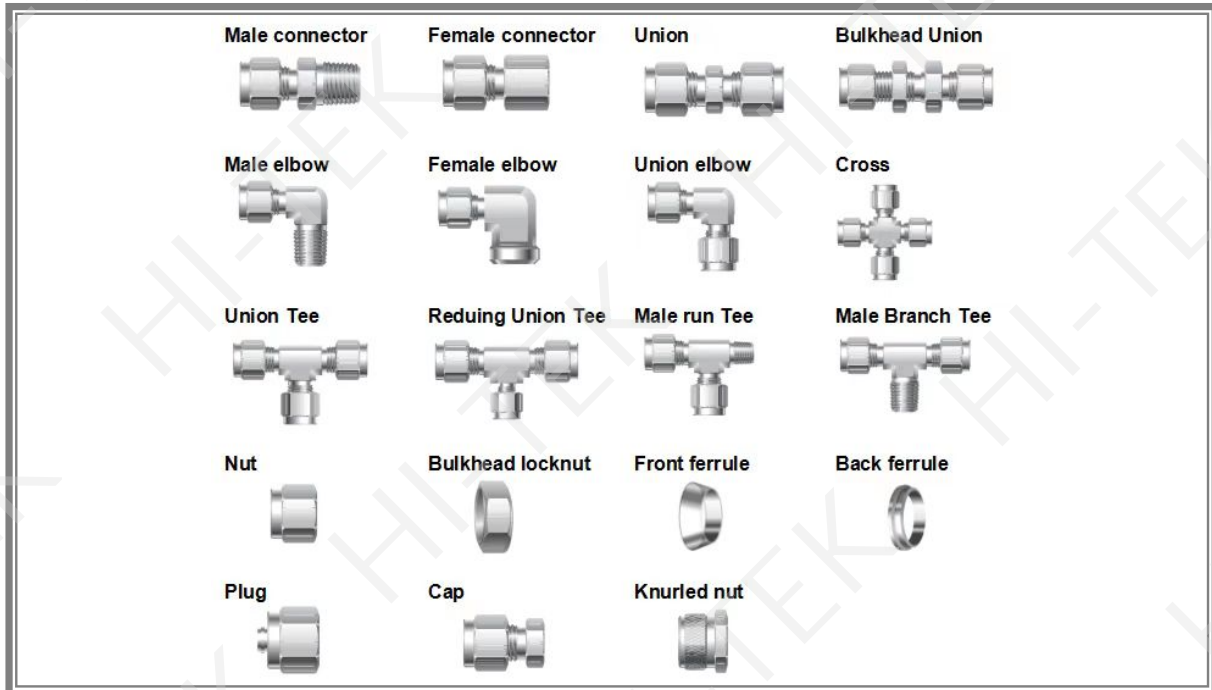


Gaugeable Tube Fittings and Adapter Fittings

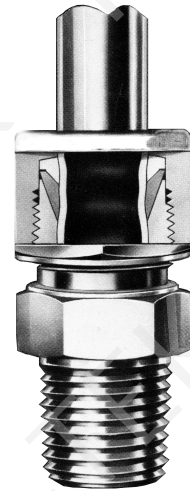


About Us

Hubei HI-TEK valve and fitting co.,ltd is a lead manufacturer which is professional doing stainless steel compression fitting, precision high pressure thread fitting, instrument ball valve, check valve, needle valve, 2-3-5 manifold valve, dbb/sbb valve, vented cap body grease fitting, packing injection fitting, single/double ball internal check fitting, gauge cock, siphon, snubber, test plug, tank cleaning nozzle. Fitting and valve pressure from 1500-10000psig. A variety of materials offer. Products hot sales in USA, Canada, Australia, Singapore, Malaysia, Thailand, Vietnam, Indonesia, South Korea, Saudi Arabia, Germany, France, UK, Italy, Spain, Norway, Russia, Sweden, Brazil, South Africa, Argentina, India, Iran, Venezuela, Ecuador, Peru etc, Build long-term and strong business relationship with many Europe and America brand, also have argnet in Iran. We not only strive to meet all of customer's requirements but also enhance customer's expectations by providing them excellent products at economical price. Products come with a warranty of 12 months from the date of shipment against any defect in material or workmanship. The warranty stands for replacement of determined defective parts only.

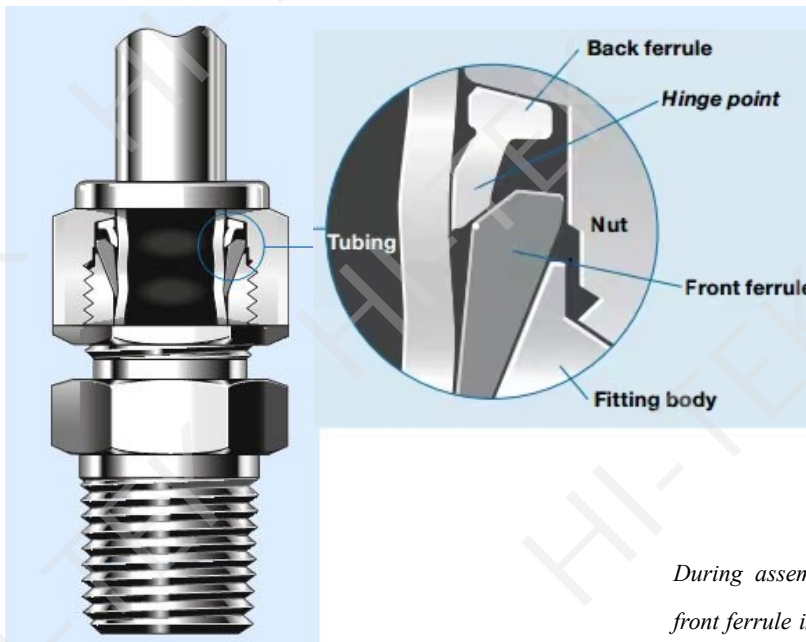
HI-TEK is committed to make every effort towards producing world class quality products at economical price. Welcome to cooperate with us. We will do our best to make you satisfied.

- Available in tube sizes from 1/16 to 2 in. and 2 to 50 mm
- Consistent gaugeability upon initial installation
- Easy to disconnect and retighten
- Wide variety of materials and configurations



Features

- Live-loaded, two-ferrule design.
- Easy to install.
- No torque is transmitted to tubing during installation.
- gap inspection gauge ensures sufficient pull-up upon initial installation.



Two-Ferrule, Mechanical Grip Design

The two ferrules separate sealing and tube gripping functions; each ferrule is optimized for its function.

The front ferrule creates a seal:

- against the fitting body
- on the tubing outside diameter.

As the nut is turned, the back ferrule:

- axially advances the front ferrule
- radially applies an effective tube grip.

During assembly of the advanced-geometry design (above), the front ferrule is driven into the fitting body and the tubing to create primary seals, while the back ferrule hinges inward to create a strong grip on the tubing. The back ferrule geometry allows for an improved engineering hinging-colleting™ action that translates axial motion into radial swaging action on the tube, yet operates with a low assembly torque requirement.

Advanced-Geometry, Hinging-Colleting Back Ferrule Design

- excellent gas-tight sealing and tube-gripping action
 - easily achieved proper installation
 - consistent remakes
 - excellent vibration fatigue resistance and tube support
 - full compatibility with original stainless steel tube fittings of identical sizes

Thread standard & specifications

Thread standard	Thread Type	Thread angle	Application field
JIS B0203 (1981)	PT	55°	Used for high temperature, high pressure and lubrication system is suitable for the tube ,pipe, cock , valve and other Pipe connection accessories.
JIS B0203 (1982)	R	55°	
GB7306-87	R	55°	
	ZG	55°	
B.S.84:1956	BSP	55°	
JIS B0203 (1982)	Rc	55°	Used for high temperature, high pressure and lubrication system is suitable for the tube ,pipe, cock , valve and other Pipe connection accessories.
GB7306-87	Rc	55°	
	ZG	55°	
B.S.84:1956	BSP	55°	
JIS B0203 (1981)	PF	55°	
GB7306-87	Rp	55°	Most of used for water, gas,electric wire ,lubrication system which under pressure in 1.6Mpa
B.S.84:1956	BSP	55°	
GB7307-87	G	55°	
ANSI B20.1	NPT	60°	Used in automobile,aviation machine,machine tools,such as fuel, oil,Water, gas conveying system pipe connection
GB/T12716-91	Z	60°	General use coarse thread.Fine thread is commonly used in thin arm parts, can also be used for fine-tuning mechanism adjustment
GB192~197-81	M	60°	

Thread specification list

NPT、Z					BSP、R、R1、Rc、ZG、RT、PT、BSPT						
Thread size (inch)	threads per inch	Surface of the thread diameter			Angle	Thread size (inchi)	threads per inch	Surface of the thread diameter			Angle
		A	B	C				A	B	C	
1/16	27	7.894	7.142	6.398	60°	1/16	28	7.723	7.142	6.561	55°
1/8	27	10.242	9.489	8.737		1/8	28	9.728	9.147	8.566	
1/4	18	13.616	12.487	11.358		1/4	19	13.157	12.301	11.445	
3/8	18	17.055	15.926	14.797		3/8	19	16.662	15.806	14.950	
1/2	14	21.224	19.772	18.321		1/2	14	20.995	19.793	18.631	
3/4	14	26.569	25.117	23.666		3/4	14	26.441	25.279	24.117	
1	11.5	33.228	31.461	29.694		1	11	33.249	31.770	30.291	
1-1/4	11.5	41.985	40.218	38.451		1-1/4	11	41.910	40.431	38.952	
1-1/2	11.5	48.054	46.287	44.520		1-1/2	11	47.803	46.324	44.845	
2	11.5	60.092	58.325	56.558		2	11	59.641	58.135	56.656	

Thread specification list

BSP、Rp、G、PF、BSPT					Metric size						
Thread size (inch)	Thread per inch	Thread diameter			Angle	Thread size (MM)	Threads per inch	Thread diameter			Angle
		A	B	C				A	B	C	
1/16	28	7.732	7.142	6.561	55°	M6	1	6.0	5.35	4.917	60°
1/8	28	9.782	9.147	8.566		M8		8.0	7.35	6.917	
1/4	19	13.157	12.301	11.455		M10		10.0	9.35	8.917	
3/8	19	16.662	15.806	14.950		M12	1.5	12.0	11.026	10.376	
1/2	14	20.955	19.793	18.631		M14		14.0	13.026	12.376	
5/8	14	22.911	21.749	20.587		M16		16.0	15.026	14.376	
3/4	14	26.441	25.279	24.117		M18		18.0	17.026	16.376	
7/8	14	30.201	29.039	27.877		M20		20.0	19.026	18.376	
1	11	33.249	31.770	30.291		M22		22.0	21.026	20.376	
1-1/8	11	37.897	36.418	34.939		M24		24.0	23.026	22.376	
1-1/4	11	41.910	40.431	38.952		M27	2	27.0	25.701	24.835	
1-1/2	11	47.803	46.324	44.845		M30		30.0	28.701	27.835	
1-3/4	11	53.746	52.267	50.788		M33		33.0	31.701	30.835	
2	11	59.614	58.135	56.656		M36		36.0	34.701	33.835	

Thread specification list

SAE/MS allowed the pressure rating(316ss/carbon steel)

SAE/MS					SAE/MS allowed the pressure rating(316ss/carbon steel)						
Thread size (inch)	Thread per inch	Thread diameter			Angle	Thread size (inch)	Thread per inch	Nonlocalizable		Ajustable position	
		A	B	C				psig	Mpa	psig	Mpa
5/16	24	7.938	7.249	6.792	60°	5/16	24	4568	31.5	4568	31.5
7/16	20	11.113	10.287	9.738		7/16	20	4568	31.5	4568	31.5
1/2	20	12.700	11.875	11.325		1/2	20	4568	31.5	3626	25.0
9/16	18	14.288	13.325	12.559		9/16	18	4568	31.5	3626	25.0
3/4	16	19.050	18.019	17.331		3/4	16	4568	31.5	3626	25.0
1-1/16	12	26.988	25.613	24.695		1-1/16	12	3626	25.0	2900	20.0
1-5/16	12	33.338	31.963	31.046		1-5/16	12	2900	20.0	2320	16.0

NPT、 Z fitting allowed pressure rating

Thread size (inch)	Thread per inch	316SS & carbon steel				Brass			
		Male		Female		Male		Female	
		psig	MPa	psig	MPa	psig	MPa	psig	MPa
1/16	28	11000	75.9	6700	46.2	5500	37.9	3300	22.8
1/8	28	10000	69.0	6500	44.8	5000	34.5	3200	22.1
1/4	19	8000	55.2	6600	45.5	4000	27.6	3300	22.8
3/8	19	7800	53.8	5300	36.6	3900	26.9	2600	17.9
1/2	14	7700	53.1	4900	33.8	3800	26.2	2400	16.6
3/4	14	7300	50.3	4600	31.7	3600	24.8	2300	15.9
1	11	5300	36.6	4400	30.3	2800	19.3	2200	15.2
1-1/4	11	6000	41.4	5000	34.5	3000	20.7	2500	17.2
1-1/2	11	5000	34.5	4600	31.7	2500	17.2	2300	15.9
2	11	3900	26.9	3900	26.9	1900	13.1	1900	13.1

Remark:According to process pipe standard ASME B31.3

BSP、 R、 R1、 Rc、 ZG、 RT、 PT、 BSPT fitting allowed pressure rating

Thread size (inch)	Thread per inch	316SS & carbon steel				Brass			
		Male		Female		Male		Female	
		psig	MPa	psig	MPa	psig	MPa	psig	MPa
1/8	28	9585	66.1	5887	40.6	4792	33.1	2943	20.3
1/4	19	8918	61.5	5800	40.0	4459	30.8	2900	20.0
3/8	19	8715	60.1	4684	32.3	4357	30.1	2342	16.1
1/2	14	6902	47.6	4176	28.8	3451	23.8	2088	14.4
3/4	14	6554	45.2	3872	26.7	3277	22.6	1936	13.4
1	11	6583	45.4	3654	25.2	3296	22.7	1827	12.6
1-1/4	11	5452	37.6	4249	29.3	2726	18.3	2124	14.6
1-1/2	11	4539	31.3	3944	27.2	2269	15.6	1972	13.6
2	11	3480	24.0	3480	24.0	1740	12.0	1740	12.0

Remark:According to process pipe standard ASME B31.3

Metric thread nominal working pressure rating

Metric thread						Products manufacturing standards
Thread size	Thread per inch	male		female		Product reference standard
		psig	MPa	psig	MPa	Company Standard: Q/321182 HCV001-2004
M6	1	12000	82.5	6900	47.6	Reference Standard: GB-T12220-1989
M8	1	11000	75.9	6700	46.2	GB-T12220-1989
M10	1	10000	69.0	6500	44.8	JB/T 9092-1999
M12	1.5	9000	62.1	6500	44.8	JB/T 7748-1995
M14	1.5	8000	55.2	6600	45.5	JB/T 7928-1995
M16	1.5	7800	53.8	5800	40.0	JB/T 8858-1999
M18	1.5	7800	53.8	5300	36.6	JB/T 8859-1999
M20	1.5	7700	53.1	5000	34.5	JB/T 8861-1999
M22	1.5	7700	51.0	4900	33.8	JB/T 53162-1999
M24	1.5	7400	50.3	4700	32.4	JB/T 53167-1999
M27	2	7300	42.1	4600	31.7	JB/T 53174-1999
M30	2	6100	36.6	4500	31.0	
M33	2	5300	35.2	4400	30.3	
M36	2	5100	34.5	4000	27.6	

China material standard		Euqal to USA material No.
Q235	GB700-88	1015, M1015, M1017
10#	GB699-88	1010, 1012, (ASTM A575, 576)
20#	GB699-88	1010, 1023 (ASTM A575, 576)
25#	GB699-88	1025, 1026, 1029 (ASTM A575, 576)
30#	GB699-88	1030, 1034 (ASTM A29, 576, 108, 515)
45#	GB699-88	1045, ASI 1042 (ASTM A568, A519)
12CrMo	GB3077-88	T12 (ASTM A213, 387)
15CrMo	GB3077-88	B11 (ASTM A799)
20CrMo	GB3077-88	4118 (ASTM A29)
1Cr18Ni9	GB1220-92	302 (JIS G4317, 4318, 4308, 4314, 4303, 4304)
0Cr18Ni9	GB1220-92	304 (ASTM A276, 314, 167, 240, 793, 580, 313)
00Cr19Ni10	GB1220-92	304L (ASTM A276, 314, 167, 240, 269)
1Cr18Ni9Ti	GB1220-92	321H (ASTM A167, 271)
0Cr18Ni10Ti	GB1220-92	321 (ASTM A314, 580)
0Cr17Ni12Mo2	GB1220-92	316 (ASTM A314, 167, 313, 269)
00Cr17Ni14Mo2	GB1220-92	316L (ASTM A276, 213, 270)
1Cr17Ni7	GB1220-92	301 (ASTM A167)
12CrMov	GB3077-88	////
38CrMoAl	GB3077-88	////
35CrMo	GB3077-88	4135, 4173 (ASTM A29, 322)

Metric size stainless steel tube fitting advised allowed working pressure

Tube OD	Pipe thickness (mm)													
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	5.0
3	670													
6	310	420	540	710										
8		310	390	520										
10		240	300	400	510	580								
12		200	250	330	410	470								
14		160	200	270	340	380	430							
15		150	190	250	310	360	400							
16			170	230	290	330	370	400						
18			150	200	260	290	320	370						
20			140	180	230	260	290	330	380					
22			140	160	200	230	260	300	340					
25					180	200	230	260	290	320				
28						180	200	230	260	280	330			
30						170	180	210	240	260	310			
32						160	170	200	220	240	290	330		
38							140	160	190	200	240	270	310	
50										150	180	210	240	270

Fractional In ,size stainless steel tube fitting advised allowed working pressure

Tube OD	Pipe thickness (in/mm)													Tube OD
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	
1/16	5600	6800	8100	9400	12000									1.587
1/8						8500	10900							3.175
3/16						5400	7000	10200						4.763
1/4						4000	5100	7500	10200					6.350
5/16							4000	5800	8000					7.94
3/8							3300	4800	6500	7500				9.525
1/2							2600	3700	5100	6700				12.70
5/8								2900	4000	5200	6000			15.875
3/4								2400	3300	4200	4900	5800		19.050
7/8								2000	2800	3600	4200	4800		22.225
1									2400	3100	3600	4200	4700	25.400
1 1/4										2400	2800	3300	3600	31.750
1 1/2											2300	2700	3000	38.100
2												2000	2200	50.800

Pipe size list

Nominal OD IN	Actual MM	SCH (MM)								
		5S	5	10S	10	20	+	30	40S-STD	40
1/8	10.287		0.889	1.245	1.245				1.727	1.727
1/4	13.716		1.245	1.651	1.651				2.235	2.235
3/8	17.145		1.245	1.651	1.651				2.311	2.311
1/2	21.336	1.651	1.651	2.108	2.108				2.769	2.769
3/4	26.670	1.651	1.651	2.108	2.108				2.870	2.870
1	33.401	1.651	1.651	2.769	2.769				3.387	3.387
1	42.164	1.651	1.651	2.769	2.769				3.556	3.556
1	48.260	1.651	1.651	2.769	2.769				3.683	3.683
2	60.325	1.651	1.651	2.769	2.769				3.912	3.912
2	73.025	2.108	2.108	3.048	3.048				5.156	5.156
3	88.900	2.108	2.108	3.048	3.048				5.486	5.486
3	101.60	2.108	2.108	3.048	3.048				5.740	5.740
4	114.30	2.108	2.108	3.048	3.048				6.020	6.020

Nominal OD IN	Actual MM	SCH(MM)								
		+	60	80S.EH	80	100	120	140	160	DBL.EH
1/8	10.287			2.413	2.413					
1/4	13.716			3.023	3.023					
3/8	17.145			3.200	3.200					
1/2	21.336			3.734	3.734				4.750	7.468
3/4	26.670			3.912	3.912				5.537	7.823
1	33.401			4.547	4.547				6.350	9.039
1	42.164			4.851	4.851				6.350	9.703
1	48.260			5.080	5.080				7.137	10.160
2	60.325			5.537	5.537				8.738	11.074
2	73.025			7.010	7.010				9.525	14.021
3	88.900			7.620	7.620				11.125	15.240
3	101.60			8.077	8.077					16.154
4	114.30			8.560	8.560		11.125		13.487	17.120

Swagelok tube adapter ordering numbers follow the sequence shown below

A - **B C** - **D** - **E F**
SS 6 M 6 4 I

A material
SS=316
SSL=316L
S=304
SL=304L
P=1Cr18Ni9Ti
CS=carbon steel
AL=Aluminum

C I= (in)
M= (mm)

D Fitting type
1=male connector
2=90°male elbow
3=Tee, union
4=Cross, union

E Second End Connection Size
Add a size designator from the list at left for the second end connection or if the fitting is a reducing union.

F Second End Connection Size
Add a second end size designator
And tube thread size designator

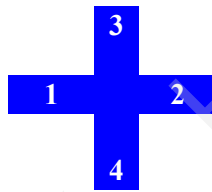
H=Brass
 C20=Alloy 20
 HC=Alloy C-276
 N=Nylon
 Ti=Titanium

5 = 45° male elbow
 6 = union
 7 = Female connector
 8 = Female elbow
 9 = Elbow, union
 11 = Bulkhead male connector
 61 = Bulkhead union
 71 = Bulkhead female connector

1=1/16NPT
 2=1/8 NPT
 4=1/4 NPT
 6=3/8 NPT
 8=1/2 NPT
 12=3/4 NPT
 16=1 NPT
 20=1 1/4 NPT
 24=1 1/2 NPT
 32=2 NPT
 W=Male pipe weld/tube socket weld
 RG=ISO/BSP parallel pipe thread
 RS= ISO/BSP parallel pipe thread
 ST= Straight thread with O-ring (for SAE/MS)

B Size (Tube OD)

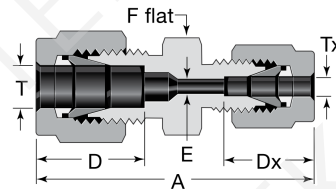
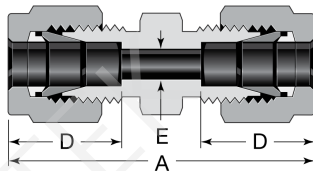
Fractional, in.	Metric, mm
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2I=1/8	3M=3
3I=3/16	4M=4
4I=1/4	6M=6
5I=5/16	8M=8
6I=3/8	10M=10
8I=1/2	12M=12
10I=5/8	14M=14
12I=3/4	15M=15
14I=7/8	16M=16
16I=1	18M=18
18I=1 1/8	20M=20
20I=1 1/4	22M=22
24I=1 1/2	25M=25
32I=2	28M=28
	38M=38
	50M=50



Tees and Crosses

Ordering numbers for tees and crosses indicate first the size of the run (1 to and then the size of the branch (3 for tees and 3 to 4 for crosses).

Example : 316ss reducing union
 6mm-1/4in (Metric-fractional)



Union

Tube OD (Inch)	Basic Ordering Number	Size		
		A	D	E
Dimensions (IN)				
1/16	-11-6	0.99	0.34	0.05
1/8	-21-6	1.40	0.5	0.09
3/16	-31-6	1.47	0.54	0.12
1/4	-41-6	1.61	0.60	0.19
5/16	-51-6	1.69	0.64	0.25
3/8	-61-6	1.77	0.66	0.28
1/2	-81-6	2.02	0.90	0.41
5/8	-101-6	2.05	0.96	0.50
3/4	-121-6	2.11	0.96	0.62
7/8	-141-6	2.17	1.02	0.72
1	-161-6	2.55	1.23	0.88
1 1/8	-181-6	2.55	1.23	0.97
1 1/4	-201-6	3.63	1.62	1.09
1 1/2	-241-6	4.25	1.97	1.34
2	-321-6	5.88	2.66	1.81
Size (MM)				

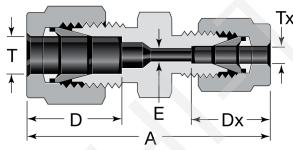
Reducing Union

Tube OD (Inch)	Basic Ordering Number	Size					
		A	D	DX	E	F	
Dimensions (MM)							
2	1/8	-2M-6-2I	35.2	12.9	12.8	1.7	12
2	1/4	-2M-6-4I	38.6	12.9	15.3	1.7	14
3	1/8	-3M-6-4I	35.2	12.9	12.8	2.4	12
4	1/8	-4M-6-2I	36.5	13.7	12.8	2.4	12
4	1/4	-4M-6-4I	39.4	13.7	15.3	2.4	14
6	1/16	-6M-6-1I	34.3	15.3	8.6	1.3	14
6	1/8	-6M-6-2I	38.5	15.3	12.8	2.4	14
6	1/4	-6M-6-4I	41.0	15.3	15.3	4.8	14
6	5/16	-6M-6-5I	42.3	15.3	16.2	4.8	14
6	3/8	-6M-6-6I	43.2	15.3	16.8	4.8	16
8	1/4	-8M-6-4I	42.3	16.2	15.3	4.8	15
8	3/8	-8M-6-6I	44.3	16.2	16.9	6.4	16
10	1/8	-10M-6-2I	41.8	17.2	12.8	2.4	18
10	1/4	-10M-6-4I	44.5	17.2	15.3	4.8	18
10	5/16	-10M-6-5I	45.1	17.2	16.2	6.4	18
10	3/8	-10M-6-6I	45.9	17.2	16.9		18

2	-2M-6	35.6	12.9	1.7
3	-3M-6	35.3	12.9	2.4
4	-4M-6	37.3	13.7	2.4
6	-6M-6	41.0	15.3	4.8
8	-8M-6	43.2	16.2	6.4
10	-10M-6	46.2	17.2	7.9
12	-12M-6	51.2	22.8	9.5
14	-14M-6	52.0	24.4	11.1
15	-15M-6	52.0	24.4	11.9
16	-16M-6	52.0	24.4	12.7
18	-18M-6	53.5	24.4	15.1
20	-20M-6	55.0	26.0	15.9
22	-22M-6	55.0	26.0	18.3
25	-25M-6	65.0	31.3	21.8
28	-28M-6	85.0	36.6	21.8
30	-30M-6	92.7	39.6	26.2
32	-32M-6	97.3	42.0	28.6
38	-38M-6	114.0	49.4	33.7
50	-50M-6	146.0	65.0	45.2

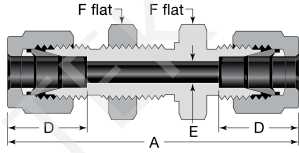
12	1/4	-12M-6-4I	47.0	22.8	15.3	4.8	22
12	5/16	-12M-6-5I	47.8	22.8	16.2	6.4	22
12	3/8	-12M-6-6I	48.4	22.8	16.9	7.1	22
12	1/2	-12M-6-8I	51.2	22.8	22.8	9.5	22
15	1/2	-15M-6-8I	52.0	24.4	22.8	10.3	24
16	5/8	-16M-6-10I	52.0	24.4	24.4	12.7	24
18	3/4	-18M-6-12I	53.5	24.4	24.4	15.1	27
20	1/2	-20M-6-8I	55.0	26.0	22.8	10.3	30
20	1	-20M-6-16I	62.8	26.0	31.3	15.9	35
25	1	-25M-6-16I	65.0	31.3	31.3	21.8	35

Reducing Union



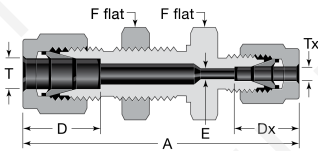
Tube OD		Basic Ordering Number	Dimensions			
T	TX (IN)		A	D	DX	E
Dimensions (IN)						
1/8	1/16	-2I-6-1I	1.22	0.50	0.34	0.05
3/16	1/16	-3I-6-1I	1.27	0.54	0.34	0.05
	1/8	-3I-6-2I	1.44		0.50	0.09
1/4	1/16	-4I-6-1I	1.35	0.60	0.34	0.05
	1/8	-4I-6-2I	1.52		0.50	0.09
	3/16	-4I-6-3I	1.55		0.54	0.12
5/16	1/8	-5I-6-2I	1.56	0.64	0.50	0.09
	1/4	-5I-6-4I	1.66		0.60	0.19
3/8	1/16	-6I-6-1I	1.44	0.66	0.34	0.05
	1/8	-6I-6-2I	1.61		0.50	0.09
	3/8	-6I-6-4I	1.70		0.60	0.19
	5/16	-6I-6-5I	1.75		0.64	0.25
1/2	1/8	-8I-6-2I	1.78	0.90	0.50	0.09
	1/4	-8I-6-4I	1.85		0.60	0.19
	3/8	-8I-6-6I	1.91		0.66	0.28
5/8	3/8	-10I-6-6I	1.94	0.96	0.66	0.28
	1/2	-10I-6-8I	2.05		0.90	0.41
3/4	1/4	-12I-6-4I	1.94	0.96	0.60	0.19
	3/8	-12I-6-6I	2.00		0.66	0.28
	1/2	-12I-6-8I	2.11		0.90	0.41
	5/8	-12I-6-10I	2.11		0.96	0.50
1	1/2	-16I-6-8I	2.11	1.23	0.90	0.41
	3/4	-16I-6-12I	2.38		0.96	0.62
Dimensions (MM)						
3	2	-3M-6-2M	35.3	12.9	12.9	1.7
6	2	-6M-6-2M	38.6	15.3	12.9	1.7
	3	-6M-6-3M	38.6		12.9	2.4
	4	-6M-6-4M	39.4		13.7	2.4
8	6	-8M-6-6M	42.3	16.2	15.3	4.8
10	6	-10M-6-6M	44.5	17.2	15.3	4.8
	8	-10M-6-8M	45.1		16.2	6.4
12	6	-12M-6-6M	47.0	22.8	15.3	4.8
	8	-12M-6-8M	47.8		16.2	6.4
	10	-12M-6-10M	48.7		17.2	7.9
16	10	-16M-6-10M	45.9	24.4	17.2	7.9
	12	-16M-6-12M	52.0		22.8	9.5
18	12	-18M-6-12M	53.5	24.4	22.8	9.5
25	18	-25M-6-18M	61.0	31.3	24.4	15.1
	20	-25M-6-20M	62.3		26.0	15.9
30	18	-30M-6-18M	75.4	39.6	24.4	15.1

	20	-30M-6-20M	75.4		26.0	15.9
	25	-30M-6-25M	80.1		31.3	21.8
32	18	-32M-6-18M	77.8	42.0	24.4	15.1
	20	-32M-6-20M	77.8		26.0	15.9
	25	-32M-6-25M	82.3		31.3	21.8
38	20	-38M-6-20M	87.5	49.4	26.0	15.9
	25	-38M-6-25M	92.0		31.3	21.8
	30	-38M-6-30M	105.0		39.6	26.2



Bulkhead Union

Tube OD	Basic Ordering Number	Dimensions					
		A	D	E	F	Panel Hole Size	Max Panel Thickness
Dimensions (IN)							
1/16	-1I-6I	1.24	0.34	0.05	5/16	13/64	0.12
1/8	-2I-6I	2.02	0.50	0.09	1/2	21/64	0.50
3/16	-3I-6I	2.11	0.54	0.12	9/16	25/64	0.40
1/4	-4I-6I	2.27	0.60	0.19	5/8	29/64	0.40
5/16	-5I-6I	2.39	0.64	0.25	11/16	33/64	0.44
3/8	-6I-6I	2.45	0.66	0.28	3/4	37/64	0.50
1/2	-8I-6I	2.80	0.90	0.41	1 5/16	49/64	0.50
5/8	-10I-6I	2.86	0.96	0.50	1 1/16	57/64	0.50
3/4	-12I-6I	3.11	0.96	0.62	1 3/16	11/64	0.66
1	-16I-6I	3.77	1.23	0.86	1 5/8	1 21/64	0.75
1 1/4	-20I-6I	4.85	1.62	1.09	1 7/8	1 41/64	
1 1/2	-24I-6I	5.48	1.97	1.34	2 1/4	1 61/64	
2	-32I-6I	7.10	2.66	1.81	2 3/4	2 41/64	
Dimensions (MM)							
3	-3M-6I	51.3	12.9	2.4	14	8.3	12.7
4	-4M-6I	53.6	13.7	2.4	14	9.9	
6	-6M-6I	57.7	15.3	4.8	16	11.5	
8	-8M-6I	61.0	16.2	6.4	18	13.1	11.2
10	-10M-6I	63.7	17.2	7.9	22	16.3	
12	-12M-6I	71.0	22.8	9.5	24	19.5	12.7
14	-14M-6I	72.5	24.4	11.1	27	22.5	
15	-15M-6I	72.5	24.4	11.9	27	22.8	
16	-16M-6I	72.5	24.4	12.7	27	22.8	
18	-18M-6I	78.9	24.4	15.1	30	26.0	16.8
20	-20M-6I	84.5	26.0	15.9	35	29.0	19.0
25	-25M-6I	96.0	31.3	21.8	41	34.0	
30	-30M-6I	124.0	39.6	26.2	50	40.5	
32	-32M-6I	128.0	42.0	28.6	50	42.5	
38	-38M-6I	145.0	49.4	33.7	60	50.5	
Minimum panel thickness is 1.5MM							



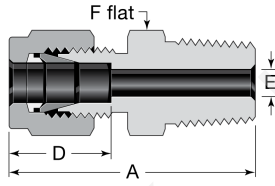
Bulkhead Reducing Union

Tube OD		Basic Ordering Number	Dimensions						
T	TX		A	D	DX	E	F	Panel Hole Size	Max Panel Thickness
Dimensions (IN)									
1/4	1/8	-4I-6I-2I	2.17	0.60	0.5	0.09	5/8	29/64	0.40
3/8	1/4	-6I-6I-4I	2.39	0.66	0.6	0.19	3/4	37/64	0.44
1/2	1/4	-8I-6I-4I	2.63	0.90	0.6	0.19	15/16	49/64	0.50

Bulkhead Reducing Union (Metric to Fractional)

Tube OD		Basic Ordering Number	Dimensions					
T	TX		A	D	DX	E	F	Panel Hole Size
Dimensions (MM)								

6	1/8	-6M-61-2I	55.1	15.3	12.7	2.4	16	11.5	10.2	
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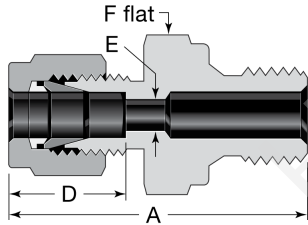


Male Connectors NPT

Tube OD	NPT Size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/16	1/16	-1I-1-1	0.94	0.34	0.05	5/16
	1/8	-1I-1-2	1.03			7/16
	1/4	-1I-1-4	1.22			9/16
1/8	1/16	-2I-1-1	1.17	0.50	0.09	7/16
	1/8	-2I-1-2	1.20			7/16
	1/4	-2I-1-4	1.40			9/16
	3/8	-2I-1-6	1.41			11/16
3/16	1/8	-3I-1-2	1.23	0.54	0.12	7/16
	1/4	-3I-1-4	1.43			9/16
1/4	1/16	-4I-1-1	1.29	0.60	0.12	1/5
	1/8	-4I-1-2	1.29			1/2
	1/4	-4I-1-4	1.49			9/16
	3/8	-4I-1-6	1.61			11/16
	1/2	-4I-1-8	1.76			7/8
5/16	1/8	-5I-1-2	1.34	0.64	0.19	9/16
	1/4	-5I-1-4	1.52			2.25
	3/8	-5I-1-6	1.54			2.25
3/8	1/8	-6I-1-2	1.39	0.66	0.28	5/8
	1/4	-6I-1-4	1.57			5/8
	3/8	-6I-1-6	1.57			11/16
	1/2	-6I-1-8	1.82			7/8
	3/4	-6I-1-12	1.88			11/16
	1	-6I-1-16	1.85			2.28
1/2	1/8	-8I-1-2	1.53	0.90	0.19	13/16
	1/4	-8I-1-4	1.71			2.28
	3/8	-8I-1-6	1.71			3.38
	1/2	-8I-1-8	1.93			4.41
	3/4	-8I-1-12	1.99			4.41
5/8	1/4	-10I-1-4	1.74	0.96	0.28	15/16
	3/8	-10I-1-6	1.74			3.38
	1/2	-10I-1-8	1.93			4.47
	3/4	-10I-1-12	1.99			5.50
3/4	3/8	-12I-1-6	1.90	0.96	0.41	1 1/16
	1/2	-12I-1-8	1.99			4.47
	3/4	-12I-1-12	1.99			6.62
	1	-12I-1-16	2.25			6.62
7/8	1/2	-14I-1-8	1.99	1.02	0.47	1 3/16
	3/4	-14I-1-12	1.99			6.62
	1	-14I-1-16	2.25			7.72
1	1/2	-16I-1-8	2.26	1.23	0.47	1 3/8
	3/4	-16I-1-12	2.26			6.62
	1	-16I-1-16	2.45			8.88
1 1/8	1	-18I-1-16	2.45	1.23	0.88	1 5/8
1 1/4	1	-20I-1-16	3.04	1.62	0.88	1 3/4
	1 1/4	-20I-1-20	3.04			1.09
1 1/2	1 1/2	-24I-1-24	3.50	1.97	1.34	2 1/8
2	2	-32I-1-32	4.47	2.66	1.81	2 3/4

Tube OD	NPT Size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
2	1/8	-2M-1-2	30.5	12.9	1.7	12
3	1/8	-3M-1-2	30.5	12.9	2.4	12
	1/4	-3M-1-4	35.6			14
4	1/8	-4M-1-2	31.2	13.7	2.4	12
	1/4	-4M-1-4	36.3			14
6	1/8	-6M-1-2	32.8	15.3	4.8	14
	1/4	-6M-1-4	37.9			14
	3/8	-6M-1-6	38.4			18
	1/2	-6M-1-8	44.7			22
8	1/8	-8M-1-2	34.2	16.2	4.8	15
	1/4	-8M-1-4	38.7			15
	3/8	-8M-1-6	39.3			6.4
	1/2	-8M-1-8	45.6			22
10	1/8	-10M-1-2	36.3	17.2	4.8	18
	1/4	-10M-1-4	40.9			7.1
	3/8	-10M-1-6	40.9			18
	1/2	-10M-1-8	46.5			7.9
12	3/4	-10M-1-12	48.0	22.8	9.5	27
	1/8	-12M-1-2	38.8			4.8
	1/4	-12M-1-4	43.4			7.1
	3/8	-12M-1-6	43.4			22
	1/2	-12M-1-8	49.0			22
	3/4	-12M-1-12	50.5			27
14	1/4	-14M-1-4	44.1	24.4	7.1	24
	3/8	-14M-1-6	44.1			9.5
15	1/2	-14M-1-8	49.0	24.4	11.1	24
	3/4	-14M-1-12	49.0			24
16	1/2	-15M-1-8	49.0	24.4	11.9	24
	3/4	-15M-1-12	50.5			27
18	1/2	-16M-1-8	44.1	24.4	9.5	24
	3/4	-16M-1-12	50.5			11.9
20	1/2	-18M-1-8	50.5	26.0	15.1	27
	3/4	-18M-1-12	50.5			30
22	1/2	-20M-1-8	52.3	26.0	15.9	30
	3/4	-20M-1-12	52.3			35
25	1/2	-22M-1-8	52.3	31.3	18.3	30
	3/4	-22M-1-12	57.1			35
	1	-22M-1-16	57.5			11.9
28	3/4	-25M-1-12	57.5	36.6	21.8	35
	1	-25M-1-16	62.3			35
	1 1/4	-25M-1-20	62.3			41
30	1	-28M-1-16	72.4	39.6	21.8	46
	1 1/4	-28M-1-20	73.1			46
32	1 1/4	-30M-1-20	77.2	42.0	26.2	46
38	1 1/2	-32M-1-20	79.6	44.0	28.6	46
		-38M-1-24	91.6	49.4	33.7	55

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.



Male Connectors ISO/BSP Parallel Thread (RS)

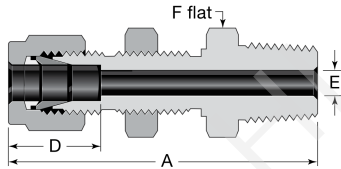
Tube OD	ISO size	Basic Ordering Number	Dimensions				
			A	D	E	F	
Dimensions (IN)							
1/8	1/8	-2I-1-2RS	1.31	0.50	0.09	9/16	
	1/4	-2I-1-4RS	1.50			3/4	
	3/8	-2I-1-6RS	1.53			7/8	
1/4	1/8	-4I-1-2RS	1.40	0.60	0.16	9/16	
	1/4	-4I-1-4RS	1.59			3/4	
	3/8	-4I-1-6 RS	1.62			7/8	
3/8	1/2	-4I-1-8 RS	1.70	0.66	0.19	1 1/16	
	1/8	-6I-1-2 RS	1.49			5/8	
	1/4	-6I-1-4 RS	1.65			3/4	
1/2	3/8	-6I-1-6 RS	1.66	0.90	0.23	7/8	
	1/2	-6I-1-8 RS	1.76			1 1/16	
	1/4	-8I-1-4 RS	1.76			13/16	
3/4	3/8	-8I-1-6 RS	1.79	0.96	0.31	7/8	
	1/2	-8I-1-8 RS	1.87			1 1/16	
	1/2	-12I-1-8 RS	1.92			0.47	1 1/16
1	3/4	-12I-1-12 RS	2.05	1.23	0.62	1 5/16	
	1/2	-16I-1-8 RS	2.19			0.47	1 3/8
	3/4	-16I-1-12 RS	2.27			0.63	1 3/8
	1	-16I-1-16 RS	2.35		0.78	1 5/8	

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end

Tube OD	ISO size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
2	1/8	-2M-1-2RS	33.3	12.9	1.7	14
3	1/8	-3M-1-2 RS	33.3	12.9	2.4	14
	1/4	-3M-1-4 RS	38.1		2.4	19
4	1/8	-4M-1-2 RS	34.3	13.7	2.4	14
6	1/8	-6M-1-2 RS	35.6	15.3	4.0	14
	1/4	-6M-1-4 RS	40.4		4.8	19
	3/8	-6M-1-6 RS	41.1		4.8	22
8	1/2	-6M-1-8 RS	43.2	16.2	4.8	27
	1/8	-8M-1-2 RS	36.6		4.0	15
	1/4	-8M-1-4 RS	41.4		6.4	19
10	3/8	-8M-1-6 RS	42.2	17.2	6.4	22
	1/2	-8M-1-8 RS	44.2		6.4	27
	1/4	-10M-1-4 RS	42.2		5.9	19
12	3/8	-10M-1-6 RS	42.9	22.8	7.9	22
	1/2	-10M-1-8 RS	45.0		7.9	27
	1/4	-12M-1-4 RS	44.5		5.9	22
14	3/8	-12M-1-6 RS	45.5	24.4	7.9	22
	1/2	-12M-1-8 RS	47.5		9.5	27
	3/4	-12M-1-12 RS	52.1		9.5	35
15	3/8	-14M-1-6 RS	43.9	24.4	7.9	24
	1/2	-14M-1-8 RS	47.5		11.1	27
	3/8	-15M-1-6 RS	45.5		7.9	24
16	1/2	-15M-1-8 RS	47.5	24.4	11.1	27
	3/4	-15M-1-12 RS	52.8		11.1	35
	3/8	-16M-1-6 RS	45.5		7.9	24
18	1/2	-16M-1-8 RS	47.5	24.4	11.9	27
	3/4	-16M-1-12 RS	52.8		12.7	35
	1/2	-18M-1-8 RS	48.8		11.9	27
20	3/4	-18M-1-12 RS	52.1	26.0	15.1	35
	1/2	-20M-1-8 RS	50.5		11.9	30
	3/4	-20M-1-12 RS	52.6		15.9	35
22	3/4	-22M-1-12 RS	52.6	26.0	15.9	35
	1	-22M-1-16 RS	54.9		18.3	41
25	3/4	-25M-1-12 RS	57.7	31.3	15.9	35
	1	-25M-1-16 RS	59.7		19.8	41
28	1	-28M-1-16 RS	69.9	36.6	19.8	41
	1 1/4	-28M-1-20 RS	72.9		21.8	50
30	1 1/4	-30M-1-20 RS	76.7	39.6	25.0	50
32	1 1/4	-32M-1-20 RS	79.2	42.0	25.0	50
38	1 1/2	-38M-1-24 RS	90.9	49.4	31.8	55

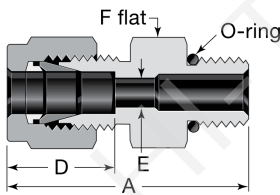
The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end

Male bulkhead connectors NPT



Tube OD	NPT Size	Basic Ordering Number	Dimensions					
			A	D	E	F	Panel hole size	Max panel thickness
Dimensions (IN)								
1/8	1/8	-2I-11-2	1.83	0.50	0.09	1/2	21/64	0.50
1/4	1/8	-4I-11-2	1.95	0.60	0.19	5/8	29/64	0.40
	1/4	-4I-11-4	2.13	0.60	0.19	5/8	29/64	0.40
3/8	1/4	-6I-11-4	2.26	0.66	0.28	3/4	37/64	0.44
	3/8	-6I-11-6	2.26	0.66	0.28	3/4	37/64	0.44
	1/2	-6I-11-8	2.51	0.66	0.28	7/8	37/64	0.44
1/2	3/8	-8I-11-6	2.49	0.90	0.38	15/16	49/64	0.50
	1/2	-8I-11-8	2.71	0.90	0.41	15/16	49/64	0.50
3/4	3/4	-12I-11-12	3.00	0.96	0.62	13/16	1 1/64	0.66
1	1	-12I-11-16	3.67	1.23	0.88	1 5/8	1 21/64	0.75
Dimensions (MM)								
6	1/8	-6M-11-2	49.5	15.3	4.8	16	11.5	10.2
	1/4	-6M-11-4	53.6	15.3	4.8	16	11.5	10.2
12	1/2	-12M-11-8	68.8	22.8	9.5	24	19.5	12.7

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.



Adapts to SAE J1926/1 and ISO 11926-1 straight thread boss.

SAE/MS Straight Thread (ST)

Tube OD	SAE/MS size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/8	5/16-24	-2I-1-2ST	1.18	0.50	0.09	7/16
	7/16-20	-2I-1-4 ST	1.24			9/16
	9/16-18	-2I-1-6 ST	1.31			11/16
1/4	5/16-24	-4I-1-2 ST	1.27	0.60	0.19	1/2
	7/16-20	-4I-1-4 ST	1.34			9/16
	9/16-18	-4I-1-6 ST	1.40			11/16
	3/4-16	-4I-1-8 ST	1.48			7/8
5/16	7/8-14	-4I-1-10 ST	1.60	0.64	0.25	1
	1/2-20	-5I-1-5 ST	1.37			5/8
	7/16-20	-6I-1-4 ST	1.40			5/8
	9/16-18	-6I-1-6 ST	1.46			11/16
3/8	3/4-16	-6I-1-8 ST	1.54	0.66	0.28	7/8
	7/8-14	-6I-1-10 ST	1.66			1
	9/16-18	-8I-1-6 ST	1.54			13/16
	3/4-16	-8I-1-8 ST	1.66			7/8
1/2	7/8-14	-8I-1-10 ST	1.77	0.90	0.41	1
	1 1/16-12	-8I-1-12 ST	1.93			1 1/4
	3/4-16	-10I-1-8 ST	1.65			15/16
5/8	7/8-14	-10I-1-10 ST	1.78	0.96	0.50	1
	3/4-16	-12I-1-8 ST	1.81			1 1/16
3/4	1 1/16-12	-12I-1-12 ST	1.93	0.96	0.62	1 1/4
	1 5/16-12	-12I-1-16 ST	1.96			1 1/2
	7/8	1 3/16-12	-14I-1-14 ST			1.93
1	1 1/16-12	-16I-1-12 ST	2.10	1.23	0.66	1 3/8
	1 5/16-12	-16I-1-16 ST	2.14			0.88
1 1/4	1 5/8-12	-20I-1-20 ST	2.69	1.62	1.09	1 7/8
1 1/2	1 7/8-12	-24I-1-24 ST	3.06	1.97	1.34	2 1/8
2	2 1/2-12	-32I-1-32 ST	4.00	2.66	1.81	2 3/4

Tube OD	SAE/MS size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
6	9/16-18	-6M-1-6ST	35.6	15.3	4.8	18
10	9/16-18	-10M-1-6ST	37.3	17.2	7.1	22
	3/4-16	-10M-1-8ST	39.4	17.2	7.9	22
12	7/16-20	-12M-1-4ST	40.6	22.8	5.2	22
	9/16-18	-12M-1-6ST	39.9	22.8	7.1	22

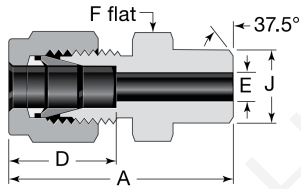
The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end

Long SAE/MS Straight Thread (ST)

Tube OD	SAE/MS size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/4	7/16-20	-4I-1L-4ST	2.26	0.60	0.19	9/16
1/2	3/4-16	-8I-1L-8ST	3.01	0.90	0.41	7/8

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Weld connectors Male Pipe Weld (Fractional)



Tube OD	Pipe Weld Size	Basic Ordering Number	Dimensions				
			A	D	E①	F	J
Dimensions(N)							
1/8	1/8	2I-1-2W	1.2	0.50	0.09	7/16	0.405
3/16	1/8	3I-1-2W	1.23	0.54	0.12	7/16	0.405
1/4	1/8	4I-1-2W	1.29	0.60	0.19	1/2	0.405
	1/4	4I-1-4W	1.49		0.19	9/16	0.540
5/16	1/8	5I-1-2W	1.34	0.64	0.21	9/16	0.405
	1/4	5I-1-4W	1.52		0.25	9/16	0.540
3/8	1/4	6I-1-4W	1.57	0.66	0.28	5/8	0.540
	3/8	6I-1-6W	1.57			11/16	0.675
	1/2	6I-1-8W	1.82			7/8	0.840
	3/4	6I-1-12W	1.88			1 1/6	1.050
1/2	3/8	8I-1-6W	1.71	0.90	0.41	13/16	0.675
	1/2	8I-1-8W	1.93			7/8	0.840
	3/4	8I-1-12W	1.99			1 1/16	1.050
	1	8I-1-16W	2.25			11/16	1.315
5/8	1/2	10I-1-8W	1.93	0.96	0.50	15/16	0.840
3/4	1/2	12I-1-8W	1.99	0.96	0.55	11/16	0.840
	3/4	12I-1-12W	2.45		0.62	11/16	1.050
1	1	16I-1-16W	3.04	1.23	0.88	1 3/8	1.315
1 1/4	1 1/4	20I-1-20W	3.50	1.62	1.09	1 3/4	1.660
1 1/2	1 1/2	24I-1-24W	4.47	1.97	1.34	2 1/8	1.900
2	2	32I-1-32W		2.66	1.81	2 3/4	2.375

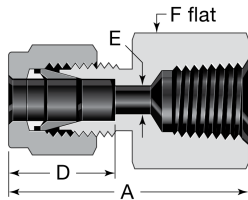
The E dimension is the minimum nominal opening. These fittings may have a larger opening at the weld end. Wall thickness at the weld end is based on schedule 80 pipe

Male Pipe Weld (Metric to Fractional)

Tube OD	Pipe Weld Size in.	Basic Ordering Number	Dimensions					
			A	D	E①	F	F, in ②	J
Dimensions (MM)								
3	1/8	-3M-1-2W	30.5	12.9	2.4	12	1/2	10.3
4	1/8	-4M-1-2W	31.2	13.7			1/2	10.3
6	1/8	-6M-1-2W	32.8	15.3	4.8	14	1/2	10.3
	1/4	-6M-1-4W	37.9				13.7	
8	1/8	-8M-1-2W	34.2	16.2	5.4	15	9/16	10.3
	1/4	-8M-1-4W	38.7		6.4			13.7
	1/2	-8M-1-8W	45.6		22			7/8
10	1/4	-10M-1-4W	40.9	17.2	7.5	18	7/8	13/16
	3/8	-10M-1-6W	40.9		7.9			17.1
	1/2	-10M-1-8W	46.5		22			21.3
12	1/4	-12M-1-4W	43.4	22.8	7.5	22	7/8	13/16
	3/8	-12M-1-6W	43.4		9.5			17.1
	1/2	-12M-1-8W	49.0		21.3			
14	3/8	-14M-1-6W	44.1	24.4	10.7	24	15/16	17.1
15	1/2	-15M-1-8W	49.0		11.9	24	15/16	21.3
16	1/2	-16M-1-8W	49.0		12.7	24	15/16	21.3
18	1/2	-18M-1-8W	50.5		13.9	27	11/16	21.3
30	1 1/4	-30M-1-20W	77.2	39.6	26.2	46	46MM	42.2
32	1 1/4	-32M-1-20W	79.6	42.0	28.6	46	46MM	42.2
38	1 1/2	-38M-1-24W	91.6	49.4	33.7	55	55MM	48.3

① The E dimension is the minimum nominal opening. These fittings may have a larger opening at the weld end. Wall thickness at the weld end is based on schedule 80 pipe.

② This dimension is for steel and aluminum fittings.

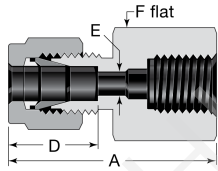


Female connectors NPT

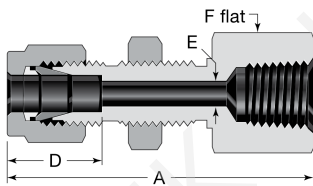
Tube OD	NPT	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions(IN)						
1/16	1/16	-11-7-1	0.93	0.34	0.05	7/16
	1/8	-11-7-2	0.96			9/16
1/8	1/8	-21-7-2	1.13	0.50	0.09	9/16
	1/4	-21-7-4	1.32			3/4
3/16	1/8	-31-7-2	1.17	0.54	0.12	9/16
	1/8	-41-7-2	1.23			9/16
1/4	1/4	-41-7-4	1.41	0.60	0.19	3/4
	3/8	-41-7-6	1.48			7/8
	1/2	-41-7-8	1.67			1 1/16
	1/8	-51-7-2	1.26			9/16
5/16	1/4	-51-7-4	1.45	0.64	0.25	3/4
	1/8	-61-7-2	1.29			5/8
3/8	1/4	-61-7-4	1.48	0.66	0.28	3/4
	3/8	-61-7-6	1.54			7/8
	1/2	-61-7-8	1.73			1 1/16
	3/4	-61-7-12	1.88			1 5/16
1/2	1/4	-81-7-4	1.59	0.90	0.41	13/16
	3/8	-81-7-6	1.65			7/8
	1/2	-81-7-8	1.84			1 1/16
	3/4	-81-7-12	1.90			1 5/16
5/8	3/8	-101-7-6	1.65	0.96	0.50	15/16
	1/2	-101-7-8	1.84			1 1/16
	3/4	-101-7-12	1.90			1 5/16
3/4	1/2	-121-7-8	1.84	0.96	0.62	1 1/16
	3/4	-121-7-12	1.90			1 5/16
7/8	3/4	-141-7-12	1.96	1.02	0.72	1 5/16
	1	3/4	-161-7-12			2.10
1	1	-161-7-16	2.45	1.23	0.88	1 5/8
	1 1/4	1 1/4	-201-7-20			2.94
1 1/2	1 1/2	-241-7-20	3.28	1.97	1.34	2 3/8
2	2	-321-7-32	4.00	2.66	1.81	2 7/8

Tube OD	NPT	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
3	1/8	-3M-7-2	28.7	12.9	2.4	14
	1/4	-3M-7-4	33.5			19
4	1/8	-4M-7-2	29.7	13.7	2.4	14
	1/8	-6M-7-2	31.3			14
6	1/4	-6M-7-4	35.8	15.3	4.8	19
	3/8	-6M-7-6	37.6			22
	1/2	-6M-7-8	42.5			27
	1/8	-8M-7-2	32.1			15
8	1/4	-8M-7-4	37.0	16.2	6.4	19
	3/8	-8M-7-6	38.5			22
	1/2	-8M-7-8	43.3			27
10	1/4	-10M-7-4	37.8	17.2	7.9	19
	3/8	-10M-7-6	39.4			22
	1/2	-10M-7-8	44.2			27
12	1/4	-12M-7-4	40.3	22.8	9.5	22
	3/8	-12M-7-6	41.9			22
	1/2	-12M-7-8	46.7			27
15	1/2	-15M-7-8	46.7	24.4	11.9	27
16	1/2	-16M-7-8	46.9	24.4	12.7	27
	1/2	-20M-7-8	47.9			26.0
20	3/4	-20M-7-12	49.7	26.0	18.3	35
	3/4	-22M-7-12	49.7			35
22	1	-22M-7-16	57.9	26.0	18.3	41
	3/4	-25M-7-12	53.4			35
25	1	-25M-7-16	62.3	31.3	21.8	41
	1	-25M-7-16	62.3			41

ISO/BSP Parallel Thread (RG, Gauge)

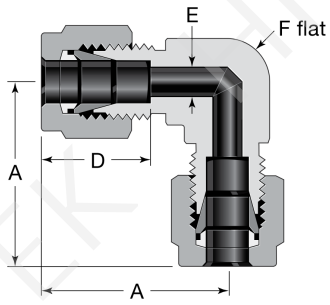


Tube OD	ISO Thread size in	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/8	1/4	-2I-7-4-RG	1.39	1.50	0.09	3/4
1/4	1/8	-4I-7-2- RG	1.26	0.60	0.18	9/16
	1/4	-4I-7-4- RG	1.48		0.19	3/4
	3/8	-4I-7-6- RG	1.48		0.19	15/16
	1/2	-4I-7-8- RG	1.71		0.19	1 1/16
5/16	1/4	-5I-7-4- RG	1.51	0.64	0.22	3/4
	1/2	-5I-7-8- RG	1.61		0.28	1 1/16
3/8	1/4	-6I-7-4- RG	1.54	0.66	0.22	3/4
	3/8	-6I-7-6- RG	1.52		0.26	15/16
	1/2	-6I-7-8- RG	1.65		0.28	1 1/16
1/2	3/8	-8I-7-6- RG	1.75	0.90	0.26	15/16
	1/2	-8I-7-8- RG	1.90		0.28	1 1/16
Dimensions (MM)						
3	1/4	-3M-7-4- RG	35.3	1.29	2.4	19
6	1/8	-6M-7-2- RG	32.0	15.3	4.5	14
	1/4	-6M-7-4- RG	37.6		4.8	19
	3/8	-6M-7-6- RG	37.6		4.8	24
	1/2	-6M-7-8- RG	43.5		4.8	27
8	1/4	-8M-7-4- RG	38.5	16.2	5.5	19
	3/8	-8M-7-6- RG	36.2		6.5	24
	1/2	-8M-7-8- RG	41.0		7.0	27
10	1/4	-10M-7-4- RG	39.4	17.2	5.5	19
	3/8	-10M-7-6- RG	38.8		6.5	24
	1/2	-10M-7-8- RG	42.1		7.0	27
12	1/4	-12M-7-4- RG	41.9	22.8	5.5	22
	3/8	-12M-7-6- RG	44.4		6.5	24
	1/2	-12M-7-8- RG	48.2		7.0	27
20	1/2	-20M-7-8- RG	54.3	26.0	7.0	30
22	1/2	-20M-7-8- RG	54.3	26.0	7.0	30



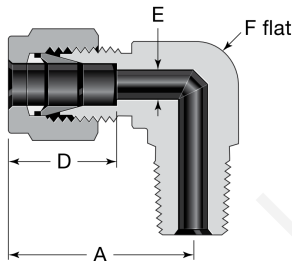
Female bulkhead NPT

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions					
			A	D	E	F	Panel Hole Size	Max Panel Thickness
Dimensions (IN)								
1/8	1/8	-2I-7I-2	1.76	0.50	0.09	9/16	21/64	0.50
1/4	1/8	-4I-7I-2	1.85	0.60	0.19	5/8	29/64	0.40
	1/4	-4I-7I-4	2.04	0.60	0.19	3/4	29/64	0.40
3/8	1/4	-6I-7I-4	2.17	0.66	0.28	3/4	37/64	0.44
1/2	3/8	-8I-7I-6	2.43	0.90	0.41	15/16	49/64	0.50
	1/2	-8I-7I-8	2.62	0.90	0.41	1 1/16	49/64	0.50
Dimensions (MM)								
6	1/4	-6M-7I-4	51.8	15.3	4.8	19	11.5	10.2
12	1/2	-12M-7I-4	66.5	22.8	9.5	27	19.5	12.7



Union elbow

Tube OD	Basic Ordering Number	Dimensions			
		A	D	E	F
Dimensions (IN)					
1/16	-1I-9	0.70	0.34	0.05	3/8
1/8	-2I-9	0.88	0.50	0.09	3/8
3/16	-3I-9	1.00	0.54	0.12	1/2
1/4	-4I-9	1.06	0.60	0.19	1/2
5/16	-5I-9	1.13	0.64	0.25	9/16
3/8	-6I-9	1.20	0.66	0.28	5/8
1/2	-8I-9	1.42	0.90	0.41	13/16
5/8	-10I-9	1.50	0.96	0.50	15/16
3/4	-12I-9	1.57	0.96	0.62	1 1/16
7/8	-14I-9	1.76	1.02	0.72	1 3/8
1	-16I-9	1.93	1.23	0.88	1 3/8
1 1/8	-18I-9	2.17	1.23	0.97	1 11/16
1 1/4	-20I-9	2.67	1.62	1.09	1 11/16
1 1/2	-24I-9	3.10	1.97	1.34	2
2	-32I-9	4.22	2.66	1.81	2 3/4
Dimensions (MM)					
3	-3M-9	22.3	12.9	2.4	3/8
4	-4M-9	25.4	13.7	2.4	1/2
6	-6M-9	27.0	15.3	4.8	1/2
8	-8M-9	28.8	16.2	6.4	9/16
10	-10M-9	31.5	17.2	7.9	11/16
12	-12M-9	36.0	22.8	9.5	13/16
14	-14M-9	38.0	24.4	11.1	15/16
15	-15M-9	38.0	24.4	11.9	15/16
16	-16M-9	38.0	24.4	12.7	15/16
18	-18M-9	39.8	24.4	15.1	1 1/16
20	-20M-9	44.6	26.0	15.9	1 3/8
22	-22M-9	44.6	26.0	18.3	1 3/8
25	-25M-9	49.1	31.3	21.8	1 3/8
28	-28M-9	64.0	36.6	21.8	41MM
30	-30M-9	69.9	39.6	26.2	46MM
32	-32M-9	72.3	42.0	28.6	46MM
38	-38M-9	84.0	49.4	33.7	55MM
50	-50M-9	106	65.3	45.2	2 3/4

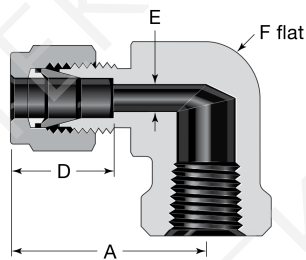


Union male elbow NPT

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/16	1/16	-11-2-1	0.75	0.34	0.05	7/16
	1/8	-11-2-2	0.75		0.05	7/16
1/8	1/16	-21-2-1	0.93	0.50	0.09	7/16
	1/8	-21-2-2	0.93		0.09	7/16
	1/4	-21-2-4	0.97		0.09	1/2
3/16	1/8	-31-2-2	1.00		0.54	0.12
	1/4	-31-2-4	1.00	0.12		1/2
1/4	1/16	-41-2-1	1.06	0.60	0.12	1/2
	1/8	-41-2-2	1.06		0.19	1/2
	1/4	-41-2-4	1.06		0.19	1/2
	3/8	-41-2-6	1.17		0.19	11/16
5/16	1/2	-41-2-8	1.25	0.64	0.19	13/16
	1/4	-51-2-2	1.13		0.19	9/16
	3/8	-51-2-4	1.13		0.25	9/16
3/8	1/2	-51-2-6	1.20	0.66	0.25	11/16
	1/8	-61-2-2	1.20		0.19	5/8
	1/4	-61-2-4	1.20		0.28	5/8
	3/8	-61-2-6	1.23		0.28	11/16
1/2	1/2	-61-2-8	1.31	0.90	0.28	13/16
	3/4	-61-2-12	1.46		0.28	1 1/16
	1/4	-81-2-4	1.42		0.28	13/16
	3/8	-81-2-6	1.42		0.38	13/16
5/8	1/2	-81-2-8	1.42	0.96	0.41	13/16
	3/4	-81-2-12	1.57		0.41	1 1/16
	3/8	-101-2-6	1.50		0.38	15/16
3/4	1/2	-101-2-8	1.50	0.96	0.47	15/16
	3/4	-101-2-12	1.57		0.50	1 1/16
	1/2	-121-2-8	1.57		0.47	1 1/16
7/8	3/4	-121-2-12	1.57	1.02	0.62	1 1/16
	3/4	-141-2-12	1.76		0.62	1 3/8
1	3/4	-161-2-12	1.93	1.23	0.62	1 3/8
	1	-161-2-16	1.93		0.88	1 3/8
1 1/4	1 1/4	-201-2-20	2.67	1.62	1.09	1 11/16
1 1/2	1 1/2	-241-2-24	3.10	1.97	1.34	2
2	2	-321-2-32	4.22	2.66	1.81	2 3/4

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
3	1/8	-3M-2-2	23.6	12.9	2.4	7/16
	1/4	-3M-2-4	24.6		2.4	1/2
4	1/8	-4M-2-2	25.4	13.7	2.4	1/2
	1/4	-4M-2-4	25.4		2.4	1/2
6	1/8	-6M-2-2	27.0	15.3	4.8	1/2
	1/4	-6M-2-4	27.0		4.8	1/2
	3/8	-6M-2-6	29.8		4.8	11/16
	1/2	-6M-2-8	31.8		4.8	13/16
8	1/8	-8M-2-2	28.8	16.2	4.8	9/16
	1/4	-8M-2-4	28.8		6.4	9/16
	3/8	-8M-2-6	30.6		6.4	11/16
	1/2	-8M-2-8	32.6		6.4	13/16
10	1/8	-10M-2-2	31.5	17.2	4.8	11/16
	1/4	-10M-2-4	31.5		7.1	11/16
	3/8	-10M-2-6	31.5		7.9	11/16
	1/2	-10M-2-8	33.5		7.9	13/16
12	1/4	-12M-2-4	36.0	22.8	7.1	13/16
	3/8	-12M-2-6	36.0		9.5	13/16
	1/2	-12M-2-8	36.0		9.5	13/16
	3/4	-12M-2-12	39.8		9.5	1 1/16
15	1/2	-15M-2-8	38.0	24.4	11.9	15/16
16	3/8	-16M-2-6	38.0	24.4	9.5	15/16
	1/2	-16M-2-8	38.0		11.9	15/16
	3/4	-16M-2-12	39.8		12.7	1 1/16
18	1/2	-18M-2-8	39.8	24.4	11.9	1 1/16
	3/4	-18M-2-12	39.8		15.1	1 1/16
20	1/2	-20M-2-8	44.6	26.0	11.9	1 3/8
	3/4	-20M-2-12	44.6		15.9	1 3/8
22	3/4	-22M-2-12	44.6	26.0	15.9	1 3/8
	1	-22M-2-16	44.6		18.3	1 3/8
25	3/4	-25M-2-12	49.1	31.3	15.9	1 3/8
	1	-25M-2-16	49.1		21.8	1 3/8
30	1 1/4	-30M-2-20	69.9	39.6	26.2	46MM
32	1 1/4	-32M-2-20	72.3	42.0	27.8	46MM
38	1 1/2	-38M-2-24	84.0	49.2	33.7	55MM

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end

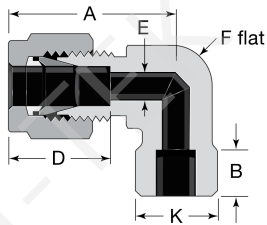


Union female elbow NPT

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/8	1/8	-2I-8-2	0.97	0.50	0.09	1/2
	1/4	-2I-8-4	1.08			11/16
3/16	1/8	-3I-8-2	1.00	0.54	0.12	1/2
1/4	1/8	-4I-8-2	1.06	0.60	0.19	1/2
	1/4	-4I-8-4	1.17			11/16
	3/8	-4I-8-6	1.25			13/16
	1/2	-4I-8-8	1.36			1
5/16	1/8	-5I-8-2	1.13	0.64	0.25	9/16
	1/4	-5I-8-4	1.20			11/16
3/8	1/8	-6I-8-2	1.20	0.66	0.28	5/8
	1/4	-6I-8-4	1.23			11/16
	3/8	-6I-8-6	1.31			13/16
	1/2	-6I-8-8	1.42			1
1/2	1/4	-8I-8-4	1.42	0.90	0.41	13/16
	3/8	-8I-8-6	1.42			13/16
	1/2	-8I-8-8	1.53			1
5/8	3/8	-10I-8-6	1.50	0.96	0.50	15/16
	1/2	-10I-8-8	1.57			1 1/16
3/4	1/2	-12I-8-8	1.57	0.96	0.62	1 1/16
	3/4	-12I-8-12	1.76			1 3/8
7/8	3/4	-14I-8-12	1.76	1.02	0.72	1 3/8
	1	-16I-8-12	1.93			1 3/8
1	1	-16I-8-16	2.11	1.23	0.88	1 11/16

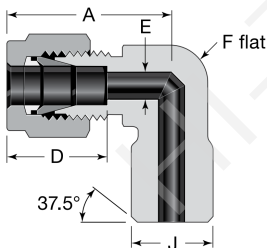
Tube OD	NPT Thread Size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
6	1/8	-6I-8-2F	27.0 29.8 34.6	15.3	4.8	1/2
	1/4	-6I-8-4F				11/16
	1/2	-6I-8-8F				1
8	1/4	-8I-8-4F	30.6	16.2	6.4	11/16
10	1/8	-10I-8-2F	31.5	17.2	7.9	11/16
	1/4	-10I-8-4F	33.5			13/16
12	1/4	-12I-8-4F	36.0	22.8	9.5	13/16
	1/2	-12I-8-8F	38.8			1
16	1/2	-16I-8-8F	39.5	24.4	12.7	1 1/16

Tube Socket Weld



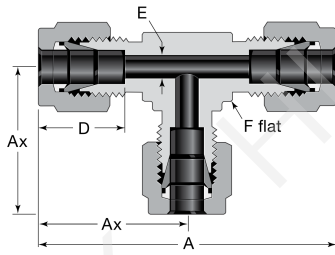
Tube OD	Socket Weld Size	Basic Ordering Number	Dimensions					
			A	B	D	E	F	K
Dimensions (IN)								
1/4	1/4	-4I-9-4W	106	0.23	0.60	0.19	1/2	0.50
3/8	3/8	-6I-9-6W	1.20	0.31	0.66	0.28	5/8	0.63
1/2	1/2	-8I-9-8W	1.42	0.38	0.90	0.41	13/16	0.81
3/4	3/4	-12I-9-12W	1.57	0.44	0.96	0.62	1 1/16	1.06
1	1	-16I-9-16W	1.93	0.62	1.23	0.88	1 3/8	1.38

Male Pipe Weld

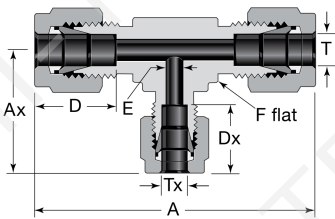


Tube OD	Pipe Weld Size	Basic Ordering Number	Dimensions				
			A	D	E	F	J
Dimensions (IN)							
1/4	1/8	-4I-2-2W	106	0.60	0.19	1/2	0.405
	1/4	-4I-2-4W				1/2	0.540
3/8	1/4	-6I-2-4W	1.20	0.66	0.28	5/8	0.540
1/2	1/2	-8I-2-8W	1.42	0.90	0.41	13/16	0.840
3/4	3/4	-12I-2-12W	1.57	0.96	0.62	1 1/16	1.050

Union tee



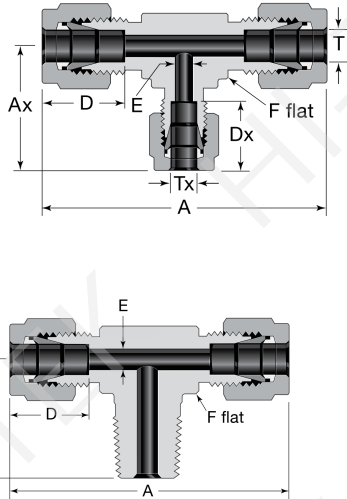
Tube OD	Basic Ordering Number	Dimensions				
		A	AX	D	E	F
Dimensions (IN)						
1/16	-11-3	1.40	0.70	0.34	0.05	3/8
1/8	-21-3	1.76	0.88	0.50	0.09	3/8
3/16	-31-3	2.00	1.00	0.54	0.12	1/2
1/4	-41-3	2.12	1.06	0.60	0.19	1/2
5/16	-51-3	2.26	1.13	0.64	0.25	9/16
3/8	-61-3	2.40	1.20	0.66	0.28	5/8
1/2	-81-3	2.84	1.42	0.90	0.41	13/16
5/8	-101-3	3.00	1.50	0.96	0.50	15/16
3/4	-121-3	3.14	1.57	0.96	0.62	1 1/16
7/8	-141-3	3.52	1.76	1.02	0.72	1 3/8
1	-161-3	3.86	1.93	1.23	0.88	1 3/8
1 1/8	-181-3	4.34	2.17	1.23	0.97	1 11/16
1 1/4	-201-3	5.34	2.67	1.62	1.09	1 11/16
1 1/2	-241-3	6.20	3.10	1.97	1.34	2
2	-321-3	8.44	4.22	2.66	1.81	2 3/4
Dimensions (MM)						
3	-3M-3	8.4	22.3	12.9	2.4	3/8
4	-4M-3	44.6	25.4	13.7	2.4	1/2
6	-6M-3	50.8	27.0	15.3	4.8	1/2
8	-8M-3	54.0	28.8	16.2	6.4	9/16
10	-10M-3	57.6	31.5	17.2	7.9	11/16
12	-12M-3	63.0	36.0	22.8	9.5	13/16
14	-14M-3	72.0	38.0	24.4	11.1	15/16
15	-15M-3	76.0	38.0	24.4	11.9	15/16
16	-16M-3	76.0	38.0	24.4	12.7	15/16
18	-18M-3	76.0	39.8	24.4	15.1	1 1/16
20	-20M-3	79.6	44.6	26.0	15.9	1 3/8
22	-22M-3	89.2	44.6	26.0	18.3	1 3/8
25	-25M-3	89.2	49.1	31.3	21.8	1 3/8
28	-28M-3	98.2	64.0	36.6	21.8	41MM
30	-30M-3	128.0	69.9	39.6	26.2	46MM
32	-32M-3	139.8	72.3	42.0	28.6	46MM
38	-38M-3	144.6	84.0	49.4	33.7	55MM
50	-50M-3	168.0	106	65.3	45.2	2 3/4



Reducing Union tee (IN) fractional

Tube OD		Basic Ordering Number	Size					
T	TX		A	AX	D	DX	E	F
Dimensions (IN)								
3/8	1/4	-61-3-61-41	2.40	1.14	0.66	0.60	0.19	5/8
1/2	1/4	-81-3-81-41	2.84	1.25	0.90	0.60	0.19	13/16
	3/8	-81-3-81-61		1.31		0.66	0.26	
5/8	3/8	-101-3-101-61	3.06	1.42	0.96	0.66	0.26	1
3/4	3/8	-121-3-121-61	3.4	1.46	0.96	0.66	0.28	1 1/16
	1/2	-121-3-121-81		1.57		0.90	0.41	1 1/16
1	3/8	-161-3-161-61	3.86	1.65	1.23	0.66	0.28	1 3/8
	1/2	-161-3-161-81		1.76		0.90	0.41	
	3/4	-161-3-161-121		1.76		0.96	0.62	
1 1/4	1	-201-3-201-161	5.34	2.17	1.62	1.23	0.88	1 11/16
1 1/2	1	-241-3-241-161	6.20	2.36	1.97	1.23	0.88	2
2	1	-321-3-321-161	8.44	2.79	2.66	1.23	0.88	2 3/4

Reducing union tee (MM) metric



Tube OD	Basic Ordering Number	Dimensions						
T	TX	A	AX	D	DX	E	F	
Dimensions (MM)								
3	6	-3M-3-3M-6M	49.3	26.9	12.9	15.3	2.4	1/2
8		-8M-3-8M-6M	59.9	29.0	16.2		5/8	
10		-10M-3-10M-6M	63.0	29.7	17.2		11/16	
12		-12M-3-12M-6M	72.0	31.8	22.8		13/16	
15	12	-15M-3-15M-12M	77.7	38.9	24.4	22.8	9.5	1
16		-16M-3-16M-12M	77.6	38.9	24.4			1
18		-18M-3-18M-12M	79.8	39.9	24.4			1 1/16
22		-22M-3-22M-12M	89.4	44.7	26.0			1 3/8
25		-25M-3-25M-12M	98.0	44.7	31.3			1 3/8

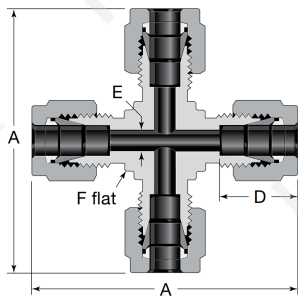
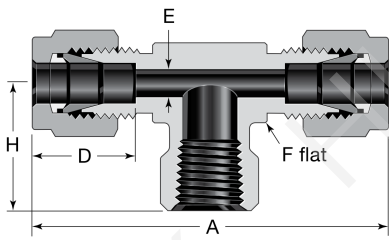
Branch, NPT (TTM)

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (IN)						
1/16	1/16	-11-3-1N	1.50	0.34	0.05	7/16
	1/8	-11-3-2N	1.50		0.05	7/16
1/8	1/16	-21-3-1N	1.86	0.50	0.09	7/16
	1/8	-21-3-2N	1.86		0.09	7/16
	1/4	-21-3-4N	1.94		0.09	1/2
3/16	1/8	-31-3-2N	2.00	0.54	0.12	1/2
	1/4	-31-3-4N	2.00		0.12	1/2
1/4	1/16	-41-3-1N	2.12	0.60	0.12	1/2
	1/8	-41-3-2N	2.12		0.19	1/2
	1/4	-41-3-4N	2.12		0.19	1/2
	3/8	-41-3-6N	2.34		0.19	11/16
5/16	1/2	-41-3-8N	2.50	0.64	0.19	13/16
	1/4	-51-3-2N	2.26		0.19	9/16
	3/8	-51-3-4N	2.26		0.25	9/16
3/8	1/2	-51-3-6N	2.40	0.66	0.25	11/16
	1/8	-61-3-2N	2.40		0.19	5/8
	1/4	-61-3-4N	2.40		0.28	5/8
	3/8	-61-3-6N	2.46		0.28	11/16
1/2	1/2	-61-3-8N	2.62	0.90	0.28	13/16
	3/4	-61-3-12N	2.92		0.28	1 1/16
	1/4	-81-3-4N	2.84		0.28	13/16
5/8	3/8	-81-3-6N	2.84	0.96	0.38	13/16
	1/2	-81-3-8N	2.84		0.41	13/16
	3/4	-81-3-12N	3.14		0.41	1 1/16
3/4	3/8	-101-3-6N	3.00	0.96	0.38	15/16
	1/2	-101-3-8N	3.00		0.47	15/16
	3/4	-101-3-12N	3.14		0.50	1 1/16
7/8	1/2	-121-3-8N	3.14	1.02	0.47	1 1/16
	3/4	-121-3-12N	3.14		0.62	1 1/16
1	3/4	-141-3-12N	3.52	1.23	0.62	1 3/8
	1	-161-3-12N	3.86		0.62	1 3/8
1 1/4	1	-161-3-16N	3.86	1.09	0.88	1 3/8
	1 1/4	-201-3-20N	5.34		1.09	1 11/16
1 1/2	1 1/2	-241-3-24N	6.20	1.97	1.34	2
2	2	-321-3-32N	8.44	2.66	1.81	2 3/4

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions			
			A	D	E	F
Dimensions (MM)						
3	1/8	-3M-3-2N	47.2	12.9	2.4	7/16
	1/4	-3M-3-4N	49.2		2.4	1/2
4	1/8	-4M-3-2N	50.8	13.7	2.4	1/2
	1/4	-4M-3-4N	50.8		2.4	1/2
6	1/8	-6M-3-2N	54.0	15.3	4.8	1/2
	1/4	-6M-3-4N	54.0		4.8	1/2
	3/8	-6M-3-6N	59.6		4.8	11/16
8	1/2	-6M-3-8N	63.6	16.2	4.8	13/16
	1/8	-8M-3-2N	57.6		4.8	9/16
	1/4	-8M-3-4N	57.6		6.4	9/16
	3/8	-8M-3-6N	61.2		6.4	11/16
10	1/2	-8M-3-8N	65.2	17.2	6.4	13/16
	1/8	-10M-3-2N	63.0		4.8	11/16
	1/4	-10M-3-4N	63.0		7.1	11/16
12	3/8	-10M-3-6N	63.0	22.8	7.9	11/16
	1/2	-10M-3-8N	67.0		7.9	13/16
	1/4	-12M-3-4N	72.0		7.1	13/16
	3/8	-12M-3-6N	72.0		9.5	13/16
15	1/2	-12M-3-8N	72.0	24.4	9.5	13/16
	3/4	-12M-3-12N	79.6		9.5	1 1/16
	1/8	-15M-3-8N	76.0		11.9	15/16
16	3/8	-16M-3-6N	76.0	24.4	9.5	15/16
	1/2	-16M-3-8N	76.0		11.9	15/16
18	3/4	-16M-3-12N	79.6	24.4	12.7	1 1/16
	1/2	-18M-3-8N	79.6		11.9	1 1/16
20	3/4	-18M-3-12N	79.6	26.0	15.1	1 1/16
	1/2	-20M-3-8N	89.2		11.9	1 3/8
22	3/4	-20M-3-12N	89.2	26.0	15.9	1 3/8
	1	-22M-3-16N	89.2		18.3	1 3/8
25	3/4	-22M-3-12N	89.2	31.3	15.9	1 3/8
	1	-25M-3-16N	98.2		21.8	1 3/8
30	1 1/4	-25M-3-12N	98.2	39.6	26.2	46MM
32	1 1/4	-30M-3-20N	139.8	42.0	27.8	46MM
38	1 1/2	-32M-3-20N	144.6	49.2	33.7	55MM
		-38M-3-24N	168.0			

The E dimension is the minimum nominal opening. These fittings may have a larger opening at the pipe/straight thread end.

Female Union tee, NPT

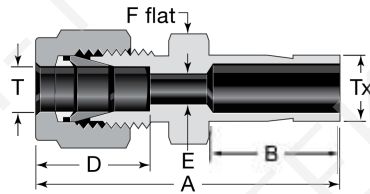


Cross

Tube OD	Basic Ordering Number	Dimensions				
		A	AX	D	E	F
Dimensions (IN)						
1/16	-11-4	1.40	0.70	0.34	0.05	3/8
1/8	-21-4	1.76	0.88	0.50	0.09	3/8
3/16	-31-4	2.00	1.00	0.54	0.12	1/2
1/4	-41-3	2.12	1.06	0.60	0.19	1/2
5/16	-51-4	2.26	1.13	0.64	0.25	9/16
3/8	-61-4	2.40	1.20	0.66	0.28	5/8
1/2	-81-4	2.84	1.42	0.90	0.41	13/16
5/8	-101-4	3.00	1.50	0.96	0.50	15/16
3/4	-121-4	3.14	1.57	0.96	0.62	1 1/16
7/8	-141-4	3.52	1.76	1.02	0.72	1 3/8
1	-161-4	3.86	1.93	1.23	0.88	1 3/8
1 1/8	-181-4	4.34	2.17	1.23	0.97	1 11/16
1 1/4	-201-4	5.34	2.67	1.62	1.09	1 11/16
1 1/2	-241-4	6.20	3.10	1.97	1.34	2
2	-321-4	8.44	4.22	2.66	1.81	2 3/4

Tube OD	NPT Thread size	Basic Ordering Number	Dimensions				
			A	D	E	F	H
Dimensions (IN)							
1/8	1/8	-2I-3-3F	1.94	0.5	0.09	1/2	0.75
1/4	1/8	-4I-3-3F	2.12	0.60	0.19	1/2	0.75
	1/4	-4I-3-4F	2.34	0.60	0.19	11/16	0.88
3/8	1/4	-6I-3-4F	2.46	0.66	0.28	11/16	0.88
	3/8	-6I-3-6F	2.62	0.66	0.28	13/16	0.88
1/2	1/2	-8I-3-8F	2.84	0.66	0.28	1	1.12
	1/4	-8I-3-4F	2.84	0.90	0.41	13/16	0.88
1/2	3/8	-8I-3-6F	2.84	0.90	0.41	13/16	0.88
	1/2	-8I-3-8F	3.06	0.90	0.41	1	1.12
5/8	1/2	-10I-3-8F	3.06	0.96	0.50	1	1.12
3/4	3/4	-12I-3-12F	3.52	0.96	0.62	1 3/8	1.25
1	3/4	-16I-3-12F	3.86	1.23	0.88	1 3/8	1.25
	1	-16I-3-16F	4.22	1.23	0.88	1 11/16	1.50
Dimensions (MM)							
6	1/8	-6M-3-2F	53.9	15.3	4.8	1/2	19.0
	1/4	-6M-3-4F	59.5	15.3	4.8	11/16	22.4
8	1/8	-8M-3-2F	59.7	16.2	6.4	5/8	19.0
	1/4	-8M-3-4F	61.2	16.2	6.4	11/16	22.4
10	1/4	-10M-3-4F	67.0	17.2	7.9	13/16	22.4
12	1/4	-12M-3-4F	72.0	22.8	9.5	13/16	22.4
	3/8	-12M-3-6F	72.0	22.8	9.5	13/16	22.4
	1/2	-12M-3-8F	77.7	22.8	9.5	1	28.4
16	1/2	-16M-3-6F	77.6	24.4	12.7	1	28.4

Tube OD	Basic Ordering Number	Dimensions				
		A	AX	D	E	F
Dimensions (MM)						
3	-3M-4	8.4	22.3	12.9	2.4	3/8
4	-4M-4	44.6	25.4	13.7	2.4	1/2
6	-6M-4	50.8	27.0	15.3	4.8	1/2
8	-8M-4	54.0	28.8	16.2	6.4	9/16
10	-10M-4	57.6	31.5	17.2	7.9	11/16
12	-12M-4	63.0	36.0	22.8	9.5	13/16
14	-14M-4	72.0	38.0	24.4	11.1	15/16
15	-15M-4	76.0	38.0	24.4	11.9	15/16
16	-16M-4	76.0	38.0	24.4	12.7	15/16
18	-18M-4	76.0	39.8	24.4	15.1	1 1/16
20	-20M-4	79.6	44.6	26.0	15.9	1 3/8
22	-22M-4	89.2	44.6	26.0	18.3	1 3/8
25	-25M-4	89.2	49.1	31.3	21.8	1 3/8
28	-28M-4	98.2	64.0	36.6	21.8	41MM
30	-30M-4	128.0	69.9	39.6	26.2	46MM
32	-32M-4	139.8	72.3	42.0	28.6	46MM
38	-38M-4	144.6	84.0	49.4	33.7	55MM
50	-50M-4	168.0	106	65.3	45.2	2 3/4

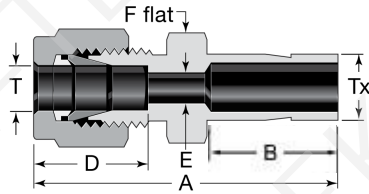


Reducer (Fractional)

Tube OD		Basic Ordering Number	Dimensions				
T	TX		A	D	E	F	B-MM
Dimensions (IN)							
1/16	1/8	-1I-R-2I	1.15	0.34	0.05	5/16	13.45
	1/4	-1I-R-4I	1.24		0.05	5/16	15.75
1/8	1/16	-2I-R-1I	1.14	0.50	0.03	7/16	12.5
	1/8	-2I-R-2I	1.32		0.08	7/16	13.45
	3/16	-2I-R-3I	1.35		0.09	7/16	14.20
	1/4	-2I-R-4I	1.42		0.09	7/16	15.75
	3/8	-2I-R-6I	1.48		0.09	7/16	17.50
	1/2	-2I-R-8I	1.74		0.09	9/16	23.20
3/16	1/8	-3I-R-2I	1.37	0.54	0.08	7/16	13.45
	1/4	-3I-R-4I	1.46		0.12	7/16	15.75
1/4	1/8	-4I-R-2I	1.45	0.60	0.08	1/2	13.45
	3/16	-4I-R-3I	1.48		0.12	1/2	14.20
	1/4	-4I-R-4I	1.54		0.17	1/2	15.75
	5/16	-4I-R-5I	1.57		0.19	1/2	16.80
	3/8	-4I-R-6I	1.60		0.19	1/2	17.50
	1/2	-4I-R-8I	1.82		0.19	9/16	23.20
	5/8	-4I-R-10I	1.89		0.19	11/16	24.70
	3/4	-4I-R-12I	1.88		0.19	13/16	24.70
5/16	3/8	-5I-R-6I	1.65	0.64	0.25	9/16	17.50
	1/2	-5I-R-8I	1.87		0.25	9/16	23.20
3/8	1/4	-6I-R-4I	1.63	0.66	0.17	5/8	15.75
	3/8	-6I-R-6I	1.70		0.27	5/8	17.50
	1/2	-6I-R-8I	1.91		0.28	5/8	23.20
	5/8	-6I-R-10I	1.98		0.28	11/16	24.70
	3/4	-6I-R-12I	1.98		0.28	13/16	24.7
1/2	1/4	-8I-R-4I	1.77	0.90	0.17	13/16	15.75
	3/8	-8I-R-6I	1.84		0.27	13/16	17.50
	1/2	-8I-R-8I	2.06		0.37	13/16	23.20
	5/8	-8I-R-10I	2.12		0.41	13/16	24.70
	3/4	-8I-R-12I	2.12		0.41	13/16	24.70
	1	-8I-R-16I	2.37		0.41	1 1/16	31.70
5/8	3/4	-10I-R-12I	2.15	0.96	0.50	15/16	24.70
	7/8	-10I-R-14I	2.21		0.50	15/16	26.70
	1	-10I-R-16I	2.40		0.50	1 1/16	31.70
3/4	1/2	-12I-R-8I	2.15	0.96	0.37	1 1/16	23.20
	1	-12I-R-16I	2.46		0.62	1 1/16	31.70
1	1 1/4	-16I-R-20I	3.17	1.23	0.88	1 3/8	40.0
	1 1/2	-16I-R-24I	3.51		0.88	1 5/8	51.50
	2	-16I-R-32I	4.43		0.88	2 1/8	68.40

Reducer (Metric)

Tube OD		Basic Ordering Number	Dimensions				
T	TX		A	D	E	F	B
Dimensions (MM)							
2	3	-2M-R-3M	33.5	12.9	1.7	12	13.15
	4	-3M-R-4M	35.0		2.4	12	
3	6	-3M-R-6M	36.1	12.9	2.4	12	15.75
	10	-3M-R-10M	38.4		2.4	14	
4	6	-4M-R-6M	37.1	13.7	2.4	12	15.75
6	3	-6M-R-3M	36.9	15.3	1.9	14	13.15
	8	-6M-R-8M	39.9		4.8	14	16.50
	10	-6M-R-10M	40.7		4.8	14	17.50
	12	-6M-R-12M	46.3		4.8	14	23.50
8	18	-6M-R-18M	49.6	16.2	4.8	22	24.90
	6	-8M-R-6M	40.3		4.1	15	15.75
10	10	-8M-R-10M	42.0	17.2	6.4	15	17.50
	12	-8M-R-12M	47.6		6.4	15	23.50
12	6	-10M-R-6M	42.4	17.2	4.1	18	15.75
	8	-10M-R-8M	43.4		5.6	18	16.50
	12	-10M-R-12M	49.8		7.9	18	23.50
	15	-10M-R-15M	51.3		7.9	18	23.80
	18	-10M-R-18M	51.3		7.9	22	24.90
	6	-12M-R-6M	44.9		4.1	22	15.75
16	8	-12M-R-8M	45.9	22.8	5.6	22	16.50
	10	-12M-R-10M	46.7		7.1	22	17.50
	16	-12M-R-16M	53.8		9.5	22	24.60
	18	-12M-R-18M	53.8		9.5	22	24.90
	20	-12M-R-20M	56.1		9.5	22	25.40
	22	-12M-R-22M	56.1		9.5	24	26.20
	25	-12M-R-25M	62.4		9.5	27	31.80
18	12	-16M-R-12M	53.0	24.4	8.8	24	23.50
	12	-18M-R-12M	54.6		8.8	27	23.50
	16	-18M-R-16M	56.1		12.0	27	24.60
	20	-18M-R-20M	57.6		15.1	27	25.40
	22	-18M-R-22M	57.6		15.1	27	26.20
20	25	-18M-R-25M	62.4	26.0	15.1	27	31.80
	16	-20M-R-16M	57.9		12.0	30	24.60
	18	-20M-R-18M	57.9		13.9	30	24.90
	22	-20M-R-22M	59.4		15.9	30	26.20
22	25	-20M-R-25M	64.2	26.0	15.9	30	31.80
	18	-22M-R-18M	57.9		13.9	30	24.90
	20	-22M-R-20M	59.4		15.5	30	25.40
25	-22M-R-25M	64.2	18.3	30	31.80		



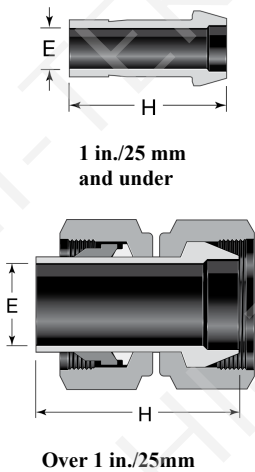
Reducer (Metric to Fractional)

Tube OD		Basic Ordering Number	Dimensions				
T.mm	TX.in		A	D	E	F	B-MM
Dimensions (MM)							
2	1/8	-2M-R-2I	33.5	12.9	1.7	12	13.45
3	1/8	-3M-R-2I	33.5	12.9	2.0	12	13.45
	1/4	-3M-R-4I	36.1	12.9	2.4	12	15.75
4	1/4	-4M-R-4I	37.1	13.7	2.4	12	15.75
6	1/8	-6M-R-2I	36.9	15.3	2.0	14	13.45
	1/4	-6M-R-4I	39.2		4.4		15.75
	5/16	-6M-R-5I	39.9		4.8		16.80
	3/8	-6M-R-6I	40.7		4.8		17.50
8	1/2	-6M-R-8I	46.3	4.8	23.20		
	1/4	-8M-R-4I	40.3	16.2	4.4	15	15.75
	3/8	-8M-R-6I	42.0		6.4		17.50
1/2	-8M-R-8I	47.6	6.4		23.20		
10	3/8	-10M-R-6I	44.2	17.2	6.8	18	17.50
	1/2	-10M-R-8I	49.8		7.9		23.20
12	1/2	-12M-R-8I	52.3	22.8	9.3	27	23.20
	3/4	-12M-R-12I	53.8		9.5		24.70
18	3/4	-18M-R-12I	56.1	24.4	14.7	22	24.70
	1	-18M-R-16I	62.4		15.1		31.70
25	1	-25M-R-16I	69.5	31.3	20.2	35	31.70

Reducer (Fractional to Metric)

Tube OD		Basic Ordering Number	Dimensions				
T.in	TX.mm		A	D	E	F	B
Dimensions (MM)							
1/8	6	-2I-R-6M	1.42	0.50	0.09	7/16	15.75

Port Connectors



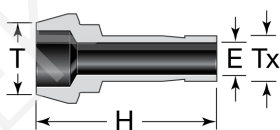
Port Connector (Fractional)

Tube OD	Basic Ordering Number	Dimensions	
		H	E
Dimensions (in)			
1/16	-1I-PC	0.54	0.03
1/8	-2I-PC	0.88	0.08
1/4	-4I-PC	0.98	0.17
5/16	-5I-PC	1.02	0.22
3/8	-6I-PC	1.05	0.27
1/2	-8I-PC	1.43	0.37
5/8	-10I-PC	1.49	0.47
3/4	-12I-PC	1.49	0.58
1	-16I-PC	1.94	0.80
1 1/4	-20I-PC	2.72	1.02
1 1/2	-24I-PC	3.31	1.25
2	-32I-PC	4.56	1.72

Port Connector (Metric)

Tube OD	Basic Ordering Number	Dimensions	
		H	E
Dimensions (MM)			
3	-3M-PC	22.2	1.9
6	-6M-PC	25.0	4.1
8	-8M-PC	26.0	5.6
10	-10M-PC	27.1	7.1
12	-12M-PC	36.2	8.8
15	-15M-PC	37.8	11.2
16	-16M-PC	37.8	12.0
18	-18M-PC	37.8	13.9
20	-20M-PC	39.4	15.5
25	-25M-PC	49.3	19.9
28	-28M-PC	63.5	22.5
30	-30M-PC	67.6	24.3
32	-32M-PC	69.7	26.5
38	-38M-PC	81.9	31.6

Reducing Port Connector



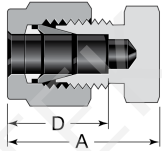
Tube OD		Basic Ordering Number	Dimensions	
T	TX		E	H
Dimensions (in)				
1/8	1/16	-2I-PC-1I	0.03	0.72
1/4	1/16	-4I-PC-1I	0.03	0.75
	1/8	-4I-PC-2I	0.08	0.90
3/8	1/8	-6I-PC-2I	0.08	0.92

Tube OD		Basic ordering Number	Dimensions	
T	TX		E	H
Dimensions (MM)				
6	3	-6M-PC-3M	1.9	22.9
8	6	-8M-PC-6M	4.1	25.4
10	6	-10M-PC-6M	4.1	25.8
	8	-10M-PC-8M	5.6	26.3

	1/4	-6I-PC-4I	0.17	1.00
1/2	1/4	-8I-PC-4I	0.17	1.17
	3/8	-8I-PC-6I	0.27	1.21
3/4	1/2	-12I-PC-8I	0.37	1.49
1	1/2	-16I-PC-8I	0.37	1.69
	3/4	-16I-PC-12I	0.58	1.72

12	6	-12M-PC-6M	4.1	29.6
	8	-12M-PC-8M	5.6	30.1
	10	-12M-PC-10M	7.1	30.6
16	12	-16M-PC-12M	8.8	37.5
28	25	-28M-PC-25M	19.8	56.5
32	25	-32M-PC-25M	19.8	60.3
38	25	-38M-PC-25M	19.8	65.8

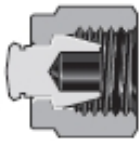
Caps and Plugs



Cap

Tube OD	Basic Ordering Number	Dimensions	
		A	D
Dimensions (in)			
1/16	-1I-C	0.59	0.34
1/8	-2I-C	0.79	0.50
3/16	-3I-C	0.84	0.54
1/4	-4I-C	0.92	0.60
5/16	-5I-C	0.96	0.64
3/8	-6I-C	1.01	0.66
1/2	-8I-C	1.15	0.90
5/8	-10I-C	1.18	0.96
3/4	-12I-C	1.24	0.96
7/8	-14I-C	1.34	1.02
1	-16I-C	1.51	1.23
1 1/8	-18I-C	1.51	1.23
1 1/4	-20I-C	2.10	1.62
1 1/2	-24I-C	2.54	1.97
2	-32I-C	3.41	2.66

Tube OD	Basic Ordering Number	Dimensions	
		A	D
Dimensions (MM)			
2	-2M-C	20.1	12.9
3	-3M-C	20.1	12.9
4	-4M-C	21.3	13.7
6	-6M-C	23.1	15.3
8	-8M-C	24.5	16.2
10	-10M-C	26.6	17.2
12	-12M-C	29.1	22.8
14	-14M-C	29.9	24.4
15	-15M-C	29.9	24.4
16	-16M-C	29.9	24.4
18	-18M-C	31.4	24.4
20	-20M-C	34.0	26.0
22	-22M-C	34.0	26.0
25	-25M-C	38.5	31.3
28	-28M-C	48.5	36.6
30	-30M-C	53.4	39.6
32	-32M-C	55.8	42.0
38	-38M-C	65.4	49.4

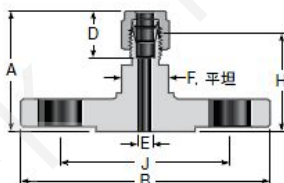


Plug

Tube OD	Basic Ordering Number
Dimensions (in)	
1/16	-1I-P
1/8	-2I-P
3/16	-3I-P
1/4	-4I-P
5/16	-5I-P
3/8	-6I-P
1/2	-8I-P
5/8	-10I-P
3/4	-12I-P
7/8	-14I-P
1	-16I-P
1 1/8	-18I-P
1 1/4	-20I-P
1 1/2	-24I-P
2	-32I-P

Tube OD	Basic Ordering Number
Dimensions (MM)	
2	-2M-P
3	-3M-P
4	-4M-P
6	-6M-P
8	-8M-P
10	-10M-P
12	-12M-P
14	-14M-P
15	-15M-P
16	-16M-P
18	-18M-P
20	-20M-P
22	-22M-P
25	-25M-P
28	-28M-P
30	-30M-P
32	-32M-P

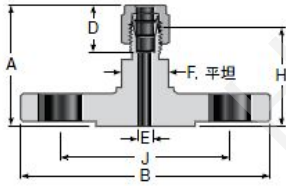
TUBE -flange fitting



Tube to ANSI flange

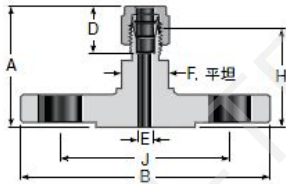
Tube OD in	ANSI flange NPS	class	Basic Ordering Number	Dimensions.in						
				A	B	D	E	F	H	J
1/4	1/2	150	-4I-F8-150	1.61	3.50	0.60	0.19	13/16	1.32	2.38
3/8	1/2	300	-6I-F8-300	1.79	3.75	0.66	0.28	13/16	1.50	2.62
1/2	1	150	-8I-F16-150	1.90	4.25	0.90	0.41	13/16	1.50	3.12
3/4	1	150	-8I-F16-150	1.98	4.25	0.96	0.62	1 1/4	1.58	3.12
1	1	150	-16I-F16-150	2.38	4.25	1.23	0.88	1 3/8	1.90	3.12
1 1/2	2	150	-24I-F32-150	3.40	6.00	1.97	1.34	2 1/8	2.33	4.75
2	2	150	-32I-F32-150	4.11	6.00	2.66	1.81	2 3/4	2.64	4.75

Tube to DIN flange PN40



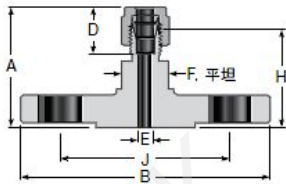
TUBE OD MM	DIN flange DN	Basic Ordering Number	Dimensions.in						
			A	B	D	E	F	H	J
6	25	-6M-F25-40	47.5	115	153	4.8	20	40.1	85.0
12	15	-12M-F15-40	48.5	95.0	22.8	9.5	20	38.4	65.0
	25	-12M-F25-40	50.5	115				40.4	85.0
	50	-12M-F50-40	55.3	165				45.2	125
18	15	-18M-F15-40	51.8	95.0	24.4	15.1	32	41.7	65.0
	25	-18M-F25-40	53.8	115				43.7	85.0
25	25	-25M-F25-40	64.0	115	31.3	21.8	35	51.8	85.0
38	50	-38M-F50-40	90.4	165	49.4	33.7	55	62.7	125
50	50	-50M-F50-40	103	165	65.0	45.2	70	66.3	125

Tube to EN Flange PN40



TUBE OD MM	DIN flange DN	Basic Ordering Number	Dimensions.in						
			A	B	D	E	F	H	J
6	25	-6M-F25E-40	47.5	115	153	4.8	20	40.1	85.0
12	15	-12M-F15E-40	48.5	95.0	22.8	9.5	20	38.4	65.0
	25	-12M-F25E-40	50.5	115				40.4	85.0
	50	-12M-F50E-40	55.3	165				45.2	125
18	15	-18M-F15-40	51.8	95.0	24.4	15.1	32	41.7	65.0
	25	-18M-F25E-40	53.8	115				43.7	85.0
25	25	-25M-F25E-40	64.0	115	31.3	21.8	35	51.8	85.0
38	50	-38M-F50E-40	90.4	165	49.4	33.7	55	62.7	125
50	50	-50M-F50E-40	103	165	65.0	45.2	70	66.3	125

Tube to JIS flange 10K.



Tube OD MM	EN Flange DN	Basic Ordering Number	Dimensions.in						
			A	B	D	E	F	H	J
Dimensions.in									
1/4	15	-4I-15A-10K	1.66	3.74	0.60	0.19	13/16	1.37	2.76
3/8		-6I-15A-10K	1.72		0.66	0.28		1.43	
1/2		-8I-15A-10K	1.83		0.90	0.41		1.51	
3/4		-12I-15A-10K	1.91		0.96	0.62		1 1/4	
1	25	-16I-25A-10K	2.40	4.92	1.23	0.88	1 3/8	1.92	3.54
2	50	-32I-50A-10K	4.01	6.10	2.66	1.81	2 3/4	2.54	4.72
Dimensions MM									
12	15	-12M-15A-10K	46.5	95.0	22.8	9.5	20	36.3	70.0
18	15	-18M-15A-10K	48.5	95.0	24.4	15.1	32	38.4	70.0
25	25	-25M-25A-10K	61.0	125	31.3	21.8	35	48.8	90.0



Nut

Tube OD	Basic Ordering Number	Dimensions	
		G	L
Dimensions, in			
1/16	-1I-1	5/16	0.31
1/8	-2I-1	7/16	0.47
3/16	-3I-1	1/2	0.47
1/4	-4I-1	9/16	0.50
5/16	-5I-1	5/8	0.53
3/8	-6I-1	11/16	0.56
1/2	-8I-1	7/8	0.69
5/8	-10I-1	1	0.69
3/4	-12I-1	1 1/8	0.69
7/8	-14I-1	1 1/4	0.69
1	-16I-1	1 1/2	0.81
1 1/4	-20I-1	1 7/8	1.25
1 1/2	-24I-1	2 1/4	1.50
2	-32I-1	3	2.06

Tube OD	Basic Ordering Number	Dimensions	
		G	L
Dimensions, (MM)			
2	-2M-1	12	11.9
3	-3M-1	12	11.9
4	-4M-1	12	11.9
6	-6M-1	14	12.7
8	-8M-1	16	13.5
10	-10M-1	19	15.1
12	-12M-1	22	17.4
14	-14M-1	25	17.4
15	-15M-1	25	17.4
16	-16M-1	25	17.4
18	-18M-1	30	17.4
20	-20M-1	32	17.4
22	-22M-1	32	17.4
25	-25M-1	38	20.6
28	-28M-1	46	30.6
30	-30M-1	50	32.7
32	-32M-1	50	34.4
38	-38M-1	50	40.6
50	-50M-1	75	52.3



Front ferrule (A)

Tube OD	Basic Ordering Number	Tube OD	Basic Ordering Number
Dimensions, in		Dimensions, (MM)	
1/16	-1I-1A	2	-2M-1A
1/8	-2I-1A	3	-3M-1A
3/16	-3I-1A	4	-4M-1A
1/4	-4I-1A	6	-6M-1A
5/16	-5I-1A	8	-8M-1A
3/8	-6I-1A	10	-10M-1A
1/2	-8I-1A	12	-12M-1A
5/8	-10I-1A	14	-14M-1A
3/4	-12I-1A	15	-15M-1A
7/8	-14I-1A	16	-16M-1A
1	-16I-1A	18	-18M-1A
1 1/4	-20I-1A	20	-20M-1A
1 1/2	-24I-1A	22	-22M-1A
2	-32I-1A	25	-25M-1A
		28	-28M-1A
		30	-30M-1A
		32	-32M-1A
		38	-38M-1A
		50	-50M-1A

Back ferrule (B)

Tube OD	Basic Ordering Number	Tube OD	Basic Ordering Number
Dimensions, in		Dimensions, (MM)	
1/16	-1I-1B	2	-2M-1B
1/8	-2I-1B	3	-3M-1B
3/16	-3I-1B	4	-4M-1B
1/4	-4I-1B	6	-6M-1B
5/16	-5I-1B	8	-8M-1B
3/8	-6I-1B	10	-10M-1B
1/2	-8I-1B	12	-12M-1B
5/8	-10I-1B	14	-14M-1B
3/4	-12I-1B	15	-15M-1B
7/8	-14I-1B	16	-16M-1B
1	-16I-1B	18	-18M-1B
1 1/4	-20I-1B	20	-20M-1B
1 1/2	-24I-1B	22	-22M-1B
2	-32I-1B	25	-25M-1B
		28	-28M-1B
		30	-30M-1B
		32	-32M-1B
		38	-38M-1B
		50	-50M-1B