

Tube Fittings, Tubes and Pipes

6 Series



FITOK GmbH

Sprendlinger Landstr. 115, 63069 Offenbach / Germany
www.fitokgmbh.de
info@fitokgmbh.de

FITOK INC.

6100 Corporate Dr., Suite 588, Houston, Texas 77036, USA
www.fitokinc.com
info@fitokinc.com

FITOK Co., Ltd.

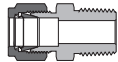
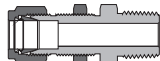
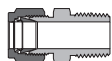
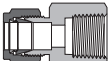
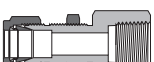
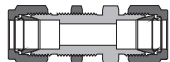
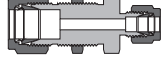
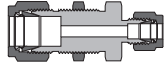
Yingtailong Industrial Park, Shenzhen, 518109, China
www.fitok.com.cn
info@fitok.com.cn

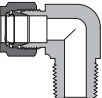
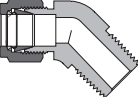
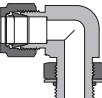
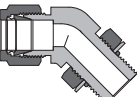
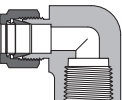
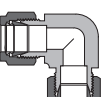
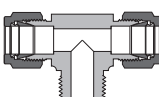
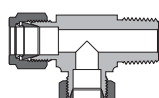
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Valves and Fittings

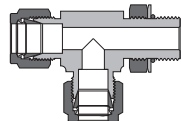
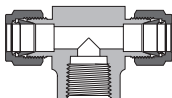
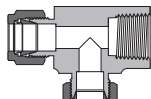
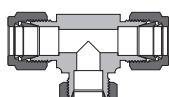
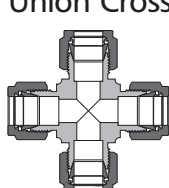
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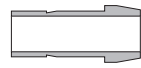
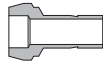
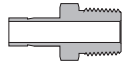
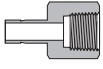
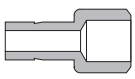
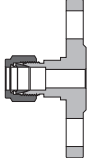
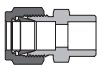
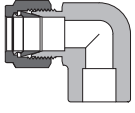
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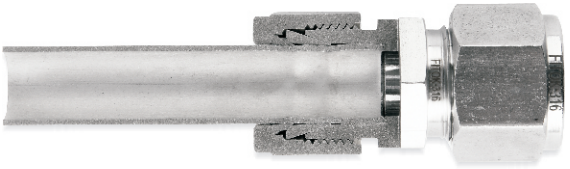
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Features

- ⦿ Sizes range from 1/16" to 1 1/2" and 2 mm to 38 mm.
- ⦿ Diverse materials and configurations are available.
- ⦿ Precision machined components ensure perfect deformation of the ferrules and tubing.
- ⦿ Hardened threads with smooth surface finish avoid galling and help to extend the fitting service life.
- ⦿ Female nut threads are silver-plated to reduce the friction against the body threads.
- ⦿ Radius junction design with elbows provides smooth flow path.
- ⦿ Every fitting is stamped with size, material, and heat code.
- ⦿ Fittings are easy to disconnect and retighten.



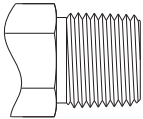
Technical Data

⦿ Thread Ends

NPT Threads (NPT)

- ⦿ Comply with ASME B1.20.1, SAE AS71051.
- ⦿ Installation torque suggested by FITOK.

Thread Data						
Thread Size	Thread/in.	Dia. at Reference Plane (mm)			Handtight Engagement (mm)	Required Torque N·m(lbf·in)
		Max. Dia.	Pitch Dia.	Min. Dia.		
1/16	27	7.894	7.142	6.389	4.064	—
1/8		10.242	9.489	8.737	4.102	9 (79.6)
1/4	18	13.616	12.487	11.358	5.785	15 (132.8)
3/8		17.055	15.926	14.797	6.096	25 (221.3)
1/2	14	21.224	19.772	18.321	8.128	35 (309.8)
3/4		26.569	25.117	23.666	8.618	50 (442.5)
1	11.5	33.228	31.461	29.694	10.160	55 (486.8)
1 1/4		41.985	40.218	38.451	10.668	60 (531)
1 1/2		48.054	46.287	44.520	10.668	70 (619.5)
2		60.092	58.325	56.558	11.065	75 (663.8)



- ☐ 60° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of root and crest are parallel
- ☐ Taper 1:16
- ☐ Type of sealing: thread sealant

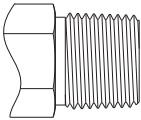
Working Pressures of NPT Thread Ends								
Thread Size	316 Stainless Steel and Carbon Steel				Brass			
	Male		Female		Male		Female	
	psig	bar	psig	bar	psig	bar	psig	bar
1/16	11000	757	6700	460	5500	378	3300	227
1/8	10000	689	6500	447	5000	344	3200	220
1/4	8000	551	6600	454	4000	275	3300	227
3/8	7800	537	5300	365	3900	268	2600	179
1/2	7700	530	4900	337	3800	261	2400	165
3/4	7300	502	4600	316	3600	248	2300	158
1	5300	365	4400	303	2600	179	2200	151
1 1/4	6000	410	5000	344	3000	200	2500	172
1 1/2	5000	344	4600	317	2500	172	2300	158
2	3900	268	3900	268	1900	130	1900	130

Working pressure is based on ANSI/ASME B31.3 at ambient temperature.

ISO Tapered Threads (R, R1, R2, Rc, RT, PT, BSPT, ZG)

- Comply with ISO 7-1, EN 10226-1, BS 21, DIN 2999, JIS B0203.
- The installation torque is the same as that of NPT thread ends.

Thread Data					
Thread Size	Thread/ in.	Dia. at Reference Plane (mm)			Gauge Length
		Max. Dia.	Pitch Dia.	Min. Dia.	
1/16	28	7.723	7.142	6.561	4.0
1/8		9.728	9.147	8.566	4.0
1/4	19	13.157	12.301	11.445	6.0
3/8		16.662	15.806	14.950	6.4
1/2	14	20.955	19.793	18.631	8.2
3/4		26.441	25.279	24.117	9.5
1	11	33.249	31.770	30.291	10.4
1 1/4		41.910	40.431	38.952	12.7
1 1/2		47.803	46.324	44.845	12.7
2		59.614	58.135	56.656	15.9



- 55° thread angle
- Pitch measured in inch
- Truncation of root and crest are round
- Taper 1:16
- Type of sealing: thread sealant

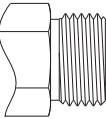
Working Pressures of ISO Tapered Thread Ends

The working pressures of ISO tapered thread ends are the same with that of the NPT thread ends.

ISO Parallel Threads (G, RP, PF, BSPP)

Comply with ISO 228-1, DIN ISO 228-1, JIS B0202, BS 2779.

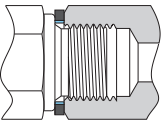
Thread Data				
Thread Size	Thread/ in.	Basic Dia. (mm)		
		Max. Dia.	Pitch Dia.	Min. Dia.
1/16	28	7.723	7.142	6.561
1/8		9.728	9.147	8.566
1/4	19	13.157	12.301	11.445
3/8		16.662	15.806	14.950
1/2	14	20.955	19.793	18.631
5/8		22.911	21.749	20.587
3/4		26.441	25.279	24.117
7/8		30.201	29.039	27.877
1	11	33.249	31.770	30.291
1 1/8		37.897	36.418	34.939
1 1/4		41.910	40.431	38.952
1 1/2		47.803	46.324	44.845
1 3/4		53.746	52.267	50.788
2		59.614	58.135	56.656



- 55° thread angle
- Pitch measured in inch
- Truncation of root and crest are round

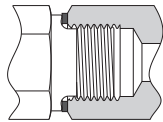
Types of Sealing for ISO parallel threads

1. RS Stud End, RS Gasket and RP Port



- RS stud end complies with DIN 3852-2 type A
- For RS gasket, see page 82
- RP port complies with DIN 3852-2 type X

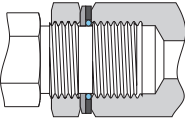
2. RP Stud End, RP Gasket and RP Port



- RP studs end complies with DIN 3852-2 type B
- For RP gasket, see page 83
- RP port complies with DIN 3852-2 type X

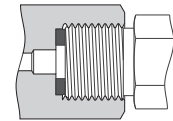
The RP gasket can be used with a RS fitting

3. PP Stud End and RP Port



- RP port complies with DIN 3852-2 type X

4. RG Port, RG Gasket and BP Stud End



- RG port complies with EN 837-1/3
- For RG gasket, see page 83

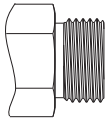
Working Pressures of Adjustable ISO Parallel Thread Ends(PP)

Thread Size	316 Stainless Steel and Carbon Steel	
	psig	bar
1/8	4568	315
1/4		
3/8		
1/2	2320	160
3/4		
1		

SAE/MS Straight Threads (UN, UNJ)

Comply with ASME B1.1, ISO R725.

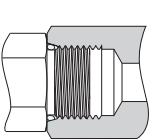
Thread Data				
Thread Size	Thread/ in.	Basic Dia. (mm)		
		Max. Dia.	Pitch Dia.	Min. Dia.
5/16-24	24	7.938	7.249	6.792
3/8-24	24	9.525	8.837	8.380
7/16-20	20	11.113	10.287	9.738
1/2-20	20	12.700	11.875	11.326
9/16-18	18	14.288	13.325	12.761
3/4-16	16	19.050	18.019	17.330
7/8-14	14	22.225	21.046	20.262
1 1/16-12	12	26.988	25.613	24.719
1 3/16-12	12	30.163	28.788	27.871
1 5/16-12	12	33.338	31.963	31.046
1 5/8-12	12	41.275	39.901	38.984
1 7/8-12	12	47.625	46.251	45.324
2 1/2-12	12	63.500	62.126	61.209



- 60° thread angle
- Pitch measured in inch
- Truncation of root and crest are parallel

Types of Sealing for SAE/MS threads

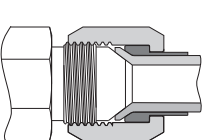
1. ST Stud End and ISO 11926-1 Port



☐ ST stud end complies with ISO 11926-3

☐ For O-ring, see page 84

2. 37° Flare (AN) Stud and Flared Tubing



☐ The type of sealing complies with SAE J514

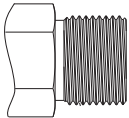
Working Pressures of SAE/MS Thread Ends				
Thread Size	316 Stainless Steel and Carbon Steel			
	Non-adjustable		Adjustable	
	psig	bar	psig	bar
5/16-24	4568	315	4568	315
3/8-24				
7/16-20				
1/2-20				
9/16-18			3626	250
3/4-16				
7/8-14	3626	250	2900	200
1 1/16-12				
1 3/16-12				
1 5/16-12	2900	200	2320	160
1 5/8-12				
1 7/8-12				
2 1/2-12	1813	125	1450	100

Working pressures are based on ISO 11926-3 at ambient temperature.

Metric Threads (M)

Comply with ISO 261.

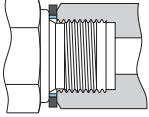
Thread Data				
Thread Size	Pitch (mm)	Basic Dia. (mm)		
		Max. Dia.	Pitch Dia.	Min. Dia.
M6 x 1	1	6.000	5.350	4.917
M8 x 1		8.000	7.350	6.917
M10 x 1		10.000	9.350	8.917
M12 x 1.5	1.5	12.000	11.026	10.376
M14 x 1.5		14.000	13.026	12.376
M16 x 1.5		16.000	15.026	14.376
M18 x 1.5		18.000	17.026	16.376
M20 x 1.5		20.000	19.026	18.376
M22 x 1.5		22.000	21.026	20.376
M24 x 1.5		24.000	23.026	22.376
M27 x 2	2	27.000	25.701	24.835
M30 x 2		30.000	28.701	27.835
M33 x 2		33.000	31.701	30.835
M36 x 2		36.000	34.701	33.835
M39 x 2		39.000	37.701	36.835
M42 x 2		42.000	40.701	39.835
M45 x 2		45.000	43.701	42.835
M48 x 2		48.000	46.701	45.835



- ☐ 60° thread angle
- ☐ Pitch measured in mm
- ☐ Truncation of root and crest are parallel

Types of Sealing for Metric Threads

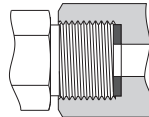
1. MRS Stud End, RS-M gasket and MS Port



☐ MRS stud end complies with DIN 3852-1 type A

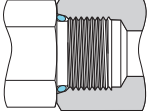
☐ For RS-M gasket, see page 82

2. MS Stud End, RG-M gasket and MS Port



☐ For RG-M gasket, see page 83

3. MST Stud End and ISO 6149-1 Port



☐ MST stud end complies with ISO 6149-3

☐ For O-ring, see page 84

Working Pressures for MST Stud Ends				
Thread Size	Stainless Steel and Carbon Steel			
	Non-adjustable		Adjustable	
	psig	bar	psig	bar
M8 x 1	5800	400	4568	315
M10 x 1				
M12 x 1.5				
M14 x 1.5				
M16 x 1.5	4568	315	3626	250
M18 x 1.5				
M20 x 1.5				
M22 x 1.5				
M27 x 2				
M30 x 2	2900	200	2320	160
M33 x 2				
M42 x 2				
M48 x 2				
M60 x 2	2320	160	1450	100

Working pressures are based on ISO 6149-3 at ambient temperature.

Working Temperatures

Tube Ends

Material	Minimum Temperature	Maximum Temperature
Stainless Steel	-325° F (-198° C)	800° F (426° C)
Brass	-325° F (-198° C)	400° F (204° C)
Alloy 400/R-405	-325° F (-198° C)	800° F (426° C)

Thread Ends

The working temperatures of the thread ends may be limited by the teflon tape or thread sealant or, when applicable, the gaskets or O-rings as follows:

Component	Material	Minimum Temperature	Maximum Temperature
RS gasket	Buna N	-22° F (-30° C)	230° F (110° C)
	Fluorocarbon FKM	-4° F (-20° C)	400° F (204° C)
RP/RG gasket	Copper	-452° F (-269° C)	500° F (260° C)
	Stainless Steel	-425° F (-254° C)	1000° F (538° C)
	PTFE	-65° F (-54° C)	450° F (232° C)
	Vulcanized Fibre	-76° F (-60° C)	221° F (105° C)
O-ring	Buna N	-22° F (-30° C)	230° F (110° C)
	Fluorocarbon FKM	-4° F (-20° C)	400° F (204° C)

Working Pressures

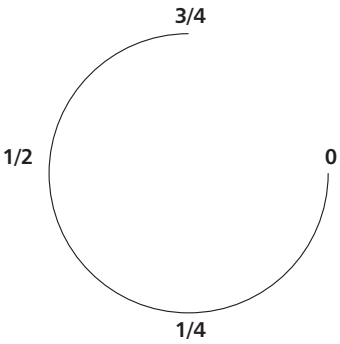
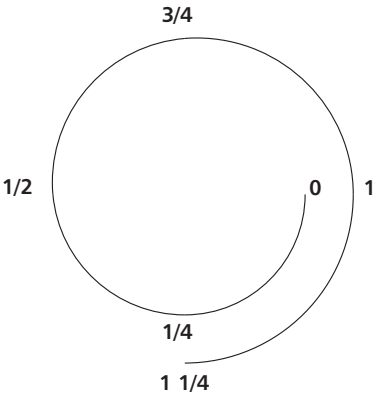
- The maximum working pressures of the tube ends at ambient temperature are rated by the used FITOK tubings. Refer to FITOK tubing data.
- The maximum working pressures of the thread ends at ambient temperature are stated above.
- To get the maximum working pressure at elevated temperature, use the maximum working pressure at ambient temperature to multiply the factors in the form of Elevated Temperature Factors in page 9.
- The whole fitting is rated by the smallest value among its ends.

Materials

Material	Bar Stock	Forging	Designator
316 stainless steel	ASTM A276, ASME SA479, EN 1.4401	ASTM A182, ASME SA182, EN 1.4401	SS
304 stainless steel	ASTM A276, ASME SA479, EN 1.4301	ASTM A182, ASME SA182, EN 1.4301	S4
321 stainless steel	ASTM A276, ASME SA479, EN 1.4541	ASTM A182, ASME SA182, EN 1.4541	S1
Alloy 20	ASTM B473	ASTM B462	A20
Alloy 400/R-405	ASTM B164, ASME SB164	ASTM B564, ASME SB564	M
Alloy 600	ASTM B166, ASME SB166	ASTM B564, ASME SB564	INC
Alloy 625	ASTM B446	ASTM B564, ASME SB564	A65
Alloy C-276	ASTM B574	ASTM B564	HC
Aluminum	ASTM B211	ASTM B247	AL
Brass	ASTM B16/B453	ASTM B283	B
Carbon steel	ASTM A108	/	CS
Nylon	ASTM D4066	/	PA
PTFE	ASTM D1710	ASTM D3294	T
Duplex 2205	ASTM A479	ASTM A182	D5
Duplex 2507	ASTM A479	ASTM A182	D7
Titanium (grade 4)	ASTM B348	ASTM B381	TI
904L stainless steel	ASTM B649	ASTM A182	904L

Installation Instructions

- FITOK tube fittings up to 1" or 25 mm
 1. Loosen the nut 1/4 turn from finger-tight position.
 2. Insert tubing into the tube fitting, make sure that the tubing rests firmly on the shoulder of the port.
 3. Finger-tighten the nut.
 4. Tighten the nut 1 1/4 turns with wrench while holding steady the body of the fitting or the valve (Fig.1).For small-sized fittings (1/16", 1/8" and 3/16", 2 mm, 3 mm and 4 mm), tighten the nut 3/4 turn with wrench (Fig.2).
- FITOK tube fittings over 1" or 25 mm
 1. Use presetting tool to install the ferrules onto the tube, please refer to the instruction of Hydraulic Presetting Tool for details.
 2. Insert the preset tubing with ferrules and nut into the body of fitting, finger tight.
 3. Tighten the nut one-half turn with wrench.
- Reinstallation (all sizes)
 1. Mark the tube at the back of the nut, mark a line along the nut and fitting body flats.
 2. Insert tubing with presetted ferrules into the fitting body until the front ferrule seats.
 3. Then rotate the nut with a wrench to the previously pulled-up position as indicated by the marks on the tube and the flats.
 4. Tighten the nut slightly with wrench.
- Plugs and Port Connectors
 1. Tighten the plug or port connector 1/4 turn from the finger-tight position while holding steady the body of the fitting. For small-sized fittings (1/16", 1/8" and 3/16", 2 mm, 3 mm and 4 mm), tighten the nut 1/8 turn with wrench.
 2. Reinstallation: Tighten slightly with a wrench from the finger-tight position.The Installation Instructions of the tube adapter end of Port Connectors are the same as the FITOK Tube Fittings.



Cautions:

- Do not loosen or tighten fittings when system is pressurized.
- Make sure that the tubing rests firmly on the shoulder of the port.
- Always leave enough straight length of the tubing for the fittings.
- Always use an insert for extremely soft plastic tubing.
- Material of the metal tubing should be softer than that of the fitting. For example, stainless steel tubing should not be used with brass fittings. When tubing and fittings are made of the same material, the tubing must be fully annealed.
- The allowable working pressure of the tube fitting is rated to the maximum working pressure of the corresponding tubing, which can be found in FITOK tubing data sheet. For those which can not be found in FITOK tubing data sheet, please contact the authorized representative or FITOK for related information.
- Keep the tubing end and surface clean and smooth.
- Always use proper thread sealants on tapered pipe threads. Make sure that its working temperature does not exceed that of the sealants.
- When assemble the tube fitting, hold the body with a wrench and turn the nut instead of holding the nut.
- When install a valve with tube fitting end, hold the valve body with a wrench and turn the nut.
- When assemble the fitting to a valve with thread, hold the valve body with a wrench and turn the body of the fitting.

FITOK Stainless Steel Seamless Tubing

Features

- ⦿ Sizes range from 1/16" to 1 1/2" and 3 mm to 38 mm.
- ⦿ Material, size, specification and heat code are indicated on the tubing surface.
- ⦿ Pickling surface finish and mechanical polished surface finish tubes are available.

Material Standards

Grade	UNS Designation	ASTM	ASME
316/316L	S31600/S31603	A269/A213	SA213
304/304L	S31400/S31403		
321	S32100		

Allowable Working Pressure

- ⦿ The allowable working pressures in the table below for fractional tubing and metric tubing are based on ASME B31.3 at ambient temperature.
- ⦿ The data in the table are applied to 316 SS, 304 SS and 321 SS. For 316L SS and 304L SS, multiply the data in the table by 0.84 to get the allowable working pressure.
- ⦿ To work out the allowable working pressure at elevated temperature, take allowable working pressure at ambient temperature to multiply the factors in the table of Elevated Temperature Factors in page 9.

Fractional Tubing

Tube O.D. (in.)	Nominal Wall Thickness, in.															
	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	0.134	0.156	0.188
	Working Pressure, psig															
	Note: For gas service, select a tube thickness outside of the shaded area															
1/16	5660	6870	8180	9490	12100											
1/8						8580	11000									
3/16						5450	7070	10300								
1/4						4040	5150	7570	10300							
5/16							4040	5860	8080							
3/8							3330	4850	5860							
1/2							2600	3530	4750	6260						
5/8								2930	4040	5250	6060					
3/4								2420	3330	4240	4950	5860				
7/8								2020	2830	3640	4240	4850				
1									2420	3130	3640	4240	4750			
1 1/4										2420	2830	3330	3640	4150	4950	
1 1/2											2320	2730	3030	3430	4040	4950

Metric Tubing

Tube O.D. (mm)	Nominal Wall 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
	Working Pressure, bar												
	Note: For gas service, select a tube thickness outside of the shaded area												
3	677												
6	313	424	545	717									
8		313	394	525									
10		242	303	404	515	586							
12		202	252	333	414	475							
14		162	202	273	343	384	434	494					
15		151	192	252	313	364	404	453					
16			172	232	293	333	374	404					
18			151	202	263	293	323	374					
20			141	182	232	263	293	333	384				
22			121	162	202	232	263	303	343				
25					182	202	232	263	293	323			
28						182	202	232	263	283	333		
30						172	182	212	242	263	313		
32						162	172	202	222	242	293	333	
38							141	162	192	202	242	273	313

Elevated Temperature Factors

Temperature		Material				
°F	°C	316	316L	304	304L	321
100	38	1.0	1.0	1.0	1.0	1.0
200	93	1.0	1.0	1.0	1.0	1.0
300	149	1.0	1.0	1.0	1.0	1.0
400	204	0.97	0.93	0.94	0.94	1.0
500	260	0.90	0.86	0.88	0.88	0.97
600	316	0.85	0.81	0.82	0.84	0.92
650	343	0.84	0.79	0.81	0.82	0.90
700	371	0.82	0.77	0.80	0.81	0.88
750	399	0.80	0.75	0.78	0.80	0.86
800	427	0.80	0.74	0.76	0.78	0.85
850	454	0.79	0.72	0.75	0.77	0.84
900	486	0.78		0.73		0.83
950	510	0.77		0.72		0.82
1000	538	0.76		0.69		0.81

Example to calculate the allowable working pressure:

- Type 316L SS 12 mm O.D.×1.5 mm wall at 800°F (427°C)
1. The allowable working pressure for 316 SS at ambient temperature is 333 bar (shown in the table above), multiply by 0.84 to get 316L SS data. So allowable working pressure for 316L SS at ambient temperature is 333 bar × 0.84 = 280 bar.
 2. The elevated temperature factor for 800°F (427°C) is 0.74 (shown in the table above). So the allowable working pressure for 316L SS 12 mm O.D. × 1.5 mm wall at 800°F (427°C) is 280 bar × 0.74 = 207 bar.

Ordering Information

Fractional Tubing

Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number					Weight	
		316	316L	304	304L	321	lb/ft	Kg/m
1/8	0.028	SS-ST2-028-	6L-ST2-028-	S4-ST2-028-	4L-ST2-028-	S1-ST2-028-	0.030	0.044
1/4	0.035	SS-ST4-035-	6L-ST4-035-	S4-ST4-035-	4L-ST4-035-	S1-ST4-035-	0.082	0.122
	0.049	SS-ST4-049-	6L-ST4-049-	S4-ST4-049-	4L-ST4-049-	S1-ST4-049-	0.107	0.159
	0.065	SS-ST4-065-	6L-ST4-065-	S4-ST4-065-	4L-ST4-065-	S1-ST4-065-	0.131	0.194
3/8	0.035	SS-ST6-035-	6L-ST6-035-	S4-ST6-035-	4L-ST6-035-	S1-ST6-035-	0.129	0.192
	0.049	SS-ST6-049-	6L-ST6-049-	S4-ST6-049-	4L-ST6-049-	S1-ST6-049-	0.173	0.258
	0.065	SS-ST6-065-	6L-ST6-065-	S4-ST6-065-	4L-ST6-065-	S1-ST6-065-	0.219	0.326
1/2	0.035	SS-ST8-035-	6L-ST8-035-	S4-ST8-035-	4L-ST8-035-	S1-ST8-035-	0.177	0.263
	0.049	SS-ST8-049-	6L-ST8-049-	S4-ST8-049-	4L-ST8-049-	S1-ST8-049-	0.240	0.357
	0.065	SS-ST8-065-	6L-ST8-065-	S4-ST8-065-	4L-ST8-065-	S1-ST8-065-	0.307	0.457
5/8	0.065	SS-ST10-065-	6L-ST10-065-	S4-ST10-065-	4L-ST10-065-	S1-ST10-065-	0.396	0.589
3/4	0.065	SS-ST12-065-	6L-ST12-065-	S4-ST12-065-	4L-ST12-065-	S1-ST12-065-	0.484	0.720
1	0.083	SS-ST16-083-	6L-ST16-083-	S4-ST16-083-	4L-ST16-083-	S1-ST16-083-	0.827	1.231
1 1/4	0.109	SS-ST20-109-	6L-ST20-109-	S4-ST20-109-	4L-ST20-109-	S1-ST20-109-	1.352	2.012
1 1/2	0.134	SS-ST24-134-	6L-ST24-134-	S4-ST24-134-	4L-ST24-134-	S1-ST24-134-	1.989	2.961

Metric Tubing

Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number					Weight	
		316	316L	304	304L	321	Kg/m	
3	0.5	SS-ST3M-0.5-	6L-ST3M-0.5-	S4-ST3M-0.5-	4L-ST3M-0.5-	S1-ST3M-0.5-	0.031	
	0.7	SS-ST3M-0.7-	6L-ST3M-0.7-	S4-ST3M-0.7-	4L-ST3M-0.7-	S1-ST3M-0.7-	0.040	
6	1.0	SS-ST6M-1.0-	6L-ST6M-1.0-	S4-ST6M-1.0-	4L-ST6M-1.0-	S1-ST6M-1.0-	0.125	
	1.5	SS-ST6M-1.5-	6L-ST6M-1.5-	S4-ST6M-1.5-	4L-ST6M-1.5-	S1-ST6M-1.5-	0.169	
8	1.0	SS-ST8M-1.0-	6L-ST8M-1.0-	S4-ST8M-1.0-	4L-ST8M-1.0-	S1-ST8M-1.0-	0.175	
	1.5	SS-ST8M-1.5-	6L-ST8M-1.5-	S4-ST8M-1.5-	4L-ST8M-1.5-	S1-ST8M-1.5-	0.244	
10	1.0	SS-ST10M-1.0-	6L-ST10M-1.0-	S4-ST10M-1.0-	4L-ST10M-1.0-	S1-ST10M-1.0-	0.226	
	1.5	SS-ST10M-1.5-	6L-ST10M-1.5-	S4-ST10M-1.5-	4L-ST10M-1.5-	S1-ST10M-1.5-	0.320	
12	1.0	SS-ST12M-1.0-	6L-ST12M-1.0-	S4-ST12M-1.0-	4L-ST12M-1.0-	S1-ST12M-1.0-	0.276	
	1.5	SS-ST12M-1.5-	6L-ST12M-1.5-	S4-ST12M-1.5-	4L-ST12M-1.5-	S1-ST12M-1.5-	0.395	
	2.0	SS-ST12M-2.0-	6L-ST12M-2.0-	S4-ST12M-2.0-	4L-ST12M-2.0-	S1-ST12M-2.0-	0.501	
14	1.0	SS-ST14M-1.0-	6L-ST14M-1.0-	S4-ST14M-1.0-	4L-ST14M-1.0-	S1-ST14M-1.0-	0.326	
	1.5	SS-ST14M-1.5-	6L-ST14M-1.5-	S4-ST14M-1.5-	4L-ST14M-1.5-	S1-ST14M-1.5-	0.470	
	2.0	SS-ST14M-2.0-	6L-ST14M-2.0-	S4-ST14M-2.0-	4L-ST14M-2.0-	S1-ST14M-2.0-	0.602	
16	1.0	SS-ST16M-1.0-	6L-ST16M-1.0-	S4-ST16M-1.0-	4L-ST16M-1.0-	S1-ST16M-1.0-	0.376	
	1.5	SS-ST16M-1.5-	6L-ST16M-1.5-	S4-ST16M-1.5-	4L-ST16M-1.5-	S1-ST16M-1.5-	0.545	
	2.0	SS-ST16M-2.0-	6L-ST16M-2.0-	S4-ST16M-2.0-	4L-ST16M-2.0-	S1-ST16M-2.0-	0.702	
18	1.0	SS-ST18M-1.0-	6L-ST18M-1.0-	S4-ST18M-1.0-	4L-ST18M-1.0-	S1-ST18M-1.0-	0.426	
	1.5	SS-ST18M-1.5-	6L-ST18M-1.5-	S4-ST18M-1.5-	4L-ST18M-1.5-	S1-ST18M-1.5-	0.620	
	2.0	SS-ST18M-2.0-	6L-ST18M-2.0-	S4-ST18M-2.0-	4L-ST18M-2.0-	S1-ST18M-2.0-	0.802	
20	2.0	SS-ST20M-2.0-	6L-ST20M-2.0-	S4-ST20M-2.0-	4L-ST20M-2.0-	S1-ST20M-2.0-	0.903	
22	2.0	SS-ST22M-2.0-	6L-ST22M-2.0-	S4-ST22M-2.0-	4L-ST22M-2.0-	S1-ST22M-2.0-	1.003	
25	2.0	SS-ST25M-2.0-	6L-ST25M-2.0-	S4-ST25M-2.0-	4L-ST25M-2.0-	S1-ST25M-2.0-	1.153	
	2.5	SS-ST25M-2.5-	6L-ST25M-2.5-	S4-ST25M-2.5-	4L-ST25M-2.5-	S1-ST25M-2.5-	1.410	
28	2.8	SS-ST28M-2.8-	6L-ST28M-2.8-	S4-ST28M-2.8-	4L-ST28M-2.8-	S1-ST28M-2.8-	1.769	
30	3.0	SS-ST30M-3.0-	6L-ST30M-3.0-	S4-ST30M-3.0-	4L-ST30M-3.0-	S1-ST30M-3.0-	2.031	
32	3.5	SS-ST32M-3.5-	6L-ST32M-3.5-	S4-ST32M-3.5-	4L-ST32M-3.5-	S1-ST32M-3.5-	2.501	
38	4.0	SS-ST38M-4.0-	6L-ST38M-4.0-	S4-ST38M-4.0-	4L-ST38M-4.0-	S1-ST38M-4.0-	3.410	

Add the actual length (foot or meter) and surface finish code as a suffix to the basic ordering number to get the complete ordering number. "AP" for pickling surface finish, "MP" for mechanical polished surface finish.

For example:

- 12 feet long, outside diameter 1/2", wall thickness 0.049", and pickling surface finish 316L SS seamless tube, the complete ordering number is **6L-ST8-049-12-AP**.
- 3 meters long, outside diameter 1/2", wall thickness 0.049", and mechanical polished surface finish 316L SS seamless tube, the complete ordering number is **6L-ST8-049-3M-MP**.
- 3 meters long, outside diameter 12 mm, wall thickness 1.0 mm, and pickling surface finish 304L SS seamless tube, the complete ordering number is **4L-ST12M-1.0-3M-AP**.

FITOK Stainless Steel Seamless Pipe

Features

- Nominal pipe sizes from NPS 1/8 to NPS 2.
- Material, size, specification and heat code are indicated on the pipe surface.

Allowable Working Pressure

- The allowable working pressures in the form are based on ASME B31.3 at ambient temperature.
- The datas in the form are applied to 316 SS, 304 SS and 321 SS. For 316L SS and 304L SS, multiply the data in the form by 0.84 to get the allowable working pressure.
- The elevated temperature factors are the same with those of FITOK stainless steel seamless as tubing.

Ordering Information

NPS	Schedule Number	Basic Ordering Number					Weight	
		316	316L	304	304L	321	lb/ft	Kg/m
1/8	40S	SS-SP2-40S-	6L-SP2-40S-	S4-SP2-40S-	4L-SP2-40S-	S1-SP2-40S-	0.250	0.372
	80S	SS-SP2-80S-	6L-SP2-80S-	S4-SP2-80S-	4L-SP2-80S-	S1-SP2-80S-	0.321	0.478
1/4	40S	SS-SP4-40S-	6L-SP4-40S-	S4-SP4-40S-	4L-SP4-40S-	S1-SP4-40S-	0.433	0.645
	80S	SS-SP4-80S-	6L-SP4-80S-	S4-SP4-80S-	4L-SP4-80S-	S1-SP4-80S-	0.546	0.812
3/8	40S	SS-SP6-40S-	6L-SP6-40S-	S4-SP6-40S-	4L-SP6-40S-	S1-SP6-40S-	0.579	0.862
	80S	SS-SP6-80S-	6L-SP6-80S-	S4-SP6-80S-	4L-SP6-80S-	S1-SP6-80S-	0.754	1.122
1/2	40S	SS-SP8-40S-	6L-SP8-40S-	S4-SP8-40S-	4L-SP8-40S-	S1-SP8-40S-	0.868	1.292
	80S	SS-SP8-80S-	6L-SP8-80S-	S4-SP8-80S-	4L-SP8-80S-	S1-SP8-80S-	1.110	1.652
3/4	40S	SS-SP12-40S-	6L-SP12-40S-	S4-SP12-40S-	4L-SP12-40S-	S1-SP12-40S-	1.154	1.717
	80S	SS-SP12-80S-	6L-SP12-80S-	S4-SP12-80S-	4L-SP12-80S-	S1-SP12-80S-	1.504	2.238
1	40S	SS-SP16-40S-	6L-SP16-40S-	S4-SP16-40S-	4L-SP16-40S-	S1-SP16-40S-	1.713	2.549
	80S	SS-SP16-80S-	6L-SP16-80S-	S4-SP16-80S-	4L-SP16-80S-	S1-SP16-80S-	2.216	3.297
1 1/4	40S	SS-SP20-40S-	6L-SP20-40S-	S4-SP20-40S-	4L-SP20-40S-	S1-SP20-40S-	2.319	3.450
	80S	SS-SP20-80S-	6L-SP20-80S-	S4-SP20-80S-	4L-SP20-80S-	S1-SP20-80S-	3.057	4.549
1 1/2	40S	SS-SP24-40S-	6L-SP24-40S-	S4-SP24-40S-	4L-SP24-40S-	S1-SP24-40S-	2.773	4.126
	80S	SS-SP24-80S-	6L-SP24-80S-	S4-SP24-80S-	4L-SP24-80S-	S1-SP24-80S-	3.705	5.513
2	40S	SS-SP32-40S-	6L-SP32-40S-	S4-SP32-40S-	4L-SP32-40S-	S1-SP32-40S-	3.727	5.546
	80S	SS-SP32-80S-	6L-SP32-80S-	S4-SP32-80S-	4L-SP32-80S-	S1-SP32-80S-	5.123	7.624

Add the actual foot (feet)/meter (meters) as a suffix to the basic ordering number to complete the ordering number.

Example:

1. 12 feet long, NPS 1/2, schedule number 40S, 316 SS seamless pipe, the complete ordering number is **SS-SP8-40S-12**.
2. 2 meters long, NPS 1/2, schedule number 40S, 316 SS seamless pipe, the complete ordering number is **SS-SP8-40S-2M**.

Material Standard

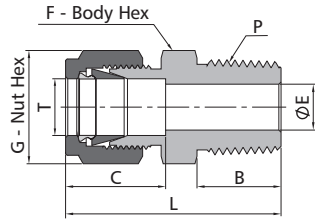
Grade	UNS Designation	ASTM	ASME
316/316L	S31600/S31603	A312	SA312
304/304L	S31400/S31403		
321	S32100		

NPS	Schedule Number (ASME B36.19M)			
	5S	10S	40S	80S
	Working Pressure, psig (bar)			
1/8	/	3940 (272)	5750 (397)	8700 (600)
1/4	/	3960 (273)	5620 (387)	8130 (560)
3/8	/	3110 (215)	4540 (313)	6660 (459)
1/2	2470 (170)	3220 (222)	4370 (301)	6190 (427)
3/4	1960 (135)	2540 (175)	3550 (245)	5040 (348)
1	1550 (107)	2680 (185)	3330 (229)	4650 (320)
1 1/4	1230 (85)	2110 (146)	2760 (190)	3890 (268)
1 1/2	1070 (74)	1830 (126)	2460 (170)	3520 (243)
2	840 (58)	1430 (99)	2060 (142)	2990 (206)

Pipe Dimension

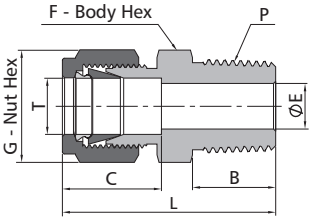
NPS	Outside Diameter		Schedule Number																		
			5S	5	10S	10	20	30	40S	40	STD	60	80S	80	XS	100	120	140	160	XXS	
In.	mm	Nominal Wall Thickness, mm																			
1/8	0.405	10.287			1.245	1.245		1.448	1.727	1.727	1.727		2.413	2.413	2.413						
1/4	0.540	13.716			1.651	1.651		1.854	2.235	2.235	2.235		3.023	3.023	3.023						
3/8	0.675	17.145			1.651	1.651		1.854	2.311	2.311	2.311		3.200	3.200	3.200						
1/2	0.840	21.336	1.651	1.651	2.108	2.108		2.413	2.769	2.769	2.769		3.734	3.734	3.734					4.775	7.468
3/4	1.050	26.670	1.651	1.651	2.108	2.108		2.413	2.870	2.870	2.870		3.912	3.912	3.912					5.563	7.823
1	1.315	33.401	1.651	1.651	2.769	2.769		2.900	3.378	3.378	3.378		4.547	4.547	4.547					6.350	9.093
1 1/4	1.660	42.164	1.651	1.651	2.769	2.769		2.972	3.556	3.556	3.556		4.851	4.851	4.851					6.350	9.703
1 1/2	1.900	48.260	1.651	1.651	2.769	2.769		3.175	3.683	3.683	3.683		5.080	5.080	5.080					7.137	10.160
2	2.375	60.325	1.651	1.651	2.769	2.769		3.175	3.912	3.912	3.912		5.537	5.537	5.537					8.738	11.074
2 1/2	2.875	73.025	2.108	2.108	3.048	3.048		4.775	5.156	5.156	5.156		7.010	7.010	7.010					9.525	14.021
3	3.500	88.900	2.108	2.108	3.048	3.048		4.775	5.486	5.486	5.486		7.620	7.620	7.620					11.125	15.240
3 1/2	4.000	101.600	2.108	2.108	3.048	3.048		4.775	5.740	5.740	5.740		8.077	8.077	8.077						
4	4.500	114.300	2.108	2.108	3.048	3.048		4.775	6.020	6.020	6.020		8.560	8.560	8.560		11.125			13.487	17.120
5	5.563	141.300	2.769	2.769	3.404	3.404			6.553	6.553	6.553		9.525	9.525	9.525		12.700			15.875	19.050
6	6.625	168.275	2.769	2.769	3.404	3.404			7.112	7.112	7.112		10.973	10.973	10.973		14.275			18.263	21.946
8	8.625	219.075	2.769	2.769	3.759	3.759	6.350	7.036	8.179	8.179	8.179	10.312	12.700	12.700	12.700	15.088	18.263	20.625	23.012	22.225	
10	10.750	273.050	3.404	3.404	4.191	4.191	6.350	7.798	9.271	9.271	9.271	12.700	12.700	12.700	12.700	15.088	18.263	21.438	25.400	28.575	25.400
12	12.750	323.850	3.962	3.962	4.572	4.572	6.350	8.382	9.525	10.312	9.525	14.275	12.700	17.475	12.700	21.438	25.400	28.575	33.325	25.400	
14	14.000	355.600	3.962	3.962	4.775	6.350	7.925	9.525	9.525	11.125	9.525	15.088	12.700	19.050	12.700	23.825	27.788	31.750	35.712		
16	16.000	406.400	4.191	4.191	4.775	6.350	7.925	9.525	9.525	12.700	9.525	16.662	12.700	21.438	12.700	26.187	30.963	36.525	40.488		
18	18.000	457.200	4.191	4.191	4.775	6.350	7.925	9.525	9.525	14.275	9.525	19.050	12.700	23.825	12.700	29.362	34.925	39.675	45.237		
20	20.000	508.000	4.775	4.775	5.537	6.350	9.525	12.700	9.525	15.088	9.525	20.625	12.700	26.187	12.700	32.537	38.100	44.450	50.013		
22	22.000	558.800	4.775	4.775	5.537	6.350	9.525	12.700			9.525	22.225		28.575	12.700	34.925	41.275	47.625	53.975		
24	24.000	609.600	5.537	5.537	6.350	6.350	9.525	14.275	9.525	17.475	9.525	24.613	12.700	30.963	12.700	38.887	46.025	52.375	59.538		
26	26.000	660.400					12.700				9.525					12.700	1. The schedule numbers of 5S, 10S, 40S, and 80S comply with ASME B36.19M. 2. The others comply with ASME B36.10M.				
28	28.000	711.200					12.700	15.875			9.525					12.700					
30	30.000	762.000	6.350	6.350	7.925	7.925	12.700	15.875			9.525					12.700					
32	32.000	812.800					12.700	15.875		17.475	9.525					12.700					
34	34.000	863.600					12.700	15.875		17.475	9.525					12.700					
36	36.000	914.400					12.700	15.875		19.050	9.525					12.700					

Male Connectors

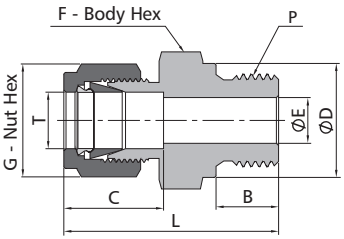


Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/16	1/16	-CM-FL1-NS1	23.9	9.7	8.6	1.3	7.9	7.9	
1/16	1/8	-CM-FL1-NS2	26.2	9.7	8.6	1.3	7.9	11.1	
1/16	1/4	-CM-FL1-NS4	31.0	14.2	8.6	1.3	7.9	14.3	
1/8	1/16	-CM-FL2-NS1	29.7	9.7	12.7	2.3	11.1	11.1	
1/8	1/8	-CM-FL2-NS2	30.5	9.7	12.7	2.3	11.1	11.1	
1/8	1/4	-CM-FL2-NS4	35.6	14.2	12.7	2.3	11.1	14.3	
1/8	3/8	-CM-FL2-NS6	35.8	14.2	12.7	2.3	11.1	17.5	
1/8	1/2	-CM-FL2-NS8	42.2	19.1	12.7	2.3	11.1	22.2	
3/16	1/16	-CM-FL3-NS1	31.2	9.7	13.7	2.3	12.7	11.1	
3/16	1/8	-CM-FL3-NS2	31.2	9.7	13.7	3.0	12.7	11.1	
3/16	1/4	-CM-FL3-NS4	36.3	14.2	13.7	3.0	12.7	14.3	
1/4	1/16	-CM-FL4-NS1	32.8	9.7	15.2	3.0	14.3	12.7	
1/4	1/8	-CM-FL4-NS2	32.8	9.7	15.2	4.8	14.3	12.7	
1/4	1/4	-CM-FL4-NS4	37.8	14.2	15.2	4.8	14.3	14.3	
1/4	3/8	-CM-FL4-NS6	38.4	14.2	15.2	4.8	14.3	17.5	
1/4	1/2	-CM-FL4-NS8	44.7	19.1	15.2	4.8	14.3	22.2	
1/4	3/4	-CM-FL4-NS12	46.2	19.1	15.2	4.8	14.3	27.0	
5/16	1/8	-CM-FL5-NS2	34.0	9.7	16.3	4.8	15.9	14.3	
5/16	1/4	-CM-FL5-NS4	38.6	9.7	16.3	6.4	15.9	14.3	
5/16	3/8	-CM-FL5-NS6	39.1	14.2	16.3	6.4	15.9	17.5	
5/16	1/2	-CM-FL5-NS8	45.5	19.1	16.3	6.4	15.9	22.2	
3/8	1/8	-CM-FL6-NS2	35.3	9.7	16.8	4.8	17.5	15.9	
3/8	1/4	-CM-FL6-NS4	39.9	14.2	16.8	7.1	17.5	15.9	
3/8	3/8	-CM-FL6-NS6	39.9	14.2	16.8	7.1	17.5	17.5	
3/8	1/2	-CM-FL6-NS8	46.2	19.1	16.8	7.1	17.5	22.2	
3/8	3/4	-CM-FL6-NS12	47.8	19.1	16.8	7.1	17.5	27.0	
3/8	1	-CM-FL6-NS16	47.0	23.9	16.8	7.1	17.5	34.9	
1/2	1/8	-CM-FL8-NS2	38.9	9.7	22.9	4.8	22.2	20.6	
1/2	1/4	-CM-FL8-NS4	43.4	14.2	22.9	7.1	22.2	20.6	
1/2	3/8	-CM-FL8-NS6	43.4	14.2	22.9	9.7	22.2	20.6	
1/2	1/2	-CM-FL8-NS8	49.0	19.1	22.9	10.4	22.2	22.2	
1/2	3/4	-CM-FL8-NS12	50.5	19.1	22.9	10.4	22.2	27.0	
1/2	1	-CM-FL8-NS16	57.2	23.9	22.9	10.4	22.2	34.9	
5/8	1/4	-CM-FL10-NS4	44.2	14.2	24.4	7.1	25.4	23.8	
5/8	3/8	-CM-FL10-NS6	44.2	14.2	24.4	9.7	25.4	23.8	
5/8	1/2	-CM-FL10-NS8	49.0	19.1	24.4	11.9	25.4	23.8	
5/8	3/4	-CM-FL10-NS12	50.5	19.1	24.4	12.7	25.4	27.0	
3/4	3/8	-CM-FL12-NS6	45.7	14.2	24.4	10.4	28.6	27.0	
3/4	1/2	-CM-FL12-NS8	50.5	19.1	24.4	11.9	28.6	27.0	
3/4	3/4	-CM-FL12-NS12	50.5	19.1	24.4	15.7	28.6	27.0	
3/4	1	-CM-FL12-NS16	57.2	23.9	24.4	15.7	28.6	34.9	
7/8	1/2	-CM-FL14-NS8	50.5	19.1	25.9	11.9	31.8	30.2	
7/8	3/4	-CM-FL14-NS12	50.5	19.1	25.9	15.7	31.8	30.2	
7/8	1	-CM-FL14-NS16	57.2	23.9	25.9	18.3	31.8	34.9	
1	1/2	-CM-FL16-NS8	57.4	19.1	31.2	11.9	38.1	34.9	
1	3/4	-CM-FL16-NS12	57.4	19.1	31.2	15.7	38.1	34.9	
1	1	-CM-FL16-NS16	62.2	23.9	31.2	22.4	38.1	34.9	
1 1/8	1	-CM-FL18-NS16	62.2	23.9	31.2	22.4	46.0	41.3	
1 1/4	1	-CM-FL20-NS16	77.2	23.9	41.1	22.4	47.6	44.5	
1 1/4	1 1/4	-CM-FL20-NS20	77.2	23.9	41.1	27.7	47.6	44.5	
1 1/2	1 1/2	-CM-FL24-NS24	88.9	26.2	50.0	34.0	57.2	54.0	

Male Connectors



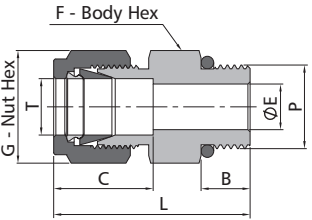
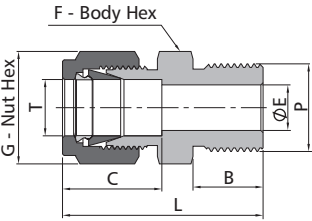
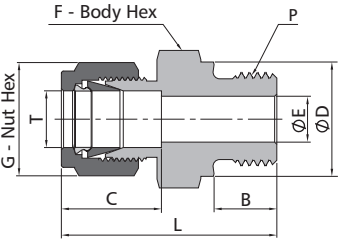
Fractional Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/8	1/8	-CM-FL2-RT2	30.5	9.7	12.7	2.3	11.1	11.1	
1/8	1/4	-CM-FL2-RT4	35.6	14.2	12.7	2.3	11.1	14.3	
1/4	1/8	-CM-FL4-RT2	32.8	9.7	15.2	4.8	14.3	12.7	
1/4	1/4	-CM-FL4-RT4	37.8	14.2	15.2	4.8	14.3	14.3	
1/4	3/8	-CM-FL4-RT6	38.4	14.2	15.2	4.8	14.3	17.5	
1/4	1/2	-CM-FL4-RT8	44.7	19.1	15.2	4.8	14.3	22.2	
5/16	1/8	-CM-FL5-RT2	34.0	9.7	16.3	4.8	15.9	14.3	
5/16	1/4	-CM-FL5-RT4	38.6	14.2	16.3	6.4	15.9	14.3	
3/8	1/8	-CM-FL6-RT2	35.3	9.7	16.8	4.8	17.5	15.9	
3/8	1/4	-CM-FL6-RT4	39.9	14.2	16.8	7.1	17.5	15.9	
3/8	3/8	-CM-FL6-RT6	39.9	14.2	16.8	7.1	17.5	17.5	
3/8	1/2	-CM-FL6-RT8	46.2	19.1	16.8	7.1	17.5	22.2	
3/8	3/4	-CM-FL6-RT12	47.8	19.1	16.8	7.1	17.5	27.0	
1/2	1/4	-CM-FL8-RT4	43.4	14.2	22.9	7.1	22.2	20.6	
1/2	3/8	-CM-FL8-RT6	43.4	14.2	22.9	9.7	22.2	20.6	
1/2	1/2	-CM-FL8-RT8	49.0	19.1	22.9	10.4	22.2	22.2	
1/2	3/4	-CM-FL8-RT12	50.5	19.1	22.9	10.4	22.2	27.0	
5/8	1/2	-CM-FL10-RT8	49.0	19.1	24.4	11.9	25.4	23.8	
3/4	3/4	-CM-FL12-RT12	50.5	19.1	24.4	15.7	28.6	27.0	
3/4	1	-CM-FL12-RT16	57.2	23.9	24.4	15.7	28.6	34.9	
1	3/4	-CM-FL16-RT12	57.4	19.1	31.2	15.7	38.1	34.9	
1	1	-CM-FL16-RT16	62.2	23.9	31.2	22.4	38.1	34.9	



Fractional Tube			ISO Parallel Thread (RS)							
T-Tube O.D. (in.)	P-RS Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	D	
1/8	1/8	-CM-FL2-RS2	30.0	7.1	12.7	2.3	11.1	14.3	13.7	
1/8	1/4	-CM-FL2-RS4	35.3	11.2	12.7	2.3	11.1	19.1	18.0	
1/8	3/8	-CM-FL2-RS6	36.3	11.2	12.7	2.3	11.1	22.2	21.8	
1/4	1/8	-CM-FL4-RS2	32.3	7.1	15.2	4.0	14.3	14.3	13.7	
1/4	1/4	-CM-FL4-RS4	37.6	11.2	15.2	4.8	14.3	19.1	18.0	
1/4	3/8	-CM-FL4-RS6	38.9	11.2	15.2	4.8	14.3	22.2	21.8	
1/4	1/2	-CM-FL4-RS8	44.7	14.2	15.2	4.8	14.3	27.0	25.9	
3/8	1/8	-CM-FL6-RS2	37.8	7.1	16.8	4.0	17.5	15.9	13.7	
3/8	1/4	-CM-FL6-RS4	39.1	11.2	16.8	5.9	17.5	19.1	18.0	
3/8	3/8	-CM-FL6-RS6	40.4	11.2	16.8	7.1	17.5	22.2	21.8	
3/8	1/2	-CM-FL6-RS8	46.2	14.2	16.8	7.1	17.5	27.0	25.9	
1/2	1/4	-CM-FL8-RS4	42.7	11.2	22.9	5.9	22.2	20.6	18.0	
1/2	3/8	-CM-FL8-RS6	43.2	11.2	22.9	7.9	22.2	22.2	21.8	
1/2	1/2	-CM-FL8-RS8	49.0	14.2	22.9	10.4	22.2	27.0	25.9	
3/4	1/2	-CM-FL12-RS8	49.0	14.2	24.4	11.9	28.6	27.0	25.9	
3/4	3/4	-CM-FL12-RS12	52.9	15.7	24.4	15.7	28.6	33.3	32.0	
1	1/2	-CM-FL16-RS8	55.5	14.2	31.2	11.9	38.1	34.9	25.9	
1	3/4	-CM-FL16-RS12	57.7	15.7	31.2	16.0	38.1	34.9	32.0	
1	1	-CM-FL16-RS16	59.9	18.3	31.2	19.8	38.1	41.3	39.1	

1. Dimensions are for reference only, subject to change.
2. Dimensions shown are in finger-tight position.

Male Connectors



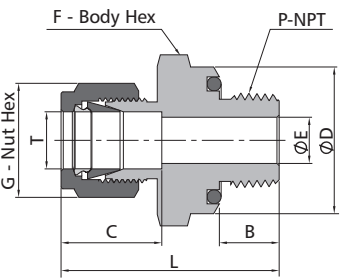
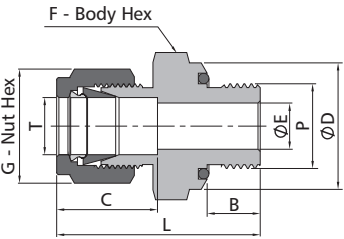
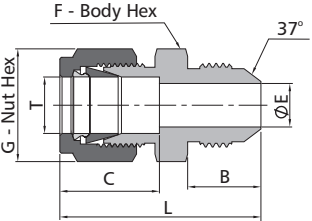
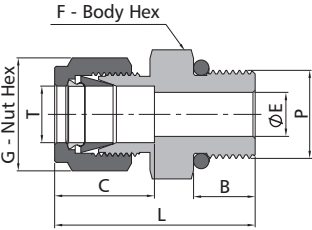
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

Fractional Tube			ISO Parallel Thread (RP)							
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	D	
1/8	1/8	-CM-FL2-RP2	30.0	7.1	12.7	2.3	11.1	14.3	13.8	
1/8	1/4	-CM-FL2-RP4	35.3	11.2	12.7	2.3	11.1	19.1	17.8	
1/4	1/8	-CM-FL4-RP2	32.3	7.1	15.2	4.1	14.3	14.3	13.8	
1/4	1/4	-CM-FL4-RP4	37.6	11.2	15.2	4.8	14.3	19.1	17.8	
1/2	3/8	-CM-FL8-RP6	40.4	11.2	22.9	7.9	22.2	22.2	21.8	
1/2	1/2	-CM-FL8-RP8	49.0	14.2	22.9	10.4	22.2	27.0	25.9	
3/4	1/2	-CM-FL12-RP8	49.0	14.2	24.4	11.9	28.6	27.0	25.9	
3/4	3/4	-CM-FL12-RP12	52.9	15.7	24.4	15.7	28.6	33.3	32.0	
1	1	-CM-FL16-RP16	59.9	18.3	31.2	19.8	38.1	41.3	38.8	

Fractional Tube			ISO Parallel Thread (BP)							
T-Tube O.D. (in.)	P-BP Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F		
1/4	3/8	-CM-FL4-BP6	38.4	14.2	15.2	4.8	14.3	17.5		
3/8	3/8	-CM-FL6-BP6	39.9	14.2	16.8	7.1	17.5	17.5		

Fractional Tube			SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F		
1/16	5/16-24	-CM-FL1-ST5	23.4	7.6	8.6	1.3	7.9	11.1		
1/8	5/16-24	-CM-FL2-ST5	30.0	7.6	12.7	2.3	11.1	11.1		
1/8	7/16-20	-CM-FL2-ST7	31.5	9.1	12.7	2.3	11.1	14.3		
1/8	9/16-18	-CM-FL2-ST9	33.3	9.9	12.7	2.3	11.1	17.5		
3/16	3/8-24	-CM-FL3-ST6	30.5	7.6	13.7	3.0	12.7	12.7		
1/4	5/16-24	-CM-FL4-ST5	32.3	7.6	15.2	2.3	14.3	12.7		
1/4	7/16-20	-CM-FL4-ST7	34.0	9.1	15.2	4.8	14.3	14.3		
1/4	9/16-18	-CM-FL4-ST9	35.6	9.9	15.2	4.8	14.3	17.5		
1/4	3/4-16	-CM-FL4-ST12	37.6	11.2	15.2	4.8	14.3	22.2		
1/4	7/8-14	-CM-FL4-ST14	40.6	12.7	15.2	4.8	14.3	25.4		
5/16	1/2-20	-CM-FL5-ST8	34.8	9.1	16.3	6.4	15.9	15.9		
3/8	7/16-20	-CM-FL6-ST7	35.6	9.1	16.8	5.1	17.5	15.9		
3/8	9/16-18	-CM-FL6-ST9	37.1	9.9	16.8	7.1	17.5	17.5		
3/8	3/4-16	-CM-FL6-ST12	39.1	11.2	16.8	7.1	17.5	22.2		
3/8	7/8-14	-CM-FL6-ST14	42.2	12.7	16.8	7.1	17.5	25.4		
1/2	9/16-18	-CM-FL8-ST9	39.1	9.9	22.9	7.1	22.2	20.6		
1/2	3/4-16	-CM-FL8-ST12	41.9	11.2	22.9	10.4	22.2	22.2		
1/2	7/8-14	-CM-FL8-ST14	45.0	12.7	22.9	10.4	22.2	25.4		
1/2	1 1/16-12	-CM-FL8-ST17	49.0	15.0	22.9	10.4	22.2	31.8		
5/8	3/4-16	-CM-FL10-ST12	41.9	11.2	24.4	10.7	25.4	23.8		
5/8	7/8-14	-CM-FL10-ST14	45.2	12.7	24.4	12.7	25.4	25.4		
3/4	3/4-16	-CM-FL12-ST12	46.0	11.2	24.4	10.7	28.6	27.0		
3/4	1 1/16-12	-CM-FL12-ST17	49.0	15.0	24.4	15.7	28.6	31.8		
3/4	1 5/16-12	-CM-FL12-ST21	49.8	15.0	24.4	16.0	28.6	38.1		
7/8	1 3/16-12	-CM-FL14-ST19	49.0	15.0	25.9	18.3	31.8	34.9		
1	1 1/16-12	-CM-FL16-ST17	53.3	15.0	31.2	16.8	38.1	34.9		
1	1 5/16-12	-CM-FL16-ST21	54.4	15.0	31.2	22.4	38.1	38.1		
1 1/4	1 5/8-12	-CM-FL20-ST26	68.3	15.0	41.1	27.7	47.6	47.6		
1 1/2	1 7/8-12	-CM-FL24-ST30	77.7	15.0	50.0	34.0	57.2	54.0		

Male Connectors



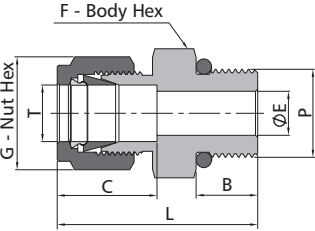
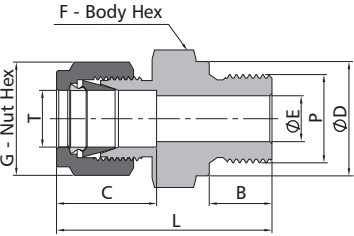
Fractional Tube			SAE/MS Straight Thread						
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/4	7/16-20	-CML-FL4-ST7	57.4	9.1	15.2	4.8	14.3	14.3	
1/2	3/4-16	-CML-FL8-ST12	76.5	11.2	22.9	10.4	22.2	22.2	

Fractional Tube			37° Flare (AN)						
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/16	1/8	-CM-FL1-AN2	27.2	11.4	8.6	1.3	7.9	11.1	
1/8	1/8	-CM-FL2-AN2	32.3	11.4	12.7	1.5	11.1	11.1	
1/8	1/4	-CM-FL2-AN4	35.1	14.0	12.7	2.3	11.1	12.7	
3/16	3/16	-CM-FL3-AN3	33.5	12.2	13.7	2.3	12.7	11.1	
1/4	1/4	-CM-FL4-AN4	37.6	14.0	15.2	4.3	14.3	12.7	
5/16	5/16	-CM-FL5-AN5	38.4	14.0	16.2	5.8	15.9	14.3	
3/8	1/4	-CM-FL6-AN4	39.6	14.0	16.8	4.3	17.5	15.9	
3/8	3/8	-CM-FL6-AN6	39.6	14.1	16.8	7.1	17.5	15.9	
1/2	1/2	-CM-FL8-AN8	46.0	16.7	22.8	9.9	22.2	20.6	
5/8	5/8	-CM-FL10-AN10	49.0	19.3	24.5	12.3	25.4	23.8	
3/4	3/4	-CM-FL12-AN12	53.3	21.9	24.4	15.5	28.6	28.6	
1	1	-CM-FL16-AN16	61.5	23.1	31.2	21.3	38.1	34.9	

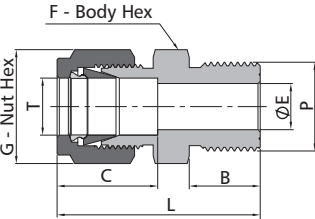
Fractional Tube			O-Seal with SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	D	
1/16	5/16-24	-CM-FL1-OST5	26.7	8.6	8.6	1.3	7.9	14.3	14.0	
1/8	5/16-24	-CM-FL2-OST5	32.8	8.6	12.7	2.3	11.1	14.3	14.0	
3/16	3/8-24	-CM-FL3-OST6	34.3	9.7	13.7	3.0	12.7	15.9	15.7	
1/4	7/16-20	-CM-FL4-OST7	38.4	10.4	15.2	4.8	14.3	19.1	18.8	
5/16	1/2-20	-CM-FL5-OST8	40.6	11.2	16.3	6.4	15.9	22.2	21.8	
3/8	9/16-18	-CM-FL6-OST9	42.4	11.9	16.8	7.1	17.5	23.8	23.6	
1/2	3/4-16	-CM-FL8-OST12	46.0	11.9	22.9	10.4	22.2	28.6	28.4	
3/4	1 1/16-12	-CM-FL12-OST17	52.3	14.2	24.4	15.7	28.6	38.1	37.8	
1	1 5/16-12	-CM-FL16-OST21	58.2	14.2	31.2	22.4	38.1	44.5	44.2	

Fractional Tube			O-Seal with NPT Thread							
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	D	
1/8	1/8	-CM-FL2-ONS2	32.8	7.1	8.6	2.3	11.1	19.1	18.8	
1/4	1/8	-CM-FL4-ONS2	35.1	7.1	15.2	4.8	14.3	19.1	18.8	
1/4	1/4	-CM-FL4-ONS4	38.4	9.7	15.2	4.8	14.3	23.8	23.6	
3/8	1/4	-CM-FL6-ONS4	39.9	9.7	16.8	7.1	17.5	23.8	23.6	
3/8	3/8	-CM-FL6-ONS6	41.4	10.4	16.8	7.1	17.5	28.6	28.4	
3/8	1/2	-CM-FL6-ONS8	47.0	13.5	16.8	7.1	17.5	33.3	33.0	
1/2	1/2	-CM-FL8-ONS8	49.8	13.5	22.9	10.4	22.2	33.3	33.0	

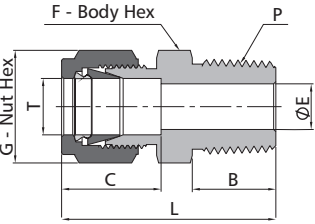
Male Connectors



Adapt to straight thread boss of ISO 6149-1.



Male Connectors



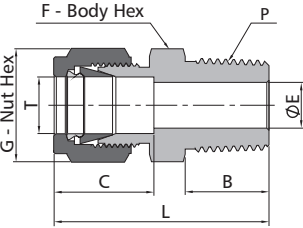
Fractional Tube			Metric Thread (MRS)						
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	D
1/8	M14 x 1.5	-CM-FL2-MRS14	36.7	12	12.7	2.3	11.1	19.1	19
1/8	M16 x 1.5	-CM-FL2-MRS16	37.5	12	12.7	2.3	11.1	22.2	21
1/8	M18 x 1.5	-CM-FL2-MRS18	38.5	12	12.7	2.3	11.1	23.8	23
1/8	M20 x 1.5	-CM-FL2-MRS20	41.1	14	12.7	2.3	11.1	25.4	25
1/4	M14 x 1.5	-CM-FL4-MRS14	38.0	12	15.2	4.8	14.3	19.1	19
1/4	M16 x 1.5	-CM-FL4-MRS16	39.9	12	15.2	4.8	14.3	22.2	21
1/4	M18 x 1.5	-CM-FL4-MRS18	40.8	12	15.2	4.8	14.3	23.8	23
1/4	M20 x 1.5	-CM-FL4-MRS20	43.6	14	15.2	4.8	14.3	25.4	25
3/8	M14 x 1.5	-CM-FL6-MRS14	41.3	12	16.8	7.1	17.5	19.1	19
3/8	M16 x 1.5	-CM-FL6-MRS16	41.3	12	16.8	7.1	17.5	22.2	21
3/8	M18 x 1.5	-CM-FL6-MRS18	41.8	12	16.8	7.1	17.5	23.8	23
3/8	M20 x 1.5	-CM-FL6-MRS20	45.1	14	16.8	7.1	17.5	25.4	25
1/2	M16 x 1.5	-CM-FL8-MRS16	44.0	12	22.9	9.0	22.2	22.2	21
1/2	M18 x 1.5	-CM-FL8-MRS18	44.0	12	22.9	10.0	22.2	23.8	23
1/2	M20 x 1.5	-CM-FL8-MRS20	47.9	14	22.9	10.4	22.2	25.4	25
1/2	M22 x 1.5	-CM-FL8-MRS22	48.5	14	22.9	10.4	22.2	27.0	27

Fractional Tube			Metric Thread (MST)						
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/4	M14X1.5	-CM-FL4-MST14	35.2	11	15.2	4.8	14.3	19.1	
3/8	M14X1.5	-CM-FL6-MST14	36.7	11	16.8	7.1	17.5	19.1	
3/8	M20X1.5	-CM-FL6-MST20	41.2	14	16.8	7.1	17.5	27.0	
1/2	M14X1.5	-CM-FL8-MST14	40.2	11	22.9	7.5	22.2	20.6	
1/2	M20X1.5	-CM-FL8-MST20	44.0	14	22.9	10.4	22.2	27.0	

Fractional Tube			Metric Thread (MS)						
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/16	M5 x 0.8	-CM-FL1-MS5	21.8	8	8.6	1.3	7.9	7.9	
1/8	M14 x 1.5	-CM-FL2-MS14	34.8	13	12.7	2.3	11.1	15.9	
1/8	M16 x 1.5	-CM-FL2-MS16	35.8	14	12.7	2.3	11.1	17.5	
1/8	M18 x 1.5	-CM-FL2-MS18	37.2	15	12.7	2.3	11.1	19.1	
1/8	M20 x 1.5	-CM-FL2-MS20	38.2	16	12.7	2.3	11.1	22.2	
1/4	M14 x 1.5	-CM-FL4-MS14	36.9	13	15.2	4.8	14.3	15.9	
1/4	M16 x 1.5	-CM-FL4-MS16	38.1	14	15.2	4.8	14.3	17.5	
1/4	M18 x 1.5	-CM-FL4-MS18	39.5	15	15.2	4.8	14.3	19.1	
1/4	M20 x 1.5	-CM-FL4-MS20	40.7	16	15.2	4.8	14.3	22.2	
3/8	M10 x 1.0	-CM-FL6-MS10	36.4	11	16.8	4.8	17.5	15.9	
3/8	M14 x 1.5	-CM-FL6-MS14	39.3	13	16.8	7.1	17.5	15.9	
3/8	M16 x 1.5	-CM-FL6-MS16	39.7	14	16.8	7.1	17.5	17.5	
3/8	M18 x 1.5	-CM-FL6-MS18	41.5	15	16.8	7.1	17.5	19.1	
3/8	M20 x 1.5	-CM-FL6-MS20	42.3	16	16.8	7.1	17.5	22.2	
1/2	M16 x 1.5	-CM-FL8-MS16	43.2	14	22.9	8.4	22.2	20.6	
1/2	M18 x 1.5	-CM-FL8-MS18	43.7	15	22.9	9.6	22.2	20.6	
1/2	M20 x 1.5	-CM-FL8-MS20	44.9	16	22.9	10.4	22.2	22.2	
1/2	M22 x 1.5	-CM-FL8-MS22	47.0	17	22.9	10.4	22.2	23.8	

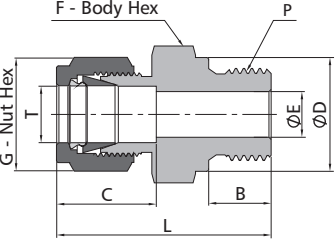
Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
2	1/8	-CM-ML2-NS2	30.5	9.7	12.9	1.7	12	12	
3	1/8	-CM-ML3-NS2	30.5	9.7	12.9	2.4	12	12	
3	1/4	-CM-ML3-NS4	35.6	14.2	12.9	2.4	12	14	
4	1/8	-CM-ML4-NS2	31.2	9.7	13.7	2.4	12	12	
4	1/4	-CM-ML4-NS4	36.3	14.2	13.7	2.4	12	14	
6	1/8	-CM-ML6-NS2	32.8	9.7	15.3	4.8	14	14	
6	1/4	-CM-ML6-NS4	37.9	14.2	15.3	4.8	14	14	
6	3/8	-CM-ML6-NS6	38.4	14.2	15.3	4.8	14	18	
6	1/2	-CM-ML6-NS8	44.7	19.1	15.3	4.8	14	22	
8	1/8	-CM-ML8-NS2	34.2	9.7	16.2	4.8	16	15	
8	1/4	-CM-ML8-NS4	38.7	14.2	16.2	6.4	16	15	
8	3/8	-CM-ML8-NS6	39.3	14.2	16.2	6.4	16	18	
8	1/2	-CM-ML8-NS8	45.6	19.1	16.2	6.4	16	22	
10	1/8	-CM-ML10-NS2	36.3	9.7	17.2	4.8	19	18	
10	1/4	-CM-ML10-NS4	40.9	14.2	17.2	7.1	19	18	
10	3/8	-CM-ML10-NS6	40.9	14.2	17.2	7.9	19	18	
10	1/2	-CM-ML10-NS8	46.5	19.1	17.2	7.9	19	22	
10	3/4	-CM-ML10-NS12	48.0	19.1	17.2	7.9	19	27	
10	1	-CM-ML10-NS16	54.6	23.9	17.2	7.9	19	35	
12	1/8	-CM-ML12-NS2	38.8	9.7	22.8	4.8	22	22	
12	1/4	-CM-ML12-NS4	43.4	14.2	22.8	7.1	22	22	
12	3/8	-CM-ML12-NS6	43.4	14.2	22.8	9.5	22	22	
12	1/2	-CM-ML12-NS8	49.0	19.1	22.8	9.5	22	22	
12	3/4	-CM-ML12-NS12	50.5	19.1	22.8	9.5	22	27	
14	1/8	-CM-ML14-NS2	38.8	9.7	24.4	4.8	25	24	
14	1/4	-CM-ML14-NS4	44.1	14.2	24.4	7.1	25	24	
14	3/8	-CM-ML14-NS6	44.1	14.2	24.4	9.5	25	24	
14	1/2	-CM-ML14-NS8	49.0	19.1	24.4	11.1	25	24	
14	3/4	-CM-ML14-NS12	50.5	19.1	24.4	11.1	25	27	
15	1/2	-CM-ML15-NS8	49.0	19.1	24.4	11.9	25	24	
15	3/4	-CM-ML15-NS12	50.5	19.1	24.4	11.9	25	27	
15	1	-CM-ML15-NS16	57.1	23.9	24.4	11.9	25	35	
16	1/4	-CM-ML16-NS4	44.1	14.2	24.4	7.1	25	24	
16	3/8	-CM-ML16-NS6	44.1	14.2	24.4	9.5	25	24	
16	1/2	-CM-ML16-NS8	49.0	19.1	24.4	11.9	25	24	
16	3/4	-CM-ML16-NS12	50.5	19.1	24.4	12.7	25	27	
18	3/8	-CM-ML18-NS6	45.6	14.2	24.4	9.5	30	27	
18	1/2	-CM-ML18-NS8	50.5	19.1	24.4	11.9	30	27	
18	3/4	-CM-ML18-NS12	50.5	19.1	24.4	15.1	30	27	
20	1/2	-CM-ML20-NS8	52.3	19.1	26.0	11.9	32	30	
20	3/4	-CM-ML20-NS12	52.3	19.1	26.0	15.9	32	30	
20	1	-CM-ML20-NS16	57.1	23.9	26.0	15.9	32	35	
22	1/2	-CM-ML22-NS8	52.3	19.1	26.0	11.9	32	30	
22	3/4	-CM-ML22-NS12	52.3	19.1	26.0	15.9	32	30	
22	1	-CM-ML22-NS16	57.1	23.9	26.0	18.3	32	35	
25	1/2	-CM-ML25-NS8	57.5	19.1	31.3	11.9	38	35	
25	3/4	-CM-ML25-NS12	57.5	19.1	31.3	15.9	38	35	
25	1	-CM-ML25-NS16	62.3	23.9	31.3	21.8	38	35	
28	1	-CM-ML28-NS16	72.4	23.9	36.6	21.8	46	41	
28	1 1/4	-CM-ML28-NS20	73.1	23.9	36.6	21.8	46	46	
30	1 1/4	-CM-ML30-NS20	77.2	23.9	39.6	26.2	50	46	
32	1 1/4	-CM-ML32-NS20	79.6	23.9	42.0	28.6	50	46	
38	1 1/2	-CM-ML38-NS24	91.6	26.2	49.4	33.7	60	55	

Male Connectors



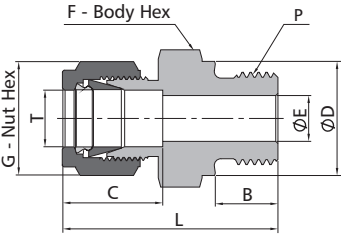
Metric Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
2	1/8	-CM-ML2-RT2	30.5	9.7	12.9	1.7	12	12	
3	1/8	-CM-ML3-RT2	30.5	9.7	12.9	2.4	12	12	
3	1/4	-CM-ML3-RT4	35.6	14.2	12.9	2.4	12	14	
4	1/8	-CM-ML4-RT2	31.2	9.7	13.7	2.4	12	12	
4	1/4	-CM-ML4-RT4	36.3	14.2	13.7	2.4	12	14	
6	1/8	-CM-ML6-RT2	32.8	9.7	15.3	4.8	14	14	
6	1/4	-CM-ML6-RT4	37.9	14.2	15.3	4.8	14	14	
6	3/8	-CM-ML6-RT6	38.4	14.2	15.3	4.8	14	18	
6	1/2	-CM-ML6-RT8	44.7	19.1	15.3	4.8	14	22	
8	1/8	-CM-ML8-RT2	34.2	9.7	16.2	4.8	16	15	
8	1/4	-CM-ML8-RT4	38.7	14.2	16.2	6.4	16	15	
8	3/8	-CM-ML8-RT6	39.2	14.2	16.2	6.4	16	18	
8	1/2	-CM-ML8-RT8	45.6	19.1	16.2	6.4	16	22	
10	1/8	-CM-ML10-RT2	36.3	9.7	17.2	4.8	19	18	
10	1/4	-CM-ML10-RT4	40.9	14.2	17.2	7.1	19	18	
10	3/8	-CM-ML10-RT6	40.9	14.2	17.2	7.9	19	18	
10	1/2	-CM-ML10-RT8	46.5	19.1	17.2	7.9	19	22	
10	3/4	-CM-ML10-RT12	48.0	19.1	17.2	7.9	19	27	
12	1/8	-CM-ML12-RT2	38.3	9.7	22.8	4.8	22	22	
12	1/4	-CM-ML12-RT4	43.4	14.2	22.8	7.1	22	22	
12	3/8	-CM-ML12-RT6	43.4	14.2	22.8	9.5	22	22	
12	1/2	-CM-ML12-RT8	49.0	19.1	22.8	9.5	22	22	
12	3/4	-CM-ML12-RT12	50.5	19.1	22.8	9.5	22	27	
14	1/8	-CM-ML14-RT2	38.8	9.7	24.4	4.8	25	24	
14	1/4	-CM-ML14-RT4	44.1	14.2	24.4	7.1	25	24	
14	3/8	-CM-ML14-RT6	44.1	14.2	24.4	7.9	25	24	
14	1/2	-CM-ML14-RT8	49.0	19.1	24.4	11.1	25	24	
14	3/4	-CM-ML14-RT12	50.5	19.1	24.4	11.1	25	27	
15	1/2	-CM-ML15-RT8	49.0	19.1	24.4	11.9	25	24	
16	1/4	-CM-ML16-RT4	44.1	14.2	24.4	7.1	25	24	
16	3/8	-CM-ML16-RT6	44.1	14.2	24.4	9.5	25	24	
16	1/2	-CM-ML16-RT8	49.0	19.1	24.4	11.9	25	24	
16	3/4	-CM-ML16-RT12	50.5	19.1	24.4	12.7	25	27	
18	1/2	-CM-ML18-RT8	50.5	19.1	24.4	11.9	30	27	
18	3/4	-CM-ML18-RT12	50.5	19.1	24.4	15.1	30	27	
20	1/2	-CM-ML20-RT8	52.3	19.1	26.0	11.9	32	30	
20	3/4	-CM-ML20-RT12	52.3	19.1	26.0	15.9	32	30	
22	3/4	-CM-ML22-RT12	52.3	19.1	26.0	15.9	32	30	
22	1	-CM-ML22-RT16	57.1	23.9	26.0	18.3	32	35	
25	1/2	-CM-ML25-RT8	57.5	19.1	31.3	11.9	38	35	
25	3/4	-CM-ML25-RT12	57.5	19.1	31.3	15.9	38	35	
25	1	-CM-ML25-RT16	62.3	23.9	31.3	21.8	38	35	
28	1	-CM-ML28-RT16	72.4	23.9	36.6	21.8	46	41	
28	1 1/4	-CM-ML28-RT20	73.1	23.9	36.6	21.8	46	46	
30	1 1/4	-CM-ML30-RT20	77.2	23.9	39.6	26.2	50	46	
32	1 1/4	-CM-ML32-RT20	79.6	23.9	42.0	28.6	50	46	
38	1 1/2	-CM-ML38-RT24	91.6	26.2	49.4	33.7	60	55	

Male Connectors

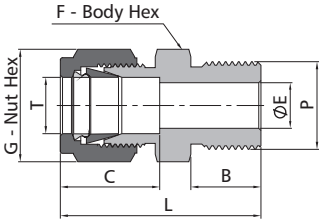


Metric Tube			ISO Parallel Thread (RS)						
T-Tube O.D. (mm)	P-RS Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	D
2	1/8	-CM-ML2-RS2	30.0	7.1	12.9	1.7	12	14	13.7
3	1/8	-CM-ML3-RS2	30.0	7.1	12.9	2.4	12	14	13.7
3	1/4	-CM-ML3-RS4	35.3	11.2	12.9	2.4	12	19	18.0
4	1/8	-CM-ML4-RS2	30.7	7.1	13.7	2.4	12	14	13.7
4	1/4	-CM-ML4-RS4	36.0	11.2	13.7	2.4	12	19	18.0
6	1/8	-CM-ML6-RS2	32.3	7.1	15.3	4.0	14	14	13.7
6	1/4	-CM-ML6-RS4	37.6	11.2	15.3	4.8	14	19	18.0
6	3/8	-CM-ML6-RS6	38.9	11.2	15.3	4.8	14	22	21.6
6	1/2	-CM-ML6-RS8	44.7	14.2	15.3	4.8	14	27	25.9
8	1/8	-CM-ML8-RS2	33.2	7.1	16.2	4.0	16	15	14.5
8	1/4	-CM-ML8-RS4	38.5	11.2	16.2	6.4	16	19	18.0
8	3/8	-CM-ML8-RS6	39.8	11.2	16.2	6.4	16	22	21.6
8	1/2	-CM-ML8-RS8	45.6	14.2	16.2	6.4	16	27	25.9
8	3/4	-CM-ML8-RS12	49.5	15.7	16.2	6.4	16	35	32.0
10	1/4	-CM-ML10-RS4	39.4	11.2	17.2	5.9	19	19	18.0
10	3/8	-CM-ML10-RS6	40.6	11.2	17.2	7.9	19	22	21.6
10	1/2	-CM-ML10-RS8	46.5	14.2	17.2	7.9	19	27	25.9
12	1/4	-CM-ML12-RS4	42.6	11.2	22.8	5.9	22	22	21.6
12	3/8	-CM-ML12-RS6	43.1	11.2	22.8	7.9	22	22	21.6
12	1/2	-CM-ML12-RS8	49.0	14.2	22.8	9.5	22	27	25.9
12	3/4	-CM-ML12-RS12	52.8	15.7	22.8	9.5	22	35	32.0
14	1/4	-CM-ML14-RS4	42.9	11.2	24.4	7.1	25	24	18.0
14	3/8	-CM-ML14-RS6	43.9	11.2	24.4	7.9	25	24	21.6
14	1/2	-CM-ML14-RS8	49.0	14.2	24.4	11.1	25	27	25.9
14	3/4	-CM-ML14-RS12	52.8	15.7	24.4	11.1	25	35	32.0
15	3/8	-CM-ML15-RS6	43.9	11.2	24.4	7.9	25	24	21.6
15	1/2	-CM-ML15-RS8	49.0	14.2	24.4	11.9	25	27	25.9
15	3/4	-CM-ML15-RS12	52.8	15.7	24.4	11.9	25	35	32.0
16	3/8	-CM-ML16-RS6	43.9	11.2	24.4	7.9	25	24	21.6
16	1/2	-CM-ML16-RS8	49.0	14.2	24.4	11.9	25	27	25.9
16	3/4	-CM-ML16-RS12	52.8	15.7	24.4	12.7	25	35	32.0
18	1/2	-CM-ML18-RS8	49.0	14.2	24.4	11.9	30	27	25.9
18	3/4	-CM-ML18-RS12	52.8	15.7	24.4	15.1	30	35	32.0
20	1/2	-CM-ML20-RS8	50.5	14.2	26.0	11.9	32	30	25.9
20	3/4	-CM-ML20-RS12	52.8	15.7	26.0	15.9	32	35	32.0
22	3/4	-CM-ML22-RS12	52.8	15.7	26.0	15.9	32	35	32.0
22	1	-CM-ML22-RS16	55.3	18.3	26.0	18.3	32	41	39.1
25	3/4	-CM-ML25-RS12	57.5	15.7	31.3	15.9	38	35	32.0
25	1	-CM-ML25-RS16	60.1	18.3	31.3	19.8	38	41	39.1
28	1	-CM-ML28-RS16	70.1	18.3	36.6	19.8	46	41	39.1
28	1 1/4	-CM-ML28-RS20	73.9	19.8	36.6	21.8	46	50	49.0
30	1 1/4	-CM-ML30-RS20	76.5	19.8	39.6	25.0	50	50	49.0
32	1 1/4	-CM-ML32-RS20	78.9	19.8	42.0	25.0	50	50	49.0
38	1 1/2	-CM-ML38-RS24	90.8	22.1	49.4	31.8	60	55	54.7

Male Connectors

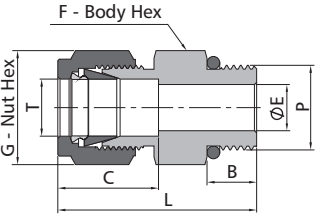


Metric Tube			ISO Parallel Thread (RP)						
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	D
3	1/8	-CM-ML3-RP2	30.0	7.1	12.9	2.4	12	14	13.8
3	1/4	-CM-ML3-RP4	35.3	11.2	12.9	2.4	12	19	18.0
4	1/8	-CM-ML4-RP2	30.7	7.1	13.7	2.4	12	14	13.8
6	1/8	-CM-ML6-RP2	32.3	7.1	15.3	4.0	14	14	13.8
6	1/4	-CM-ML6-RP4	37.6	11.2	15.3	4.8	14	19	18.0
6	3/8	-CM-ML6-RP6	38.9	11.2	15.3	4.8	14	22	21.8
6	1/2	-CM-ML6-RP8	44.7	14.2	15.3	4.8	14	27	26.0
8	1/8	-CM-ML8-RP2	33.3	7.1	16.2	4.0	16	15	13.8
8	1/4	-CM-ML8-RP4	38.5	11.2	16.2	5.9	16	19	18.0
8	3/8	-CM-ML8-RP6	39.8	11.2	16.2	6.4	16	22	21.8
8	1/2	-CM-ML8-RP8	45.6	14.2	16.2	6.4	16	27	26.0
10	1/4	-CM-ML10-RP4	39.4	11.2	17.2	5.9	19	19	18.0
10	3/8	-CM-ML10-RP6	40.6	11.2	17.2	7.9	19	22	21.8
10	1/2	-CM-ML10-RP8	46.5	14.2	17.2	7.9	19	27	26.0
12	1/4	-CM-ML12-RP4	42.6	11.2	22.8	5.9	22	22	18.0
12	3/8	-CM-ML12-RP6	43.1	11.2	22.8	7.9	22	22	21.8
12	1/2	-CM-ML12-RP8	49.0	14.2	22.8	9.5	22	27	26.0
12	3/4	-CM-ML12-RP12	52.8	15.7	22.8	9.5	22	35	32.0
15	1/2	-CM-ML15-RP8	49.0	14.2	24.4	11.9	25	27	26.0
16	3/8	-CM-ML16-RP6	43.9	11.2	24.4	7.9	25	24	21.8
16	1/2	-CM-ML16-RP8	49.0	14.2	24.4	11.9	25	27	26.0
18	1/2	-CM-ML18-RP8	49.0	14.2	24.4	11.9	30	27	26.0
18	3/4	-CM-ML18-RP12	52.8	15.7	24.4	15.1	30	35	32.0
20	1/2	-CM-ML20-RP8	50.5	14.2	26.0	11.9	32	30	26.0
20	3/4	-CM-ML20-RP12	52.8	15.7	26.0	15.9	32	35	32.0
22	3/4	-CM-ML22-RP12	52.8	15.7	26.0	15.9	32	35	32.0
22	1	-CM-ML22-RP16	55.3	18.3	26.0	18.3	32	41	39.0
25	3/4	-CM-ML25-RP12	57.5	15.7	31.3	15.9	38	35	32.0
25	1	-CM-ML25-RP16	60.1	18.3	31.3	19.8	38	41	39.0
28	1	-CM-ML28-RP16	70.1	18.3	36.6	19.8	46	41	39.0
28	1 1/4	-CM-ML28-RP20	73.9	19.8	36.6	21.8	46	50	49.0
30	1 1/4	-CM-ML30-RP20	76.5	19.8	39.6	26.2	50	50	49.0
32	1 1/4	-CM-ML32-RP20	78.9	19.8	42.0	28.6	50	50	49.0
38	1 1/2	-CM-ML38-RP24	89.3	20.6	49.4	31.8	60	55	54.7

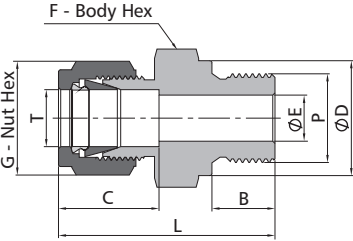


Metric Tube			ISO Parallel Thread (BP)						
T-Tube O.D. (mm)	P-BP Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	1/4	-CM-ML6-BP4	36.9	12.9	15.3	4.8	14	14	
6	3/8	-CM-ML6-BP6	39.5	14.2	15.3	4.8	14	18	
8	1/8	-CM-ML8-BP2	33.9	9.8	16.2	4.0	16	14	
8	1/4	-CM-ML8-BP4	37.0	12.9	16.2	6.4	16	14	
8	3/8	-CM-ML8-BP6	39.3	14.2	16.2	6.4	16	18	
8	1/2	-CM-ML8-BP8	45.4	18.8	16.2	6.4	16	22	
10	1/4	-CM-ML10-BP4	39.5	12.9	17.2	5.9	19	18	
10	1/2	-CM-ML10-BP8	46.3	18.8	17.2	7.9	19	22	
12	3/8	-CM-ML12-BP6	44.2	14.2	22.8	7.9	22	22	
12	1/2	-CM-ML12-BP8	49.0	18.8	22.8	9.5	22	22	
14	1/4	-CM-ML14-BP4	42.9	12.9	24.4	5.9	25	24	
16	3/8	-CM-ML16-BP6	43.4	14.2	24.4	7.9	25	24	
16	1/2	-CM-ML16-BP8	47.9	18.8	24.4	9.5	25	24	
18	1/2	-CM-ML18-BP8	49.8	18.8	24.4	9.5	30	27	

Male Connectors

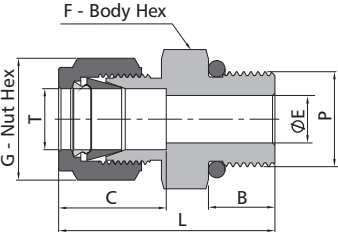


Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



Metric Tube			SAE/MS Straight Thread						
T-Tube O.D. (mm)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	9/16-18	-CM-ML6-ST9	35.6	9.9	15.3	4.8	14	18	
10	9/16-18	-CM-ML10-ST9	37.3	9.9	17.2	7.1	19	22	
10	3/4-16	-CM-ML10-ST12	39.4	11.2	17.2	7.9	19	22	
12	7/16-20	-CM-ML12-ST7	40.6	9.1	22.8	5.2	22	22	
12	9/16-18	-CM-ML12-ST9	39.9	9.9	22.8	7.1	22	22	

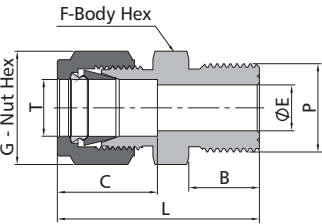
Metric Tube			Metric Thread (MRS)						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	D
6	M8 x 1	-CM-ML6-MRS8	33.3	8	15.3	3.0	14	14	12
6	M10 x 1	-CM-ML6-MRS10	33.3	8	15.3	4.0	14	14	14
6	M12 x 1.5	-CM-ML6-MRS12	38.2	12	15.3	4.8	14	18	17
6	M14 x 1.5	-CM-ML6-MRS14	39.7	12	15.3	4.8	14	19	19
8	M8 x 1	-CM-ML8-MRS8	34.1	8	16.2	3.0	16	14	12
8	M10 x 1	-CM-ML8-MRS10	34.1	8	16.2	5.0	16	15	14
8	M12 x 1.5	-CM-ML8-MRS12	40.4	12	16.2	6.0	16	18	17
8	M14 x 1.5	-CM-ML8-MRS14	40.4	12	16.2	6.4	16	19	19
10	M12 x 1.5	-CM-ML10-MRS12	40.7	12	17.2	6.0	19	18	17
10	M14 x 1.5	-CM-ML10-MRS14	41.5	12	17.2	7.9	19	19	19
12	M16 x 1.5	-CM-ML12-MRS16	45.5	12	22.8	9.0	22	22	21
12	M20 x 1.5	-CM-ML12-MRS20	48.0	14	22.8	9.5	22	25	25
12	M22 x 1.5	-CM-ML12-MRS22	49.5	14	22.8	9.5	22	27	27
14	M14 x 1.5	-CM-ML14-MRS14	44.9	12	24.4	8.0	25	24	19
14	M20 x 1.5	-CM-ML14-MRS20	48.0	14	24.4	11.1	25	25	25
16	M20 x 1.5	-CM-ML16-MRS20	48.0	14	24.4	12.0	25	25	25
18	M20 x 1.5	-CM-ML18-MRS20	48.5	14	24.4	12.0	30	27	25
20	M20 x 1.5	-CM-ML20-MRS20	50.0	14	26.0	12.0	32	30	25
22	M24 x 1.5	-CM-ML22-MRS24	50.5	14	26.0	15.0	32	30	29
25	M27 x 2	-CM-ML25-MRS27	57.5	16	31.3	16.8	38	35	32



Adapt to straight thread boss of ISO 6149-1.

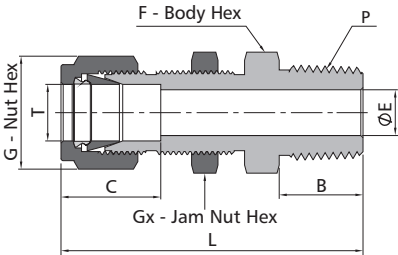
Metric Tube			Metric Thread (MST)						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	M14 x 1.5	-CM-ML6-MST14	35.2	11	15.3	4.8	14	19	
10	M14 x 1.5	-CM-ML10-MST14	36.7	11	17.2	7.5	19	19	
10	M20 x 1.5	-CM-ML10-MST20	41.2	14	17.2	7.9	19	27	
12	M14 x 1.5	-CM-ML12-MST14	40.2	11	22.8	7.5	22	22	
12	M20 x 1.5	-CM-ML12-MST20	44.0	14	22.8	10.4	22	27	

Male Connectors



Metric Tube			Metric Thread (MS)						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	M6 x 1	-CM-ML6-MS6	32.4	8	15.3	2.0	14	14	
6	M8 x 1	-CM-ML6-MS8	32.4	9	15.3	3.0	14	14	
6	M10 x 1	-CM-ML6-MS10	35.2	11	15.3	4.7	14	14	
6	M12 x 1.5	-CM-ML6-MS12	36.4	12	15.3	4.8	14	14	
6	M14 x 1.5	-CM-ML6-MS14	37.4	13	15.3	4.8	14	16	
6	M16 x 1.5	-CM-ML6-MS16	38.4	14	15.3	4.8	14	18	
6	M18 x 1.5	-CM-ML6-MS18	40.0	15	15.3	4.8	14	19	
6	M20 x 1.5	-CM-ML6-MS20	41.7	16	15.3	4.8	14	22	
8	M8 x 1	-CM-ML8-MS8	34.5	9	16.2	3.0	16	14	
8	M10 x 1	-CM-ML8-MS10	35.6	11	16.2	4.7	16	14	
8	M12 x 1.5	-CM-ML8-MS12	36.6	12	16.2	6.0	16	14	
8	M14 x 1.5	-CM-ML8-MS14	37.7	13	16.2	6.4	16	16	
8	M20 x 1.5	-CM-ML8-MS20	42.5	16	16.2	6.4	16	22	
10	M12 x 1.5	-CM-ML10-MS12	38.7	12	17.2	6.0	19	18	
10	M14 x 1.5	-CM-ML10-MS14	39.7	13	17.2	7.2	19	18	
10	M20 x 1.5	-CM-ML10-MS20	43.5	16	17.2	7.9	19	22	
12	M12 x 1.5	-CM-ML12-MS12	41.2	12	22.8	6.0	22	22	
12	M16 x 1.5	-CM-ML12-MS16	43.2	14	22.8	9.5	22	22	
12	M18 x 1.5	-CM-ML12-MS18	44.2	15	22.8	9.5	22	22	
12	M20 x 1.5	-CM-ML12-MS20	45.2	16	22.8	9.5	22	22	
14	M14 x 1.5	-CM-ML14-MS14	42.5	13	24.4	7.2	25	24	
14	M16 x 1.5	-CM-ML14-MS16	43.9	14	24.4	8.4	25	24	
14	M20 x 1.5	-CM-ML14-MS20	45.1	16	24.4	10.8	25	24	
16	M20 x 1.5	-CM-ML16-MS20	46.1	16	24.4	10.8	25	24	
18	M20 x 1.5	-CM-ML18-MS20	47.5	16	24.4	10.8	30	27	
18	M22 x 1.5	-CM-ML18-MS22	48.5	17	24.4	12.0	30	27	
20	M20 x 1.5	-CM-ML20-MS20	49.5	16	26.0	10.8	32	30	
22	M24 x 1.5	-CM-ML22-MS24	50.5	17	26.0	14.4	32	30	
25	M27 x 2	-CM-ML25-MS27	57.0	18	31.3	16.1	38	35	

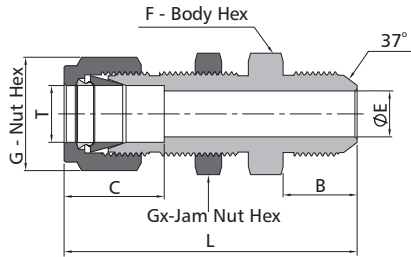
Bulkhead Male Connectors



Fractional Tube										NPT Thread	
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	B	C	E	G	F	Gx		
1/16	1/16	-BCM-FL1-NS1	30.2	9.7	8.6	1.3	7.9	7.9	7.9	5.2	6.4
1/16	1/8	-BCM-FL1-NS2	32.3	9.7	8.6	1.3	7.9	11.1	7.9	5.2	6.4
1/8	1/8	-BCM-FL2-NS2	46.5	9.7	12.7	2.3	11.1	12.7	12.7	8.3	12.7
3/16	1/8	-BCM-FL3-NS2	48.0	9.7	13.7	3.0	12.7	14.3	14.3	9.9	12.7
1/4	1/8	-BCM-FL4-NS2	49.5	9.7	15.2	4.8	14.3	15.9	15.9	11.5	10.2
1/4	1/4	-BCM-FL4-NS4	54.1	14.2	15.2	4.8	14.3	15.9	15.9	11.5	10.2
1/4	3/8	-BCM-FL4-NS6	54.9	14.2	15.2	4.8	14.3	17.5	15.9	11.5	10.2
1/4	1/2	-BCM-FL4-NS8	60.3	19.1	15.2	4.8	14.3	22.2	15.9	11.5	10.2
5/16	1/8	-BCM-FL5-NS2	52.8	9.7	16.3	4.8	15.9	17.5	17.5	13.1	11.2
5/16	1/4	-BCM-FL5-NS4	57.7	14.2	16.3	6.4	15.9	17.5	17.5	13.1	11.2
3/8	1/8	-BCM-FL6-NS2	52.9	9.7	16.8	4.8	17.5	19.1	19.1	14.7	11.2
3/8	1/4	-BCM-FL6-NS4	57.4	14.2	16.8	7.1	17.5	19.1	19.1	14.7	11.2
3/8	3/8	-BCM-FL6-NS6	57.4	14.2	16.8	7.1	17.5	19.1	19.1	14.7	11.2
3/8	1/2	-BCM-FL6-NS8	63.8	19.1	16.8	7.1	17.5	22.2	19.1	14.7	11.2
1/2	1/8	-BCM-FL8-NS2	58.7	9.7	22.9	4.8	22.2	23.8	23.8	19.4	12.7
1/2	1/4	-BCM-FL8-NS4	63.2	14.2	22.9	7.1	22.2	23.8	23.8	19.4	12.7
1/2	3/8	-BCM-FL8-NS6	63.2	14.2	22.9	9.7	22.2	23.8	23.8	19.4	12.7
1/2	1/2	-BCM-FL8-NS8	68.8	19.1	22.9	10.4	22.2	23.8	23.8	19.4	12.7
5/8	3/8	-BCM-FL10-NS6	66.7	14.2	24.4	9.7	25.4	27.0	27.0	22.6	15.1
5/8	1/2	-BCM-FL10-NS8	71.5	19.1	24.4	11.9	25.4	27.0	27.0	22.6	15.1
3/4	1/2	-BCM-FL12-NS8	76.2	19.1	24.4	11.9	28.6	30.2	30.2	25.8	16.8
3/4	3/4	-BCM-FL12-NS12	76.2	19.1	24.4	15.7	28.6	30.2	30.2	25.8	16.8
7/8	3/4	-BCM-FL14-NS12	84.1	19.1	25.9	15.7	31.8	33.3	33.3	29.0	19.1
1	3/4	-BCM-FL16-NS12	88.4	19.1	31.2	15.7	38.1	41.3	41.3	33.7	19.1
1	1	-BCM-FL16-NS16	93.2	23.9	31.2	22.4	38.1	41.3	41.3	33.7	19.1

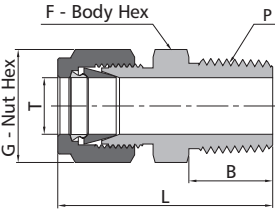
Metric Tube										NPT Thread	
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	B	C	E	G	F	Gx		
6	1/8	-BCM-ML6-NS2	49.6	9.7	15.3	4.8	14	16	16	11.5	10.2
6	1/4	-BCM-ML6-NS4	53.6	14.2	15.3	4.8	14	16	16	11.5	10.2
8	1/8	-BCM-ML8-NS2	52.3	9.7	16.2	4.8	16	18	18	13.1	11.2
8	1/4	-BCM-ML8-NS4	57.5	14.2	16.2	6.4	16	18	18	13.1	11.2
10	1/4	-BCM-ML10-NS4	58.4	14.2	17.2	7.9	19	22	22	16.3	11.2
10	3/8	-BCM-ML10-NS6	58.4	14.2	17.2	7.9	19	22	22	16.3	11.2
10	1/2	-BCM-ML10-NS8	63.1	19.1	17.2	7.9	19	22	22	16.3	11.2
12	1/4	-BCM-ML12-NS4	63.9	14.2	22.8	7.9	22	24	24	19.5	12.7
12	3/8	-BCM-ML12-NS6	63.9	14.2	22.8	9.5	22	24	24	19.5	12.7
12	1/2	-BCM-ML12-NS8	68.8	19.1	22.8	9.5	22	24	24	19.5	12.7

Bulkhead Male Connectors



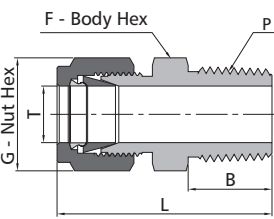
Fractional Tube										37° Flare (AN)	
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	B	C	E	G	F	Gx		
1/8	1/8	-BCM-FL2-AN2	48.5	11.4	12.7	1.5	11.1	12.7	12.7	8.3	12.7
1/8	1/4	-BCM-FL2-AN4	51.8	14.0	12.7	2.3	11.1	15.9	12.7	8.3	12.7
3/16	3/16	-BCM-FL3-AN3	50.3	12.2	13.7	2.3	12.7	14.3	14.3	9.9	12.7
1/4	1/4	-BCM-FL4-NS4	53.8	14.0	15.2	4.3	14.3	15.9	15.9	11.5	10.2
5/16	5/16	-BCM-FL5-AN5	56.1	14.0	16.2	5.8	15.9	17.5	17.5	13.1	14.3
3/8	1/4	-BCM-FL6-AN4	57.2	14.0	16.8	4.3	17.5	19.1	19.1	14.7	11.2
3/8	3/8	-BCM-FL6-AN6	57.2	14.2	16.8	7.1	17.5	19.1	19.1	14.7	11.2
1/2	1/2	-BCM-FL8-AN8	65.8	16.8	22.8	9.9	22.2	23.8	23.8	19.4	12.7
5/8	5/8	-BCM-FL10-AN10	69.6	19.3	24.4	12.3	25.4	27.0	27.0	22.6	15.1
3/4	3/4	-BCM-FL12-AN12	79.0	21.8	24.4	15.5	28.6	30.2	30.2	25.8	16.8
1	1	-BCM-FL16-AN16	92.5	23.1	31.2	21.3	38.1	41.3	41.3	33.7	19.1

Thermocouple Connectors



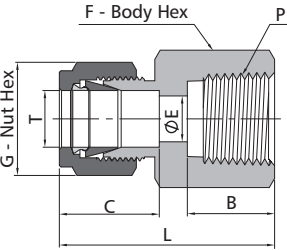
Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	G	F
1/16	1/16	-TCM-FL1-NS1	23.9	9.7	7.9	7.9
1/16	1/8	-TCM-FL1-NS2	26.2	9.7	7.9	11.1
1/16	1/4	-TCM-FL1-NS4	31.0	14.2	7.9	14.3
1/8	1/16	-TCM-FL2-NS1	29.7	9.7	11.1	11.1
1/8	1/8	-TCM-FL2-NS2	30.5	9.7	11.1	11.1
1/8	1/4	-TCM-FL2-NS4	35.6	14.2	11.1	14.3
3/16	1/8	-TCM-FL3-NS2	31.2	9.7	12.7	11.1
3/16	1/4	-TCM-FL3-NS4	36.3	14.2	12.7	14.3
1/4	1/8	-TCM-FL4-NS2	32.8	9.7	14.3	12.7
1/4	1/4	-TCM-FL4-NS4	37.8	14.2	14.3	14.3
1/4	3/8	-TCM-FL4-NS6	38.4	14.2	14.3	17.5
1/4	1/2	-TCM-FL4-NS8	44.7	19.1	14.3	22.2
5/16	1/4	-TCM-FL5-NS4	38.6	14.2	15.9	14.3
3/8	1/4	-TCM-FL6-NS4	39.9	14.2	17.5	15.9
3/8	3/8	-TCM-FL6-NS6	39.9	14.2	17.5	17.5
3/8	1/2	-TCM-FL6-NS8	46.2	19.1	17.5	22.2
3/8	3/4	-TCM-FL6-NS12	47.8	19.1	17.5	27.0
1/2	1/2	-TCM-FL8-NS8	49.0	19.1	22.2	22.2
1/2	3/4	-TCM-FL8-NS12	50.5	19.1	22.2	27.0
5/8	3/4	-TCM-FL10-NS12	50.5	19.1	25.4	27.0
3/4	3/4	-TCM-FL12-NS12	50.5	19.1	28.6	27.0
1	1	-TCM-FL16-NS16	62.2	23.9	38.1	34.9

Thermocouple Connectors



Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	G	F
2	1/8	-TCM-ML2-NS2	30.5	9.7	12	12
3	1/8	-TCM-ML3-NS2	30.5	9.7	12	12
3	1/4	-TCM-ML3-NS4	35.6	14.2	12	14
4	1/8	-TCM-ML4-NS2	31.2	9.7	12	12
4	1/4	-TCM-ML4-NS4	36.3	14.2	12	14
6	1/8	-TCM-ML6-NS2	32.8	9.7	14	14
6	1/4	-TCM-ML6-NS4	37.9	14.2	14	14
6	3/8	-TCM-ML6-NS6	38.4	14.2	14	18
6	1/2	-TCM-ML6-NS8	44.7	19.1	14	22
8	1/4	-TCM-ML8-NS4	38.7	14.2	16	15
8	3/8	-TCM-ML8-NS6	39.3	14.2	16	18
8	1/2	-TCM-ML8-NS8	45.6	19.1	16	22
10	3/8	-TCM-ML10-NS6	40.9	14.2	19	18
10	1/2	-TCM-ML10-NS8	46.5	19.1	19	22
10	3/4	-TCM-ML10-NS12	48.0	19.1	19	27
10	1	-TCM-ML10-NS16	54.6	23.9	19	35
12	3/8	-TCM-ML12-NS6	43.4	14.2	22	22
12	1/2	-TCM-ML12-NS8	49.0	19.1	22	22
12	3/4	-TCM-ML12-NS12	50.5	19.1	22	27
14	1/2	-TCM-ML14-NS8	49.0	19.1	25	24
14	3/4	-TCM-ML14-NS12	50.5	19.1	25	27
15	1/2	-TCM-ML15-NS8	49.0	19.1	25	24
15	3/4	-TCM-ML15-NS12	50.5	19.1	25	27
15	1	-TCM-ML15-NS16	57.1	23.9	25	35
16	3/4	-TCM-ML16-NS12	50.5	19.1	25	27
18	3/4	-TCM-ML18-NS12	50.5	19.1	30	27
20	1	-TCM-ML20-NS16	57.1	23.9	32	35
22	1	-TCM-ML22-NS16	57.1	23.9	32	35
25	1	-TCM-ML25-NS16	62.3	23.9	38	35

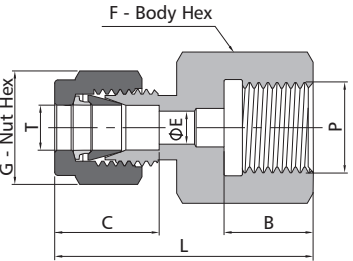
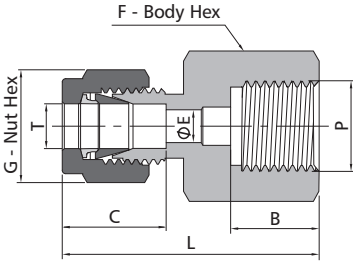
Female Connectors



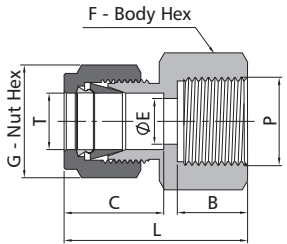
Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/16	1/16	-CF-FL1-NS1	23.6	9.9	8.6	1.3	7.9	11.1	
1/16	1/8	-CF-FL1-NS2	24.4	10.4	8.6	1.3	7.9	14.3	
1/8	1/8	-CF-FL2-NS2	28.7	10.4	12.7	2.3	11.1	14.3	
1/8	1/4	-CF-FL2-NS4	33.5	15.0	12.7	2.3	11.1	19.1	
3/16	1/8	-CF-FL3-NS2	29.7	10.4	13.7	3.0	12.7	14.3	
1/4	1/8	-CF-FL4-NS2	31.2	10.4	15.2	4.8	14.3	14.3	
1/4	1/4	-CF-FL4-NS4	35.8	15.0	15.2	4.8	14.3	19.1	
1/4	3/8	-CF-FL4-NS6	37.6	15.0	15.2	4.8	14.3	22.2	
1/4	1/2	-CF-FL4-NS8	42.4	19.8	15.2	4.8	14.3	27.0	
5/16	1/8	-CF-FL5-NS2	32.0	10.4	16.3	6.4	15.9	14.3	
5/16	1/4	-CF-FL5-NS4	36.8	15.0	16.3	6.4	15.9	19.1	
3/8	1/8	-CF-FL6-NS2	32.8	10.4	16.8	7.1	17.5	15.9	
3/8	1/4	-CF-FL6-NS4	37.6	15.0	16.8	7.1	17.5	19.1	
3/8	3/8	-CF-FL6-NS6	39.1	15.0	16.8	7.1	17.5	22.2	
3/8	1/2	-CF-FL6-NS8	43.9	19.8	16.8	7.1	17.5	27.0	
3/8	3/4	-CF-FL6-NS12	47.8	20.6	16.8	7.1	17.5	33.3	
1/2	1/4	-CF-FL8-NS4	40.4	15.0	22.9	10.4	22.2	20.6	
1/2	3/8	-CF-FL8-NS6	41.9	15.0	22.9	10.4	22.2	22.2	
1/2	1/2	-CF-FL8-NS8	46.7	19.8	22.9	10.4	22.2	27.0	
1/2	3/4	-CF-FL8-NS12	48.3	20.6	22.9	10.4	22.2	33.3	
5/8	3/8	-CF-FL10-NS6	41.9	15.0	24.4	12.7	25.4	23.8	
5/8	1/2	-CF-FL10-NS8	46.7	19.8	24.4	12.7	25.4	27.0	
3/4	1/2	-CF-FL12-NS8	46.7	19.8	24.4	15.7	28.6	27.0	
3/4	3/4	-CF-FL12-NS12	48.3	20.6	24.4	15.7	28.6	33.3	
7/8	3/4	-CF-FL14-NS12	49.8	20.6	25.9	18.3	31.8	33.3	
1	3/4	-CF-FL16-NS12	53.3	20.6	31.2	22.4	38.1	34.9	
1	1	-CF-FL16-NS16	62.2	25.4	31.2	22.4	38.1	41.3	
1 1/4	1 1/4	-CF-FL20-NS20	74.7	25.4	41.1	27.7	47.6	54.0	
1 1/2	1 1/2	-CF-FL24-NS24	83.3	27.7	50.0	36.3	57.2	60.3	

Fractional Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/4	1/8	-CF-FL4-RT2	31.2	10.4	15.2	4.8	14.3	14.3	
1/4	1/4	-CF-FL4-RT4	35.8	15.0	15.2	4.8	14.3	19.1	
1/4	3/8	-CF-FL4-RT6	37.6	15.0	15.2	4.8	14.3	22.2	
1/4	1/2	-CF-FL4-RT8	42.4	19.8	15.2	4.8	14.3	27.0	
3/8	1/4	-CF-FL6-RT4	37.6	15.0	16.8	7.1	17.5	19.1	
3/8	3/8	-CF-FL6-RT6	39.1	15.0	16.8	7.1	17.5	22.2	
3/8	1/2	-CF-FL6-RT8	43.9	19.8	16.8	7.1	17.5	27.0	
1/2	1/4	-CF-FL8-RT4	40.4	15.0	22.9	10.4	22.2	20.6	
1/2	3/8	-CF-FL8-RT6	41.9	15.0	22.9	10.4	22.2	22.2	
1/2	1/2	-CF-FL8-RT8	46.7	19.8	22.9	10.4	22.2	27.0	

Female Connectors



Adapt to Japanese gauge stud (JIS B7505)

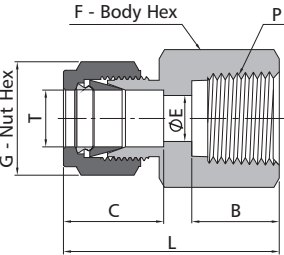


Fractional Tube			ISO Parallel Thread (RG)						
T-Tube O.D. (in.)	P-RG Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/8	1/4	-CF-FL2-RG4	35.3	12.9	12.7	2.3	11.1	19.1	
1/8	3/8	-CF-FL2-RG6	38.7	14.2	12.7	2.3	11.1	23.8	
1/4	1/4	-CF-FL4-RG4	37.6	12.9	15.2	4.8	14.3	19.1	
1/4	3/8	-CF-FL4-RG6	37.6	14.2	15.2	4.8	14.3	23.8	
1/4	1/2	-CF-FL4-RG8	43.4	18.8	15.2	4.8	14.3	27.0	
5/16	1/4	-CF-FL5-RG4	38.4	12.9	16.3	5.6	15.9	19.1	
5/16	3/8	-CF-FL5-RG6	39.2	14.2	16.3	6.4	15.9	23.8	
5/16	1/2	-CF-FL5-RG8	40.9	18.8	16.3	7.1	15.9	27.0	
3/8	1/4	-CF-FL6-RG4	39.1	12.9	16.8	5.6	17.5	19.1	
3/8	3/8	-CF-FL6-RG6	38.6	14.2	16.8	6.4	17.5	23.8	
3/8	1/2	-CF-FL6-RG8	41.9	18.8	16.8	7.1	17.5	27.0	
1/2	1/4	-CF-FL8-RG4	41.9	12.9	22.9	5.6	22.2	22.2	
1/2	3/8	-CF-FL8-RG6	44.5	14.2	22.9	6.4	22.2	23.8	
1/2	1/2	-CF-FL8-RG8	48.3	18.8	22.9	7.1	22.2	27.0	

Fractional Tube			ISO Parallel Thread (RJ)						
T-Tube O.D. (in.)	P-RJ Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/4	1/4	-CF-FL4-RJ4	37.6	12.9	15.2	4.6	14.3	19.1	
1/4	3/8	-CF-FL4-RJ6	37.6	15.8	15.2	4.8	14.3	23.8	
1/4	1/2	-CF-FL4-RJ8	43.4	18.8	15.2	4.8	14.3	27.0	
5/16	1/4	-CF-FL5-RJ4	38.4	12.9	16.3	5.6	15.9	19.1	
5/16	1/2	-CF-FL5-RJ8	40.9	18.8	16.3	7.1	15.9	27.0	
3/8	1/4	-CF-FL6-RJ4	39.1	12.9	16.8	5.6	17.5	19.1	
3/8	3/8	-CF-FL6-RJ6	38.6	15.8	16.8	6.4	17.5	23.8	
3/8	1/2	-CF-FL6-RJ8	41.9	18.8	16.8	7.1	17.5	27.0	
1/2	1/4	-CF-FL8-RJ4	41.9	12.9	22.9	5.6	22.2	20.6	
1/2	3/8	-CF-FL8-RJ6	44.5	15.8	22.9	6.4	22.2	23.8	
1/2	1/2	-CF-FL8-RJ8	48.3	18.8	22.9	7.1	22.2	27.0	

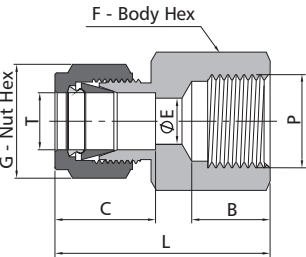
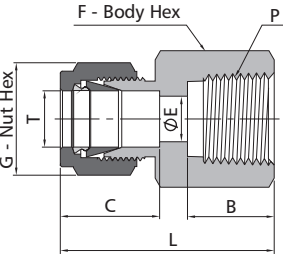
Fractional Tube			Metric Thread						
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
1/8	M14 x 1.5	-CF-FL2-MS14	32.3	13	12.7	2.3	11.1	19.1	
1/8	M16 x 1.5	-CF-FL2-MS16	33.3	14	12.7	2.3	11.1	22.2	
1/8	M18 x 1.5	-CF-FL2-MS18	34.3	15	12.7	2.3	11.1	25.4	
1/8	M20 x 1.5	-CF-FL2-MS20	35.3	16	12.7	2.3	11.1	27.0	
1/4	M16 x 1.5	-CF-FL4-MS16	35.8	14	15.2	4.8	14.3	22.2	
1/4	M18 x 1.5	-CF-FL4-MS18	36.8	15	15.2	4.8	14.3	25.4	
1/4	M20 x 1.5	-CF-FL4-MS20	37.8	16	15.2	4.8	14.3	27.0	
3/8	M14 x 1.5	-CF-FL6-MS14	37.1	13	16.8	7.1	17.5	19.1	
3/8	M16 x 1.5	-CF-FL6-MS16	37.5	14	16.8	7.1	17.5	22.2	
3/8	M18 x 1.5	-CF-FL6-MS18	38.5	15	16.8	7.1	17.5	25.4	
3/8	M20 x 1.5	-CF-FL6-MS20	39.5	16	16.8	7.1	17.5	27.0	
1/2	M16 x 1.5	-CF-FL8-MS16	41.4	14	22.9	8.4	22.2	22.2	
1/2	M18 x 1.5	-CF-FL8-MS18	42.4	15	22.9	9.6	22.2	25.4	
1/2	M20 x 1.5	-CF-FL8-MS20	43.4	16	22.9	10.4	22.2	27.0	
1/2	M22 x 1.5	-CF-FL8-MS22	44.4	17	22.9	10.4	22.2	27.0	

Female Connectors



Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
3	1/8	-CF-ML3-NS2	28.7	10.4	12.9	2.4	12	14	
3	1/4	-CF-ML3-NS4	33.5	15.0	12.9	2.4	12	19	
4	1/8	-CF-ML4-NS2	29.7	10.4	13.7	2.4	12	14	
6	1/8	-CF-ML6-NS2	31.3	10.4	15.3	4.8	14	14	
6	1/4	-CF-ML6-NS4	35.8	15.0	15.3	4.8	14	19	
6	3/8	-CF-ML6-NS6	37.7	15.0	15.3	4.8	14	22	
6	1/2	-CF-ML6-NS8	42.5	19.8	15.3	4.8	14	27	
8	1/8	-CF-ML8-NS2	32.1	10.4	16.2	4.8	16	15	
8	1/4	-CF-ML8-NS4	37.0	15.0	16.2	6.4	16	19	
8	3/8	-CF-ML8-NS6	38.5	15.0	16.2	6.4	16	22	
8	1/2	-CF-ML8-NS8	43.3	19.8	16.2	6.4	16	27	
10	1/8	-CF-ML10-NS2	33.0	10.4	17.2	4.8	19	15	
10	1/4	-CF-ML10-NS4	37.8	15.0	17.2	7.9	19	19	
10	3/8	-CF-ML10-NS6	39.4	15.0	17.2	7.9	19	22	
10	1/2	-CF-ML10-NS8	44.2	19.8	17.2	7.9	19	27	
12	1/4	-CF-ML12-NS4	40.3	15.0	22.8	7.9	22	22	
12	3/8	-CF-ML12-NS6	41.9	15.0	22.8	9.5	22	22	
12	1/2	-CF-ML12-NS8	46.7	19.8	22.8	9.5	22	27	
12	3/4	-CF-ML12-NS12	49.7	20.6	22.8	9.5	22	35	
14	3/4	-CF-ML14-NS12	49.7	20.6	24.4	11.1	25	35	
15	1/2	-CF-ML15-NS8	46.7	19.8	24.4	11.9	25	27	
16	3/8	-CF-ML16-NS6	41.9	15.0	24.4	9.5	25	27	
16	1/2	-CF-ML16-NS8	46.9	19.8	24.4	11.9	25	27	
20	1/2	-CF-ML20-NS8	47.9	19.8	26.0	11.9	32	30	
20	3/4	-CF-ML20-NS12	49.7	20.6	26.0	15.9	32	35	
22	3/4	-CF-ML22-NS12	49.7	20.6	26.0	15.9	32	35	
22	1	-CF-ML22-NS16	57.9	25.4	26.0	18.3	32	41	
25	3/4	-CF-ML25-NS12	53.4	20.6	31.3	15.9	38	35	
25	1	-CF-ML25-NS16	62.3	25.4	31.3	21.8	38	41	

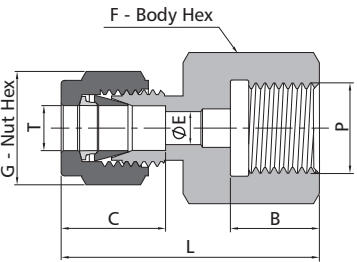
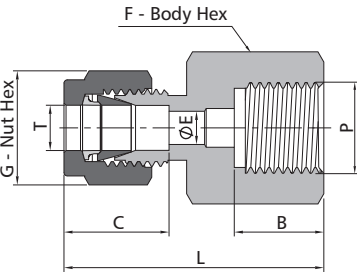
Female Connectors



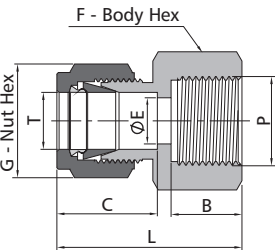
Metric Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
3	1/8	-CF-ML3-RT2	28.7	10.4	12.9	2.4	12	14	
6	1/8	-CF-ML6-RT2	31.3	10.4	15.3	4.8	14	14	
6	1/4	-CF-ML6-RT4	35.8	15.0	15.3	4.8	14	19	
6	3/8	-CF-ML6-RT6	36.9	15.0	15.3	4.8	14	22	
6	1/2	-CF-ML6-RT8	42.5	19.8	15.3	4.8	14	27	
8	1/8	-CF-ML8-RT2	32.1	10.4	16.2	6.4	16	15	
8	1/4	-CF-ML8-RT4	37.0	15.0	16.2	6.4	16	19	
8	3/8	-CF-ML8-RT6	38.5	15.0	16.2	6.4	16	22	
8	1/2	-CF-ML8-RT8	43.3	19.8	16.2	6.4	16	27	
10	1/8	-CF-ML10-RT2	33.0	10.4	17.2	7.9	19	18	
10	1/4	-CF-ML10-RT4	37.8	15.0	17.2	7.9	19	19	
10	3/8	-CF-ML10-RT6	39.4	15.0	17.2	7.9	19	22	
10	1/2	-CF-ML10-RT8	44.2	19.8	17.2	7.9	19	27	
12	1/8	-CF-ML12-RT2	35.5	10.4	22.8	8.3	22	22	
12	1/4	-CF-ML12-RT4	40.3	15.0	22.8	9.5	22	22	
12	3/8	-CF-ML12-RT6	41.9	15.0	22.8	9.5	22	22	
12	1/2	-CF-ML12-RT8	46.7	19.8	22.8	9.5	22	27	
12	3/4	-CF-ML12-RT12	49.0	20.6	22.8	9.5	22	35	
15	1/2	-CF-ML15-RT8	46.7	19.8	24.4	11.9	25	27	
16	1/2	-CF-ML16-RT8	48.4	19.8	24.4	11.9	25	27	
16	3/4	-CF-ML16-RT12	49.7	20.6	24.4	12.7	25	35	
20	1/2	-CF-ML20-RT8	47.9	19.8	26.0	11.9	32	30	
20	3/4	-CF-ML20-RT12	49.7	20.6	26.0	15.9	32	35	
22	3/4	-CF-ML22-RT12	49.7	20.6	26.0	15.9	32	35	
22	1	-CF-ML22-RT16	57.9	25.4	26.0	18.3	32	41	
25	3/4	-CF-ML25-RT12	53.4	20.6	31.3	15.9	38	35	
25	1	-CF-ML25-RT16	62.3	25.4	31.3	21.8	38	41	

Metric Tube			ISO Parallel Thread (RP)						
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	1/8	-CF-ML6-RP2	33.5	13.0	15.3	4.8	14	14	
6	1/4	-CF-ML6-RP4	39.4	18.5	15.3	4.8	14	19	
22	3/4	-CF-ML22-RP12	53.3	25.9	26.0	18.3	32	35	
25	1	-CF-ML25-RP16	63.9	28.2	31.3	21.8	38	40	

Female Connectors



Adapt to Japanese Gauge stud (JIS B7505)

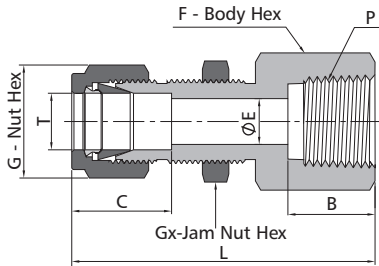


Metric Tube			ISO Parallel Thread (RG)						
T-Tube O.D. (mm)	P-RG Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
3	1/4	-CF-ML3-RG4	35.3	12.9	12.9	2.4	12	19	
6	1/4	-CF-ML6-RG4	37.6	12.9	15.3	4.8	14	19	
6	3/8	-CF-ML6-RG6	37.6	14.2	15.3	4.8	14	24	
6	1/2	-CF-ML6-RG8	43.5	18.8	15.3	4.8	14	27	
8	1/4	-CF-ML8-RG4	38.5	12.9	16.2	6.4	16	19	
8	3/8	-CF-ML8-RG6	36.2	14.2	16.2	6.4	16	24	
8	1/2	-CF-ML8-RG8	41.0	18.8	16.2	6.4	16	27	
10	1/4	-CF-ML10-RG4	39.4	12.9	17.2	5.9	19	19	
10	3/8	-CF-ML10-RG6	38.8	14.2	17.2	7.9	19	24	
10	1/2	-CF-ML10-RG8	42.1	18.8	17.2	7.9	19	27	
12	1/4	-CF-ML12-RG4	41.9	12.9	22.8	5.9	22	22	
12	3/8	-CF-ML12-RG6	44.4	14.2	22.8	7.9	22	24	
12	1/2	-CF-ML12-RG8	48.2	18.8	22.8	9.5	22	27	
20	1/2	-CF-ML20-RG8	54.3	18.8	26.0	11.9	32	30	
22	1/2	-CF-ML22-RG8	54.3	18.8	26.0	11.9	32	30	

Metric Tube			ISO Parallel Thread (RJ)						
T-Tube O.D. (mm)	P-RJ Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	1/4	-CF-ML6-RJ4	37.6	12.9	15.3	4.8	14	19	
6	3/8	-CF-ML6-RJ6	37.6	15.8	15.3	4.8	14	24	
6	1/2	-CF-ML6-RJ8	43.5	18.8	15.3	4.8	14	27	
8	1/4	-CF-ML8-RJ4	38.5	12.9	16.2	5.5	16	19	
8	3/8	-CF-ML8-RJ6	36.2	15.8	16.2	6.5	16	24	
8	1/2	-CF-ML8-RJ8	41.0	18.8	16.2	7.0	16	27	
10	1/4	-CF-ML10-RJ4	39.4	12.9	17.2	5.5	19	19	
10	3/8	-CF-ML10-RJ6	38.8	15.8	17.2	6.5	19	24	
10	1/2	-CF-ML10-RJ8	42.1	18.8	17.2	7.0	19	27	
12	1/4	-CF-ML12-RJ4	41.9	12.9	22.8	5.5	22	22	
12	3/8	-CF-ML12-RJ6	44.4	15.8	22.8	6.5	22	24	
12	1/2	-CF-ML12-RJ8	48.2	18.8	22.8	7.0	22	27	

Metric Tube			Metric Thread						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimension, mm						
			L	B	C	E	G	F	
6	M10 x 1	-CF-ML6-MS10	32.7	11	15.3	4.0	14	16	
6	M14 x 1.5	-CF-ML6-MS14	34.7	13	15.3	4.8	14	19	
6	M20 x 1.5	-CF-ML6-MS20	37.7	16	15.3	4.8	14	27	
8	M8 x 1	-CF-ML8-MS8	31.6	9	16.2	3.2	16	14	
8	M10 x 1	-CF-ML8-MS10	33.6	11	16.2	4.0	16	16	
8	M14 x 1.5	-CF-ML8-MS14	35.6	13	16.2	6.0	16	19	
8	M20 x 1.5	-CF-ML8-MS20	38.6	16	16.2	6.4	16	27	
10	M16 x 1.5	-CF-ML10-MS16	38.1	14	17.2	7.9	19	22	
12	M20 x 1.5	-CF-ML12-MS20	44.9	16	22.8	9.5	22	27	
14	M10 x 1	-CF-ML14-MS10	42.5	11	24.4	4.0	25	24	
14	M20 x 1.5	-CF-ML14-MS20	44.9	16	24.4	10.8	25	27	
14	M22 x 1.5	-CF-ML14-MS22	45.9	17	24.4	11.1	25	27	
16	M20 x 1.5	-CF-ML16-MS20	44.9	16	24.4	10.8	26	27	
20	M20 x 1.5	-CF-ML20-MS20	46.5	16	26.0	10.8	32	30	
25	M27 x 2	-CF-ML25-MS27	54.4	18	31.3	16.1	38	35	

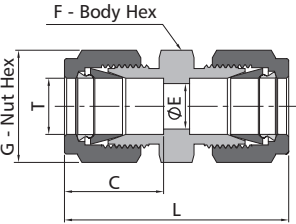
Bulkhead Female Connectors



Fractional Tube										NPT Thread	
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	B	C	E	G	F	Gx		
1/16	1/16	-BCF-FL1-NS1	26.2	9.9	8.6	1.3	7.9	11.1	7.9	5.2	3.2
1/16	1/8	-BCF-FL1-NS2	26.9	10.4	8.6	1.3	7.9	14.3	7.9	5.2	3.2
1/8	1/8	-BCF-FL2-NS2	44.7	10.4	12.7	2.3	11.1	14.3	12.7	8.3	12.7
1/8	1/4	-BCF-FL2-NS4	49.6	15.0	12.7	2.3	11.1	19.1	12.7	8.3	12.7
3/16	1/8	-BCF-FL3-NS2	45.5	10.4	13.7	3.0	12.7	14.3	14.3	9.9	12.7
1/4	1/8	-BCF-FL4-NS2	47.0	10.4	15.2	4.8	14.3	15.9	15.9	11.5	10.2
1/4	1/4	-BCF-FL4-NS4	51.8	15.0	15.2	4.8	14.3	19.1	15.9	11.5	10.2
1/4	3/8	-BCF-FL4-NS6	53.3	15.0	15.2	4.8	14.3	22.2	15.9	11.5	10.2
1/4	1/2	-BCF-FL4-NS8	58.2	19.8	15.2	4.8	14.3	27.0	15.9	11.5	10.2
5/16	1/8	-BCF-FL5-NS2	49.8	10.4	16.3	6.4	15.9	14.3	17.5	13.1	11.2
5/16	1/4	-BCF-FL5-NS4	60.5	15.0	16.3	6.4	15.9	19.1	17.5	13.1	11.2
3/8	1/8	-BCF-FL6-NS2	50.3	10.4	16.8	7.1	17.5	15.9	19.1	14.5	11.2
3/8	1/4	-BCF-FL6-NS4	55.1	15.0	16.8	7.1	17.5	19.1	19.1	14.5	11.2
3/8	3/8	-BCF-FL6-NS6	56.6	15.0	16.8	7.1	17.5	22.2	19.1	14.5	11.2
3/8	1/2	-BCF-FL6-NS8	61.5	19.8	16.8	7.1	17.5	27.0	19.1	14.5	11.2
3/8	3/4	-BCF-FL6-NS12	65.3	20.6	16.8	7.1	17.5	33.3	19.1	14.5	11.2
1/2	1/4	-BCF-FL8-NS4	60.2	15.0	22.9	10.4	22.2	23.8	23.8	19.4	12.7
1/2	3/8	-BCF-FL8-NS6	61.7	15.0	22.9	10.4	22.2	23.8	23.8	19.4	12.7
1/2	1/2	-BCF-FL8-NS8	66.5	19.8	22.9	10.4	22.2	27.0	23.8	19.4	12.7
1/2	3/4	-BCF-FL8-NS12	68.1	20.6	22.9	10.4	22.2	33.3	23.8	19.4	12.7
5/8	3/8	-BCF-FL10-NS6	62.5	15.0	24.4	12.7	25.4	23.8	27.0	22.6	15.1
5/8	1/2	-BCF-FL10-NS8	67.3	19.8	24.4	12.7	25.4	27.0	27.0	22.6	15.1
3/4	1/2	-BCF-FL12-NS8	72.2	19.8	24.4	15.7	28.6	27.0	30.2	25.8	19.8
3/4	3/4	-BCF-FL12-NS12	73.7	20.6	24.4	15.7	28.6	33.3	30.2	25.8	19.8
7/8	3/4	-BCF-FL14-NS12	80.8	20.6	25.9	18.3	31.8	33.3	33.3	29.0	23.8
1	3/4	-BCF-FL16-NS12	84.7	20.6	31.2	22.4	38.1	41.3	41.3	33.7	23.8
1	1	-BCF-FL16-NS16	93.5	25.4	31.2	22.4	38.1	41.3	41.3	33.7	23.8

Metric Tube										NPT Thread	
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	B	C	E	G	F	Gx		
6	1/8	-BCF-ML6-NS2	47.2	10.4	15.3	4.8	14	16	16	11.5	10.2
6	1/4	-BCF-ML6-NS4	51.8	15.0	15.3	4.8	14	19	16	11.5	10.2
8	1/8	-BCF-ML8-NS2	49.6	10.4	16.2	4.8	16	18	18	13.1	11.2
10	1/4	-BCF-ML10-NS4	55.2	15.0	17.2	7.9	19	22	22	16.3	11.2
12	3/8	-BCF-ML12-NS6	60.9	15.0	22.8	9.5	22	24	24	19.5	12.7
12	1/2	-BCF-ML12-NS8	66.5	19.8	22.8	9.5	22	27	24	19.5	12.7

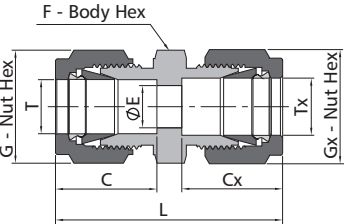
Unions



Fractional Tube						
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				
		L	C	G	F	E
1/16	-U-FL1	25.1	8.6	7.9	11.1	1.3
1/8	-U-FL2	35.6	12.7	11.1	11.1	2.3
3/16	-U-FL3	37.3	13.7	12.7	12.7	3.0
1/4	-U-FL4	40.9	15.2	14.3	12.7	4.8
5/16	-U-FL5	42.9	16.2	15.9	14.3	6.4
3/8	-U-FL6	45.0	16.8	17.5	15.9	7.1
1/2	-U-FL8	51.3	22.9	22.2	20.6	10.4
5/8	-U-FL10	52.1	24.4	25.4	23.9	12.7
3/4	-U-FL12	53.6	24.4	28.6	27.0	15.7
7/8	-U-FL14	55.1	25.9	31.8	34.9	18.3
1	-U-FL16	64.8	31.2	38.1	34.9	22.4
1 1/8	-U-FL18	64.8	31.2	44.5	41.3	24.6
1 1/4	-U-FL20	92.2	41.1	47.6	44.5	27.7
1 1/2	-U-FL24	108.0	50.0	57.2	54.0	34.0

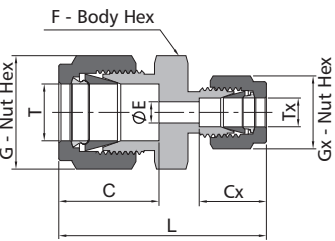
Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
		L	C	G	F	E
2	-U-ML2	35.6	12.9	12	12	1.7
3	-U-ML3	35.3	12.9	12	12	2.4
4	-U-ML4	37.3	13.7	12	12	2.4
6	-U-ML6	41.0	15.3	14	14	4.8
8	-U-ML8	43.2	16.2	16	15	6.4
10	-U-ML10	46.2	17.2	19	18	7.9
12	-U-ML12	51.2	22.8	22	22	9.5
14	-U-ML14	52.0	24.4	25	24	11.1
15	-U-ML15	52.0	24.4	25	24	11.9
16	-U-ML16	52.0	24.4	25	24	12.7
18	-U-ML18	53.5	24.4	30	27	15.1
20	-U-ML20	55.0	26.0	32	30	15.9
22	-U-ML22	55.0	26.0	32	30	18.3
25	-U-ML25	65.0	31.3	38	35	21.8
28	-U-ML28	85.0	36.6	46	41	21.8
30	-U-ML30	92.7	39.6	50	46	26.2
32	-U-ML32	97.3	42.0	50	46	28.6
38	-U-ML38	113.6	49.4	60	55	33.7

Conversion Unions



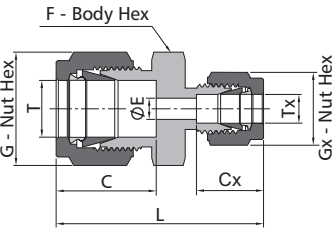
Metric Tube			Fractional Tube							
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	Cx	Gx	
3	1/8	-U-ML3-FL2	35.2	12.9	12	12	2.4	12.7	11.1	
4	1/8	-U-ML4-FL2	36.5	13.7	12	12	2.4	12.7	11.1	
4	1/4	-U-ML4-FL4	39.4	13.7	12	14	2.4	15.2	14.3	
6	1/8	-U-ML6-FL2	38.5	15.3	14	14	2.4	12.7	11.1	
6	1/4	-U-ML6-FL4	41.0	15.3	14	14	4.8	15.2	14.3	
6	5/16	-U-ML6-FL5	42.3	15.3	14	14	4.8	16.2	15.9	
8	1/4	-U-ML8-FL4	42.3	16.2	16	15	4.8	15.2	14.3	
8	3/8	-U-ML8-FL6	44.3	16.2	16	16	6.4	16.8	17.5	
10	1/8	-U-ML10-FL2	41.8	17.2	19	18	2.4	12.7	11.1	
10	1/4	-U-ML10-FL4	44.5	17.2	19	18	4.8	15.2	14.3	
10	5/16	-U-ML10-FL5	45.1	17.2	19	18	6.4	16.2	15.9	
10	3/8	-U-ML10-FL6	45.9	17.2	19	18	7.1	16.8	17.5	
12	5/16	-U-ML12-FL5	47.8	22.8	22	22	6.4	16.2	15.9	
12	3/8	-U-ML12-FL6	48.4	22.8	22	22	7.1	16.8	17.5	
12	1/2	-U-ML12-FL8	51.2	22.8	22	22	9.5	22.9	22.2	
15	1/2	-U-ML15-FL8	52.0	24.4	25	24	10.4	22.9	22.2	
16	5/8	-U-ML16-FL10	52.0	24.4	25	24	12.7	24.4	25.4	
18	3/4	-U-ML18-FL12	53.5	24.4	30	27	15.1	24.4	28.6	
20	1/2	-U-ML20-FL8	55.0	26.0	32	30	10.4	22.9	22.2	
20	1	-U-ML20-FL16	62.8	26.0	32	35	15.9	31.2	38.1	
25	1	-U-ML25-FL16	65.0	31.3	38	35	21.8	31.2	38.1	

Reducing Unions



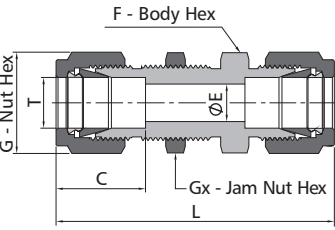
Fractional Tube									
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	Cx	Gx
1/8	1/16	-U-FL2-FL1	31.0	12.7	11.1	11.1	1.3	8.6	7.9
3/16	1/16	-U-FL3-FL1	32.3	13.7	12.7	11.1	1.3	8.6	7.9
3/16	1/8	-U-FL3-FL2	36.6	13.7	12.7	11.1	2.3	12.7	11.1
1/4	1/16	-U-FL4-FL1	34.3	15.2	14.3	12.7	1.3	8.6	7.9
1/4	1/8	-U-FL4-FL2	38.6	15.2	14.3	12.7	2.3	12.7	11.1
1/4	3/16	-U-FL4-FL3	39.4	15.2	14.3	12.7	3.0	13.7	12.7
5/16	1/8	-U-FL5-FL2	39.6	16.2	15.9	14.3	2.3	12.7	11.1
5/16	1/4	-U-FL5-FL4	42.2	16.2	15.9	14.3	4.8	15.2	14.3
3/8	1/16	-U-FL6-FL1	36.6	16.8	17.5	15.9	1.3	8.6	7.9
3/8	1/8	-U-FL6-FL2	40.9	16.8	17.5	15.9	2.3	12.7	11.1
3/8	1/4	-U-FL6-FL4	43.2	16.8	17.5	15.9	4.8	15.2	14.3
3/8	5/16	-U-FL6-FL5	44.2	16.8	17.5	15.9	6.4	16.2	15.9
1/2	1/8	-U-FL8-FL2	45.2	22.8	22.2	20.6	2.3	12.7	11.1
1/2	1/4	-U-FL8-FL4	47.0	22.8	22.2	20.6	4.8	15.2	14.3
1/2	3/8	-U-FL8-FL6	48.5	22.8	22.2	20.6	7.1	16.8	17.5
5/8	3/8	-U-FL10-FL6	49.3	24.4	25.4	23.9	7.1	16.8	17.5
5/8	1/2	-U-FL10-FL8	52.1	24.4	25.4	23.9	10.4	22.8	22.2
3/4	1/4	-U-FL12-FL4	49.3	24.4	28.6	27.0	4.8	15.2	14.3
3/4	3/8	-U-FL12-FL6	50.8	24.4	28.6	27.0	7.1	16.8	17.5
3/4	1/2	-U-FL12-FL8	53.6	24.4	28.6	27.0	10.4	22.8	22.2
3/4	5/8	-U-FL12-FL10	53.6	24.4	28.6	27.0	12.7	24.4	25.4
1	1/2	-U-FL16-FL8	60.5	31.2	38.1	34.9	10.4	22.8	22.2
1	3/4	-U-FL16-FL12	60.5	31.2	38.1	34.9	15.7	24.4	28.6

Reducing Unions



Metric Tube									
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	Cx	Gx
3	2	-U-ML3-ML2	35.3	12.9	12	12	1.7	12.9	12
6	2	-U-ML6-ML2	38.6	15.3	14	14	1.7	12.9	12
6	3	-U-ML6-ML3	38.6	15.3	14	14	2.4	12.9	12
6	4	-U-ML6-ML4	39.4	15.3	14	14	2.4	13.7	12
8	6	-U-ML8-ML6	42.3	16.3	16	15	4.8	15.3	14
10	6	-U-ML10-ML6	44.5	17.2	19	18	4.8	15.3	14
10	8	-U-ML10-ML8	45.1	17.2	19	18	6.4	16.3	16
12	6	-U-ML12-ML6	47.0	22.8	22	22	4.8	15.3	14
12	8	-U-ML12-ML8	47.8	22.8	22	22	6.4	16.3	16
12	10	-U-ML12-ML10	48.7	22.8	22	22	7.9	17.2	19
16	10	-U-ML16-ML10	49.5	24.4	25	24	7.9	17.2	19
16	12	-U-ML16-ML12	52.0	24.4	25	24	9.5	22.8	22
18	12	-U-ML18-ML12	53.5	24.4	30	27	9.5	22.8	22
25	18	-U-ML25-ML18	61.0	31.3	38	35	15.1	24.4	30
25	20	-U-ML25-ML20	62.3	31.3	38	35	15.9	26.0	32
30	18	-U-ML30-ML18	75.4	39.6	50	46	15.1	24.4	30
30	20	-U-ML30-ML20	75.4	39.6	50	46	15.9	26.0	32
30	25	-U-ML30-ML25	80.1	39.6	50	46	21.8	31.3	38
32	18	-U-ML32-ML18	77.8	42.0	50	46	15.1	24.4	30
32	20	-U-ML32-ML20	77.8	42.0	50	46	15.9	26.0	32
32	25	-U-ML32-ML25	82.3	42.0	50	46	21.8	31.3	38
38	20	-U-ML38-ML20	87.5	49.4	60	55	15.9	26.0	32
38	25	-U-ML38-ML25	92.0	49.4	60	55	21.8	31.3	38
38	30	-U-ML38-ML30	104.6	49.4	60	55	26.2	39.6	50

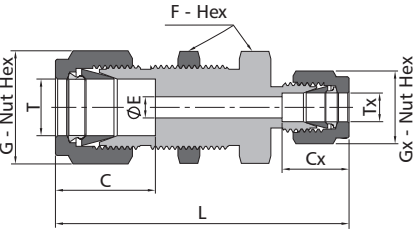
Bulkhead Unions



Fractional Tube									
Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm						Panel Hole Size (mm)	Max. Panel Thickness (mm)
		L	C	E	G	F	Gx		
1/16	-BU-FL1	31.5	8.6	1.3	7.9	7.9	7.9	5.2	3.0
1/8	-BU-FL2	51.3	12.7	2.3	11.1	12.7	12.7	8.3	12.7
3/16	-BU-FL3	53.6	13.7	3.0	12.7	14.3	14.3	9.9	12.7
1/4	-BU-FL4	57.7	15.2	4.8	14.3	15.9	15.9	11.5	10.2
5/16	-BU-FL5	60.7	16.3	6.4	15.9	17.5	17.5	13.1	11.2
3/8	-BU-FL6	62.2	16.8	7.1	17.5	19.1	19.1	14.7	11.2
1/2	-BU-FL8	71.1	22.9	10.4	22.2	23.8	23.8	19.4	12.7
5/8	-BU-FL10	72.6	24.4	12.7	25.4	27.0	27.0	22.6	12.7
3/4	-BU-FL12	79.0	24.4	15.7	28.6	30.2	30.2	25.8	16.8
7/8	-BU-FL14	84.6	25.9	18.3	31.8	33.3	34.9	29.0	19.1
1	-BU-FL16	95.8	31.2	22.4	38.1	41.3	41.3	33.7	19.1
1 1/4	-BU-FL20	123.2	41.1	27.8	47.6	47.6	47.6	41.7	19.1
1 1/2	-BU-FL24	139.2	50.0	34.0	57.2	57.2	57.2	49.6	19.1

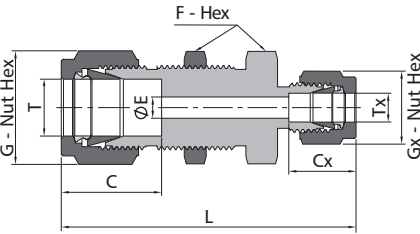
Metric Tube									
Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm						Panel Hole Size (mm)	Max. Panel Thickness (mm)
		L	C	E	G	F	Gx		
3	-BU-ML3	51.3	12.9	2.4	12	14	14	8.3	12.7
4	-BU-ML4	53.6	13.7	2.4	12	14	14	9.9	12.7
6	-BU-ML6	57.7	15.3	4.8	14	16	16	11.5	10.2
8	-BU-ML8	61.0	16.2	6.4	16	18	18	13.1	11.2
10	-BU-ML10	63.7	17.2	7.9	19	22	22	16.3	11.2
12	-BU-ML12	71.0	22.8	9.5	22	24	24	19.5	12.7
14	-BU-ML14	72.5	24.4	11.1	25	27	27	22.5	12.7
15	-BU-ML15	72.5	24.4	11.9	25	27	27	22.8	12.7
16	-BU-ML16	72.5	24.4	12.7	25	27	27	22.8	12.7
18	-BU-ML18	78.9	24.4	15.1	30	30	30	26.0	16.8
20	-BU-ML20	84.5	26.0	15.9	32	35	35	29.0	19.0
25	-BU-ML25	96.0	31.3	21.8	38	41	41	34.0	19.0
30	-BU-ML30	124.0	39.6	26.2	50	50	50	40.5	19.0
32	-BU-ML32	128.0	42.0	28.6	50	50	50	42.5	19.0
38	-BU-ML38	145.0	49.4	33.7	60	60	60	50.5	19.0

Bulkhead Reducing Unions



Fractional Tube											
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	C	E	G	F	Cx	Gx		
1/4	1/8	-BU-FL4-FL2	55.1	15.2	2.3	14.3	15.9	12.7	11.1	11.5	10.2
3/8	1/4	-BU-FL6-FL4	60.7	16.8	4.8	17.5	19.1	15.2	14.3	14.7	11.2
1/2	1/4	-BU-FL8-FL4	66.8	22.9	4.8	22.2	23.8	15.2	14.3	19.4	12.7

Bulkhead Reducing Unions



Metric Tube											
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	C	E	G	F	Cx	Gx		
6	3	-BU-ML6-ML3	55.1	15.3	2.4	14	16	12.9	12	11.5	10.2
8	6	-BU-ML8-ML6	60.1	16.2	4.8	16	18	15.3	14	13.1	11.2
12	8	-BU-ML12-ML8	67.6	22.8	6.4	22	24	16.2	16	19.5	12.7

Bulkhead Conversion Unions

Fractional Tube											
T-Tube O.D. (in.)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	C	E	G	F	Cx	Gx		
1/4	6	-BU-FL4-ML6	57.7	16.8	4.8	14.3	15.9	15.3	14	11.5	10.2

Metric Tube											
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							Panel Hole Size (mm)	Max. Panel Thickness (mm)
			L	C	E	G	F	Cx	Gx		
6	1/8	-BU-ML6-FL2	55.1	15.3	2.3	14	16	15.2	11.1	11.5	10.2
6	1/4	-BU-ML6-FL4	57.7	15.3	4.8	14	16	16.8	14.3	11.5	10.2

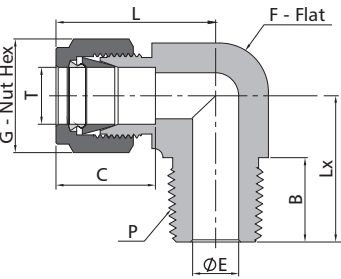
Bulkhead Locknuts



Fractional Tube	
T-Tube O.D. (in.)	Basic Ordering Number
1/16	-BN-FL1
1/8	-BN-FL2
3/16	-BN-FL3
1/4	-BN-FL4
5/16	-BN-FL5
3/8	-BN-FL6
1/2	-BN-FL8
5/8	-BN-FL10
3/4	-BN-FL12
7/8	-BN-FL14
1	-BN-FL16
1 1/4	-BN-FL20
1 1/2	-BN-FL24

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
3	-BN-ML3
4	-BN-ML4
6	-BN-ML6
8	-BN-ML8
10	-BN-ML10
12	-BN-ML12
14	-BN-ML14
18	-BN-ML18
20	-BN-ML20
22	-BN-ML22
25	-BN-ML25
28	-BN-ML28
30	-BN-ML30
32	-BN-ML32
38	-BN-ML38

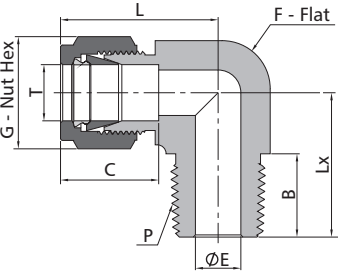
Male Elbows



Fractional Tube			NPT Thread							
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	B	Lx	
1/16	1/16	-LM-FL1-NS1	19.1	8.6	7.9	11.1	1.3	9.7	17.8	
1/16	1/8	-LM-FL1-NS2	19.1	8.6	7.9	11.1	1.3	9.7	17.8	
1/8	1/16	-LM-FL2-NS1	23.6	12.7	11.1	11.1	2.4	9.7	17.8	
1/8	1/8	-LM-FL2-NS2	23.6	12.7	11.1	11.1	2.4	9.7	17.8	
1/8	1/4	-LM-FL2-NS4	24.6	12.7	11.1	12.7	2.4	14.2	23.4	
3/16	1/8	-LM-FL3-NS2	25.4	13.7	12.7	12.7	3.0	9.7	18.8	
3/16	1/4	-LM-FL3-NS4	25.4	13.7	12.7	12.7	3.0	14.2	23.4	
1/4	1/16	-LM-FL4-NS1	26.9	15.2	14.3	12.7	3.0	9.7	18.8	
1/4	1/8	-LM-FL4-NS2	26.9	15.2	14.3	12.7	4.8	9.7	18.8	
1/4	1/4	-LM-FL4-NS4	26.9	15.2	14.3	12.7	4.8	14.2	23.4	
1/4	3/8	-LM-FL4-NS6	29.7	15.2	14.3	17.5	4.8	14.2	26.2	
1/4	1/2	-LM-FL4-NS8	31.8	15.2	14.3	20.6	4.8	19.1	33.0	
5/16	1/8	-LM-FL5-NS2	28.7	16.3	15.9	14.3	4.8	9.7	19.8	
5/16	1/4	-LM-FL5-NS4	28.7	16.3	15.9	14.3	6.4	14.2	24.4	
5/16	3/8	-LM-FL5-NS6	30.5	16.3	15.9	17.5	6.4	14.2	26.2	
3/8	1/8	-LM-FL6-NS2	30.5	16.8	17.5	15.9	4.8	9.7	20.8	
3/8	1/4	-LM-FL6-NS4	30.5	16.8	17.5	15.9	7.1	14.2	25.4	
3/8	3/8	-LM-FL6-NS6	31.2	16.8	17.5	17.5	7.1	14.2	26.2	
3/8	1/2	-LM-FL6-NS8	33.3	16.8	17.5	20.6	7.1	19.1	33.0	
3/8	3/4	-LM-FL6-NS12	37.1	16.8	17.5	27.0	7.1	19.1	36.8	
1/2	1/4	-LM-FL8-NS4	36.1	22.9	22.2	20.6	7.1	14.2	28.2	
1/2	3/8	-LM-FL8-NS6	36.1	22.9	22.2	20.6	9.7	14.2	28.2	
1/2	1/2	-LM-FL8-NS8	36.1	22.9	22.2	20.6	10.4	19.1	33.0	
1/2	3/4	-LM-FL8-NS12	39.9	22.9	22.2	27.0	10.4	19.1	36.8	
5/8	3/8	-LM-FL10-NS6	38.1	24.4	25.4	23.8	9.7	14.2	30.2	
5/8	1/2	-LM-FL10-NS8	38.1	24.4	25.4	23.8	11.9	19.1	35.1	
5/8	3/4	-LM-FL10-NS12	39.9	24.4	25.4	27.0	12.7	19.1	36.8	
3/4	1/2	-LM-FL12-NS8	39.9	24.4	28.6	27.0	11.9	19.1	36.8	
3/4	3/4	-LM-FL12-NS12	39.9	24.4	28.6	27.0	15.7	19.1	36.8	
7/8	3/4	-LM-FL14-NS12	44.7	25.9	31.8	34.9	15.7	19.1	41.7	
1	3/4	-LM-FL16-NS12	49.0	31.2	38.1	34.9	15.7	19.1	41.7	
1	1	-LM-FL16-NS16	49.0	31.2	38.1	34.9	22.4	23.9	46.5	
1 1/4	1 1/4	-LM-FL20-NS20	66.5	41.1	47.6	42.9	27.7	23.9	52.4	
1 1/2	1 1/2	-LM-FL24-NS24	78.0	50.0	57.2	50.8	34.0	26.2	60.5	

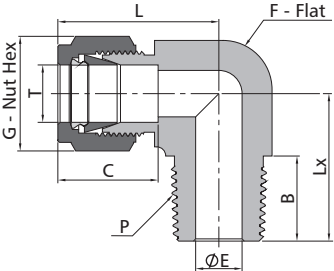
Fractional Tube			ISO Tapered Thread (RT)							
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	B	Lx	
1/8	1/8	-LM-FL2-RT2	23.6	12.7	11.1	11.1	2.4	9.7	17.8	
1/8	1/4	-LM-FL2-RT4	24.6	12.7	11.1	12.7	2.4	14.2	23.4	
1/4	1/8	-LM-FL4-RT2	26.9	15.2	14.3	12.7	4.8	9.7	18.8	
1/4	1/4	-LM-FL4-RT4	26.9	15.2	14.3	12.7	4.8	14.2	23.4	
1/4	3/8	-LM-FL4-RT6	29.7	15.2	14.3	17.5	4.8	14.2	26.2	
1/4	1/2	-LM-FL4-RT8	31.8	15.2	14.3	20.6	4.8	19.1	33.0	
5/16	1/4	-LM-FL5-RT4	28.7	16.3	15.9	14.3	6.4	14.2	24.4	
3/8	1/8	-LM-FL6-RT2	30.5	16.8	17.5	15.9	4.8	9.7	20.8	
3/8	1/4	-LM-FL6-RT4	30.5	16.8	17.5	15.9	7.1	14.2	25.4	
3/8	3/8	-LM-FL6-RT6	31.2	16.8	17.5	17.5	7.1	14.2	26.2	
1/2	3/8	-LM-FL8-RT6	36.1	22.9	22.2	20.6	9.7	14.2	27.9	
1/2	1/2	-LM-FL8-RT8	36.1	22.9	22.2	20.6	10.4	19.1	33.0	
3/4	1/2	-LM-FL12-RT8	39.9	24.4	28.6	27.0	11.9	19.1	36.8	
1	1	-LM-FL16-RT16	49.0	31.2	38.1	34.9	22.4	23.9	46.5	

Male Elbows



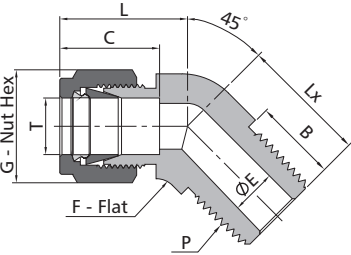
Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
3	1/8	-LM-ML3-NS2	23.6	12.9	12	11.1	2.4	9.7	17.8
3	1/4	-LM-ML3-NS4	24.6	12.9	12	12.7	2.4	14.2	23.4
4	1/8	-LM-ML4-NS2	25.4	13.7	12	12.7	2.4	9.7	18.8
4	1/4	-LM-ML4-NS4	25.4	13.7	12	12.7	2.4	14.2	23.4
6	1/8	-LM-ML6-NS2	27.0	15.3	14	12.7	4.8	9.7	18.8
6	1/4	-LM-ML6-NS4	27.0	15.3	14	12.7	4.8	14.2	23.4
6	3/8	-LM-ML6-NS6	29.8	15.3	14	17.5	4.8	14.2	26.2
6	1/2	-LM-ML6-NS8	31.8	15.3	14	20.6	4.8	19.1	33.0
8	1/8	-LM-ML8-NS2	28.8	16.2	16	14.3	4.8	9.7	19.8
8	1/4	-LM-ML8-NS4	28.8	16.2	16	14.3	6.4	14.2	24.4
8	3/8	-LM-ML8-NS6	30.6	16.2	16	17.5	6.4	14.2	26.2
8	1/2	-LM-ML8-NS8	32.6	16.2	16	20.6	6.4	19.1	33.0
10	1/8	-LM-ML10-NS2	31.5	17.2	19	17.5	4.8	9.7	21.6
10	1/4	-LM-ML10-NS4	31.5	17.2	19	17.5	7.1	14.2	26.2
10	3/8	-LM-ML10-NS6	31.5	17.2	19	17.5	7.9	14.2	26.2
10	1/2	-LM-ML10-NS8	33.5	17.2	19	20.6	7.9	19.1	33.0
12	1/8	-LM-ML12-NS2	36.0	22.8	22	20.6	4.8	9.7	23.6
12	1/4	-LM-ML12-NS4	36.0	22.8	22	20.6	7.1	14.2	28.2
12	3/8	-LM-ML12-NS6	36.0	22.8	22	20.6	9.5	14.2	28.2
12	1/2	-LM-ML12-NS8	36.0	22.8	22	20.6	9.5	19.1	33.0
12	3/4	-LM-ML12-NS12	39.8	22.8	22	27.0	9.5	19.1	36.8
15	1/2	-LM-ML15-NS8	38.0	24.4	25	23.8	11.9	19.1	35.1
16	1/4	-LM-ML16-NS4	38.0	24.4	25	23.8	7.1	14.2	30.2
16	3/8	-LM-ML16-NS6	38.0	24.4	25	23.8	9.5	14.2	30.2
16	1/2	-LM-ML16-NS8	38.0	24.4	25	23.8	11.9	19.1	35.1
16	3/4	-LM-ML16-NS12	39.8	24.4	25	27.0	12.7	19.1	36.8
18	1/2	-LM-ML18-NS8	39.8	24.4	30	27.0	11.9	19.1	36.8
18	3/4	-LM-ML18-NS12	39.8	24.4	30	27.0	15.1	19.1	36.8
20	1/2	-LM-ML20-NS8	44.6	26.0	32	34.9	11.9	19.1	41.7
20	3/4	-LM-ML20-NS12	44.6	26.0	32	34.9	15.9	19.1	41.7
22	3/4	-LM-ML22-NS12	44.6	26.0	32	34.9	15.9	19.1	41.7
22	1	-LM-ML22-NS16	44.6	26.0	32	34.9	18.3	23.9	46.5
25	3/4	-LM-ML25-NS12	49.1	31.3	38	34.9	15.9	19.1	41.7
25	1	-LM-ML25-NS16	49.1	31.3	38	34.9	21.8	23.9	46.5
30	1 1/4	-LM-ML30-NS20	69.9	39.6	50	42.9	26.2	23.9	53.1
32	1 1/4	-LM-ML32-NS20	72.3	42.0	50	42.9	27.8	23.9	53.1
38	1 1/2	-LM-ML38-NS24	84.0	49.4	60	50.8	33.7	26.2	60.4

Male Elbows



Metric Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
3	1/8	-LM-ML3-RT2	23.6	12.9	12	11.1	2.4	9.7	17.8
3	1/4	-LM-ML3-RT4	24.6	12.9	12	12.7	2.4	14.2	23.4
4	1/8	-LM-ML4-RT2	25.4	13.7	12	12.7	2.4	9.7	18.8
4	1/4	-LM-ML4-RT4	25.4	13.7	12	12.7	2.4	14.2	23.4
6	1/8	-LM-ML6-RT2	27.0	15.3	14	12.7	4.8	9.7	18.8
6	1/4	-LM-ML6-RT4	27.0	15.3	14	12.7	4.8	14.2	23.4
6	3/8	-LM-ML6-RT6	29.8	15.3	14	17.5	4.8	14.2	26.2
6	1/2	-LM-ML6-RT8	31.8	15.3	14	20.6	4.8	19.1	33.0
8	1/8	-LM-ML8-RT2	28.8	16.2	16	14.3	4.8	9.7	19.8
8	1/4	-LM-ML8-RT4	28.8	16.2	16	14.3	6.4	14.2	24.4
8	3/8	-LM-ML8-RT6	30.6	16.2	16	17.5	6.4	14.2	26.2
8	1/2	-LM-ML8-RT8	32.6	16.2	16	20.6	6.4	19.1	33.0
10	1/8	-LM-ML10-RT2	31.5	17.2	19	17.5	4.8	9.7	21.6
10	1/4	-LM-ML10-RT4	31.5	17.2	19	17.5	7.1	14.2	26.2
10	3/8	-LM-ML10-RT6	31.5	17.2	19	17.5	7.9	14.2	26.2
10	1/2	-LM-ML10-RT8	33.5	17.2	19	20.6	7.9	19.1	33.0
12	1/8	-LM-ML12-RT2	36.0	22.8	22	20.6	4.8	9.7	23.6
12	1/4	-LM-ML12-RT4	36.0	22.8	22	20.6	7.1	14.2	28.2
12	3/8	-LM-ML12-RT6	36.0	22.8	22	20.6	9.5	14.2	28.2
12	1/2	-LM-ML12-RT8	36.0	22.8	22	20.6	9.5	19.1	33.0
12	3/4	-LM-ML12-RT12	39.8	22.8	22	27.0	9.5	19.1	36.8
14	1/2	-LM-ML14-RT8	38.1	24.4	25	23.8	11.1	19.1	35.1
15	1/2	-LM-ML15-RT8	38.1	24.4	25	23.8	11.9	19.1	35.1
16	1/4	-LM-ML16-RT4	38.0	24.4	25	23.8	7.1	14.2	30.2
16	3/8	-LM-ML16-RT6	38.0	24.4	25	23.8	9.5	14.2	30.2
16	1/2	-LM-ML16-RT8	38.0	24.4	25	23.8	11.9	19.1	35.1
16	3/4	-LM-ML16-RT12	39.8	24.4	25	27.0	12.7	19.1	36.8
18	1/2	-LM-ML18-RT8	39.8	24.4	30	27.0	11.9	19.1	36.8
18	3/4	-LM-ML18-RT12	39.8	24.4	30	27.0	15.1	19.1	36.8
20	1/2	-LM-ML20-RT8	44.6	26.0	32	34.9	11.9	19.1	41.7
20	3/4	-LM-ML20-RT12	44.6	26.0	32	34.9	15.9	19.1	41.7
22	3/4	-LM-ML22-RT12	44.6	26.0	32	34.9	15.9	19.1	41.7
22	1	-LM-ML22-RT16	44.6	26.0	32	34.9	18.3	23.9	46.5
25	3/4	-LM-ML25-RT12	49.1	31.3	38	34.9	15.9	19.1	41.7
25	1	-LM-ML25-RT16	49.1	31.3	38	34.9	21.8	23.9	46.5
28	1	-LM-ML28-RT16	64.0	36.6	46	42.9	21.8	23.9	53.1

45° Male Elbows



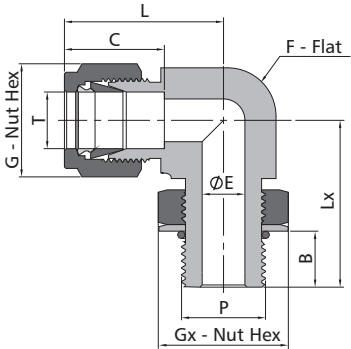
Fractional Tube			NPT Thread						
T-Tube O.D (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
1/16	1/16	-VM-FL1-NS1	15.7	8.6	7.9	9.5	1.3	9.7	14.5
1/8	1/8	-VM-FL2-NS2	20.8	12.7	11.1	11.1	2.3	9.7	16.8
3/16	1/8	-VM-FL3-NS2	21.6	13.7	12.7	11.1	3.0	9.7	14.7
1/4	1/8	-VM-FL4-NS2	24.6	15.2	14.3	12.7	4.8	9.7	16.5
1/4	1/4	-VM-FL4-NS4	24.6	15.2	14.3	12.7	4.8	14.2	21.1
5/16	1/8	-VM-FL5-NS2	24.1	16.3	15.9	14.3	4.8	9.7	16.8
3/8	1/8	-VM-FL6-NS2	27.9	16.8	17.5	15.9	4.8	9.7	18.3
3/8	1/4	-VM-FL6-NS4	27.9	16.8	17.5	15.9	7.1	14.2	22.9
3/8	3/8	-VM-FL6-NS6	29.2	16.8	17.5	20.6	7.1	19.1	24.1
1/2	3/8	-VM-FL8-NS6	32.0	22.9	22.2	20.6	9.7	19.1	24.1
5/8	1/2	-VM-FL10-NS8	30.7	24.4	25.4	23.8	11.9	19.1	29.7
3/4	3/4	-VM-FL12-NS12	34.0	24.4	28.6	27.0	15.7	19.1	31.0
7/8	3/4	-VM-FL14-NS12	40.4	25.9	31.8	31.8	15.7	19.1	32.3
1	1	-VM-FL16-NS16	40.4	31.2	38.1	34.9	22.4	23.9	37.8

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
6	1/8	-VM-ML6-NS2	23.4	15.3	14	12.7	4.8	9.7	16.8
6	1/4	-VM-ML6-NS4	23.4	15.3	14	12.7	4.8	14.2	21.8
8	1/8	-VM-ML8-NS2	24.3	16.2	16	15.9	4.8	9.7	16.8
10	1/4	-VM-ML10-NS4	26.6	17.2	19	17.5	7.9	14.2	24.1
12	3/8	-VM-ML12-NS6	29.1	22.8	22	20.6	9.5	19.1	24.1
12	1/2	-VM-ML12-NS8	30.7	22.8	22	20.6	9.5	19.1	29.7
16	1/2	-VM-ML16-NS8	30.7	24.4	25	23.8	11.9	19.1	29.7

Adjustable Male Elbows

SAE/MS Straight Thread

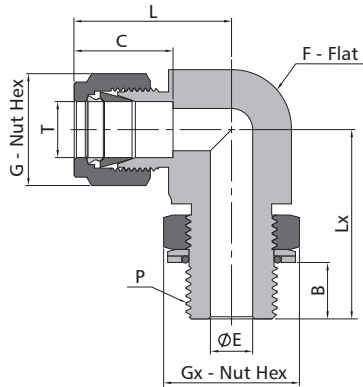
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



Fractional Tube			SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	G	E	F	Lx	Gx
1/4	7/16-20	-LP-FL4-ST7	28.4	9.9	15.2	14.3	4.8	12.7	28.4	14.3
1/4	9/16-18	-LP-FL4-ST9	30.5	11.2	15.2	14.3	4.8	15.9	32.3	17.5
5/16	1/2-20	-LP-FL5-ST8	30.2	9.9	16.3	15.9	5.8	14.3	29.5	15.9
3/8	7/16-20	-LP-FL6-ST7	33.3	9.9	16.8	17.5	5.1	15.9	31.5	14.3
3/8	9/16-18	-LP-FL6-ST9	32.0	11.2	16.8	17.5	7.1	15.9	32.3	17.5
3/8	3/4-16	-LP-FL6-ST12	34.8	12.7	16.8	17.5	7.1	20.6	37.8	22.2
1/2	9/16-18	-LP-FL8-ST9	37.6	11.2	22.9	22.2	7.1	20.6	37.5	17.5
1/2	3/4-16	-LP-FL8-ST12	37.6	12.7	22.9	22.2	10.4	20.6	37.8	22.2
5/8	7/8-14	-LP-FL10-ST14	39.6	14.2	24.4	25.4	12.7	23.8	43.4	25.4
3/4	1 1/16-12	-LP-FL12-ST17	41.4	16.8	24.4	28.6	15.7	27.0	48.8	31.8
7/8	1 3/16-12	-LP-FL14-ST19	43.2	16.8	25.9	31.8	18.3	30.2	50.5	34.9
1	1 5/16-12	-LP-FL16-ST21	50.5	16.8	31.2	38.1	22.4	34.9	53.6	38.1
1 1/4	1 5/8-12	-LP-FL20-ST26	67.8	16.8	41.1	47.6	27.7	42.9	58.2	47.6
1 1/2	1 7/8-12	-LP-FL24-ST30	78.0	16.8	50.0	57.2	34.0	50.8	60.5	54.0

Adjustable Male Elbows

ISO Parallel Thread



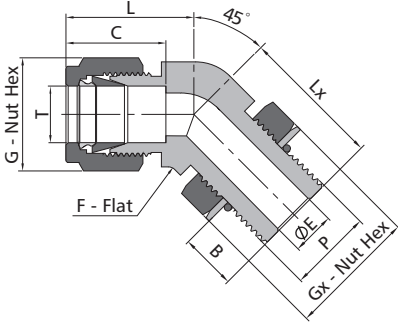
Fractional Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	G	E	F	Lx	Gx
1/4	1/8	-LP-FL4-PP2	26.9	8.1	15.2	14.3	4.1	12.7	26.4	14.3
1/4	1/4	-LP-FL4-PP4	29.0	9.1	15.2	14.3	4.8	15.9	32.3	19.1
3/8	1/4	-LP-FL6-PP4	30.5	9.1	16.8	17.5	5.8	15.9	32.3	19.1
3/8	3/8	-LP-FL6-PP6	33.3	9.4	16.8	17.5	7.1	20.6	37.1	22.2
1/2	1/4	-LP-FL8-PP4	36.1	9.1	22.9	22.2	5.8	20.6	35.1	19.1
1/2	3/8	-LP-FL8-PP6	36.1	9.4	22.9	22.2	7.9	20.6	37.1	22.2
1/2	1/2	-LP-FL8-PP8	38.1	13.0	22.9	22.2	10.4	23.8	43.4	27.0
5/8	1/2	-LP-FL10-PP8	38.1	13.0	24.4	25.4	11.9	23.8	43.4	27.0
3/4	1/2	-LP-FL12-PP8	39.9	13.0	24.4	28.6	11.9	27.0	45.2	27.0
3/4	3/4	-LP-FL12-PP12	39.9	13.0	24.4	28.6	15.7	27.0	48.8	34.9
1	3/4	-LP-FL16-PP12	49.0	13.0	31.2	38.1	15.7	34.9	53.3	34.9
1	1	-LP-FL16-PP16	49.0	14.0	31.2	38.1	19.8	34.9	53.6	41.3

Metric Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	G	E	F	Lx	Gx
6	1/8	-LP-ML6-PP2	27.0	8.1	15.3	14	4.0	12.7	26.4	14.3
6	1/4	-LP-ML6-PP4	29.0	9.1	15.3	14	4.8	15.9	32.3	19.1
8	1/8	-LP-ML8-PP2	28.8	8.1	16.2	16	4.0	14.3	27.4	14.3
8	1/4	-LP-ML8-PP4	29.9	9.1	16.2	16	5.9	15.9	32.2	19.1
10	1/4	-LP-ML10-PP4	33.5	9.1	17.2	19	5.9	20.6	35.0	19.1
10	3/8	-LP-ML10-PP6	33.5	9.4	17.2	19	7.9	20.6	37.1	22.2
12	1/4	-LP-ML12-PP4	36.0	9.1	22.8	22	5.9	20.6	35.0	19.1
12	3/8	-LP-ML12-PP6	36.0	9.4	22.8	22	7.9	20.6	37.1	22.2
12	1/2	-LP-ML12-PP8	38.0	13.0	22.8	22	9.5	23.8	43.4	27.0
12	3/4	-LP-ML12-PP12	39.8	13.0	22.8	22	9.5	27.0	48.8	34.9

45° Adjustable Male Elbows

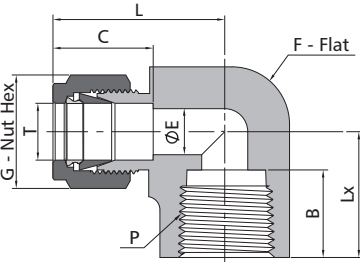
SAE/MS Straight Thread

Adapt to straight thread boss of SAE J1926-1,
ISO 11926-1 and MS 16142.



Fractional Tube			SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	G	E	F	Lx	Gx
1/4	7/16-20	-VP-FL4-ST7	25.7	9.9	15.2	14.3	4.8	12.7	25.7	14.3
3/8	9/16-18	-VP-FL6-ST9	27.9	11.2	16.8	17.5	7.1	15.9	28.2	17.5
1/2	3/4-16	-VP-FL8-ST12	32.0	12.7	22.9	22.2	10.4	20.6	32.3	22.2
3/4	1 1/16-12	-VP-FL12-ST17	39.9	16.8	24.4	28.6	15.7	27.0	47.2	31.8
1	1 5/16-12	-VP-FL16-ST21	47.5	16.8	31.2	38.1	22.4	33.3	50.5	38.1

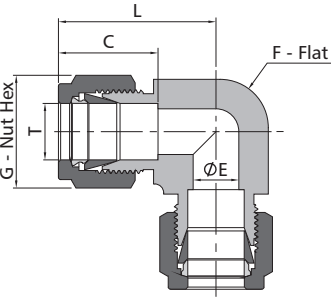
Female Elbows



Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	G	E	F	Lx
1/16	1/16	-LF-FL1-NS1	18.0	9.9	8.6	7.9	1.3	11.1	14.2
1/16	1/8	-LF-FL1-NS2	20.6	10.4	8.6	7.9	1.3	14.3	19.1
1/8	1/8	-LF-FL2-NS2	24.6	10.4	12.7	11.1	2.3	14.3	19.1
1/8	1/4	-LF-FL2-NS4	27.4	15.0	12.7	11.1	2.3	17.5	22.4
3/16	1/8	-LF-FL3-NS2	25.4	10.4	13.7	12.7	3.0	12.7	19.1
1/4	1/8	-LF-FL4-NS2	26.9	10.4	15.2	14.3	4.8	14.3	19.1
1/4	1/4	-LF-FL4-NS4	29.7	15.0	15.2	14.3	4.8	17.5	22.4
1/4	3/8	-LF-FL4-NS6	31.8	15.0	15.2	14.3	4.8	20.6	22.4
1/4	1/2	-LF-FL4-NS8	34.5	19.8	15.2	14.3	4.8	25.4	28.4
5/16	1/8	-LF-FL5-NS2	28.7	10.4	16.3	15.9	6.4	14.3	19.1
5/16	1/4	-LF-FL5-NS4	30.5	15.0	16.3	15.9	6.4	17.5	22.4
3/8	1/8	-LF-FL6-NS2	30.5	10.4	16.8	17.5	7.1	15.9	19.1
3/8	1/4	-LF-FL6-NS4	31.2	15.0	16.8	17.5	7.1	17.5	22.4
3/8	3/8	-LF-FL6-NS6	33.3	15.0	16.8	17.5	7.1	20.6	22.4
3/8	1/2	-LF-FL6-NS8	36.1	19.8	16.8	17.5	7.1	25.4	28.4
1/2	1/4	-LF-FL8-NS4	36.1	15.0	22.9	22.2	10.4	20.6	22.4
1/2	3/8	-LF-FL8-NS6	36.1	15.0	22.9	22.2	10.4	20.6	22.4
1/2	1/2	-LF-FL8-NS8	38.9	19.8	22.9	22.2	10.4	25.4	28.4
5/8	3/8	-LF-FL10-NS6	38.1	15.0	24.4	25.4	12.7	23.8	22.4
5/8	1/2	-LF-FL10-NS8	39.9	19.8	24.4	25.4	12.7	27.0	28.4
3/4	1/2	-LF-FL12-NS8	39.9	19.8	24.4	28.6	15.7	27.0	28.4
3/4	3/4	-LF-FL12-NS12	44.7	20.6	24.4	28.6	15.7	34.9	31.8
7/8	3/4	-LF-FL14-NS12	44.7	20.6	25.9	31.8	18.3	34.9	31.8
1	3/4	-LF-FL16-NS12	49.0	20.6	31.2	38.1	22.4	34.9	31.8
1	1	-LF-FL16-NS16	53.6	25.4	31.2	38.1	22.4	42.9	38.1

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	B	C	G	E	F	Lx
6	1/8	-LF-ML6-NS2	27.0	10.4	15.3	14	4.8	12.7	19.0
6	1/4	-LF-ML6-NS4	29.8	15.0	15.3	14	4.8	17.5	22.4
8	1/8	-LF-ML8-NS2	28.8	10.4	16.2	16	4.8	14.3	19.1
8	1/4	-LF-ML8-NS4	30.6	15.0	16.2	16	6.4	17.5	22.4
10	1/4	-LF-ML10-NS4	33.5	15.0	17.2	19	7.9	20.6	22.4
10	3/8	-LF-ML10-NS6	33.5	15.0	17.2	19	7.9	20.6	22.4
10	1/2	-LF-ML10-NS8	36.6	19.8	17.2	19	7.9	25.4	28.5
12	1/4	-LF-ML12-NS4	36.0	15.0	22.8	22	7.9	20.6	22.4
12	3/8	-LF-ML12-NS6	36.0	15.0	22.8	22	9.5	20.6	22.4
12	1/2	-LF-ML12-NS8	38.8	19.8	22.8	22	9.5	25.4	28.4
16	3/8	-LF-ML16-NS6	39.5	15.0	24.4	25	9.5	27.0	23.6
16	1/2	-LF-ML16-NS8	39.5	19.8	24.4	25	12.7	27.0	28.5

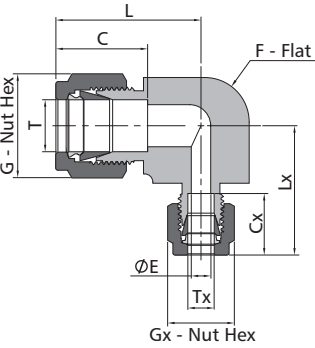
Union Elbows



Fractional Tube			Dimension, mm				
T-Tube O.D. (in.)	Basic Ordering Number		L	C	G	F	E
1/16	-LU-FL1		17.8	8.6	7.9	9.5	1.3
1/8	-LU-FL2		22.4	12.7	11.1	9.5	2.3
3/16	-LU-FL3		25.4	13.7	12.7	12.7	3.0
1/4	-LU-FL4		26.9	15.2	14.3	12.7	4.8
5/16	-LU-FL5		28.7	16.3	15.9	14.3	6.4
3/8	-LU-FL6		30.5	16.8	17.5	15.9	7.1
1/2	-LU-FL8		36.1	22.9	22.2	20.6	10.4
5/8	-LU-FL10		38.1	24.4	25.4	23.8	12.7
3/4	-LU-FL12		39.9	24.4	28.6	27.0	15.7
7/8	-LU-FL14		44.7	25.9	31.8	34.9	18.3
1	-LU-FL16		49.0	31.2	38.1	34.9	22.4
1 1/8	-LU-FL18		55.1	31.2	41.3	42.9	24.6
1 1/8	-LU-FL20		66.5	41.1	47.6	42.9	27.7
1 1/2	-LU-FL24		78.0	50.0	57.2	50.8	34.0

Metric Tube			Dimension, mm				
T-Tube O.D. (mm)	Basic Ordering Number		L	C	G	F	E
3	-LU-ML3		22.3	12.9	12	9.5	2.4
4	-LU-ML4		25.4	13.7	12	12.7	2.4
6	-LU-ML6		27.0	15.3	14	12.7	4.8
8	-LU-ML8		28.8	16.2	16	14.3	6.4
10	-LU-ML10		31.5	17.2	19	17.5	7.9
12	-LU-ML12		36.0	22.8	22	20.6	9.5
14	-LU-ML14		38.0	24.4	25	23.8	11.0
15	-LU-ML15		38.8	24.4	25	23.8	11.9
16	-LU-ML16		38.0	24.4	25	23.8	12.7
18	-LU-ML18		39.8	24.4	30	27.0	15.1
20	-LU-ML20		44.6	26.0	32	34.9	15.9
22	-LU-ML22		44.6	26.0	32	34.9	18.3
25	-LU-ML25		49.1	31.3	38	34.9	21.8
28	-LU-ML28		64.0	36.6	46	42.9	21.8
30	-LU-ML30		69.9	39.6	50	42.9	26.2
32	-LU-ML32		72.3	42.0	50	42.9	28.6
38	-LU-ML38		84.0	49.4	60	50.8	33.7

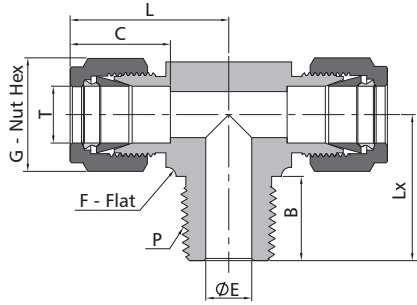
Union Reducing Elbows



Fractional Tube										
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	Cx	Gx	Lx
3/16	1/8	-LU-FL3-FL2	25.4	13.7	12.7	12.7	2.3	12.7	11.1	24.7
1/4	1/8	-LU-FL4-FL2	26.9	15.2	14.3	12.7	2.3	12.7	11.1	25.4
5/16	1/8	-LU-FL5-FL2	29.7	16.3	15.9	14.3	2.3	12.7	11.1	26.4
5/16	1/4	-LU-FL5-FL4	29.7	16.3	15.9	14.3	4.8	15.2	14.3	29.0
3/8	1/8	-LU-FL6-FL2	30.5	16.8	17.5	15.9	2.3	12.7	11.1	26.4
3/8	1/4	-LU-FL6-FL4	30.5	16.8	17.5	15.9	4.8	15.2	14.3	29.0
3/8	5/16	-LU-FL6-FL5	30.5	16.8	17.5	15.9	6.4	16.3	15.9	29.7
1/2	1/4	-LU-FL8-FL4	36.1	22.9	22.2	20.6	4.8	15.2	14.3	32.2
1/2	5/16	-LU-FL8-FL5	36.1	22.9	22.2	20.6	6.4	16.3	15.9	32.5
1/2	3/8	-LU-FL8-FL6	36.1	22.9	22.2	20.6	7.1	16.8	17.5	33.6
5/8	3/8	-LU-FL10-FL6	38.1	24.4	25.4	23.8	7.1	16.8	17.5	35.6
5/8	1/2	-LU-FL10-FL8	38.1	24.4	25.4	23.8	10.4	22.9	22.2	38.1
3/4	1/4	-LU-FL12-FL4	39.9	24.4	28.6	27.0	4.8	15.2	14.3	35.9
3/4	3/8	-LU-FL12-FL6	39.9	24.4	28.6	27.0	7.1	16.8	17.5	37.4
3/4	1/2	-LU-FL12-FL8	39.9	24.4	28.6	27.0	10.4	22.9	22.2	39.9
7/8	1/4	-LU-FL14-FL4	44.7	25.9	31.8	34.9	4.8	15.2	14.3	40.7
1	1/2	-LU-FL16-FL8	49.0	31.2	38.1	34.9	10.4	22.9	22.2	44.4
1	3/4	-LU-FL16-FL12	49.0	31.2	38.1	34.9	15.7	24.4	28.6	44.4

Metric Tube										
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	Cx	Gx	Lx
8	6	-LU-ML8-ML6	28.8	16.2	16	14.3	4.8	15.3	14	27.9
10	8	-LU-ML10-ML8	31.5	17.2	19	17.5	6.4	16.2	16	30.5
12	8	-LU-ML12-ML8	36.0	22.8	22	20.6	6.4	16.2	16	32.6
14	8	-LU-ML14-ML8	38.8	24.4	25	23.8	6.4	16.2	16	35.4
14	10	-LU-ML14-ML10	38.8	24.4	25	23.8	7.9	17.2	19	36.4

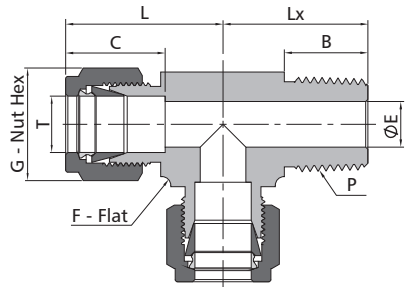
Male Branch Tees



Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
1/8	1/8	-TTM-FL2-NS2	23.6	12.7	11.1	11.1	2.3	9.7	17.8
1/8	1/4	-TTM-FL2-NS4	24.6	12.7	11.1	12.7	2.3	14.2	23.4
3/16	1/8	-TTM-FL3-NS2	24.4	13.7	12.7	11.1	3.0	9.7	17.8
1/4	1/8	-TTM-FL4-NS2	26.9	15.2	14.3	12.7	4.8	9.7	18.8
1/4	1/4	-TTM-FL4-NS4	26.9	15.2	14.3	12.7	4.8	14.2	23.4
5/16	1/8	-TTM-FL5-NS2	29.7	16.3	15.9	15.9	4.8	9.7	20.8
5/16	1/4	-TTM-FL5-NS4	29.7	16.3	15.9	15.9	6.4	14.2	25.7
3/8	1/4	-TTM-FL6-NS4	30.5	16.8	17.5	15.9	7.1	14.2	25.4
3/8	3/8	-TTM-FL6-NS6	33.3	16.8	17.5	20.6	7.1	14.2	28.2
1/2	3/8	-TTM-FL8-NS6	36.1	22.9	22.2	20.6	9.7	14.2	28.2
1/2	1/2	-TTM-FL8-NS8	36.1	22.9	22.2	20.6	10.4	19.1	33.0
5/8	1/2	-TTM-FL10-NS8	38.9	24.4	25.4	25.4	11.9	19.1	35.8
3/4	3/4	-TTM-FL12-NS12	39.9	24.4	28.6	27.0	15.7	19.1	36.8
7/8	3/4	-TTM-FL14-NS12	44.7	25.9	31.8	33.3	15.7	19.1	38.1
1	3/4	-TTM-FL16-NS12	49.3	31.2	38.1	33.3	15.7	19.1	42.2
1	1	-TTM-FL16-NS16	49.3	31.2	38.1	34.9	22.4	23.9	46.7

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
6	1/8	-TTM-ML6-NS2	27.0	15.3	14	12.7	4.8	9.7	18.8
6	1/4	-TTM-ML6-NS4	27.0	15.3	14	12.7	4.8	14.2	23.4
8	1/8	-TTM-ML8-NS2	29.9	16.2	16	15.9	4.8	9.7	20.8
8	1/4	-TTM-ML8-NS4	29.9	16.2	16	15.9	6.4	14.2	25.4
10	1/4	-TTM-ML10-NS4	33.5	17.2	19	20.6	7.9	14.2	28.2
10	3/8	-TTM-ML10-NS6	33.5	17.2	19	20.6	7.9	14.2	28.2
12	1/4	-TTM-ML12-NS4	36.0	22.8	22	20.6	7.9	14.2	28.2
12	3/8	-TTM-ML12-NS6	36.0	22.8	22	20.6	9.5	14.2	28.2
12	1/2	-TTM-ML12-NS8	36.0	22.8	22	20.6	9.5	19.1	33.0
16	1/2	-TTM-ML16-NS8	38.8	24.4	25	25.4	11.9	19.1	35.8

Male Run Tees



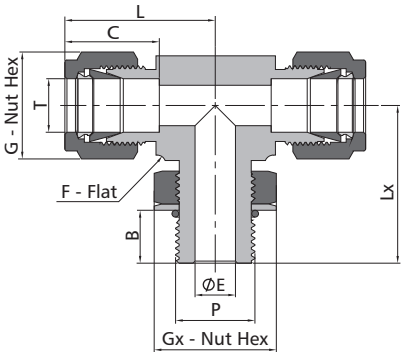
Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
1/8	1/8	-TMT-FL2-NS2	23.6	12.7	11.1	11.1	2.3	9.7	17.8
1/8	1/4	-TMT-FL2-NS4	24.6	12.7	11.1	12.7	2.3	14.2	23.4
3/16	1/8	-TMT-FL3-NS2	24.4	13.7	12.7	11.1	3.0	9.7	17.8
1/4	1/8	-TMT-FL4-NS2	26.9	15.2	14.3	12.7	4.8	9.7	18.8
1/4	1/4	-TMT-FL4-NS4	26.9	15.2	14.3	12.7	4.8	14.2	23.4
5/16	1/8	-TMT-FL5-NS2	29.7	16.3	15.9	15.9	4.8	9.7	20.8
5/16	1/4	-TMT-FL5-NS4	29.7	16.3	15.9	15.9	6.4	14.2	25.7
3/8	1/4	-TMT-FL6-NS4	30.5	16.8	17.5	15.9	7.1	14.2	25.4
3/8	3/8	-TMT-FL6-NS6	33.3	16.8	17.5	20.6	7.1	14.2	28.2
1/2	3/8	-TMT-FL8-NS6	36.1	22.9	22.2	20.6	9.7	14.2	28.2
1/2	1/2	-TMT-FL8-NS8	36.1	22.9	22.2	20.6	10.4	19.1	33.0
5/8	1/2	-TMT-FL10-NS8	38.1	24.4	25.4	23.8	11.9	19.1	35.8
3/4	3/4	-TMT-FL12-NS12	39.9	24.4	28.6	27.0	15.7	19.1	36.8
7/8	3/4	-TMT-FL14-NS12	44.7	25.9	31.8	33.3	15.7	19.1	38.1
1	3/4	-TMT-FL16-NS12	49.3	31.2	38.1	33.3	15.7	19.1	42.2
1	1	-TMT-FL16-NS16	49.3	31.2	38.1	34.9	22.4	23.9	46.7

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
6	1/8	-TMT-ML6-NS2	27.0	15.3	14	12.7	4.8	9.7	18.0
6	1/4	-TMT-ML6-NS4	27.0	15.3	14	12.7	4.8	14.2	23.4
8	1/8	-TMT-ML8-NS2	29.9	16.2	16	15.9	4.8	9.7	20.8
8	1/4	-TMT-ML8-NS4	29.9	16.2	16	15.9	6.4	14.2	25.4
10	1/4	-TMT-ML10-NS4	33.5	17.2	19	20.6	7.9	14.2	28.2
10	1/2	-TMT-ML10-NS8	33.5	17.2	19	20.6	7.9	14.2	28.2
12	1/4	-TMT-ML12-NS4	36.0	22.8	22	20.6	7.9	14.2	28.2
12	3/8	-TMT-ML12-NS6	36.0	22.8	22	20.6	9.5	14.2	28.2
12	1/2	-TMT-ML12-NS8	36.0	22.8	22	20.6	9.5	19.1	33.0
16	1/2	-TMT-ML16-NS8	38.0	24.4	25	23.8	11.9	19.1	35.0

Adjustable Male Branch Tees

SAE/MS Straight Thread

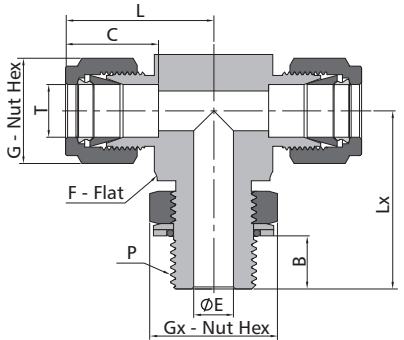
Adapt to straight thread boss of
SAE J1926-1, ISO 11926-1 and MS 16142.



Fractional Tube			SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
1/4	7/16-20	-TTP-FL4-ST7	28.5	9.9	15.2	4.8	14.3	12.7	28.5	14.3
3/8	9/16-18	-TTP-FL6-ST9	32.0	11.2	16.8	7.1	17.5	15.9	32.3	17.5
1/2	3/4-16	-TTP-FL8-ST12	37.6	12.7	22.9	10.4	22.2	20.6	37.8	22.2
3/4	1 1/16-12	-TTP-FL12-ST17	41.4	16.8	24.4	15.7	28.6	27.0	48.8	28.6
1	1 5/16-12	-TTP-FL16-ST21	50.5	16.8	31.2	22.4	38.1	34.9	53.6	38.1
1 1/4	1 5/8-12	-TTP-FL20-ST26	67.8	16.8	41.1	27.7	47.6	42.9	58.2	47.6
1 1/2	1 7/8-12	-TTP-FL24-ST30	78.0	16.8	50.0	34.0	57.2	50.8	60.5	54.0

Adjustable Male Branch Tees

ISO Parallel Thread



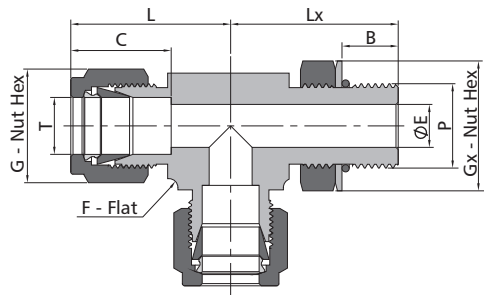
Fractional Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
1/4	1/8	-TTP-FL4-PP2	26.9	8.1	15.2	4.1	14.3	12.7	26.4	14.3
1/4	1/4	-TTP-FL4-PP4	29.0	9.1	15.2	4.8	14.3	15.9	32.3	19.1
3/8	1/4	-TTP-FL6-PP4	30.5	9.1	16.8	5.8	17.5	15.9	32.3	19.1
1/2	3/8	-TTP-FL8-PP6	36.1	9.4	22.9	7.9	22.2	20.6	37.1	22.2
1/2	1/2	-TTP-FL8-PP8	38.1	13.0	22.9	10.4	22.2	23.8	43.4	27.0
5/8	1/2	-TTP-FL10-PP8	38.1	13.0	24.4	11.9	25.4	23.8	43.4	27.0
3/4	1/2	-TTP-FL12-PP8	39.9	13.0	24.4	11.9	28.6	27.0	45.2	27.0
3/4	3/4	-TTP-FL12-PP12	39.9	13.0	24.4	15.7	28.6	27.0	48.8	34.9
1	1	-TTP-FL16-PP16	49.0	14.0	31.2	19.8	38.1	34.9	53.6	41.3

Metric Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
6	1/8	-TTP-ML6-PP2	27.0	8.1	15.3	4.0	14	12.7	26.4	14.3
6	1/4	-TTP-ML6-PP4	29.0	9.1	15.3	4.8	14	15.9	32.2	19.1
8	1/8	-TTP-ML8-PP2	28.8	8.1	16.2	4.0	16	14.3	27.5	14.3
8	1/4	-TTP-ML8-PP4	29.9	9.1	16.2	5.9	16	15.9	32.2	19.1
10	1/4	-TTP-ML10-PP4	33.5	9.1	17.2	5.9	19	20.6	35.1	19.1
12	3/8	-TTP-ML12-PP6	36.0	9.4	22.8	7.9	22	20.6	37.1	22.2
12	1/2	-TTP-ML12-PP8	38.0	13.0	22.8	9.5	22	23.8	43.5	27.0

Adjustable Male Run Tees

SAE/MS Straight Thread

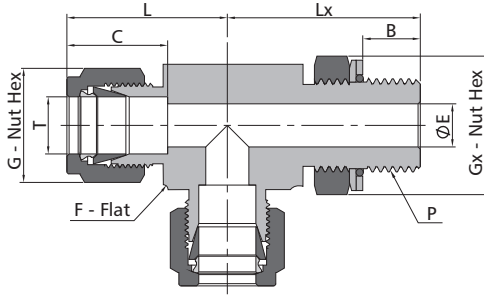
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



Fractional Tube			SAE/MS Straight Thread							
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
1/4	7/16-20	-TPT-FL4-ST7	28.5	9.9	15.2	4.8	14.3	12.7	28.5	14.3
3/8	9/16-18	-TPT-FL6-ST9	32.0	11.2	16.8	7.1	17.5	15.9	32.3	17.5
1/2	3/4-16	-TPT-FL8-ST12	37.6	12.7	22.9	10.4	22.2	20.6	37.8	22.2
3/4	1 1/16-12	-TPT-FL12-ST17	41.4	16.8	24.4	15.7	28.6	27.0	48.8	28.6
1	1 5/16-12	-TPT-FL16-ST21	50.5	16.8	31.2	22.4	38.1	34.9	53.6	38.1
1 1/4	1 5/8-12	-TPT-FL20-ST26	67.8	16.8	41.1	27.7	47.6	42.9	58.2	47.6
1 1/2	1 7/8-12	-TPT-FL24-ST30	78.0	16.8	50.0	34.0	57.2	50.8	60.5	54.0

Adjustable Male Run Tees

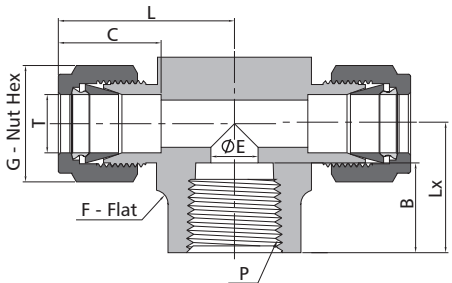
ISO Parallel Thread



Fractional Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
1/4	1/8	-TPT-FL4-PP2	26.9	8.1	15.2	4.1	14.3	12.7	26.4	14.3
1/4	1/4	-TPT-FL4-PP4	29.0	9.1	15.2	4.8	14.3	15.9	32.3	19.1
3/8	1/4	-TPT-FL6-PP4	30.5	9.1	16.8	5.8	17.5	15.9	32.3	19.1
1/2	3/8	-TPT-FL8-PP6	36.1	9.4	22.9	7.9	22.2	20.6	37.1	22.2
1/2	1/2	-TPT-FL8-PP8	38.1	13.0	22.9	10.4	22.2	23.8	43.4	27.0
5/8	1/2	-TPT-FL10-PP8	38.1	13.0	24.4	11.9	25.4	23.8	43.4	27.0
3/4	1/2	-TPT-FL12-PP8	39.9	13.0	24.4	11.9	28.6	27.0	45.2	27.0
3/4	3/4	-TPT-FL12-PP12	39.9	13.0	24.4	15.7	28.6	27.0	48.8	34.9
1	1	-TPT-FL16-PP16	49.0	14.0	31.2	19.8	38.1	34.9	53.6	41.3

Metric Tube			ISO Parallel Thread (PP)							
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm							
			L	B	C	E	G	F	Lx	Gx
6	1/8	-TPT-ML6-PP2	27.0	8.1	15.3	4.0	14	12.7	26.4	14.3
6	1/4	-TPT-ML6-PP4	29.0	9.1	15.3	4.8	14	15.9	32.2	19.1
8	1/8	-TPT-ML8-PP2	28.8	8.1	16.2	4.0	16	14.3	27.5	14.3
8	1/4	-TPT-ML8-PP4	29.9	9.1	16.2	5.9	16	15.9	32.2	19.1
10	1/4	-TPT-ML10-PP4	33.5	9.1	17.2	5.9	19	20.6	35.1	19.1
12	3/8	-TPT-ML12-PP6	36.0	9.4	22.8	7.9	22	20.6	37.1	22.2
12	1/2	-TPT-ML12-PP8	38.0	13.0	22.8	9.5	22	23.8	43.5	27.0

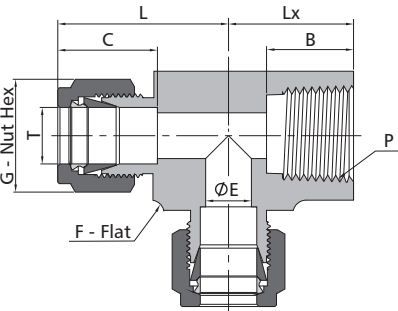
Female Branch Tees



Fractional Tube			NPT Thread							
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	B	Lx	
1/8	1/8	-TTF-FL2-NS2	24.6	12.7	11.1	12.7	2.3	10.4	19.1	
3/16	1/8	-TTF-FL3-NS2	25.7	13.7	12.7	12.7	3.0	10.4	19.1	
1/4	1/8	-TTF-FL4-NS2	26.9	15.2	14.3	12.7	4.8	10.4	19.1	
1/4	1/4	-TTF-FL4-NS4	29.7	15.2	14.3	17.5	4.8	15.0	22.4	
5/16	1/8	-TTF-FL5-NS2	29.7	16.2	15.9	15.9	6.4	10.4	19.1	
3/8	1/4	-TTF-FL6-NS4	31.2	16.8	17.5	17.5	7.1	15.0	22.4	
3/8	3/8	-TTF-FL6-NS6	33.3	16.8	17.5	20.6	7.1	15.0	22.4	
3/8	1/2	-TTF-FL6-NS8	36.1	16.8	17.5	25.4	7.1	19.8	28.4	
1/2	1/4	-TTF-FL8-NS4	36.1	22.9	22.2	20.6	10.4	15.0	22.4	
1/2	3/8	-TTF-FL8-NS6	36.1	22.9	22.2	20.6	10.4	15.0	22.4	
1/2	1/2	-TTF-FL8-NS8	38.9	22.9	22.2	25.4	10.4	19.8	28.4	
5/8	1/2	-TTF-FL10-NS8	38.9	24.4	25.4	25.4	12.7	19.8	28.4	
3/4	3/4	-TTF-FL12-NS12	44.7	24.4	28.6	34.9	15.7	20.6	31.8	
7/8	3/4	-TTF-FL14-NS12	44.7	25.9	31.8	34.9	18.3	20.6	31.8	
1	3/4	-TTF-FL16-NS12	49.0	31.2	38.1	34.9	22.4	20.6	31.8	
1	1	-TTF-FL16-NS16	53.6	31.2	38.1	42.9	22.4	25.4	38.1	

Metric Tube			NPT Thread							
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm							
			L	C	G	F	E	B	Lx	
6	1/8	-TTF-ML6-NS2	27.0	15.3	14	12.7	4.8	10.4	19.0	
6	1/4	-TTF-ML6-NS4	29.8	15.3	14	17.5	4.8	15.0	22.4	
8	1/8	-TTF-ML8-NS2	29.9	16.2	16	15.9	6.4	10.4	19.0	
8	1/4	-TTF-ML8-NS4	30.6	16.2	16	17.5	6.4	15.0	22.4	
10	1/4	-TTF-ML10-NS4	33.5	17.2	19	20.6	7.9	15.0	22.4	
12	1/8	-TTF-ML12-NS2	36.0	22.8	22	20.6	6.4	10.4	22.3	
12	1/4	-TTF-ML12-NS4	36.0	22.8	22	20.6	9.5	15.0	22.4	
12	3/8	-TTF-ML12-NS6	36.0	22.8	22	20.6	9.5	15.0	22.4	
12	1/2	-TTF-ML12-NS8	38.8	22.8	22	25.4	9.5	19.8	28.5	
16	1/2	-TTF-ML16-NS8	38.8	24.4	25	25.4	12.7	19.8	28.4	

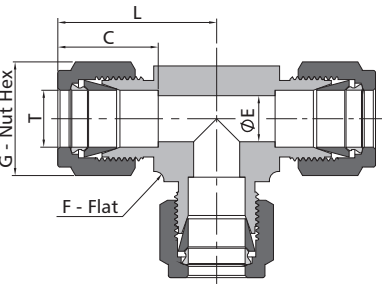
Female Run Tees



Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
1/8	1/8	-TFT-FL2-NS2	24.6	12.7	11.1	12.7	2.3	10.4	19.1
3/16	1/8	-TFT-FL3-NS2	25.7	13.7	12.7	12.7	3.0	10.4	19.1
1/4	1/8	-TFT-FL4-NS2	26.9	15.2	14.3	12.7	4.8	10.4	19.1
1/4	1/4	-TFT-FL4-NS4	29.7	15.2	14.3	17.5	4.8	15.0	22.4
5/16	1/8	-TFT-FL5-NS2	29.7	16.2	15.9	15.9	6.4	10.4	19.1
3/8	1/4	-TFT-FL6-NS4	31.2	16.8	17.5	17.5	7.1	15.0	22.4
1/2	1/4	-TFT-FL8-NS4	36.1	22.9	22.2	20.6	10.4	15.0	22.4
1/2	3/8	-TFT-FL8-NS6	36.1	22.9	22.2	20.6	10.4	15.0	22.4
1/2	1/2	-TFT-FL8-NS8	39.9	22.9	22.2	27.0	10.4	19.8	28.4
5/8	1/2	-TFT-FL10-NS8	39.9	24.4	25.4	27.0	12.7	19.8	28.4
3/4	3/4	-TFT-FL12-NS12	44.7	24.4	28.6	34.9	15.7	20.6	31.8
7/8	1/2	-TFT-FL14-NS8	44.7	25.9	31.8	34.9	15.7	19.8	28.4
7/8	3/4	-TFT-FL14-NS12	44.7	25.9	31.8	34.9	18.3	20.6	31.8
1	3/4	-TFT-FL16-NS12	49.0	31.2	38.1	34.9	22.4	20.6	31.8
1	1	-TFT-FL16-NS16	53.6	31.2	38.1	42.9	22.4	25.4	38.1

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	Lx
6	1/8	-TFT-ML6-NS2	27.0	15.3	14	12.7	4.8	10.4	19.0
6	1/4	-TFT-ML6-NS4	29.8	15.3	14	17.5	4.8	15.0	22.4
8	1/8	-TFT-ML8-NS2	29.9	16.2	16	15.9	4.8	10.4	19.0
8	1/4	-TFT-ML8-NS4	30.6	16.2	16	17.5	6.4	15.0	22.4
10	1/4	-TFT-ML10-NS4	33.5	17.2	19	20.6	7.9	15.0	22.4
12	1/4	-TFT-ML12-NS4	36.0	22.8	22	20.6	9.5	15.0	22.4
12	3/8	-TFT-ML12-NS6	36.0	22.8	22	20.6	9.5	15.0	23.1
12	1/2	-TFT-ML12-NS8	38.8	22.8	22	25.4	9.5	19.8	28.5
16	1/2	-TFT-ML16-NS8	39.8	24.4	25	27.0	11.9	19.8	28.4

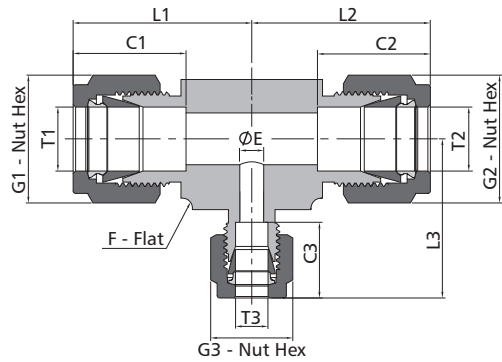
Union Tees



Fractional Tube			Dimension, mm				
T-Tube O.D. (in.)	Basic Ordering Number		Dimension, mm				
			L	C	G	F	E
1/16	-TTT-FL1		17.8	8.6	7.9	9.5	1.3
1/8	-TTT-FL2		22.4	12.7	11.1	9.5	2.3
3/16	-TTT-FL3		24.4	13.7	12.7	11.1	3.0
1/4	-TTT-FL4		26.9	15.2	14.3	12.7	4.8
5/16	-TTT-FL5		29.7	16.2	15.9	15.9	6.4
3/8	-TTT-FL6		30.5	16.8	17.5	15.9	7.1
1/2	-TTT-FL8		36.1	22.9	22.2	20.6	10.4
5/8	-TTT-FL10		38.9	24.4	25.4	25.4	12.7
3/4	-TTT-FL12		39.9	24.4	28.6	27.0	15.7
7/8	-TTT-FL14		44.7	25.9	31.8	34.9	18.3
1	-TTT-FL16		49.0	31.2	38.1	34.9	22.4
1 1/8	-TTT-FL18		55.1	31.2	46.0	42.9	24.6
1 1/4	-TTT-FL20		66.5	41.1	47.6	42.9	27.7
1 1/2	-TTT-FL24		78.0	50.0	57.2	50.8	34.0

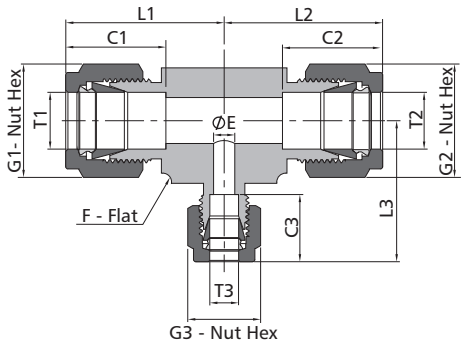
Metric Tube			Dimension, mm				
T-Tube O.D. (mm)	Basic Ordering Number		Dimension, mm				
			L	C	G	F	E
2	-TTT-ML2		22.3	12.9	12	9.5	1.7
3	-TTT-ML3		22.3	12.9	12	9.5	2.4
4	-TTT-ML4		25.4	13.7	12	12.7	2.4
6	-TTT-ML6		27.0	15.3	14	12.7	4.8
8	-TTT-ML8		29.9	16.2	16	15.9	6.4
10	-TTT-ML10		31.5	17.2	19	17.5	7.9
12	-TTT-ML12		36.0	22.8	22	20.6	9.5
14	-TTT-ML14		38.8	24.4	25	25.4	11.1
15	-TTT-ML15		38.8	24.4	25	25.4	11.9
16	-TTT-ML16		38.8	24.4	25	25.4	12.7
18	-TTT-ML18		38.8	24.4	30	27.0	15.1
20	-TTT-ML20		44.6	26.0	32	34.9	15.9
22	-TTT-ML22		44.6	26.0	32	34.9	18.3
25	-TTT-ML25		49.1	31.3	38	34.9	21.8
28	-TTT-ML28		64.0	36.6	46	42.9	21.8
30	-TTT-ML30		69.9	39.6	50	42.9	26.2
32	-TTT-ML32		72.3	42.0	50	42.9	28.6
38	-TTT-ML38		84.0	49.4	60	50.8	33.7

Reducing Union Tees



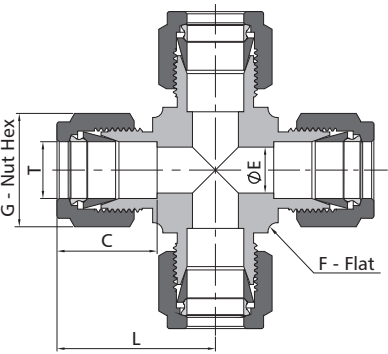
Fractional Tube														
T1-Tube O.D. (in.)	T2-Tube O.D. (in.)	T3-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm										
				L1	L2	L3	C1	C2	C3	G1	G2	G3	F	E
1/4	1/4	1/8	-TTT-FL4-FL4-FL2	26.7	26.7	24.4	15.2	15.2	12.7	14.3	14.3	11.1	12.7	2.3
3/8	1/4	1/4	-TTT-FL6-FL4-FL4	30.5	29.0	29.0	16.8	15.2	15.2	17.5	14.3	14.3	15.9	4.8
3/8	1/4	3/8	-TTT-FL6-FL4-FL6	30.5	29.0	30.5	16.8	15.2	16.8	17.5	14.3	17.5	15.9	4.8
3/8	3/8	1/4	-TTT-FL6-FL6-FL4	30.5	30.5	29.0	16.8	16.8	15.2	17.5	17.5	14.3	15.9	4.8
1/2	1/4	1/4	-TTT-FL8-FL4-FL4	36.1	31.8	31.8	22.9	15.2	15.2	22.2	14.3	14.3	20.6	4.8
1/2	1/4	1/2	-TTT-FL8-FL4-FL8	36.1	31.8	36.1	22.9	15.2	22.9	22.2	14.3	22.2	20.6	4.8
1/2	3/8	3/8	-TTT-FL8-FL6-FL6	36.1	33.3	33.3	22.9	16.8	16.8	22.2	17.5	17.5	20.6	7.1
1/2	3/8	1/2	-TTT-FL8-FL6-FL8	36.1	33.3	36.1	22.9	16.8	22.9	22.2	17.5	22.2	20.6	7.1
1/2	1/2	1/4	-TTT-FL8-FL8-FL4	36.1	36.1	31.8	22.9	22.9	15.2	22.2	22.2	14.3	20.6	4.8
1/2	1/2	3/8	-TTT-FL8-FL8-FL6	36.1	36.1	33.3	22.9	22.9	16.8	22.2	22.2	17.5	20.6	7.1
5/8	3/8	3/8	-TTT-FL10-FL6-FL6	38.9	36.1	36.1	24.4	16.8	16.8	25.4	17.5	17.5	25.4	7.1
5/8	3/8	1/2	-TTT-FL10-FL6-FL8	38.9	36.1	38.9	24.4	16.8	22.9	25.4	17.5	22.2	25.4	7.1
5/8	1/2	3/8	-TTT-FL10-FL8-FL6	38.9	38.9	36.1	24.4	22.9	16.8	25.4	22.2	17.5	25.4	7.1
5/8	1/2	1/2	-TTT-FL10-FL8-FL8	38.9	38.9	38.9	24.4	22.9	22.9	25.4	22.2	22.2	25.4	10.4
5/8	5/8	3/8	-TTT-FL10-FL10-FL6	38.9	38.9	36.1	24.4	24.4	16.8	25.4	25.4	17.5	25.4	7.1
5/8	5/8	1/2	-TTT-FL10-FL10-FL8	38.9	38.9	38.9	24.4	24.4	22.9	25.4	25.4	22.2	25.4	10.4
3/4	3/8	3/8	-TTT-FL12-FL6-FL6	39.6	36.9	36.9	24.4	16.8	16.8	28.6	17.5	17.5	27.0	7.1
3/4	1/2	3/8	-TTT-FL12-FL8-FL6	39.6	39.6	36.9	24.4	22.9	16.8	28.6	22.2	17.5	27.0	7.1
3/4	1/2	1/2	-TTT-FL12-FL8-FL8	39.6	39.6	39.6	24.4	22.9	22.9	28.6	22.2	22.2	27.0	10.4
3/4	5/8	3/8	-TTT-FL12-FL10-FL6	39.6	39.6	36.9	24.4	24.4	16.8	28.6	25.4	17.5	27.0	7.1
3/4	5/8	1/2	-TTT-FL12-FL10-FL8	39.6	39.6	39.6	24.4	24.4	22.9	28.6	25.4	22.2	27.0	10.4
3/4	5/8	5/8	-TTT-FL12-FL10-FL10	39.6	39.6	39.6	24.4	24.4	24.4	28.6	25.4	25.4	27.0	12.7
3/4	3/4	1/4	-TTT-FL12-FL12-FL4	39.6	39.6	35.1	24.4	24.4	15.2	28.6	28.6	14.3	27.0	4.8
3/4	3/4	3/8	-TTT-FL12-FL12-FL6	39.6	39.6	36.9	24.4	24.4	16.8	28.6	28.6	17.5	27.0	7.1
3/4	3/4	1/2	-TTT-FL12-FL12-FL8	39.6	39.6	39.6	24.4	24.4	22.9	28.6	28.6	22.2	27.0	10.4
3/4	3/4	5/8	-TTT-FL12-FL12-FL10	39.6	39.6	39.6	24.4	24.4	24.4	28.6	28.6	25.4	27.0	12.7
7/8	1/2	3/4	-TTT-FL14-FL8-FL12	44.7	44.7	44.7	25.9	22.9	24.4	31.8	22.2	28.6	34.9	10.4
7/8	5/8	3/8	-TTT-FL14-FL10-FL6	44.7	44.7	41.9	25.9	24.4	16.8	31.8	25.4	17.5	34.9	7.1
7/8	3/4	3/8	-TTT-FL14-FL12-FL6	44.7	44.7	41.9	25.9	24.4	16.8	31.8	28.6	17.5	34.9	7.1
7/8	3/4	1/2	-TTT-FL14-FL12-FL8	44.7	44.7	44.7	25.9	24.4	22.9	31.8	28.6	22.2	34.9	10.4
7/8	3/4	3/4	-TTT-FL14-FL12-FL12	44.7	44.7	44.7	25.9	24.4	24.4	31.8	28.6	28.6	34.9	15.7
7/8	7/8	1/4	-TTT-FL14-FL14-FL4	44.7	44.7	40.4	25.9	25.9	15.2	31.8	31.8	14.3	34.9	4.8
7/8	7/8	3/8	-TTT-FL14-FL14-FL6	44.7	44.7	41.9	25.9	25.9	16.8	31.8	31.8	17.5	34.9	7.1
1	3/8	3/8	-TTT-FL16-FL6-FL6	49.3	41.9	41.9	31.2	16.8	16.8	38.1	17.5	17.5	34.9	7.1
1	1/2	1/4	-TTT-FL16-FL8-FL4	49.3	44.7	40.4	31.2	22.9	15.2	38.1	22.2	14.3	34.9	4.8
1	1/2	3/8	-TTT-FL16-FL8-FL6	49.3	44.7	41.9	31.2	22.9	16.8	38.1	22.2	17.5	34.9	7.1
1	1/2	1/2	-TTT-FL16-FL8-FL8	49.3	44.7	44.7	31.2	22.9	22.9	38.1	22.2	22.2	34.9	10.4
1	1/2	1	-TTT-FL16-FL8-FL16	49.3	44.7	49.3	31.2	22.9	31.2	38.1	22.2	38.1	34.9	10.4
1	5/8	3/8	-TTT-FL16-FL10-FL6	49.3	44.7	41.9	31.2	24.4	16.8	38.1	25.4	17.5	34.9	7.1
1	3/4	3/8	-TTT-FL16-FL12-FL6	49.3	44.7	41.9	31.2	24.4	16.8	38.1	28.6	17.5	34.9	7.1
1	3/4	1/2	-TTT-FL16-FL12-FL8	49.3	44.7	44.7	31.2	24.4	22.9	38.1	28.6	22.2	34.9	10.4
1	3/4	5/8	-TTT-FL16-FL12-FL10	49.3	44.7	44.7	31.2	24.4	24.4	38.1	28.6	25.4	34.9	12.7
1	3/4	1	-TTT-FL16-FL12-FL16	49.3	44.7	49.3	31.2	24.4	31.2	38.1	28.6	38.1	34.9	15.7
1	7/8	1/4	-TTT-FL16-FL14-FL4	49.3	44.7	40.4	31.2	25.9	15.2	38.1	31.8	14.3	34.9	4.8
1	7/8	3/8	-TTT-FL16-FL14-FL6	49.3	44.7	41.9	31.2	25.9	16.8	38.1	31.8	17.5	34.9	7.1
1	7/8	1/2	-TTT-FL16-FL14-FL8	49.3	44.7	44.7	31.2	25.9	22.9	38.1	31.8	22.2	34.9	10.4
1	7/8	3/4	-TTT-FL16-FL14-FL12	49.3	44.7	44.7	31.2	25.9	24.4	38.1	31.8	28.6	34.9	12.7
1	7/8	7/8	-TTT-FL16-FL14-FL14	49.3	44.7	44.7	31.2	25.9	25.9	38.1	31.8	31.8	34.9	18.3
1	1	1/4	-TTT-FL16-FL16-FL4	49.3	49.3	40.4	31.2	31.2	15.2	38.1	38.1	14.3	34.9	4.8
1	1	3/8	-TTT-FL16-FL16-FL6	49.3	49.3	41.9	31.2	31.2	16.8	38.1	38.1	17.5	34.9	7.1
1	1	1/2	-TTT-FL16-FL16-FL8	49.3	49.3	44.7	31.2	31.2	22.9	38.1	38.1	22.2	34.9	10.4
1	1	5/8	-TTT-FL16-FL16-FL10	49.3	49.3	44.7	31.2	31.2	24.4	38.1	38.1	25.4	34.9	12.7
1	1	3/4	-TTT-FL16-FL16-FL12	49.3	49.3	44.7	31.2	31.2	24.4	38.1	38.1	28.6	34.9	15.7
1	1	7/8	-TTT-FL16-FL16-FL14	49.3	49.3	44.7	31.2	31.2	25.9	38.1	38.1	31.8	34.9	18.3
1 1/4	1 1/4	1	-TTT-FL20-FL20-FL16	67.8	67.8	55.1	41.2	41.2	31.3	47.6	47.6	38.1	42.9	22.4
1 1/2	1 1/2	1	-TTT-FL24-FL24-FL16	78.7	78.7	60.0	50.0	50.0	31.3	57.2	57.2	38.1	50.8	22.4

Reducing Union Tees



Metric Tube														
T1-Tube O.D. (mm)	T2-Tube O.D. (mm)	T3-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm										
				L1	L2	L3	C1	C2	C3	G1	G2	G3	F	E
3	3	6	-TTT-ML3-ML3-ML6	24.7	24.7	27.0	12.9	12.9	15.3	12	12	14	12.7	2.4
6	6	3	-TTT-ML6-ML6-ML3	27.0	27.0	25.4	15.3	15.3	12.9	14	14	12	12.7	2.4
6	6	8	-TTT-ML6-ML6-ML8	28.0	28.0	28.8	15.3	15.3	16.2	14	14	16	14.3	4.8
8	8	6	-TTT-ML8-ML8-ML6	30.0	30.0	29.0	16.2	16.2	15.3	16	16	14	15.9	4.8
8	8	12	-TTT-ML8-ML8-ML12	35.2	35.2	36.0	16.2	16.2	22.8	16	16	22	20.6	6.4
10	10	6	-TTT-ML10-ML10-ML6	31.5	31.5	29.9	17.2	17.2	15.3	19	19	14	17.5	4.8
10	10	8	-TTT-ML10-ML10-ML8	31.5	31.5	30.7	17.2	17.2	16.2	19	19	16	17.5	6.4
12	12	6	-TTT-ML12-ML12-ML6	36.0	36.0	31.8	22.8	22.8	15.3	22	22	14	20.6	4.8
12	12	8	-TTT-ML12-ML12-ML8	36.0	36.0	35.2	22.8	22.8	16.2	22	22	16	20.6	6.4
12	12	14	-TTT-ML12-ML12-ML14	38.0	38.0	38.0	22.8	22.8	24.4	22	22	25	25.4	9.5
12	12	18	-TTT-ML12-ML12-ML18	39.8	39.8	39.8	22.8	22.8	24.4	22	22	30	27.0	9.5
14	14	8	-TTT-ML14-ML14-ML8	38.0	38.0	37.2	24.4	24.4	16.2	25	25	16	25.4	6.4
14	14	10	-TTT-ML14-ML14-ML10	38.0	38.0	38.0	24.4	24.4	17.2	25	25	19	25.4	7.9
15	15	12	-TTT-ML15-ML15-ML12	38.8	38.8	38.8	24.4	24.4	22.8	25	25	22	25.4	9.5
16	8	16	-TTT-ML16-ML8-ML16	38.8	37.2	38.8	24.4	16.2	24.4	25	16	25	25.4	6.4
16	16	12	-TTT-ML16-ML16-ML12	38.8	38.8	38.9	24.4	24.4	22.8	25	25	22	25.4	9.5
18	18	8	-TTT-ML18-ML18-ML8	39.8	39.8	39.0	24.4	24.4	16.2	30	30	16	27.0	6.4
18	18	10	-TTT-ML18-ML18-ML10	39.8	39.8	39.8	24.4	24.4	17.2	30	30	19	27.0	7.9
18	18	12	-TTT-ML18-ML18-ML12	39.8	39.8	39.8	24.4	24.4	22.8	30	30	22	27.0	9.5
18	18	14	-TTT-ML18-ML18-ML14	39.8	39.8	39.8	24.4	24.4	24.4	30	30	25	27.0	11.1
20	20	14	-TTT-ML20-ML20-ML14	44.6	44.6	44.6	26.0	26.0	24.4	32	32	25	34.9	11.1
22	22	12	-TTT-ML22-ML22-ML12	44.6	44.6	44.6	26.0	26.0	22.8	32	32	22	34.9	9.5
25	25	12	-TTT-ML25-ML25-ML12	49.1	49.1	44.7	31.3	31.3	22.8	38	38	22	34.9	9.5

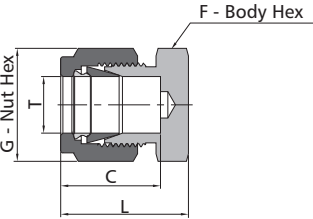
Union Crosses



Fractional Tube						
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				
		L	C	G	F	E
1/8	-C-FL2	22.4	12.7	11.1	9.5	2.3
3/16	-C-FL3	24.4	13.7	12.7	11.1	3.0
1/4	-C-FL4	26.9	15.2	14.3	12.7	4.8
5/16	-C-FL5	29.7	16.2	15.9	15.9	6.4
3/8	-C-FL6	30.5	16.8	17.5	15.9	7.1
1/2	-C-FL8	36.1	22.9	22.2	20.6	10.4
5/8	-C-FL10	36.3	24.4	25.4	27.0	12.7
3/4	-C-FL12	39.9	24.4	28.6	27.0	15.7
7/8	-C-FL14	44.7	25.9	31.8	34.9	18.3
1	-C-FL16	49.0	31.2	38.1	34.9	22.4

Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
		L	C	G	F	E
3	-C-ML3	22.3	12.9	12	9.5	2.4
4	-C-ML4	25.4	13.7	12	12.7	2.4
6	-C-ML6	27.0	15.3	14	12.7	4.8
8	-C-ML8	29.9	16.2	16	15.9	6.4
10	-C-ML10	33.5	17.2	19	20.6	7.9
12	-C-ML12	36.0	22.8	22	20.6	9.5
16	-C-ML16	37.0	24.4	25	23.8	12.7
18	-C-ML18	38.3	24.4	30	27.0	15.1
20	-C-ML20	44.6	26.0	32	34.9	15.9
22	-C-ML22	44.7	26.0	32	34.9	18.3
25	-C-ML25	49.2	31.3	38	34.9	21.8

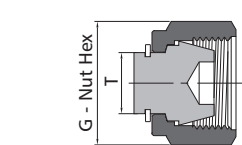
Caps



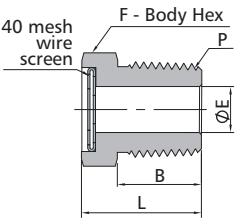
Fractional Tube					
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm			
		L	C	G	F
1/16	-TC-FL1	15.0	8.6	7.9	7.9
1/8	-TC-FL2	20.1	12.7	11.1	11.1
3/16	-TC-FL3	21.3	13.7	12.7	11.1
1/4	-TC-FL4	23.4	15.2	14.3	12.7
5/16	-TC-FL5	24.4	16.3	15.9	14.3
3/8	-TC-FL6	25.7	16.8	17.5	15.9
1/2	-TC-FL8	29.2	22.9	22.2	20.6
5/8	-TC-FL10	30.0	24.4	25.4	23.8
3/4	-TC-FL12	31.5	24.4	28.6	27.0
7/8	-TC-FL14	34.0	25.9	31.8	30.2
1	-TC-FL16	38.4	31.2	38.1	34.9
1 1/8	-TC-FL18	38.4	31.2	46.0	41.3
1 1/4	-TC-FL20	53.3	41.1	47.6	44.5
1 1/2	-TC-FL24	64.5	50.0	57.2	54.0

Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
		L	C	G	F	
2	-TC-ML2	20.1	12.9	12	12	
3	-TC-ML3	20.1	12.9	12	12	
4	-TC-ML4	21.3	13.7	12	12	
6	-TC-ML6	23.1	15.3	14	14	
8	-TC-ML8	24.5	16.2	16	15	
10	-TC-ML10	26.6	17.2	19	18	
12	-TC-ML12	29.1	22.8	22	22	
14	-TC-ML14	29.9	24.4	25	24	
15	-TC-ML15	29.9	24.4	25	24	
16	-TC-ML16	29.9	24.4	25	24	
18	-TC-ML18	31.4	24.4	30	27	
20	-TC-ML20	34.0	26.0	32	30	
22	-TC-ML22	34.0	26.0	32	30	
25	-TC-ML25	38.5	31.3	38	35	
28	-TC-ML28	48.5	36.6	46	41	
30	-TC-ML30	53.4	39.6	50	46	
32	-TC-ML32	55.8	42.0	50	46	
38	-TC-ML38	65.4	49.4	60	55	

Plugs

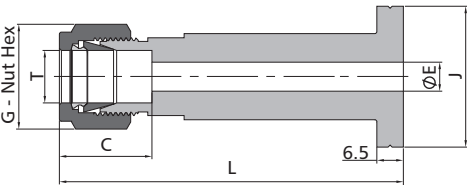


Vent Protectors



40 mesh 300 series stainless steel wire screen assembly

Lapped Flange Connectors



- Standard material is 316 or Monel.
- The flange ends are used with NPS 1/2 lap joint pipe flanges.
- The flange ends are dimensioned to meet "ANSI B16.5 Class 2500" flange specifications.
- The Flange Seal A means surface finish Ra 3.2-6.3 µm, the flange Seal B means Ra 6.3-12.5 µm.

Fractional Tube		
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm
		G
1/16	-TP-FL1	7.9
1/8	-TP-FL2	11.1
3/16	-TP-FL3	12.7
1/4	-TP-FL4	14.3
5/16	-TP-FL5	15.9
3/8	-TP-FL6	17.5
1/2	-TP-FL8	22.2
5/8	-TP-FL10	25.4
3/4	-TP-FL12	28.6
7/8	-TP-FL14	31.8
1	-TP-FL16	38.1
1 1/4	-TP-FL20	47.6
1 1/2	-TP-FL24	57.2

Metric Tube		
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm
		G
2	-TP-ML2	12
3	-TP-ML3	12
4	-TP-ML4	12
6	-TP-ML6	14
8	-TP-ML8	16
10	-TP-ML10	19
12	-TP-ML12	22
14	-TP-ML14	25
15	-TP-ML15	25
16	-TP-ML16	25
18	-TP-ML18	30
20	-TP-ML20	32
22	-TP-ML22	32
25	-TP-ML25	38
28	-TP-ML28	46
30	-TP-ML30	50
32	-TP-ML32	50
38	-TP-ML38	60

NPT Thread

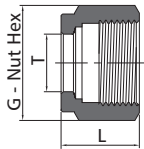
P-NPT Size	Ordering Number	Dimension, mm			
		L	F	B	E
1/8	SS-VPF-NS2	14.2	12.7	9.7	4.8
1/4	SS-VPF-NS4	19.8	14.3	14.2	7.1
3/8	SS-VPF-NS6	20.6	17.5	14.2	10.4
1/2	SS-VPF-NS8	26.2	22.2	19.1	12.7
3/4	SS-VPF-NS12	26.9	27.0	19.2	18.3
1	SS-VPF-NS16	34.8	34.9	23.9	22.4

To order brass, replace SS in the ordering number with B
Example: B-VPF-NS2

Fractional Tube							
T-Tube O.D. (in.)	Flange Seal	Basic Ordering Number	Dimension, mm				
			L	G	C	E	J
1/4	A	-LFC-FL4A	80.8	14.3	15.2	4.8	34.5
1/4	B	-LFC-FL4B	80.8	14.3	15.2	4.8	34.5
3/8	A	-LFC-FL6A	82.9	17.5	16.8	7.1	34.5
3/8	B	-LFC-FL6B	82.9	17.5	16.8	7.1	34.5
1/2	A	-LFC-FL8A	85.1	22.2	22.9	7.9	34.5
1/2	B	-LFC-FL8B	85.1	22.2	22.9	7.9	34.5

Metric Tube							
T-Tube O.D. (mm)	Flange Seal	Basic Ordering Number	Dimension, mm				
			L	G	C	E	J
10	A	-LFC-ML10A	82.6	19	17.2	7.9	34.5
10	B	-LFC-ML10B	82.6	19	17.2	7.9	34.5

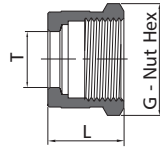
Nuts



Fractional Tube			
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm	
		L	G
1/16	-N-FL1	7.9	7.9
1/8	-N-FL2	11.9	11.1
3/16	-N-FL3	11.9	12.7
1/4	-N-FL4	12.7	14.3
5/16	-N-FL5	13.5	15.9
3/8	-N-FL6	14.2	17.5
1/2	-N-FL8	17.5	22.2
5/8	-N-FL10	17.5	25.4
3/4	-N-FL12	17.5	28.6
7/8	-N-FL14	17.5	31.8
1	-N-FL16	20.6	38.1
1 1/8	-N-FL18	30.8	46.0
1 1/4	-N-FL20	31.8	47.6
1 1/2	-N-FL24	38.1	57.2

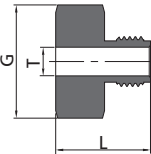
Metric Tube			
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm	
		L	G
2	-N-ML2	11.9	12
3	-N-ML3	11.9	12
4	-N-ML4	11.9	12
6	-N-ML6	12.7	14
8	-N-ML8	13.5	16
10	-N-ML10	15.1	19
12	-N-ML12	17.4	22
14	-N-ML14	17.4	25
15	-N-ML15	17.4	25
16	-N-ML16	17.4	25
18	-N-ML18	17.4	30
20	-N-ML20	17.4	32
22	-N-ML22	17.4	32
25	-N-ML25	20.6	38
28	-N-ML28	30.6	46
30	-N-ML30	32.7	50
32	-N-ML32	34.4	50
38	-N-ML38	40.6	60

Knurled Nuts



To order a knurled nut add K to the nut ordering number.
Example: **B-KN-FL4**

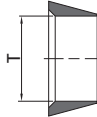
Male Nuts



Fractional Tube			
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm	
		L	G
1/16	-MN-FL1	9.7	6.4
1/8	-MN-FL2	13.5	9.5
1/4	-MN-FL4	15.7	12.7
1/2	-MN-FL8	22.1	23.8

Metric Tube			
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm	
		L	G
3	-MN-ML3	13.5	10
6	-MN-ML6	15.7	14
10	-MN-ML10	22.1	22
12	-MN-ML12	22.1	24

Front Ferrules



Fractional Tube	
T-Tube O.D. (in.)	Basic Ordering Number
1/16	-FF-FL1
1/8	-FF-FL2
3/16	-FF-FL3
1/4	-FF-FL4
5/16	-FF-FL5
3/8	-FF-FL6
1/2	-FF-FL8
5/8	-FF-FL10
3/4	-FF-FL12
7/8	-FF-FL14
1	-FF-FL16
1 1/8	-FF-FL18*
1 1/4	-FF-FL20*
1 1/2	-FF-FL24*

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
2	-FF-ML2
3	-FF-ML3
4	-FF-ML4
6	-FF-ML6
8	-FF-ML8
10	-FF-ML10
12	-FF-ML12
14	-FF-ML14
15	-FF-ML15
16	-FF-ML16
18	-FF-ML18
20	-FF-ML20
22	-FF-ML22
25	-FF-ML25
28	-FF-ML28*
30	-FF-ML30*
32	-FF-ML32*
38	-FF-ML38*

* Stainless steel front ferrules over 1 in. or 25 mm are PFA coated.

Rear Ferrules

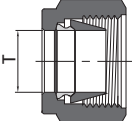


Fractional Tube	
T-Tube O.D. (in.)	Basic Ordering Number
1/16	-RF-FL1
1/8	-RF-FL2
3/16	-RF-FL3
1/4	-RF-FL4
5/16	-RF-FL5
3/8	-RF-FL6
1/2	-RF-FL8
5/8	-RF-FL10
3/4	-RF-FL12
7/8	-RF-FL14
1	-RF-FL16
1 1/8	-RF-FL18*
1 1/4	-RF-FL20*
1 1/2	-RF-FL24*

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
2	-RF-ML2
3	-RF-ML3
4	-RF-ML4
6	-RF-ML6
8	-RF-ML8
10	-RF-ML10
12	-RF-ML12
14	-RF-ML14
15	-RF-ML15
16	-RF-ML16
18	-RF-ML18
20	-RF-ML20
22	-RF-ML22
25	-RF-ML25
28	-RF-ML28*
30	-RF-ML30*
32	-RF-ML32*
38	-RF-ML38*

* Stainless steel rear ferrules over 1 in. or 25 mm are PFA coated.

Nuts+Ferrules



Fractional Tube	
T-Tube O.D. (in.)	Basic Ordering Number
1/16	-NFR-FL1
1/8	-NFR-FL2
3/16	-NFR-FL3
1/4	-NFR-FL4
5/16	-NFR-FL5
3/8	-NFR-FL6
1/2	-NFR-FL8
5/8	-NFR-FL10
3/4	-NFR-FL12
7/8	-NFR-FL14
1	-NFR-FL16
1 1/8	-NFR-FL18
1 1/4	-NFR-FL20
1 1/2	-NFR-FL24

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
2	-NFR-ML2
3	-NFR-ML3
4	-NFR-ML4
6	-NFR-ML6
8	-NFR-ML8
10	-NFR-ML10
12	-NFR-ML12
14	-NFR-ML14
15	-NFR-ML15
16	-NFR-ML16
18	-NFR-ML18
20	-NFR-ML20
22	-NFR-ML22
25	-NFR-ML25
28	-NFR-ML28
30	-NFR-ML30
32	-NFR-ML32
38	-NFR-ML38

Nut-Ferrule Sets



Each Nut-Ferrule Set contains 5 nuts, 5 front ferrules and 5 rear ferrules.

Fractional Tube		Metric Tube	
T-Tube O.D. (in.)	Basic Ordering Number	T-Tube O.D. (mm)	Basic Ordering Number
1/16	-NFS-FL1	2	-NFS-ML2
1/8	-NFS-FL2	3	-NFS-ML3
3/16	-NFS-FL3	4	-NFS-ML4
1/4	-NFS-FL4	6	-NFS-ML6
5/16	-NFS-FL5	8	-NFS-ML8
3/8	-NFS-FL6	10	-NFS-ML10
1/2	-NFS-FL8	12	-NFS-ML12
5/8	-NFS-FL10	14	-NFS-ML14
3/4	-NFS-FL12	15	-NFS-ML15
		16	-NFS-ML16
		18	-NFS-ML18

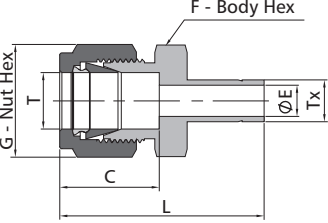
Ferrule Sets



Each Ferrule Set contains 10 front ferrules and 10 rear ferrules.

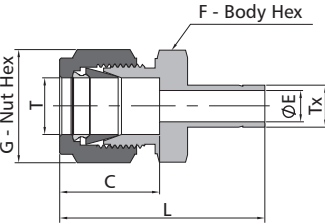
Fractional Tube		Metric Tube	
T-Tube O.D. (in.)	Basic Ordering Number	T-Tube O.D. (mm)	Basic Ordering Number
1/16	-FRS-FL1	2	-FRS-ML2
1/8	-FRS-FL2	3	-FRS-ML3
3/16	-FRS-FL3	4	-FRS-ML4
1/4	-FRS-FL4	6	-FRS-ML6
5/16	-FRS-FL5	8	-FRS-ML8
3/8	-FRS-FL6	10	-FRS-ML10
1/2	-FRS-FL8	12	-FRS-ML12
5/8	-FRS-FL10	14	-FRS-ML14
3/4	-FRS-FL12	15	-FRS-ML15
		16	-FRS-ML16
		18	-FRS-ML18

Reducers



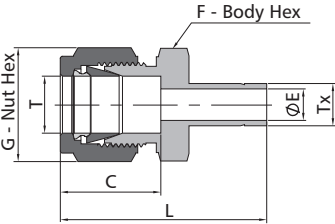
Fractional Tube							
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				
			L	C	G	F	E
1/16	1/8	-R-FL1-FT2	29.2	8.6	7.9	7.9	1.3
1/16	3/16	-R-FL1-FT3	30.0	8.6	7.9	7.9	1.3
1/16	1/4	-R-FL1-FT4	31.5	8.6	7.9	7.9	1.3
1/8	1/16	-R-FL2-FT1	29.0	12.7	11.1	11.1	0.8
1/8	1/8	-R-FL2-FT2	33.5	12.7	11.1	11.1	2.0
1/8	3/16	-R-FL2-FT3	34.3	12.7	11.1	11.1	2.3
1/8	1/4	-R-FL2-FT4	36.1	12.7	11.1	11.1	2.3
1/8	3/8	-R-FL2-FT6	37.6	12.7	11.1	11.1	2.3
1/8	1/2	-R-FL2-FT8	44.2	12.7	11.1	14.3	2.3
3/16	1/8	-R-FL3-FT2	34.8	13.7	12.7	11.1	2.0
3/16	1/4	-R-FL3-FT4	37.1	13.7	12.7	11.1	3.0
1/4	1/8	-R-FL4-FT2	36.8	15.2	14.3	12.7	2.0
1/4	3/16	-R-FL4-FT3	37.6	15.2	14.3	12.7	3.0
1/4	1/4	-R-FL4-FT4	39.1	15.2	14.3	12.7	4.3
1/4	5/16	-R-FL4-FT5	39.9	15.2	14.3	12.7	4.8
1/4	3/8	-R-FL4-FT6	40.6	15.2	14.3	12.7	4.8
1/4	1/2	-R-FL4-FT8	46.2	15.2	14.3	14.3	4.8
1/4	5/8	-R-FL4-FT10	48.0	15.2	14.3	17.5	4.8
1/4	3/4	-R-FL4-FT12	47.8	15.2	14.3	20.6	4.8
5/16	3/8	-R-FL5-FT6	41.9	16.3	15.9	14.3	6.4
5/16	1/2	-R-FL5-FT8	47.5	16.3	15.9	14.3	6.4
3/8	1/4	-R-FL6-FT4	41.4	16.8	17.5	15.9	4.3
3/8	3/8	-R-FL6-FT6	43.2	16.8	17.5	15.9	6.9
3/8	1/2	-R-FL6-FT8	48.5	16.8	17.5	15.9	7.1
3/8	5/8	-R-FL6-FT10	50.3	16.8	17.5	17.5	7.1
3/8	3/4	-R-FL6-FT12	50.3	16.8	17.5	20.6	7.1
1/2	1/4	-R-FL8-FT4	45.0	22.9	22.2	20.6	4.3
1/2	3/8	-R-FL8-FT6	46.7	22.9	22.2	20.6	6.9
1/2	1/2	-R-FL8-FT8	52.3	22.9	22.2	20.6	9.4
1/2	5/8	-R-FL8-FT10	53.8	22.9	22.2	20.6	10.4
1/2	3/4	-R-FL8-FT12	53.8	22.9	22.2	20.6	10.4
1/2	1	-R-FL8-FT16	60.2	22.9	22.2	27.0	10.4
5/8	3/4	-R-FL10-FT12	54.6	24.4	25.4	23.8	12.7
5/8	7/8	-R-FL10-FT14	56.1	24.4	25.4	23.8	12.7
5/8	1	-R-FL10-FT16	61.0	24.4	25.4	27.0	12.7
3/4	3/4	-R-FL12-FT12	54.6	24.4	28.6	27.0	14.7
3/4	1	-R-FL12-FT16	62.5	24.4	28.6	27.0	15.7
1	1 1/4	-R-FL16-FT20	80.5	31.2	38.1	34.9	22.4
1	1 1/2	-R-FL16-FT24	89.2	31.2	38.1	41.3	22.4
1	2	-R-FL16-FT32	112.5	31.2	38.1	54.0	22.4
1 1/4	1 1/2	-R-FL20-FT24	104.1	41.1	57.2	47.6	27.7

Reducers



Metric Tube							
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
			L	C	G	F	E
2	3	-R-ML2-MT3	33.5	12.9	12	12	1.7
3	4	-R-ML3-MT4	35.0	12.9	12	12	2.4
3	6	-R-ML3-MT6	36.1	12.9	12	12	2.4
3	10	-R-ML3-MT10	38.4	12.9	12	14	2.4
4	6	-R-ML4-MT6	37.1	13.7	12	12	2.4
6	3	-R-ML6-MT3	36.9	15.3	14	14	1.9
6	8	-R-ML6-MT8	39.9	15.3	14	14	4.8
6	10	-R-ML6-MT10	40.7	15.3	14	14	4.8
6	12	-R-ML6-MT12	46.3	15.3	14	14	4.8
6	18	-R-ML6-MT18	49.6	15.3	14	22	4.8
8	6	-R-ML8-MT6	40.3	16.2	16	15	4.1
8	10	-R-ML8-MT10	42.0	16.2	16	15	6.4
8	12	-R-ML8-MT12	47.6	16.2	16	15	6.4
10	6	-R-ML10-MT6	42.4	17.2	19	18	4.1
10	8	-R-ML10-MT8	43.4	17.2	19	18	5.6
10	12	-R-ML10-MT12	49.8	17.2	19	18	7.9
10	15	-R-ML10-MT15	51.3	17.2	19	18	7.9
10	18	-R-ML10-MT18	51.3	17.2	19	22	7.9
12	6	-R-ML12-MT6	44.9	22.8	22	22	4.1
12	8	-R-ML12-MT8	45.9	22.8	22	22	5.6
12	10	-R-ML12-MT10	46.7	22.8	22	22	7.1
12	16	-R-ML12-MT16	53.8	22.8	22	22	9.5
12	18	-R-ML12-MT18	53.8	22.8	22	22	9.5
12	20	-R-ML12-MT20	56.1	22.8	22	22	9.5
12	22	-R-ML12-MT22	56.1	22.8	22	24	9.5
12	25	-R-ML12-MT25	62.4	22.8	22	27	9.5
16	12	-R-ML16-MT12	53.0	24.4	25	24	8.8
18	12	-R-ML18-MT12	54.6	24.4	30	27	8.8
18	16	-R-ML18-MT16	56.1	24.4	30	27	12.0
18	20	-R-ML18-MT20	57.6	24.4	30	27	15.1
18	22	-R-ML18-MT22	57.6	24.4	30	27	15.1
18	25	-R-ML18-MT25	62.4	24.4	30	27	15.1
20	16	-R-ML20-MT16	57.9	26.0	32	30	12.0
20	18	-R-ML20-MT18	57.9	26.0	32	30	13.9
20	22	-R-ML20-MT22	59.4	26.0	32	30	15.9
20	25	-R-ML20-MT25	64.2	26.0	32	30	15.8
22	18	-R-ML22-MT18	57.9	26.0	32	30	13.9
22	20	-R-ML22-MT20	59.4	26.0	32	30	15.5
22	25	-R-ML22-MT25	64.2	26.0	32	30	18.3
25	18	-R-ML25-MT18	63.1	31.3	38	35	13.9
25	20	-R-ML25-MT20	64.6	31.3	38	35	15.5

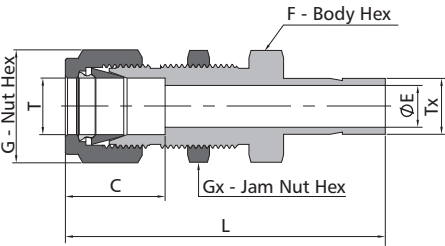
Reducers



Metric Tube			Fractional Tube				
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				
			L	C	G	F	E
2	1/8	-R-ML2-FT2	33.5	12.9	12	12	1.7
3	1/8	-R-ML3-FT2	33.5	12.9	12	12	2.0
3	1/4	-R-ML3-FT4	36.1	12.9	12	12	2.4
4	1/4	-R-ML4-FT4	37.1	13.7	12	12	2.4
6	1/8	-R-ML6-FT2	36.9	15.3	14	14	2.0
6	1/4	-R-ML6-FT4	39.2	15.3	14	14	4.4
6	5/16	-R-ML6-FT5	39.9	15.3	14	14	4.8
6	3/8	-R-ML6-FT6	40.7	15.3	14	14	4.8
6	1/2	-R-ML6-FT8	46.3	15.3	14	14	4.8
8	1/4	-R-ML8-FT4	40.3	16.2	16	15	4.4
8	3/8	-R-ML8-FT6	42.0	16.2	16	15	6.4
8	1/2	-R-ML8-FT8	47.6	16.2	16	15	6.4
10	3/8	-R-ML10-FT6	44.2	17.2	19	18	6.8
10	1/2	-R-ML10-FT8	49.8	17.2	19	18	7.9
12	1/2	-R-ML12-FT8	52.3	22.8	22	22	9.3
12	3/4	-R-ML12-FT12	53.8	22.8	22	22	9.5
18	3/4	-R-ML18-FT12	56.1	24.4	30	27	14.7
18	1	-R-ML18-FT16	62.4	24.4	30	27	15.1
25	1	-R-ML25-FT16	69.5	31.3	38	35	20.2

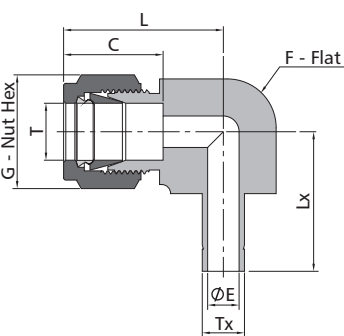
Fractional Tube			Metric Tube				
T-Tube O.D. (in.)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
			L	C	G	F	E
1/8	6	-R-FL2-MT6	36.1	12.7	11.1	11.1	2.3

Bulkhead Reducers



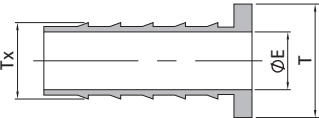
Fractional Tube								
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm					
			L	C	G	F	Gx	E
1/8	1/8	-BR-FL2-FT2	49.5	12.7	11.1	12.7	12.7	2.0
1/4	1/4	-BR-FL4-FT4	55.9	15.2	14.3	15.9	15.9	4.3
3/8	3/8	-BR-FL6-FT6	61.2	16.8	17.5	19.1	19.1	6.9
1/2	1/2	-BR-FL8-FT8	72.9	22.9	22.2	23.8	23.8	9.4
5/8	5/8	-BR-FL10-FT10	75.2	24.4	25.4	27.0	27.0	11.9
3/4	3/4	-BR-FL12-FT12	81.5	24.4	28.6	30.2	30.2	14.7
1	1	-BR-FL16-FT16	100.3	31.2	38.1	41.3	41.3	20.3

Reducer Elbows



Metric Tube								
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm					
			L	C	G	F	E	Lx
6	6	-LR-ML6-MT6	27.0	15.3	14	12.7	4.6	18.8
12	12	-LR-ML12-MT12	38.1	22.8	22	23.8	8.8	23.4

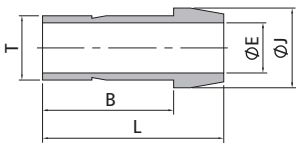
Insert for Soft Plastic Tubings



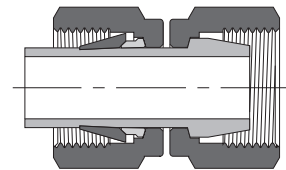
Fractional Tube			
T-Tube O.D. (in.)	Tx-Tube I.D. (in.)	Basic Ordering Number	E (mm)
3/16	1/8	-IN-3-2	2.3
1/4	1/8	-IN-4-2	2.3
1/4	0.17	-IN-4-017	2.8
1/4	3/16	-IN-4-3	3.5
5/16	1/8	-IN-5-2	2.3
5/16	3/16	-IN-5-3	3.0
5/16	1/4	-IN-5-4	4.8
3/8	3/16	-IN-6-3	3.0
3/8	1/4	-IN-6-4	4.8
1/2	1/4	-IN-8-4	4.8
1/2	3/8	-IN-8-6	7.9
5/8	3/8	-IN-10-6	7.9
5/8	1/2	-IN-10-8	11.1
3/4	1/2	-IN-12-8	11.1
3/4	5/8	-IN-12-10	14.2
1	3/4	-IN-16-12	17.5

Metric Tube			
T-Tube O.D. (mm)	Tx-Tube I.D. (mm)	Basic Ordering Number	E (mm)
6	4	-IN-6M-4M	2.8
8	6	-IN-8M-6M	4.4
10	8	-IN-10M-8M	6.4
12	8	-IN-12M-8M	6.4
12	10	-IN-12M-10M	8.3

Port Connectors



1" /25 mm and below

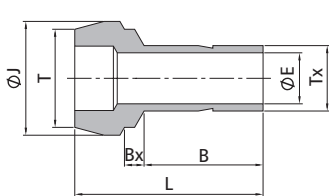


1 1/4" /28 mm and above

Fractional Tube					
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm			
		L	B	E	J
1/16	-P-FL1	13.7	10.7	0.8	3.3
1/8	-P-FL2	22.4	15.7	2.0	6.1
1/4	-P-FL4	24.6	18.8	4.3	9.4
5/16	-P-FL5	25.9	20.1	5.6	10.9
3/8	-P-FL6	26.2	20.3	6.9	12.7
1/2	-P-FL8	35.8	25.9	9.4	15.7
5/8	-P-FL10	41.7	28.1	11.9	20.5
3/4	-P-FL12	41.9	27.7	14.7	22.1
1	-P-FL16	48.0	34.5	20.3	28.4
1 1/4	-P-FL20	69.1	50.6	25.9	37.4
1 1/2	-P-FL24	84.1	59.4	31.8	45.8

Metric Tube					
T-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm			
		L	B	E	J
3	-P-ML3	22.2	15.7	1.9	6.0
6	-P-ML6	24.6	18.7	4.1	9.0
8	-P-ML8	25.9	20.0	5.6	11.0
10	-P-ML10	26.1	20.2	7.1	13.1
12	-P-ML12	35.8	26.0	8.8	15.0
15	-P-ML15	37.8	27.6	11.2	19.6
16	-P-ML16	37.8	27.6	12.0	20.6
18	-P-ML18	37.8	27.7	13.9	21.0
20	-P-ML20	39.4	29.2	15.5	24.6
25	-P-ML25	49.3	34.5	19.9	31.2
28	-P-ML28	63.5	48.3	22.5	34.4
30	-P-ML30	67.6	52.2	24.3	37.4
32	-P-ML32	69.7	52.4	26.5	39.4
38	-P-ML38	81.9	61.4	31.6	45.8

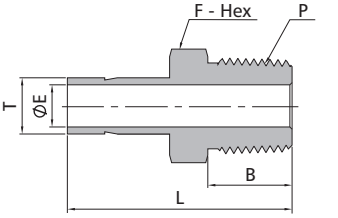
Reducing Port Connectors



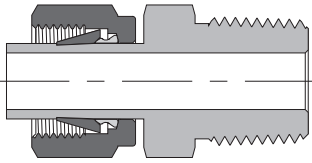
Fractional Tube							
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				
			L	B	E	Bx	J
1/8	1/16	-P-FL2-FL1	17.3	8.6	0.8	2.0	6.1
1/4	1/16	-P-FL4-FL1	18.0	8.6	0.8	3.6	9.4
1/4	1/8	-P-FL4-FL2	22.6	13.5	2.0	3.3	9.4
3/8	1/8	-P-FL6-FL2	23.1	13.5	2.0	3.8	12.7
3/8	1/4	-P-FL6-FL4	24.9	15.7	4.3	3.3	12.7
1/2	1/4	-P-FL8-FL4	29.2	15.7	4.3	3.8	15.7
1/2	3/8	-P-FL8-FL6	30.5	17.5	6.9	3.3	15.7
3/4	1/2	-P-FL12-FL8	37.8	23.1	9.4	3.8	22.1
1	1/2	-P-FL16-FL8	42.9	24.4	9.4	4.8	28.5
1	3/4	-P-FL16-FL12	43.7	25.9	14.7	4.1	28.5

Metric Tube							
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimension, mm				
			L	B	E	Bx	J
6	3	-P-ML6-ML3	22.6	13.5	1.9	3.2	9.0
8	6	-P-ML8-ML6	24.7	15.7	4.1	3.1	11.0
10	6	-P-ML10-ML6	25.0	15.7	4.1	3.4	13.1
10	8	-P-ML10-ML8	26.3	17.0	5.6	3.1	13.1
12	6	-P-ML12-ML6	29.6	15.7	4.1	3.6	15.0
12	8	-P-ML12-ML8	29.8	16.8	5.6	3.4	15.0
12	10	-P-ML12-ML10	30.4	17.5	7.1	3.1	15.0
16	12	-P-ML16-ML12	36.2	23.1	8.8	3.4	19.0
28	25	-P-ML28-ML25	56.5	33.0	19.8	8.2	34.3
32	25	-P-ML32-ML25	60.3	33.0	19.8	9.9	39.5
38	25	-P-ML38-ML25	65.8	33.0	19.8	12.3	47.1

Male Adapters



1" and below

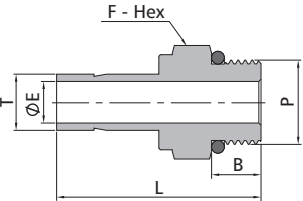
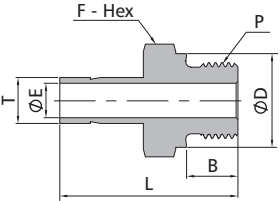
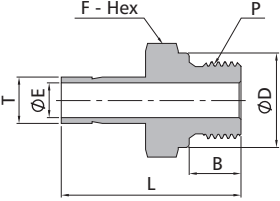


1 1/4" and above

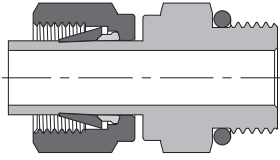
Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/16	1/8	-AM-FT1-NS2	25.4	9.7	0.8	11.1
1/8	1/8	-AM-FT2-NS2	29.5	9.7	2.0	11.1
1/8	1/4	-AM-FT2-NS4	34.8	14.2	2.0	14.3
3/16	1/8	-AM-FT3-NS2	30.2	9.7	3.0	11.1
3/16	1/4	-AM-FT3-NS4	35.6	14.2	3.0	14.3
1/4	1/8	-AM-FT4-NS2	31.8	9.7	4.3	11.1
1/4	1/4	-AM-FT4-NS4	37.1	14.2	4.3	14.3
1/4	3/8	-AM-FT4-NS6	37.8	14.2	4.3	17.5
1/4	1/2	-AM-FT4-NS8	43.4	19.1	4.3	22.2
5/16	1/8	-AM-FT5-NS2	32.8	9.7	4.8	11.1
5/16	1/4	-AM-FT5-NS4	38.1	14.2	5.6	14.3
5/16	3/8	-AM-FT5-NS6	38.9	14.2	5.6	17.5
5/16	1/2	-AM-FT5-NS8	44.2	19.1	5.6	22.2
3/8	1/8	-AM-FT6-NS2	33.5	9.7	4.8	11.1
3/8	1/4	-AM-FT6-NS4	38.9	14.2	6.9	14.3
3/8	3/8	-AM-FT6-NS6	39.6	14.2	6.9	17.5
3/8	1/2	-AM-FT6-NS8	45.2	19.1	6.9	22.2
1/2	1/4	-AM-FT8-NS4	44.5	14.2	7.1	14.3
1/2	3/8	-AM-FT8-NS6	45.2	14.2	9.4	17.5
1/2	1/2	-AM-FT8-NS8	50.8	19.1	9.4	22.2
5/8	1/2	-AM-FT10-NS8	52.3	19.1	11.9	22.2
3/4	1/2	-AM-FT12-NS8	52.3	19.1	11.9	22.2
3/4	3/4	-AM-FT12-NS12	52.3	19.1	14.7	27.0
3/4	1	-AM-FT12-NS16	61.2	23.9	20.7	34.9
1	3/4	-AM-FT16-NS12	58.7	19.1	15.7	27.0
1	1	-AM-FT16-NS16	66.0	23.9	20.3	34.9
1 1/4	1 1/4	-AM-FT20-NS20	80.3	23.9	25.9	44.5
1 1/2	1 1/2	-AM-FT24-NS24	94.5	26.2	31.8	54.0

Fractional Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/8	1/8	-AM-FT2-RT2	29.5	9.7	2.0	11.1
1/8	1/4	-AM-FT2-RT4	34.8	14.2	2.0	14.3
1/4	1/8	-AM-FT4-RT2	31.8	9.7	4.3	11.1
1/4	1/4	-AM-FT4-RT4	37.1	14.2	4.3	14.3
1/4	3/8	-AM-FT4-RT6	37.8	14.2	4.3	17.5
1/4	1/2	-AM-FT4-RT8	43.4	19.1	4.3	22.2
5/16	1/8	-AM-FT5-RT2	32.8	9.7	4.8	11.1
5/16	1/4	-AM-FT5-RT4	38.1	14.2	5.6	14.3
3/8	1/4	-AM-FT6-RT4	38.9	14.2	6.9	14.3
3/8	3/8	-AM-FT6-RT6	39.6	14.2	6.9	17.5
3/8	1/2	-AM-FT6-RT8	45.2	19.1	6.9	22.2
1/2	1/4	-AM-FT8-RT4	44.5	14.2	7.1	14.3
1/2	3/8	-AM-FT8-RT6	45.2	14.2	9.4	17.5
1/2	1/2	-AM-FT8-RT8	50.8	19.1	9.4	22.2
5/8	3/8	-AM-FT10-RT6	48.5	14.2	9.5	17.5
5/8	1/2	-AM-FT10-RT8	52.3	19.1	11.9	22.2
3/4	3/4	-AM-FT12-RT12	52.3	19.1	14.7	27.0
1	1	-AM-FT16-RT16	66.0	23.9	20.3	34.9

Male Adapters



1" and below



1 1/4" and above

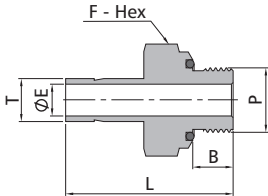
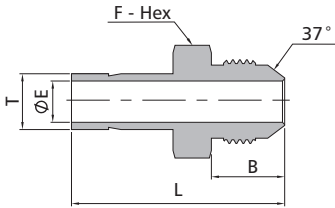
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

Fractional Tube			ISO Parallel Thread (RS)				
T-Tube O.D. (in.)	P-RS Size	Basic Ordering Number	Dimension, mm				
			L	B	E	F	D
1/8	1/8	-AM-FT2-RS2	31.0	7.1	2.0	14.3	13.7
1/8	1/4	-AM-FT2-RS4	35.8	11.2	2.0	19.1	17.8
1/4	1/8	-AM-FT4-RS2	33.3	7.1	4.1	14.3	13.7
1/4	1/4	-AM-FT4-RS4	38.1	11.2	4.3	19.1	17.8
3/8	1/8	-AM-FT6-RS2	34.0	7.1	1.3	14.3	13.7
3/8	1/4	-AM-FT6-RS4	39.9	11.2	5.8	19.1	17.8
3/8	3/8	-AM-FT6-RS6	40.6	11.2	6.9	22.2	21.6
3/8	1/2	-AM-FT6-RS8	42.9	14.2	7.1	27.0	25.9
1/2	1/4	-AM-FT8-RS4	45.5	11.2	5.8	19.1	17.8
1/2	3/8	-AM-FT8-RS6	46.2	11.2	7.9	22.2	21.6
1/2	1/2	-AM-FT8-RS8	49.2	14.2	9.4	27.0	25.9
5/8	1/2	-AM-FT10-RS8	50.0	14.2	11.9	27.0	25.9
3/4	3/4	-AM-FT12-RS12	54.9	16.0	14.7	33.3	32.0
1	1	-AM-FT16-RS16	64.5	18.3	20.3	41.3	38.9

Fractional Tube			ISO Parallel Thread (RP)				
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimension, mm				
			L	B	E	F	D
1/8	1/8	-AM-FT2-RP2	27.7	7.1	1.3	14.3	13.7
1/8	1/4	-AM-FT2-RP4	33.3	11.2	1.3	19.1	17.8
1/4	1/8	-AM-FT4-RP2	30.2	7.1	4.1	14.3	13.7
1/4	1/4	-AM-FT4-RP4	38.1	11.2	4.6	19.1	17.8
3/8	1/8	-AM-FT6-RP2	34.0	7.1	1.3	19.1	13.7
3/8	1/4	-AM-FT6-RP4	37.3	11.2	6.4	19.1	17.8
3/8	3/8	-AM-FT6-RP6	38.1	11.2	7.1	22.2	21.6
3/8	1/2	-AM-FT6-RP8	42.9	14.2	7.1	27.0	25.9
1/2	1/4	-AM-FT8-RP4	42.9	11.2	6.4	19.1	17.8
1/2	3/8	-AM-FT8-RP6	43.7	11.2	7.9	22.2	21.6
1/2	1/2	-AM-FT8-RP8	49.3	14.2	9.9	27.0	25.9
5/8	1/2	-AM-FT10-RP8	50.0	14.2	11.9	27.0	25.9
3/4	3/4	-AM-FT12-RP12	53.1	16.0	14.7	33.5	32.0
1	1	-AM-FT16-RP16	63.3	18.3	20.3	41.3	38.9

Fractional Tube			SAE/MS Straight Thread			
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/8	5/16-24	-AM-FT2-ST5	30.5	7.6	2.0	11.1
1/4	7/16-20	-AM-FT4-ST7	35.3	9.1	4.3	14.3
3/8	7/16-20	-AM-FT6-ST7	37.1	9.1	5.1	14.3
3/8	9/16-18	-AM-FT6-ST9	38.6	9.9	6.9	17.5
3/8	3/4-16	-AM-FT6-ST12	40.6	11.2	6.9	22.2
1/2	9/16-18	-AM-FT8-ST9	44.2	9.9	7.1	17.5
1/2	3/4-16	-AM-FT8-ST12	46.2	11.2	9.4	22.2
5/8	7/8-14	-AM-FT10-ST14	49.3	12.7	11.9	25.4
3/4	1 1/16-12	-AM-FT12-ST17	53.3	15.0	14.7	31.8
1	1 5/16-12	-AM-FT16-ST21	61.2	15.0	20.3	38.1
1 1/4	1 5/8-12	-AM-FT20-ST26	71.4	15.0	25.9	47.6
1 1/2	1 7/8-12	-AM-FT24-ST30	83.3	15.0	31.8	54.0

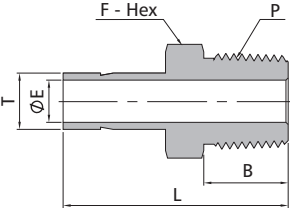
Male Adapters



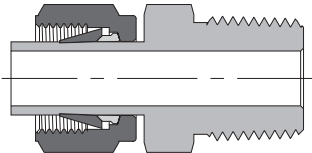
Fractional Tube			37° Flare (AN)			
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/4	1/4	-AM-FT4-AN4	37.1	14.0	4.3	12.7
3/8	1/4	-AM-FT6-AN4	38.9	14.0	4.3	12.7
3/8	3/8	-AM-FT6-AN6	39.6	14.2	6.9	15.9
1/2	1/2	-AM-FT8-AN8	48.5	16.8	9.4	20.6
3/4	3/4	-AM-FT12-AN12	56.1	21.8	14.7	28.6
1	1	-AM-FT16-AN16	65.5	23.1	20.3	34.9

Fractional Tube			O-Seal with SAE/MS Straight Thread			
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/8	5/16-24	-AM-FT2-OST5	32.5	8.6	2.0	14.3
3/16	3/8-24	-AM-FT3-OST6	35.1	9.7	3.0	15.9
1/4	7/16-20	-AM-FT4-OST7	39.1	10.4	4.3	19.1
5/16	1/2-20	-AM-FT5-OST8	41.7	11.2	5.6	22.2
3/8	9/16-18	-AM-FT6-OST9	43.2	11.9	6.9	23.8
1/2	3/4-16	-AM-FT8-OST12	49.5	11.9	9.4	28.6

Male Adapters



25 mm and below

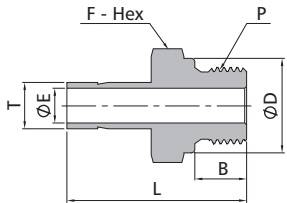


28 mm and above

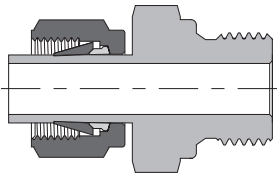
Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
3	1/8	-AM-MT3-NS2	29.4	9.7	1.8	12
4	1/8	-AM-MT4-NS2	29.4	9.7	2.0	12
6	1/8	-AM-MT6-NS2	32.8	9.7	4.1	12
6	1/4	-AM-MT6-NS4	38.1	14.2	4.1	14
6	3/8	-AM-MT6-NS6	39.2	14.2	4.1	18
6	1/2	-AM-MT6-NS8	42.1	19.1	4.1	22
8	1/4	-AM-MT8-NS4	39.1	14.2	5.6	14
8	3/8	-AM-MT8-NS6	39.9	14.2	5.6	19
10	1/4	-AM-MT10-NS4	39.9	14.2	7.1	14
10	3/8	-AM-MT10-NS6	40.6	14.2	7.1	18
10	1/2	-AM-MT10-NS8	46.2	19.1	7.1	22
12	1/4	-AM-MT12-NS4	46.5	14.2	7.1	14
12	3/8	-AM-MT12-NS6	46.2	14.2	8.8	18
12	1/2	-AM-MT12-NS8	52.1	19.1	8.8	22
16	1/2	-AM-MT16-NS8	50.8	19.1	12.7	22
16	3/4	-AM-MT16-NS12	51.6	19.1	12.7	27
18	1/2	-AM-MT18-NS8	50.8	19.1	12.7	27
18	3/4	-AM-MT18-NS12	51.6	19.1	14.0	27
20	1/2	-AM-MT20-NS8	51.8	19.1	11.9	22
20	3/4	-AM-MT20-NS12	52.4	19.1	15.1	27
25	1	-AM-MT25-NS16	65.9	23.9	19.8	35
28	1	-AM-MT28-NS16	74.4	23.9	22.2	35
28	1 1/4	-AM-MT28-NS20	76.2	23.9	22.5	46
30	1	-AM-MT30-NS16	79.2	23.9	22.2	41
30	1 1/4	-AM-MT30-NS20	80.0	23.9	24.3	46
32	1 1/4	-AM-MT32-NS20	81.0	23.9	26.5	46
38	1 1/2	-AM-MT38-NS24	92.2	26.2	31.6	55

Metric Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
3	1/8	-AM-MT3-RT2	29.4	9.7	1.8	12
4	1/8	-AM-MT4-RT2	29.4	9.7	2.0	12
6	1/8	-AM-MT6-RT2	32.8	9.7	4.1	12
6	1/4	-AM-MT6-RT4	38.1	14.2	4.1	14
8	1/4	-AM-MT8-RT4	39.1	14.2	5.6	14
8	3/8	-AM-MT8-RT6	39.9	14.2	5.6	18
10	1/4	-AM-MT10-RT4	39.9	14.2	7.1	14
10	3/8	-AM-MT10-RT6	40.6	14.2	7.1	18
10	1/2	-AM-MT10-RT8	44.5	19.1	7.5	22
12	1/4	-AM-MT12-RT4	46.5	14.2	7.1	16
12	3/8	-AM-MT12-RT6	46.2	14.2	8.8	18
12	1/2	-AM-MT12-RT8	51.8	19.1	8.8	22
16	1/2	-AM-MT16-RT8	50.8	19.1	12.7	22
18	3/4	-AM-MT18-RT12	51.6	19.1	14.0	27
20	3/4	-AM-MT20-RT12	52.4	19.1	15.1	27
25	1	-AM-MT25-RT16	65.9	23.9	19.8	35
28	1	-AM-MT28-RT16	74.7	23.9	22.2	35
28	1 1/4	-AM-MT28-RT20	76.2	23.9	22.5	46
30	1 1/4	-AM-MT30-RT20	80.0	23.9	24.3	46
32	1 1/4	-AM-MT32-RT20	81.0	23.9	26.5	46
38	1 1/2	-AM-MT38-RT24	92.2	26.2	31.6	55

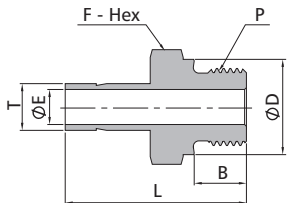
Male Adapters



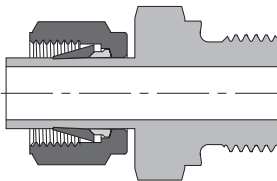
25 mm and below



28 mm and above



25 mm and below

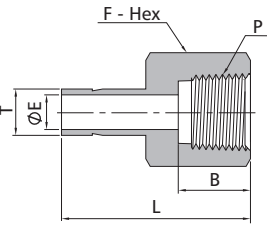


28 mm and above

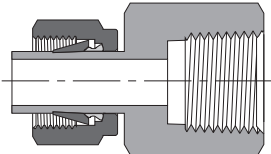
Metric Tube			ISO Parallel Thread (RS)					
T-Tube O.D. (mm)	P-RS Size	Basic Ordering Number	Dimension, mm					
			L	B	E	F	D	
3	1/8	-AM-MT3-RS2	31.0	7.1	1.8	14	13.7	
4	1/8	-AM-MT4-RS2	31.8	7.1	2.0	14	13.7	
6	1/8	-AM-MT6-RS2	34.3	7.1	4.0	14	13.7	
6	1/4	-AM-MT6-RS4	39.1	11.2	4.1	19	17.8	
8	1/4	-AM-MT8-RS4	40.1	11.2	5.6	19	17.8	
10	1/4	-AM-MT10-RS4	40.9	11.2	5.9	19	17.8	
10	3/8	-AM-MT10-RS6	41.7	11.2	7.1	22	21.6	
10	1/2	-AM-MT10-RS8	44.7	14.2	7.1	27	25.9	
12	1/4	-AM-MT12-RS4	46.7	11.2	5.9	19	17.8	
12	3/8	-AM-MT12-RS6	47.2	11.2	7.9	22	21.6	
12	1/2	-AM-MT12-RS8	50.5	14.2	8.8	27	25.9	
16	1/2	-AM-MT16-RS8	50.8	14.2	11.9	27	25.9	
18	3/4	-AM-MT18-RS12	55.9	16.0	13.9	35	32.0	
20	3/4	-AM-MT20-RS12	57.0	16.0	15.1	33	32.0	
25	1	-AM-MT25-RS16	65.1	18.3	19.8	41	38.9	
28	1	-AM-MT28-RS16	72.9	18.3	19.8	41	38.9	
28	1 1/4	-AM-MT28-RS20	77.0	19.8	22.5	50	49.0	
30	1 1/4	-AM-MT30-RS20	80.8	19.8	24.3	50	49.0	
32	1 1/4	-AM-MT32-RS20	81.8	19.8	26.5	50	49.0	
38	1 1/2	-AM-MT38-RS24	94.5	22.1	31.6	55	54.7	

Metric Tube			ISO Parallel Thread (RP)					
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimension, mm					
			L	B	E	F	D	
3	1/8	-AM-MT3-RP2	31.0	7.1	1.8	14	13.7	
4	1/8	-AM-MT4-RP2	31.8	7.1	2.0	14	13.7	
6	1/8	-AM-MT6-RP2	33.3	7.1	4.0	14	13.7	
6	1/4	-AM-MT6-RP4	38.1	11.2	4.0	19	17.8	
8	1/4	-AM-MT8-RP4	38.9	11.2	6.4	19	17.8	
10	1/4	-AM-MT10-RP4	38.9	11.2	6.4	19	17.8	
10	3/8	-AM-MT10-RP6	39.7	11.2	7.5	22	21.6	
10	1/2	-AM-MT10-RP8	42.9	14.2	7.5	27	25.9	
12	1/4	-AM-MT12-RP4	43.7	11.2	6.4	19	17.8	
12	3/8	-AM-MT12-RP6	44.5	11.2	7.9	22	21.6	
12	1/2	-AM-MT12-RP8	49.2	14.2	9.1	27	25.9	
16	1/2	-AM-MT16-RP8	50.8	14.2	11.9	27	25.9	
18	3/4	-AM-MT18-RP12	53.2	16.0	14.0	33	32.0	
20	3/4	-AM-MT20-RP12	54.0	16.0	15.1	33	32.0	
25	1	-AM-MT25-RP16	65.1	18.3	19.8	41	38.9	
28	1	-AM-MT28-RP16	72.7	18.3	19.8	41	38.9	
28	1 1/4	-AM-MT28-RP20	77.3	19.8	22.5	50	49.0	
30	1 1/4	-AM-MT30-RP20	80.8	19.8	24.3	50	49.0	
32	1 1/4	-AM-MT32-RP20	82.1	19.8	26.5	50	49.0	
38	1 1/2	-AM-MT38-RP24	94.5	22.1	31.6	55	54.7	

Female Adapters



1" and below

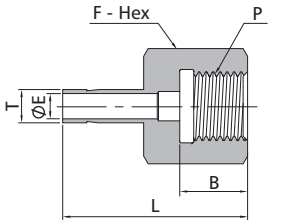
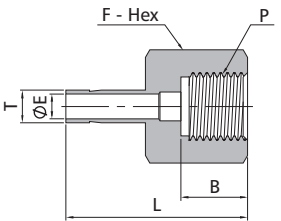
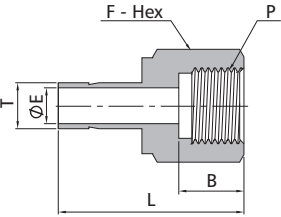


1 1/4" and above

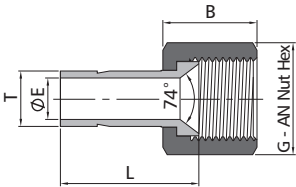
Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/16	1/8	-AF-FT1-NS2	27.2	10.4	0.8	14.3
1/8	1/8	-AF-FT2-NS2	31.5	10.4	2.0	14.3
1/8	1/4	-AF-FT2-NS4	35.3	15.0	2.0	19.1
3/16	1/8	-AF-FT3-NS2	31.8	10.4	2.9	14.3
3/16	1/4	-AF-FT3-NS4	35.8	15.0	3.0	19.1
1/4	1/8	-AF-FT4-NS2	33.0	10.4	4.3	14.3
1/4	1/4	-AF-FT4-NS4	37.1	15.0	4.3	19.1
1/4	3/8	-AF-FT4-NS6	39.4	15.0	4.3	22.2
1/4	1/2	-AF-FT4-NS8	45.5	19.8	4.3	27.0
5/16	1/8	-AF-FT5-NS2	34.0	10.4	5.6	14.3
5/16	1/4	-AF-FT5-NS4	37.6	15.0	5.6	19.1
5/16	3/8	-AF-FT5-NS6	40.4	15.0	5.6	22.2
3/8	1/8	-AF-FT6-NS2	34.3	10.4	6.9	14.3
3/8	1/4	-AF-FT6-NS4	38.1	15.0	6.9	19.1
3/8	3/8	-AF-FT6-NS6	40.4	15.0	6.9	22.2
3/8	1/2	-AF-FT6-NS8	46.7	19.8	6.9	27.0
1/2	1/4	-AF-FT8-NS4	43.4	15.0	9.4	19.1
1/2	3/8	-AF-FT8-NS6	45.5	15.0	9.4	22.2
1/2	1/2	-AF-FT8-NS8	51.8	19.8	9.4	27.0
5/8	3/8	-AF-FT10-NS6	47.2	15.0	11.9	22.2
5/8	1/2	-AF-FT10-NS8	53.1	19.8	11.9	27.0
3/4	1/2	-AF-FT12-NS8	52.8	19.8	14.7	27.0
3/4	3/4	-AF-FT12-NS12	54.9	20.6	14.7	33.3
3/4	1	-AF-FT12-NS16	58.4	25.4	14.7	41.3
7/8	3/4	-AF-FT14-NS12	56.4	20.6	14.7	33.3
1	3/4	-AF-FT16-NS12	60.7	20.6	20.3	33.3
1	1	-AF-FT16-NS16	64.3	25.4	20.3	41.3
1 1/4	1 1/4	-AF-FT20-NS20	77.7	25.4	25.9	54.0
1 1/2	1 1/2	-AF-FT24-NS24	88.9	27.7	31.8	60.3

Fractional Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/4	1/8	-AF-FT4-RT2	33.0	10.4	4.3	14.3
1/4	1/4	-AF-FT4-RT4	36.8	15.0	4.3	19.1
3/8	1/4	-AF-FT6-RT4	38.1	15.0	6.9	19.1
3/8	3/8	-AF-FT6-RT6	40.4	15.0	6.9	22.2
1/2	1/4	-AF-FT8-RT4	43.4	15.0	9.4	19.1
1/2	3/8	-AF-FT8-RT6	45.7	15.0	9.4	22.2
1/2	1/2	-AF-FT8-RT8	52.1	19.8	9.4	27.0

Female Adapters



Adapt to Japanese gauge stud.



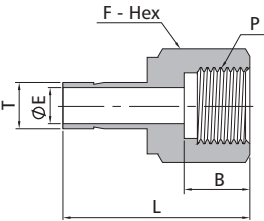
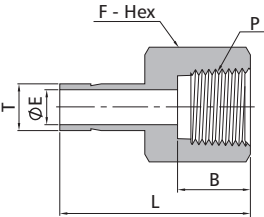
Fractional Tube			ISO Parallel Thread (RP)			
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/8	1/8	-AF-FT2-RP2	29.7	10.2	2.0	14.3
1/4	1/8	-AF-FT4-RP2	31.8	10.2	4.3	14.3
1/4	1/4	-AF-FT4-RP4	38.1	15.2	4.3	19.1
3/8	1/4	-AF-FT6-RP4	39.4	15.2	6.9	19.1
3/8	3/8	-AF-FT6-RP6	39.9	15.2	6.9	23.8
1/2	3/8	-AF-FT8-RP6	45.2	15.2	9.7	23.8
1/2	1/2	-AF-FT8-RP8	49.5	18.2	9.7	27.0

Fractional Tube			ISO Parallel Thread (RG)			
T-Tube O.D. (in.)	P-RG Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/4	1/4	-AF-FT4-RG4	35.3	12.9	4.3	19.1
3/8	3/8	-AF-FT6-RG6	39.4	14.2	6.6	23.8
1/2	1/2	-AF-FT8-RG8	45.7	18.8	7.1	27.0

Fractional Tube			ISO Parallel Thread (RJ)			
T-Tube O.D. (in.)	P-RJ Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/4	1/4	-AF-FT4-RJ4	35.3	12.9	4.3	19.1
3/8	3/8	-AF-FT6-RJ6	39.4	14.2	6.6	23.8
1/2	1/2	-AF-FT8-RJ8	49.3	18.8	7.1	27.0

Fractional Tube			AN Thread			
T-Tube O.D. (in.)	AN Tube Flare Size(in.)	Basic Ordering Number	Dimension, mm			
			L	B	E	F
1/8	1/8	-AF-FT2-AN2	22.4	14.0	2.4	9.5
1/8	1/4	-AF-FT2-AN4	22.4	15.8	2.4	14.3
1/4	1/4	-AF-FT4-AN4	24.4	15.8	4.6	14.3
3/8	3/8	-AF-FT6-AN6	28.1	18.5	7.1	17.5
1/2	1/2	-AF-FT8-AN8	36.1	21.6	9.9	22.2
3/4	3/4	-AF-FT12-AN12	37.8	26.2	14.7	31.8

Female Adapters

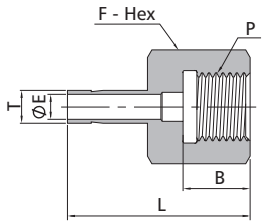
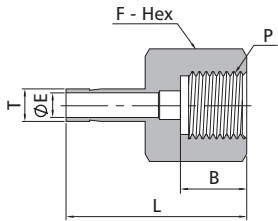


Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
3	1/8	-AF-MT3-NS2	28.8	10.4	1.3	14
4	1/8	-AF-MT4-NS2	33.3	10.4	2.0	14
6	1/8	-AF-MT6-NS2	32.5	10.4	4.1	14
6	1/4	-AF-MT6-NS4	37.1	15.0	4.1	19
8	1/8	-AF-MT8-NS2	35.1	10.4	6.4	14
8	1/4	-AF-MT8-NS4	37.6	15.0	5.6	19
8	3/8	-AF-MT8-NS6	36.5	15.0	6.4	22
10	1/4	-AF-MT10-NS4	38.1	15.0	7.1	19
10	3/8	-AF-MT10-NS6	40.1	15.0	7.1	22
10	1/2	-AF-MT10-NS8	46.5	19.8	7.1	27
12	1/4	-AF-MT12-NS4	43.7	15.0	8.8	19
12	3/8	-AF-MT12-NS6	42.9	15.0	9.1	22
12	1/2	-AF-MT12-NS8	52.3	19.8	8.8	27
16	1/2	-AF-MT16-NS8	49.2	19.8	12.7	27
18	3/4	-AF-MT18-NS12	52.4	20.6	14.0	32
20	1/2	-AF-MT20-NS8	50.0	19.8	15.0	27
20	3/4	-AF-MT20-NS12	53.2	20.6	15.1	32
25	1	-AF-MT25-NS16	66.7	25.4	19.8	41

Metric Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
3	1/8	-AF-MT3-RT2	27.8	10.4	1.8	14
4	1/8	-AF-MT4-RT2	28.6	10.4	2.0	14
6	1/8	-AF-MT6-RT2	33.0	10.4	4.1	14
8	1/4	-AF-MT8-RT4	37.6	15.0	5.6	19
10	1/4	-AF-MT10-RT4	38.1	15.0	7.1	19
10	3/8	-AF-MT10-RT6	36.5	15.0	7.5	22
10	1/2	-AF-MT10-RT8	41.3	19.8	7.5	27
12	1/4	-AF-MT12-RT4	40.5	15.0	9.1	19
12	3/8	-AF-MT12-RT6	43.7	15.0	9.1	22
12	1/2	-AF-MT12-RT8	46.8	19.8	9.1	27
16	1/2	-AF-MT16-RT8	48.4	19.8	12.7	27
18	3/4	-AF-MT18-RT12	52.4	20.6	14.0	32
20	3/4	-AF-MT20-RT12	53.2	20.6	15.1	32
25	1	-AF-MT25-RT16	66.7	25.4	19.8	41

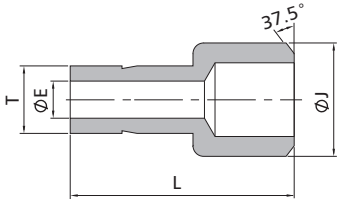
Metric Tube			ISO Parallel Thread (RP)			
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
6	1/8	-AF-MT6-RP2	32.0	10.2	4.1	14
6	1/4	-AF-MT6-RP4	37.8	15.2	4.1	19
12	1/2	-AF-MT12-RP8	49.8	18.8	8.8	27

Female Adapters



Adapt to Japanese gauge stud.

Weld adapters

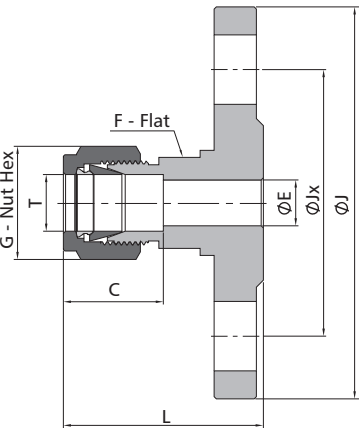


Metric Tube			ISO Parallel Thread (RG)			
T-Tube O.D. (mm)	P-RG Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
3	1/8	-AF-MT3-RG2	28.6	6.5	1.6	14
3	1/4	-AF-MT3-RG4	33.5	10.2	1.9	19
4	1/8	-AF-MT4-RG2	29.4	6.5	2.0	14
6	1/8	-AF-MT6-RG2	31.0	6.5	4.1	14
6	1/4	-AF-MT6-RG4	35.3	10.2	4.1	19
6	3/8	-AF-MT6-RG6	38.4	14.2	4.1	24
6	1/2	-AF-MT6-RG8	42.9	18.0	4.1	27
8	1/4	-AF-MT8-RG4	33.0	10.2	5.5	19
8	3/8	-AF-MT8-RG6	38.9	14.2	5.6	24
8	1/2	-AF-MT8-RG8	43.7	18.0	5.6	27
10	1/4	-AF-MT10-RG4	34.5	10.2	5.5	19
10	3/8	-AF-MT10-RG6	36.1	14.2	6.5	24
10	1/2	-AF-MT10-RG8	41.1	18.0	7.1	27
12	1/4	-AF-MT12-RG4	40.1	10.2	5.5	19
12	3/8	-AF-MT12-RG6	44.7	14.2	6.5	24
12	1/2	-AF-MT12-RG8	48.8	18.0	7.0	27
16	1/2	-AF-MT16-RG8	49.0	18.0	7.0	27
18	1/2	-AF-MT18-RG8	49.3	18.0	7.0	27

Metric Tube			ISO Parallel Thread (RJ)			
T-Tube O.D. (mm)	P-RJ Size	Basic Ordering Number	Dimension, mm			
			L	B	E	F
6	1/4	-AF-MT6-RJ4	35.3	10.2	4.1	19
6	3/8	-AF-MT6-RJ6	38.6	15.8	4.1	24
6	1/2	-AF-MT6-RJ8	42.9	18.0	4.1	27
8	1/4	-AF-MT8-RJ4	33.0	10.2	5.5	19
8	3/8	-AF-MT8-RJ6	39.4	15.8	5.6	24
8	1/2	-AF-MT8-RJ8	43.7	18.0	5.6	27
10	1/4	-AF-MT10-RJ4	34.5	10.2	5.5	19
10	3/8	-AF-MT10-RJ6	36.1	15.8	6.5	24
10	1/2	-AF-MT10-RJ8	41.1	18.0	7.1	27
12	1/4	-AF-MT12-RJ4	40.1	10.2	5.5	19
12	3/8	-AF-MT12-RJ6	44.7	15.8	6.5	24
12	1/2	-AF-MT12-RJ8	48.8	18.0	7.0	27

Fractional Tube			Pipe Weld		
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimension, mm		
			L	J	E
1/4	1/4	-AW-FT4-PB4	29.0	13.7	4.3
3/8	1/2	-AW-FT6-PB8	37.1	21.3	6.9
1/2	1/2	-AW-FT8-PB8	42.2	21.3	9.4
1/2	3/4	-AW-FT8-PB12	42.7	26.7	9.4
3/4	3/4	-AW-FT12-PB12	47.5	26.7	14.7

Flange Adapters



- Integrally forged body.
- ANSI flanges comply with ANSI B16.5.
- DIN flanges comply with DIN 2501/2526.
- GB flanges comply with GB/T 9123.1.
- EN flanges comply with EN 1092-1.
- JIS flanges comply with JIS B 2220.

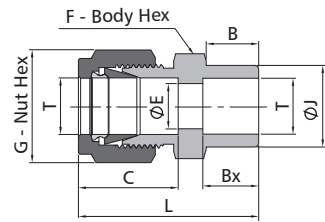
ANSI Flanges										
T-Tube O.D. (in.)	ANSI Flange NPS	Class	Basic Ordering Number Raised Face Flange	Dimension, mm						
				L	J	Jx	E	C	G	F
1/4	1/2	150	-FA-FL4-F8-150	40.9	88.9	60.5	4.8	15.2	14.3	20.6
3/8	1/2	300	-FA-FL6-F8-300	45.5	95.3	66.5	7.1	16.8	17.5	20.6
1/2	1/2	150	-FA-FL8-F8-150	45.2	88.9	60.5	10.4	22.9	22.2	20.6
1/2	1	150	-FA-FL8-F16-150	48.3	108.0	79.2	10.4	22.9	22.2	20.6
1/2	2	150	-FA-FL8-F32-150	53.1	152.4	121	10.4	22.9	22.2	20.6
3/4	1	150	-FA-FL12-F16-150	50.3	108.0	79.2	15.7	24.4	28.6	31.8
1	1	150	-FA-FL16-F16-150	60.5	108.0	79.2	22.4	31.2	38.1	34.9

DIN/GB Flanges, Pressure Class PN 40									
T-Tube O.D. (mm)	DIN Flange Size DN	Basic Ordering Number Raised Face Flange	Dimension, mm						
			L	J	Jx	E	C	G	F
6	25	-FA-ML6-F25-40B1	47.5	115.0	85.0	4.8	15.3	14	20
12	15	-FA-ML12-F15-40B1	48.5	95.0	65.0	9.5	22.8	22	20
12	25	-FA-ML12-F25-40B1	50.5	115.0	85.0	9.5	22.8	22	20
12	50	-FA-ML12-F50-40B1	55.3	165.0	125.0	9.5	22.8	22	20
18	15	-FA-ML18-F15-40B1	51.8	95.0	65.0	15.1	24.4	30	32
18	25	-FA-ML18-F25-40B1	53.8	115.0	85.0	15.1	24.4	30	32
25	25	-FA-ML25-F25-40B1	64.0	115.0	85.0	21.8	31.3	38	35

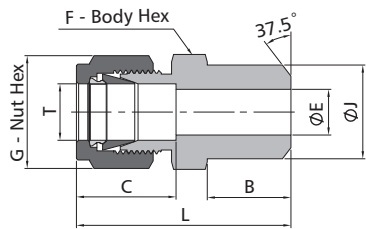
EN Flanges, Pressure Class PN 40									
T-Tube O.D. (mm)	EN Flange Size DN	Basic Ordering Number Raised Face Flange	Dimension, mm						
			L	J	Jx	E	C	G	F
6	25	-FA-ML6-F25E-40B1	47.5	115.0	85.0	4.8	15.3	14	20
12	15	-FA-ML12-F15E-40B1	48.5	95.0	65.0	9.5	22.8	22	20
12	25	-FA-ML12-F25E-40B1	50.5	115.0	85.0	9.5	22.8	22	20
12	50	-FA-ML12-F50E-40B1	55.3	165.0	125.0	9.5	22.8	22	20
18	15	-FA-ML18-F15E-40B1	51.8	95.0	65.0	15.1	24.4	30	32
18	25	-FA-ML18-F25E-40B1	53.8	115.0	85.0	15.1	24.4	30	32
25	25	-FA-ML25-F25E-40B1	64.0	115.0	85.0	21.8	31.3	38	35

JIS Flanges, Pressure Class 10K									
T-Tube O.D.	JIS Flange Size DN	Basic Ordering Number Raised Face Flange	Dimension, mm						
			L	J	Jx	E	C	G	F
1/4"	15	-FA-FL4-F15-10KRF	42.2	95.0	70.1	4.8	15.2	14.3	20.6
3/8"	15	-FA-FL6-F15-10KRF	43.7	95.0	70.1	7.1	16.8	17.5	20.6
1/2"	15	-FA-FL8-F15-10KRF	46.5	95.0	70.1	10.4	22.9	22.2	20.6
3/4"	15	-FA-FL12-F15-10KRF	48.5	95.0	70.1	15.7	24.4	28.6	31.8
1"	25	-FA-FL16-F25-10KRF	61.0	125.0	89.9	22.4	31.2	38.1	34.9
12mm	15	-FA-ML12-F15-10KRF	46.5	95.0	70.0	9.5	22.8	22	20
18mm	15	-FA-ML18-F15-10KRF	48.5	95.0	70.0	15.1	24.4	30	32
25mm	25	-FA-ML25-F25-10KRF	61.0	125.0	90.0	21.8	31.3	38	35

Weld Connectors

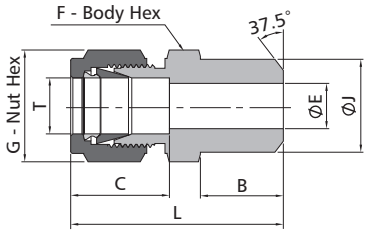


Fractional Tube		Tube Socket Weld							
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							
		L	C	G	F	B	E	Bx	J
1/8	-CW-FL2-TS2	29.0	12.7	11.1	11.1	8.6	2.3	2.5	7.9
3/16	-CW-FL3-TS3	29.7	13.7	12.7	11.1	9.5	3.3	4.8	10.7
1/4	-CW-FL4-TS4	33.5	15.2	14.3	12.7	10.4	4.8	7.1	11.2
3/8	-CW-FL6-TS6	37.6	16.8	17.5	15.9	11.9	7.1	7.9	15.7
1/2	-CW-FL8-TS8	41.1	22.9	22.2	20.6	11.9	10.4	9.7	19.1
5/8	-CW-FL10-TS10	41.9	24.4	25.4	23.8	11.9	12.7	10.4	23.4
3/4	-CW-FL12-TS12	43.4	24.4	28.6	27.0	11.9	15.7	11.1	26.7
1	-CW-FL16-TS16	52.6	31.2	38.1	34.9	14.2	22.4	15.7	33.3



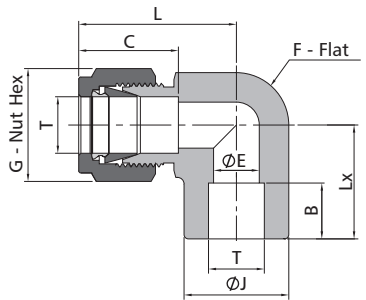
Fractional Tube			Pipe Butt Weld						
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	J
1/8	1/8	-CW-FL2-PB2	30.5	12.7	11.1	11.1	2.3	9.7	10.3
3/16	1/8	-CW-FL3-PB2	31.2	13.7	12.7	11.1	3.0	9.7	10.3
1/4	1/8	-CW-FL4-PB2	32.8	15.2	14.3	12.7	4.8	9.7	10.3
1/4	1/4	-CW-FL4-PB4	37.8	15.2	14.3	14.3	4.8	14.2	13.7
5/16	1/8	-CW-FL5-PB2	34.0	16.3	15.9	14.3	5.3	9.7	10.3
5/16	1/4	-CW-FL5-PB4	38.6	16.3	15.9	14.3	6.4	14.2	13.7
3/8	1/4	-CW-FL6-PB4	39.9	16.8	17.5	15.9	7.1	14.2	13.7
3/8	3/8	-CW-FL6-PB6	39.9	16.8	17.5	17.5	7.1	14.2	17.1
3/8	1/2	-CW-FL6-PB8	46.2	16.8	17.5	22.2	7.1	19.1	21.3
3/8	3/4	-CW-FL6-PB12	47.8	16.8	17.5	27.0	7.1	19.1	26.7
1/2	3/8	-CW-FL8-PB6	43.4	22.9	22.2	20.6	10.4	14.2	17.1
1/2	1/2	-CW-FL8-PB8	49.0	22.9	22.2	22.2	10.4	19.1	21.3
1/2	3/4	-CW-FL8-PB12	50.5	22.9	22.2	27.0	10.4	19.1	26.7
5/8	1/2	-CW-FL10-PB8	49.0	24.4	25.4	23.8	12.7	19.1	21.3
3/4	1/2	-CW-FL12-PB8	50.5	24.4	28.6	27.0	14.0	19.1	21.3
3/4	3/4	-CW-FL12-PB12	50.5	24.4	28.6	27.0	15.7	19.1	26.7
1	1	-CW-FL16-PB16	62.2	31.2	38.1	34.9	22.4	23.9	33.4
1 1/4	1 1/4	-CW-FL20-PB20	77.2	41.1	47.6	44.5	27.7	23.9	42.2
1 1/2	1 1/2	-CW-FL24-PB24	88.9	50.0	57.2	54.0	34.0	26.2	48.3

Weld Connectors



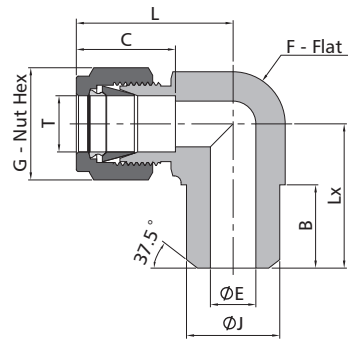
Metric Tube			Pipe Butt Weld						
T-Tube O.D. (mm)	Pipe Weld Size	Basic Ordering Number	Dimension, mm						
			L	C	G	F	E	B	J
3	1/8	-CW-ML3-PB2	30.5	12.9	12	12	2.4	9.7	10.3
4	1/8	-CW-ML4-PB2	31.5	13.7	12	12	2.4	9.7	10.3
6	1/8	-CW-ML6-PB2	32.8	15.3	14	14	4.8	9.7	10.3
6	1/4	-CW-ML6-PB4	37.9	15.3	14	14	4.8	14.2	13.7
8	1/8	-CW-ML8-PB2	34.2	16.2	16	15	5.4	9.7	10.3
8	1/4	-CW-ML8-PB4	38.7	16.2	16	15	6.4	14.2	13.7
8	1/2	-CW-ML8-PB8	45.6	16.2	16	22	6.4	19.1	21.3
10	1/4	-CW-ML10-PB4	40.9	17.2	19	18	7.5	14.2	13.7
10	3/8	-CW-ML10-PB6	40.9	17.2	19	18	7.9	14.2	17.1
10	1/2	-CW-ML10-PB8	46.5	17.2	19	22	7.9	19.1	21.3
12	1/4	-CW-ML12-PB4	43.4	22.8	22	22	7.5	14.2	13.7
12	3/8	-CW-ML12-PB6	43.4	22.8	22	22	9.5	14.2	17.1
12	1/2	-CW-ML12-PB8	49.0	22.8	22	22	9.5	19.1	21.3
14	3/8	-CW-ML14-PB6	44.1	24.4	25	24	10.7	14.2	17.1
15	1/2	-CW-ML15-PB8	49.0	24.4	25	24	11.9	19.1	21.3
16	1/2	-CW-ML16-PB8	49.0	24.4	25	24	12.7	19.1	21.3
18	1/2	-CW-ML18-PB8	50.5	24.4	30	27	13.9	19.1	21.3
30	1 1/4	-CW-ML30-PB20	77.2	39.6	50	46	26.2	23.9	42.2
32	1 1/4	-CW-ML32-PB20	79.6	42.0	50	46	28.6	23.9	42.2
38	1 1/2	-CW-ML38-PB24	91.6	49.4	60	55	33.7	26.2	48.3

Weld Elbows



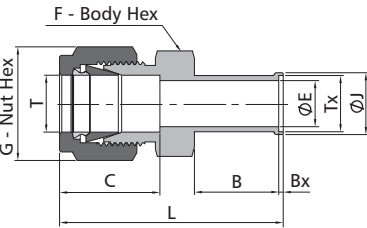
Fractional Tube		Tube Socket Weld							
T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							
		L	C	G	F	B	E	Lx	J
1/8	-LW-FL2-TS2	16.8	12.7	11.1	9.5	2.5	2.3	16.0	9.7
3/16	-LW-FL3-TS3	18.3	13.7	12.7	11.1	4.8	3.3	17.5	11.2
1/4	-LW-FL4-TS4	26.9	15.2	14.3	12.7	7.1	4.8	19.6	12.7
3/8	-LW-FL6-TS6	30.5	16.8	17.5	15.9	7.9	7.1	23.1	15.7
1/2	-LW-FL8-TS8	36.1	22.9	22.2	20.6	9.7	10.4	25.9	20.6
5/8	-LW-FL10-TS10	29.5	24.4	25.4	27.0	10.4	12.7	29.5	23.9
3/4	-LW-FL12-TS12	39.9	24.4	28.6	27.0	11.2	15.7	29.7	26.9
1	-LW-FL16-TS16	49.0	31.2	38.1	34.9	15.7	22.4	36.8	35.1

Weld Elbows



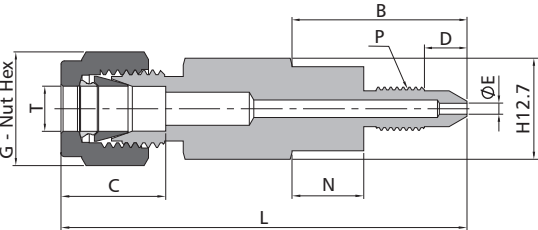
Fractional Tube			Pipe Butt Weld							
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimension, mm							
			L	C	G	F	B	E	Lx	J
1/8	1/8	-LW-FL2-PB2	23.4	12.7	11.1	11.1	9.7	2.3	18.3	10.3
3/16	1/8	-LW-FL3-PB2	25.7	13.7	12.7	12.7	9.7	3.3	18.8	10.3
1/4	1/8	-LW-FL4-PB2	26.9	15.2	14.3	12.7	9.7	4.8	18.8	10.3
1/4	1/4	-LW-FL4-PB4	26.9	15.2	14.3	12.7	14.2	4.8	23.4	13.7
3/8	1/4	-LW-FL6-PB4	30.5	16.8	17.5	15.9	14.2	7.1	25.4	13.7
1/2	3/8	-LW-FL8-PB6	34.8	22.9	22.2	19.1	14.2	10.4	28.8	17.1
1/2	1/2	-LW-FL8-PB8	36.1	22.9	22.2	20.6	19.1	10.4	33.0	21.3
5/8	1/2	-LW-FL10-PB8	36.3	24.4	25.4	23.8	19.1	12.7	35.1	21.3
3/4	3/4	-LW-FL12-PB12	39.9	24.4	28.6	27.0	19.1	15.7	36.8	26.7
1	3/4	-LW-FL16-PB12	49.3	31.2	38.1	34.9	19.1	22.4	41.9	26.7
1	1	-LW-FL16-PB16	49.3	31.2	38.1	34.9	20.6	22.4	46.7	33.4

Automatic Tube Weld Connectors



Fractional Tube			Automatic Tube Weld							
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm							
			L	C	G	F	B	E	Bx	J
1/4	1/4	-CW-FL4-TB4A	44.2	15.2	14.3	12.7	19.1	4.5	0.5	7.4
3/8	3/8	-CW-FL6-TB6A	46.7	16.8	17.5	15.9	19.1	7.8	0.8	10.4
1/2	1/2	-CW-FL8-TB8A	50.5	22.9	22.2	20.6	19.1	10.4	1.0	14.0

Calibration Fittings



- ⦿ The calibration fittings can be connected directly with the bleed port of the transmitter so that the calibration process can be simplified.
- ⦿ Two types are available to fit the bleed ports of the transmitters.

T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm							Transmitter Type
			L	B	C	D	E	G	N	
1/4	1/4-28	-FC-FL4-1428	42.9	19.8	15.2	10.9	1.5	14.3	-	Honeywell
1/4	5/16-24	-FC-FL4-51624	58.9	35.8	15.2	10.2	1.5	14.3	10.4	Rosemount/Foxboro

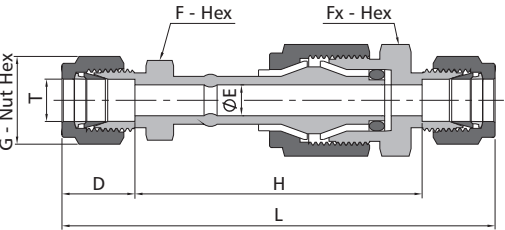
Dielectric Fittings

Materials

component	Material
Insulator	Polyamide-imide
O-Ring	70 Durometer FKM
Backup Ring	Virgin PTFE

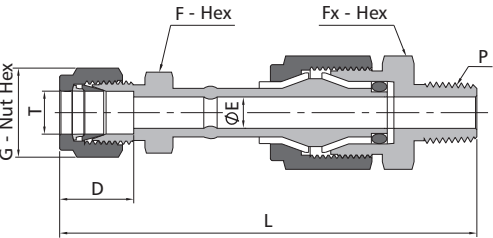
Technical Date

- ⦿ Electrical resistance of insulators: $7 \times 10^8 \Omega$ at 10 volts DC at 70°F (21°C) and 50% relative humidity, $10 \times 10^6 \Omega$ at 10 volts DC at 100°F (38°C) and 90% relative humidity.
- ⦿ Maximum working pressure: 5000 psig (344 bar) at 70°F (21°C).
- ⦿ Temperature range: -40°F (-40°C) to 200°F (93°C).



Fractional Tube		Dimension, mm						
T-Tube O.D. (in.)	Basic Ordering Number	L	D	G	H	E	F	Fx
1/4	-DF-FL4	95.7	15.2	14.3	65.3	4.8	12.7	20.6
3/8	-DF-FL6	99.6	16.8	17.5	65.8	7.1	15.9	20.6
1/2	-DF-FL8	106	22.9	22.2	60.2	7.1	20.6	20.6

Metric Tube		Dimension, mm						
T-Tube O.D. (mm)	Basic Ordering Number	L	D	G	H	E	F	Fx
12	-DF-ML12	107	22.8	22	61.7	7.1	22	22



Fractional Tube			NPT Thread					
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					
			L	D	G	E	F	Fx
3/8	1/4	-DF-FL6-NS4	94.7	16.8	17.5	7.1	15.9	22.2

RS Gaskets



The RS gasket provides a seal with male ISO parallel threads. The gasket consists of a fluorocarbon FKM or Buna inner ring bonded to a carbon steel or stainless steel outer ring.

ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
1/8	-RS-2	16.0	10.4	2.0
1/4	-RS-4	20.6	13.7	
3/8	-RS-6	23.9	17.3	
1/2	-RS-8	28.7	21.6	2.5
3/4	-RS-12	35.1	26.9	
1	-RS-16	42.9	33.8	

Metric Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
M8 x 1	-RS-M8	13	8.7	1.0
M10 x 1	-RS-M10	16	10.7	1.5
M12 x 1.5	-RS-M12	18	12.7	
M14 x 1.5	-RS-M14	22	14.7	
M16 x 1.5	-RS-M16	24	16.7	
M18 x 1.5	-RS-M18	26	18.7	
M20 x 1.5	-RS-M20	28	20.7	
M22 x 1.5	-RS-M22	30	22.7	2.0
M24 x 1.5	-RS-M24	32	24.7	
M27 x 2	-RS-M27	36	27.2	
M30 x 2	-RS-M30	39	30.7	
M33 x 2	-RS-M33	42	33.7	2.5
M36 x 2	-RS-M36	48	37.0	
M39 x 2	-RS-M39	51	40.0	
M42 x 2	-RS-M42	53	42.7	3.0
M45 x 2	-RS-M45	57	46.0	
M48 x 2	-RS-M48	59	48.7	

Ordering Information

Add the material designator as a prefix to the basic ordering number to complete the ordering number.

Ring		Designator
Outer	Inner	
Stainless Steel	FKM	SSF
Carbon Steel	FKM	CSF
	Buna-N	CSB

Example:

A RS gasket with a Buna inner ring bonded to carbon steel outer ring provides a seal with 1/8 male ISO parallel thread, the complete ordering number is **CSB-RS-2**.

RS gasket can be used with RS fitting only.

RP Gaskets



The RP gasket provides a seal with male ISO parallel threads. *The RP gasket may be used with a RS fitting.*

ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
1/8	-RP-2	15.0	9.9	1.0
1/4	-RP-4	19.1	13.2	1.5
3/8	-RP-6	23.1	16.8	
1/2	-RP-8	26.9	21.1	2.0
3/4	-RP-12	33.0	26.7	
1	-RP-16	40.1	33.2	

Metric Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
M8 x 1	-RP-M8	13.2	8.2	1.5
M10 x 1	-RP-M10	15.2	10.2	
M12 x 1.5	-RP-M12	18.2	12.2	2.0
M14 x 1.5	-RP-M14	20.2	14.2	
M16 x 1.5	-RP-M16	22.2	16.2	
M18 x 1.5	-RP-M18	24.2	18.2	
M20 x 1.5	-RP-M20	26.2	20.2	
M22 x 1.5	-RP-M22	28.2	22.2	
M24 x 1.5	-RP-M24	30.2	24.2	2.5
M27 x 2	-RP-M27	33.3	27.2	
M30 x 2	-RP-M30	37.3	30.2	
M33 x 2	-RP-M33	40.3	33.2	
M36 x 2	-RP-M36	43.3	36.2	
M39 x 2	-RP-M39	47.3	39.2	
M42 x 2	-RP-M42	50.3	42.2	
M45 x 2	-RP-M45	53.3	45.2	
M48 x 2	-RP-M48	56.3	48.2	

RG Gaskets

The RG gasket provides a seal on pressure gauges equipped with male ISO parallel threads.

ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
1/4	-RG-4	10.7	7.6	1.8
3/8	-RG-6	14.2	8.6	2.3
1/2	-RG-8	17.8	9.1	2.5

RG Gaskets

Metric Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
M10 x 1	-RG-M10	8.3	3.3	1.5
M12 x 1.5	-RG-M12	9.7	5.4	2.0
M14 x 1.5	-RG-M14	11.7	6.4	
M16 x 1.5	-RG-M16	13.7	8.4	
M18 x 1.5	-RG-M18	15.7	10.0	
M20 x 1.5	-RG-M20	17.6	11.4	
M22 x 1.5	-RG-M22	19.6	13.4	
M24 x 1.5	-RG-M24	21.6	14.8	2.5
M27 x 2	-RG-M27	24.0	13.9	
M30 x 2	-RG-M30	27.0	19.5	
M33 x 2	-RG-M33	30.0	21.5	
M36 x 2	-RG-M36	33.0	23.5	
M39 x 2	-RG-M39	36.0	24.5	
M42 x 2	-RG-M42	38.9	29.5	
M45 x 2	-RG-M45	41.9	30.0	
M48 x 2	-RG-M48	44.9	32.5	

RJ Gaskets

The RJ gasket provides a seal on Japanese pressure gauges equipped with male ISO parallel threads.

ISO Parallel Thread Size	Basic Ordering Number	Dimension, mm		
		T	E	H
1/4	-RJ-4	10.9	5.6	1.0
3/8	-RJ-6	13.9	5.6	1.0
1/2	-RJ-8	17.8	5.6	1.0

Ordering Information

Add the material designator as a prefix to the basic ordering number to complete the ordering number.

Material	Designator
Copper	CU
316L SS	6L
Vulcanized Fibre	QB
PTFE	T

Example:

CU-RP-2, 6L-RG-6, QB-RG-M20, T-RJ-8.

O-Rings



O-Rings for Fittings with SAE/MS Straight Threads

SAE/MS Thread Size	Ordering Number	Material
5/16-24	VI9-902	90 Durometer Fluorocarbon FKM
3/8-24	VI9-903	
7/16-20	VI9-904	
1/2-20	VI9-905	
9/16-18	VI9-906	
3/4-16	VI9-908	
7/8-14	VI9-910	
1 1/16-12	VI9-912	
1 3/16-12	VI9-914	
1 5/16-12	VI9-916	
1 5/8-12	VI9-920	
1 7/8-12	VI9-924	

O-Rings for Fittings with O-Seal Pipe Threads

NPT/ISO Thread Size	Ordering Number	Material
1/8	BN7-013	70 Durometer NBR
1/4	BN7-113	
3/8	BN7-116	
1/2	BN7-118	

O-Rings for Adjustable Fittings with ISO Parallel Threads

ISO Parallel Thread Size	Ordering Number	Material
1/8	VI9-502	90 Durometer Fluorocarbon FKM
1/4	VI9-111	
3/8	VI9-113	
1/2	VI9-508	
3/4	VI9-119	
1	VI9-217	

O-Rings for Fittings with O-Seal Straight Threads

SAE/MS Thread Size	Ordering Number	Material
5/16-24	BN7-011	70 Durometer NBR
3/8-24	BN7-012	
7/16-20	BN7-013	
1/2-20	BN7-112	
9/16-18	BN7-113	
3/4-16	BN7-116	
1 1/16-12	BN7-121	
1 5/16-12	BN7-125	

O-Rings for Fittings with Metric Threads

Metric Thread Size	Ordering Number	Material
M14 x 1.5	BN9-M14	90 Durometer NBR
M20 x 1.5	BN9-M20	

Ordering Information

SS – CM – ML12 – NS8 – □ – □ – S – □

Material

SS	316 SS
S4	304 SS
S1	321 SS
A20	Alloy 20
M	Alloy 400
INC	Alloy 600
A65	Alloy 625
HC	Alloy C-276
AL	Aluminum
B	Brass
CS	Carbon Steel
D5	Duplex 2205
D7	Duplex 2507
T	PTFE
Ti	Titanium
PA	Nylon
904L	904L SS

Fitting Type

CM	Male Connector
BCM	Bulkhead Male Connector
TCM	Thermocouple Connector
CF	Female Connector
BCF	Bulkhead Female Connector
U	Union
BU	Bulkhead Union
LM	Male Elbow
VM	45° Male Elbow
LP	Positionable Male Elbow
LF	Female Elbow
LU	Union Elbow
TMT	Male Run Tee
TTM	Male Branch Tee
TPT	Positionable Male Run Tee
TTP	Positionable Male Branch Tee
TFT	Female Run Tee
TTF	Female Branch Tee
TTT	Union Tee
C	Union Cross
TC	Cap
TP	Plug
R	Reducer
P	Port Connector
AM	Male Adapter
AF	Female Adapter
CW	Weld Connector
LW	Weld Elbow
DF	Dielectric Fitting

P1 Type

ML	Metric Ferrule
FL	Fractional Ferrule
MT	Metric Tube
FT	Fractional Tube

P1 Size

1	1/16"
2	1/8" or 2 mm
3	3/16" or 3 mm
4	1/4" or 4 mm
5	5/16"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	5/8" or 10 mm
12	3/4" or 12 mm
14	7/8" or 14 mm
15	15 mm
16	1" or 16 mm
18	1 1/8" or 18mm
20	1 1/4" or 20mm
22	22 mm
24	1 1/2" or 24mm
25	25 mm
28	28 mm
30	30 mm
32	2" or 32 mm
38	38 mm
50	50 mm

P2 Type

Except the same as the P1, the other type follows:

NS	NPT Thread
ONS	O-ring with NPT Thread
RT	ISO Tapered Thread
RS	ISO Parallel Thread
RP	ISO Parallel Thread
RG	ISO Parallel Thread (Gauge)
RJ	ISO Parallel Thread (Japanese Gauge)
PP	Positionable, ISO Parallel Thread
ST	SAE/MS Straight Thread
OST	O-ring with SAE/MS Straight Thread
AN	37° Flare
MS	Male Metric Thread
MG	Female Metric Thread
TS	Fractional Tube Socket Weld
PB	Pipe Butt Weld

P2 Size

Except the same as the P1, the other size follows:

5	M5 x 0.8 or 5/16-24
6	M6 x 1 or 3/8-24
7	7/16-20
8	M8 x 1 or 1/2-20
9	9/16-18
10	M10 x 1
12	M12 x 1.5 or 3/4-16
14	M14 x 1.5 or 7/8-14
16	M16 x 1.5
17	1 1/16-12
18	M18 x 1.5
19	1 3/16-12
20	M20 x 1.5
21	1 5/16-12
22	M22 x 1.5
24	M24 x 1.5
26	1 5/8-12
27	M27 x 2
30	1 7/8-12

P3 and P4

Specify in the same way as the P2

NO	NO
S	NACE MR0175
	Classification for Nuclear Facility Application
N2	Class 2
N3	Class 3

Special Application

NO	NO
S	NACE MR0175
	Classification for Nuclear Facility Application
N2	Class 2
N3	Class 3

Cleaning and Packaging

FC-01	FC-01
F2	FC-02

P4

P2

P1

P3

P1, P2, P3 and P4 shall be described in the following orders:

- ⦿ Ferrule - Tube - NPT Thread - ISO Tapered Thread - ISO Parallel Thread - SAE/MS Straight Thread - 37° Flare - Pipe Butt Weld - Fractional Tube Socket Weld - Others
- ⦿ Describe in descending order as per size if the end connection types are the same
- ⦿ Describe the end of P1 if all end connections are the same

Cleaning and Packaging :

FC-01 : Standard cleaning and packaging for general industrial procedures.

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

