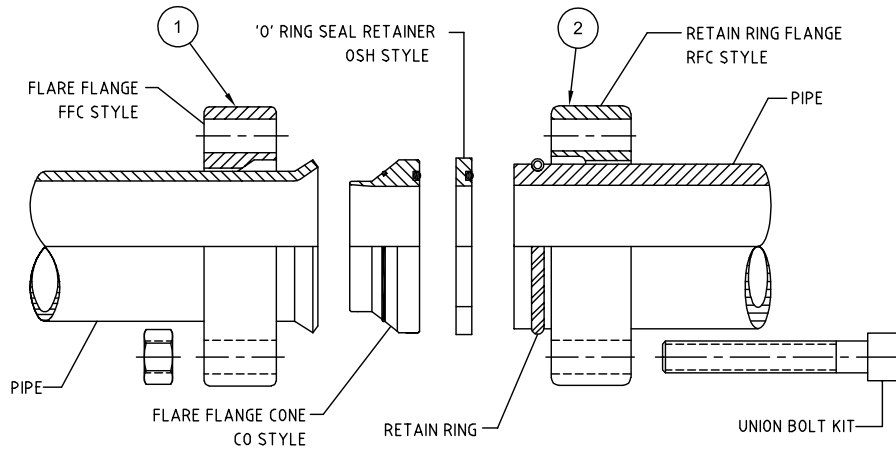
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-RFC-74-250-N-SC	120 - 130
3"	BK-FFC-RFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange

Flare 'O' Ring Face to Retain Ring Pipe



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-FFC-OSH-RFC-34-150-N-SC	85 - 90
2"	BK-FFC-OSH-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-OSH-RFC-34-250-N-SC	85 - 90
3"	BK-FFC-OSH-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-FFC-OSH-RFC-64-150-N-SC	110 - 120
2"	BK-FFC-OSH-RFC-64-200-N-SC	120 - 130

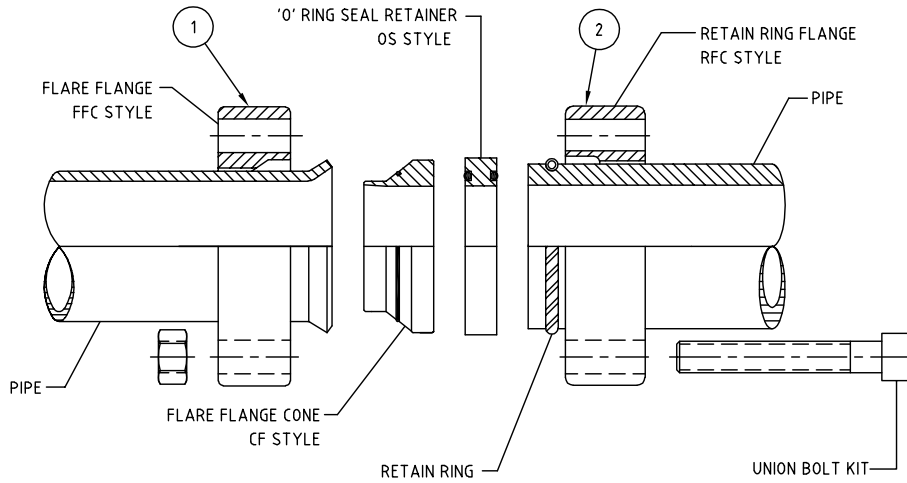
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-OSH-RFC-74-250-N-SC	120 - 130
3"	BK-FFC-OSH-RFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange

Flare Flat Face to Retain Ring Pipe



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-FFC-OS-RFC-34-150-N-SC	85 - 90
2"	BK-FFC-OS-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-OS-RFC-34-250-N-SC	85 - 90
3"	BK-FFC-OS-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-FFC-OS-RFC-64-150-N-SC	110 - 120
2"	BK-FFC-OS-RFC-64-200-N-SC	120 - 130

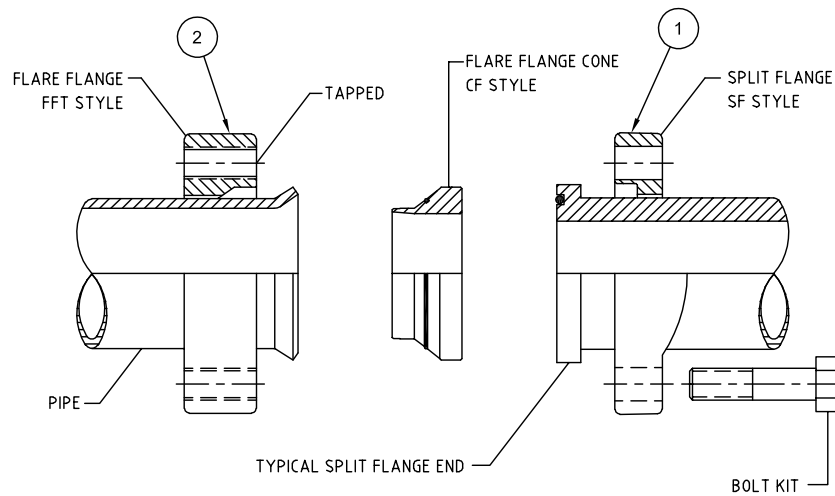
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-OS-RFC-74-250-N-SC	120 - 130
3"	BK-FFC-OS-RFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange

Flare Flat Face to Split Flange



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-FFT-34-050-HH	16 - 18
3/4"	BK-SF-FFT-34-075-HH	25 - 30
1"	BK-SF-FFT-34-100-HH	25 - 30
1 1/4"	BK-SF-FFT-34-125-HH	45 - 50
1 1/2"	BK-SF-FFT-34-150-HH	85 - 90
2"	BK-SF-FFT-34-200-HH	85 - 90
2 1/2"	BK-SF-FFT-34-250-HH	85 - 90
3"	BK-SF-FFT-34-300-HH	110 - 120

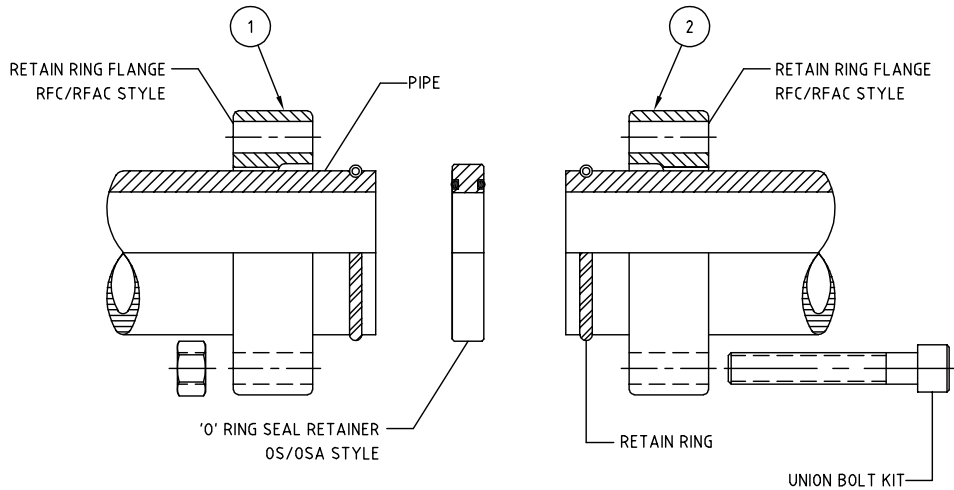
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-FFT-64-050-HH	16-18
3/4"	BK-SF-FFT-64-075-HH	25-30
1"	BK-SF-FFT-64-100-HH	45-50
1 1/4"	BK-SF-FFT-64-125-HH	85-90
1 1/2"	BK-SF-FFT-64-150-HH	110-120
2"	BK-SF-FFT-64-200-HH	120-130



Bolt Kits - Retain Ring Flange

Pipe Union



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OS-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OS-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OS-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OS-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OS-RFC-64-150-N-SC	120 - 130
3"	BK-RFC-OS-RFC-64-200-N-SC	350 - 400

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFC-OS-RFC-74-250-N-SC	120 - 130
6"	BK-RFC-OS-RFC-74-300-N-HH	350 - 400
8"	BK-RFC-OS-RFC-74-400-N-N	500 - 550

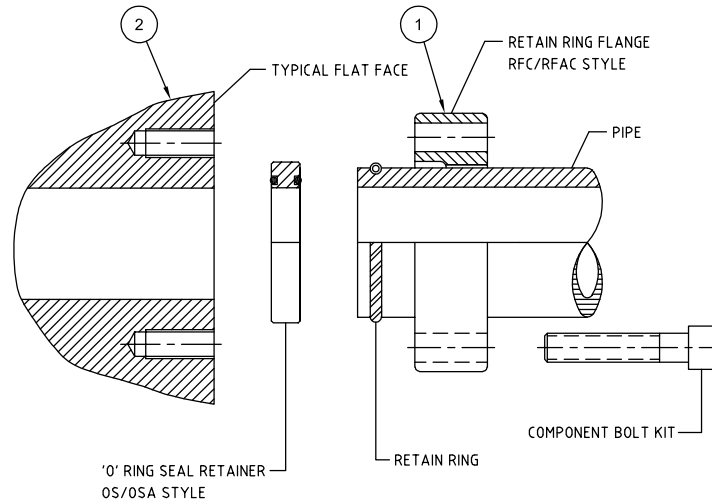
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSA-RFAC-48-500-N-HH	350-400
6"	BK-RFAC-OSA-RFAC-48-600-N-N	500-550
8"	BK-RFAC-OSA-RFAC-48-800-N-N	1100-1200



Bolt Kits - Retain Ring Flange

Pipe to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OS-COMP-34-150-SC	85 - 90
2"	BK-RFC-OS-COMP-34-200-SC	85 - 90
2 1/2"	BK-RFC-OS-COMP-34-250-SC	85 - 90
3"	BK-RFC-OS-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OS-COMP-64-150-SC	110 - 120
2"	BK-RFC-OS-COMP-64-200-SC	120 - 30

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSP-COMP-74-250-SC	120-130
3"	BK-RFC-OSP-COMP-74-300-HH	350-400
4"	BK-RFC-OSP-COMP-74-400-HH	500-550

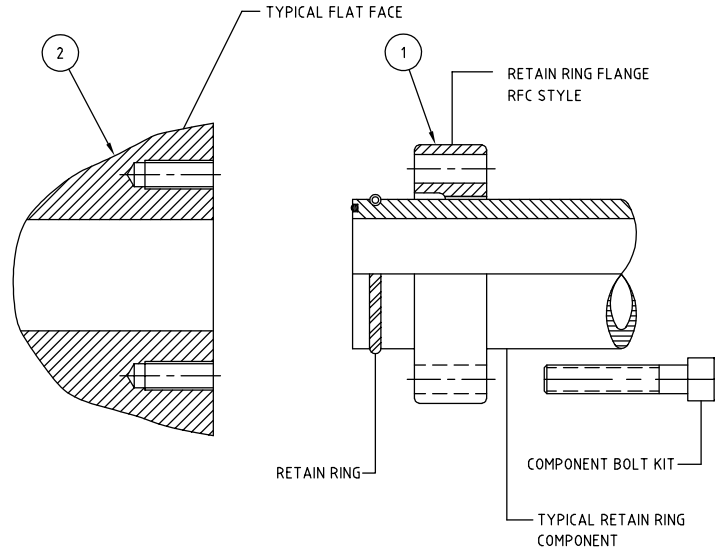
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSA-COMP-48-500-HH	120-130
6"	BK-RFAC-OSA-COMP-48-600-HH	350-400
8"	BK-RFAC-OSA-COMP-48-800-HH	500-550



Bolt Kits - Retain Ring Flange

'O' Ring Face Retain Ring Component to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-COMP-34-050-SC	16 - 18
3/4"	BK-RFC-COMP-34-075-SC	25 - 30
1"	BK-RFC-COMP-34-100-SC	25 - 30
1 1/4"	BK-RFC-COMP-34-125-SC	45 - 50
1 1/2"	BK-RFC-COMP-34-150-SC	85 - 90
2"	BK-RFC-COMP-34-200-SC	85 - 90
2 1/2"	BK-RFC-COMP-34-250-SC	85 - 90
3"	BK-RFC-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-COMP-64-050-SC	16-18
3/4"	BK-RFC-COMP-64-075-SC	25-30
1"	BK-RFC-COMP-64-100-SC	45-50
1 1/4"	BK-RFC-COMP-64-125-SC	85-90
1 1/2"	BK-RFC-COMP-64-150-SC	110-120
2"	BK-RFC-COMP-64-200-SC	120-130

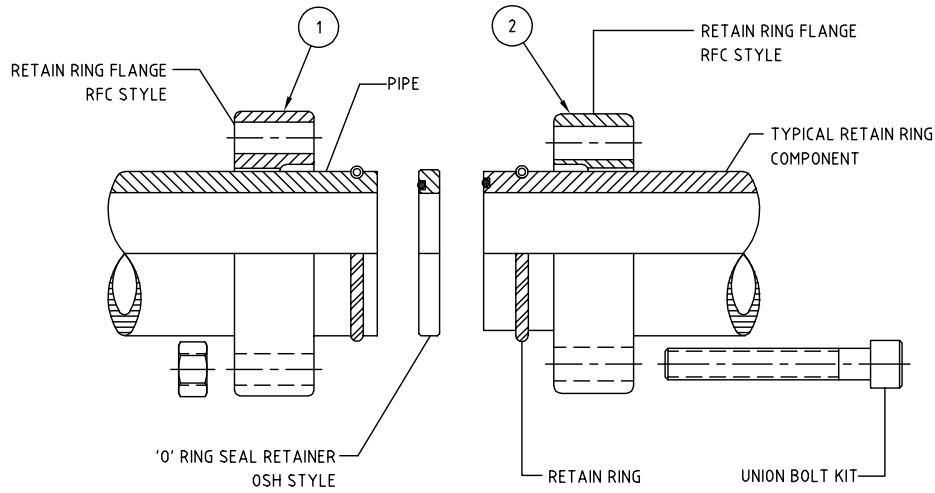
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-COMP-74-250-SC	120-130
3"	BK-RFC-COMP-74-300-HH	350-400
4"	BK-RFC-COMP-74-400-HH	500-550



Bolt Kits - Retain Ring Flange

Pipe to 'O' Ring Face Retain Ring Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSH-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OSH-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OSH-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OSH-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSH-RFC-64-150-N-SC	120 - 130
2"	BK-RFC-OSH-RFC-64-200-N-SC	350 - 400

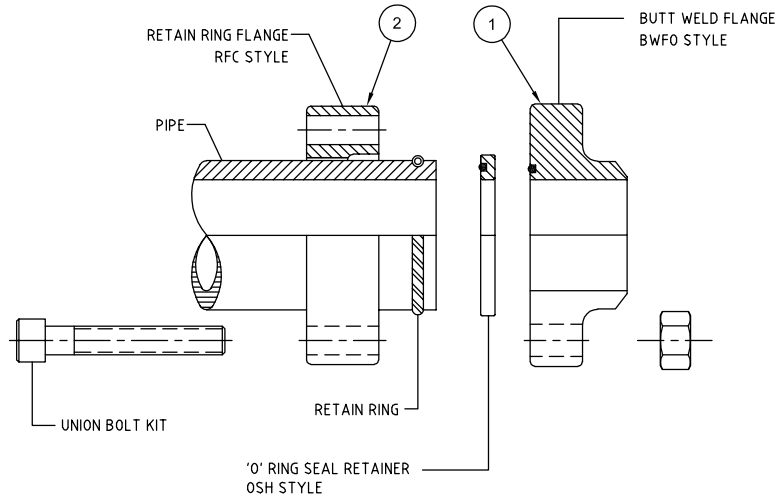
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSH-RFC-74-250-N-SC	120-130
3"	BK-RFC-OSH-RFC-74-300-N-HH	350-400
4"	BK-RFC-OSH-RFC-74-400-N-N	500-550



Bolt Kits - Retain Ring Flange

Pipe to 'O' Ring Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-BWFO-OSH-RFC-34-150-N-SC	85 - 90
2"	BK-BWFO-OSH-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-BWFO-OSH-RFC-34-250-N-SC	85 - 90
3"	BK-BWFO-OSH-RFC-34-300-N-SC	110 - 120

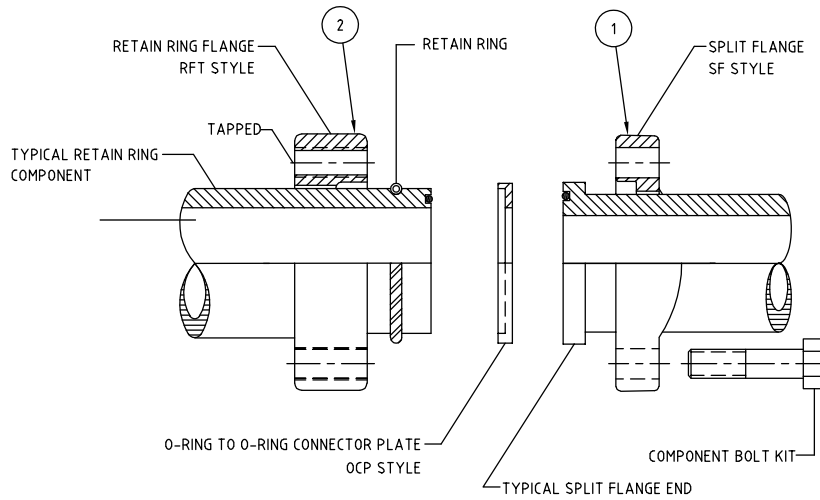
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-BWFO-OSH-RFC-64-150-N-SC	110 - 120
2"	BK-BWFO-OSH-RFC-64-200-N-SC	120 - 130



Bolt Kits - Retain Ring Flange

'O' Ring Face Retain Ring Component to Split Flange



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-OCP-RFT-34-050-HH	16 - 18
3/4"	BK-SF-OCP-RFT-34-075-HH	25 - 30
1"	BK-SF-OCP-RFT-34-100-HH	25 - 30
1 1/4"	BK-SF-OCP-RFT-34-125-HH	45 - 50
1 1/2"	BK-SF-OCP-RFT-34-150-HH	85 - 90
2"	BK-SF-OCP-RFT-34-200-HH	85 - 90
2 1/2"	BK-SF-OCP-RFT-34-250-HH	85 - 90
3"	BK-SF-OCP-RFT-34-300-HH	110 - 120

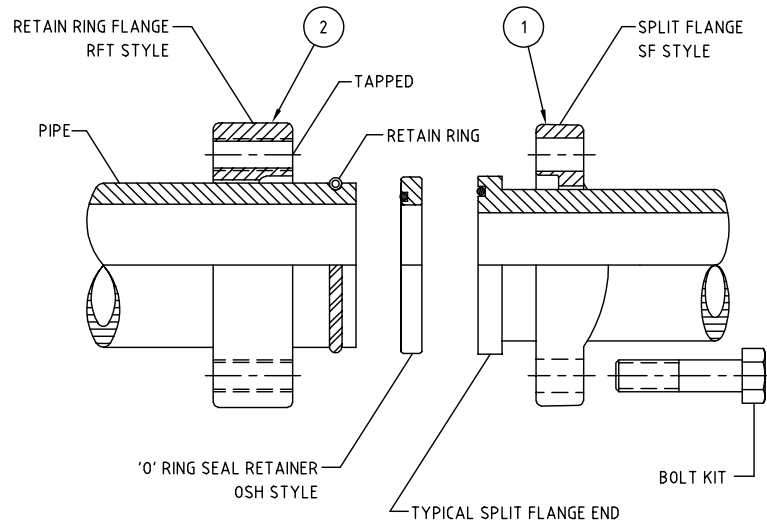
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-OCP-RFT-64-050-HH	16-18
3/4"	BK-SF-OCP-RFT-64-075-HH	25-30
1"	BK-SF-OCP-RFT-64-100-HH	45-50
1 1/4"	BK-SF-OCP-RFT-64-125-HH	85-90
1 1/2"	BK-SF-OCP-RFT-64-150-HH	110-120
2"	BK-SF-OCP-RFT-64-200-HH	120-130



Bolt Kits - Retain Ring Flange

Pipe to Split Flange



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-SF-OSH-RFT-34-150-HH	85 - 90
2"	BK-SF-OSH-RFT-34-200-HH	85 - 90
2 1/2"	BK-SF-OSH-RFT-34-250-HH	85 - 90
3"	BK-SF-OSH-RFT-34-300-HH	110 - 120

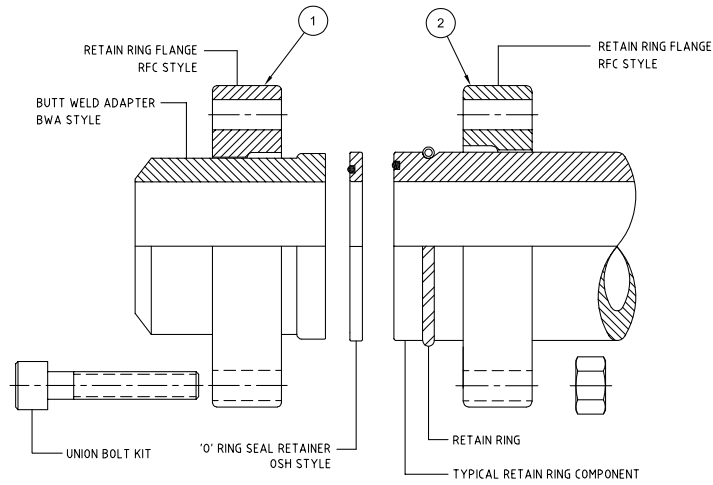
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-SF-OSH-RFT-64-150-HH	110 - 120
2"	BK-SF-OSH-RFT-64-200-HH	120 - 130



Bolt Kits - Retain Ring Flange

Butt Weld Adapter to 'O' Ring Face Retain Ring Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSH-RFC-34-050-N-SC	16 - 18
3/4"	BK-RFC-OSH-RFC-34-075-N-SC	25 - 30
1"	BK-RFC-OSH-RFC-34-100-N-SC	25 - 30
1 1/4"	BK-RFC-OSH-RFC-34-125-N-SC	45 - 50
1 1/2"	BK-RFC-OSH-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OSH-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OSH-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OSH-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSH-RFC-64-050-N-SC	16-18
3/4"	BK-RFC-OSH-RFC-64-075-N-SC	25-30
1"	BK-RFC-OSH-RFC-64-100-N-SC	45-50
1 1/4"	BK-RFC-OSH-RFC-64-125-N-SC	85-90
1 1/2"	BK-RFC-OSH-RFC-64-150-N-SC	110-120
2"	BK-RFC-OSH-RFC-64-200-N-SC	120-130

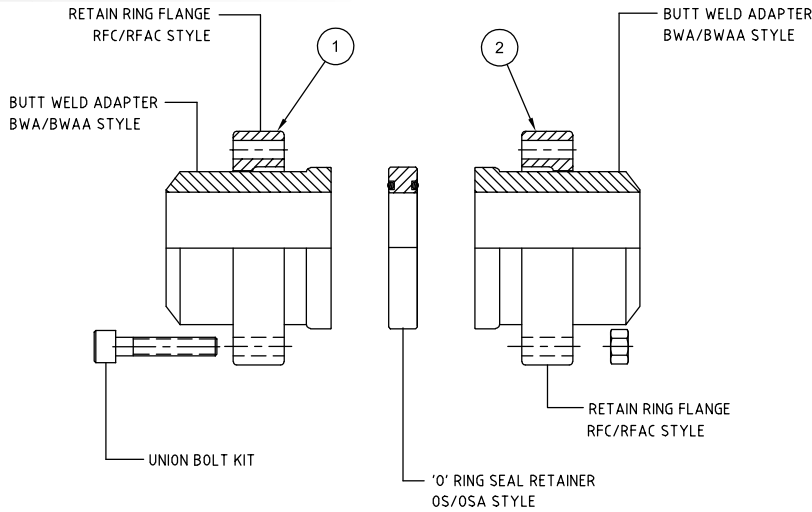
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSH-RFC-74-250-N-SC	120-130
3"	BK-RFC-OSH-RFC-74-300-N-HH	350-400
4"	BK-RFC-OSH-RFC-74-400-N-N	500-550



Bolt Kits - Retain Ring Flange

Butt Weld Adapter Union



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OS-RFC-34-050-N-SC	16 - 18
3/4"	BK-RFC-OS-RFC-34-075-N-SC	25 - 30
1"	BK-RFC-OS-RFC-34-100-N-SC	25 - 30
1 1/4"	BK-RFC-OS-RFC-34-125-N-SC	45 - 50
1 1/2"	BK-RFC-OS-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OS-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OS-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OS-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OS-RFC-64-050-N-SC	16 - 18
3/4"	BK-RFC-OS-RFC-64-075-N-SC	25 - 30
1"	BK-RFC-OS-RFC-64-100-N-SC	45 - 50
1 1/4"	BK-RFC-OS-RFC-64-125-N-SC	85 - 90
1 1/2"	BK-RFC-OS-RFC-64-150-N-SC	110 - 120
2"	BK-RFC-OS-RFC-64-200-N-SC	120 - 130

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OS-RFC-74-250-N-SC	120 - 130
3"	BK-RFC-OS-RFC-74-300-N-HH	350 - 400
4"	BK-RFC-OS-RFC-74-400-N-N	500 - 550

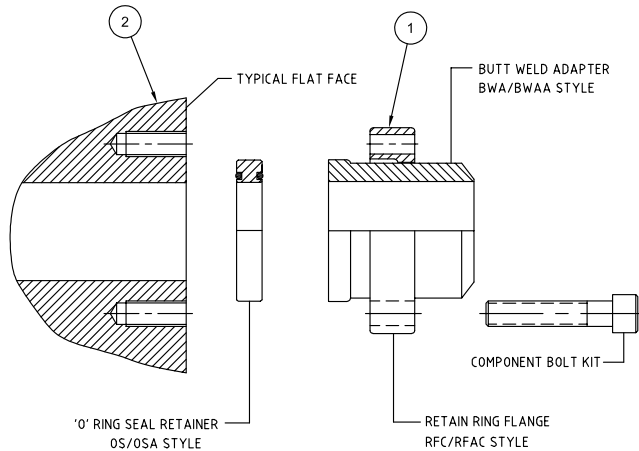
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSA-RFAC-48-500-N-HH	350 - 400
6"	BK-RFAC-OSA-RFAC-48-600-N-N	500 - 550
8"	BK-RFAC-OSA-RFAC-48-800-N-N	1100 - 1200



Bolt Kits - Retain Ring Flange

Butt Weld Adapter to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OS-COMP-34-050-SC	16 - 18
3/4"	BK-RFC-OS-COMP-34-075-SC	25 - 30
1"	BK-RFC-OS-COMP-34-100-SC	25 - 30
1 1/4"	BK-RFC-OS-COMP-34-125-SC	45 - 50
1 1/2"	BK-RFC-OS-COMP-34-150-SC	85 - 90
2"	BK-RFC-OS-COMP-34-200-SC	85 - 90
2 1/2"	BK-RFC-OS-COMP-34-250-SC	85 - 90
3"	BK-RFC-OS-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OS-COMP-64-050-SC	16 - 18
3/4"	BK-RFC-OS-COMP-64-075-SC	25 - 30
1"	BK-RFC-OS-COMP-64-100-SC	45 - 50
1 1/4"	BK-RFC-OS-COMP-64-125-SC	85 - 90
1 1/2"	BK-RFC-OS-COMP-64-150-SC	110 - 120
2"	BK-RFC-OS-COMP-64-200-SC	120 - 130

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OS-COMP-74-250-SC	120 - 130
3"	BK-RFC-OS-COMP-74-300-HH	350 - 400
4"	BK-RFC-OS-COMP-74-400-HH	500 - 550

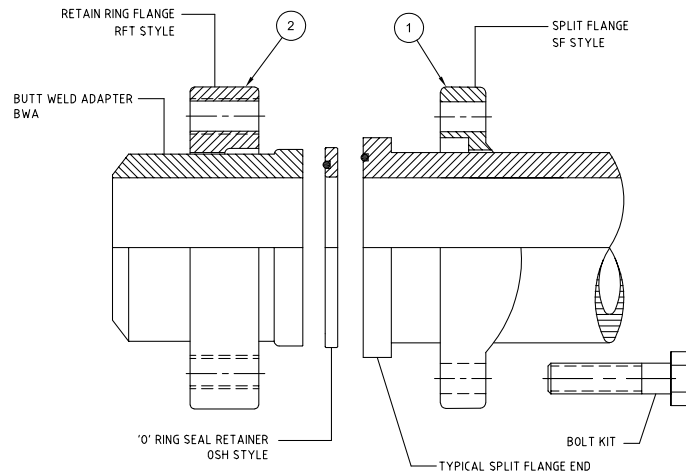
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSA-COMP-48-500-HH	350 - 400
6"	BK-RFAC-OSA-COMP-48-600-HH	500 - 550
8"	BK-RFAC-OSA-COMP-48-800-HH	1100 - 1200



Bolt Kits - Retain Ring Flange

Butt Weld Adapter to SAE Split Flange



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-OSH-RFT-34-050-HH	16 - 18
3/4"	BK-SF-OSH-RFT-34-075-HH	25 - 30
1"	BK-SF-OSH-RFT-34-100-HH	25 - 30
1 1/4"	BK-SF-OSH-RFT-34-125-HH	45 - 50
1 1/2"	BK-SF-OSH-RFT-34-150-HH	85 - 90
2"	BK-SF-OSH-RFT-34-200-HH	85 - 90
2 1/2"	BK-SF-OSH-RFT-34-250-HH	85 - 90
3"	BK-SF-OSH-RFT-34-300-HH	110 - 120

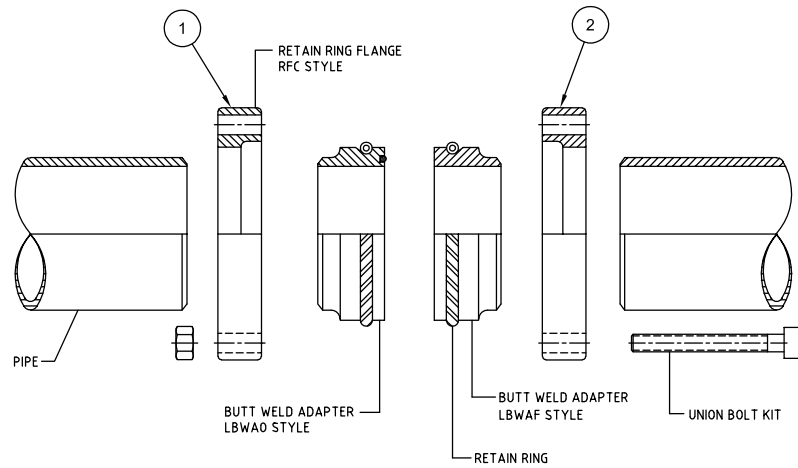
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-OSH-RFT-64-050-HH	16-18
3/4"	BK-SF-OSH-RFT-64-075-HH	25-30
1"	BK-SF-OSH-RFT-64-100-HH	45-50
1 1/4"	BK-SF-OSH-RFT-64-125-HH	85-90
1 1/2"	BK-SF-OSH-RFT-64-150-HH	110-120
2"	BK-SF-OSH-RFT-64-200-HH	120-130



Bolt Kits - Low Pressure Retain Ring Flange

Union Style



TMI® 6-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-RFC-16-250-N-SC	85-90
3"	BK-RFC-RFC-16-300-N-SC	110-120
4"	BK-RFC-RFC-16-400-N-SC	110-120
5"	BK-RFC-RFC-16-500-N-SC	110-120
6"	BK-RFC-RFC-16-600-N-SC	110-120

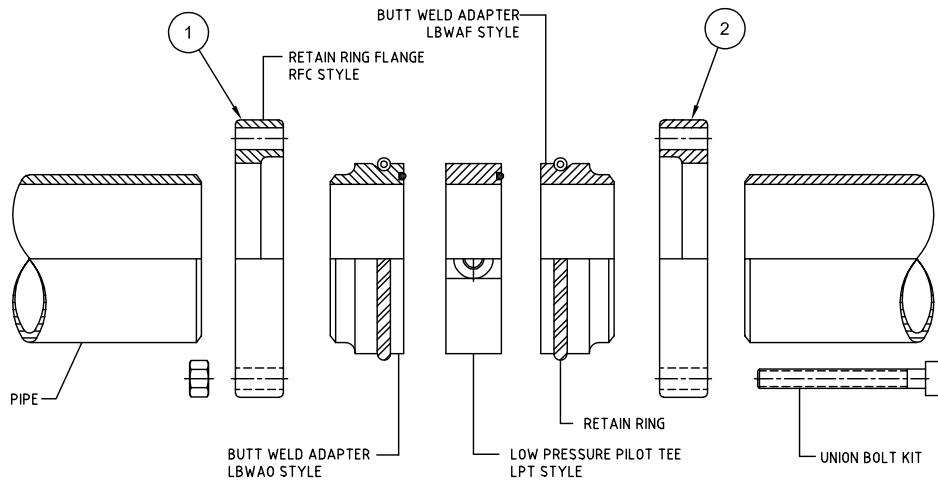
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
8"	BK-RFC-RFC-18-800-N-SC	120 - 130



Bolt Kits - Low Pressure Retain Ring Flange

Union Style with Pilot Tee



TMI® 6-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-LPT-RFC-16-250-N-SC	85-90
3"	BK-RFC-LPT-RFC-16-300-N-SC	110-120
4"	BK-RFC-LPT-RFC-16-400-N-SC	110-120
5"	BK-RFC-LPT-RFC-16-500-N-SC	110-120
6"	BK-RFC-LPT-RFC-16-600-N-SC	110-120

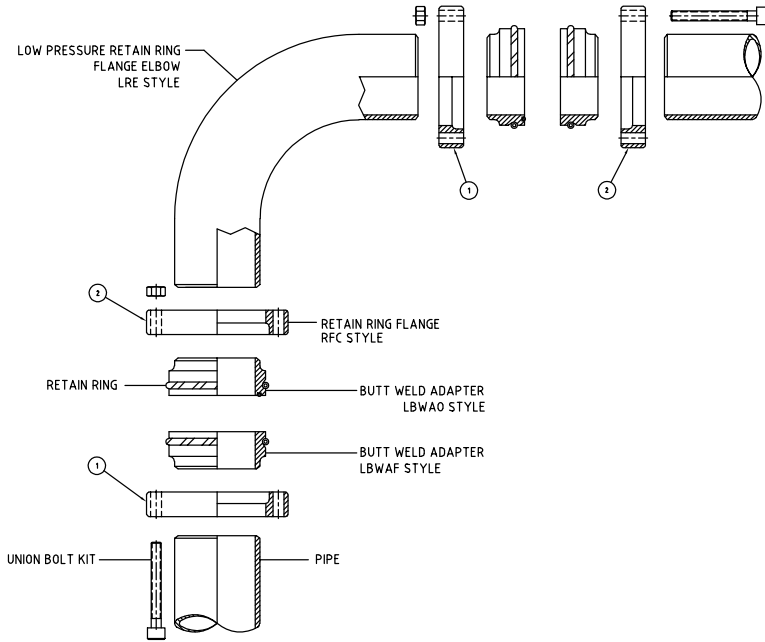
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
8"	BK-RFC-LPT-RFC-18-800-N-SC	120 - 130



Bolt Kits - Low Pressure Retain Ring Flange

Pipe to Retain Ring Component



TMI® 6-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-RFC-16-250-N-SC	85-90
3"	BK-RFC-RFC-16-300-N-SC	110-120
4"	BK-RFC-RFC-16-400-N-SC	110-120
5"	BK-RFC-RFC-16-500-N-SC	110-120
6"	BK-RFC-RFC-16-600-N-SC	110-120

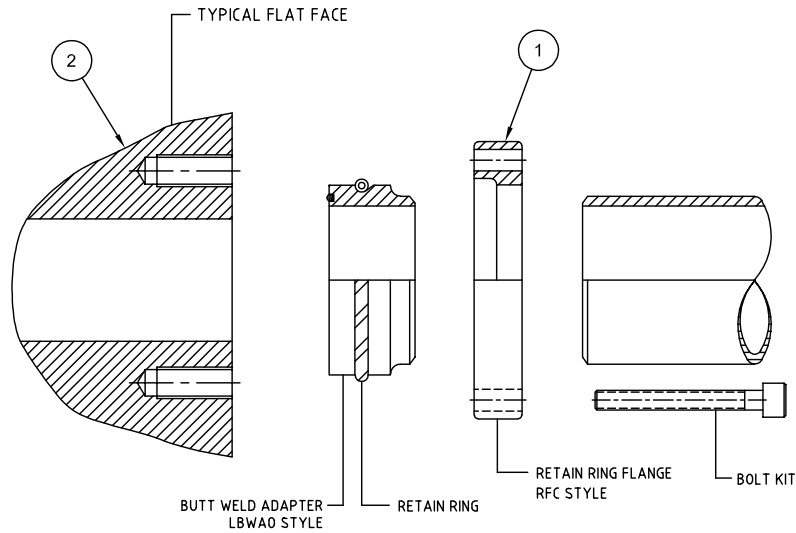
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
8"	BK-RFC-RFC-18-800-N-SC	120 - 130



Bolt Kits - Low Pressure Retain Ring Flange

'O' Ring Face to Flat Face Component



TMI® 6-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-COMP-16-250-SC	85-90
3"	BK-RFC-COMP-16-300-SC	110-120
4"	BK-RFC-COMP-16-400-SC	110-120
5"	BK-RFC-COMP-16-500-SC	110-120
6"	BK-RFC-COMP-16-600-SC	110-120

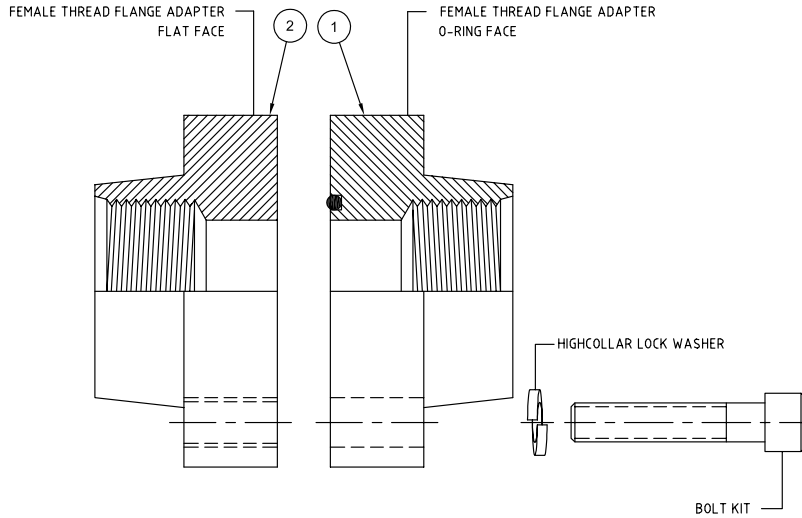
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
8"	BK-RFC-COMP-18-800-SC	120 - 130



Bolt Kits - Female Thread Flange

'O' Ring Face to Flat Face



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No. Female NPT Thread	Bolt Kit Part No. Female SAE Straight Thread	Bolt Torque ft.lbs.
1/2"	BK-NTFO-NTFF-34-050-SC-HLW	BK-STFO-STFF-34-050-SC-HLW	16 - 18
3/4"	BK-NTFO-NTFF-34-075-SC-HLW	BK-STFO-STFF-34-075-SC-HLW	25 - 30
1"	BK-NTFO-NTFF-34-100-SC-HLW	BK-STFO-STFF-34-100-SC-HLW	25 - 30
1 1/4"	BK-NTFO-NTFF-34-125-SC-HLW	BK-STFO-STFF-34-125-SC-HLW	45 - 50
1 1/2"	BK-NTFO-NTFF-34-150-SC-HLW	BK-STFO-STFF-34-150-SC-HLW	85 - 90
2"	BK-NTFO-NTFF-34-200-SC-HLW	BK-STFO-STFF-34-200-SC-HLW	85 - 90
2 1/2"	BK-NTFO-NTFF-34-250-SC-HLW	BK-STFO-STFF-34-250-SC-HLW	85 - 90
3"	BK-NTFO-NTFF-34-300-SC-HLW	BK-STFO-STFF-34-300-SC-HLW	110 - 120

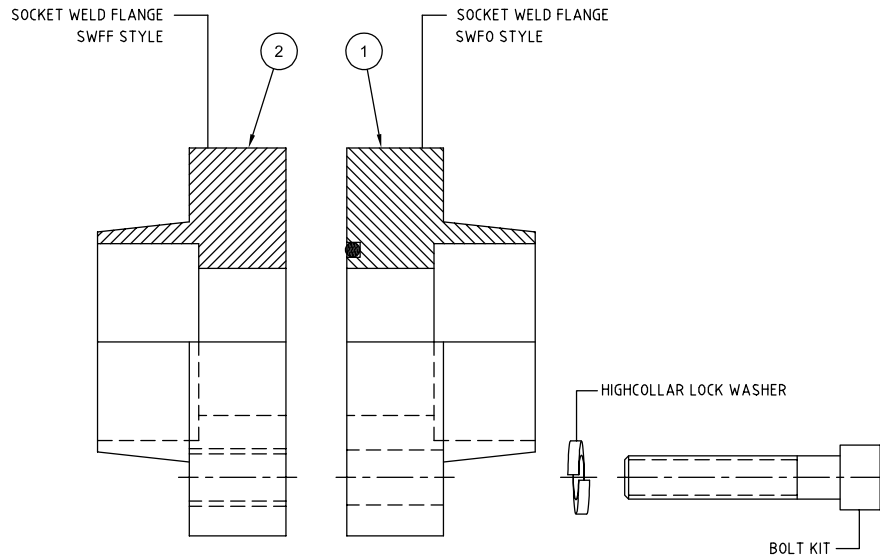
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No. Female NPT Thread	Bolt Kit Part No. Female SAE Straight Thread	Bolt Torque ft.lbs.
1/2"	BK-NTFO-NTFF-64-050-SC-HLW	BK-STFO-STFF-64-050-SC-HLW	16 - 18
3/4"	BK-NTFO-NTFF-64-075-SC-HLW	BK-STFO-STFF-64-075-SC-HLW	25 - 30
1"	BK-NTFO-NTFF-64-100-SC-HLW	BK-STFO-STFF-64-100-SC-HLW	45 - 50
1 1/4"	BK-NTFO-NTFF-64-125-SC-HLW	BK-STFO-STFF-64-125-SC-HLW	85 - 90
1 1/2"	BK-NTFO-NTFF-64-150-SC-HLW	BK-STFO-STFF-64-150-SC-HLW	110 - 120
2"	BK-NTFO-NTFF-64-200-SC-HLW	BK-STFO-STFF-64-200-SC-HLW	120 - 130



Bolt Kits - Socket Weld Flange

'O' Ring Face to Flat Face



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SWFO-SWFF-34-050-SC-HLW	16-18
3/4"	BK-SWFO-SWFF-34-075-SC-HLW	25-30
1"	BK-SWFO-SWFF-34-100-SC-HLW	25-30
1 1/4"	BK-SWFO-SWFF-34-125-SC-HLW	45-50
1 1/2"	BK-SWFO-SWFF-34-150-SC-HLW	85-90
2"	BK-SWFO-SWFF-34-200-SC-HLW	85-90
2 1/2"	BK-SWFO-SWFF-34-250-SC-HLW	85-90
3"	BK-SWFO-SWFF-34-300-SC-HLW	110-120
4"	BK-SWFO-SWFF-34-400-SC-HLW	110-120

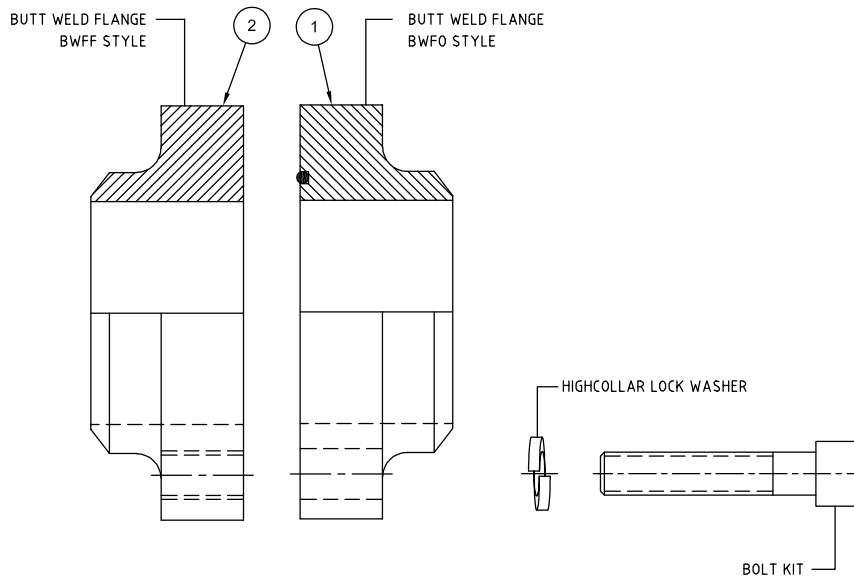
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SWFO-SWFF-64-050-SC-HLW	16-18
3/4"	BK-SWFO-SWFF-64-075-SC-HLW	25-30
1"	BK-SWFO-SWFF-64-100-SC-HLW	45-50
1 1/4"	BK-SWFO-SWFF-64-125-SC-HLW	85-90
1 1/2"	BK-SWFO-SWFF-64-150-SC-HLW	110-120
2"	BK-SWFO-SWFF-64-200-SC-HLW	120-130



Bolt Kits - Butt Weld Flange

'O' Ring Face to Flat Face



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-BWFO-BWFF-34-050-SC-HLW	16 - 18
3/4"	BK-BWFO-BWFF-34-075-SC-HLW	25 - 30
1"	BK-BWFO-BWFF-34-100-SC-HLW	25 - 30
1 1/4"	BK-BWFO-BWFF-34-125-SC-HLW	45 - 50
1 1/2"	BK-BWFO-BWFF-34-150-SC-HLW	85 - 90
2"	BK-BWFO-BWFF-34-200-SC-HLW	85 - 90
2 1/2"	BK-BWFO-BWFF-34-250-SC-HLW	85 - 90
3"	BK-BWFO-BWFF-34-300-SC-HLW	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

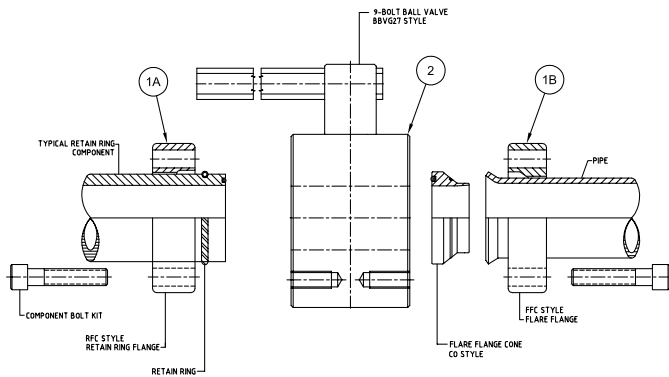
Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-BWFO-BWFF-64-050-SC-HLW	16-18
3/4"	BK-BWFO-BWFF-64-075-SC-HLW	25-30
1"	BK-BWFO-BWFF-64-100-SC-HLW	45-50
1 1/4"	BK-BWFO-BWFF-64-125-SC-HLW	85-90
1 1/2"	BK-BWFO-BWFF-64-150-SC-HLW	110-120
2"	BK-BWFO-BWFF-64-200-SC-HLW	120-130



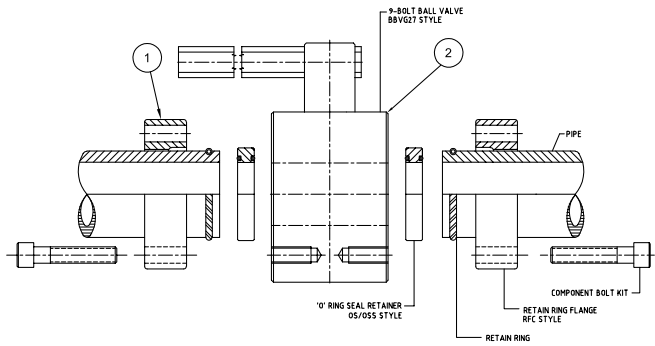
Bolt Kits - 9-Bolt Ball Valve (BBVG27)

Connections

'O' Ring Face Connections



Retain Ring Pipe Connection



TMI® 9-Bolt - 'O' Ring Face Retain Ring Component Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-BV-49-250	85-90
3"	BK-RFC-BV-49-300	110-120
4"	BK-RFC-OSHS-BV-49-400	110-120

Note: Must use OSHS with 4" Connection

TMI® 9-Bolt - O-Ring Face Flare Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-BV-49-250	85-90
3"	BK-FFC-BV-49-300	110-120

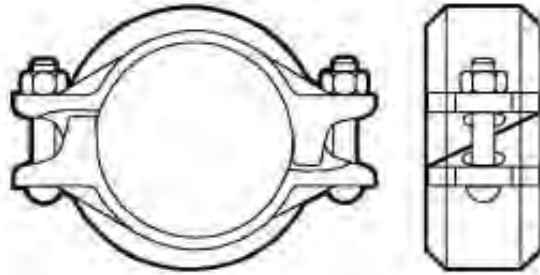
TMI® 9-Bolt - Retain Ring Pipe Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OS-BV-49-250	85 - 90
3"	BK-RFC-OS-BV-49-300	110 - 120
4"	BK-RFC-OSS-BV-49-400	110 - 120
5"	BK-RFC-OSA-BV-49-500	120 - 130



Bolt Kits - Roll/Cut Grooved

Zero-Flex® Coupling Bolts



Standard Rigid Grooved Coupling - 2-Bolt Oval Neck Configuration Style

Complete with Extra Heavy Nut

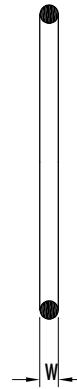
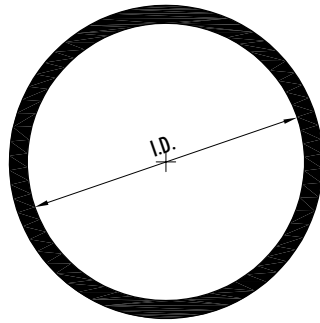
Size	Bolt Kit Part No.
2 1/2"	BKG2-0.50 x 2.75-N
3"	BKG2-0.50 x 2.50-N
4"	BKG2-0.50 x 2.75-N
5"	BKG2-0.63 x 3.25-N
6"	BKG2-0.63 x 3.25-N
8"	BKG2-0.75 x 3.25-N

MATERIAL: CARBON STEEL, (STAINLESS STEEL AND OTHER ALLOYS ARE AVAILABLE UPON REQUEST)



Elastomer Seals

'O' Ring



OR 'O' Ring

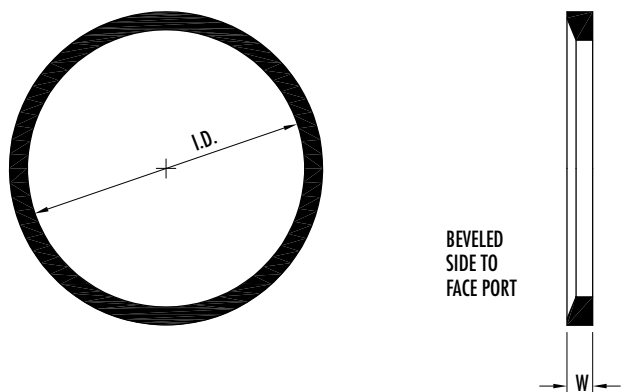
'O' Ring (BUNA) Part No.	'O' Ring (VITON) Part No.	Dimensions(in) I.D. x W
OR-2-210	ORV-2-210	.734 x .139
OR-2-214	ORV-2-214	.984 x .139
OR-2-219	ORV-2-219	1.296 x .139
OR-2-222	ORV-2-222	1.484 x .139
OR-2-225	ORV-2-225	1.859 x .139
OR-2-228	ORV-2-228	2.234 x .139
OR-2-232	ORV-2-232	2.734 x .139
OR-2-237	ORV-2-237	3.359 x .139
OR-2-241	ORV-2-241	3.859 x .139
OR-2-243	ORV-2-243	4.109 x .139
OR-2-245	ORV-2-245	4.359 x .139
OR-2-253	ORV-2-253	5.359 x .139
OR-2-259	ORV-2-259	6.234 x .139
OR-2-353	ORV-2-353	4.975 x .210
OR-2-359	ORV-2-359	5.725 x .210
OR-2-368	ORV-2-368	7.725 x .210
OR-2-372	ORV-2-372	8.725 x .210
OR-3-906	ORV-3-906	.468 x .078
OR-3-908	ORV-3-908	.644 x .087
OR-3-909	ORV-3-909	.706 x .097
OR-3-910	ORV-3-910	.755 x .097
OR-3-912	ORV-3-912	.924 x .116
OR-3-913	ORV-3-913	.986 x .116
OR-3-916	ORV-3-916	1.171 x .116
OR-3-918	ORV-3-918	1.355 x .116
OR-3-920	ORV-3-920	1.475 x .118
OR-3-924	ORV-3-924	1.720 x .118
OR-3-928	ORV-3-928	2.090 x .118
OR-3-932	ORV-3-932	2.337 x .118

'O' Ring (BUNA) Part No.	'O' Ring (VITON) Part No.	Dimensions(mm) I.D. x W
OR-1715	ORV-1715	17 x 1.5
OR-1915	ORV-1915	19 x 1.5
OR-2315	ORV-2315	23 x 1.5
OR-2515	ORV-2515	25 x 1.5
OR-2815	ORV-2815	28 x 1.5
OR-3015	ORV-3015	30 x 1.5
OR-3815	ORV-3815	38 x 1.5
OR-4315	ORV-4315	43 x 1.5
OR-5615	ORV-5615	56 x 1.5
OR-6515	ORV-6515	65 x 1.5
OR-8015	ORV-8015	80 x 1.5

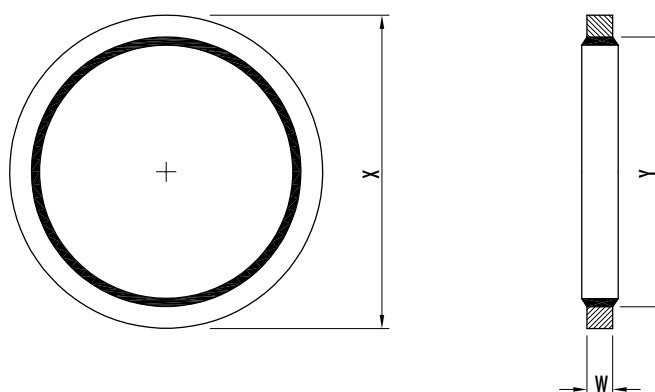
Elastomer Seals



'D' Ring



Bonded Seal



DR 'D' Ring

'D' Ring (BUNA) Part No.	'D' Ring (VITON) Part No.	Dimensions(mm) I.D. x W
DR-G050	DRV-G050	18.5 x 1.5
DR-G075	DRV-G075	23.9 x 1.5
DR-G100	DRV-G100	29.7 x 2
DR-G125	DRV-G125	38.8 x 2
DR-G150	DRV-G150	44.7 x 2

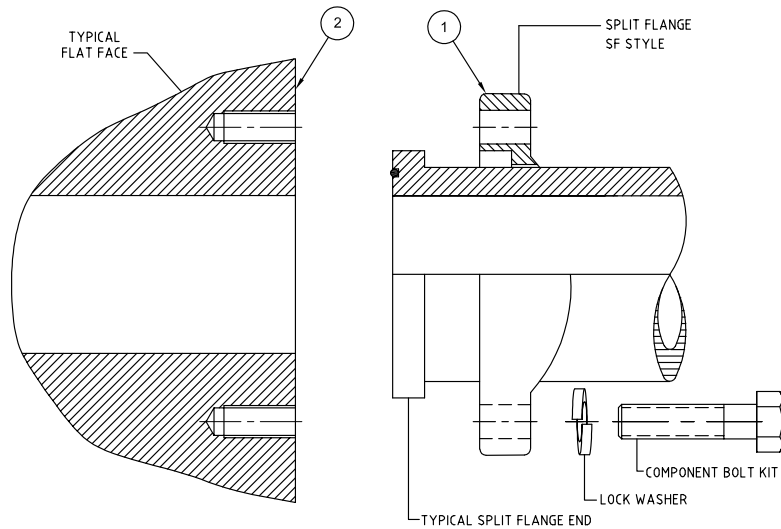
BS Bonded Seal

Bonded Seal (BUNA) Part No.	Bonded Seal (VITON) Part No.	Dimensions (in)		
		X	Y	W
BS-3236	BSV-3236	2.875	2.380	.128



Bolt Kits - SAE Split Flange

Split Flange to Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-COMP-34-050-HH-LW	16-18
3/4"	BK-SF-COMP-34-075-HH-LW	25-30
1"	BK-SF-COMP-34-100-HH-LW	25-30
1 1/4"	BK-SF-COMP-34-125-HH-LW	45-50
1 1/2"	BK-SF-COMP-34-150-HH-LW	85-90
2"	BK-SF-COMP-34-200-HH-LW	85-90
2 1/2"	BK-SF-COMP-34-250-HH-LW	85-90
3"	BK-SF-COMP-34-300-HH-LW	110-120
4"	BK-SF-COMP-34-400-HH-LW	110-120

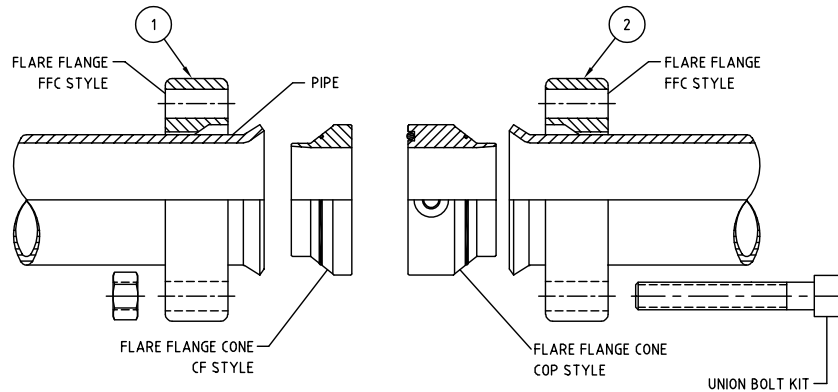
SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-SF-COMP-64-050-HH-LW	16-18
3/4"	BK-SF-COMP-64-075-HH-LW	25-30
1"	BK-SF-COMP-64-100-HH-LW	45-50
1 1/4"	BK-SF-COMP-64-125-HH-LW	85-90
1 1/2"	BK-SF-COMP-64-150-HH-LW	110-120
2"	BK-SF-COMP-64-200-HH-LW	120-130



Bolt Kits - Flare Flange with Pilot Port Connection

Union Style - 'O' Ring Face Cone with Pilot Port



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COP-FFC-34-050-N-SC	16 - 18
3/4"	BK-FFC-COP-FFC-34-075-N-SC	25 - 30
1"	BK-FFC-COP-FFC-34-100-N-SC	25 - 30
1 1/4"	BK-FFC-COP-FFC-34-125-N-SC	45 - 50
1 1/2"	BK-FFC-COP-FFC-34-150-N-SC	85 - 90
2"	BK-FFC-COP-FFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-COP-FFC-34-250-N-SC	85 - 90
3"	BK-FFC-COP-FFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COP-FFC-64-050-N-SC	16-18
3/4"	BK-FFC-COP-FFC-64-075-N-SC	25-30
1"	BK-FFC-COP-FFC-64-100-N-SC	45-50
1 1/4"	BK-FFC-COP-FFC-64-125-N-SC	85-90
1 1/2"	BK-FFC-COP-FFC-64-150-N-SC	110-120
2"	BK-FFC-COP-FFC-64-200-N-SC	120-130

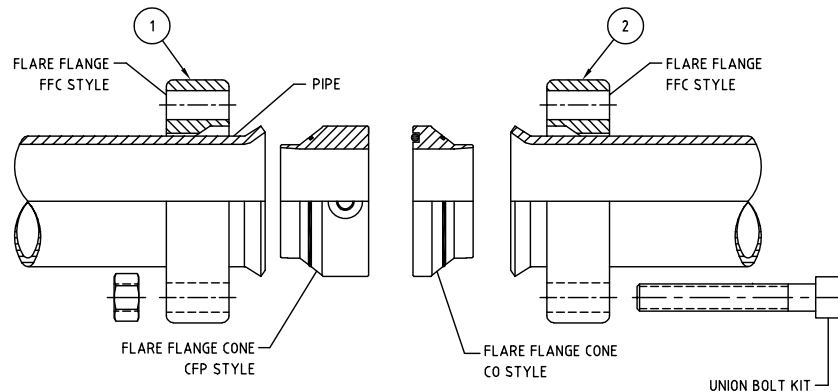
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-COP-FFC-74-250-N-SC	120 - 130
3"	BK-FFC-COP-FFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange with Pilot Port Connection

Union Style - Flat Face Cone with Pilot Port



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-CFP-FFC-34-050-N-SC	16 - 18
3/4"	BK-FFC-CFP-FFC-34-075-N-SC	25 - 30
1"	BK-FFC-CFP-FFC-34-100-N-SC	25 - 30
1 1/4"	BK-FFC-CFP-FFC-34-125-N-SC	45 - 50
1 1/2"	BK-FFC-CFP-FFC-34-150-N-SC	85 - 90
2"	BK-FFC-CFP-FFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-CFP-FFC-34-250-N-SC	85 - 90
3"	BK-FFC-CFP-FFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-CFP-FFC-64-050-N-SC	16-18
3/4"	BK-FFC-CFP-FFC-64-075-N-SC	25-30
1"	BK-FFC-CFP-FFC-64-100-N-SC	45-50
1 1/4"	BK-FFC-CFP-FFC-64-125-N-SC	85-90
1 1/2"	BK-FFC-CFP-FFC-64-150-N-SC	110-120
2"	BK-FFC-CFP-FFC-64-200-N-SC	120-130

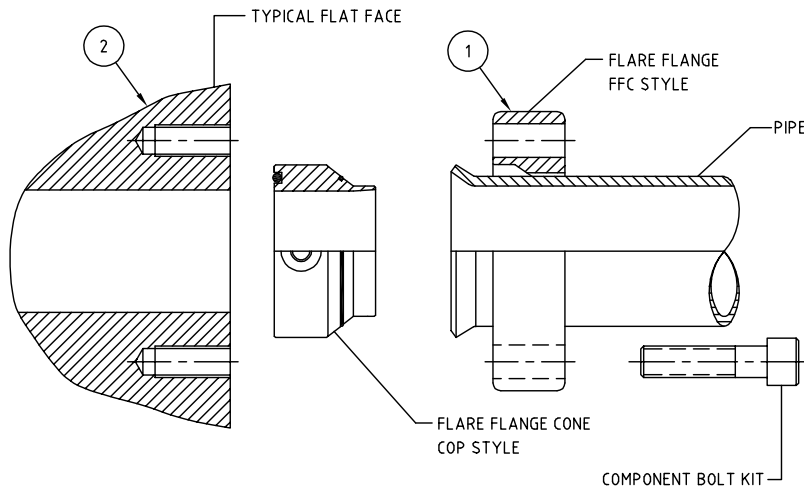
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-CFP-FFC-74-250-N-SC	120 - 130
3"	BK-FFC-CFP-FFC-74-300-N-HH	350 - 400



Bolt Kits - Flare Flange with Pilot Port Connection

Flare Flange to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COP-COMP-34-050-SC	16 - 18
3/4"	BK-FFC-COP-COMP-34-075-SC	25 - 30
1"	BK-FFC-COP-COMP-34-100-SC	25 - 30
1 1/4"	BK-FFC-COP-COMP-34-125-SC	45 - 50
1 1/2"	BK-FFC-COP-COMP-34-150-SC	85 - 90
2"	BK-FFC-COP-COMP-34-200-SC	85 - 90
2 1/2"	BK-FFC-COP-COMP-34-250-SC	85 - 90
3"	BK-FFC-COP-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-COP-COMP-64-050-SC	16-18
3/4"	BK-FFC-COP-COMP-64-075-SC	25-30
1"	BK-FFC-COP-COMP-64-100-SC	45-50
1 1/4"	BK-FFC-COP-COMP-64-125-SC	85-90
1 1/2"	BK-FFC-COP-COMP-64-150-SC	110-120
2"	BK-FFC-COP-COMP-64-200-SC	120-130

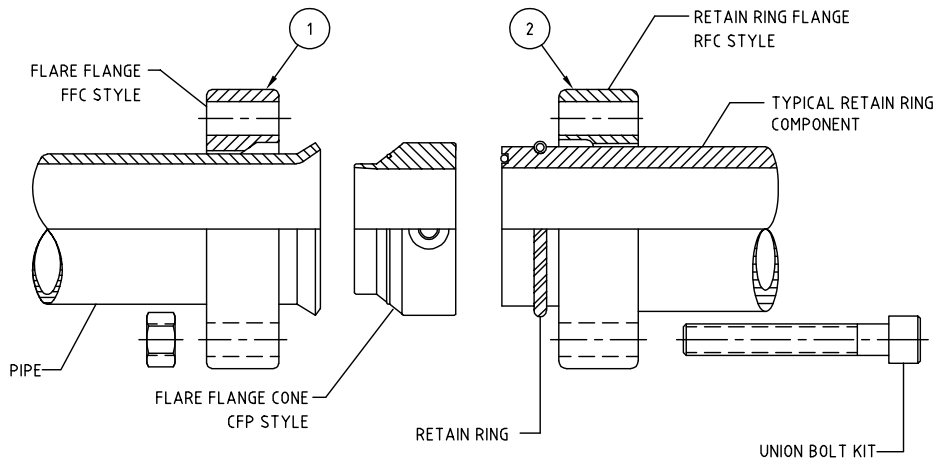
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-COP-COMP-74-250-SC	120 - 130
3"	BK-FFC-COP-COMP-74-300-HH	350 - 400



Bolt Kits - Flare Flange with Pilot Port Connection

Flare Flange to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-CFP-RFC-34-050-N-SC	16 - 18
3/4"	BK-FFC-CFP-RFC-34-075-N-SC	25 - 30
1"	BK-FFC-CFP-RFC-34-100-N-SC	25 - 30
1 1/4"	BK-FFC-CFP-RFC-34-125-N-SC	45 - 50
1 1/2"	BK-FFC-CFP-RFC-34-150-N-SC	85 - 90
2"	BK-FFC-CFP-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-FFC-CFP-RFC-34-250-N-SC	85 - 90
3"	BK-FFC-CFP-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-FFC-CFP-RFC-64-050-N-SC	16-18
3/4"	BK-FFC-CFP-RFC-64-075-N-SC	25-30
1"	BK-FFC-CFP-RFC-64-100-N-SC	45-50
1 1/4"	BK-FFC-CFP-RFC-64-125-N-SC	85-90
1 1/2"	BK-FFC-CFP-RFC-64-150-N-SC	110-120
2"	BK-FFC-CFP-RFC-64-200-N-SC	120-130

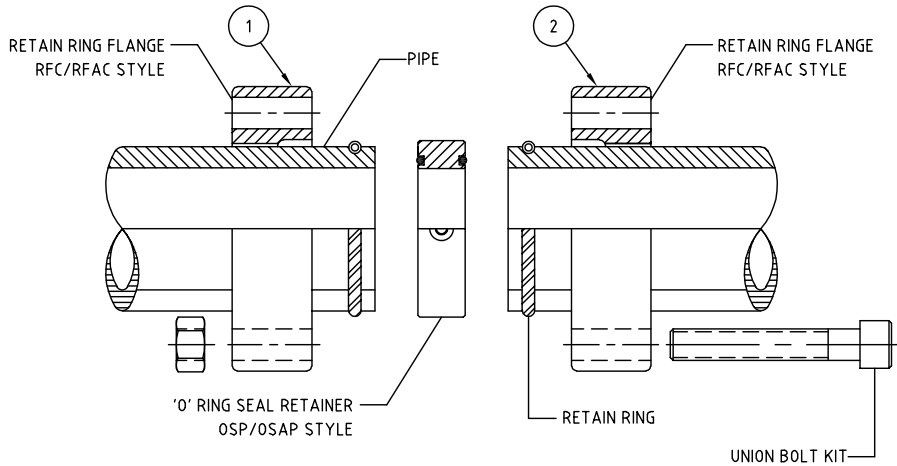
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-FFC-CFP-RFC-74-250-N-SC	120 - 130
3"	BK-FFC-CFP-RFC-74-300-N-HH	350 - 400



Bolt Kits - Retain Ring Flange with Pilot Port Connection

Pipe Union



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSP-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OSP-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OSP-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OSP-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSP-RFC-64-150-N-SC	120 - 130
2"	BK-RFC-OSP-RFC-64-200-N-SC	350 - 400

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSP-RFC-74-250-N-SC	120-130
3"	BK-RFC-OSP-RFC-74-300-N-HH	350-400
4"	BK-RFC-OSP-RFC-74-400-N-N	500-550

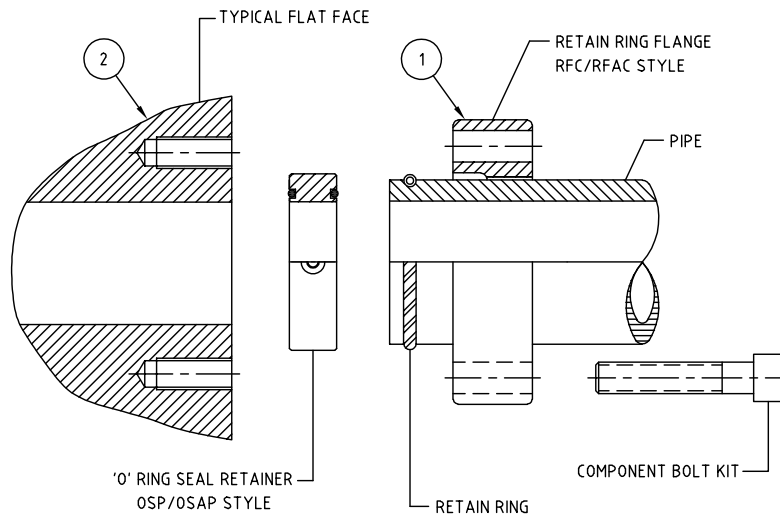
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSAP-RFAC-48-500-N-HH	350-400
6"	BK-RFAC-OSAP-RFAC-48-600-N-N	500-550
8"	BK-RFAC-OSAP-RFAC-48-800-N-N	1100-1200



Bolt Kits - Retain Ring Flange with Pilot Port Connection

Pipe to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSP-COMP-34-150-SC	85 - 90
2"	BK-RFC-OSP-COMP-34-200-SC	85 - 90
2 1/2"	BK-RFC-OSP-COMP-34-250-SC	85 - 90
3"	BK-RFC-OSP-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1 1/2"	BK-RFC-OSP-COMP-64-150-SC	110 - 120
2"	BK-RFC-OSP-COMP-64-200-SC	120 - 130

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSP-COMP-74-250-SC	120-130
3"	BK-RFC-OSP-COMP-74-300-HH	350-400
4"	BK-RFC-OSP-COMP-74-400-HH	500-550

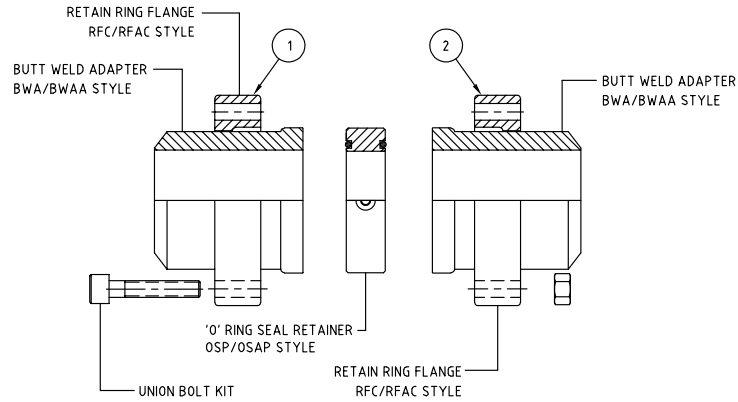
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSAP-COMP-48-500-HH	350-400
6"	BK-RFAC-OSAP-COMP-48-600-HH	500-550
8"	BK-RFAC-OSAP-COMP-48-800-HH	1100-1200



Bolt Kits - Retain Ring Flange with Pilot Port Connection

Butt Weld Adapter Union



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSP-RFC-34-050-N-SC	16 - 18
3/4"	BK-RFC-OSP-RFC-34-075-N-SC	25 - 30
1"	BK-RFC-OSP-RFC-34-100-N-SC	25 - 30
1 1/4"	BK-RFC-OSP-RFC-34-125-N-SC	45 - 50
1 1/2"	BK-RFC-OSP-RFC-34-150-N-SC	85 - 90
2"	BK-RFC-OSP-RFC-34-200-N-SC	85 - 90
2 1/2"	BK-RFC-OSP-RFC-34-250-N-SC	85 - 90
3"	BK-RFC-OSP-RFC-34-300-N-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSP-RFC-64-050-N-SC	16-18
3/4"	BK-RFC-OSP-RFC-64-075-N-SC	25-30
1"	BK-RFC-OSP-RFC-64-100-N-SC	45-50
1 1/4"	BK-RFC-OSP-RFC-64-125-N-SC	85-90
1 1/2"	BK-RFC-OSP-RFC-64-150-N-SC	110-120
2"	BK-RFC-OSP-RFC-64-200-N-SC	120-130

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSP-RFC-74-250-N-SC	120-130
3"	BK-RFC-OSP-RFC-74-300-N-HH	350-400
4"	BK-RFC-OSP-RFC-74-400-N-N	500-550

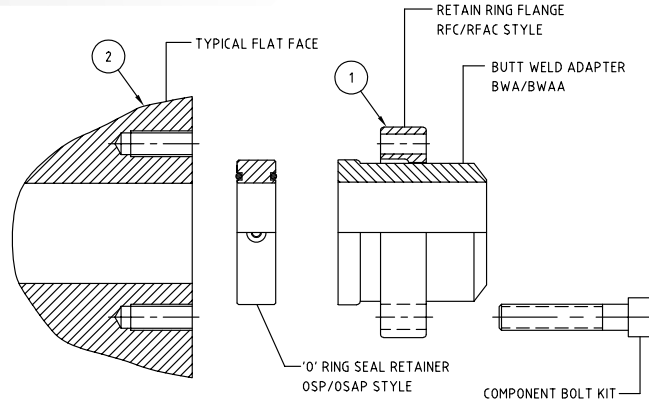
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSAP-RFAC-48-500-N-HH	350-400
6"	BK-RFAC-OSAP-RFAC-48-600-N-N	500-550
8"	BK-RFAC-OSAP-RFAC-48-800-N-N	1100-1200



Bolt Kits - Retain Ring Flange with Pilot Port Connection

Butt Weld Adapter to Flat Face Component



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSP-COMP-34-050-SC	16 - 18
3/4"	BK-RFC-OSP-COMP-34-075-SC	25 - 30
1"	BK-RFC-OSP-COMP-34-100-SC	25 - 30
1 1/4"	BK-RFC-OSP-COMP-34-125-SC	45 - 50
1 1/2"	BK-RFC-OSP-COMP-34-150-SC	85 - 90
2"	BK-RFC-OSP-COMP-34-200-SC	85 - 90
2 1/2"	BK-RFC-OSP-COMP-34-250-SC	85 - 90
3"	BK-RFC-OSP-COMP-34-300-SC	110 - 120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-RFC-OSP-COMP-64-050-SC	16-18
3/4"	BK-RFC-OSP-COMP-64-075-SC	25-30
1"	BK-RFC-OSP-COMP-64-100-SC	45-50
1 1/4"	BK-RFC-OSP-COMP-64-125-SC	85-90
1 1/2"	BK-RFC-OSP-COMP-64-150-SC	110-120
2"	BK-RFC-OSP-COMP-64-200-SC	120-130

ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-RFC-OSP-COMP-74-250-SC	120-130
3"	BK-RFC-OSP-COMP-74-300-HH	350-400
4"	BK-RFC-OSP-COMP-74-400-HH	500-550

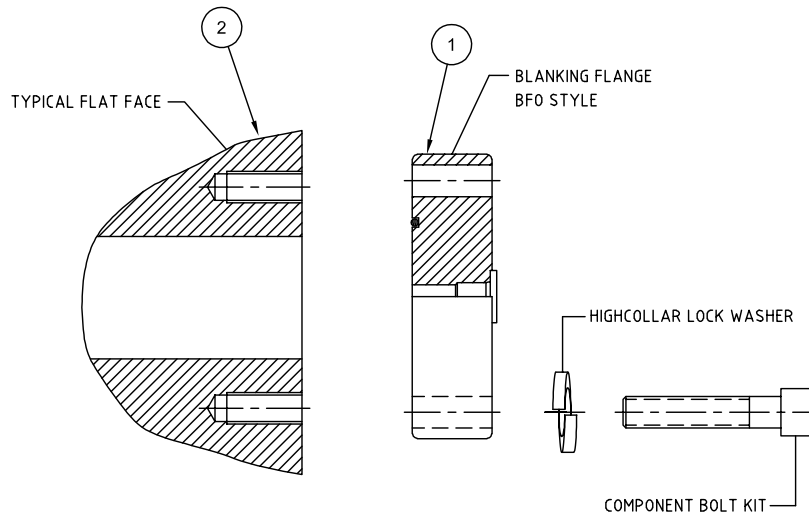
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-RFAC-OSAP-COMP-48-500-HH	350-400
6"	BK-RFAC-OSAP-COMP-48-600-HH	500-550
8"	BK-RFAC-OSAP-COMP-48-800-HH	1100-1200



Bolt Kits - Blanking Flange to Flat Face Component

SAE Code 61, SAE Code 62, ISO 6164



SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-BFO-COMP-34-050-SC-HLW	16-18
3/4"	BK-BFO-COMP-34-075-SC-HLW	25-30
1"	BK-BFO-COMP-34-100-SC-HLW	25-30
1 1/4"	BK-BFO-COMP-34-125-SC-HLW	45-50
1 1/2"	BK-BFO-COMP-34-150-SC-HLW	85-90
2"	BK-BFO-COMP-34-200-SC-HLW	85-90
2 1/2"	BK-BFO-COMP-34-250-SC-HLW	85-90
3"	BK-BFO-COMP-34-300-SC-HLW	110-120
4"	BK-BFO-COMP-34-400-SC-HLW	110-120

SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-BFO-COMP-64-050-SC-HLW	16-18
3/4"	BK-BFO-COMP-64-075-SC-HLW	25-30
1"	BK-BFO-COMP-64-100-SC-HLW	45-50
1 1/4"	BK-BFO-COMP-64-125-SC-HLW	85-90
1 1/2"	BK-BFO-COMP-64-150-SC-HLW	110-120
2"	BK-BFO-COMP-64-200-SC-HLW	120-130

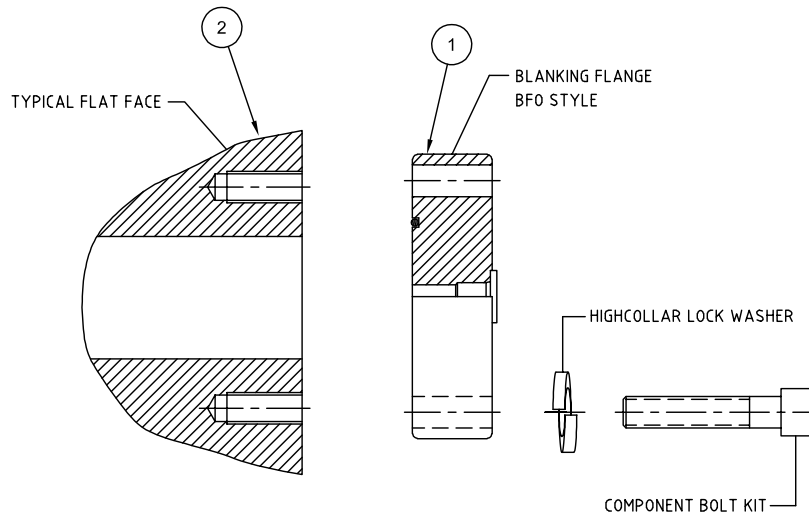
ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-BFO-COMP-74-250-SC-HLW	120-130
3"	BK-BFO-COMP-74-300-SC-HLW	350-400
4"	BK-BFO-COMP-74-300-SC-HLW	500-550



Bolt Kits - Blanking Flange to Flat Face Component

TMI 8-Bolt, TMI 9-Bolt



TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"	BK-BFO-COMP-48-500-SC-HLW	350-400
6"	BK-BFO-COMP-48-600-SC-HLW	350-400
8"	BK-BFO-COMP-48-800-SC-HLW	350-400

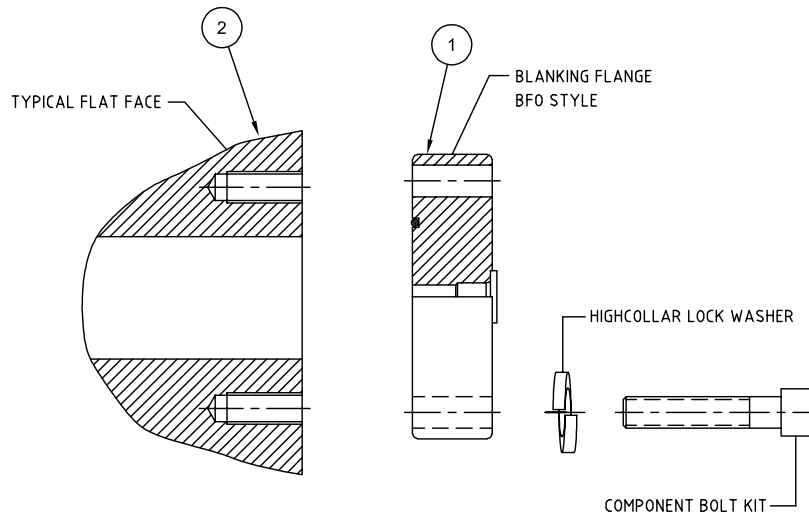
TMI® 9-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-BFO-COMP-49-250-SC-HLW	85-90
3"	BK-BFO-COMP-49-300-SC-HLW	110-120
4"	BK-BFO-COMP-49-400-SC-HLW	110-120
5"	BK-BFO-COMP-49-500-SC-HLW	120-130



Bolt Kits - Low Pressure Blanking Flange to Flat Face Component

TMI 6-Bolt, TMI 8-Bolt



TMI® 6-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-BFO-COMP-16-250-SC-HLW	85-90
3"	BK-BFO-COMP-16-300-SC-HLW	110-120
4"	BK-BFO-COMP-16-400-SC-HLW	110-120
5"	BK-BFO-COMP-16-500-SC-HLW	110-120
6"	BK-BFO-COMP-16-600-SC-HLW	110-120

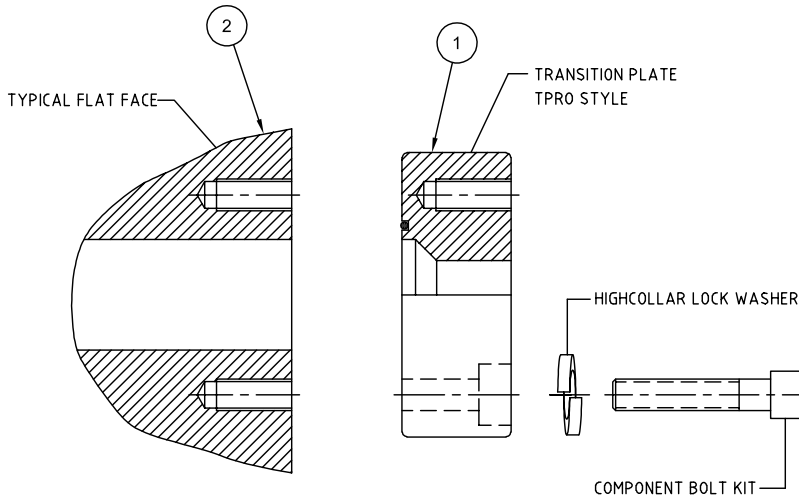
TMI® 8-Bolt - Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
8"	BK-BFO-COMP-18-800-SC-HLW	120-130



Bolt Kits - Transition Plate Reducer

Manifold Mount Style to Flat Face Component - SAE Code 61



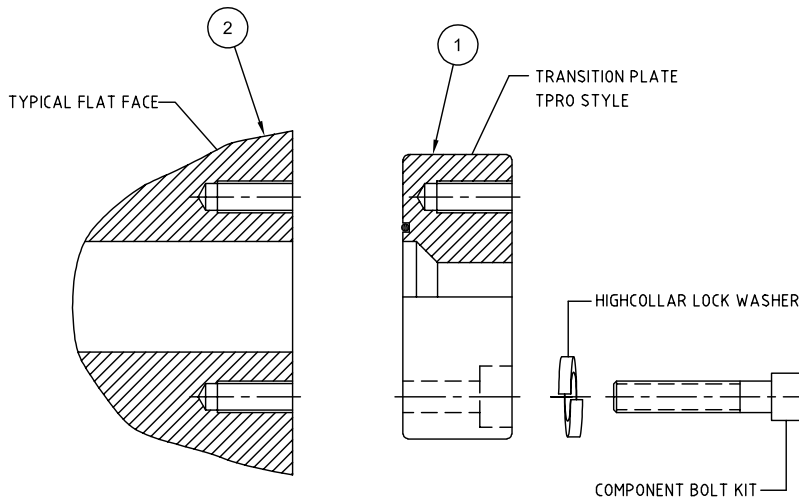
SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
3/4"x1/2"	BK-TPRO-COMP-34-075x050-SC-HLW	25-30
1"x1/2"	BK-TPRO-COMP-34-100x050-SC-HLW	25-30
1"x3/4"	BK-TPRO-COMP-34-100x075-SC-HLW	25-30
1 1/4"x3/4"	BK-TPRO-COMP-34-125x075-SC-HLW	45-50
1 1/4"x1"	BK-TPRO-COMP-34-125x100-SC-HLW	45-50
1 1/2"x 1"	BK-TPRO-COMP-34-150x100-SC-HLW	85-90
1 1/2"x1 1/4"	BK-TPRO-COMP-34-150x125-SC-HLW	85-90
2"x1 1/4"	BK-TPRO-COMP-34-200x125-SC-HLW	85-90
2"x1 1/2"	BK-TPRO-COMP-34-200x150-SC-HLW	85-90
2 1/2"x 1 1/2"	BK-TPRO-COMP-34-250x150-SC-HLW	85-90
2 1/2"x2"	BK-TPRO-COMP-34-250x200-SC-HLW	85-90
3"x2"	BK-TPRO-COMP-34-300x200-SC-HLW	110-120
3"x2 1/2"	BK-TPRO-COMP-34-300x250-SC-HLW	110-120



Bolt Kits - Transition Plate Reducer

Manifold Mount Style to Flat Face Component - SAE Code 62, SAE Code 62-SAE Code 61



SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
3/4"x1/2"	BK-TPRO-COMP-64-075x050-SC-HLW	25-30
1"x1/2"	BK-TPRO-COMP-64-100x050-SC-HLW	45-50
1"x3/4"	BK-TPRO-COMP-64-100x075-SC-HLW	45-50
1 1/4"x3/4"	BK-TPRO-COMP-64-125x075-SC-HLW	85-90
1 1/4"x1"	BK-TPRO-COMP-64-125x100-SC-HLW	85-90
1 1/2"x 1"	BK-TPRO-COMP-64-150x100-SC-HLW	110-120
1 1/2"x1 1/4"	BK-TPRO-COMP-64-150x125-SC-HLW	110-120
2"x1 1/4"	BK-TPRO-COMP-64-200x125-SC-HLW	120-130
2"x1 1/2"	BK-TPRO-COMP-64-200x150-SC-HLW	120-130

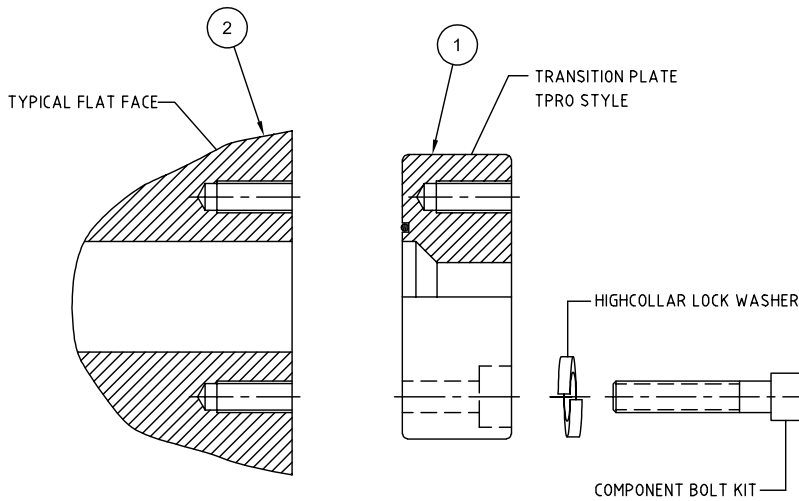
SAE Code 62/Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
3/4"x1/2"	BK-TPRO-COMP-6-34-075x050-SC-HLW	25-30
1"x1/2"	BK-TPRO-COMP-6-34-100x050-SC-HLW	45-50
1"x3/4"	BK-TPRO-COMP-6-34-100x075-SC-HLW	45-50
1 1/4"x3/4"	BK-TPRO-COMP-6-34-125x075-SC-HLW	85-90
1 1/4"x1"	BK-TPRO-COMP-6-34-125x100-SC-HLW	85-90
1 1/2"x 1"	BK-TPRO-COMP-6-34-150x100-SC-HLW	110-120
1 1/2"x1 1/4"	BK-TPRO-COMP-6-34-150x125-SC-HLW	110-120
2"x1 1/4"	BK-TPRO-COMP-6-34-200x125-SC-HLW	120-130
2"x1 1/2"	BK-TPRO-COMP-6-34-200x150-SC-HLW	120-130



Bolt Kits - Transition Plate Reducer

Manifold Mount Style to Flat Face Component - ISO 6164, ISO 6164/SAE Code 61, ISO 6164/SAE Code 62



ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
3"x2 1/2"	BK-TPRO-COMP-74-300x250-SC-HLW	350-400
4"x2 1/2"	BK-TPRO-COMP-74-400x250-SC-HLW	500-550
4"x3"	BK-TPRO-COMP-74-400x300-SC-HLW	500-550

ISO 6164/SAE Code 61 - 4-Bolt Flange Connection

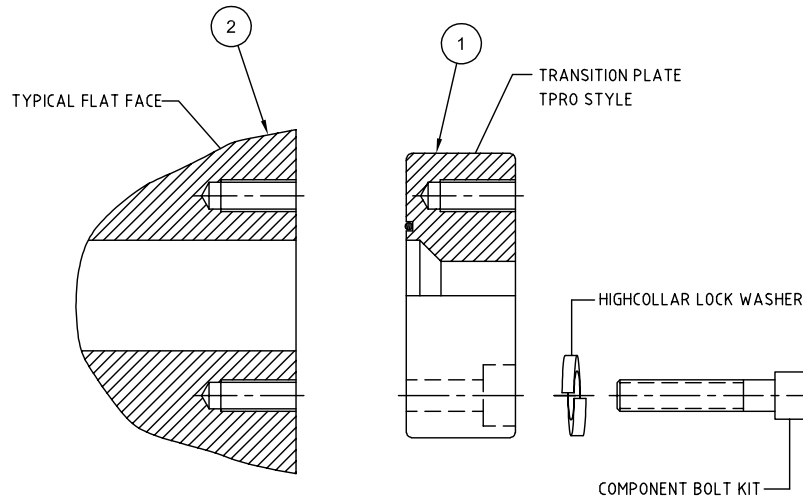
Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"x1 1/2"	BK-TPRO-COMP-7-34-250x150-SC-HLW	120-130
2 1/2"x2"	BK-TPRO-COMP-7-34-250x200-SC-HLW	120-130
3"x2"	BK-TPRO-COMP-7-34-300x200-SC-HLW	350-400
3"x2 1/2"	BK-TPRO-COMP-7-34-300x250-SC-HLW	350-400
4"x2 1/2"	BK-TPRO-COMP-7-34-400x250-SC-HLW	500-550
4"x 3"	BK-TPRO-COMP-7-34-400x300-SC-HLW	500-550

ISO 6164/SAE Code 62 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"x1 1/2"	BK-TPRO-COMP-7-64-250x150-SC-HLW	120-130
3"x2"	BK-TPRO-COMP-7-64-300x200-SC-HLW	350-400
4"x2"	BK-TPRO-COMP-7-64-400x200-SC-HLW	500-550

Bolt Kits - Transition Plate Reducer

Manifold Mount Style to Flat Face Component - TMI 8-Bolt, TMI 8-Bolt/ISO 6164



ISO 6164 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
6"x5"	BK-TPRO-COMP-48-600x500-SC-HLW	500-550
8"x5"	BK-TPRO-COMP-48-800x500-SC-HLW	1100-1200
8"x6"	BK-TPRO-COMP-48-800x600-SC-HLW	1100-1200

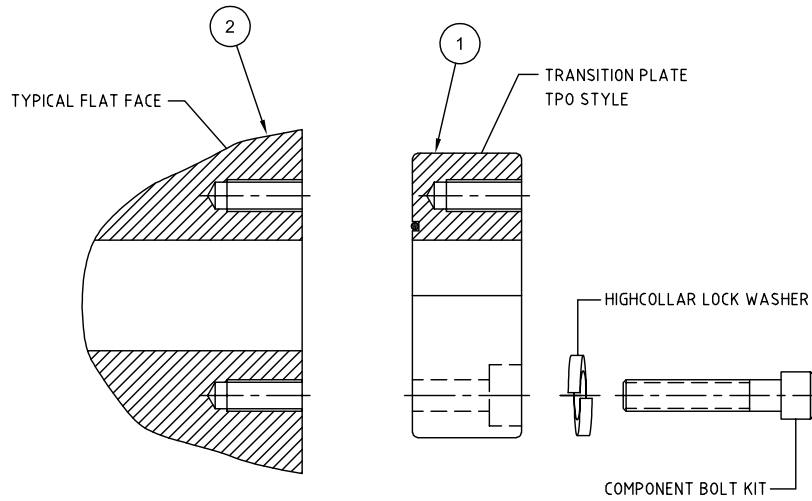
TMI® 8-Bolt/ISO 6164 - 8-Bolt/4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
5"x4"	BK-TPRO-COMP-4-74-500x400-SC-HLW	350-400



Bolt Kits - Transition Plate

Manifold Mount Style to Flat Face Component



SAE Code 62/Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
1/2"	BK-TPO-COMP-6-34-050-SC-HLW	16-18
3/4"	BK-TPO-COMP-6-34-075-SC-HLW	25-30
1"	BK-TPO-COMP-6-34-100-SC-HLW	45-50
1 1/4"	BK-TPO-COMP-6-34-125-SC-HLW	85-90
1 1/2"	BK-TPO-COMP-6-34-150-SC-HLW	110-120
2"	BK-TPO-COMP-6-34-200-SC-HLW	120-130

ISO 6164/SAE Code 61 - 4-Bolt Flange Connection

Size	Bolt Kit Part No.	Bolt Torque ft.lbs.
2 1/2"	BK-TPO-COMP-7-34-250-SC-HLW	120-130
3"	BK-TPO-COMP-7-34-300-SC-HLW	350-400



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TUBE-MAC® INDUSTRIES WARRANTS ITS PRODUCTS TO BE FREE FROM VISIBLE DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FOLLOWING THE DATE OF DELIVERY TO THE ORIGINAL BUYER. THE WARRANTY EXTENDS ONLY TO THE ORIGINAL BUYER.

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The Buyer agrees that porosity or pin holes in steel may not be commercially detectable. Therefore, TUBE-MAC® INDUSTRIES offers no warranty with respect to steel integrity and TUBE-MAC® INDUSTRIES shall not be liable for any damages, claims, injuries or otherwise caused by or in any way related to steel integrity.

TUBE-MAC® INDUSTRIES' liability shall be limited to the repair or replacement of defective product(s) free of charge at the seller's sole option and discretion. TUBE-MAC® INDUSTRIES reserves the right at its sole option and discretion to refund a portion or all of the purchase price paid by the Buyer in lieu of any other obligations TUBE-MAC® INDUSTRIES has under this Warranty. In no event shall TUBE-MAC® INDUSTRIES be liable for any incidental, consequential, general or special damage of any kind or nature whatsoever including but not limited to loss of profit arising out of any incident(s) involving the use or utilization of the product and/or system covered under this Warranty. In no event shall TUBE-MAC® INDUSTRIES be liable for any personal injury or any special or general damages arising out of the personal injury of any kind or nature whatsoever.

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