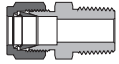


# 6 Series Tube Fittings



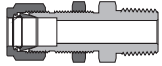
# Contents

## Male Connectors - CM



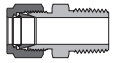
A-14

## Bulkhead Male Connectors - BCM



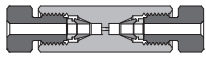
A-26

## Thermocouple Connectors - TCM



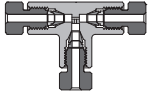
A-27

## Chromatograph Fittings - U



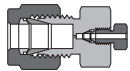
A-28

## Chromatograph Fittings - TTT



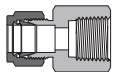
A-28

## Column End Fittings - U



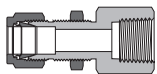
A-29

## Female Connectors - CF



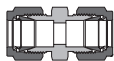
A-29

## Bulkhead Female Connectors - BCF



A-34

## Unions - U



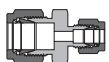
A-35

## Conversion Unions - U



A-36

## Reducing Unions - U



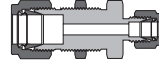
A-37

## Bulkhead Unions - BU



A-38

## Bulkhead Reducing Unions - BU



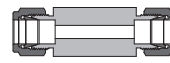
A-38

## Bulkhead Conversion Unions - BU



A-39

## Weld Bulkhead Unions - BU



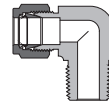
A-40

## Bulkhead Locknuts - BN



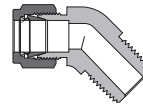
A-40

## Male Elbows - LM



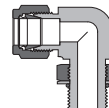
A-41

## 45° Male Elbows - VM



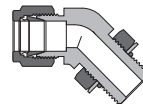
A-44

## Adjustable Male Elbows - LP



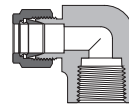
A-45

## 45° Adjustable Male Elbows - VP



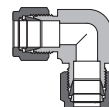
A-47

## Female Elbows - LF



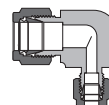
A-48

## Union Elbows - LU



A-49

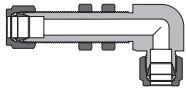
## Union Reducing Elbows - LU



A-50

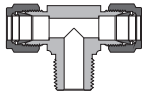
# Contents

Bulkhead Union Elbows - BBLU



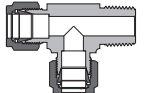
A-51

Male Branch Tees - TTM



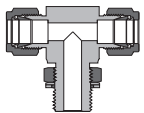
A-52

Male Run Tees - TMT



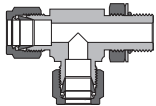
A-53

Adjustable Male Branch Tees - TTP



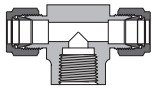
A-54

Adjustable Male Run Tees - TPT



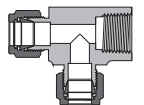
A-55

Female Branch Tees - TTF



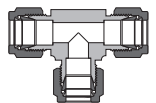
A-56

Female Run Tees - TFT



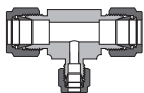
A-57

Union Tees - TTT



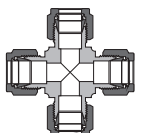
A-58

Reducing Union Tees - TTT



A-59

Union Crosses - C



A-61

Caps - TC



A-61

Plugs - TP



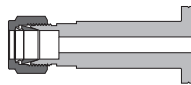
A-62

Vent Protectors - VPF



A-62

Lapped Flange Connectors - LFC



A-62

Nuts - N



A-63

Knurled Nuts



A-63

Male Nuts - MN



A-63

Front Ferrules - FF



A-64

Rear Ferrules - RF



A-64

Nuts + Ferrules - NFR



A-64

Nuts - Ferrule Sets - NFS



A-65

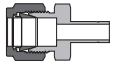
Ferrule Sets - FRS



A-65

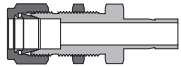
# Contents

## Reducers - R



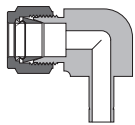
A-66

## Bulkhead Reducers - BR



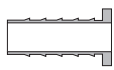
A-68

## Reducer Elbows - LR



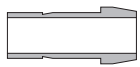
A-68

## Insert for Soft Plastic Tubings - IN



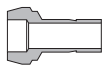
A-69

## Port Connectors - P



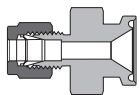
A-69

## Reducing Port Connectors - P



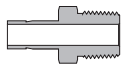
A-70

## Sanitary Flange Fittings - SFF



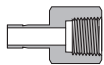
A-71

## Male Adapters - AM



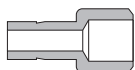
A-72

## Female Adapters - AF



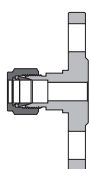
A-77

## Weld Adapters - AW



A-80

## Flange Adapters - FA



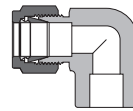
A-81

## Weld Connectors - CW



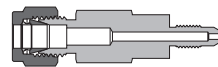
A-83

## Weld Elbows - LW



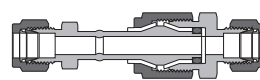
A-84

## Calibration Fittings - FC



A-85

## Dielectric Fittings - DF



A-86

## RS, RSD Gaskets - RS, RSD



A-87

## RP Gaskets - RP



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## RG Gaskets - RG

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## RJ Gaskets - RJ

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## O-rings - VI, BN



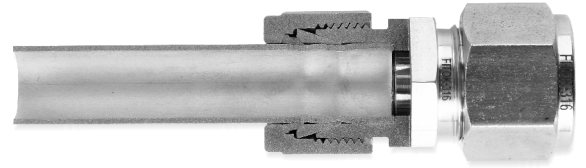
A-89

## Ordering Number Description

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## Features

- ⦿ Sizes range from 1/16" to 2" and 2 mm to 50 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 for elbows provides smooth flow path
- ⦿ Every fitting is marked with size, material and heat number
- ⦿ Fittings are easy to disconnect and retighten
- ⦿ 1/8" to 5/8", 3 mm to 16 mm fittings available with EC-79 certification



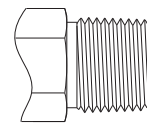
## Technical Data

### ⦿ Thread Ends

#### NPT Threads (NPT)

- ⦿ Comply with ASME B1.20.1, SAE AS71051.

Thread Data						
Thread Size	Thread/in.	Dia. at Reference Plane (mm)			Handtight Engagement	
		Max. Dia.	Pitch Dia.	Min. Dia.	(mm)	Threads
1/16	27	7.894	7.142	6.389	4.064	4.32
1/8		10.242	9.489	8.737	4.102	4.36
1/4	18	13.616	12.487	11.358	5.785	4.10
3/8		17.055	15.926	14.797	6.096	4.32
1/2	14	21.224	19.772	18.321	8.128	4.48
3/4		26.569	25.117	23.666	8.618	4.75
1	11.5	33.228	31.461	29.694	10.160	4.60
1 1/4		41.985	40.218	38.451	10.668	4.83
1 1/2		48.054	46.287	44.520	10.668	4.83
2		60.092	58.325	56.558	11.065	5.01



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

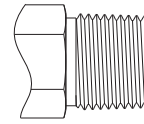
Working Pressures of NPT Thread Ends								
Thread Size	316 Stainless Steel and Carbon Steel				Brass			
	Male		Female		Male		Female	
	psig	bar	psig	bar	psig	bar	psig	bar
1/16	11000	757	6700	460	5500	378	3300	227
1/8	10000	690	6500	447	5000	344	3200	220
1/4	8000	551	6600	454	4000	275	3300	227
3/8	7800	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.

Thread Data						
Thread Size	Thread/in.	Dia. at Reference Plane (mm)			Gauge Length	
		Max. Dia.	Pitch Dia.	Min. Dia.	(mm)	Threads
1/16	28	7.723	7.142	6.561	4.0	4.4
1/8		9.728	9.147	8.566	4.0	4.4
1/4	19	13.157	12.301	11.445	6.0	4.5
3/8		16.662	15.806	14.950	6.4	4.8
1/2	14	20.955	19.793	18.631	8.2	4.5
3/4		26.441	25.279	24.117	9.5	5.2
1	11	33.249	31.770	30.291	10.4	4.5
1 1/4		41.910	40.431	38.952	12.7	5.5
1 1/2		47.803	46.324	44.845	12.7	5.5
2		59.614	58.135	56.656	15.9	6.9



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

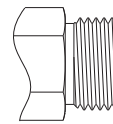
### Working Pressures of ISO Tapered Thread Ends

The working pressures of ISO tapered thread ends are the same as 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.

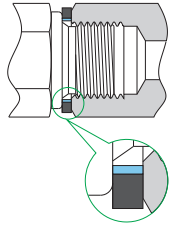
Thread Data				
Thread Size	Thread/in.	Basic Dia. (mm)		
		Max. Dia.	Pitch Dia.	Min. Dia.
1/16	28	7.723	7.142	6.561
1/8		9.728	9.147	8.566
1/4	19	13.157	12.301	11.445
3/8		16.662	15.806	14.950
1/2	14	20.955	19.793	18.631
5/8		22.911	21.749	20.587
3/4		26.441	25.279	24.117
7/8		30.201	29.039	27.877
1	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

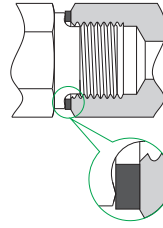
**Types of Sealing for ISO Parallel Threads**

**1. RS Stud End, RS Gasket and RP Port**



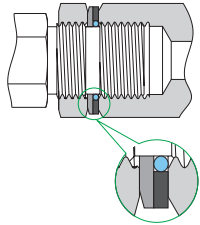
- RS stud end complies with DIN 3852-2 type A
- For RS gasket, see page A-87
- RP port complies with DIN 3852-2 type X

**2. RP Stud End, RP Gasket and RP Port**



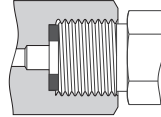
- RP stud end complies with DIN 3852-2 type B
- For RP gasket, see page A-87
- RP port complies with DIN 3852-2 type X

**3. PP Stud End and RP Port**



- PP Stud end complies with ISO 1179-3
- RP port complies with DIN 3852-2 type X

**4. RG Port, RG Gasket and BP Stud End**



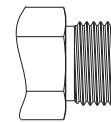
- RG port complies with EN 837-1/3
- For RG gasket, see page A-88

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.

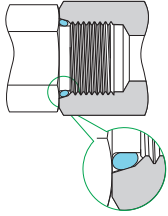
Thread Data				
Thread Size	Thread/ in.	Basic Dia. (mm)		
		Max. Dia.	Pitch Dia.	Min. Dia.
5/16-24	24	7.938	7.249	6.792
3/8-24	24	9.525	8.837	8.380
7/16-20	20	11.113	10.287	9.738
1/2-20	20	12.700	11.875	11.326
9/16-18	18	14.288	13.325	12.761
3/4-16	16	19.050	18.019	17.330
7/8-14	14	22.225	21.046	20.262
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

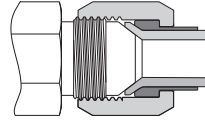
## Types of Sealing for SAE/MS Threads

## 1. ST Stud End and SAE J1926-1 Port



- ST stud end complies with SAE J1926-3
- For O-ring, see page A-89

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



- The type of sealing complies with SAE J514
- Pressures refer to 37° Flared Tube Fittings Catalog

## 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	5075	350	5075	350		
3/8-24			4568	315		
7/16-20					4060	280
1/2-20						
9/16-18			3626	250	3045	210
3/4-16	3045	210			2538	175
7/8-14			2538	175	2030	140
1 1/16-12					2030	140
1 3/16-12						
1 5/16-12						
1 5/8-12						
1 7/8-12						
2 1/2-12						

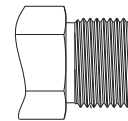
Working pressures are based on SAE J1926-3 at ambient temperature.

## 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

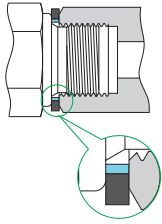


- 60° thread angle
- Pitch measured in mm
- Truncation of root and crest are parallel



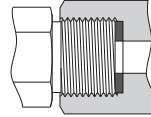
**Types of Sealing for Metric Threads**

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



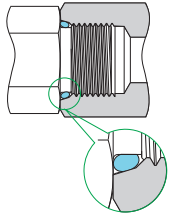
- MRS stud end complies with DIN 3852-1 type A
- For RS-M gasket, see page A-87

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



- For RG-M gasket, see page A-88

**3. MST Stud End and ISO 6149-1 Port**



- MST stud end complies with ISO 6149-3
- For O-ring, see page A-89

**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				
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**

**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	-13°F (-25°C)	230°F (110°C)
	Fluorocarbon FKM	5°F (-15°C)	400°F (204°C)
RP/RG Gasket	Copper	-325°F (-198°C)	400°F (204°C)
	Stainless Steel	-425°F (-254°C)	1000°F (538°C)
RG Gasket	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 determined by the maximum working pressure of the FITOK Tubing that is used. Refer to *Tubing* on F-02.
- ⦿ The maximum working pressures of the thread ends at ambient temperature are stated as above.
- ⦿ To get the maximum working pressure at elevated temperature, use the maximum working pressure at ambient temperature to multiply the factors in the table of Elevated Temperature Factors on F-14.
- ⦿ The maximum working pressure of the whole fitting is determined by the end connection with the lowest pressure rating.

## Materials

Material	Bar Stock	Forging	Designator
<b>316 stainless steel</b>	ASTM A479, ASME SA479, EN 1.4401	ASTM A182, ASME SA182, EN 1.4401	SS
316L stainless steel	ASTM A479, ASME SA479, EN 1.4404	ASTM A182, ASME SA182, EN 1.4404	6L
304 stainless steel	ASTM A479, ASME SA479, EN 1.4301	ASTM A182, ASME SA182, EN 1.4301	S4
321 stainless steel	ASTM A479, ASME SA479, EN 1.4541	ASTM A182, ASME SA182, EN 1.4541	S1
316Ti stainless steel	ASTM A479, ASME SA479, EN 1.4571	ASTM A182, ASME SA182, EN 1.4571	6T
<b>6Mo (S31254)</b>	ASTM A479	ASTM A182	S12
904L stainless steel	ASTM A479	ASTM A182	904L
Titanium (grade 4)	ASTM B348	ASTM B381	TI
Duplex 2205	ASTM A479	ASTM A182	D5
<b>Super duplex 2507</b>	ASTM A479	ASTM A182	D7
Alloy 20	ASTM A479	ASTM B462	A20
<b>Alloy 400</b>	ASTM B164, ASME SB164	ASTM B564, ASME SB564	M
Alloy 600	ASTM B166, ASME SB166	ASTM B564, ASME SB564	INC
<b>Alloy 625</b>	ASTM B446	ASTM B564, ASME SB564	A65
Alloy 718	ASTM B637	ASTM B637	A78
<b>Alloy 825</b>	ASTM B425	ASTM B564	A85
<b>Alloy C-276</b>	ASTM B574	ASTM B564	HC
Carbon steel	ASTM A108	ASTM A105	CS
<b>Brass</b>	ASTM B16/B453	ASTM B283	B
Nylon	ASTM D4066	/	PA
PTFE	ASTM D1710	/	T

Note: Normal materials in boldface letter can be supplied rapidly; other materials need make to order, for lead time please contact FITOK Group.

## Installation Instructions

### FITOK Tube Fittings up to 1" or 25 mm

#### Manual Installation

##### Initial installation

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 the body of the fitting or the valve steady (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).

##### Re-installation

1. Mark the tube at the back of the nut, mark a line along the nut and fitting body flats.
2. Insert tubing with preset ferrules into the fitting body until the front ferrule seats.
3. Hold the fitting body steady, then rotate the nut with a wrench to the previous pulled-up position as indicated by the marks on the tube and the flats.
4. Tighten the nut slightly with wrench.

#### Installation with Manual Presetting Tool

##### Initial installation

1. Hold the presetting tool steady.
2. Install the nut and ferrules onto the presetting tool.
3. Insert tubing into the presetting tool, and make sure the tube rests firmly on the shoulder of the presetting tool.
4. Finger-tighten the nut.
5. Tighten the nut clockwise 1 1/4 turns with wrench (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).
6. Loosen the nut and insert the tubing with preset ferrules into the fitting body until the front ferrule seats against the fitting body .
7. Tighten the nut with wrench. When you feel a significant increase in resistance, further tighten the nut slightly.

##### Re-installation

Same as the re-installation steps for manual installation for fittings up to 1" or 25 mm.

#### Installation with Hydraulic Presetting Tool

Only applicable for tube fittings from 1/2" to 1" and 12 mm - 25 mm.

##### Initial installation

1. Preset the ferrules onto the tubing using FITOK Hydraulic Presetting Tool. For details, refer to Instructions of Hydraulic Presetting Tool.
2. Install the preset assembly (tubing, nut, front and back ferrules) into the fitting body. Finger tight the nut.
3. Further tighten the nut 1/2 turn with a wrench while holding the fitting body steady.

##### Re-installation

Same as the re-installation steps for manual installation for fittings up to 1" or 25 mm.

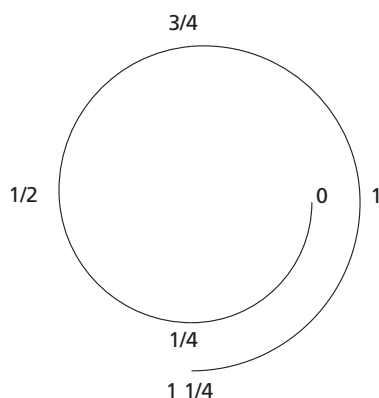


Fig.1

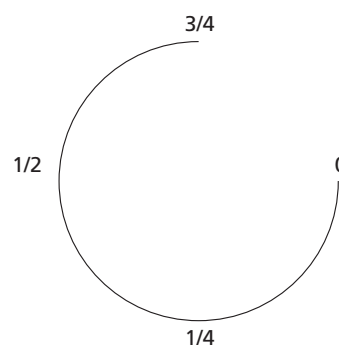


Fig.2

## FITOK Tube Fittings over 1" or 25 mm

### Initial installation

1. Preset the ferrules onto the tubing using FITOK Hydraulic Presetting Tool. For details, refer to Instructions of Hydraulic Presetting Tool.
2. Install the preset assembly (tubing, nut, front and back ferrules) into the fitting body. Finger tight the nut.
3. Further tighten the nut 1/2 turn with a wrench while holding the fitting body steady.

### Re-installation

Same as the re-installation steps for manual installation for fittings up to 1" or 25 mm.

## Plugs

### Initial installation

Tighten the plug 1/4 turn from finger-tight position with wrench while holding the body of the fitting steady. 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.

### Re-installation

Tighten the plug slightly with wrench from finger-tight position.

## Port Connectors

The initial installation and re-installation for the tube end is the same as those of tube fittings and the non-tube end same as those of the plug.

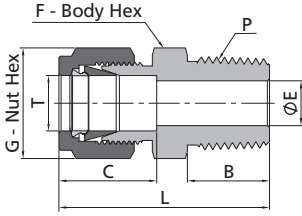
## Cautions:

1. Do not loosen or tighten fittings when the system is pressurized.
2. Make sure that the tubing rests firmly on the shoulder of the port.
3. Always leave enough straight length of the tubing for the fittings.
4. Always use an insert for extremely soft plastic tubing.
5. 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.
6. 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 FITOK Group or our authorized distributors for related information.
7. Keep the tubing end and surface clean and smooth.
8. Always use proper thread sealants on tapered pipe threads. Make sure that its working temperature does not exceed that of the sealants.
9. When assembling the tube fitting, hold the body with a wrench and turn the nut instead of holding the nut.
10. When installing a valve with tube fitting end, hold the valve body with a wrench and turn the nut.
11. When assembling the fitting to a valve with thread, hold the valve body with a wrench and turn the body of the fitting.
12. Gap Inspection Gauge is ONLY accurate for initial installation by manual operation.

## Dimensions

Dimensions are for reference only and are subject to change; Dimensions are shown with FITOK nuts finger-tight.

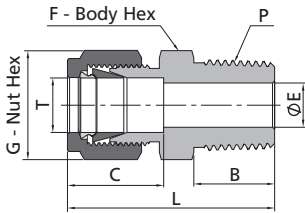
### Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

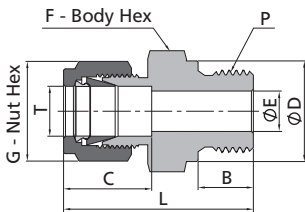
Fractional Tube			NPT Thread					
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	C	E	G	F
1/16	1/16	-CM-FL1-NS1	0.94(23.9)	0.38(9.7)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.31(7.9)
1/16	1/8	-CM-FL1-NS2	1.03(26.2)	0.38(9.7)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)
1/16	1/4	-CM-FL1-NS4	1.22(31.0)	0.56(14.2)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.56(14.3)
1/8	1/16	-CM-FL2-NS1	1.17(29.7)	0.38(9.7)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.44(11.1)
1/8	1/8	-CM-FL2-NS2	1.20(30.5)	0.38(9.7)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.44(11.1)
1/8	1/4	-CM-FL2-NS4	1.40(35.6)	0.56(14.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)
1/8	3/8	-CM-FL2-NS6	1.41(35.8)	0.56(14.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.69(17.5)
1/8	1/2	-CM-FL2-NS8	1.66(42.2)	0.75(19.1)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.87(22.2)
3/16	1/16	-CM-FL3-NS1	1.23(31.2)	0.38(9.7)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.44(11.1)
3/16	1/8	-CM-FL3-NS2	1.23(31.2)	0.38(9.7)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.44(11.1)
3/16	1/4	-CM-FL3-NS4	1.43(36.3)	0.56(14.2)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)
1/4	1/16	-CM-FL4-NS1	1.29(32.8)	0.38(9.7)	0.60(15.2)	0.12(3.0)	0.56(14.3)	0.50(12.7)
1/4	1/8	-CM-FL4-NS2	1.29(32.8)	0.38(9.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.50(12.7)
1/4	1/4	-CM-FL4-NS4	1.49(37.8)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)
1/4	3/8	-CM-FL4-NS6	1.51(38.4)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.69(17.5)
1/4	1/2	-CM-FL4-NS8	1.76(44.7)	0.75(19.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)
1/4	3/4	-CM-FL4-NS12	1.82(46.2)	0.75(19.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)
5/16	1/8	-CM-FL5-NS2	1.34(34.0)	0.38(9.7)	0.64(16.3)	0.19(4.8)	0.63(15.9)	0.56(14.3)
5/16	1/4	-CM-FL5-NS4	1.52(38.6)	0.38(9.7)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.56(14.3)
5/16	3/8	-CM-FL5-NS6	1.54(39.1)	0.56(14.2)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.69(17.5)
5/16	1/2	-CM-FL5-NS8	1.79(45.5)	0.75(19.1)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.87(22.2)
3/8	1/8	-CM-FL6-NS2	1.39(35.3)	0.38(9.7)	0.66(16.8)	0.19(4.8)	0.69(17.5)	0.63(15.9)
3/8	1/4	-CM-FL6-NS4	1.57(39.9)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)
3/8	3/8	-CM-FL6-NS6	1.57(39.9)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.69(17.5)
3/8	1/2	-CM-FL6-NS8	1.82(46.2)	0.75(19.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)
3/8	3/4	-CM-FL6-NS12	1.88(47.8)	0.75(19.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)
3/8	1	-CM-FL6-NS16	2.14(54.4)	0.94(23.9)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.37(34.9)
1/2	1/8	-CM-FL8-NS2	1.53(38.9)	0.38(9.7)	0.90(22.9)	0.19(4.8)	0.87(22.2)	0.81(20.6)
1/2	1/4	-CM-FL8-NS4	1.71(43.4)	0.56(14.2)	0.90(22.9)	0.28(7.1)	0.87(22.2)	0.81(20.6)
1/2	3/8	-CM-FL8-NS6	1.71(43.4)	0.56(14.2)	0.90(22.9)	0.38(9.7)	0.87(22.2)	0.81(20.6)
1/2	1/2	-CM-FL8-NS8	1.93(49.0)	0.75(19.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)
1/2	3/4	-CM-FL8-NS12	1.99(50.5)	0.75(19.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)
1/2	1	-CM-FL8-NS16	2.25(57.2)	0.94(23.9)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.37(34.9)
5/8	1/4	-CM-FL10-NS4	1.74(44.2)	0.56(14.2)	0.96(24.4)	0.28(7.1)	1.00(25.4)	0.94(23.8)
5/8	3/8	-CM-FL10-NS6	1.74(44.2)	0.56(14.2)	0.96(24.4)	0.38(9.7)	1.00(25.4)	0.94(23.8)
5/8	1/2	-CM-FL10-NS8	1.93(49.0)	0.75(19.1)	0.96(24.4)	0.47(11.9)	1.00(25.4)	0.94(23.8)
5/8	3/4	-CM-FL10-NS12	1.99(50.5)	0.75(19.1)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.06(27.0)
3/4	3/8	-CM-FL12-NS6	1.80(45.7)	0.56(14.2)	0.96(24.4)	0.41(10.4)	1.13(28.6)	1.06(27.0)
3/4	1/2	-CM-FL12-NS8	1.99(50.5)	0.75(19.1)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.06(27.0)
3/4	3/4	-CM-FL12-NS12	1.99(50.5)	0.75(19.1)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)
3/4	1	-CM-FL12-NS16	2.25(57.2)	0.94(23.9)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.37(34.9)
7/8	1/2	-CM-FL14-NS8	1.99(50.5)	0.75(19.1)	1.02(25.9)	0.47(11.9)	1.25(31.8)	1.19(30.2)
7/8	3/4	-CM-FL14-NS12	1.99(50.5)	0.75(19.1)	1.02(25.9)	0.62(15.7)	1.25(31.8)	1.19(30.2)
7/8	1	-CM-FL14-NS16	2.25(57.2)	0.94(23.9)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.37(34.9)
1	1/2	-CM-FL16-NS8	2.26(57.4)	0.75(19.1)	1.23(31.2)	0.47(11.9)	1.50(38.1)	1.37(34.9)
1	3/4	-CM-FL16-NS12	2.26(57.4)	0.75(19.1)	1.23(31.2)	0.62(15.7)	1.50(38.1)	1.37(34.9)
1	1	-CM-FL16-NS16	2.45(62.2)	0.94(23.9)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.37(34.9)
1 1/8	1	-CM-FL18-NS16	2.45(62.2)	0.94(23.9)	1.44(36.7)	0.88(22.4)	1.75(44.5)	1.63(41.3)
1 1/4	1	-CM-FL20-NS16	3.04(77.2)	0.94(23.9)	1.62(41.1)	0.88(22.4)	1.87(47.6)	1.75(44.5)
1 1/4	1 1/4	-CM-FL20-NS20	3.04(77.2)	0.94(23.9)	1.62(41.1)	1.09(27.7)	1.87(47.6)	1.75(44.5)
1 1/2	1 1/2	-CM-FL24-NS24	3.50(88.9)	1.03(26.2)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.13(54.0)

Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

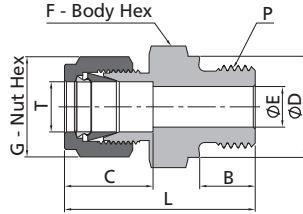
Fractional Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/8	1/8	-CM-FL2-RT2	1.20(30.5)	0.38(9.7)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.44(11.1)	
1/8	1/4	-CM-FL2-RT4	1.40(35.6)	0.56(14.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	
1/4	1/8	-CM-FL4-RT2	1.29(32.8)	0.38(9.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.50(12.7)	
1/4	1/4	-CM-FL4-RT4	1.49(37.8)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)	
1/4	3/8	-CM-FL4-RT6	1.51(38.4)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.69(17.5)	
1/4	1/2	-CM-FL4-RT8	1.76(44.7)	0.75(19.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	
5/16	1/8	-CM-FL5-RT2	1.34(34.0)	0.38(9.7)	0.64(16.3)	0.19(4.8)	0.63(15.9)	0.56(14.3)	
5/16	1/4	-CM-FL5-RT4	1.52(38.6)	0.56(14.2)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.56(14.3)	
3/8	1/8	-CM-FL6-RT2	1.39(35.3)	0.38(9.7)	0.66(16.8)	0.19(4.8)	0.69(17.5)	0.63(15.9)	
3/8	1/4	-CM-FL6-RT4	1.57(39.9)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)	
3/8	3/8	-CM-FL6-RT6	1.57(39.9)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.69(17.5)	
3/8	1/2	-CM-FL6-RT8	1.82(46.2)	0.75(19.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	
3/8	3/4	-CM-FL6-RT12	1.88(47.8)	0.75(19.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	
1/2	1/4	-CM-FL8-RT4	1.71(43.4)	0.56(14.2)	0.90(22.9)	0.28(7.1)	0.87(22.2)	0.81(20.6)	
1/2	3/8	-CM-FL8-RT6	1.71(43.4)	0.56(14.2)	0.90(22.9)	0.38(9.7)	0.87(22.2)	0.81(20.6)	
1/2	1/2	-CM-FL8-RT8	1.93(49.0)	0.75(19.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)	
1/2	3/4	-CM-FL8-RT12	1.99(50.5)	0.75(19.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	
5/8	1/2	-CM-FL10-RT8	1.93(49.0)	0.75(19.1)	0.96(24.4)	0.47(11.9)	1.00(25.4)	0.94(23.8)	
3/4	3/4	-CM-FL12-RT12	1.99(50.5)	0.75(19.1)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)	
3/4	1	-CM-FL12-RT16	2.25(57.2)	0.94(23.9)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.37(34.9)	
1	3/4	-CM-FL16-RT12	2.26(57.4)	0.75(19.1)	1.23(31.2)	0.62(15.7)	1.50(38.1)	1.37(34.9)	
1	1	-CM-FL16-RT16	2.45(62.2)	0.94(23.9)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.37(34.9)	



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

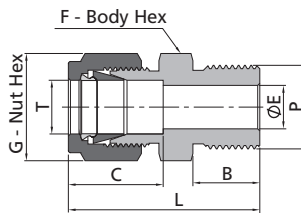
Fractional Tube			ISO Parallel Thread (RS)						
T-Tube O.D. (in.)	P-RS Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	D
1/8	1/8	-CM-FL2-RS2	1.18(30.0)	0.28(7.1)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	0.54(13.7)
1/8	1/4	-CM-FL2-RS4	1.39(35.3)	0.44(11.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	0.71(18.0)
1/8	3/8	-CM-FL2-RS6	1.43(36.3)	0.44(11.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.87(22.2)	0.86(21.8)
1/4	1/8	-CM-FL4-RS2	1.27(32.3)	0.28(7.1)	0.60(15.2)	0.16(4.0)	0.56(14.3)	0.56(14.3)	0.54(13.7)
1/4	1/4	-CM-FL4-RS4	1.48(37.6)	0.44(11.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.71(18.0)
1/4	3/8	-CM-FL4-RS6	1.53(38.9)	0.44(11.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	0.86(21.8)
1/4	1/2	-CM-FL4-RS8	1.76(44.7)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)	1.02(25.9)
3/8	1/8	-CM-FL6-RS2	1.49(37.8)	0.28(7.1)	0.66(16.8)	0.16(4.0)	0.69(17.5)	0.63(15.9)	0.54(13.7)
3/8	1/4	-CM-FL6-RS4	1.54(39.1)	0.44(11.2)	0.66(16.8)	0.23(5.9)	0.69(17.5)	0.75(19.1)	0.71(18.0)
3/8	3/8	-CM-FL6-RS6	1.59(40.4)	0.44(11.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	0.86(21.8)
3/8	1/2	-CM-FL6-RS8	1.82(46.2)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	1.02(25.9)
1/2	1/4	-CM-FL8-RS4	1.68(42.7)	0.44(11.2)	0.90(22.9)	0.23(5.9)	0.87(22.2)	0.81(20.6)	0.71(18.0)
1/2	3/8	-CM-FL8-RS6	1.70(43.2)	0.44(11.2)	0.90(22.9)	0.31(7.9)	0.87(22.2)	0.87(22.2)	0.86(21.8)
1/2	1/2	-CM-FL8-RS8	1.93(49.0)	0.56(14.2)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	1.02(25.9)
3/4	1/2	-CM-FL12-RS8	1.93(49.0)	0.56(14.2)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.06(27.0)	1.02(25.9)
3/4	3/4	-CM-FL12-RS12	2.08(52.9)	0.62(15.7)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.31(33.3)	1.26(32.0)
1	1/2	-CM-FL16-RS8	2.19(55.5)	0.56(14.2)	1.23(31.2)	0.47(11.9)	1.50(38.1)	1.37(34.9)	1.02(25.9)
1	3/4	-CM-FL16-RS12	2.27(57.7)	0.62(15.7)	1.23(31.2)	0.63(16.0)	1.50(38.1)	1.37(34.9)	1.26(32.0)
1	1	-CM-FL16-RS16	2.36(59.9)	0.72(18.3)	1.23(31.2)	0.78(19.8)	1.50(38.1)	1.63(41.3)	1.54(39.1)

Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

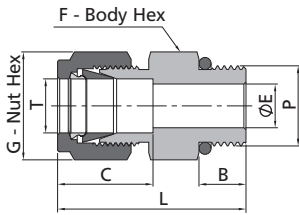
Fractional Tube			ISO Parallel Thread (RP)						
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	D
1/8	1/8	-CM-FL2-RP2	1.18(30.0)	0.28(7.1)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	0.54(13.8)
1/8	1/4	-CM-FL2-RP4	1.39(35.3)	0.44(11.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	0.70(17.8)
1/4	1/8	-CM-FL4-RP2	1.27(32.3)	0.28(7.1)	0.60(15.2)	0.16(4.1)	0.56(14.3)	0.56(14.3)	0.54(13.8)
1/4	1/4	-CM-FL4-RP4	1.48(37.6)	0.44(11.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.70(17.8)
1/2	3/8	-CM-FL8-RP6	1.79(45.5)	0.44(11.2)	0.90(22.9)	0.31(7.9)	0.87(22.2)	0.87(22.2)	0.86(21.8)
1/2	1/2	-CM-FL8-RP8	1.93(49.0)	0.56(14.2)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	1.02(25.9)
3/4	1/2	-CM-FL12-RP8	1.93(49.0)	0.56(14.2)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.06(27.0)	1.02(25.9)
3/4	3/4	-CM-FL12-RP12	2.08(52.9)	0.62(15.7)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.31(33.3)	1.26(32.0)
1	1	-CM-FL16-RP16	2.36(59.9)	0.72(18.3)	1.23(31.2)	0.78(19.8)	1.50(38.1)	1.63(41.3)	1.53(38.8)



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

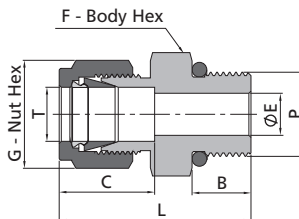
Fractional Tube			ISO Parallel Thread (BP)					
T-Tube O.D. (in.)	P-BP Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	C	E	G	F
1/4	3/8	-CM-FL4-BP6	1.51(38.4)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.69(17.5)
3/8	3/8	-CM-FL6-BP6	1.57(39.9)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.69(17.5)

## Male Connectors



1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. 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	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/16	5/16-24	-CM-FL1-ST5	0.92(23.4)	0.30(7.6)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)	
1/8	5/16-24	-CM-FL2-ST5	1.18(30.0)	0.30(7.6)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.44(11.1)	
1/8	7/16-20	-CM-FL2-ST7	1.24(31.5)	0.36(9.1)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	
1/8	9/16-18	-CM-FL2-ST9	1.31(33.3)	0.39(9.9)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.69(17.5)	
3/16	3/8-24	-CM-FL3-ST6	1.20(30.5)	0.30(7.6)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.50(12.7)	
1/4	5/16-24	-CM-FL4-ST5	1.27(32.3)	0.30(7.6)	0.60(15.2)	0.12(3.0)	0.56(14.3)	0.50(12.7)	
1/4	7/16-20	-CM-FL4-ST7	1.34(34.0)	0.36(9.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)	
1/4	9/16-18	-CM-FL4-ST9	1.40(35.6)	0.39(9.9)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.69(17.5)	
1/4	3/4-16	-CM-FL4-ST12	1.48(37.6)	0.44(11.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	
1/4	7/8-14	-CM-FL4-ST14	1.60(40.6)	0.50(12.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.00(25.4)	
5/16	1/2-20	-CM-FL5-ST8	1.37(34.8)	0.36(9.1)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.63(15.9)	
3/8	7/16-20	-CM-FL6-ST7	1.40(35.6)	0.36(9.1)	0.66(16.8)	0.20(5.1)	0.69(17.5)	0.63(15.9)	
3/8	9/16-18	-CM-FL6-ST9	1.46(37.1)	0.39(9.9)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.69(17.5)	
3/8	3/4-16	-CM-FL6-ST12	1.54(39.1)	0.44(11.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	
3/8	7/8-14	-CM-FL6-ST14	1.66(42.2)	0.50(12.7)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.00(25.4)	
1/2	9/16-18	-CM-FL8-ST9	1.54(39.1)	0.39(9.9)	0.90(22.9)	0.28(7.1)	0.87(22.2)	0.81(20.6)	
1/2	3/4-16	-CM-FL8-ST12	1.65(41.9)	0.44(11.2)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)	
1/2	7/8-14	-CM-FL8-ST14	1.77(45.0)	0.50(12.7)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.00(25.4)	
1/2	1 1/16-12	-CM-FL8-ST17	1.93(49.0)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.25(31.8)	
5/8	3/4-16	-CM-FL10-ST12	1.65(41.9)	0.44(11.2)	0.96(24.4)	0.42(10.7)	1.00(25.4)	0.94(23.8)	
5/8	7/8-14	-CM-FL10-ST14	1.78(45.2)	0.50(12.7)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.00(25.4)	
3/4	3/4-16	-CM-FL12-ST12	1.81(46.0)	0.44(11.2)	0.96(24.4)	0.42(10.7)	1.13(28.6)	1.06(27.0)	
3/4	1 1/16-12	-CM-FL12-ST17	1.93(49.0)	0.59(15.0)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.25(31.8)	
3/4	1 5/16-12	-CM-FL12-ST21	1.96(49.8)	0.59(15.0)	0.96(24.4)	0.63(16.0)	1.13(28.6)	1.50(38.1)	
7/8	1 3/16-12	-CM-FL14-ST19	1.93(49.0)	0.59(15.0)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.37(34.9)	
1	1 1/16-12	-CM-FL16-ST17	2.10(53.3)	0.59(15.0)	1.23(31.2)	0.66(16.8)	1.50(38.1)	1.37(34.9)	
1	1 5/16-12	-CM-FL16-ST21	2.14(54.4)	0.59(15.0)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.50(38.1)	
1 1/4	1 5/8-12	-CM-FL20-ST26	2.69(68.3)	0.59(15.0)	1.62(41.1)	1.09(27.7)	1.87(47.6)	1.87(47.6)	
1 1/2	1 7/8-12	-CM-FL24-ST30	3.06(77.7)	0.59(15.0)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.13(54.0)	

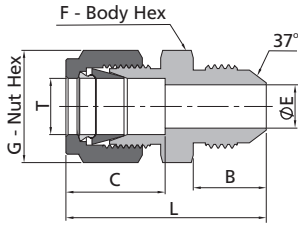


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			SAE/MS Straight Thread						
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/4	7/16-20	-CML-FL4-ST7	2.26(57.4)	0.36(9.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)	
1/2	3/4-16	-CML-FL8-ST12	3.01(76.5)	0.44(11.2)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)	

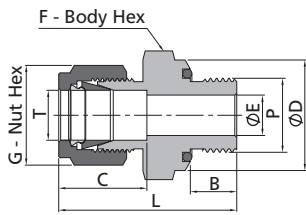


Male Connectors



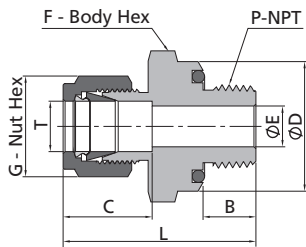
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			37° Flare (AN)						
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/16	1/8	-CM-FL1-AN2	1.07(27.2)	0.45(11.4)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)	0.44(11.1)
1/8	1/8	-CM-FL2-AN2	1.27(32.3)	0.45(11.4)	0.50(12.7)	0.06(1.5)	0.44(11.1)	0.44(11.1)	0.44(11.1)
1/8	1/4	-CM-FL2-AN4	1.38(35.1)	0.55(14.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.50(12.7)	0.50(12.7)
3/16	3/16	-CM-FL3-AN3	1.32(33.5)	0.48(12.2)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.44(11.1)	0.44(11.1)
1/4	1/4	-CM-FL4-AN4	1.48(37.6)	0.55(14.0)	0.60(15.2)	0.17(4.3)	0.56(14.3)	0.50(12.7)	0.50(12.7)
5/16	5/16	-CM-FL5-AN5	1.51(38.4)	0.55(14.0)	0.64(16.2)	0.23(5.8)	0.63(15.9)	0.56(14.3)	0.56(14.3)
3/8	1/4	-CM-FL6-AN4	1.56(39.6)	0.55(14.0)	0.66(16.8)	0.17(4.3)	0.69(17.5)	0.63(15.9)	0.63(15.9)
3/8	3/8	-CM-FL6-AN6	1.56(39.6)	0.56(14.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)	0.63(15.9)
1/2	1/2	-CM-FL8-AN8	1.81(46.0)	0.66(16.7)	0.90(22.8)	0.39(9.9)	0.87(22.2)	0.81(20.6)	0.81(20.6)
5/8	5/8	-CM-FL10-AN10	1.93(49.0)	0.76(19.3)	0.96(24.5)	0.48(12.3)	1.00(25.4)	0.94(23.8)	0.94(23.8)
3/4	3/4	-CM-FL12-AN12	2.10(53.3)	0.86(21.9)	0.96(24.4)	0.61(15.5)	1.13(28.6)	1.13(28.6)	1.13(28.6)
1	1	-CM-FL16-AN16	2.42(61.5)	0.91(23.1)	1.23(31.2)	0.84(21.3)	1.50(38.1)	1.37(34.9)	1.37(34.9)



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

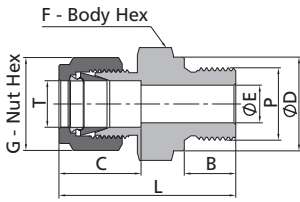
Fractional Tube			O-Seal with SAE/MS Straight Thread						
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	D
1/16	5/16-24	-CM-FL1-OST5	1.05(26.7)	0.34(8.6)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.56(14.3)	0.55(14.0)
1/8	5/16-24	-CM-FL2-OST5	1.29(32.8)	0.34(8.6)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	0.55(14.0)
3/16	3/8-24	-CM-FL3-OST6	1.35(34.3)	0.38(9.7)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.63(15.9)	0.62(15.7)
1/4	7/16-20	-CM-FL4-OST7	1.51(38.4)	0.41(10.4)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.74(18.8)
5/16	1/2-20	-CM-FL5-OST8	1.60(40.6)	0.44(11.2)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.87(22.2)	0.86(21.8)
3/8	9/16-18	-CM-FL6-OST9	1.67(42.4)	0.47(11.9)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.94(23.8)	0.93(23.6)
1/2	3/4-16	-CM-FL8-OST12	1.81(46.0)	0.47(11.9)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.13(28.6)	1.12(28.4)
3/4	1 1/16-12	-CM-FL12-OST17	2.06(52.3)	0.56(14.2)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.50(38.1)	1.49(37.8)
1	1 5/16-12	-CM-FL16-OST21	2.29(58.2)	0.56(14.2)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.75(44.5)	1.74(44.2)



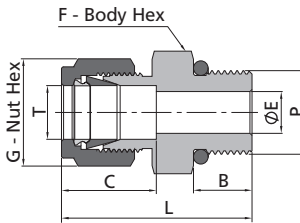
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			O-Seal with NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	D
1/8	1/8	-CM-FL2-ONS2	1.29(32.8)	0.28(7.1)	0.34(8.6)	0.09(2.3)	0.47(11.9)	0.75(19.1)	0.74(18.8)
1/4	1/8	-CM-FL4-ONS2	1.38(35.1)	0.28(7.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.74(18.8)
1/4	1/4	-CM-FL4-ONS4	1.51(38.4)	0.38(9.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.94(23.8)	0.93(23.6)
3/8	1/4	-CM-FL6-ONS4	1.57(39.9)	0.38(9.7)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.94(23.8)	0.93(23.6)
3/8	3/8	-CM-FL6-ONS6	1.63(41.4)	0.41(10.4)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.13(28.6)	1.12(28.4)
3/8	1/2	-CM-FL6-ONS8	1.85(47.0)	0.53(13.5)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.31(33.3)	1.30(33.0)
1/2	1/2	-CM-FL8-ONS8	1.96(49.8)	0.53(13.5)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.31(33.3)	1.30(33.0)

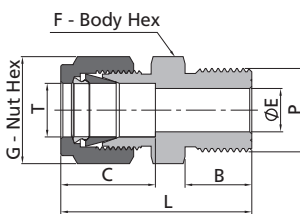
Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.



1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. Adapt to straight thread boss of ISO 6149-1.



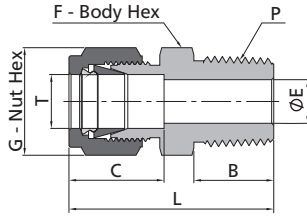
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			Metric Thread (MRS)							
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimensions, in. (mm)							
			L	B	C	E	G	F	D	
1/8	M14 x 1.5	-CM-FL2-MRS14	1.44(36.7)	0.47(12.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	0.75(19.0)	
1/8	M16 x 1.5	-CM-FL2-MRS16	1.48(37.5)	0.47(12.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.87(22.2)	0.83(21.0)	
1/8	M18 x 1.5	-CM-FL2-MRS18	1.52(38.5)	0.47(12.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.94(23.8)	0.91(23.0)	
1/8	M20 x 1.5	-CM-FL2-MRS20	1.62(41.1)	0.55(14.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	1.00(25.4)	0.98(25.0)	
1/4	M14 x 1.5	-CM-FL4-MRS14	1.50(38.0)	0.47(12.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.75(19.0)	
1/4	M16 x 1.5	-CM-FL4-MRS16	1.57(39.9)	0.47(12.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	0.83(21.0)	
1/4	M18 x 1.5	-CM-FL4-MRS18	1.61(40.8)	0.47(12.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.94(23.8)	0.91(23.0)	
1/4	M20 x 1.5	-CM-FL4-MRS20	1.72(43.6)	0.55(14.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.00(25.4)	0.98(25.0)	
3/8	M14 x 1.5	-CM-FL6-MRS14	1.63(41.3)	0.47(12.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.0)	
3/8	M16 x 1.5	-CM-FL6-MRS16	1.63(41.3)	0.47(12.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	0.83(21.0)	
3/8	M18 x 1.5	-CM-FL6-MRS18	1.65(41.8)	0.47(12.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.94(23.8)	0.91(23.0)	
3/8	M20 x 1.5	-CM-FL6-MRS20	1.78(45.1)	0.55(14.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.00(25.4)	0.98(25.0)	
1/2	M16 x 1.5	-CM-FL8-MRS16	1.73(44.0)	0.47(12.0)	0.90(22.8)	0.35(9.0)	0.87(22.2)	0.87(22.2)	0.83(21.0)	
1/2	M18 x 1.5	-CM-FL8-MRS18	1.73(44.0)	0.47(12.0)	0.90(22.9)	0.39(10.0)	0.87(22.2)	0.94(23.8)	0.91(23.0)	
1/2	M20 x 1.5	-CM-FL8-MRS20	1.89(47.9)	0.55(14.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.00(25.4)	0.98(25.0)	
1/2	M22 x 1.5	-CM-FL8-MRS22	1.91(48.5)	0.55(14.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	1.06(27.0)	

Fractional Tube			Metric Thread (MST)					
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	C	E	G	F
1/4	M14X1.5	-CM-FL4-MST14	1.39(35.2)	0.43(11.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)
3/8	M14X1.5	-CM-FL6-MST14	1.44(36.7)	0.43(11.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)
3/8	M20X1.5	-CM-FL6-MST20	1.62(41.2)	0.55(14.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)
1/2	M14X1.5	-CM-FL8-MST14	1.58(40.2)	0.43(11.0)	0.90(22.9)	0.30(7.5)	0.87(22.2)	0.81(20.6)
1/2	M20X1.5	-CM-FL8-MST20	1.73(44.0)	0.55(14.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)

Fractional Tube			Metric Thread (MS)					
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	C	E	G	F
1/16	M5 x 0.8	-CM-FL1-MS5	0.86(21.8)	0.31(8.0)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.31(7.9)
1/8	M14 x 1.5	-CM-FL2-MS14	1.37(34.8)	0.51(13.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.63(15.9)
1/8	M16 x 1.5	-CM-FL2-MS16	1.41(35.8)	0.55(14.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.69(17.5)
1/8	M18 x 1.5	-CM-FL2-MS18	1.46(37.2)	0.59(15.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)
1/8	M20 x 1.5	-CM-FL2-MS20	1.50(38.1)	0.63(16.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.87(22.2)
1/4	M14 x 1.5	-CM-FL4-MS14	1.45(36.9)	0.51(13.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)
1/4	M16 x 1.5	-CM-FL4-MS16	1.50(38.1)	0.55(14.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.69(17.5)
1/4	M18 x 1.5	-CM-FL4-MS18	1.56(39.5)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)
1/4	M20 x 1.5	-CM-FL4-MS20	1.60(40.7)	0.63(16.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)
3/8	M10 x 1.0	-CM-FL6-MS10	1.43(36.4)	0.43(11.0)	0.66(16.8)	0.19(4.8)	0.69(17.5)	0.63(15.9)
3/8	M14 x 1.5	-CM-FL6-MS14	1.55(39.3)	0.51(13.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)
3/8	M16 x 1.5	-CM-FL6-MS16	1.56(39.7)	0.55(14.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.69(17.5)
3/8	M18 x 1.5	-CM-FL6-MS18	1.63(41.5)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)
3/8	M20 x 1.5	-CM-FL6-MS20	1.67(42.3)	0.63(16.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)
1/2	M16 x 1.5	-CM-FL8-MS16	1.70(43.2)	0.55(14.0)	0.90(22.9)	0.33(8.4)	0.87(22.2)	0.81(20.6)
1/2	M18 x 1.5	-CM-FL8-MS18	1.72(43.7)	0.59(15.0)	0.90(22.9)	0.38(9.6)	0.87(22.2)	0.81(20.6)
1/2	M20 x 1.5	-CM-FL8-MS20	1.77(44.9)	0.63(16.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)
1/2	M22 x 1.5	-CM-FL8-MS22	1.85(47.0)	0.67(17.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)

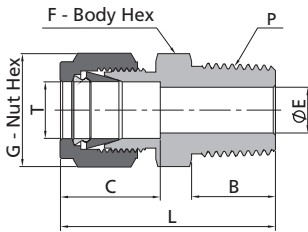
Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	E	G	F	
2	1/8	-CM-ML2-NS2	30.5(1.20)	9.7(0.38)	12.9(0.51)	1.7(0.07)	12.0(0.47)	12.0(0.47)	
3	1/8	-CM-ML3-NS2	30.5(1.20)	9.7(0.38)	12.9(0.51)	2.4(0.09)	12.0(0.47)	12.0(0.47)	
3	1/4	-CM-ML3-NS4	35.6(1.40)	14.2(0.56)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)	
4	1/8	-CM-ML4-NS2	31.2(1.23)	9.7(0.38)	13.7(0.54)	2.4(0.09)	12.0(0.47)	12.0(0.47)	
4	1/4	-CM-ML4-NS4	36.3(1.43)	14.2(0.56)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)	
6	1/8	-CM-ML6-NS2	32.8(1.29)	9.7(0.38)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)	
6	1/4	-CM-ML6-NS4	37.9(1.49)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)	
6	3/8	-CM-ML6-NS6	38.4(1.51)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)	
6	1/2	-CM-ML6-NS8	44.7(1.76)	19.1(0.75)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)	
8	1/8	-CM-ML8-NS2	34.2(1.35)	9.7(0.38)	16.2(0.64)	4.8(0.19)	16.0(0.63)	15.0(0.59)	
8	1/4	-CM-ML8-NS4	38.7(1.52)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	15.0(0.59)	
8	3/8	-CM-ML8-NS6	39.3(1.55)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)	
8	1/2	-CM-ML8-NS8	45.6(1.80)	19.1(0.75)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)	
10	1/8	-CM-ML10-NS2	36.3(1.43)	9.7(0.38)	17.2(0.68)	4.8(0.19)	19.0(0.75)	18.0(0.71)	
10	1/4	-CM-ML10-NS4	40.9(1.61)	14.2(0.56)	17.2(0.68)	7.1(0.28)	19.0(0.75)	18.0(0.71)	
10	3/8	-CM-ML10-NS6	40.9(1.61)	14.2(0.56)	17.2(0.68)	7.9(0.31)	19.0(0.75)	18.0(0.71)	
10	1/2	-CM-ML10-NS8	46.5(1.83)	19.1(0.75)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	
10	3/4	-CM-ML10-NS12	48.0(1.89)	19.1(0.75)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)	
10	1	-CM-ML10-NS16	54.6(2.15)	23.9(0.94)	17.2(0.68)	7.9(0.31)	19.0(0.75)	35.0(1.38)	
12	1/8	-CM-ML12-NS2	38.8(1.53)	9.7(0.38)	22.8(0.90)	4.8(0.19)	22.0(0.87)	22.0(0.87)	
12	1/4	-CM-ML12-NS4	43.4(1.71)	14.2(0.56)	22.8(0.90)	7.1(0.28)	22.0(0.87)	22.0(0.87)	
12	3/8	-CM-ML12-NS6	43.4(1.71)	14.2(0.56)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)	
12	1/2	-CM-ML12-NS8	49.0(1.93)	19.1(0.75)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)	
12	3/4	-CM-ML12-NS12	49.1(1.93)	19.1(0.75)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	
14	1/8	-CM-ML14-NS2	39.9(1.57)	9.7(0.38)	24.4(0.96)	4.8(0.19)	25.0(0.98)	24.0(0.94)	
14	1/4	-CM-ML14-NS4	44.1(1.74)	14.2(0.56)	24.4(0.96)	7.1(0.28)	25.0(0.98)	24.0(0.94)	
14	3/8	-CM-ML14-NS6	44.1(1.74)	14.2(0.56)	24.4(0.96)	9.5(0.37)	25.0(0.98)	24.0(0.94)	
14	1/2	-CM-ML14-NS8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.1(0.44)	25.0(0.98)	24.0(0.94)	
14	3/4	-CM-ML14-NS12	49.1(1.93)	19.1(0.75)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)	
15	1/2	-CM-ML15-NS8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.9(0.47)	25.0(0.98)	24.0(0.94)	
15	3/4	-CM-ML15-NS12	50.5(1.99)	19.1(0.75)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	
15	1	-CM-ML15-NS16	57.1(2.25)	23.9(0.94)	24.4(0.96)	11.9(0.47)	25.0(0.98)	35.0(1.38)	
16	1/4	-CM-ML16-NS4	44.1(1.74)	14.2(0.56)	24.4(0.96)	7.1(0.28)	25.0(0.98)	24.0(0.94)	
16	3/8	-CM-ML16-NS6	44.1(1.74)	14.2(0.56)	24.4(0.96)	9.5(0.37)	25.0(0.98)	24.0(0.94)	
16	1/2	-CM-ML16-NS8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.9(0.47)	25.0(0.98)	24.0(0.94)	
16	3/4	-CM-ML16-NS12	50.5(1.99)	19.1(0.75)	24.4(0.96)	12.7(0.5)	25.0(0.98)	27.0(1.06)	
18	3/8	-CM-ML18-NS6	45.6(1.80)	14.2(0.56)	24.4(0.96)	9.5(0.37)	30.0(1.18)	27.0(1.06)	
18	1/2	-CM-ML18-NS8	50.5(1.99)	19.1(0.75)	24.4(0.96)	11.9(0.47)	30.0(1.18)	27.0(1.06)	
18	3/4	-CM-ML18-NS12	50.5(1.99)	19.1(0.75)	24.4(0.96)	15.1(0.59)	30.0(1.18)	27.0(1.06)	
20	1/2	-CM-ML20-NS8	52.3(2.06)	19.1(0.75)	26.0(1.02)	11.9(0.47)	32.0(1.26)	30.0(1.18)	
20	3/4	-CM-ML20-NS12	52.3(2.06)	19.1(0.75)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)	
20	1	-CM-ML20-NS16	57.1(2.25)	23.9(0.94)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	
22	1/2	-CM-ML22-NS8	52.3(2.06)	19.1(0.75)	26.0(1.02)	11.9(0.47)	32.0(1.26)	30.0(1.18)	
22	3/4	-CM-ML22-NS12	52.3(2.06)	19.1(0.75)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)	
22	1	-CM-ML22-NS16	57.1(2.25)	23.9(0.94)	26.0(1.02)	18.3(0.72)	32.0(1.26)	35.0(1.38)	
25	1/2	-CM-ML25-NS8	57.5(2.26)	19.1(0.75)	31.3(1.23)	11.9(0.47)	38.0(1.50)	35.0(1.38)	
25	3/4	-CM-ML25-NS12	57.5(2.26)	19.1(0.75)	31.3(1.23)	15.9(0.63)	38.0(1.50)	35.0(1.38)	
25	1	-CM-ML25-NS16	62.3(2.45)	23.9(0.94)	31.3(1.23)	21.8(0.86)	38.0(1.50)	35.0(1.38)	
28	1	-CM-ML28-NS16	72.4(2.85)	23.9(0.94)	36.6(1.44)	21.8(0.86)	46.0(1.81)	41.0(1.61)	
28	1 1/4	-CM-ML28-NS20	73.1(2.88)	23.9(0.94)	36.6(1.44)	21.8(0.86)	46.0(1.81)	46.0(1.81)	
30	1 1/4	-CM-ML30-NS20	77.2(3.04)	23.9(0.94)	39.6(1.56)	26.2(1.03)	50.0(1.97)	46.0(1.81)	
32	1 1/4	-CM-ML32-NS20	79.6(3.13)	23.9(0.94)	42.0(1.65)	28.6(1.13)	50.0(1.97)	46.0(1.81)	
38	1 1/2	-CM-ML38-NS24	91.6(3.61)	26.2(1.03)	49.4(1.94)	33.7(1.33)	60.0(2.36)	55.0(2.17)	

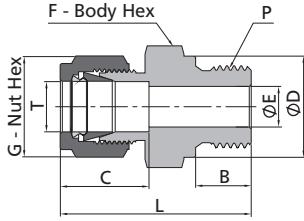
## Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Metric Tube			ISO Tapered Thread (RT)					
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
2	1/8	-CM-ML2-RT2	30.5(1.20)	9.7(0.38)	12.9(0.51)	1.7(0.07)	12.0(0.47)	12.0(0.47)
3	1/8	-CM-ML3-RT2	30.5(1.20)	9.7(0.38)	12.9(0.51)	2.4(0.09)	12.0(0.47)	12.0(0.47)
3	1/4	-CM-ML3-RT4	35.6(1.40)	14.2(0.56)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)
4	1/8	-CM-ML4-RT2	31.2(1.23)	9.7(0.38)	13.7(0.54)	2.4(0.09)	12.0(0.47)	12.0(0.47)
4	1/4	-CM-ML4-RT4	36.3(1.43)	14.2(0.56)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)
6	1/8	-CM-ML6-RT2	32.8(1.29)	9.7(0.38)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	1/4	-CM-ML6-RT4	37.9(1.49)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	3/8	-CM-ML6-RT6	38.4(1.51)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)
6	1/2	-CM-ML6-RT8	44.7(1.76)	19.1(0.75)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)
8	1/8	-CM-ML8-RT2	34.2(1.35)	9.7(0.38)	16.2(0.64)	4.8(0.19)	16.0(0.63)	15.0(0.59)
8	1/4	-CM-ML8-RT4	38.7(1.52)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	15.0(0.59)
8	3/8	-CM-ML8-RT6	39.2(1.54)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)
8	1/2	-CM-ML8-RT8	45.6(1.80)	19.1(0.75)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)
10	1/8	-CM-ML10-RT2	36.3(1.43)	9.7(0.38)	17.2(0.68)	4.8(0.19)	19.0(0.75)	18.0(0.71)
10	1/4	-CM-ML10-RT4	40.9(1.61)	14.2(0.56)	17.2(0.68)	7.1(0.28)	19.0(0.75)	18.0(0.71)
10	3/8	-CM-ML10-RT6	40.9(1.61)	14.2(0.56)	17.2(0.68)	7.9(0.31)	19.0(0.75)	18.0(0.71)
10	1/2	-CM-ML10-RT8	46.5(1.83)	19.1(0.75)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
10	3/4	-CM-ML10-RT12	48.0(1.89)	19.1(0.75)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)
12	1/8	-CM-ML12-RT2	38.9(1.53)	9.7(0.38)	22.8(0.90)	4.8(0.19)	22.0(0.87)	22.0(0.87)
12	1/4	-CM-ML12-RT4	43.4(1.71)	14.2(0.56)	22.8(0.90)	7.1(0.28)	22.0(0.87)	22.0(0.87)
12	3/8	-CM-ML12-RT6	43.4(1.71)	14.2(0.56)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	1/2	-CM-ML12-RT8	49.0(1.93)	19.1(0.75)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	3/4	-CM-ML12-RT12	50.5(1.99)	19.1(0.75)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)
14	1/8	-CM-ML14-RT2	39.9(1.57)	9.7(0.38)	24.4(0.96)	4.8(0.19)	25.0(0.98)	24.0(0.94)
14	1/4	-CM-ML14-RT4	44.1(1.74)	14.2(0.56)	24.4(0.96)	7.1(0.28)	25.0(0.98)	24.0(0.94)
14	3/8	-CM-ML14-RT6	44.1(1.74)	14.2(0.56)	24.4(0.96)	9.5(0.37)	25.0(0.98)	24.0(0.94)
14	1/2	-CM-ML14-RT8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.1(0.44)	25.0(0.98)	24.0(0.94)
14	3/4	-CM-ML14-RT12	50.5(1.99)	19.1(0.75)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)
15	1/2	-CM-ML15-RT8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.9(0.47)	25.0(0.98)	24.0(0.94)
16	1/4	-CM-ML16-RT4	44.1(1.74)	14.2(0.56)	24.4(0.96)	7.1(0.28)	25.0(0.98)	24.0(0.94)
16	3/8	-CM-ML16-RT6	44.1(1.74)	14.2(0.56)	24.4(0.96)	9.5(0.37)	25.0(0.98)	24.0(0.94)
16	1/2	-CM-ML16-RT8	49.0(1.93)	19.1(0.75)	24.4(0.96)	11.9(0.47)	25.0(0.98)	24.0(0.94)
16	3/4	-CM-ML16-RT12	50.5(1.99)	19.1(0.75)	24.4(0.96)	12.7(0.5)	25.0(0.98)	27.0(1.06)
18	1/2	-CM-ML18-RT8	50.5(1.99)	19.1(0.75)	24.4(0.96)	11.9(0.47)	30.0(1.18)	27.0(1.06)
18	3/4	-CM-ML18-RT12	50.5(1.99)	19.1(0.75)	24.4(0.96)	15.1(0.59)	30.0(1.18)	27.0(1.06)
20	1/2	-CM-ML20-RT8	52.3(2.06)	19.1(0.75)	26.0(1.02)	11.9(0.47)	32.0(1.26)	30.0(1.18)
20	3/4	-CM-ML20-RT12	52.3(2.06)	19.1(0.75)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)
22	3/4	-CM-ML22-RT12	52.3(2.06)	19.1(0.75)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)
22	1	-CM-ML22-RT16	57.1(2.25)	23.9(0.94)	26.0(1.02)	18.3(0.72)	32.0(1.26)	35.0(1.38)
25	1/2	-CM-ML25-RT8	57.5(2.26)	19.1(0.75)	31.3(1.23)	11.9(0.47)	38.0(1.50)	35.0(1.38)
25	3/4	-CM-ML25-RT12	57.5(2.26)	19.1(0.75)	31.3(1.23)	15.9(0.63)	38.0(1.50)	35.0(1.38)
25	1	-CM-ML25-RT16	62.3(2.45)	23.9(0.94)	31.3(1.23)	21.8(0.86)	38.0(1.50)	35.0(1.38)
28	1	-CM-ML28-RT16	72.4(2.85)	23.9(0.94)	36.6(1.44)	21.8(0.86)	46.0(1.81)	41.0(1.61)
28	1 1/4	-CM-ML28-RT20	73.1(2.88)	23.9(0.94)	36.6(1.44)	21.8(0.86)	46.0(1.81)	46.0(1.81)
30	1 1/4	-CM-ML30-RT20	77.2(3.04)	23.9(0.94)	39.6(1.56)	26.2(1.03)	50.0(1.97)	46.0(1.81)
32	1 1/4	-CM-ML32-RT20	79.6(3.13)	23.9(0.94)	42.0(1.65)	28.6(1.13)	50.0(1.97)	46.0(1.81)
38	1 1/2	-CM-ML38-RT24	91.6(3.61)	26.2(1.03)	49.4(1.94)	33.7(1.33)	60.0(2.36)	55.0(2.17)

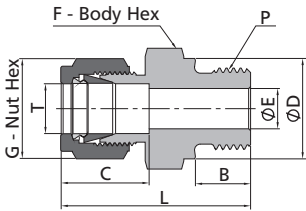
Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

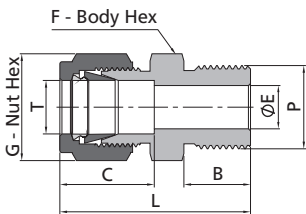
Metric Tube			ISO Parallel Thread (RS)						
T-Tube O.D. (mm)	P-RS Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	E	G	F	D
2	1/8	-CM-ML2-RS2	30.0(1.18)	7.1(0.28)	12.9(0.51)	1.7(0.07)	12.0(0.47)	14.0(0.55)	13.7(0.54)
3	1/8	-CM-ML3-RS2	30.0(1.18)	7.1(0.28)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)	13.7(0.54)
3	1/4	-CM-ML3-RS4	35.3(1.39)	11.2(0.44)	12.9(0.51)	2.4(0.09)	12.0(0.47)	19.0(0.75)	18.0(0.71)
4	1/8	-CM-ML4-RS2	30.7(1.21)	7.1(0.28)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)	13.7(0.54)
4	1/4	-CM-ML4-RS4	36.0(1.42)	11.2(0.44)	13.7(0.54)	2.4(0.09)	12.0(0.47)	19.0(0.75)	18.0(0.71)
6	1/8	-CM-ML6-RS2	32.3(1.27)	7.1(0.28)	15.3(0.60)	4.0(0.16)	14.0(0.55)	14.0(0.55)	13.7(0.54)
6	1/4	-CM-ML6-RS4	37.6(1.48)	11.2(0.44)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)	18.0(0.71)
6	3/8	-CM-ML6-RS6	38.9(1.53)	11.2(0.44)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)	21.6(0.85)
6	1/2	-CM-ML6-RS8	44.7(1.76)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)	25.9(1.02)
8	1/8	-CM-ML8-RS2	33.2(1.31)	7.1(0.28)	16.2(0.64)	4.0(0.16)	16.0(0.63)	15.0(0.59)	13.7(0.54)
8	1/4	-CM-ML8-RS4	38.5(1.52)	11.2(0.44)	16.2(0.64)	6.4(0.25)	16.0(0.63)	19.0(0.75)	18.0(0.71)
8	3/8	-CM-ML8-RS6	39.8(1.57)	11.2(0.44)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)	21.6(0.85)
8	1/2	-CM-ML8-RS8	45.6(1.80)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)	25.9(1.02)
8	3/4	-CM-ML8-RS12	49.5(1.95)	15.7(0.62)	16.2(0.64)	6.4(0.25)	16.0(0.63)	35.0(1.38)	32.0(1.26)
10	1/4	-CM-ML10-RS4	39.4(1.55)	11.2(0.44)	17.2(0.68)	5.9(0.23)	19.0(0.75)	19.0(0.75)	18.0(0.71)
10	3/8	-CM-ML10-RS6	40.6(1.60)	11.2(0.44)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	21.6(0.85)
10	1/2	-CM-ML10-RS8	46.5(1.83)	14.2(0.56)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)	25.9(1.02)
12	1/4	-CM-ML12-RS4	42.6(1.68)	11.2(0.44)	22.8(0.90)	5.9(0.23)	22.0(0.87)	22.0(0.87)	18.0(0.71)
12	3/8	-CM-ML12-RS6	43.1(1.70)	11.2(0.44)	22.8(0.90)	7.9(0.31)	22.0(0.87)	22.0(0.87)	21.6(0.85)
12	1/2	-CM-ML12-RS8	49.0(1.93)	14.2(0.56)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	25.9(1.02)
12	3/4	-CM-ML12-RS12	52.8(2.08)	15.7(0.62)	22.8(0.90)	9.5(0.37)	22.0(0.87)	35.0(1.38)	32.0(1.26)
14	1/4	-CM-ML14-RS4	44.2(1.74)	11.2(0.44)	24.4(0.96)	6.4(0.25)	25.0(0.98)	24.0(0.94)	18.0(0.71)
14	3/8	-CM-ML14-RS6	43.9(1.73)	11.2(0.44)	24.4(0.96)	7.9(0.31)	25.0(0.98)	24.0(0.94)	21.6(0.85)
14	1/2	-CM-ML14-RS8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)	25.9(1.02)
14	3/4	-CM-ML14-RS12	52.8(2.08)	15.7(0.62)	24.4(0.96)	11.1(0.44)	25.0(0.98)	35.0(1.38)	32.0(1.26)
15	3/8	-CM-ML15-RS6	43.9(1.73)	11.2(0.44)	24.4(0.96)	7.9(0.31)	25.0(0.98)	24.0(0.94)	21.6(0.85)
15	1/2	-CM-ML15-RS8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	25.9(1.02)
15	3/4	-CM-ML15-RS12	52.8(2.08)	15.7(0.62)	24.4(0.96)	11.9(0.47)	25.0(0.98)	35.0(1.38)	32.0(1.26)
16	3/8	-CM-ML16-RS6	43.9(1.73)	11.2(0.44)	24.4(0.96)	7.9(0.31)	25.0(0.98)	24.0(0.94)	21.6(0.85)
16	1/2	-CM-ML16-RS8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	25.9(1.02)
16	3/4	-CM-ML16-RS12	52.8(2.08)	15.7(0.62)	24.4(0.96)	12.7(0.5)	25.0(0.98)	35.0(1.38)	32.0(1.26)
18	1/2	-CM-ML18-RS8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.9(0.47)	30.0(1.18)	27.0(1.06)	25.9(1.02)
18	3/4	-CM-ML18-RS12	52.8(2.08)	15.7(0.62)	24.4(0.96)	15.1(0.59)	30.0(1.18)	35.0(1.38)	32.0(1.26)
20	1/2	-CM-ML20-RS8	50.5(1.99)	14.2(0.56)	26.0(1.02)	11.9(0.47)	32.0(1.26)	30.0(1.18)	25.9(1.02)
20	3/4	-CM-ML20-RS12	52.8(2.08)	15.7(0.62)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	32.0(1.26)
22	3/4	-CM-ML22-RS12	52.8(2.08)	15.7(0.62)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	32.0(1.26)
22	1	-CM-ML22-RS16	55.3(2.18)	18.3(0.72)	26.0(1.02)	18.3(0.72)	32.0(1.26)	41.0(1.61)	39.1(1.54)
25	3/4	-CM-ML25-RS12	57.5(2.26)	15.7(0.62)	31.3(1.23)	15.9(0.63)	38.0(1.50)	35.0(1.38)	32.0(1.26)
25	1	-CM-ML25-RS16	60.1(2.37)	18.3(0.72)	31.3(1.23)	19.8(0.78)	38.0(1.50)	41.0(1.61)	39.1(1.54)
28	1	-CM-ML28-RS16	70.1(2.76)	18.3(0.72)	36.6(1.44)	19.8(0.78)	46.0(1.81)	41.0(1.61)	39.1(1.54)
28	1 1/4	-CM-ML28-RS20	73.9(2.91)	19.8(0.78)	36.6(1.44)	21.8(0.86)	46.0(1.81)	50.0(1.97)	49.0(1.93)
30	1 1/4	-CM-ML30-RS20	79.2(3.12)	19.8(0.78)	39.6(1.56)	26.2(1.03)	50.0(1.97)	50.0(1.97)	49.0(1.93)
32	1 1/4	-CM-ML32-RS20	78.9(3.11)	19.8(0.78)	42.0(1.65)	28.6(1.13)	50.0(1.97)	50.0(1.97)	49.0(1.93)
38	1 1/2	-CM-ML38-RS24	90.8(3.57)	20.6(0.81)	49.4(1.94)	31.8(1.25)	60.0(2.36)	55.0(2.17)	54.7(2.15)

Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

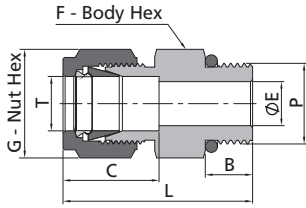
Metric Tube			ISO Parallel Thread (RP)						
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	E	G	F	D
3	1/8	-CM-ML3-RP2	30.0(1.18)	7.1(0.28)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)	13.8(0.54)
3	1/4	-CM-ML3-RP4	35.3(1.39)	11.2(0.44)	12.9(0.51)	2.4(0.09)	12.0(0.47)	19.0(0.75)	18.0(0.71)
4	1/8	-CM-ML4-RP2	30.7(1.21)	7.1(0.28)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)	13.8(0.54)
6	1/8	-CM-ML6-RP2	32.3(1.27)	7.1(0.28)	15.3(0.60)	4.0(0.16)	14.0(0.55)	14.0(0.55)	13.8(0.54)
6	1/4	-CM-ML6-RP4	37.6(1.48)	11.2(0.44)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)	18.0(0.71)
6	3/8	-CM-ML6-RP6	38.9(1.53)	11.2(0.44)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)	21.8(0.86)
6	1/2	-CM-ML6-RP8	44.7(1.76)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)	26.0(1.02)
8	1/8	-CM-ML8-RP2	33.3(1.31)	7.1(0.28)	16.2(0.64)	4.0(0.16)	16.0(0.63)	15.0(0.59)	13.8(0.54)
8	1/4	-CM-ML8-RP4	38.5(1.52)	11.2(0.44)	16.2(0.64)	5.9(0.23)	16.0(0.63)	19.0(0.75)	18.0(0.71)
8	3/8	-CM-ML8-RP6	39.8(1.57)	11.2(0.44)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)	21.8(0.86)
8	1/2	-CM-ML8-RP8	45.6(1.80)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)	26.0(1.02)
10	1/4	-CM-ML10-RP4	39.4(1.55)	11.2(0.44)	17.2(0.68)	5.9(0.23)	19.0(0.75)	19.0(0.75)	18.0(0.71)
10	3/8	-CM-ML10-RP6	42.8(1.69)	11.2(0.44)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	21.8(0.86)
10	1/2	-CM-ML10-RP8	46.5(1.83)	14.2(0.56)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)	26.0(1.02)
12	1/4	-CM-ML12-RP4	42.6(1.68)	11.2(0.44)	22.8(0.90)	5.9(0.23)	22.0(0.87)	22.0(0.87)	18.0(0.71)
12	3/8	-CM-ML12-RP6	43.1(1.70)	11.2(0.44)	22.8(0.90)	7.9(0.31)	22.0(0.87)	22.0(0.87)	21.8(0.86)
12	1/2	-CM-ML12-RP8	52.1(2.05)	14.2(0.56)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	26.0(1.02)
12	3/4	-CM-ML12-RP12	52.8(2.08)	15.7(0.62)	22.8(0.90)	9.5(0.37)	22.0(0.87)	35.0(1.38)	32.0(1.26)
15	1/2	-CM-ML15-RP8	47.5(1.87)	14.2(0.56)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	26.0(1.02)
16	3/8	-CM-ML16-RP6	43.9(1.73)	11.2(0.44)	24.4(0.96)	7.9(0.31)	25.0(0.98)	24.0(0.94)	21.8(0.86)
16	1/2	-CM-ML16-RP8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	26.0(1.02)
18	1/2	-CM-ML18-RP8	49.0(1.93)	14.2(0.56)	24.4(0.96)	11.9(0.47)	30.0(1.18)	27.0(1.06)	26.0(1.02)
18	3/4	-CM-ML18-RP12	52.8(2.08)	15.7(0.62)	24.4(0.96)	15.1(0.59)	30.0(1.18)	35.0(1.38)	32.0(1.26)
20	1/2	-CM-ML20-RP8	50.5(1.99)	14.2(0.56)	26.0(1.02)	11.9(0.47)	32.0(1.26)	30.0(1.18)	26.0(1.02)
20	3/4	-CM-ML20-RP12	52.8(2.08)	15.7(0.62)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	32.0(1.26)
22	3/4	-CM-ML22-RP12	52.8(2.08)	15.7(0.62)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	32.0(1.26)
22	1	-CM-ML22-RP16	55.3(2.18)	18.3(0.72)	26.0(1.02)	18.3(0.72)	32.0(1.26)	41.0(1.61)	39.0(1.54)
25	3/4	-CM-ML25-RP12	57.5(2.26)	15.7(0.62)	31.3(1.23)	15.9(0.63)	38.0(1.50)	35.0(1.38)	32.0(1.26)
25	1	-CM-ML25-RP16	60.1(2.37)	18.3(0.72)	31.3(1.23)	19.8(0.78)	38.0(1.50)	41.0(1.61)	39.0(1.54)
28	1	-CM-ML28-RP16	70.1(2.76)	18.3(0.72)	36.6(1.44)	19.8(0.78)	46.0(1.81)	41.0(1.61)	39.0(1.54)
28	1 1/4	-CM-ML28-RP20	73.9(2.91)	19.8(0.78)	36.6(1.44)	21.8(0.86)	46.0(1.81)	50.0(1.97)	49.0(1.93)
30	1 1/4	-CM-ML30-RP20	76.5(3.01)	19.8(0.78)	39.6(1.56)	26.2(1.03)	50.0(1.97)	50.0(1.97)	49.0(1.93)
32	1 1/4	-CM-ML32-RP20	78.9(3.11)	19.8(0.78)	42.0(1.65)	28.6(1.13)	50.0(1.97)	50.0(1.97)	49.0(1.93)
38	1 1/2	-CM-ML38-RP24	89.3(3.52)	20.6(0.81)	49.4(1.94)	31.8(1.25)	60.0(2.36)	55.0(2.17)	54.7(2.15)



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

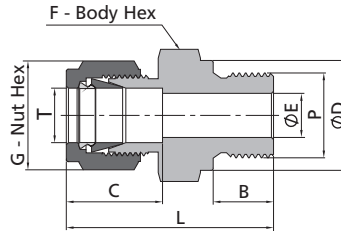
Metric Tube			ISO Parallel Thread (BP)					
T-Tube O.D. (mm)	P-BP Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	1/4	-CM-ML6-BP4	36.9(1.45)	12.9(0.51)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	3/8	-CM-ML6-BP6	39.5(1.56)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)
8	1/8	-CM-ML8-BP2	33.9(1.33)	9.8(0.39)	16.2(0.64)	4.0(0.16)	16.0(0.63)	14.0(0.55)
8	1/4	-CM-ML8-BP4	37.0(1.46)	12.9(0.51)	16.2(0.64)	6.4(0.25)	16.0(0.63)	14.0(0.55)
8	3/8	-CM-ML8-BP6	39.3(1.55)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)
8	1/2	-CM-ML8-BP8	45.4(1.79)	18.8(0.74)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)
10	1/4	-CM-ML10-BP4	39.5(1.56)	12.9(0.51)	17.2(0.68)	5.9(0.23)	19.0(0.75)	18.0(0.71)
10	1/2	-CM-ML10-BP8	46.3(1.82)	18.8(0.74)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
12	3/8	-CM-ML12-BP6	44.2(1.74)	14.2(0.56)	22.8(0.90)	7.9(0.31)	22.0(0.87)	22.0(0.87)
12	1/2	-CM-ML12-BP8	52.1(2.05)	18.8(0.74)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
14	1/4	-CM-ML14-BP4	42.9(1.69)	12.9(0.51)	24.4(0.96)	5.9(0.23)	25.0(0.98)	24.0(0.94)
16	3/8	-CM-ML16-BP6	43.4(1.71)	14.2(0.56)	24.4(0.96)	7.9(0.31)	25.0(0.98)	24.0(0.94)
16	1/2	-CM-ML16-BP8	47.9(1.89)	18.8(0.74)	24.4(0.96)	9.5(0.37)	25.0(0.98)	24.0(0.94)
18	1/2	-CM-ML18-BP8	49.8(1.96)	18.8(0.74)	24.4(0.96)	9.5(0.37)	30.0(1.18)	27.0(1.06)

Male Connectors



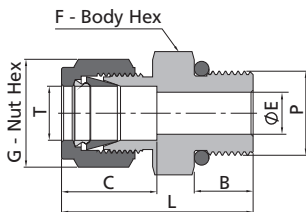
1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

Metric Tube			SAE/MS Straight Thread					
T-Tube O.D. (mm)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	9/16-18	-CM-ML6-ST9	35.6(1.40)	9.9(0.39)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)
10	9/16-18	-CM-ML10-ST9	37.3(1.47)	9.9(0.39)	17.2(0.68)	7.1(0.28)	19.0(0.75)	18.0(0.71)
10	3/4-16	-CM-ML10-ST12	39.4(1.55)	11.2(0.44)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
12	7/16-20	-CM-ML12-ST7	40.6(1.60)	9.1(0.36)	22.8(0.90)	5.2(0.20)	22.0(0.87)	22.0(0.87)
12	9/16-18	-CM-ML12-ST9	39.9(1.57)	9.9(0.39)	22.8(0.90)	7.1(0.28)	22.0(0.87)	22.0(0.87)



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

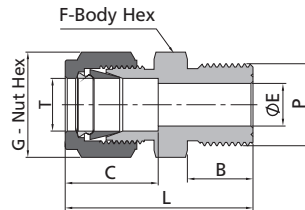
Metric Tube			Metric Thread (MRS)						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	E	G	F	D
6	M8 x 1	-CM-ML6-MRS8	33.3(1.31)	8.0(0.31)	15.3(0.60)	3.0(0.12)	14.0(0.55)	14.0(0.55)	12.0(0.47)
6	M10 x 1	-CM-ML6-MRS10	33.3(1.31)	8.0(0.31)	15.3(0.60)	4.0(0.16)	14.0(0.55)	14.0(0.55)	14.0(0.55)
6	M12 x 1.5	-CM-ML6-MRS12	38.2(1.50)	12.0(0.47)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)	17.0(0.67)
6	M14 x 1.5	-CM-ML6-MRS14	39.7(1.56)	12.0(0.47)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)	19.0(0.75)
8	M8 x 1	-CM-ML8-MRS8	34.1(1.34)	8.0(0.31)	16.2(0.64)	3.0(0.12)	16.0(0.63)	14.0(0.55)	12.0(0.47)
8	M10 x 1	-CM-ML8-MRS10	34.1(1.34)	8.0(0.31)	16.2(0.64)	5.0(0.20)	16.0(0.63)	14.0(0.55)	14.0(0.55)
8	M12 x 1.5	-CM-ML8-MRS12	40.4(1.59)	12.0(0.47)	16.2(0.64)	6.0(0.24)	16.0(0.63)	18.0(0.71)	17.0(0.67)
8	M14 x 1.5	-CM-ML8-MRS14	40.4(1.59)	12.0(0.47)	16.2(0.64)	6.4(0.25)	16.0(0.63)	19.0(0.75)	19.0(0.75)
10	M12 x 1.5	-CM-ML10-MRS12	40.7(1.60)	12.0(0.47)	17.2(0.68)	6.0(0.24)	19.0(0.75)	18.0(0.71)	17.0(0.67)
10	M14 x 1.5	-CM-ML10-MRS14	39.5(1.56)	12.0(0.47)	17.2(0.68)	7.9(0.31)	19.0(0.75)	19.0(0.75)	19.0(0.75)
12	M16 x 1.5	-CM-ML12-MRS16	45.5(1.79)	12.0(0.47)	22.8(0.90)	9.0(0.35)	22.0(0.87)	22.0(0.87)	21.0(0.83)
12	M20 x 1.5	-CM-ML12-MRS20	47.2(1.86)	14.0(0.55)	22.8(0.90)	9.5(0.37)	22.0(0.87)	25.0(0.98)	25.0(0.98)
12	M22 x 1.5	-CM-ML12-MRS22	47.5(1.87)	14.0(0.55)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	27.0(1.06)
14	M14 x 1.5	-CM-ML14-MRS14	44.9(1.77)	12.0(0.47)	24.4(0.96)	8.0(0.31)	25.0(0.98)	24.0(0.94)	19.0(0.75)
14	M20 x 1.5	-CM-ML14-MRS20	48.0(1.89)	14.0(0.55)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)	25.0(0.98)
16	M20 x 1.5	-CM-ML16-MRS20	48.0(1.89)	14.0(0.55)	24.4(0.96)	12.0(0.47)	25.0(0.98)	25.0(0.98)	25.0(0.98)
18	M20 x 1.5	-CM-ML18-MRS20	48.5(1.91)	14.0(0.55)	24.4(0.96)	12.0(0.47)	30.0(1.18)	27.0(1.06)	25.0(0.98)
20	M20 x 1.5	-CM-ML20-MRS20	50.0(1.97)	14.0(0.55)	26.0(1.02)	12.0(0.47)	32.0(1.26)	30.0(1.18)	25.0(0.98)
22	M24 x 1.5	-CM-ML22-MRS24	50.5(1.99)	14.0(0.55)	26.0(1.02)	15.0(0.59)	32.0(1.26)	30.0(1.18)	28.8(1.13)
25	M27 x 2	-CM-ML25-MRS27	57.5(2.26)	16.0(0.63)	31.3(1.23)	16.8(0.66)	38.0(1.50)	35.0(1.38)	32.0(1.26)



1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. 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	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	M14 x 1.5	-CM-ML6-MST14	38.7(1.52)	11.0(0.43)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
10	M14 x 1.5	-CM-ML10-MST14	40.0(1.57)	11.0(0.43)	17.2(0.68)	7.5(0.30)	19.0(0.75)	19.0(0.75)
10	M20 x 1.5	-CM-ML10-MST20	47.2(1.86)	14.0(0.55)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)
12	M14 x 1.5	-CM-ML12-MST14	40.2(1.58)	11.0(0.43)	22.8(0.90)	7.5(0.30)	22.0(0.87)	22.0(0.87)
12	M20 x 1.5	-CM-ML12-MST20	47.2(1.86)	14.0(0.55)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)

## Male Connectors

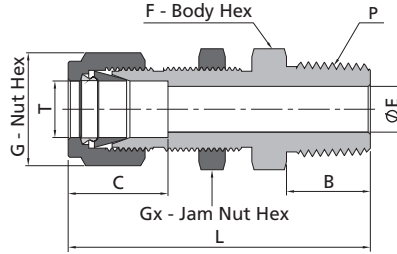


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Metric Tube			Metric Thread (MS)					
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	M6 x 1	-CM-ML6-MS6	32.4(1.28)	8.0(0.31)	15.3(0.60)	2.0(0.08)	14.0(0.55)	14.0(0.55)
6	M8 x 1	-CM-ML6-MS8	35.3(1.39)	9.0(0.35)	15.3(0.60)	3.0(0.12)	14.0(0.55)	14.0(0.55)
6	M10 x 1	-CM-ML6-MS10	34.7(1.37)	11.0(0.43)	15.3(0.60)	4.7(0.19)	14.0(0.55)	14.0(0.55)
6	M12 x 1.5	-CM-ML6-MS12	36.4(1.43)	12.0(0.47)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	M14 x 1.5	-CM-ML6-MS14	36.5(1.44)	13.0(0.51)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)
6	M16 x 1.5	-CM-ML6-MS16	38.4(1.51)	14.0(0.55)	15.3(0.60)	4.8(0.19)	14.0(0.55)	18.0(0.71)
6	M18 x 1.5	-CM-ML6-MS18	40.0(1.57)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
6	M20 x 1.5	-CM-ML6-MS20	41.7(1.64)	16.0(0.63)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)
8	M8 x 1	-CM-ML8-MS8	34.5(1.36)	9.0(0.35)	16.2(0.64)	3.0(0.12)	16.0(0.63)	14.0(0.55)
8	M10 x 1	-CM-ML8-MS10	36.6(1.44)	11.0(0.43)	16.2(0.64)	4.7(0.19)	16.0(0.63)	14.0(0.55)
8	M12 x 1.5	-CM-ML8-MS12	36.6(1.44)	12.0(0.47)	16.2(0.64)	6.0(0.24)	16.0(0.63)	14.0(0.55)
8	M14 x 1.5	-CM-ML8-MS14	37.7(1.48)	13.0(0.51)	16.2(0.64)	6.4(0.25)	16.0(0.63)	16.0(0.63)
8	M20 x 1.5	-CM-ML8-MS20	42.5(1.67)	16.0(0.63)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)
10	M12 x 1.5	-CM-ML10-MS12	38.7(1.52)	12.0(0.47)	17.2(0.68)	6.0(0.24)	19.0(0.75)	18.0(0.71)
10	M14 x 1.5	-CM-ML10-MS14	39.7(1.56)	13.0(0.51)	17.2(0.68)	7.2(0.28)	19.0(0.75)	18.0(0.71)
10	M20 x 1.5	-CM-ML10-MS20	43.5(1.71)	16.0(0.63)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
12	M12 x 1.5	-CM-ML12-MS12	41.2(1.62)	12.0(0.47)	22.8(0.90)	6.0(0.24)	22.0(0.87)	22.0(0.87)
12	M16 x 1.5	-CM-ML12-MS16	43.2(1.70)	14.0(0.55)	22.8(0.90)	8.4(0.33)	22.0(0.87)	22.0(0.87)
12	M18 x 1.5	-CM-ML12-MS18	44.2(1.74)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	M20 x 1.5	-CM-ML12-MS20	45.2(1.78)	16.0(0.63)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
14	M14 x 1.5	-CM-ML14-MS14	42.5(1.67)	13.0(0.51)	24.4(0.96)	7.2(0.28)	25.0(0.98)	24.0(0.94)
14	M16 x 1.5	-CM-ML14-MS16	43.9(1.73)	14.0(0.55)	24.4(0.96)	8.4(0.33)	25.0(0.98)	24.0(0.94)
14	M20 x 1.5	-CM-ML14-MS20	45.1(1.78)	16.0(0.63)	24.4(0.96)	10.8(0.43)	25.0(0.98)	24.0(0.94)
16	M20 x 1.5	-CM-ML16-MS20	46.1(1.81)	16.0(0.63)	24.4(0.96)	10.8(0.43)	25.0(0.98)	24.0(0.94)
18	M20 x 1.5	-CM-ML18-MS20	47.5(1.87)	16.0(0.63)	24.4(0.96)	10.8(0.43)	30.0(1.18)	27.0(1.06)
18	M22 x 1.5	-CM-ML18-MS22	48.5(1.91)	17.0(0.67)	24.4(0.96)	12.0(0.47)	30.0(1.18)	27.0(1.06)
20	M20 x 1.5	-CM-ML20-MS20	49.5(1.95)	16.0(0.63)	26.0(1.02)	10.8(0.43)	32.0(1.26)	30.0(1.18)
22	M24 x 1.5	-CM-ML22-MS24	50.5(1.99)	17.0(0.67)	26.0(1.02)	14.4(0.57)	32.0(1.26)	30.0(1.18)
25	M27 x 2	-CM-ML25-MS27	57.0(2.24)	18.0(0.71)	31.3(1.23)	16.1(0.63)	38.0(1.50)	35.0(1.38)



Bulkhead Male Connectors

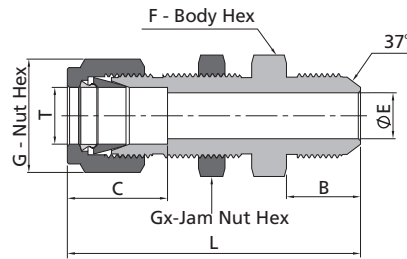


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			Dimensions, in. (mm)								NPT Thread	
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	L	B	C	E	G	F	Gx	Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)	
1/16	1/16	-BCM-FL1-NS1	1.19(30.2)	0.38(9.7)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.31(7.9)	0.31(7.9)	0.20(5.2)	0.25(6.4)	
1/16	1/8	-BCM-FL1-NS2	1.27(32.3)	0.38(9.7)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)	0.31(7.9)	0.20(5.2)	0.25(6.4)	
1/8	1/8	-BCM-FL2-NS2	1.83(46.5)	0.38(9.7)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.50(12.7)	0.50(12.7)	0.33(8.3)	0.50(12.7)	
3/16	1/8	-BCM-FL3-NS2	1.89(48.0)	0.38(9.7)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)	0.56(14.3)	0.39(9.9)	0.50(12.7)	
1/4	1/8	-BCM-FL4-NS2	1.95(49.5)	0.38(9.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.45(11.5)	0.40(10.2)	
1/4	1/4	-BCM-FL4-NS4	2.13(54.1)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.45(11.5)	0.40(10.2)	
1/4	3/8	-BCM-FL4-NS6	2.16(54.9)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.63(15.9)	0.69(17.5)	0.63(15.9)	0.45(11.5)	0.40(10.2)	
1/4	1/2	-BCM-FL4-NS8	2.37(60.3)	0.75(19.1)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	0.63(15.9)	0.45(11.5)	0.40(10.2)	
5/16	1/8	-BCM-FL5-NS2	2.08(52.8)	0.38(9.7)	0.64(16.3)	0.19(4.8)	0.63(15.9)	0.69(17.5)	0.69(17.5)	0.52(13.1)	0.44(11.2)	
5/16	1/4	-BCM-FL5-NS4	2.27(57.7)	0.56(14.2)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.69(17.5)	0.69(17.5)	0.52(13.1)	0.44(11.2)	
3/8	1/8	-BCM-FL6-NS2	2.08(52.9)	0.38(9.7)	0.66(16.8)	0.19(4.8)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)	
3/8	1/4	-BCM-FL6-NS4	2.26(57.4)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)	
3/8	3/8	-BCM-FL6-NS6	2.26(57.4)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)	
3/8	1/2	-BCM-FL6-NS8	2.51(63.8)	0.75(19.1)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	0.87(22.2)	0.58(14.7)	0.44(11.2)	
1/2	1/8	-BCM-FL8-NS2	2.31(58.7)	0.38(9.7)	0.90(22.9)	0.19(4.8)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)	
1/2	1/4	-BCM-FL8-NS4	2.49(63.2)	0.56(14.2)	0.90(22.9)	0.28(7.1)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)	
1/2	3/8	-BCM-FL8-NS6	2.49(63.2)	0.56(14.2)	0.90(22.9)	0.38(9.7)	0.87(22.2)	0.94(23.8)	0.87(22.2)	0.76(19.4)	0.50(12.7)	
1/2	1/2	-BCM-FL8-NS8	2.71(68.8)	0.75(19.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)	
5/8	3/8	-BCM-FL10-NS6	2.63(66.7)	0.56(14.2)	0.96(24.4)	0.38(9.7)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.59(15.1)	
5/8	1/2	-BCM-FL10-NS8	2.81(71.5)	0.75(19.1)	0.96(24.4)	0.47(11.9)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.59(15.1)	
3/4	1/2	-BCM-FL12-NS8	3.00(76.2)	0.75(19.1)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.19(30.2)	1.19(30.2)	1.02(25.8)	0.66(16.8)	
3/4	3/4	-BCM-FL12-NS12	3.00(76.2)	0.75(19.1)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.19(30.2)	1.19(30.2)	1.02(25.8)	0.66(16.8)	
7/8	3/4	-BCM-FL14-NS12	3.31(84.1)	0.75(19.1)	1.02(25.9)	0.62(15.7)	1.25(31.8)	1.31(33.3)	1.31(33.3)	1.14(29.0)	0.75(19.1)	
1	3/4	-BCM-FL16-NS12	3.48(88.4)	0.75(19.1)	1.23(31.2)	0.62(15.7)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.75(19.1)	
1	1	-BCM-FL16-NS16	3.67(93.2)	0.94(23.9)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.75(19.1)	

Metric Tube			Dimensions, mm (in.)							NPT Thread	
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	L	B	C	E	G	F	Gx	Panel Hole Size mm (in.)	Max. Panel Thickness mm (in.)
6	1/8	-BCM-ML6-NS2	49.6(1.95)	9.7(0.38)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)	16.0(0.63)	11.5(0.45)	10.2(0.40)
6	1/4	-BCM-ML6-NS4	53.6(2.11)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)	16.0(0.63)	11.5(0.45)	10.2(0.40)
8	1/8	-BCM-ML8-NS2	52.3(2.06)	9.7(0.38)	16.2(0.64)	4.8(0.19)	16.0(0.63)	18.0(0.71)	18.0(0.71)	13.1(0.52)	11.2(0.44)
8	1/4	-BCM-ML8-NS4	56.6(2.23)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)	18.0(0.71)	13.1(0.52)	11.2(0.44)
10	1/4	-BCM-ML10-NS4	58.4(2.30)	14.2(0.56)	17.2(0.68)	7.1(0.28)	19.0(0.75)	22.0(0.87)	22.0(0.87)	16.3(0.64)	11.2(0.44)
10	3/8	-BCM-ML10-NS6	58.4(2.30)	14.2(0.56)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	22.0(0.87)	16.3(0.64)	11.2(0.44)
10	1/2	-BCM-ML10-NS8	63.1(2.48)	19.1(0.75)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	22.0(0.87)	16.3(0.64)	11.2(0.44)
12	1/4	-BCM-ML12-NS4	63.9(2.52)	14.2(0.56)	22.8(0.90)	7.1(0.28)	22.0(0.87)	24.0(0.94)	24.0(0.94)	19.5(0.77)	12.7(0.50)
12	3/8	-BCM-ML12-NS6	63.9(2.52)	14.2(0.56)	22.8(0.90)	9.5(0.37)	22.0(0.87)	24.0(0.94)	24.0(0.94)	19.5(0.77)	12.7(0.50)
12	1/2	-BCM-ML12-NS8	68.8(2.71)	19.1(0.75)	22.8(0.90)	9.5(0.37)	22.0(0.87)	24.0(0.94)	24.0(0.94)	19.5(0.77)	12.7(0.50)

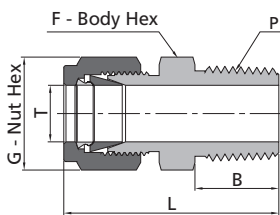
## Bulkhead Male Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			37° Flare (AN)								
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
			L	B	C	E	G	F	Gx		
1/8	1/8	-BCM-FL2-AN2	1.91(48.5)	0.45(11.4)	0.50(12.7)	0.06(1.5)	0.44(11.1)	0.50(12.7)	0.50(12.7)	0.33(8.3)	0.50(12.7)
1/8	1/4	-BCM-FL2-AN4	2.04(51.8)	0.55(14.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.63(15.9)	0.50(12.7)	0.33(8.3)	0.50(12.7)
3/16	3/16	-BCM-FL3-AN3	1.98(50.3)	0.48(12.2)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)	0.56(14.3)	0.39(9.9)	0.50(12.7)
1/4	1/4	-BCM-FL4-AN4	2.12(53.8)	0.55(14.0)	0.60(15.2)	0.17(4.3)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.45(11.5)	0.40(10.2)
5/16	5/16	-BCM-FL5-AN5	2.21(56.1)	0.55(14.0)	0.64(16.2)	0.23(5.8)	0.63(15.9)	0.69(17.5)	0.69(17.5)	0.52(13.1)	0.56(14.3)
3/8	1/4	-BCM-FL6-AN4	2.25(57.2)	0.55(14.0)	0.66(16.8)	0.17(4.3)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)
3/8	3/8	-BCM-FL6-AN6	2.25(57.2)	0.56(14.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)
1/2	1/2	-BCM-FL8-AN8	2.59(65.8)	0.66(16.8)	0.90(22.8)	0.39(9.9)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)
5/8	5/8	-BCM-FL10-AN10	2.74(69.6)	0.76(19.3)	0.96(24.4)	0.48(12.3)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.59(15.1)
3/4	3/4	-BCM-FL12-AN12	3.11(79.0)	0.86(21.8)	0.96(24.4)	0.61(15.5)	1.13(28.6)	1.19(30.2)	1.19(30.2)	1.02(25.8)	0.66(16.8)
1	1	-BCM-FL16-AN16	3.64(92.5)	0.91(23.1)	1.23(31.2)	0.84(21.3)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.75(19.1)

## Thermocouple Connectors



1. The T dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

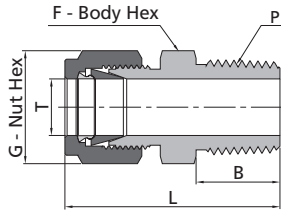
2. To order single-ferrule thermocouple connector with only the ferrule material being non-metallic, the basic ordering number is -TCM-SF□-NS4-□F.

Example: SS-TCM-SFL6-NS4-TF

Note: "6" means 3/8 in. tube OD and "T" means PTFE ferrule material.

Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	G	F
1/16	1/16	-TCM-FL1-NS1	0.94(23.9)	0.38(9.7)	0.31(7.9)	0.31(7.9)
1/16	1/8	-TCM-FL1-NS2	1.03(26.2)	0.38(9.7)	0.31(7.9)	0.44(11.1)
1/16	1/4	-TCM-FL1-NS4	1.22(31.0)	0.56(14.2)	0.31(7.9)	0.56(14.3)
1/8	1/16	-TCM-FL2-NS1	1.17(29.7)	0.38(9.7)	0.44(11.1)	0.44(11.1)
1/8	1/8	-TCM-FL2-NS2	1.20(30.5)	0.38(9.7)	0.44(11.1)	0.44(11.1)
1/8	1/4	-TCM-FL2-NS4	1.40(35.6)	0.56(14.2)	0.44(11.1)	0.56(14.3)
3/16	1/8	-TCM-FL3-NS2	1.23(31.2)	0.38(9.7)	0.50(12.7)	0.44(11.1)
3/16	1/4	-TCM-FL3-NS4	1.43(36.3)	0.56(14.2)	0.50(12.7)	0.56(14.3)
1/4	1/8	-TCM-FL4-NS2	1.29(32.8)	0.38(9.7)	0.56(14.3)	0.50(12.7)
1/4	1/4	-TCM-FL4-NS4	1.49(37.8)	0.56(14.2)	0.56(14.3)	0.56(14.3)
1/4	3/8	-TCM-FL4-NS6	1.51(38.4)	0.56(14.2)	0.56(14.3)	0.69(17.5)
1/4	1/2	-TCM-FL4-NS8	1.76(44.7)	0.75(19.1)	0.56(14.3)	0.87(22.2)
5/16	1/4	-TCM-FL5-NS4	1.52(38.6)	0.56(14.2)	0.63(15.9)	0.56(14.3)
3/8	1/4	-TCM-FL6-NS4	1.57(39.9)	0.56(14.2)	0.69(17.5)	0.63(15.9)
3/8	3/8	-TCM-FL6-NS6	1.57(39.9)	0.56(14.2)	0.69(17.5)	0.69(17.5)
3/8	1/2	-TCM-FL6-NS8	1.82(46.2)	0.75(19.1)	0.69(17.5)	0.87(22.2)
3/8	3/4	-TCM-FL6-NS12	1.88(47.8)	0.75(19.1)	0.69(17.5)	1.06(27.0)
1/2	1/2	-TCM-FL8-NS8	1.93(49.0)	0.75(19.1)	0.87(22.2)	0.87(22.2)
1/2	3/4	-TCM-FL8-NS12	1.99(50.5)	0.75(19.1)	0.87(22.2)	1.06(27.0)
5/8	3/4	-TCM-FL10-NS12	1.99(50.5)	0.75(19.1)	1.00(25.4)	1.06(27.0)
3/4	3/4	-TCM-FL12-NS12	1.99(50.5)	0.75(19.1)	1.13(28.6)	1.06(27.0)
1	1	-TCM-FL16-NS16	2.45(62.2)	0.94(23.9)	1.50(38.1)	1.37(34.9)

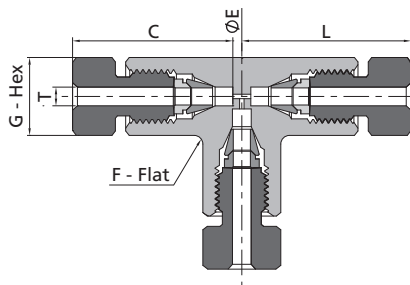
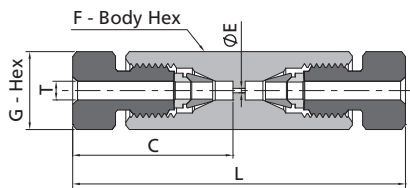
Thermocouple Connectors



The T dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	G	F
2	1/8	-TCM-ML2-NS2	30.5(1.20)	9.7(0.38)	12.0(0.47)	12.0(0.47)
3	1/8	-TCM-ML3-NS2	30.5(1.20)	9.7(0.38)	12.0(0.47)	12.0(0.47)
3	1/4	-TCM-ML3-NS4	35.6(1.40)	14.2(0.56)	12.0(0.47)	14.0(0.55)
4	1/8	-TCM-ML4-NS2	31.2(1.23)	9.7(0.38)	12.0(0.47)	12.0(0.47)
4	1/4	-TCM-ML4-NS4	36.3(1.43)	14.2(0.56)	12.0(0.47)	14.0(0.55)
6	1/8	-TCM-ML6-NS2	32.8(1.29)	9.7(0.38)	14.0(0.55)	14.0(0.55)
6	1/4	-TCM-ML6-NS4	37.9(1.49)	14.2(0.56)	14.0(0.55)	14.0(0.55)
6	3/8	-TCM-ML6-NS6	38.4(1.51)	14.2(0.56)	14.0(0.55)	18.0(0.71)
6	1/2	-TCM-ML6-NS8	44.7(1.76)	19.1(0.75)	14.0(0.55)	22.0(0.87)
8	1/4	-TCM-ML8-NS4	38.7(1.52)	14.2(0.56)	16.0(0.63)	15.0(0.59)
8	3/8	-TCM-ML8-NS6	39.3(1.55)	14.2(0.56)	16.0(0.63)	18.0(0.71)
8	1/2	-TCM-ML8-NS8	45.6(1.80)	19.1(0.75)	16.0(0.63)	22.0(0.87)
10	3/8	-TCM-ML10-NS6	40.9(1.61)	14.2(0.56)	19.0(0.75)	18.0(0.71)
10	1/2	-TCM-ML10-NS8	46.5(1.83)	19.1(0.75)	19.0(0.75)	22.0(0.87)
10	3/4	-TCM-ML10-NS12	48.0(1.89)	19.1(0.75)	19.0(0.75)	27.0(1.06)
10	1	-TCM-ML10-NS16	54.6(2.15)	23.9(0.94)	19.0(0.75)	35.0(1.38)
12	3/8	-TCM-ML12-NS6	43.4(1.71)	14.2(0.56)	22.0(0.87)	22.0(0.87)
12	1/2	-TCM-ML12-NS8	49.0(1.93)	19.1(0.75)	22.0(0.87)	22.0(0.87)
12	3/4	-TCM-ML12-NS12	50.5(1.99)	19.1(0.75)	22.0(0.87)	27.0(1.06)
14	1/2	-TCM-ML14-NS8	49.0(1.93)	19.1(0.75)	25.0(0.98)	24.0(0.94)
14	3/4	-TCM-ML14-NS12	50.5(1.99)	19.1(0.75)	25.0(0.98)	27.0(1.06)
15	3/4	-TCM-ML15-NS12	50.5(1.99)	19.1(0.75)	25.0(0.98)	27.0(1.06)
15	1	-TCM-ML15-NS16	57.1(2.25)	23.9(0.94)	25.0(0.98)	35.0(1.38)
18	3/4	-TCM-ML18-NS12	50.5(1.99)	19.1(0.75)	30.0(1.18)	27.0(1.06)
20	1	-TCM-ML20-NS16	57.1(2.25)	23.9(0.94)	32.0(1.26)	35.0(1.38)
22	1	-TCM-ML22-NS16	57.1(2.25)	23.9(0.94)	32.0(1.26)	35.0(1.38)

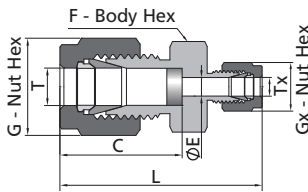
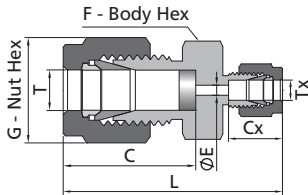
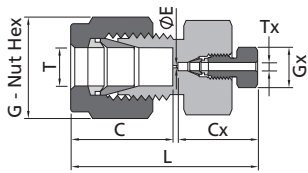
Chromatograph Fittings



Fractional Tube							
T-Tube O.D (in.)	Basic Ordering Number	Dimensions, in. (mm)					Dead Volume
		L	C	E	G	F	
1/16	-U-NFL1	1.26(32.0)	0.61(15.5)	0.01(0.3)	0.25(6.4)	0.25(6.4)	6.6 × 10 <sup>-5</sup> cm <sup>3</sup>

Fractional Tube							
T-Tube O.D (in.)	Basic Ordering Number	Dimensions, in. (mm)					Dead Volume
		L	C	E	G	F	
1/16	-TTT-NFL1	0.66(16.8)	0.61(15.5)	0.01(0.3)	0.25(6.4)	0.37(9.5)	2.8 × 10 <sup>-4</sup> cm <sup>3</sup>

Column End Fittings



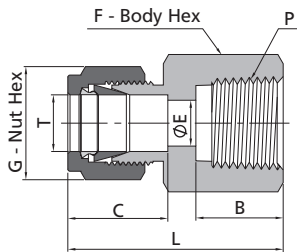
Fractional Tube										
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Dead Volume	
			L	C	Cx	E	G	Gx		
1/4	1/16	-U-FL4-NFL1	1.24(31.5)	0.60(15.2)	0.61(15.5)	0.01(0.3)	0.56(14.3)	0.25(6.4)	6.8 × 10 <sup>5</sup> cm <sup>3</sup>	
3/8	1/16	-U-FL6-NFL1	1.30(33.0)	0.66(16.8)	0.61(15.5)	0.01(0.3)	0.69(17.5)	0.25(6.4)	6.8 × 10 <sup>5</sup> cm <sup>3</sup>	

Fractional Tube										
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Dead Volume	
			L	C	Cx	G	F	E		
1/8	1/16	-U-TFL2SN7-FL1	1.22(31.0)	0.72(18.3)	0.34(8.6)	0.44(11.1)	0.44(11.1)	0.05(1.3)	5.4 × 10 <sup>3</sup> cm <sup>3</sup>	
1/4	1/16	-U-TFL4SN7-FL1	1.35(34.3)	0.82(20.8)	0.34(8.6)	0.56(14.3)	0.50(12.7)	0.05(1.3)	6.7 × 10 <sup>3</sup> cm <sup>3</sup>	
3/8	1/16	-U-TFL6SN7-FL1	1.44(36.6)	0.91(23.1)	0.34(8.6)	0.69(17.5)	0.63(15.9)	0.05(1.3)	6.5 × 10 <sup>3</sup> cm <sup>3</sup>	

Fractional Tube										
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Dead Volume	
			L	C	G	Gx	F	E		
1/8	1/16	-U-TFL2SN7-TFL1	1.22(31.0)	0.72(18.3)	0.44(11.1)	0.31(7.9)	0.44(11.1)	0.07(1.7)	0	
1/4	1/16	-U-TFL4SN7-TFL1	1.35(34.3)	0.82(20.8)	0.56(14.3)	0.31(7.9)	0.50(12.7)	0.07(1.7)	0	
3/8	1/16	-U-TFL6SN7-TFL1	1.44(36.6)	0.91(23.1)	0.69(17.5)	0.31(7.9)	0.63(15.9)	0.07(1.7)	0	
1/2	1/16	-U-TFL8SN7-TFL1	1.58(40.1)	1.04(26.4)	0.87(22.2)	0.31(7.9)	0.81(20.6)	0.07(1.7)	0	

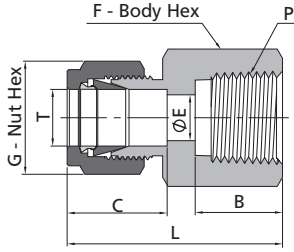
Nominal pore size of SN7 Stainless steel sinter is 7 µm, and other nominal pore sizes are available. Stainless steel sinters are loosely installed to facilitate removal and replacement.

Female Connectors



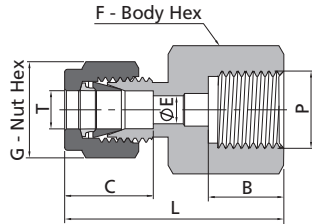
Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/16	1/16	-CF-FL1-NS1	0.93(23.6)	0.39(9.9)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)	
1/16	1/8	-CF-FL1-NS2	0.96(24.4)	0.41(10.4)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.56(14.3)	
1/8	1/8	-CF-FL2-NS2	1.13(28.7)	0.41(10.4)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	
1/8	1/4	-CF-FL2-NS4	1.32(33.5)	0.59(15.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	
3/16	1/8	-CF-FL3-NS2	1.17(29.7)	0.41(10.4)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)	
1/4	1/8	-CF-FL4-NS2	1.23(31.2)	0.41(10.4)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)	
1/4	1/4	-CF-FL4-NS4	1.41(35.8)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	
1/4	3/8	-CF-FL4-NS6	1.48(37.6)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	
1/4	1/2	-CF-FL4-NS8	1.67(42.4)	0.78(19.8)	0.60(15.2)	16.3(4.8)	0.56(14.3)	1.06(27.0)	
5/16	1/8	-CF-FL5-NS2	1.26(32.0)	0.41(10.4)	0.64(16.3)	16.3(6.4)	0.63(15.9)	0.56(14.3)	
5/16	1/4	-CF-FL5-NS4	1.45(36.8)	0.59(15.0)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.75(19.1)	
3/8	1/8	-CF-FL6-NS2	1.29(32.8)	0.41(10.4)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)	
3/8	1/4	-CF-FL6-NS4	1.48(37.6)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	
3/8	3/8	-CF-FL6-NS6	1.54(39.1)	0.59(15.0)	0.66(16.8)	1.34(7.1)	0.69(17.5)	0.88(22.2)	
3/8	1/2	-CF-FL6-NS8	1.73(43.9)	0.78(19.8)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	
3/8	3/4	-CF-FL6-NS12	1.88(47.8)	0.81(20.6)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.31(33.3)	
1/2	1/4	-CF-FL8-NS4	1.59(40.4)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.81(20.6)	
1/2	3/8	-CF-FL8-NS6	1.65(41.9)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)	
1/2	1/2	-CF-FL8-NS8	1.84(46.7)	0.78(19.8)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	
1/2	3/4	-CF-FL8-NS12	1.90(48.3)	0.81(20.6)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.31(33.3)	
5/8	3/8	-CF-FL10-NS6	1.65(41.9)	0.59(15.0)	0.96(24.4)	0.50(12.7)	1.00(25.4)	0.94(23.8)	
5/8	1/2	-CF-FL10-NS8	1.84(46.7)	0.78(19.8)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.06(27.0)	

Female Connectors

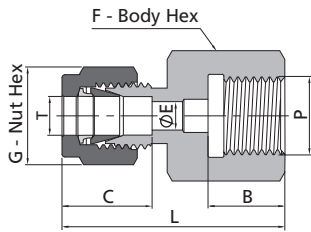


Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
3/4	1/2	-CF-FL12-NS8	1.84(46.7)	0.78(19.8)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)	
3/4	3/4	-CF-FL12-NS12	1.90(48.3)	0.81(20.6)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.31(33.3)	
7/8	3/4	-CF-FL14-NS12	1.96(49.8)	0.81(20.6)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.31(33.3)	
1	3/4	-CF-FL16-NS12	2.10(53.3)	0.81(20.6)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.37(34.9)	
1	1	-CF-FL16-NS16	2.45(62.2)	1.00(25.4)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.63(41.3)	
1 1/4	1 1/4	-CF-FL20-NS20	2.94(74.7)	1.00(25.4)	1.62(41.1)	1.09(27.7)	1.87(47.6)	2.13(54.0)	
1 1/2	1 1/2	-CF-FL24-NS24	3.30(83.8)	1.09(27.7)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.37(60.3)	

Fractional Tube			ISO Tapered Thread (RT)						
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/4	1/8	-CF-FL4-RT2	1.23(31.2)	0.41(10.4)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.56(14.3)	
1/4	1/4	-CF-FL4-RT4	1.41(35.8)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	
1/4	3/8	-CF-FL4-RT6	1.48(37.6)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	
1/4	1/2	-CF-FL4-RT8	1.67(42.4)	0.78(19.8)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)	
3/8	1/4	-CF-FL6-RT4	1.48(37.6)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	
3/8	3/8	-CF-FL6-RT6	1.54(39.1)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	
3/8	1/2	-CF-FL6-RT8	1.73(43.9)	0.78(19.8)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	
1/2	1/4	-CF-FL8-RT4	1.59(40.4)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.81(20.6)	
1/2	3/8	-CF-FL8-RT6	1.65(41.9)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.87(22.2)	
1/2	1/2	-CF-FL8-RT8	1.84(46.7)	0.78(19.8)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	

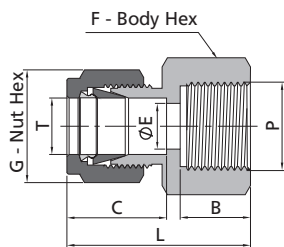


Fractional Tube			ISO Parallel Thread (RG)						
T-Tube O.D. (in.)	P-RG Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/8	1/4	-CF-FL2-RG4	1.39(35.3)	0.51(12.9)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	
1/8	3/8	-CF-FL2-RG6	1.52(38.7)	0.56(14.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.94(23.8)	
1/4	1/4	-CF-FL4-RG4	1.48(37.6)	0.51(12.9)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	
1/4	3/8	-CF-FL4-RG6	1.48(37.6)	0.56(14.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.94(23.8)	
1/4	1/2	-CF-FL4-RG8	1.71(43.4)	0.74(18.8)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)	
5/16	1/4	-CF-FL5-RG4	1.51(38.4)	0.51(12.9)	0.64(16.3)	0.22(5.6)	0.63(15.9)	0.75(19.1)	
5/16	3/8	-CF-FL5-RG6	1.45(36.9)	0.56(14.2)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.94(23.8)	
5/16	1/2	-CF-FL5-RG8	1.61(40.9)	0.74(18.8)	0.64(16.3)	0.28(7.1)	0.63(15.9)	1.06(27.0)	
3/8	1/4	-CF-FL6-RG4	1.54(39.1)	0.51(12.9)	0.66(16.8)	0.22(5.6)	0.69(17.5)	0.75(19.1)	
3/8	3/8	-CF-FL6-RG6	1.52(38.6)	0.56(14.2)	0.66(16.8)	0.25(6.4)	0.69(17.5)	0.94(23.8)	
3/8	1/2	-CF-FL6-RG8	1.65(41.9)	0.74(18.8)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	
1/2	1/4	-CF-FL8-RG4	1.65(41.9)	0.51(12.9)	0.90(22.9)	0.22(5.6)	0.87(22.2)	0.87(22.2)	
1/2	3/8	-CF-FL8-RG6	1.75(44.5)	0.56(14.2)	0.90(22.9)	0.25(6.4)	0.87(22.2)	0.94(23.8)	
1/2	1/2	-CF-FL8-RG8	1.90(48.3)	0.74(18.8)	0.90(22.9)	0.28(7.1)	0.87(22.2)	1.06(27.0)	



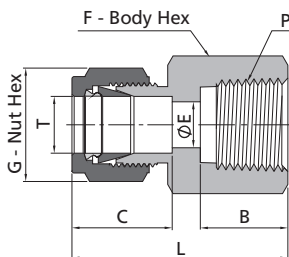
Adapt to Japanese gauge stud (JIS B7505)

Fractional Tube			ISO Parallel Thread (RJ)						
T-Tube O.D. (in.)	P-RJ Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	E	G	F	
1/4	1/4	-CF-FL4-RJ4	1.48(37.6)	0.51(12.9)	0.60(15.2)	0.18(4.6)	0.56(14.3)	0.75(19.1)	
1/4	3/8	-CF-FL4-RJ6	1.48(37.6)	0.62(15.8)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.94(23.8)	
1/4	1/2	-CF-FL4-RJ8	1.71(43.4)	0.74(18.8)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)	
5/16	1/4	-CF-FL5-RJ4	1.51(38.4)	0.51(12.9)	0.64(16.3)	0.22(5.6)	0.63(15.9)	0.75(19.1)	
5/16	1/2	-CF-FL5-RJ8	1.61(40.9)	0.74(18.8)	0.64(16.3)	0.28(7.1)	0.63(15.9)	1.06(27.0)	
3/8	1/4	-CF-FL6-RJ4	1.54(39.1)	0.51(12.9)	0.66(16.8)	0.22(5.6)	0.69(17.5)	0.75(19.1)	
3/8	3/8	-CF-FL6-RJ6	1.52(38.6)	0.62(15.8)	0.66(16.8)	0.25(6.4)	0.69(17.5)	0.94(23.8)	
3/8	1/2	-CF-FL6-RJ8	1.65(41.9)	0.74(18.8)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	
1/2	1/4	-CF-FL8-RJ4	1.65(41.9)	0.51(12.9)	0.90(22.9)	0.22(5.6)	0.87(22.2)	0.81(20.6)	
1/2	3/8	-CF-FL8-RJ6	1.75(44.5)	0.62(15.8)	0.90(22.9)	0.25(6.4)	0.87(22.2)	0.94(23.8)	
1/2	1/2	-CF-FL8-RJ8	1.90(48.3)	0.74(18.8)	0.90(22.9)	0.28(7.1)	0.87(22.2)	1.06(27.0)	



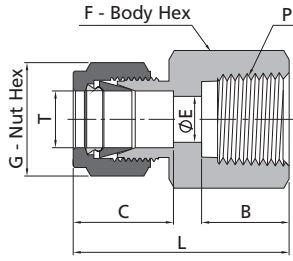
Fractional Tube			Metric Thread					
T-Tube O.D. (in.)	P-Metric Thread Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	C	E	G	F
1/8	M14 x 1.5	-CF-FL2-MS14	1.22(31.0)	0.51(13.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)
1/8	M16 x 1.5	-CF-FL2-MS16	1.31(33.3)	0.55(14.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.87(22.2)
1/8	M18 x 1.5	-CF-FL2-MS18	1.35(34.3)	0.59(15.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	1.00(25.4)
1/8	M20 x 1.5	-CF-FL2-MS20	1.39(35.3)	0.63(16.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	1.06(27.0)
1/4	M16 x 1.5	-CF-FL4-MS16	1.41(35.8)	0.55(14.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)
1/4	M18 x 1.5	-CF-FL4-MS18	1.45(36.8)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.00(25.4)
1/4	M20 x 1.5	-CF-FL4-MS20	1.49(37.8)	0.63(16.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)
3/8	M14 x 1.5	-CF-FL6-MS14	1.46(37.1)	0.51(13.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)
3/8	M16 x 1.5	-CF-FL6-MS16	1.48(37.5)	0.55(14.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)
3/8	M18 x 1.5	-CF-FL6-MS18	1.52(38.5)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.00(25.4)
3/8	M20 x 1.5	-CF-FL6-MS20	1.56(39.5)	0.63(16.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)
1/2	M16 x 1.5	-CF-FL8-MS16	1.63(41.4)	0.55(14.0)	0.90(22.9)	0.33(8.4)	0.87(22.2)	0.87(22.2)
1/2	M18 x 1.5	-CF-FL8-MS18	1.67(42.4)	0.59(15.0)	0.90(22.9)	0.38(9.6)	0.87(22.2)	1.00(25.4)
1/2	M20 x 1.5	-CF-FL8-MS20	1.71(43.4)	0.63(16.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)
1/2	M22 x 1.5	-CF-FL8-MS22	1.65(41.9)	0.63(16.0)	0.90(22.9)	0.38(9.7)	0.87(22.2)	1.06(27.0)

Female Connectors



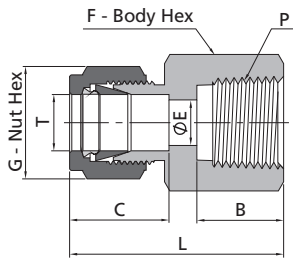
Metric Tube			NPT Thread					
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
3	1/8	-CF-ML3-NS2	28.7(1.13)	10.4(0.41)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)
3	1/4	-CF-ML3-NS4	33.5(1.32)	15.0(0.59)	12.9(0.51)	2.4(0.09)	12.0(0.47)	19.0(0.75)
4	1/8	-CF-ML4-NS2	29.7(1.17)	10.4(0.41)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)
6	1/8	-CF-ML6-NS2	31.3(1.23)	10.4(0.41)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	1/4	-CF-ML6-NS4	35.8(1.41)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
6	3/8	-CF-ML6-NS6	37.7(1.48)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)
6	1/2	-CF-ML6-NS8	42.5(1.67)	19.8(0.78)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)
8	1/8	-CF-ML8-NS2	32.1(1.26)	10.4(0.41)	16.2(0.64)	6.4(0.25)	16.0(0.63)	15.0(0.59)
8	1/4	-CF-ML8-NS4	37.0(1.46)	15.0(0.59)	16.2(0.64)	6.4(0.25)	16.0(0.63)	19.0(0.75)
8	3/8	-CF-ML8-NS6	38.5(1.52)	15.0(0.59)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)
8	1/2	-CF-ML8-NS8	43.3(1.70)	19.8(0.78)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)
10	1/8	-CF-ML10-NS2	33.0(1.30)	10.4(0.41)	17.2(0.68)	7.9(0.31)	19.0(0.75)	18.0(0.71)
10	1/4	-CF-ML10-NS4	37.8(1.49)	15.0(0.59)	17.2(0.68)	7.9(0.31)	19.0(0.75)	19.0(0.75)
10	3/8	-CF-ML10-NS6	39.4(1.55)	15.0(0.59)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
10	1/2	-CF-ML10-NS8	44.2(1.74)	19.8(0.78)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)

Female Connectors



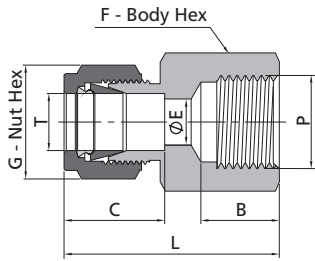
Metric Tube			NPT Thread					
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
12	1/4	-CF-ML12-NS4	40.3(1.59)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	3/8	-CF-ML12-NS6	41.9(1.65)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	1/2	-CF-ML12-NS8	46.7(1.84)	19.8(0.78)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)
12	3/4	-CF-ML12-NS12	49.1(1.93)	20.6(0.81)	22.8(0.90)	9.5(0.37)	22.0(0.87)	35.0(1.38)
14	3/4	-CF-ML14-NS12	49.7(1.96)	20.6(0.81)	24.4(0.96)	11.1(0.44)	25.0(0.98)	35.0(1.38)
15	1/2	-CF-ML15-NS8	46.7(1.84)	19.8(0.78)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)
16	3/8	-CF-ML16-NS6	41.9(1.65)	15.0(0.59)	24.4(0.96)	12.7(0.50)	25.0(0.98)	27.0(1.06)
16	1/2	-CF-ML16-NS8	46.9(1.85)	19.8(0.78)	24.4(0.96)	12.7(0.50)	25.0(0.98)	27.0(1.06)
20	1/2	-CF-ML20-NS8	47.9(1.89)	19.8(0.78)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)
20	3/4	-CF-ML20-NS12	49.7(1.96)	20.6(0.81)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)
22	3/4	-CF-ML22-NS12	49.7(1.96)	20.6(0.81)	26.0(1.02)	18.3(0.72)	32.0(1.26)	35.0(1.38)
22	1	-CF-ML22-NS16	57.9(2.28)	25.4(1.00)	26.0(1.02)	18.3(0.72)	32.0(1.26)	41.0(1.61)
25	3/4	-CF-ML25-NS12	53.4(2.10)	20.6(0.81)	31.3(1.23)	21.8(0.86)	38.0(1.50)	35.0(1.38)
25	1	-CF-ML25-NS16	62.3(2.45)	25.4(1.00)	31.3(1.23)	21.8(0.86)	38.0(1.50)	41.0(1.61)

Female Connectors

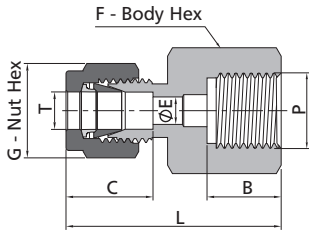


Metric Tube			ISO Tapered Thread (RT)					
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
3	1/8	-CF-ML3-RT2	28.7(1.13)	10.4(0.41)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)
6	1/8	-CF-ML6-RT2	31.3(1.23)	10.4(0.41)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	1/4	-CF-ML6-RT4	35.8(1.41)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
6	3/8	-CF-ML6-RT6	37.9(1.49)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	22.0(0.87)
6	1/2	-CF-ML6-RT8	42.5(1.67)	19.8(0.78)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)
8	1/8	-CF-ML8-RT2	32.1(1.26)	10.4(0.41)	16.2(0.64)	6.4(0.25)	16.0(0.63)	15.0(0.59)
8	1/4	-CF-ML8-RT4	37.0(1.46)	15.0(0.59)	16.2(0.64)	6.4(0.25)	16.0(0.63)	19.0(0.75)
8	3/8	-CF-ML8-RT6	38.5(1.52)	15.0(0.59)	16.2(0.64)	6.4(0.25)	16.0(0.63)	22.0(0.87)
8	1/2	-CF-ML8-RT8	43.3(1.70)	19.8(0.78)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)
10	1/8	-CF-ML10-RT2	33.0(1.30)	10.4(0.41)	17.2(0.68)	7.9(0.31)	19.0(0.75)	18.0(0.71)
10	1/4	-CF-ML10-RT4	37.8(1.49)	15.0(0.59)	17.2(0.68)	7.9(0.31)	19.0(0.75)	19.0(0.75)
10	3/8	-CF-ML10-RT6	39.4(1.55)	15.0(0.59)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)
10	1/2	-CF-ML10-RT8	44.2(1.74)	19.8(0.78)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)
12	1/8	-CF-ML12-RT2	35.5(1.40)	10.4(0.41)	22.8(0.90)	8.3(0.33)	22.0(0.87)	22.0(0.87)
12	1/4	-CF-ML12-RT4	40.3(1.59)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	3/8	-CF-ML12-RT6	41.9(1.65)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	22.0(0.87)
12	1/2	-CF-ML12-RT8	46.7(1.84)	19.8(0.78)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)
12	3/4	-CF-ML12-RT12	49.0(1.93)	20.6(0.81)	22.8(0.90)	9.5(0.37)	22.0(0.87)	35.0(1.38)
15	1/2	-CF-ML15-RT8	46.7(1.84)	19.8(0.78)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)
16	1/2	-CF-ML16-RT8	48.4(1.91)	19.8(0.78)	24.4(0.96)	12.7(0.50)	25.0(0.98)	27.0(1.06)
16	3/4	-CF-ML16-RT12	49.7(1.96)	20.6(0.81)	24.4(0.96)	12.7(0.50)	25.0(0.98)	35.0(1.38)
20	1/2	-CF-ML20-RT8	47.9(1.89)	19.8(0.78)	26.0(1.02)	15.9(0.63)	32.0(1.26)	30.0(1.18)
20	3/4	-CF-ML20-RT12	49.7(1.96)	20.6(0.81)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)
22	3/4	-CF-ML22-RT12	49.7(1.96)	20.6(0.81)	26.0(1.02)	18.3(0.72)	32.0(1.26)	35.0(1.38)
22	1	-CF-ML22-RT16	57.9(2.28)	25.4(1.00)	26.0(1.02)	18.3(0.72)	32.0(1.26)	41.0(1.61)
25	3/4	-CF-ML25-RT12	53.4(2.10)	20.6(0.81)	31.3(1.23)	21.8(0.86)	38.0(1.50)	35.0(1.38)
25	1	-CF-ML25-RT16	62.3(2.45)	25.4(1.00)	31.3(1.23)	21.8(0.86)	38.0(1.50)	41.0(1.61)

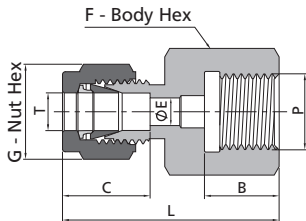
Female Connectors



Metric Tube			ISO Parallel Thread (RP)					
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	1/8	-CF-ML6-RP2	33.5(1.32)	15.5(0.61)	15.3(0.60)	4.8(0.19)	14.0(0.55)	14.0(0.55)
6	1/4	-CF-ML6-RP4	39.4(1.55)	15.5(0.61)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
22	3/4	-CF-ML22-RP12	53.3(2.10)	20.5(0.81)	26.0(1.02)	18.3(0.72)	32.0(1.26)	35.0(1.38)
25	1	-CF-ML25-RP16	63.9(2.52)	23.5(0.93)	31.3(1.23)	21.8(0.86)	38.0(1.50)	40.0(1.57)



Metric Tube			ISO Parallel Thread (RG)					
T-Tube O.D. (mm)	P-RG Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
3	1/4	-CF-ML3-RG4	35.3(1.39)	12.9(0.51)	12.9(0.51)	2.4(0.09)	12.0(0.47)	19.0(0.75)
6	1/4	-CF-ML6-RG4	37.6(1.48)	12.9(0.51)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
6	3/8	-CF-ML6-RG6	37.6(1.48)	14.2(0.56)	15.3(0.60)	4.8(0.19)	14.0(0.55)	24.0(0.94)
6	1/2	-CF-ML6-RG8	43.5(1.71)	18.8(0.74)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)
8	1/4	-CF-ML8-RG4	38.5(1.52)	12.9(0.51)	16.2(0.64)	5.5(0.22)	16.0(0.63)	19.0(0.75)
8	3/8	-CF-ML8-RG6	36.2(1.43)	14.2(0.56)	16.2(0.64)	6.4(0.25)	16.0(0.63)	24.0(0.94)
8	1/2	-CF-ML8-RG8	41.0(1.61)	18.8(0.74)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)
10	1/4	-CF-ML10-RG4	39.4(1.55)	12.9(0.51)	17.2(0.68)	5.5(0.22)	19.0(0.75)	19.0(0.75)
10	3/8	-CF-ML10-RG6	38.8(1.53)	14.2(0.56)	17.2(0.68)	6.4(0.25)	19.0(0.75)	24.0(0.94)
10	1/2	-CF-ML10-RG8	42.1(1.66)	18.8(0.74)	17.2(0.68)	7.9(0.31)	19.0(0.75)	27.0(1.06)
12	1/4	-CF-ML12-RG4	41.9(1.65)	12.9(0.51)	22.8(0.90)	5.5(0.22)	22.0(0.87)	22.0(0.87)
12	3/8	-CF-ML12-RG6	44.4(1.75)	14.2(0.56)	22.8(0.90)	6.4(0.25)	22.0(0.87)	24.0(0.94)
12	1/2	-CF-ML12-RG8	48.2(1.90)	18.8(0.74)	22.8(0.90)	7.1(0.28)	22.0(0.87)	27.0(1.06)
20	1/2	-CF-ML20-RG8	54.3(2.14)	18.8(0.74)	26.0(1.02)	7.1(0.28)	32.0(1.26)	30.0(1.18)
22	1/2	-CF-ML22-RG8	54.3(2.14)	18.8(0.74)	26.0(1.02)	7.1(0.28)	32.0(1.26)	30.0(1.18)

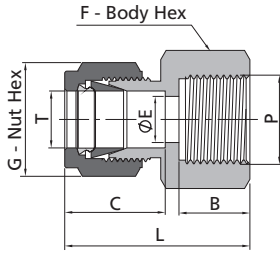


Adapt to Japanese Gauge stud (JIS B7505)

Metric Tube			ISO Parallel Thread (RJ)					
T-Tube O.D. (mm)	P-RJ Size	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	C	E	G	F
6	1/4	-CF-ML6-RJ4	37.6(1.48)	12.9(0.51)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)
6	3/8	-CF-ML6-RJ6	37.6(1.48)	15.8(0.62)	15.3(0.60)	4.8(0.19)	14.0(0.55)	24.0(0.94)
6	1/2	-CF-ML6-RJ8	43.5(1.71)	18.8(0.74)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)
8	1/4	-CF-ML8-RJ4	38.5(1.52)	12.9(0.51)	16.2(0.64)	5.5(0.22)	16.0(0.63)	19.0(0.75)
8	3/8	-CF-ML8-RJ6	36.2(1.43)	15.8(0.62)	16.2(0.64)	6.5(0.26)	16.0(0.63)	24.0(0.94)
8	1/2	-CF-ML8-RJ8	41.0(1.61)	18.8(0.74)	16.2(0.64)	7.0(0.28)	16.0(0.63)	27.0(1.06)
10	1/4	-CF-ML10-RJ4	39.4(1.55)	12.9(0.51)	17.2(0.68)	5.5(0.22)	19.0(0.75)	19.0(0.75)
10	3/8	-CF-ML10-RJ6	38.8(1.53)	15.8(0.62)	17.2(0.68)	6.5(0.26)	19.0(0.75)	24.0(0.94)
10	1/2	-CF-ML10-RJ8	42.1(1.66)	18.8(0.74)	17.2(0.68)	7.0(0.28)	19.0(0.75)	27.0(1.06)
12	1/4	-CF-ML12-RJ4	41.9(1.65)	12.9(0.51)	22.8(0.90)	5.5(0.22)	22.0(0.87)	22.0(0.87)
12	3/8	-CF-ML12-RJ6	44.4(1.75)	15.8(0.62)	22.8(0.90)	6.5(0.26)	22.0(0.87)	24.0(0.94)
12	1/2	-CF-ML12-RJ8	48.2(1.90)	18.8(0.74)	22.8(0.90)	7.0(0.28)	22.0(0.87)	27.0(1.06)

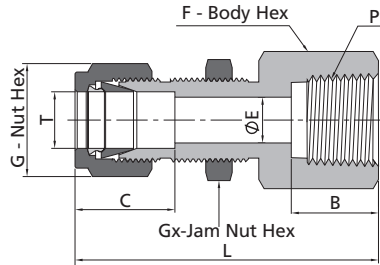


## A-34 6 Series Tube Fittings



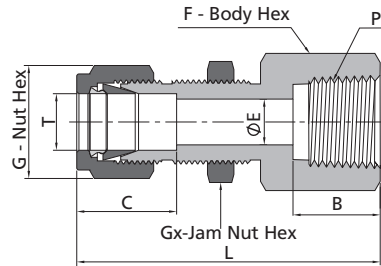
Metric Tube			Metric Thread						
T-Tube O.D. (mm)	P-Metric Thread Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	E	G	F	
6	M10 x 1	-CF-ML6-MS10	32.7(1.29)	11.0(0.43)	15.3(0.60)	4.7(0.19)	14.0(0.55)	16.0(0.63)	
6	M14 x 1.5	-CF-ML6-MS14	36.1(1.42)	13.0(0.51)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)	
6	M20 x 1.5	-CF-ML6-MS20	37.7(1.48)	16.0(0.63)	15.3(0.60)	4.8(0.19)	14.0(0.55)	27.0(1.06)	
8	M8 x 1	-CF-ML8-MS8	31.6(1.24)	9.0(0.35)	16.2(0.64)	3.0(0.12)	16.0(0.63)	14.0(0.55)	
8	M10 x 1	-CF-ML8-MS10	33.6(1.32)	11.0(0.43)	16.2(0.64)	4.0(0.16)	16.0(0.63)	16.0(0.63)	
8	M14 x 1.5	-CF-ML8-MS14	35.6(1.40)	13.0(0.51)	16.2(0.64)	6.4(0.25)	16.0(0.63)	19.0(0.75)	
8	M20 x 1.5	-CF-ML8-MS20	38.6(1.52)	16.0(0.63)	16.2(0.64)	6.4(0.25)	16.0(0.63)	27.0(1.06)	
10	M16 x 1.5	-CF-ML10-MS16	38.1(1.50)	14.0(0.55)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	
12	M20 x 1.5	-CF-ML12-MS20	44.9(1.77)	16.0(0.63)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	
14	M10 x 1	-CF-ML14-MS10	42.5(1.67)	11.0(0.43)	24.4(0.96)	4.0(0.16)	25.0(0.98)	24.0(0.94)	
14	M20 x 1.5	-CF-ML14-MS20	44.9(1.77)	16.0(0.63)	24.4(0.96)	10.8(0.43)	25.0(0.98)	27.0(1.06)	
14	M22 x 1.5	-CF-ML14-MS22	45.9(1.81)	17.0(0.67)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)	
16	M20 x 1.5	-CF-ML16-MS20	44.9(1.77)	16.0(0.63)	24.4(0.96)	10.8(0.43)	25.0(0.98)	27.0(1.06)	
20	M20 x 1.5	-CF-ML20-MS20	46.5(1.83)	16.0(0.63)	26.0(1.02)	10.8(0.43)	32.0(1.26)	30.0(1.18)	
25	M27 x 2	-CF-ML25-MS27	54.4(2.14)	18.0(0.71)	31.3(1.23)	16.1(0.63)	38.0(1.50)	35.0(1.38)	

## Bulkhead Female Connectors



Fractional Tube			NPT Thread								
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
			L	B	C	E	G	F	Gx		
1/16	1/16	-BCF-FL1-NS1	1.19(30.2)	0.39(9.9)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.44(11.1)	0.31(7.9)	0.20(5.2)	0.13(3.2)
1/16	1/8	-BCF-FL1-NS2	1.20(30.7)	0.41(10.4)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.56(14.3)	0.31(7.9)	0.20(5.2)	0.13(3.2)
1/8	1/8	-BCF-FL2-NS2	1.76(44.7)	0.41(10.4)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.56(14.3)	0.50(12.7)	0.33(8.3)	0.50(12.7)
1/8	1/4	-BCF-FL2-NS4	1.95(49.6)	0.59(15.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.75(19.1)	0.50(12.7)	0.33(8.3)	0.50(12.7)
3/16	1/8	-BCF-FL3-NS2	1.79(45.5)	0.41(10.4)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)	0.56(14.3)	0.39(9.9)	0.50(12.7)
1/4	1/8	-BCF-FL4-NS2	1.85(47.0)	0.41(10.4)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.45(11.5)	0.40(10.2)
1/4	1/4	-BCF-FL4-NS4	2.04(51.8)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.75(19.1)	0.63(15.9)	0.45(11.5)	0.40(10.2)
1/4	3/8	-BCF-FL4-NS6	2.10(53.3)	0.59(15.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.87(22.2)	0.63(15.9)	0.45(11.5)	0.40(10.2)
1/4	1/2	-BCF-FL4-NS8	2.29(58.2)	0.78(19.8)	0.60(15.2)	0.19(4.8)	0.56(14.3)	1.06(27.0)	0.63(15.9)	0.45(11.5)	0.40(10.2)
5/16	1/8	-BCF-FL5-NS2	1.96(49.8)	0.41(10.4)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.69(17.5)	0.69(17.5)	0.52(13.1)	0.44(11.2)
5/16	1/4	-BCF-FL5-NS4	2.38(60.5)	0.59(15.0)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.75(19.1)	0.69(17.5)	0.52(13.1)	0.44(11.2)
3/8	1/8	-BCF-FL6-NS2	1.98(50.3)	0.41(10.4)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)
3/8	1/4	-BCF-FL6-NS4	2.17(55.1)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)
3/8	3/8	-BCF-FL6-NS6	2.23(56.6)	0.59(15.0)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.87(22.2)	0.75(19.1)	0.58(14.7)	0.44(11.2)
3/8	1/2	-BCF-FL6-NS8	2.42(61.5)	0.78(19.8)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.06(27.0)	0.75(19.1)	0.58(14.7)	0.44(11.2)
3/8	3/4	-BCF-FL6-NS12	2.57(65.3)	0.81(20.6)	0.66(16.8)	0.28(7.1)	0.69(17.5)	1.31(33.3)	0.75(19.1)	0.58(14.7)	0.44(11.2)
1/2	1/4	-BCF-FL8-NS4	2.37(60.2)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)
1/2	3/8	-BCF-FL8-NS6	2.43(61.7)	0.59(15.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)
1/2	1/2	-BCF-FL8-NS8	2.62(66.5)	0.78(19.8)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.06(27.0)	0.94(23.8)	0.76(19.4)	0.50(12.7)
1/2	3/4	-BCF-FL8-NS12	2.68(68.1)	0.81(20.6)	0.90(22.9)	0.41(10.4)	0.87(22.2)	1.31(33.3)	0.94(23.8)	0.76(19.4)	0.50(12.7)

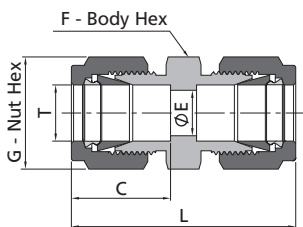
## Bulkhead Female Connectors



Fractional Tube			NPT Thread								
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
			L	B	C	E	G	F	Gx		
5/8	3/8	-BCF-FL10-NS6	2.46(62.5)	0.59(15.0)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.59(15.1)
5/8	1/2	-BCF-FL10-NS8	2.65(67.3)	0.78(19.8)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.59(15.1)
3/4	1/2	-BCF-FL12-NS8	2.84(72.2)	0.78(19.8)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.19(30.2)	1.19(30.2)	1.02(25.8)	0.78(19.8)
3/4	3/4	-BCF-FL12-NS12	2.90(73.7)	0.81(20.6)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.31(33.3)	1.19(30.2)	1.02(25.8)	0.78(19.8)
7/8	3/4	-BCF-FL14-NS12	3.18(80.8)	0.81(20.6)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.31(33.3)	1.31(33.3)	1.14(29.0)	0.94(23.8)
1	3/4	-BCF-FL16-NS12	3.33(84.7)	0.81(20.6)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.94(23.8)
1	1	-BCF-FL16-NS16	3.68(93.5)	1.00(25.4)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.94(23.8)

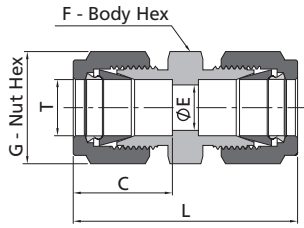
Metric Tube			NPT Thread								
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)							Panel Hole Size mm (in.)	Max. Panel Thickness mm (in.)
			L	B	C	E	G	F	Gx		
6	1/8	-BCF-ML6-NS2	47.2(1.86)	10.4(0.41)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)	16.0(0.63)	11.5(0.45)	10.2(0.40)
6	1/4	-BCF-ML6-NS4	51.8(2.04)	15.0(0.59)	15.3(0.60)	4.8(0.19)	14.0(0.55)	19.0(0.75)	16.0(0.63)	11.5(0.45)	10.2(0.40)
8	1/8	-BCF-ML8-NS2	49.6(1.95)	10.4(0.41)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)	18.0(0.71)	13.1(0.52)	11.2(0.44)
10	1/4	-BCF-ML10-NS4	55.2(2.17)	15.0(0.59)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	22.0(0.87)	16.3(0.64)	11.2(0.44)
12	3/8	-BCF-ML12-NS6	62.9(2.48)	15.0(0.59)	22.8(0.90)	9.5(0.37)	22.0(0.87)	24.0(0.94)	24.0(0.94)	19.5(0.77)	12.7(0.50)
12	1/2	-BCF-ML12-NS8	66.5(2.62)	19.8(0.78)	22.8(0.90)	9.5(0.37)	22.0(0.87)	27.0(1.06)	24.0(0.94)	19.5(0.77)	12.7(0.50)

## Unions



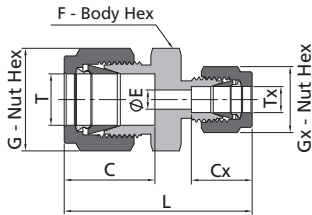
Fractional Tube		Dimensions, in. (mm)				
T-Tube O.D. (in.)	Basic Ordering Number	L	C	G	F	E
1/16	-U-FL1	0.99(25.1)	0.34(8.6)	0.31(7.9)	0.31(7.9)	0.05(1.3)
1/8	-U-FL2	1.40(35.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)
3/16	-U-FL3	1.47(37.3)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)
1/4	-U-FL4	1.61(40.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
5/16	-U-FL5	1.69(42.9)	0.64(16.2)	0.63(15.9)	0.56(14.3)	0.25(6.4)
3/8	-U-FL6	1.77(45.0)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)
1/2	-U-FL8	2.02(51.3)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
5/8	-U-FL10	2.05(52.1)	0.96(24.4)	1.00(25.4)	0.94(23.9)	0.50(12.7)
3/4	-U-FL12	2.11(53.6)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)
7/8	-U-FL14	2.19(55.7)	1.02(25.9)	1.25(31.8)	1.19(30.2)	0.72(18.3)
1	-U-FL16	2.55(64.8)	1.23(31.2)	1.5(38.1)	1.37(34.9)	0.88(22.4)
1 1/8	-U-FL18	3.47(88.2)	1.44(36.7)	1.75(44.5)	1.63(41.3)	0.97(24.6)
1 1/4	-U-FL20	3.63(92.2)	1.62(41.1)	1.87(47.6)	1.75(44.5)	1.09(27.7)
1 1/2	-U-FL24	4.25(108.0)	1.97(50.0)	2.25(57.2)	2.13(54.0)	1.34(34.0)

Unions



Metric Tube		Dimensions, mm (in.)				
T-Tube O.D. (mm)	Basic Ordering Number	L	C	G	F	E
2	-U-ML2	35.6(1.40)	12.9(0.51)	12.0(0.47)	12.0(0.47)	1.7(0.07)
3	-U-ML3	35.3(1.39)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.4(0.09)
4	-U-ML4	37.3(1.47)	13.7(0.54)	12.0(0.47)	12.0(0.47)	2.4(0.09)
6	-U-ML6	41.0(1.61)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
8	-U-ML8	43.2(1.70)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)
10	-U-ML10	46.2(1.82)	17.2(0.68)	19.0(0.75)	18.0(0.71)	7.9(0.31)
12	-U-ML12	51.2(2.02)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)
14	-U-ML14	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	11.1(0.44)
15	-U-ML15	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	11.9(0.47)
16	-U-ML16	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	12.7(0.50)
18	-U-ML18	53.5(2.11)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
20	-U-ML20	55.0(2.17)	26.0(1.02)	32.0(1.26)	30.0(1.18)	15.9(0.63)
22	-U-ML22	55.0(2.17)	26.0(1.02)	32.0(1.26)	30.0(1.18)	18.3(0.72)
25	-U-ML25	65.0(2.56)	31.3(1.23)	38.0(1.50)	35.0(1.38)	21.8(0.86)
28	-U-ML28	85.0(3.35)	36.6(1.44)	46.0(1.81)	41.0(1.61)	21.8(0.86)
30	-U-ML30	92.7(3.65)	39.6(1.56)	50.0(1.97)	46.0(1.81)	26.2(1.03)
32	-U-ML32	97.3(3.83)	42.0(1.65)	50.0(1.97)	46.0(1.81)	28.6(1.13)
38	-U-ML38	113.6(4.47)	49.4(1.94)	60.0(2.36)	55.0(2.17)	33.7(1.33)

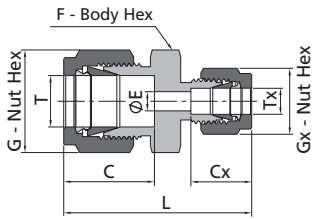
Conversion Unions



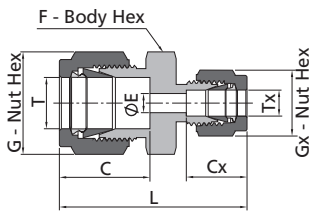
Fractional Tube			Dimensions, in. (mm)						
T-Tube O.D. (in.)	Tx-Tube O.D. (mm)	Basic Ordering Number	L	C	G	F	E	Cx	Gx
1/8	3	-U-FL2-ML3	1.39(35.2)	0.50(12.7)	0.44(11.1)	0.47(12.0)	0.09(2.3)	0.51(12.9)	0.47(12.0)
1/4	4	-U-FL4-ML4	1.55(39.4)	0.60(15.2)	0.56(14.3)	0.55(14.0)	0.09(2.4)	0.54(13.7)	0.47(12.0)
1/4	6	-U-FL4-ML6	1.62(41.2)	0.60(15.2)	0.56(14.3)	0.55(14.0)	0.19(4.8)	0.60(15.3)	0.55(14.0)
3/8	6	-U-FL6-ML6	1.72(43.7)	0.66(16.8)	0.69(17.5)	0.63(16.0)	0.19(4.8)	0.60(15.3)	0.55(14.0)
3/8	8	-U-FL6-ML8	1.75(44.5)	0.66(16.8)	0.69(17.5)	0.63(16.0)	0.25(6.4)	0.64(16.2)	0.63(16.0)
1/2	6	-U-FL8-ML6	1.88(47.7)	0.90(22.9)	0.87(22.2)	0.87(22.0)	0.19(4.8)	0.60(15.3)	0.55(14.0)
1/2	10	-U-FL8-ML10	1.93(48.9)	0.90(22.9)	0.87(22.2)	0.87(22.0)	0.31(7.9)	0.68(17.2)	0.75(19.0)
1/2	12	-U-FL8-ML12	2.02(51.4)	0.90(22.9)	0.87(22.2)	0.87(22.0)	0.37(9.5)	0.90(22.8)	0.87(22.0)
3/4	12	-U-FL12-ML12	2.13(54.2)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.37(9.5)	0.90(22.8)	0.87(22.0)
3/4	16	-U-FL12-ML16	2.12(53.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.50(12.7)	0.96(24.4)	0.98(25.0)
3/4	18	-U-FL12-ML18	2.11(53.6)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.59(15.1)	0.96(24.4)	1.18(30.0)
1	25	-U-FL16-ML25	2.65(67.4)	1.23(31.2)	1.50(38.1)	1.38(35.0)	0.86(21.8)	1.23(31.3)	1.50(38.0)

Metric Tube			Fractional Tube						
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	Cx	Gx
4	1/8	-U-ML4-FL2	36.5(1.44)	13.7(0.54)	12.0(0.47)	12.0(0.47)	2.4(0.09)	12.7(0.50)	11.1(0.44)
6	1/8	-U-ML6-FL2	38.5(1.52)	15.3(0.60)	14.0(0.55)	14.0(0.55)	2.4(0.09)	12.7(0.50)	11.1(0.44)
8	1/4	-U-ML8-FL4	42.3(1.67)	16.2(0.64)	16.0(0.63)	15.0(0.59)	4.8(0.19)	15.2(0.60)	14.3(0.56)
10	1/8	-U-ML10-FL2	41.8(1.65)	17.2(0.68)	19.0(0.75)	18.0(0.71)	2.4(0.09)	12.7(0.50)	11.1(0.44)
10	1/4	-U-ML10-FL4	44.5(1.75)	17.2(0.68)	19.0(0.75)	18.0(0.71)	4.8(0.19)	15.2(0.60)	14.3(0.56)
10	5/16	-U-ML10-FL5	45.1(1.78)	17.2(0.68)	19.0(0.75)	18.0(0.71)	6.4(0.25)	16.2(0.64)	15.9(0.63)
10	3/8	-U-ML10-FL6	45.9(1.81)	17.2(0.68)	19.0(0.75)	18.0(0.71)	7.1(0.28)	16.8(0.66)	17.5(0.69)
12	5/16	-U-ML12-FL5	47.8(1.88)	22.8(0.90)	22.0(0.87)	22.0(0.87)	6.4(0.25)	16.2(0.64)	15.9(0.63)
12	3/8	-U-ML12-FL6	48.4(1.91)	22.8(0.90)	22.0(0.87)	22.0(0.87)	7.1(0.28)	16.8(0.66)	17.5(0.69)
15	1/2	-U-ML15-FL8	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	10.4(0.41)	22.9(0.90)	22.2(0.87)
16	5/8	-U-ML16-FL10	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	12.7(0.50)	24.4(0.96)	25.4(1.00)
20	1/2	-U-ML20-FL8	55.0(2.17)	26.0(1.02)	32.0(1.26)	30.0(1.18)	10.4(0.41)	22.9(0.90)	22.2(0.87)

Reducing Unions



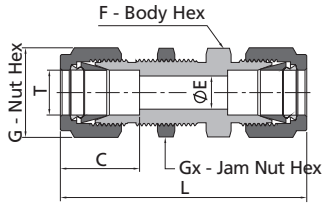
Fractional Tube										
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)							
			L	C	G	F	E	Cx	Gx	
1/8	1/16	-U-FL2-FL1	1.22(31.0)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.05(1.3)	0.34(8.6)	0.31(7.9)	
3/16	1/16	-U-FL3-FL1	1.27(32.3)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.05(1.3)	0.34(8.6)	0.31(7.9)	
3/16	1/8	-U-FL3-FL2	1.44(36.6)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.09(2.3)	0.50(12.7)	0.44(11.1)	
1/4	1/16	-U-FL4-FL1	1.35(34.3)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.05(1.3)	0.34(8.6)	0.31(7.9)	
1/4	1/8	-U-FL4-FL2	1.52(38.6)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.09(2.3)	0.50(12.7)	0.44(11.1)	
1/4	3/16	-U-FL4-FL3	1.55(39.4)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.12(3.0)	0.54(13.7)	0.50(12.7)	
5/16	1/8	-U-FL5-FL2	1.56(39.6)	0.64(16.2)	0.63(15.9)	0.56(14.3)	0.09(2.3)	0.50(12.7)	0.44(11.1)	
5/16	1/4	-U-FL5-FL4	1.66(42.2)	0.64(16.2)	0.63(15.9)	0.56(14.3)	0.19(4.8)	0.60(15.2)	0.56(14.3)	
3/8	1/16	-U-FL6-FL1	1.44(36.6)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.05(1.3)	0.34(8.6)	0.31(7.9)	
3/8	1/8	-U-FL6-FL2	1.61(40.9)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.09(2.3)	0.50(12.7)	0.44(11.1)	
3/8	1/4	-U-FL6-FL4	1.70(43.2)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.19(4.8)	0.60(15.2)	0.56(14.3)	
3/8	5/16	-U-FL6-FL5	1.74(44.2)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.25(6.4)	0.64(16.2)	0.63(15.9)	
1/2	1/8	-U-FL8-FL2	1.78(45.2)	0.90(22.8)	0.87(22.2)	0.81(20.6)	0.09(2.3)	0.50(12.7)	0.44(11.1)	
1/2	1/4	-U-FL8-FL4	1.85(47.0)	0.90(22.8)	0.87(22.2)	0.81(20.6)	0.19(4.8)	0.60(15.2)	0.56(14.3)	
1/2	3/8	-U-FL8-FL6	1.91(48.5)	0.90(22.8)	0.87(22.2)	0.81(20.6)	0.28(7.1)	0.66(16.8)	0.69(17.5)	
5/8	3/8	-U-FL10-FL6	1.94(49.3)	0.96(24.4)	1.00(25.4)	0.94(23.9)	0.28(7.1)	0.66(16.8)	0.69(17.5)	
5/8	1/2	-U-FL10-FL8	2.05(52.1)	0.96(24.4)	1.00(25.4)	0.94(23.9)	0.41(10.4)	0.90(22.8)	0.87(22.2)	
3/4	1/4	-U-FL12-FL4	1.94(49.3)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.19(4.8)	0.60(15.2)	0.56(14.3)	
3/4	3/8	-U-FL12-FL6	2.00(50.8)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.28(7.1)	0.66(16.8)	0.69(17.5)	
3/4	1/2	-U-FL12-FL8	2.11(53.6)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.41(10.4)	0.90(22.8)	0.87(22.2)	
3/4	5/8	-U-FL12-FL10	2.11(53.6)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.50(12.7)	0.96(24.4)	1.00(25.4)	
1	1/2	-U-FL16-FL8	2.38(60.5)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.41(10.4)	0.90(22.8)	0.87(22.2)	
1	3/4	-U-FL16-FL12	2.38(60.5)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.96(24.4)	1.13(28.6)	



Metric Tube										
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)							
			L	C	G	F	E	Cx	Gx	
3	2	-U-ML3-ML2	35.3(1.39)	12.9(0.51)	12.0(0.47)	12.0(0.47)	1.7(0.07)	12.9(0.51)	12.0(0.47)	
6	2	-U-ML6-ML2	38.6(1.52)	15.3(0.60)	14.0(0.55)	14.0(0.55)	1.7(0.07)	12.9(0.51)	12.0(0.47)	
6	3	-U-ML6-ML3	38.6(1.52)	15.3(0.60)	14.0(0.55)	14.0(0.55)	2.4(0.09)	12.9(0.51)	12.0(0.47)	
6	4	-U-ML6-ML4	39.4(1.55)	15.3(0.60)	14.0(0.55)	14.0(0.55)	2.4(0.09)	13.7(0.54)	12.0(0.47)	
8	6	-U-ML8-ML6	42.3(1.67)	16.3(0.64)	16.0(0.63)	15.0(0.59)	4.8(0.19)	15.3(0.60)	14.0(0.55)	
10	6	-U-ML10-ML6	44.5(1.75)	17.2(0.68)	19.0(0.75)	18.0(0.71)	4.8(0.19)	15.3(0.60)	14.0(0.55)	
10	8	-U-ML10-ML8	45.1(1.78)	17.2(0.68)	19.0(0.75)	18.0(0.71)	6.4(0.25)	16.3(0.64)	16.0(0.63)	
12	6	-U-ML12-ML6	47.0(1.85)	22.8(0.90)	22.0(0.87)	22.0(0.87)	4.8(0.19)	15.3(0.60)	14.0(0.55)	
12	8	-U-ML12-ML8	47.8(1.88)	22.8(0.90)	22.0(0.87)	22.0(0.87)	6.4(0.25)	16.3(0.64)	16.0(0.63)	
12	10	-U-ML12-ML10	48.7(1.92)	22.8(0.90)	22.0(0.87)	22.0(0.87)	7.9(0.31)	17.2(0.68)	19.0(0.75)	
16	10	-U-ML16-ML10	49.5(1.95)	24.4(0.96)	25.0(0.98)	24.0(0.94)	7.9(0.31)	17.2(0.68)	19.0(0.75)	
16	12	-U-ML16-ML12	52.0(2.05)	24.4(0.96)	25.0(0.98)	24.0(0.94)	9.5(0.37)	22.8(0.90)	22.0(0.87)	
18	12	-U-ML18-ML12	53.5(2.11)	24.4(0.96)	30.0(1.18)	27.0(1.06)	9.5(0.37)	22.8(0.90)	22.0(0.87)	
25	18	-U-ML25-ML18	61.0(2.40)	31.3(1.23)	38.0(1.50)	35.0(1.38)	15.1(0.59)	24.4(0.96)	30.0(1.18)	
25	20	-U-ML25-ML20	62.3(2.45)	31.3(1.23)	38.0(1.50)	35.0(1.38)	15.9(0.63)	26.0(1.02)	32.0(1.26)	
30	18	-U-ML30-ML18	75.4(2.97)	39.6(1.56)	50.0(1.97)	46.0(1.81)	15.1(0.59)	24.4(0.96)	30.0(1.18)	
30	20	-U-ML30-ML20	75.4(2.97)	39.6(1.56)	50.0(1.97)	46.0(1.81)	15.9(0.63)	26.0(1.02)	32.0(1.26)	
30	25	-U-ML30-ML25	80.1(3.15)	39.6(1.56)	50.0(1.97)	46.0(1.81)	21.8(0.86)	31.3(1.23)	38.0(1.50)	
32	18	-U-ML32-ML18	77.8(3.06)	42.0(1.65)	50.0(1.97)	46.0(1.81)	15.1(0.59)	24.4(0.96)	30.0(1.18)	
32	20	-U-ML32-ML20	77.8(3.06)	42.0(1.65)	50.0(1.97)	46.0(1.81)	15.9(0.63)	26.0(1.02)	32.0(1.26)	
32	25	-U-ML32-ML25	82.3(3.24)	42.0(1.65)	50.0(1.97)	46.0(1.81)	21.8(0.86)	31.3(1.23)	38.0(1.50)	
38	20	-U-ML38-ML20	87.5(3.44)	49.4(1.94)	60.0(2.36)	55.0(2.17)	15.9(0.63)	26.0(1.02)	32.0(1.26)	
38	25	-U-ML38-ML25	92.0(3.62)	49.4(1.94)	60.0(2.36)	55.0(2.17)	21.8(0.86)	31.3(1.23)	38.0(1.50)	
38	30	-U-ML38-ML30	104.6(4.12)	49.4(1.94)	60.0(2.36)	55.0(2.17)	26.2(1.03)	39.6(1.56)	50.0(1.97)	

Tube Fittings

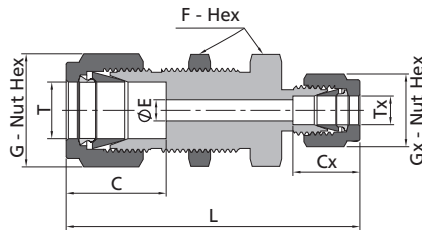
**Bulkhead Unions**



Fractional Tube		Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
Tx-Tube O.D. (in.)	Basic Ordering Number	L	C	E	G	F	Gx			
1/16	-BU-FL1	1.24(31.5)	0.34(8.6)	0.05(1.3)	0.31(7.9)	0.31(7.9)	0.31(7.9)	0.20(5.2)	0.12(3.0)	
1/8	-BU-FL2	2.02(51.3)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.50(12.7)	0.50(12.7)	0.33(8.3)	0.50(12.7)	
3/16	-BU-FL3	2.11(53.6)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.56(14.3)	0.56(14.3)	0.39(9.9)	0.50(12.7)	
1/4	-BU-FL4	2.27(57.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.45(11.5)	0.40(10.2)	
5/16	-BU-FL5	2.39(60.7)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.69(17.5)	0.69(17.5)	0.52(13.1)	0.44(11.2)	
3/8	-BU-FL6	2.45(62.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.58(14.7)	0.44(11.2)	
1/2	-BU-FL8	2.80(71.1)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.76(19.4)	0.50(12.7)	
5/8	-BU-FL10	2.86(72.6)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.89(22.6)	0.50(12.7)	
3/4	-BU-FL12	3.11(79.0)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.19(30.2)	1.19(30.2)	1.02(25.8)	0.66(16.8)	
7/8	-BU-FL14	3.35(85.2)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.38(34.9)	1.37(34.9)	1.14(29.0)	0.75(19.1)	
1	-BU-FL16	3.77(95.8)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.63(41.3)	1.63(41.3)	1.33(33.7)	0.75(19.1)	
1 1/4	-BU-FL20	4.85(123.2)	1.62(41.1)	1.09(27.8)	1.87(47.6)	1.87(47.6)	1.87(47.6)	1.64(41.7)	0.75(19.1)	
1 1/2	-BU-FL24	5.48(139.2)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.25(57.2)	2.25(57.2)	1.95(49.6)	0.75(19.1)	

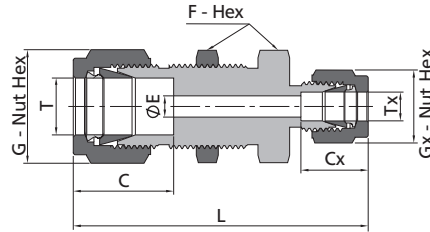
Metric Tube		Dimensions, mm (in.)							Panel Hole Size mm (in.)	Max. Panel Thickness mm (in.)
Tx-Tube O.D. (mm)	Basic Ordering Number	L	C	E	G	F	Gx			
3	-BU-ML3	51.3(2.02)	12.9(0.51)	2.4(0.09)	12.0(0.47)	14.0(0.55)	14.0(0.55)	8.3(0.33)	12.7(0.50)	
4	-BU-ML4	53.6(2.11)	13.7(0.54)	2.4(0.09)	12.0(0.47)	14.0(0.55)	14.0(0.55)	9.9(0.39)	12.7(0.50)	
6	-BU-ML6	57.7(2.27)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)	16.0(0.63)	11.5(0.45)	10.2(0.40)	
8	-BU-ML8	61.0(2.40)	16.2(0.64)	6.4(0.25)	16.0(0.63)	18.0(0.71)	18.0(0.71)	13.1(0.52)	11.2(0.44)	
10	-BU-ML10	63.7(2.51)	17.2(0.68)	7.9(0.31)	19.0(0.75)	22.0(0.87)	22.0(0.87)	16.3(0.64)	11.2(0.44)	
12	-BU-ML12	71.0(2.80)	22.8(0.90)	9.5(0.37)	22.0(0.87)	24.0(0.94)	24.0(0.94)	19.5(0.77)	12.7(0.50)	
14	-BU-ML14	72.5(2.85)	24.4(0.96)	11.1(0.44)	25.0(0.98)	27.0(1.06)	27.0(1.06)	22.5(0.89)	12.7(0.50)	
15	-BU-ML15	72.5(2.85)	24.4(0.96)	11.9(0.47)	25.0(0.98)	27.0(1.06)	27.0(1.06)	22.8(0.90)	12.7(0.50)	
16	-BU-ML16	72.5(2.85)	24.4(0.96)	12.7(0.50)	25.0(0.98)	27.0(1.06)	27.0(1.06)	22.8(0.90)	12.7(0.50)	
18	-BU-ML18	78.9(3.11)	24.4(0.96)	15.1(0.59)	30.0(1.18)	30.0(1.18)	30.0(1.18)	26.0(1.02)	16.8(0.66)	
20	-BU-ML20	84.5(3.33)	26.0(1.02)	15.9(0.63)	32.0(1.26)	35.0(1.38)	35.0(1.38)	29.0(1.14)	19.0(0.75)	
25	-BU-ML25	96.0(3.78)	31.3(1.23)	21.8(0.86)	38.0(1.5)	41.0(1.61)	41.0(1.61)	34.0(1.34)	19.0(0.75)	
30	-BU-ML30	124.0(4.88)	39.6(1.56)	26.2(1.03)	50.0(1.97)	50.0(1.97)	50.0(1.97)	40.5(1.59)	19.0(0.75)	
32	-BU-ML32	128.0(5.04)	42.0(1.65)	28.6(1.13)	50.0(1.97)	50.0(1.97)	50.0(1.97)	42.5(1.67)	19.0(0.75)	
38	-BU-ML38	145.0(5.71)	49.4(1.94)	33.7(1.33)	60.0(2.36)	60.0(2.36)	60.0(2.36)	50.5(1.99)	19.0(0.75)	

**Bulkhead Reducing Unions**



Fractional Tube			Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	L	C	E	G	F	Cx	Gx		
1/4	1/8	-BU-FL4-FL2	2.17(55.1)	0.60(15.2)	0.09(2.3)	0.56(14.3)	0.63(15.9)	0.50(12.7)	0.44(11.1)	0.45(11.5)	0.40(10.2)
3/8	1/4	-BU-FL6-FL4	2.39(60.7)	0.66(16.8)	0.19(4.8)	0.69(17.5)	0.75(19.1)	0.60(15.2)	0.56(14.3)	0.58(14.7)	0.44(11.2)
1/2	1/4	-BU-FL8-FL4	2.63(66.8)	0.90(22.9)	0.19(4.8)	0.87(22.2)	0.94(23.8)	0.60(15.2)	0.56(14.3)	0.76(19.4)	0.50(12.7)

## Bulkhead Reducing Unions



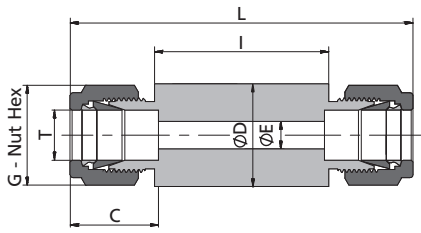
Metric Tube											
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)							Panel Hole Size mm (in.)	Max. Panel Thickness mm (in.)
			L	C	E	G	F	Cx	Gx		
6	3	-BU-ML6-ML3	55.1(2.17)	15.3(0.60)	2.4(0.09)	14.0(0.55)	16.0(0.63)	12.9(0.51)	12.0(0.47)	11.5(0.45)	10.2(0.40)
8	6	-BU-ML8-ML6	60.1(2.37)	16.2(0.64)	4.8(0.19)	16.0(0.63)	18.0(0.71)	15.3(0.60)	14.0(0.55)	13.1(0.52)	11.2(0.44)
12	8	-BU-ML12-ML8	67.6(2.66)	22.8(0.90)	6.4(0.25)	22.0(0.87)	24.0(0.94)	16.2(0.64)	16.0(0.63)	19.5(0.77)	12.7(0.50)

## Bulkhead Conversion Unions

Fractional Tube										Metric Tube	
T-Tube O.D. (in.)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, in. (mm)							Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)
			L	C	E	G	F	Cx	Gx		
1/4	6	-BU-FL4-ML6	2.27(57.7)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	0.60(15.3)	0.55(14.0)	0.45(11.5)	0.40(10.2)

Metric Tube										Fractional Tube	
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, mm (in.)							Panel Hole Size mm (in.)	Max. Panel Thickness mm (in.)
			L	C	E	G	F	Cx	Gx		
6	1/8	-BU-ML6-FL2	55.1(2.17)	15.3(0.60)	2.3(0.09)	14.0(0.55)	16.0(0.63)	12.7(0.5)	11.0(0.43)	11.5(0.45)	10.2(0.40)
6	1/4	-BU-ML6-FL4	57.7(2.27)	15.3(0.60)	4.8(0.19)	14.0(0.55)	16.0(0.63)	15.2(0.6)	14.3(0.56)	11.5(0.45)	10.2(0.40)

**Weld Bulkhead Unions**

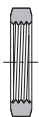


Fractional Tube		Dimensions, in. (mm)					
Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)					
		L	C	E	G	D	I
1/8	-BU-FL2-OD12	3.16(80.2)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.47(12.0)	1.97(50.0)
3/16	-BU-FL3-OD12	3.24(82.2)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.47(12.0)	1.97(50.0)
1/4	-BU-FL4-OD14	3.35(85.2)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.55(14.0)	1.97(50.0)
5/16	-BU-FL5-OD16	3.43(87.2)	0.64(16.2)	0.25(6.4)	0.63(15.9)	0.63(16.0)	1.97(50.0)
3/8	-BU-FL6-OD19	3.49(88.6)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.75(19.0)	1.97(50.0)
1/2	-BU-FL8-OD23	3.69(93.8)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.91(23.0)	1.97(50.0)
5/8	-BU-FL10-OD28	3.69(93.6)	0.96(24.4)	0.50(12.7)	1.00(25.4)	1.10(28.0)	1.97(50.0)
3/4	-BU-FL12-OD32	3.72(94.4)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.26(32.0)	1.97(50.0)
7/8	-BU-FL14-OD32	3.72(94.4)	1.02(25.9)	0.72(18.3)	1.25(31.8)	1.26(32.0)	1.97(50.0)
1	-BU-FL16-OD35	4.06(103.2)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.38(35.0)	1.97(50.0)
1-1/4	-BU-FL20-OD50	5.05(128.2)	1.62(41.1)	1.09(27.7)	1.87(47.6)	1.97(50.0)	1.97(50.0)
1-1/2	-BU-FL24-OD55	5.54(140.8)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.17(55.0)	1.97(50.0)
2	-BU-FL32-OD80	6.93(176.0)	2.67(67.8)	1.81(46.0)	3.00(76.2)	3.15(80.0)	1.97(50.0)

Metric Tube		Dimensions, mm (in.)					
Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)					
		L	C	E	G	D	I
3	-BU-ML3-OD12	80.8(3.18)	12.9(0.51)	2.4(0.09)	12.0(0.47)	12.0(0.47)	50.0(1.97)
4	-BU-ML4-OD12	82.4(3.24)	13.7(0.54)	2.4(0.09)	12.0(0.47)	12.0(0.47)	50.0(1.97)
6	-BU-ML6-OD12	86.0(3.39)	15.3(0.60)	4.8(0.19)	14.0(0.55)	12.0(0.47)	50.0(1.97)
8	-BU-ML8-OD16	87.4(3.44)	16.2(0.64)	6.4(0.25)	16.0(0.63)	16.0(0.63)	50.0(1.97)
10	-BU-ML10-OD19	89.0(3.50)	17.2(0.68)	7.9(0.31)	19.0(0.75)	19.0(0.75)	50.0(1.97)
12	-BU-ML12-OD23	94.2(3.71)	22.8(0.90)	9.5(0.37)	22.0(0.87)	23.0(0.91)	50.0(1.97)
15	-BU-ML15-OD25	93.8(3.69)	24.4(0.96)	11.9(0.47)	25.0(0.98)	25.0(0.98)	50.0(1.97)
16	-BU-ML16-OD28	94.4(3.72)	24.4(0.96)	12.7(0.50)	25.0(0.98)	28.0(1.10)	50.0(1.97)
18	-BU-ML18-OD28	94.0(3.70)	24.4(0.96)	15.1(0.59)	30.0(1.18)	28.0(1.10)	50.0(1.97)
20	-BU-ML20-OD32	94.0(3.70)	26.0(1.02)	15.9(0.63)	32.0(1.26)	32.0(1.26)	50.0(1.97)
22	-BU-ML22-OD32	94.0(3.70)	26.0(1.02)	18.3(0.72)	32.0(1.26)	32.0(1.26)	50.0(1.97)
25	-BU-ML25-OD38	103.2(4.06)	31.3(1.23)	21.8(0.86)	38.0(1.50)	38.0(1.50)	50.0(1.97)
28	-BU-ML28-OD45	123.2(4.85)	36.6(1.44)	21.8(0.86)	46.0(1.81)	45.0(1.77)	50.0(1.97)
32	-BU-ML32-OD50	133.2(5.24)	42.0(1.65)	28.6(1.13)	50.0(1.97)	50.0(1.97)	50.0(1.97)
38	-BU-ML38-OD60	146.2(5.76)	49.4(1.94)	33.7(1.33)	60.0(2.36)	60.0(2.36)	50.0(1.97)

For specified length, add "-\*\*" (metric length) as a suffix to the basic ordering number. Example: 55-BU-ML12-OD23-100

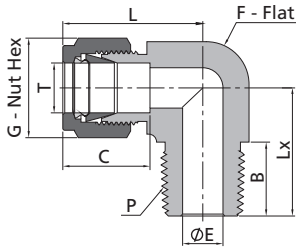
**Bulkhead Locknuts**



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



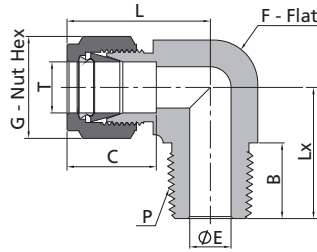
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			NPT Thread							
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)							
			L	C	G	F	E	B	Lx	
1/16	1/16	-LM-FL1-NS1	0.75(19.1)	0.34(8.6)	0.31(7.9)	0.44(11.1)	0.05(1.3)	0.38(9.7)	0.70(17.8)	
1/16	1/8	-LM-FL1-NS2	0.75(19.1)	0.34(8.6)	0.31(7.9)	0.44(11.1)	0.05(1.3)	0.38(9.7)	0.70(17.8)	
1/8	1/16	-LM-FL2-NS1	0.93(23.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.4)	0.38(9.7)	0.70(17.8)	
1/8	1/8	-LM-FL2-NS2	0.93(23.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.4)	0.38(9.7)	0.70(17.8)	
1/8	1/4	-LM-FL2-NS4	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.4)	0.56(14.2)	0.92(23.4)	
3/16	1/8	-LM-FL3-NS2	1.00(25.4)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)	0.38(9.7)	0.74(18.8)	
3/16	1/4	-LM-FL3-NS4	1.00(25.4)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)	0.56(14.2)	0.92(23.4)	
1/4	1/16	-LM-FL4-NS1	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.12(3.0)	0.38(9.7)	0.74(18.8)	
1/4	1/8	-LM-FL4-NS2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.74(18.8)	
1/4	1/4	-LM-FL4-NS4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.56(14.2)	0.92(23.4)	
1/4	3/8	-LM-FL4-NS6	1.17(29.7)	0.60(15.2)	0.56(14.3)	0.69(17.5)	0.19(4.8)	0.56(14.2)	1.03(26.2)	
1/4	1/2	-LM-FL4-NS8	1.25(31.8)	0.60(15.2)	0.56(14.3)	0.81(20.6)	0.19(4.8)	0.75(19.1)	1.30(33.0)	
5/16	1/8	-LM-FL5-NS2	1.13(28.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.19(4.8)	0.38(9.7)	0.78(19.8)	
5/16	1/4	-LM-FL5-NS4	1.13(28.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)	0.56(14.2)	0.96(24.4)	
5/16	3/8	-LM-FL5-NS6	1.20(30.5)	0.64(16.3)	0.63(15.9)	0.69(17.5)	0.25(6.4)	0.56(14.2)	1.03(26.2)	
3/8	1/8	-LM-FL6-NS2	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.19(4.8)	0.38(9.7)	0.82(20.8)	
3/8	1/4	-LM-FL6-NS4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	1.00(25.4)	
3/8	3/8	-LM-FL6-NS6	1.23(31.2)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)	0.56(14.2)	1.03(26.2)	
3/8	1/2	-LM-FL6-NS8	1.31(33.3)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)	0.75(19.1)	1.30(33.0)	
3/8	3/4	-LM-FL6-NS12	1.46(37.1)	0.66(16.8)	0.69(17.5)	1.06(27.0)	0.28(7.1)	0.75(19.1)	1.45(36.8)	
1/2	1/4	-LM-FL8-NS4	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.28(7.1)	0.56(14.2)	1.11(28.2)	
1/2	3/8	-LM-FL8-NS6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.56(14.2)	1.11(28.2)	
1/2	1/2	-LM-FL8-NS8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.75(19.1)	1.30(33.0)	
1/2	3/4	-LM-FL8-NS12	1.57(39.9)	0.90(22.9)	0.87(22.2)	1.06(27.0)	0.41(10.4)	0.75(19.1)	1.45(36.8)	
5/8	3/8	-LM-FL10-NS6	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.38(9.7)	0.56(14.2)	1.19(30.2)	
5/8	1/2	-LM-FL10-NS8	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.47(11.9)	0.75(19.1)	1.38(35.1)	
5/8	3/4	-LM-FL10-NS12	1.57(39.9)	0.96(24.4)	1.00(25.4)	1.06(27.0)	0.50(12.7)	0.75(19.1)	1.45(36.8)	
3/4	1/2	-LM-FL12-NS8	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.47(11.9)	0.75(19.1)	1.45(36.8)	
3/4	3/4	-LM-FL12-NS12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)	0.75(19.1)	1.45(36.8)	
7/8	3/4	-LM-FL14-NS12	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.64(41.7)	
1	3/4	-LM-FL16-NS12	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.64(41.7)	
1	1	-LM-FL16-NS16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.83(46.5)	
1 1/4	1 1/4	-LM-FL20-NS20	2.62(66.5)	1.62(41.1)	1.87(47.6)	1.69(42.9)	1.09(27.7)	0.94(23.9)	2.06(52.4)	
1 1/2	1 1/2	-LM-FL24-NS24	3.07(78.0)	1.97(50.0)	2.25(57.2)	2.00(50.8)	1.34(34.0)	1.03(26.2)	2.38(60.5)	

Fractional Tube			ISO Tapered Thread (RT)							
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimensions, in. (mm)							
			L	C	G	F	E	B	Lx	
1/8	1/8	-LM-FL2-RT2	0.93(23.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.4)	0.38(9.7)	0.87(22.2)	
1/8	1/4	-LM-FL2-RT4	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.4)	0.56(14.2)	0.92(23.4)	
1/4	1/8	-LM-FL4-RT2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.74(18.8)	
1/4	1/4	-LM-FL4-RT4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.56(14.2)	0.92(23.4)	
1/4	3/8	-LM-FL4-RT6	1.17(29.7)	0.60(15.2)	0.56(14.3)	0.69(17.5)	0.19(4.8)	0.56(14.2)	1.03(26.2)	
1/4	1/2	-LM-FL4-RT8	1.25(31.8)	0.60(15.2)	0.56(14.3)	0.81(20.6)	0.19(4.8)	0.75(19.1)	1.30(33.0)	
5/16	1/4	-LM-FL5-RT4	1.13(28.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)	0.56(14.2)	0.96(24.4)	
3/8	1/8	-LM-FL6-RT2	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.19(4.8)	0.38(9.7)	0.82(20.8)	
3/8	1/4	-LM-FL6-RT4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	1.00(25.4)	
3/8	3/8	-LM-FL6-RT6	1.23(31.2)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)	0.56(14.2)	1.03(26.2)	
1/2	3/8	-LM-FL8-RT6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.56(14.2)	1.11(28.2)	
1/2	1/2	-LM-FL8-RT8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.75(19.1)	1.30(33.0)	
3/4	1/2	-LM-FL12-RT8	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.37(9.5)	0.75(19.1)	1.45(36.8)	
1	1	-LM-FL16-RT16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.83(46.5)	

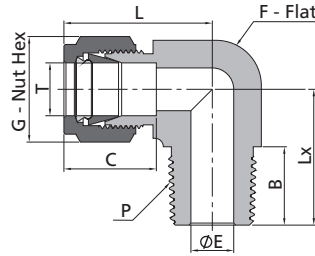


Male Elbows



Metric Tube			NPT Thread							
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)							
			L	C	G	F	E	B	Lx	
3	1/8	-LM-ML3-NS2	23.6(0.93)	12.9(0.51)	12.0(0.47)	11.1(0.44)	2.4(0.09)	9.7(0.38)	17.8(0.70)	
3	1/4	-LM-ML3-NS4	24.6(0.97)	12.9(0.51)	12.0(0.47)	12.7(0.50)	2.4(0.09)	14.2(0.56)	23.4(0.92)	
4	1/8	-LM-ML4-NS2	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)	9.7(0.38)	18.8(0.74)	
4	1/4	-LM-ML4-NS4	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)	14.2(0.56)	23.4(0.92)	
6	1/8	-LM-ML6-NS2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	9.7(0.38)	18.8(0.74)	
6	1/4	-LM-ML6-NS4	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	14.2(0.56)	23.4(0.92)	
6	3/8	-LM-ML6-NS6	29.8(1.17)	15.3(0.60)	14.0(0.55)	17.5(0.69)	4.8(0.19)	14.2(0.56)	26.2(1.03)	
6	1/2	-LM-ML6-NS8	31.8(1.25)	15.3(0.60)	14.0(0.55)	20.6(0.81)	4.8(0.19)	19.1(0.75)	33.0(1.30)	
8	1/8	-LM-ML8-NS2	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	4.8(0.19)	9.7(0.38)	19.8(0.78)	
8	1/4	-LM-ML8-NS4	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	6.4(0.25)	14.2(0.56)	24.4(0.96)	
8	3/8	-LM-ML8-NS6	30.6(1.20)	16.2(0.64)	16.0(0.63)	17.5(0.69)	6.4(0.25)	14.2(0.56)	26.2(1.03)	
8	1/2	-LM-ML8-NS8	32.6(1.28)	16.2(0.64)	16.0(0.63)	20.6(0.81)	6.4(0.25)	19.1(0.75)	33.0(1.30)	
10	1/8	-LM-ML10-NS2	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	4.8(0.19)	9.7(0.38)	21.6(0.85)	
10	1/4	-LM-ML10-NS4	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.1(0.28)	14.2(0.56)	26.2(1.03)	
10	3/8	-LM-ML10-NS6	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.9(0.31)	14.2(0.56)	26.2(1.03)	
10	1/2	-LM-ML10-NS8	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	19.1(0.75)	33.0(1.30)	
12	1/8	-LM-ML12-NS2	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	4.8(0.19)	9.7(0.38)	23.6(0.93)	
12	1/4	-LM-ML12-NS4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)	
12	3/8	-LM-ML12-NS6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	14.2(0.56)	28.2(1.11)	
12	1/2	-LM-ML12-NS8	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	19.1(0.75)	33.0(1.30)	
12	3/4	-LM-ML12-NS12	39.8(1.57)	22.8(0.90)	22.0(0.87)	27.0(1.06)	9.5(0.37)	19.1(0.75)	36.8(1.45)	
15	1/2	-LM-ML15-NS8	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	35.1(1.38)	
16	1/4	-LM-ML16-NS4	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	7.1(0.28)	14.2(0.56)	30.2(1.19)	
16	3/8	-LM-ML16-NS6	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	9.5(0.37)	14.2(0.56)	30.2(1.19)	
16	1/2	-LM-ML16-NS8	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	35.1(1.38)	
16	3/4	-LM-ML16-NS12	39.8(1.57)	24.4(0.96)	25.0(0.98)	27.0(1.06)	12.7(0.50)	19.1(0.75)	36.8(1.45)	
18	1/2	-LM-ML18-NS8	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	11.9(0.47)	19.1(0.75)	36.8(1.45)	
18	3/4	-LM-ML18-NS12	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)	19.1(0.75)	36.8(1.45)	
20	1/2	-LM-ML20-NS8	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	11.9(0.47)	19.1(0.75)	41.7(1.64)	
20	3/4	-LM-ML20-NS12	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
22	3/4	-LM-ML22-NS12	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
22	1	-LM-ML22-NS16	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	18.3(0.72)	23.9(0.94)	46.5(1.83)	
25	3/4	-LM-ML25-NS12	49.1(1.93)	31.3(1.23)	38.0(1.50)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
25	1	-LM-ML25-NS16	49.1(1.93)	31.3(1.23)	38.0(1.50)	34.9(1.37)	21.8(0.86)	23.9(0.94)	46.5(1.83)	
30	1 1/4	-LM-ML30-NS20	69.9(2.75)	39.6(1.56)	50.0(1.97)	42.9(1.69)	26.2(1.03)	23.9(0.94)	53.1(2.09)	
32	1 1/4	-LM-ML32-NS20	72.3(2.85)	42.0(1.65)	50.0(1.97)	42.9(1.69)	27.8(1.09)	23.9(0.94)	53.1(2.09)	
38	1 1/2	-LM-ML38-NS24	84.0(3.31)	49.4(1.94)	60.0(2.36)	50.8(2.00)	33.7(1.33)	26.2(1.03)	60.4(2.38)	

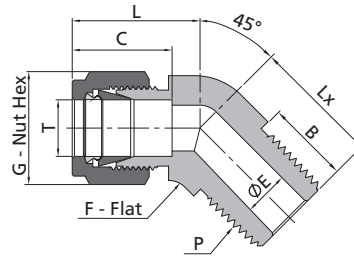
## Male Elbows



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Metric Tube			ISO Tapered Thread (RT)							
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimensions, mm (in.)							
			L	C	G	F	E	B	Lx	
3	1/8	-LM-ML3-RT2	23.6(0.93)	12.9(0.51)	12.0(0.47)	11.1(0.44)	2.4(0.09)	9.7(0.38)	17.8(0.70)	
3	1/4	-LM-ML3-RT4	24.6(0.97)	12.9(0.51)	12.0(0.47)	12.7(0.50)	2.4(0.09)	14.2(0.56)	23.4(0.92)	
4	1/8	-LM-ML4-RT2	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)	9.7(0.38)	18.8(0.74)	
4	1/4	-LM-ML4-RT4	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)	14.2(0.56)	23.4(0.92)	
6	1/8	-LM-ML6-RT2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	9.7(0.38)	18.8(0.74)	
6	1/4	-LM-ML6-RT4	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	14.2(0.56)	23.4(0.92)	
6	3/8	-LM-ML6-RT6	29.8(1.17)	15.3(0.60)	14.0(0.55)	17.5(0.69)	4.8(0.19)	14.2(0.56)	26.2(1.03)	
6	1/2	-LM-ML6-RT8	31.8(1.25)	15.3(0.60)	14.0(0.55)	20.6(0.81)	4.8(0.19)	19.1(0.75)	33.0(1.30)	
8	1/8	-LM-ML8-RT2	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	4.8(0.19)	9.7(0.38)	19.8(0.78)	
8	1/4	-LM-ML8-RT4	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	6.4(0.25)	14.2(0.56)	24.4(0.96)	
8	3/8	-LM-ML8-RT6	30.6(1.20)	16.2(0.64)	16.0(0.63)	17.5(0.69)	6.4(0.25)	14.2(0.56)	26.2(1.03)	
8	1/2	-LM-ML8-RT8	32.6(1.28)	16.2(0.64)	16.0(0.63)	20.6(0.81)	6.4(0.25)	19.1(0.75)	33.0(1.30)	
10	1/8	-LM-ML10-RT2	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	4.8(0.19)	9.7(0.38)	21.6(0.85)	
10	1/4	-LM-ML10-RT4	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.1(0.28)	14.2(0.56)	26.2(1.03)	
10	3/8	-LM-ML10-RT6	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.9(0.31)	14.2(0.56)	26.2(1.03)	
10	1/2	-LM-ML10-RT8	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	19.1(0.75)	33.0(1.30)	
12	1/8	-LM-ML12-RT2	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	4.8(0.19)	9.7(0.38)	23.6(0.93)	
12	1/4	-LM-ML12-RT4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)	
12	3/8	-LM-ML12-RT6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	14.2(0.56)	28.2(1.11)	
12	1/2	-LM-ML12-RT8	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	19.1(0.75)	33.0(1.30)	
12	3/4	-LM-ML12-RT12	39.8(1.57)	22.8(0.90)	22.0(0.87)	27.0(1.06)	9.5(0.37)	19.1(0.75)	36.8(1.45)	
14	1/2	-LM-ML14-RT8	38.1(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.1(0.44)	19.1(0.75)	35.1(1.38)	
15	1/2	-LM-ML15-RT8	38.1(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	35.1(1.38)	
16	1/4	-LM-ML16-RT4	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	7.1(0.28)	14.2(0.56)	30.2(1.19)	
16	3/8	-LM-ML16-RT6	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	9.5(0.37)	14.2(0.56)	30.2(1.19)	
16	1/2	-LM-ML16-RT8	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	35.1(1.38)	
16	3/4	-LM-ML16-RT12	39.8(1.57)	24.4(0.96)	25.0(0.98)	27.0(1.06)	12.7(0.50)	19.1(0.75)	36.8(1.45)	
18	1/2	-LM-ML18-RT8	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	11.9(0.47)	19.1(0.75)	36.8(1.45)	
18	3/4	-LM-ML18-RT12	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)	19.1(0.75)	36.8(1.45)	
20	1/2	-LM-ML20-RT8	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	11.9(0.47)	19.1(0.75)	41.7(1.64)	
20	3/4	-LM-ML20-RT12	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
22	3/4	-LM-ML22-RT12	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
22	1	-LM-ML22-RT16	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	18.3(0.72)	23.9(0.94)	46.5(1.83)	
25	3/4	-LM-ML25-RT12	49.1(1.93)	31.3(0.90)	38.0(1.50)	34.9(1.37)	15.9(0.63)	19.1(0.75)	41.7(1.64)	
25	1	-LM-ML25-RT16	49.1(1.93)	31.3(0.90)	38.0(1.50)	34.9(1.37)	21.8(0.86)	23.9(0.94)	46.5(1.83)	
28	1	-LM-ML28-RT16	64.0(2.52)	36.6(0.90)	46.0(1.81)	42.9(1.69)	21.8(0.86)	23.9(0.94)	53.1(2.09)	

45° Male Elbows



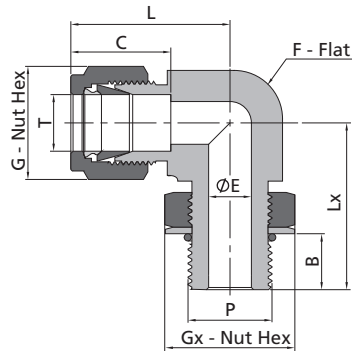
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	Lx
1/16	1/16	-VM-FL1-NS1	0.82(20.8)	0.34(8.6)	0.31(7.9)	0.44(11.1)	0.05(1.3)	0.38(9.7)	0.66(16.8)
1/8	1/8	-VM-FL2-NS2	0.82(20.8)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)	0.38(9.7)	0.66(16.8)
3/16	1/8	-VM-FL3-NS2	0.85(21.6)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)	0.38(9.7)	0.58(14.7)
1/4	1/8	-VM-FL4-NS2	0.97(24.6)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.65(16.5)
1/4	1/4	-VM-FL4-NS4	0.97(24.6)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.56(14.2)	0.83(21.1)
5/16	1/8	-VM-FL5-NS2	0.94(24.0)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.19(4.8)	0.38(9.7)	0.66(16.8)
3/8	1/8	-VM-FL6-NS2	1.10(27.9)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.19(4.8)	0.38(9.7)	0.72(18.3)
3/8	1/4	-VM-FL6-NS4	1.10(27.9)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	0.90(22.9)
3/8	3/8	-VM-FL6-NS6	1.15(29.2)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)	0.56(14.2)	0.95(24.1)
1/2	3/8	-VM-FL8-NS6	1.26(32.0)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.56(14.2)	0.95(24.1)
5/8	1/2	-VM-FL10-NS8	1.21(30.7)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.47(11.9)	0.56(14.2)	1.17(29.7)
3/4	3/4	-VM-FL12-NS12	1.34(34.0)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)	0.75(19.1)	1.22(31.0)
7/8	3/4	-VM-FL14-NS12	1.59(40.4)	1.02(25.9)	1.25(31.8)	1.25(31.8)	0.62(15.7)	0.75(19.1)	1.27(32.3)
1	1	-VM-FL16-NS16	1.59(40.4)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.49(37.8)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	Lx
6	1/8	-VM-ML6-NS2	23.4(0.92)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	9.7(0.38)	16.8(0.66)
6	1/4	-VM-ML6-NS4	23.4(0.92)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	14.2(0.56)	21.8(0.86)
8	1/8	-VM-ML8-NS2	24.3(0.96)	16.2(0.64)	16.0(0.63)	15.9(0.63)	4.8(0.19)	9.7(0.38)	16.8(0.66)
10	1/4	-VM-ML10-NS4	26.6(1.05)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.9(0.31)	14.2(0.56)	24.1(0.95)
12	3/8	-VM-ML12-NS6	29.1(1.15)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	14.2(0.56)	24.1(0.95)
12	1/2	-VM-ML12-NS8	30.7(1.21)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	19.1(0.75)	29.7(1.17)
16	1/2	-VM-ML16-NS8	30.7(1.21)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	29.7(1.17)

## Adjustable Male Elbows

## SAE/MS Straight Thread



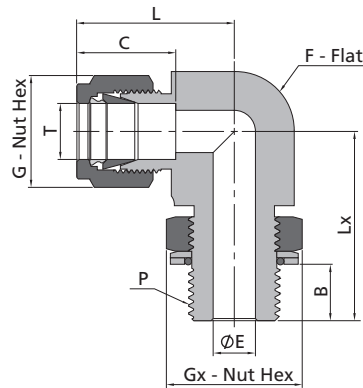
1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

2. 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	Dimensions, in. (mm)								
			L	B	C	G	E	F	Lx	Gx	
1/4	7/16-20	-LP-FL4-ST7	1.12(28.4)	0.39(9.9)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.50(12.7)	1.06(27.0)	0.56(14.3)	
1/4	9/16-18	-LP-FL4-ST9	1.20(30.5)	0.44(11.2)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.63(15.9)	1.27(32.3)	0.69(17.5)	
5/16	1/2-20	-LP-FL5-ST8	1.19(30.2)	0.39(9.9)	0.64(16.3)	0.63(15.9)	0.23(5.8)	0.56(14.3)	1.16(29.5)	0.63(15.9)	
3/8	7/16-20	-LP-FL6-ST7	1.31(33.3)	0.39(9.9)	0.66(16.8)	0.69(17.5)	0.20(5.1)	0.63(15.9)	1.24(31.5)	0.56(14.3)	
3/8	9/16-18	-LP-FL6-ST9	1.26(32.0)	0.44(11.2)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.63(15.9)	1.27(32.3)	0.69(17.5)	
3/8	3/4-16	-LP-FL6-ST12	1.37(34.8)	0.50(12.7)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.81(20.6)	1.49(37.8)	0.87(22.2)	
1/2	9/16-18	-LP-FL8-ST9	1.48(37.6)	0.44(11.2)	0.90(22.9)	0.87(22.2)	0.28(7.1)	0.81(20.6)	1.48(37.5)	0.69(17.5)	
1/2	3/4-16	-LP-FL8-ST12	1.48(37.6)	0.50(12.7)	0.90(22.9)	0.87(22.2)	0.41(10.4)	0.81(20.6)	1.49(37.8)	0.87(22.2)	
5/8	7/8-14	-LP-FL10-ST14	1.56(39.6)	0.56(14.2)	0.96(24.4)	1.00(25.4)	0.50(12.7)	0.94(23.8)	1.71(43.4)	1.00(25.4)	
3/4	1 1/16-12	-LP-FL12-ST17	1.63(41.4)	0.66(16.8)	0.96(24.4)	1.13(28.6)	0.62(15.7)	1.06(27.0)	1.92(48.8)	1.25(31.8)	
7/8	1 3/16-12	-LP-FL14-ST19	1.70(43.2)	0.66(16.8)	1.02(25.9)	1.25(31.8)	0.72(18.3)	1.25(31.8)	1.99(50.5)	1.37(34.9)	
1	1 5/16-12	-LP-FL16-ST21	1.99(50.5)	0.66(16.8)	1.23(31.2)	1.50(38.1)	0.88(22.4)	1.37(34.9)	2.11(53.6)	1.50(38.1)	
1 1/4	1 5/8-12	-LP-FL20-ST26	2.67(67.8)	0.66(16.8)	1.62(41.1)	1.87(47.6)	1.09(27.7)	1.69(42.9)	2.29(58.2)	1.87(47.6)	
1 1/2	1 7/8-12	-LP-FL24-ST30	3.07(78.0)	0.66(16.8)	1.97(50.0)	2.25(57.2)	1.34(34.0)	2.00(50.8)	2.38(60.5)	2.13(54.0)	

Adjustable Male Elbows

ISO Parallel Thread



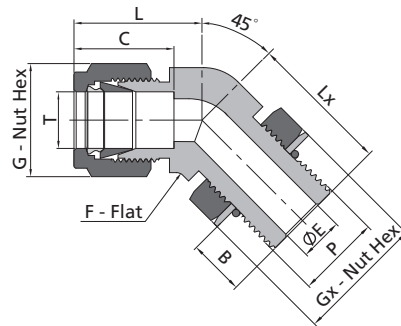
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	B	C	G	E	F	Lx	Gx	
1/4	1/8	-LP-FL4-PP2	1.06(26.9)	0.26(6.6)	0.60(15.2)	0.56(14.3)	0.16(4.1)	0.50(12.7)	1.04(26.4)	0.56(14.3)	
1/4	1/4	-LP-FL4-PP4	1.14(29.0)	0.35(9.0)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
3/8	1/4	-LP-FL6-PP4	1.20(30.5)	0.35(9.0)	0.66(16.8)	0.69(17.5)	0.23(5.8)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
3/8	3/8	-LP-FL6-PP6	1.31(33.3)	0.37(9.4)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.81(20.6)	1.46(37.1)	0.87(22.2)	
1/2	1/4	-LP-FL8-PP4	1.42(36.1)	0.35(9.0)	0.90(22.9)	0.87(22.2)	0.23(5.8)	0.81(20.6)	1.38(35.1)	0.75(19.1)	
1/2	3/8	-LP-FL8-PP6	1.42(36.1)	0.37(9.4)	0.90(22.9)	0.87(22.2)	0.31(7.9)	0.81(20.6)	1.46(37.1)	0.87(22.2)	
1/2	1/2	-LP-FL8-PP8	1.50(38.1)	0.51(13.0)	0.90(22.9)	0.87(22.2)	0.41(10.4)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
5/8	1/2	-LP-FL10-PP8	1.50(38.1)	0.51(13.0)	0.96(24.4)	1.00(25.4)	0.47(11.9)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
3/4	1/2	-LP-FL12-PP8	1.57(39.9)	0.51(13.0)	0.96(24.4)	1.13(28.6)	0.47(11.9)	1.06(27.0)	1.78(45.2)	1.06(27.0)	
3/4	3/4	-LP-FL12-PP12	1.57(39.9)	0.51(13.0)	0.96(24.4)	1.13(28.6)	0.62(15.7)	1.06(27.0)	1.92(48.8)	1.37(34.9)	
1	3/4	-LP-FL16-PP12	1.93(49.0)	0.51(13.0)	1.23(31.2)	1.50(38.1)	0.62(15.7)	1.37(34.9)	2.10(53.3)	1.37(34.9)	
1	1	-LP-FL16-PP16	1.93(49.0)	0.52(13.2)	1.23(31.2)	1.50(38.1)	0.78(19.8)	1.37(34.9)	2.11(53.6)	1.63(41.3)	

Metric Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, mm (in.)								
			L	B	C	G	E	F	Lx	Gx	
6	1/8	-LP-ML6-PP2	27.0(1.06)	6.6(0.26)	15.3(0.60)	14.0(0.55)	4.0(0.16)	12.7(0.50)	26.4(1.04)	14.3(0.56)	
6	1/4	-LP-ML6-PP4	29.0(1.14)	9.0(0.35)	15.3(0.60)	14.0(0.55)	4.8(0.19)	15.9(0.63)	32.3(1.27)	19.1(0.75)	
8	1/8	-LP-ML8-PP2	28.8(1.13)	6.6(0.26)	16.2(0.64)	16.0(0.63)	4.0(0.16)	14.3(0.56)	27.4(1.08)	14.3(0.56)	
8	1/4	-LP-ML8-PP4	29.9(1.18)	9.0(0.35)	16.2(0.64)	16.0(0.63)	5.9(0.23)	15.9(0.63)	32.2(1.27)	19.1(0.75)	
10	1/4	-LP-ML10-PP4	33.5(1.32)	9.0(0.35)	17.2(0.68)	19.0(0.75)	5.9(0.23)	20.6(0.81)	35.0(1.38)	19.1(0.75)	
10	3/8	-LP-ML10-PP6	33.5(1.32)	9.4(0.37)	17.2(0.68)	19.0(0.75)	7.9(0.31)	20.6(0.81)	37.1(1.46)	22.2(0.87)	
12	1/4	-LP-ML12-PP4	36.0(1.42)	9.0(0.35)	22.8(0.90)	22.0(0.87)	5.9(0.23)	20.6(0.81)	35.0(1.38)	19.1(0.75)	
12	3/8	-LP-ML12-PP6	36.0(1.42)	9.4(0.37)	22.8(0.90)	22.0(0.87)	7.9(0.31)	20.6(0.81)	37.1(1.46)	22.2(0.87)	
12	1/2	-LP-ML12-PP8	38.0(1.50)	13.0(0.51)	22.8(0.90)	22.0(0.87)	9.5(0.37)	23.8(0.94)	43.4(1.71)	27.0(1.06)	
12	3/4	-LP-ML12-PP12	39.8(1.57)	13.0(0.51)	22.8(0.90)	22.0(0.87)	9.5(0.37)	27.0(1.06)	48.8(1.92)	34.9(1.37)	

## 45° Adjustable Male Elbows

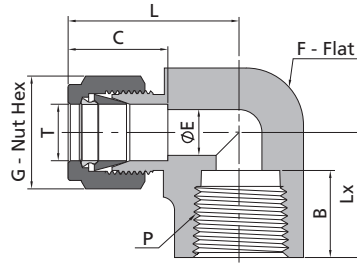
## SAE/MS Straight Thread



1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. 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	Dimensions, in. (mm)								
			L	B	C	G	E	F	Lx	Gx	
1/4	7/16-20	-VP-FL4-ST7	1.01(25.7)	0.39(9.9)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.50(12.7)	1.01(25.7)	0.56(14.3)	
3/8	9/16-18	-VP-FL6-ST9	1.10(27.9)	0.44(11.2)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.63(15.9)	1.11(28.2)	0.69(17.5)	
1/2	3/4-16	-VP-FL8-ST12	1.26(32.0)	0.50(12.7)	0.90(22.9)	0.87(22.2)	0.41(10.4)	0.81(20.6)	1.27(32.3)	0.87(22.2)	
3/4	1 1/16-12	-VP-FL12-ST17	1.57(39.9)	0.66(16.8)	0.96(24.4)	1.13(28.6)	0.62(15.7)	1.06(27.0)	1.86(47.2)	1.25(31.8)	
1	1 5/16-12	-VP-FL16-ST21	1.87(47.5)	0.66(16.8)	1.23(31.2)	1.50(38.1)	0.88(22.4)	1.37(34.9)	1.99(50.5)	1.50(38.1)	

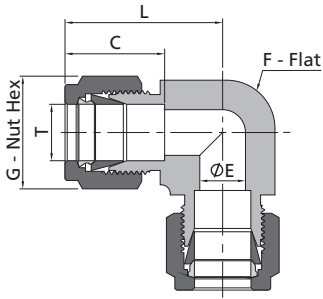
Female Elbows



Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	B	C	G	E	F	Lx
1/16	1/16	-LF-FL1-NS1	0.71(18.0)	0.39(9.9)	0.34(8.6)	0.31(7.9)	0.05(1.3)	0.44(11.1)	0.56(14.2)
1/16	1/8	-LF-FL1-NS2	0.81(20.6)	0.41(10.4)	0.34(8.6)	0.31(7.9)	0.05(1.3)	0.56(14.3)	0.75(19.1)
1/8	1/8	-LF-FL2-NS2	0.97(24.6)	0.41(10.4)	0.50(12.7)	0.44(11.1)	0.09(2.3)	0.50(12.7)	0.75(19.1)
1/8	1/4	-LF-FL2-NS4	1.08(27.4)	0.59(15.0)	0.50(12.7)	0.44(11.1)	0.09(2.3)	0.69(17.5)	0.88(22.4)
3/16	1/8	-LF-FL3-NS2	1.00(25.4)	0.41(10.4)	0.54(13.7)	0.50(12.7)	0.12(3.0)	0.5(12.7)	0.75(19.1)
1/4	1/8	-LF-FL4-NS2	1.06(26.9)	0.41(10.4)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.50(12.7)	0.75(19.1)
1/4	1/4	-LF-FL4-NS4	1.17(29.7)	0.59(15.0)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.69(17.5)	0.88(22.4)
1/4	3/8	-LF-FL4-NS6	1.25(31.8)	0.59(15.0)	0.60(15.2)	0.56(14.3)	0.19(4.8)	0.81(20.6)	0.88(22.4)
1/4	1/2	-LF-FL4-NS8	1.36(34.5)	0.78(19.8)	0.60(15.2)	0.56(14.3)	0.19(4.8)	1.00(25.4)	1.12(28.4)
5/16	1/8	-LF-FL5-NS2	1.13(28.7)	0.41(10.4)	0.64(16.3)	0.63(15.9)	0.25(6.4)	0.56(14.3)	0.75(19.1)
5/16	1/4	-LF-FL5-NS4	1.20(30.5)	0.59(15.0)	0.64(16.3)	0.63(15.9)	0.25(6.4)	0.69(17.5)	0.88(22.4)
3/8	1/8	-LF-FL6-NS2	1.20(30.5)	0.41(10.4)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.63(15.9)	0.75(19.1)
3/8	1/4	-LF-FL6-NS4	1.23(31.2)	0.59(15.0)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.69(17.5)	0.88(22.4)
3/8	3/8	-LF-FL6-NS6	1.31(33.3)	0.59(15.0)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.81(20.6)	0.88(22.4)
3/8	1/2	-LF-FL6-NS8	1.42(36.1)	0.78(19.8)	0.66(16.8)	0.69(17.5)	0.28(7.1)	1.00(25.4)	1.12(28.4)
1/2	1/4	-LF-FL8-NS4	1.42(36.1)	0.59(15.0)	0.90(22.9)	0.87(22.2)	0.41(10.4)	0.81(20.6)	0.88(22.4)
1/2	3/8	-LF-FL8-NS6	1.42(36.1)	0.59(15.0)	0.90(22.9)	0.87(22.2)	0.41(10.4)	0.81(20.6)	0.88(22.4)
1/2	1/2	-LF-FL8-NS8	1.53(38.9)	0.78(19.8)	0.90(22.9)	0.87(22.2)	0.41(10.4)	1.00(25.4)	1.12(28.4)
5/8	3/8	-LF-FL10-NS6	1.50(38.1)	0.59(15.0)	0.96(24.4)	1.00(25.4)	0.50(12.7)	0.94(23.8)	0.88(22.4)
5/8	1/2	-LF-FL10-NS8	1.57(39.9)	0.78(19.8)	0.96(24.4)	1.00(25.4)	0.50(12.7)	1.06(27.0)	1.12(28.4)
3/4	1/2	-LF-FL12-NS8	1.57(39.9)	0.78(19.8)	0.96(24.4)	1.13(28.6)	0.62(15.7)	1.06(27.0)	1.12(28.4)
3/4	3/4	-LF-FL12-NS12	1.76(44.7)	0.81(20.6)	0.96(24.4)	1.13(28.6)	0.62(15.7)	1.37(34.9)	1.25(31.8)
7/8	3/4	-LF-FL14-NS12	1.76(44.7)	0.81(20.6)	1.02(25.9)	1.25(31.8)	0.72(18.3)	1.37(34.9)	1.25(31.8)
1	3/4	-LF-FL16-NS12	1.93(49.0)	0.81(20.6)	1.23(31.2)	1.50(38.1)	0.88(22.4)	1.37(34.9)	1.25(31.8)
1	1	-LF-FL16-NS16	2.11(53.6)	1.06(26.9)	1.23(31.2)	1.50(38.1)	0.88(22.4)	1.69(42.9)	1.50(38.1)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	B	C	G	E	F	Lx
6	1/8	-LF-ML6-NS2	27.0(1.06)	10.4(0.41)	15.3(0.60)	14.0(0.55)	4.8(0.19)	12.7(0.50)	19.0(0.75)
6	1/4	-LF-ML6-NS4	29.8(1.17)	15.0(0.59)	15.3(0.60)	14.0(0.55)	4.8(0.19)	17.5(0.69)	22.4(0.88)
8	1/8	-LF-ML8-NS2	28.8(1.13)	10.4(0.41)	16.2(0.64)	16.0(0.63)	6.4(0.25)	14.3(0.56)	19.1(0.75)
8	1/4	-LF-ML8-NS4	30.6(1.20)	15.0(0.59)	16.2(0.64)	16.0(0.63)	6.4(0.25)	17.5(0.69)	22.4(0.88)
10	1/4	-LF-ML10-NS4	33.5(1.32)	15.0(0.59)	17.2(0.68)	19.0(0.75)	7.9(0.31)	20.6(0.81)	22.4(0.88)
10	3/8	-LF-ML10-NS6	33.5(1.32)	15.0(0.59)	17.2(0.68)	19.0(0.75)	7.9(0.31)	20.6(0.81)	22.4(0.88)
10	1/2	-LF-ML10-NS8	36.6(1.44)	19.8(0.78)	17.2(0.68)	19.0(0.75)	7.9(0.31)	25.4(1.00)	28.5(1.12)
12	1/4	-LF-ML12-NS4	36.0(1.42)	15.0(0.59)	22.8(0.90)	22.0(0.87)	9.5(0.37)	20.6(0.81)	22.4(0.88)
12	3/8	-LF-ML12-NS6	36.0(1.42)	15.0(0.59)	22.8(0.90)	22.0(0.87)	9.5(0.37)	20.6(0.81)	22.4(0.88)
12	1/2	-LF-ML12-NS8	38.8(1.53)	19.8(0.78)	22.8(0.90)	22.0(0.87)	9.5(0.37)	25.4(1.00)	28.4(1.12)
16	3/8	-LF-ML16-NS6	39.5(1.56)	15.0(0.59)	24.4(0.96)	25.0(0.98)	12.7(0.50)	27.0(1.06)	23.6(0.93)
16	1/2	-LF-ML16-NS8	39.5(1.56)	19.8(0.78)	24.4(0.96)	25.0(0.98)	12.7(0.50)	27.0(1.06)	28.5(1.12)

## Union Elbows

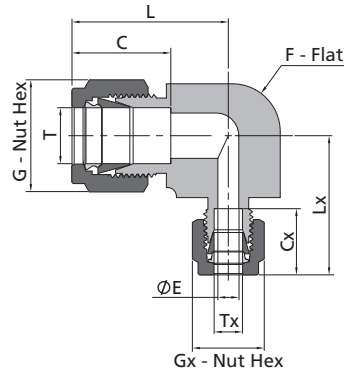


Fractional Tube						
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				
		L	C	G	F	E
1/16	-LU-FL1	0.70(17.8)	0.34(8.6)	0.31(7.9)	0.37(9.5)	0.05(1.3)
1/8	-LU-FL2	0.88(22.4)	0.50(12.7)	0.44(11.1)	0.37(9.5)	0.09(2.3)
3/16	-LU-FL3	1.00(25.4)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)
1/4	-LU-FL4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
5/16	-LU-FL5	1.13(28.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)
3/8	-LU-FL6	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)
1/2	-LU-FL8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
5/8	-LU-FL10	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.5(12.7)
3/4	-LU-FL12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)
7/8	-LU-FL14	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.72(18.3)
1	-LU-FL16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)
1 1/8	-LU-FL18	2.63(66.9)	1.44(36.7)	1.75(44.5)	1.69(42.9)	0.97(24.6)
1 1/4	-LU-FL20	2.62(66.5)	1.62(41.1)	1.87(47.6)	1.69(42.9)	1.09(27.7)
1 1/2	-LU-FL24	3.07(78.0)	1.97(50.0)	2.25(57.2)	2.00(50.8)	1.34(34.0)

Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)				
		L	C	G	F	E
3	-LU-ML3	22.3(0.88)	12.9(0.51)	12.0(0.47)	9.5(0.37)	2.4(0.09)
4	-LU-ML4	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)
6	-LU-ML6	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)
8	-LU-ML8	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	6.4(0.25)
10	-LU-ML10	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.9(0.31)
12	-LU-ML12	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)
14	-LU-ML14	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.0(0.43)
15	-LU-ML15	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)
16	-LU-ML16	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	12.7(0.50)
18	-LU-ML18	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
20	-LU-ML20	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)
22	-LU-ML22	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	18.3(0.72)
25	-LU-ML25	49.1(1.93)	31.3(1.23)	38.0(1.5)	34.9(1.37)	21.8(0.86)
28	-LU-ML28	64.0(2.52)	36.6(1.44)	46.0(1.81)	42.9(1.69)	21.8(0.86)
30	-LU-ML30	69.9(2.75)	39.6(1.56)	50.0(1.97)	42.9(1.69)	26.2(1.03)
32	-LU-ML32	72.3(2.85)	42.0(1.65)	50.0(1.97)	42.9(1.69)	28.6(1.13)
38	-LU-ML38	84.0(3.31)	49.4(1.94)	60.0(2.36)	50.8(2.00)	33.7(1.33)



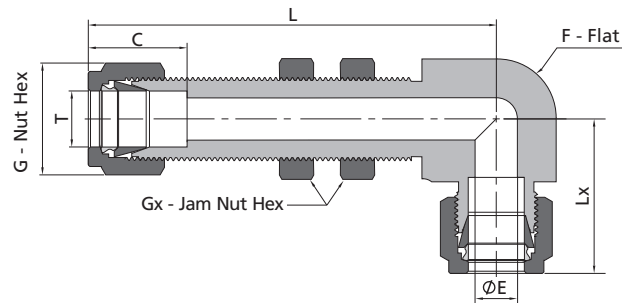
Union Reducing Elbows



Fractional Tube			Dimensions, in. (mm)								
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	L	C	G	F	E	Cx	Gx	Lx	
3/16	1/8	-LU-FL3-FL2	1.00(25.4)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.09(2.3)	0.50(12.7)	0.44(11.1)	0.97(24.7)	
1/4	1/8	-LU-FL4-FL2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.09(2.3)	0.50(12.7)	0.44(11.1)	1.00(25.4)	
5/16	1/8	-LU-FL5-FL2	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.09(2.3)	0.50(12.7)	0.44(11.1)	1.04(26.4)	
5/16	1/4	-LU-FL5-FL4	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.19(4.8)	0.60(15.2)	0.56(14.3)	1.14(29.0)	
3/8	1/8	-LU-FL6-FL2	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.09(2.3)	0.50(12.7)	0.44(11.1)	1.04(26.4)	
3/8	1/4	-LU-FL6-FL4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.19(4.8)	0.60(15.2)	0.56(14.3)	1.14(29.0)	
3/8	5/16	-LU-FL6-FL5	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.25(6.4)	0.64(16.3)	0.63(15.9)	1.17(29.7)	
1/2	1/4	-LU-FL8-FL4	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.19(4.8)	0.60(15.2)	0.56(14.3)	1.27(32.2)	
1/2	5/16	-LU-FL8-FL5	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.25(6.4)	0.64(16.3)	0.63(15.9)	1.28(32.5)	
1/2	3/8	-LU-FL8-FL6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.28(7.1)	0.66(16.8)	0.69(17.5)	1.32(33.6)	
5/8	3/8	-LU-FL10-FL6	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.28(7.1)	0.66(16.8)	0.69(17.5)	1.40(35.6)	
5/8	1/2	-LU-FL10-FL8	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.41(10.4)	0.90(22.9)	0.87(22.2)	1.50(38.1)	
3/4	1/4	-LU-FL12-FL4	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.19(4.8)	0.60(15.2)	0.56(14.3)	1.41(35.9)	
3/4	3/8	-LU-FL12-FL6	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.28(7.1)	0.66(16.8)	0.69(17.5)	1.47(37.4)	
3/4	1/2	-LU-FL12-FL8	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.41(10.4)	0.90(22.9)	0.87(22.2)	1.57(39.9)	
7/8	1/4	-LU-FL14-FL4	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.19(4.8)	0.60(15.2)	0.56(14.3)	1.60(40.7)	
1	1/2	-LU-FL16-FL8	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.41(10.4)	0.90(22.9)	0.87(22.2)	1.75(44.4)	
1	3/4	-LU-FL16-FL12	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.96(24.4)	1.13(28.6)	1.85(47.1)	

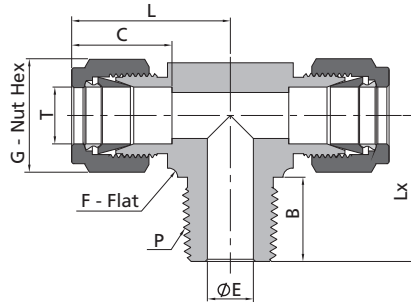
Metric Tube			Dimensions, mm (in.)								
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	L	C	G	F	E	Cx	Gx	Lx	
8	6	-LU-ML8-ML6	28.8(1.13)	16.2(0.64)	16.0(0.63)	14.3(0.56)	4.8(0.19)	15.3(0.60)	14.0(0.55)	27.9(1.10)	
10	8	-LU-ML10-ML8	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	6.4(0.25)	16.2(0.64)	16.0(0.63)	30.5(1.20)	
12	8	-LU-ML12-ML8	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	6.4(0.25)	16.2(0.64)	16.0(0.63)	32.6(1.28)	
14	8	-LU-ML14-ML8	38.8(1.53)	24.4(0.96)	25.0(0.98)	23.8(0.94)	6.4(0.25)	16.2(0.64)	16.0(0.63)	34.7(1.37)	
14	10	-LU-ML14-ML10	38.8(1.53)	24.4(0.96)	25.0(0.98)	23.8(0.94)	7.9(0.31)	17.2(0.68)	19.0(0.75)	35.5(1.40)	

## Bulkhead Union Elbows



Fractional Tube		Dimensions, in. (mm)							Panel Hole Size	Max. Panel Thickness
T-Tube O.D. (in.)	Basic Ordering Number	L	C	E	G	F	Lx	Gx	in. (mm)	in. (mm)
1/8	-BBLU-FL2	1.93(49.0)	0.50(12.7)	0.09(2.3)	0.44(11.1)	0.37(9.5)	0.88(22.4)	0.50(12.7)	0.33(8.3)	0.60(15.2)
3/16	-BBLU-FL3	2.03(51.6)	0.54(13.7)	0.12(3.0)	0.50(12.7)	0.50(12.7)	1.00(25.4)	0.56(14.3)	0.39(9.9)	0.61(15.5)
1/4	-BBLU-FL4	2.10(53.3)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.50(12.7)	1.06(26.9)	0.63(15.9)	0.45(11.5)	0.61(15.5)
5/6	-BBLU-FL5	2.30(58.4)	0.64(16.3)	0.25(6.4)	0.63(15.9)	0.63(15.9)	1.13(28.7)	0.69(17.5)	0.52(13.1)	0.74(18.8)
3/8	-BBLU-FL6	2.36(59.9)	0.66(16.8)	0.28(7.1)	0.69(15.7)	0.63(15.9)	1.20(30.5)	0.75(19.1)	0.58(14.7)	0.74(18.8)
1/2	-BBLU-FL8	2.67(67.8)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.81(20.6)	1.42(36.1)	0.94(23.8)	0.76(19.4)	0.74(18.8)
5/8	-BBLU-FL10	2.82(71.6)	0.96(24.4)	0.50(12.7)	1.00(25.4)	0.94(23.8)	1.50(38.1)	1.06(27.0)	0.89(22.6)	0.50(12.7)
3/4	-BBLU-FL12	3.08(78.2)	0.96(24.4)	0.62(12.7)	1.13(28.6)	1.06(27.0)	1.57(39.9)	1.19(30.2)	1.02(25.0)	0.66(16.8)

Male Branch Tees

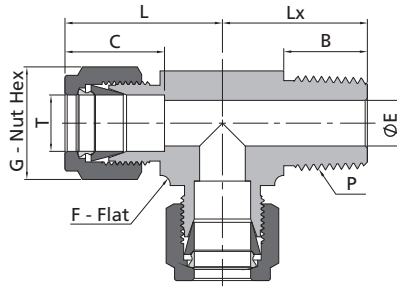


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	Lx
1/8	1/8	-TTM-FL2-NS2	0.93(23.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)	0.38(9.7)	0.70(17.8)
1/8	1/4	-TTM-FL2-NS4	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.3)	0.56(14.2)	0.92(23.4)
3/16	1/8	-TTM-FL3-NS2	0.96(24.4)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)	0.38(9.7)	0.70(17.8)
1/4	1/8	-TTM-FL4-NS2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.74(18.8)
1/4	1/4	-TTM-FL4-NS4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.56(14.2)	0.92(23.4)
5/16	1/8	-TTM-FL5-NS2	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.63(15.9)	0.19(4.8)	0.38(9.7)	0.82(20.8)
5/16	1/4	-TTM-FL5-NS4	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.63(15.9)	0.25(6.4)	0.56(14.2)	1.01(25.7)
3/8	1/4	-TTM-FL6-NS4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	1.00(25.4)
3/8	3/8	-TTM-FL6-NS6	1.31(33.3)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)	0.56(14.2)	1.11(28.2)
1/2	3/8	-TTM-FL8-NS6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.56(14.2)	1.11(28.2)
1/2	1/2	-TTM-FL8-NS8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.75(19.1)	1.30(33.0)
5/8	1/2	-TTM-FL10-NS8	1.53(38.9)	0.96(24.4)	1.00(25.4)	1.00(25.4)	0.47(11.9)	0.75(19.1)	1.41(35.8)
3/4	3/4	-TTM-FL12-NS12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)	0.75(19.1)	1.45(36.8)
7/8	3/4	-TTM-FL14-NS12	1.88(47.8)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.87(47.5)
1	3/4	-TTM-FL16-NS12	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.87(47.5)
1	1	-TTM-FL16-NS16	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.84(46.7)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	Lx
6	1/8	-TTM-ML6-NS2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	9.7(0.38)	18.8(0.74)
6	1/4	-TTM-ML6-NS4	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	14.2(0.56)	23.4(0.92)
8	1/8	-TTM-ML8-NS2	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	4.8(0.19)	9.7(0.38)	20.8(0.82)
8	1/4	-TTM-ML8-NS4	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)	14.2(0.56)	25.4(1.00)
10	1/4	-TTM-ML10-NS4	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)
10	3/8	-TTM-ML10-NS6	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	14.2(0.56)	28.2(1.11)
12	1/4	-TTM-ML12-NS4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)
12	3/8	-TTM-ML12-NS6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	14.2(0.56)	28.2(1.11)
12	1/2	-TTM-ML12-NS8	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	19.1(0.75)	33.0(1.30)
16	1/2	-TTM-ML16-NS8	38.8(1.53)	24.4(0.96)	25.0(0.98)	25.4(1.00)	11.9(0.47)	19.1(0.75)	35.8(1.41)

## Male Run Tees



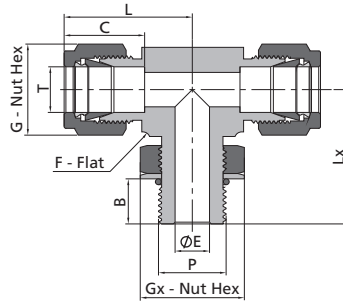
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	Lx
1/8	1/8	-TMT-FL2-NS2	0.93(23.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)	0.38(9.7)	0.70(17.8)
1/8	1/4	-TMT-FL2-NS4	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.3)	0.56(14.2)	0.92(23.4)
3/16	1/8	-TMT-FL3-NS2	0.96(24.4)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)	0.38(9.7)	0.70(17.8)
1/4	1/8	-TMT-FL4-NS2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.74(18.8)
1/4	1/4	-TMT-FL4-NS4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.56(14.2)	0.92(23.4)
5/16	1/8	-TMT-FL5-NS2	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.63(15.9)	0.19(4.8)	0.38(9.7)	0.82(20.8)
5/16	1/4	-TMT-FL5-NS4	1.17(29.7)	0.64(16.3)	0.63(15.9)	0.63(15.9)	0.25(6.4)	0.56(14.2)	1.01(25.7)
3/8	1/4	-TMT-FL6-NS4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	1.00(25.4)
3/8	3/8	-TMT-FL6-NS6	1.31(33.3)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)	0.56(14.2)	1.11(28.2)
1/2	3/8	-TMT-FL8-NS6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.56(14.2)	1.11(28.2)
1/2	1/2	-TMT-FL8-NS8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.75(19.1)	1.3(33.0)
5/8	1/2	-TMT-FL10-NS8	1.50(38.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.47(11.9)	0.75(19.1)	1.41(35.8)
3/4	3/4	-TMT-FL12-NS12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)	0.75(19.1)	1.45(36.8)
7/8	3/4	-TMT-FL14-NS12	1.88(47.8)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.87(47.5)
1	3/4	-TMT-FL16-NS12	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.75(19.1)	1.87(47.5)
1	1	-TMT-FL16-NS16	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.84(46.7)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	Lx
6	1/8	-TMT-ML6-NS2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	9.7(0.38)	18.0(0.71)
6	1/4	-TMT-ML6-NS4	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	14.2(0.56)	23.4(0.92)
8	1/8	-TMT-ML8-NS2	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	4.8(0.19)	9.7(0.38)	20.8(0.82)
8	1/4	-TMT-ML8-NS4	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)	14.2(0.56)	25.4(1.00)
10	1/4	-TMT-ML10-NS4	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)
10	1/2	-TMT-ML10-NS8	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	19.1(0.75)	33.0(1.3)
12	1/4	-TMT-ML12-NS4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	7.1(0.28)	14.2(0.56)	28.2(1.11)
12	3/8	-TMT-ML12-NS6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	14.2(0.56)	28.2(1.11)
12	1/2	-TMT-ML12-NS8	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	19.1(0.75)	33.0(1.30)
16	1/2	-TMT-ML16-NS8	38.0(1.50)	24.4(0.96)	25.0(0.98)	23.8(0.94)	11.9(0.47)	19.1(0.75)	35.0(1.38)

Adjustable Male Branch Tees

SAE/MS Straight Thread

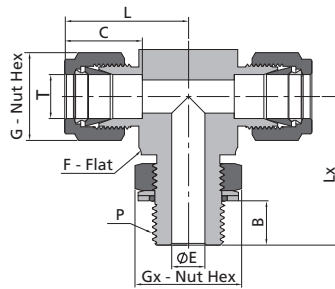


1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

Fractional Tube			SAE/MS Straight Thread								
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	B	C	E	G	F	Lx	Gx	
1/4	7/16-20	-TTP-FL4-ST7	1.12(28.5)	0.39(9.9)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.50(12.7)	1.06(27.0)	0.56(14.3)	
3/8	9/16-18	-TTP-FL6-ST9	1.26(32.0)	0.44(11.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)	1.27(32.3)	0.69(17.5)	
1/2	3/4-16	-TTP-FL8-ST12	1.48(37.6)	0.50(12.7)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.81(20.6)	1.49(37.8)	0.87(22.2)	
3/4	1 1/16-12	-TTP-FL12-ST17	1.63(41.4)	0.66(16.8)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)	1.92(48.8)	1.25(31.8)	
1	1 5/16-12	-TTP-FL16-ST21	1.99(50.5)	0.66(16.8)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.37(34.9)	2.11(53.6)	1.50(38.1)	
1 1/4	1 5/8-12	-TTP-FL20-ST26	2.67(67.8)	0.66(16.8)	1.62(41.1)	1.09(27.7)	1.87(47.6)	1.69(42.9)	2.29(58.2)	1.87(47.6)	
1 1/2	1 7/8-12	-TTP-FL24-ST30	3.07(78.0)	0.66(16.8)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.00(50.8)	2.38(60.5)	2.13(54.0)	

Adjustable Male Branch Tees

ISO Parallel Thread



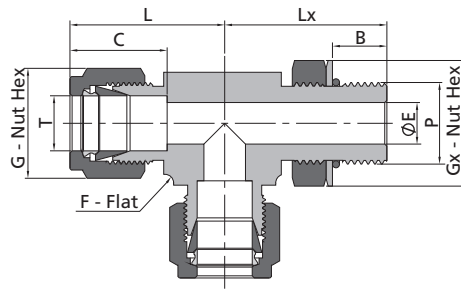
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end and welding end.

Fractional Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	B	C	E	G	F	Lx	Gx	
1/4	1/8	-TTP-FL4-PP2	1.06(26.9)	0.26(6.6)	0.60(15.2)	0.16(4.1)	0.56(14.3)	0.50(12.7)	1.04(26.4)	0.56(14.3)	
1/4	1/4	-TTP-FL4-PP4	1.14(29.0)	0.35(9.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
3/8	1/4	-TTP-FL6-PP4	1.20(30.5)	0.35(9.0)	0.66(16.8)	0.23(5.8)	0.69(17.5)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
1/2	3/8	-TTP-FL8-PP6	1.42(36.1)	0.37(9.4)	0.90(22.9)	0.31(7.9)	0.87(22.2)	0.81(20.6)	1.46(37.1)	0.87(22.2)	
1/2	1/2	-TTP-FL8-PP8	1.50(38.1)	0.51(13.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
5/8	1/2	-TTP-FL10-PP8	1.50(38.1)	0.51(13.0)	0.96(24.4)	0.47(11.9)	1.00(25.4)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
3/4	1/2	-TTP-FL12-PP8	1.57(39.9)	0.51(13.0)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.06(27.0)	1.78(45.2)	1.06(27.0)	
3/4	3/4	-TTP-FL12-PP12	1.57(39.9)	0.51(13.0)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)	1.92(48.8)	1.37(34.9)	
1	1	-TTP-FL16-PP16	1.93(49.0)	0.52(13.2)	1.23(31.2)	0.78(19.8)	1.50(38.1)	1.37(34.9)	2.11(53.6)	1.63(41.3)	

Metric Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, mm (in.)								
			L	B	C	E	G	F	Lx	Gx	
6	1/8	-TTP-ML6-PP2	27.0(1.06)	6.6(0.26)	15.3(0.60)	4.0(0.16)	14.0(0.55)	12.7(0.50)	26.4(1.04)	14.3(0.56)	
6	1/4	-TTP-ML6-PP4	29.0(1.14)	9.0(0.35)	15.3(0.60)	4.8(0.19)	14.0(0.55)	15.9(0.63)	32.2(1.27)	19.1(0.75)	
8	1/8	-TTP-ML8-PP2	28.8(1.13)	6.6(0.26)	16.2(0.64)	4.0(0.16)	16.0(0.63)	14.3(0.56)	27.5(1.08)	14.3(0.56)	
8	1/4	-TTP-ML8-PP4	29.9(1.18)	9.0(0.35)	16.2(0.64)	5.9(0.23)	16.0(0.63)	15.9(0.63)	32.2(1.27)	19.1(0.75)	
10	1/4	-TTP-ML10-PP4	33.5(1.32)	9.0(0.35)	17.2(0.68)	5.9(0.23)	19.0(0.75)	20.6(0.81)	35.1(1.38)	19.1(0.75)	
12	3/8	-TTP-ML12-PP6	36.0(1.42)	9.4(0.37)	22.8(0.90)	7.9(0.31)	22.0(0.87)	20.6(0.81)	37.1(1.46)	22.2(0.87)	
12	1/2	-TTP-ML12-PP8	38.0(1.50)	13.0(0.51)	22.8(0.90)	9.5(0.37)	22.0(0.87)	23.8(0.94)	43.5(1.71)	27.0(1.06)	

## Adjustable Male Run Tees

## SAE/MS Straight Thread

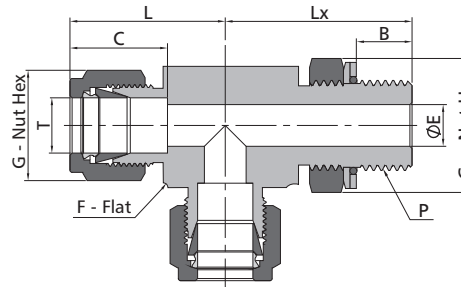


1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

Fractional Tube			SAE/MS Straight Thread								
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	B	C	E	G	F	Lx	Gx	
1/4	7/16-20	-TPT-FL4-ST7	1.12(28.5)	0.39(9.9)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.50(12.7)	1.06(27.0)	0.56(14.3)	
3/8	9/16-18	-TPT-FL6-ST9	1.26(32.0)	0.44(11.2)	0.66(16.8)	0.28(7.1)	0.69(17.5)	0.63(15.9)	1.27(32.3)	0.69(17.5)	
1/2	3/4-16	-TPT-FL8-ST12	1.48(37.6)	0.50(12.7)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.81(20.6)	1.49(37.8)	0.87(22.2)	
3/4	1 1/16-12	-TPT-FL12-ST17	1.63(41.4)	0.66(16.8)	0.96(24.4)	0.62(15.7)	1.25(31.75)	1.06(27.0)	1.92(48.8)	1.25(31.8)	
1	1 5/16-12	-TPT-FL16-ST21	1.99(50.5)	0.66(16.8)	1.23(31.2)	0.88(22.4)	1.50(38.1)	1.37(34.9)	2.11(53.6)	1.50(38.1)	
1 1/4	1 5/8-12	-TPT-FL20-ST26	2.67(67.8)	0.66(16.8)	1.62(41.1)	1.09(27.7)	1.87(47.6)	1.69(42.9)	2.29(58.2)	1.87(47.6)	
1 1/2	1 7/8-12	-TPT-FL24-ST30	3.07(78.0)	0.66(16.8)	1.97(50.0)	1.34(34.0)	2.25(57.2)	2.00(50.8)	2.38(60.5)	2.13(54.0)	

## Adjustable Male Run Tees

## ISO Parallel Thread

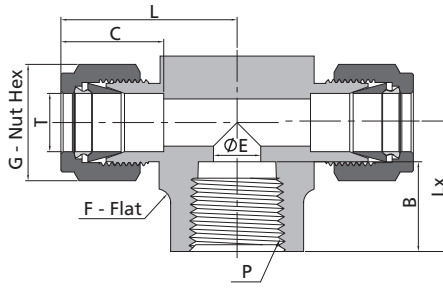


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (in.)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	B	C	E	G	F	Lx	Gx	
1/4	1/8	-TPT-FL4-PP2	1.06(26.9)	0.26(6.6)	0.60(15.2)	0.16(4.1)	0.56(14.3)	0.50(12.7)	1.04(26.4)	0.56(14.3)	
1/4	1/4	-TPT-FL4-PP4	1.14(29.0)	0.35(9.0)	0.60(15.2)	0.19(4.8)	0.56(14.3)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
3/8	1/4	-TPT-FL6-PP4	1.20(30.5)	0.35(9.0)	0.66(16.8)	0.23(5.8)	0.69(17.5)	0.63(15.9)	1.27(32.3)	0.75(19.1)	
1/2	3/8	-TPT-FL8-PP6	1.42(36.1)	0.37(9.4)	0.90(22.9)	0.31(7.9)	0.87(22.2)	0.81(20.6)	1.46(37.1)	0.87(22.2)	
1/2	1/2	-TPT-FL8-PP8	1.50(38.1)	0.51(13.0)	0.90(22.9)	0.41(10.4)	0.87(22.2)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
5/8	1/2	-TPT-FL10-PP8	1.50(38.1)	0.51(13.0)	0.96(24.4)	0.47(11.9)	1.00(25.4)	0.94(23.8)	1.71(43.4)	1.06(27.0)	
3/4	1/2	-TPT-FL12-PP8	1.57(39.9)	0.51(13.0)	0.96(24.4)	0.47(11.9)	1.13(28.6)	1.06(27.0)	1.78(45.2)	1.06(27.0)	
3/4	3/4	-TPT-FL12-PP12	1.57(39.9)	0.51(13.0)	0.96(24.4)	0.62(15.7)	1.13(28.6)	1.06(27.0)	1.92(48.8)	1.37(34.9)	
1	1	-TPT-FL16-PP16	1.93(49.0)	0.52(13.2)	1.23(31.2)	0.78(19.8)	1.50(38.1)	1.37(34.9)	2.11(53.6)	1.63(41.3)	

Metric Tube			ISO Parallel Thread (PP)								
T-Tube O.D. (mm)	P-ISO Parallel Thread Size	Basic Ordering Number	Dimensions, mm (in.)								
			L	B	C	E	G	F	Lx	Gx	
6	1/8	-TPT-ML6-PP2	27.0(1.06)	6.6(0.26)	15.3(0.60)	4.0(0.16)	14.0(0.55)	12.7(0.50)	26.4(1.04)	14.3(0.56)	
6	1/4	-TPT-ML6-PP4	29.0(1.14)	9.0(0.35)	15.3(0.60)	4.8(0.19)	14.0(0.55)	15.9(0.63)	32.2(1.27)	19.1(0.75)	
8	1/8	-TPT-ML8-PP2	28.8(1.13)	6.6(0.26)	16.2(0.64)	4.0(0.16)	16.0(0.63)	14.3(0.56)	27.5(1.08)	14.3(0.56)	
8	1/4	-TPT-ML8-PP4	29.9(1.18)	9.0(0.35)	16.2(0.64)	5.9(0.23)	16.0(0.63)	15.9(0.63)	32.2(1.27)	19.1(0.75)	
10	1/4	-TPT-ML10-PP4	33.5(1.32)	9.0(0.35)	17.2(0.68)	5.9(0.23)	19.0(0.75)	20.6(0.81)	35.1(1.38)	19.1(0.75)	
12	3/8	-TPT-ML12-PP6	36.0(1.42)	9.4(0.37)	22.8(0.90)	7.9(0.31)	22.0(0.87)	20.6(0.81)	37.1(1.46)	22.2(0.87)	
12	1/2	-TPT-ML12-PP8	38.0(1.50)	13.0(0.51)	22.8(0.90)	9.5(0.37)	22.0(0.87)	23.8(0.94)	43.5(1.71)	27.0(1.06)	

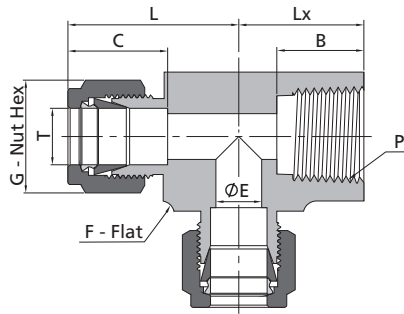
Female Branch Tees



Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	Lx
1/8	1/8	-TTF-FL2-NS2	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.3)	0.41(10.4)	0.75(19.1)
3/16	1/8	-TTF-FL3-NS2	1.01(25.7)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)	0.41(10.4)	0.75(19.1)
1/4	1/8	-TTF-FL4-NS2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.41(10.4)	0.75(19.1)
1/4	1/4	-TTF-FL4-NS4	1.17(29.7)	0.60(15.2)	0.56(14.3)	0.69(17.5)	0.19(4.8)	0.59(15.0)	0.88(22.4)
5/16	1/8	-TTF-FL5-NS2	1.17(29.7)	0.64(16.2)	0.63(15.9)	0.63(15.9)	0.25(6.4)	0.41(10.4)	0.75(19.1)
3/8	1/4	-TTF-FL6-NS4	1.23(31.2)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)	0.59(15.0)	0.88(22.4)
3/8	3/8	-TTF-FL6-NS6	1.31(33.3)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)	0.59(15.0)	0.88(22.4)
3/8	1/2	-TTF-FL6-NS8	1.42(36.1)	0.66(16.8)	0.69(17.5)	1.00(25.4)	0.28(7.1)	0.78(19.8)	1.12(28.4)
1/2	1/4	-TTF-FL8-NS4	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.59(15.0)	0.88(22.4)
1/2	3/8	-TTF-FL8-NS6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.59(15.0)	0.88(22.4)
1/2	1/2	-TTF-FL8-NS8	1.53(38.9)	0.90(22.9)	0.87(22.2)	1.00(25.4)	0.41(10.4)	0.78(19.8)	1.12(28.4)
5/8	1/2	-TTF-FL10-NS8	1.53(38.9)	0.96(24.4)	1.00(25.4)	1.00(25.4)	0.50(12.7)	0.78(19.8)	1.12(28.4)
3/4	3/4	-TTF-FL12-NS12	1.76(44.7)	0.96(24.4)	1.13(28.6)	1.37(34.9)	0.62(15.7)	0.81(20.6)	1.25(31.8)
7/8	3/4	-TTF-FL14-NS12	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.72(18.3)	0.81(20.6)	1.25(31.8)
1	3/4	-TTF-FL16-NS12	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.81(20.6)	1.25(31.8)
1	1	-TTF-FL16-NS16	2.11(53.6)	1.23(31.2)	1.50(38.1)	1.69(42.9)	0.88(22.4)	1.00(25.4)	1.50(38.1)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	Lx
6	1/8	-TTF-ML6-NS2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	10.4(0.41)	19.0(0.75)
6	1/4	-TTF-ML6-NS4	29.8(1.17)	15.3(0.60)	14.0(0.55)	17.5(0.69)	4.8(0.19)	15.0(0.59)	22.4(0.88)
8	1/8	-TTF-ML8-NS2	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)	10.4(0.41)	19.0(0.75)
8	1/4	-TTF-ML8-NS4	30.6(1.2)	16.2(0.64)	16.0(0.63)	17.5(0.69)	6.4(0.25)	15.0(0.59)	22.4(0.88)
10	1/4	-TTF-ML10-NS4	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	15.0(0.59)	22.4(0.88)
12	1/8	-TTF-ML12-NS2	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	6.4(0.25)	10.4(0.41)	22.3(0.88)
12	1/4	-TTF-ML12-NS4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	15.0(0.59)	22.4(0.88)
12	3/8	-TTF-ML12-NS6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	15.0(0.59)	22.4(0.88)
12	1/2	-TTF-ML12-NS8	38.8(1.53)	22.8(0.90)	22.0(0.87)	25.4(1.00)	9.5(0.37)	19.8(0.78)	28.5(1.12)
16	1/2	-TTF-ML16-NS8	38.8(1.53)	24.4(0.96)	25.0(0.98)	25.4(1.00)	12.7(0.50)	19.8(0.78)	28.4(1.12)

## Female Run Tees

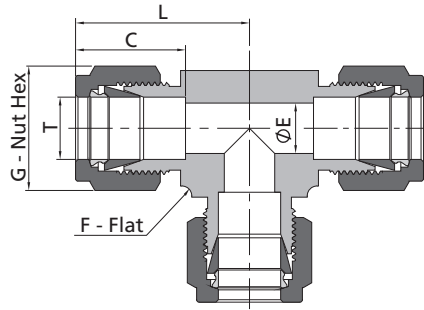


Fractional Tube			NPT Thread						
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	Lx
1/8	1/8	-TFT-FL2-NS2	0.97(24.6)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.09(2.3)	0.41(10.4)	0.75(19.1)
3/16	1/8	-TFT-FL3-NS2	1.01(25.7)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.12(3.0)	0.41(10.4)	0.75(19.1)
1/4	1/8	-TFT-FL4-NS2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.41(10.4)	0.75(19.1)
1/4	1/4	-TFT-FL4-NS4	1.17(29.7)	0.60(15.2)	0.56(14.3)	0.69(17.5)	0.19(4.8)	0.59(15.0)	0.88(22.4)
5/16	1/8	-TFT-FL5-NS2	1.17(29.7)	0.64(16.2)	0.63(15.9)	0.63(15.9)	0.25(6.4)	0.41(10.4)	0.75(19.1)
3/8	1/4	-TFT-FL6-NS4	1.23(31.2)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)	0.59(15.0)	0.88(22.4)
1/2	1/4	-TFT-FL8-NS4	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.59(15.0)	0.88(22.4)
1/2	3/8	-TFT-FL8-NS6	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.59(15.0)	0.88(22.4)
1/2	1/2	-TFT-FL8-NS8	1.57(39.9)	0.90(22.9)	0.87(22.2)	1.06(27.0)	0.41(10.4)	0.78(19.8)	1.12(28.4)
5/8	1/2	-TFT-FL10-NS8	1.57(39.9)	0.96(24.4)	1.00(25.4)	1.06(27.0)	0.50(12.7)	0.78(19.8)	1.12(28.4)
3/4	3/4	-TFT-FL12-NS12	1.76(44.7)	0.96(24.4)	1.13(28.6)	1.37(34.9)	0.62(15.7)	0.81(20.6)	1.25(31.8)
7/8	1/2	-TFT-FL14-NS8	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.62(15.7)	0.78(19.8)	1.12(28.4)
7/8	3/4	-TFT-FL14-NS12	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.72(18.3)	0.81(20.6)	1.25(31.8)
1	3/4	-TFT-FL16-NS12	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.81(20.6)	1.25(31.8)
1	1	-TFT-FL16-NS16	2.11(53.6)	1.23(31.2)	1.50(38.1)	1.69(42.9)	0.88(22.4)	1.00(25.4)	1.50(38.1)

Metric Tube			NPT Thread						
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	Lx
6	1/8	-TFT-ML6-NS2	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)	10.4(0.41)	19.0(0.75)
6	1/4	-TFT-ML6-NS4	29.8(1.17)	15.3(0.60)	14.0(0.55)	17.5(0.69)	4.8(0.19)	15.0(0.59)	22.4(0.88)
8	1/8	-TFT-ML8-NS2	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)	10.4(0.41)	19.0(0.75)
8	1/4	-TFT-ML8-NS4	30.6(1.20)	16.2(0.64)	16.0(0.63)	17.5(0.69)	6.4(0.25)	15.0(0.59)	22.4(0.88)
10	1/4	-TFT-ML10-NS4	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)	15.0(0.59)	22.4(0.88)
12	1/4	-TFT-ML12-NS4	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	15.0(0.59)	22.4(0.88)
12	3/8	-TFT-ML12-NS6	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)	15.0(0.59)	23.1(0.91)
12	1/2	-TFT-ML12-NS8	38.8(1.53)	22.8(0.90)	22.0(0.87)	25.4(1.00)	9.5(0.37)	19.8(0.78)	28.5(1.12)
16	1/2	-TFT-ML16-NS8	39.8(1.57)	24.4(0.96)	25.0(0.98)	27.0(1.06)	12.7(0.50)	19.8(0.78)	28.4(1.12)



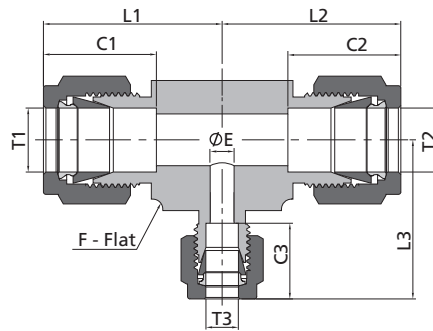
Union Tees



Fractional Tube						
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				
		L	C	G	F	E
1/16	-TTT-FL1	0.70(17.8)	0.34(8.6)	0.31(7.9)	0.37(9.5)	0.05(1.3)
1/8	-TTT-FL2	0.87(22.2)	0.50(12.7)	0.44(11.1)	0.37(9.5)	0.09(2.3)
3/16	-TTT-FL3	0.96(24.4)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)
1/4	-TTT-FL4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
5/16	-TTT-FL5	1.17(29.7)	0.64(16.2)	0.63(15.9)	0.63(15.9)	0.25(6.4)
3/8	-TTT-FL6	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)
1/2	-TTT-FL8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
5/8	-TTT-FL10	1.53(38.9)	0.96(24.4)	1.00(25.4)	1.00(25.4)	0.50(12.7)
3/4	-TTT-FL12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)
7/8	-TTT-FL14	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.72(18.3)
1	-TTT-FL16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)
1 1/8	-TTT-FL18	2.17(55.1)	1.44(36.7)	1.75(44.5)	1.69(42.9)	0.97(24.6)
1 1/4	-TTT-FL20	2.62(66.5)	1.62(41.1)	1.87(47.6)	1.69(42.9)	1.09(27.7)
1 1/2	-TTT-FL24	3.07(78.0)	1.97(50.0)	2.25(57.2)	2.00(50.8)	1.34(34.0)

Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)				
		L	C	G	F	E
2	-TTT-ML2	22.3(0.88)	12.9(0.51)	12.0(0.47)	9.5(0.37)	1.7(0.07)
3	-TTT-ML3	22.3(0.88)	12.9(0.51)	12.0(0.47)	9.5(0.37)	2.4(0.09)
4	-TTT-ML4	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)
6	-TTT-ML6	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)
8	-TTT-ML8	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)
10	-TTT-ML10	31.5(1.24)	17.2(0.68)	19.0(0.75)	17.5(0.69)	7.9(0.31)
12	-TTT-ML12	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)
14	-TTT-ML14	38.8(1.53)	24.4(0.96)	25.0(0.98)	25.4(1.00)	11.1(0.44)
15	-TTT-ML15	38.8(1.53)	24.4(0.96)	25.0(0.98)	25.4(1.00)	11.9(0.47)
16	-TTT-ML16	38.8(1.53)	24.4(0.96)	25.0(0.98)	25.4(1.00)	12.7(0.50)
18	-TTT-ML18	39.8(1.57)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
20	-TTT-ML20	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)
22	-TTT-ML22	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	18.3(0.72)
25	-TTT-ML25	49.1(1.93)	31.3(1.23)	38.0(1.50)	34.9(1.37)	21.8(0.86)
28	-TTT-ML28	64.0(2.52)	36.6(1.44)	46.0(1.81)	42.9(1.69)	21.8(0.86)
30	-TTT-ML30	69.9(2.75)	39.6(1.56)	50.0(1.97)	42.9(1.69)	26.2(1.03)
32	-TTT-ML32	72.3(2.85)	42.0(1.65)	50.0(1.97)	42.9(1.69)	28.6(1.13)
38	-TTT-ML38	84.0(3.31)	49.4(1.94)	60.0(2.36)	50.8(2.00)	33.7(1.33)

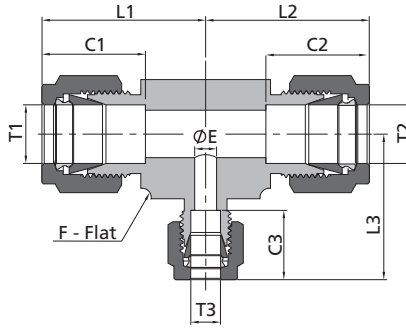
Reducing Union Tees



Tube Fittings

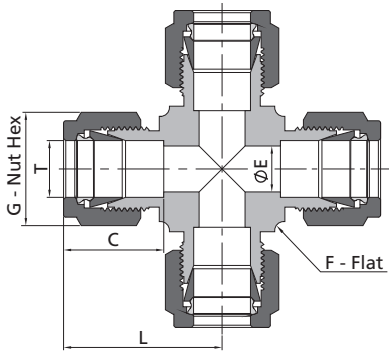
Fractional Tube				Dimensions, in. (mm)							
T1-Tube O.D. (in.)	T2-Tube O.D. (in.)	T3-Tube O.D. (in.)	Basic Ordering Number	L1	L2	L3	C1	C2	C3	F	E
1/4	1/4	1/8	-TTT-FL4-FL4-FL2	1.05(26.7)	1.05(26.7)	0.96(24.4)	0.60(15.2)	0.60(15.2)	0.50(12.7)	0.50(12.7)	0.09(2.3)
3/8	1/4	1/4	-TTT-FL6-FL4-FL4	1.20(30.5)	1.14(29.0)	1.14(29.0)	0.66(16.8)	0.60(15.2)	0.60(15.2)	0.63(15.9)	0.19(4.8)
3/8	1/4	3/8	-TTT-FL6-FL4-FL6	1.20(30.5)	1.14(29.0)	1.20(30.5)	0.66(16.8)	0.66(16.8)	0.60(15.2)	0.63(15.9)	0.19(4.8)
3/8	3/8	1/4	-TTT-FL6-FL6-FL4	1.20(30.5)	1.20(30.5)	1.14(29.0)	0.66(16.8)	0.66(16.8)	0.60(15.2)	0.63(15.9)	0.19(4.8)
1/2	1/4	1/4	-TTT-FL8-FL4-FL4	1.42(36.1)	1.22(30.9)	1.22(30.9)	0.90(22.9)	0.60(15.2)	0.60(15.2)	0.81(20.6)	0.19(4.8)
1/2	1/4	1/2	-TTT-FL8-FL4-FL8	1.42(36.1)	1.25(31.8)	1.42(36.1)	0.90(22.9)	0.60(15.2)	0.90(22.9)	0.81(20.6)	0.19(4.8)
1/2	3/8	3/8	-TTT-FL8-FL6-FL6	1.42(36.1)	1.31(33.3)	1.31(33.3)	0.90(22.9)	0.66(16.8)	0.66(16.8)	0.81(20.6)	0.28(7.1)
1/2	3/8	1/2	-TTT-FL8-FL6-FL8	1.42(36.1)	1.31(33.3)	1.42(36.1)	0.90(22.9)	0.66(16.8)	0.90(22.9)	0.81(20.6)	0.28(7.1)
1/2	1/2	1/4	-TTT-FL8-FL8-FL4	1.42(36.1)	1.42(36.1)	1.25(31.8)	0.90(22.9)	0.90(22.9)	0.60(15.2)	0.81(20.6)	0.19(4.8)
1/2	1/2	3/8	-TTT-FL8-FL8-FL6	1.42(36.1)	1.42(36.1)	1.31(33.3)	0.90(22.9)	0.90(22.9)	0.66(16.8)	0.81(20.6)	0.28(7.1)
5/8	3/8	3/8	-TTT-FL10-FL6-FL6	1.53(38.9)	1.42(36.1)	1.42(36.1)	0.96(24.4)	0.66(16.8)	0.66(16.8)	1.00(25.4)	0.28(7.1)
5/8	3/8	1/2	-TTT-FL10-FL6-FL8	1.53(38.9)	1.42(36.1)	1.53(38.9)	0.96(24.4)	0.66(16.8)	0.90(22.9)	1.00(25.4)	0.28(7.1)
5/8	1/2	3/8	-TTT-FL10-FL8-FL6	1.53(38.9)	1.53(38.9)	1.42(36.1)	0.96(24.4)	0.90(22.9)	0.66(16.8)	1.00(25.4)	0.28(7.1)
5/8	1/2	1/2	-TTT-FL10-FL8-FL8	1.53(38.9)	1.53(38.9)	1.53(38.9)	0.96(24.4)	0.90(22.9)	0.90(22.9)	1.00(25.4)	0.41(10.4)
5/8	5/8	3/8	-TTT-FL10-FL10-FL6	1.53(38.9)	1.53(38.9)	1.42(36.1)	0.96(24.4)	0.96(24.4)	0.66(16.8)	1.00(25.4)	0.28(7.1)
5/8	5/8	1/2	-TTT-FL10-FL10-FL8	1.53(38.9)	1.53(38.9)	1.53(38.9)	0.96(24.4)	0.96(24.4)	0.90(22.9)	1.00(25.4)	0.41(10.4)
3/4	3/8	3/8	-TTT-FL12-FL6-FL6	1.56(39.6)	1.45(36.9)	1.45(36.9)	0.96(24.4)	0.66(16.8)	0.66(16.8)	1.06(27.0)	0.28(7.1)
3/4	1/2	3/8	-TTT-FL12-FL8-FL6	1.56(39.6)	1.56(39.6)	1.45(36.9)	0.96(24.4)	0.90(22.9)	0.66(16.8)	1.06(27.0)	0.28(7.1)
3/4	1/2	1/2	-TTT-FL12-FL8-FL8	1.56(39.6)	1.56(39.6)	1.56(39.6)	0.96(24.4)	0.90(22.9)	0.90(22.9)	1.06(27.0)	0.41(10.4)
3/4	5/8	3/8	-TTT-FL12-FL10-FL6	1.56(39.6)	1.56(39.6)	1.45(36.9)	0.96(24.4)	0.96(24.4)	0.66(16.8)	1.06(27.0)	0.28(7.1)
3/4	5/8	1/2	-TTT-FL12-FL10-FL8	1.56(39.6)	1.56(39.6)	1.56(39.6)	0.96(24.4)	0.96(24.4)	0.90(22.9)	1.06(27.0)	0.41(10.4)
3/4	5/8	5/8	-TTT-FL12-FL10-FL10	1.56(39.6)	1.56(39.6)	1.56(39.6)	0.96(24.4)	0.96(24.4)	0.96(24.4)	1.06(27.0)	0.50(12.7)
3/4	3/4	1/4	-TTT-FL12-FL12-FL4	1.56(39.6)	1.56(39.6)	1.43(36.3)	0.96(24.4)	0.60(15.2)	0.60(15.2)	1.06(27.0)	0.19(4.8)
3/4	3/4	3/8	-TTT-FL12-FL12-FL6	1.56(39.6)	1.56(39.6)	1.45(36.9)	0.96(24.4)	0.96(24.4)	0.66(16.8)	1.06(27.0)	0.28(7.1)
3/4	3/4	1/2	-TTT-FL12-FL12-FL8	1.56(39.6)	1.56(39.6)	1.56(39.6)	0.96(24.4)	0.96(24.4)	0.90(22.9)	1.06(27.0)	0.41(10.4)
3/4	3/4	5/8	-TTT-FL12-FL12-FL10	1.56(39.6)	1.56(39.6)	1.56(39.6)	0.96(24.4)	0.96(24.4)	0.96(24.4)	1.06(27.0)	0.50(12.7)
7/8	1/2	3/4	-TTT-FL14-FL8-FL12	1.76(44.7)	1.76(44.7)	1.76(44.7)	1.02(25.9)	0.90(22.9)	0.96(24.4)	1.37(34.9)	0.41(10.4)
7/8	5/8	3/8	-TTT-FL14-FL10-FL6	1.76(44.7)	1.76(44.7)	1.65(41.9)	1.02(25.9)	0.96(24.4)	0.66(16.8)	1.37(34.9)	0.28(7.1)
7/8	3/4	3/8	-TTT-FL14-FL12-FL6	1.76(44.7)	1.76(44.7)	1.65(41.9)	1.02(25.9)	0.96(24.4)	0.66(16.8)	1.37(34.9)	0.28(7.1)
7/8	3/4	1/2	-TTT-FL14-FL12-FL8	1.76(44.7)	1.76(44.7)	1.76(44.7)	1.02(25.9)	0.96(24.4)	0.90(22.9)	1.37(34.9)	0.41(10.4)
7/8	3/4	3/4	-TTT-FL14-FL12-FL12	1.76(44.7)	1.76(44.7)	1.76(44.7)	1.02(25.9)	0.96(24.4)	0.96(24.4)	1.37(34.9)	0.62(15.7)
7/8	7/8	1/4	-TTT-FL14-FL14-FL4	1.76(44.7)	1.76(44.7)	1.59(40.4)	1.02(25.9)	1.02(25.9)	0.60(15.2)	1.37(34.9)	0.19(4.8)
7/8	7/8	3/8	-TTT-FL14-FL14-FL6	1.76(44.7)	1.76(44.7)	1.65(41.9)	1.02(25.9)	1.02(25.9)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	3/8	3/8	-TTT-FL16-FL6-FL6	1.94(49.3)	1.65(41.9)	1.65(41.9)	1.23(31.2)	0.66(16.8)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	1/2	1/4	-TTT-FL16-FL8-FL4	1.94(49.3)	1.76(44.7)	1.59(40.4)	1.23(31.2)	0.90(22.9)	0.60(15.2)	1.37(34.9)	0.19(4.8)
1	1/2	3/8	-TTT-FL16-FL8-FL6	1.94(49.3)	1.76(44.7)	1.65(41.9)	1.23(31.2)	0.90(22.9)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	1/2	1/2	-TTT-FL16-FL8-FL8	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	0.90(22.9)	0.90(22.9)	1.37(34.9)	0.41(10.4)
1	1/2	1	-TTT-FL16-FL8-FL16	1.94(49.3)	1.76(44.7)	1.94(49.3)	1.23(31.2)	0.90(22.9)	1.23(31.2)	1.37(34.9)	0.41(10.4)
1	5/8	3/8	-TTT-FL16-FL10-FL6	1.94(49.3)	1.76(44.7)	1.65(41.9)	1.23(31.2)	0.96(24.4)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	3/4	3/8	-TTT-FL16-FL12-FL6	1.94(49.3)	1.76(44.7)	1.65(41.9)	1.23(31.2)	0.96(24.4)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	3/4	1/2	-TTT-FL16-FL12-FL8	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	0.96(24.4)	0.90(22.9)	1.37(34.9)	0.41(10.4)
1	3/4	5/8	-TTT-FL16-FL12-FL10	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	0.96(24.4)	0.96(24.4)	1.37(34.9)	0.50(12.7)
1	3/4	1	-TTT-FL16-FL12-FL16	1.94(49.3)	1.76(44.7)	1.94(49.3)	1.23(31.2)	0.96(24.4)	1.23(31.2)	1.37(34.9)	0.62(15.7)
1	7/8	1/4	-TTT-FL16-FL14-FL4	1.94(49.3)	1.76(44.7)	1.59(40.4)	1.23(31.2)	1.02(25.9)	0.60(15.2)	1.37(34.9)	0.19(4.8)
1	7/8	3/8	-TTT-FL16-FL14-FL6	1.94(49.3)	1.76(44.7)	1.65(41.9)	1.23(31.2)	1.02(25.9)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	7/8	1/2	-TTT-FL16-FL14-FL8	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	1.02(25.9)	0.90(22.9)	1.37(34.9)	0.41(10.4)
1	7/8	3/4	-TTT-FL16-FL14-FL12	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	1.02(25.9)	0.96(24.4)	1.37(34.9)	0.62(15.7)
1	7/8	7/8	-TTT-FL16-FL14-FL14	1.94(49.3)	1.76(44.7)	1.76(44.7)	1.23(31.2)	1.02(25.9)	1.02(25.9)	1.37(34.9)	0.72(18.3)
1	1	1/4	-TTT-FL16-FL16-FL4	1.94(49.3)	1.94(49.3)	1.59(40.4)	1.23(31.2)	1.23(31.2)	0.60(15.2)	1.37(34.9)	0.19(4.8)
1	1	3/8	-TTT-FL16-FL16-FL6	1.94(49.3)	1.94(49.3)	1.65(41.9)	1.23(31.2)	1.23(31.2)	0.66(16.8)	1.37(34.9)	0.28(7.1)
1	1	1/2	-TTT-FL16-FL16-FL8	1.94(49.3)	1.94(49.3)	1.76(44.7)	1.23(31.2)	1.23(31.2)	0.90(22.9)	1.37(34.9)	0.41(10.4)
1	1	5/8	-TTT-FL16-FL16-FL10	1.94(49.3)	1.94(49.3)	1.76(44.7)	1.23(31.2)	1.23(31.2)	0.96(24.4)	1.37(34.9)	0.50(12.7)
1	1	3/4	-TTT-FL16-FL16-FL12	1.94(49.3)	1.94(49.3)	1.76(44.7)	1.23(31.2)	1.23(31.2)	0.96(24.4)	1.37(34.9)	0.62(15.7)
1	1	7/8	-TTT-FL16-FL16-FL14	1.94(49.3)	1.94(49.3)	1.76(44.7)	1.23(31.2)	1.23(31.2)	1.02(25.9)	1.37(34.9)	0.72(18.3)
1 1/4	1 1/4	1	-TTT-FL20-FL20-FL16	2.67(67.8)	2.67(67.8)	2.17(55.1)	1.62(41.2)	1.62(41.2)	1.23(31.3)	1.69(42.9)	0.88(22.4)
1 1/2	1 1/2	1	-TTT-FL24-FL24-FL16	3.10(78.7)	3.10(78.7)	2.36(60.0)	1.97(50.0)	1.97(50.0)	1.23(31.3)	2.00(50.8)	0.88(22.4)

Reducing Union Tees



Metric Tube				Dimensions, mm (in.)								
T1-Tube O.D. (mm)	T2-Tube O.D. (mm)	T3-Tube O.D. (mm)	Basic Ordering Number	L1	L2	L3	C1	C2	C3	F	E	
3	3	6	-TTT-ML3-ML3-ML6	24.7(0.97)	24.7(0.97)	27.0(1.06)	12.9(0.51)	12.9(0.51)	15.3(0.60)	12.7(0.50)	2.4(0.09)	
6	6	3	-TTT-ML6-ML6-ML3	27.0(1.06)	27.0(1.06)	24.7(0.97)	15.3(0.60)	15.3(0.60)	12.9(0.51)	12.7(0.50)	2.4(0.09)	
6	6	8	-TTT-ML6-ML6-ML8	28.0(1.10)	28.0(1.10)	28.8(1.13)	15.3(0.60)	15.3(0.60)	16.2(0.64)	14.3(0.56)	4.8(0.19)	
8	8	6	-TTT-ML8-ML8-ML6	30.0(1.18)	30.0(1.18)	29.0(1.14)	16.2(0.64)	16.2(0.64)	15.3(0.60)	15.9(0.63)	4.8(0.19)	
8	8	12	-TTT-ML8-ML8-ML12	35.2(1.39)	35.2(1.39)	36.0(1.42)	16.2(0.64)	16.2(0.64)	22.8(0.90)	20.6(0.81)	6.4(0.25)	
10	10	6	-TTT-ML10-ML10-ML6	31.5(1.24)	31.5(1.24)	29.9(1.18)	17.2(0.68)	17.2(0.68)	15.3(0.60)	17.5(0.69)	4.8(0.19)	
10	10	8	-TTT-ML10-ML10-ML8	31.5(1.24)	31.5(1.24)	30.7(1.21)	17.2(0.68)	17.2(0.68)	16.2(0.64)	17.5(0.69)	6.4(0.25)	
12	12	6	-TTT-ML12-ML12-ML6	36.0(1.42)	36.0(1.42)	31.8(1.25)	22.8(0.90)	22.8(0.90)	15.3(0.60)	20.6(0.81)	4.8(0.19)	
12	12	8	-TTT-ML12-ML12-ML8	36.0(1.42)	36.0(1.42)	32.0(1.26)	22.8(0.90)	22.8(0.90)	16.2(0.64)	20.6(0.81)	6.4(0.25)	
12	12	14	-TTT-ML12-ML12-ML14	38.0(1.50)	38.0(1.50)	38.0(1.50)	22.8(0.90)	22.8(0.90)	24.4(0.96)	25.4(1.00)	9.5(0.37)	
12	12	18	-TTT-ML12-ML12-ML18	39.8(1.57)	39.8(1.57)	39.8(1.57)	22.8(0.90)	22.8(0.90)	24.4(0.96)	27.0(1.06)	9.5(0.37)	
14	14	8	-TTT-ML14-ML14-ML8	38.0(1.50)	38.0(1.50)	35.5(1.40)	24.4(0.96)	24.4(0.96)	16.2(0.64)	25.4(1.00)	6.4(0.25)	
14	14	10	-TTT-ML14-ML14-ML10	38.0(1.50)	38.0(1.50)	36.7(1.44)	24.4(0.96)	24.4(0.96)	17.2(0.68)	25.4(1.00)	7.9(0.31)	
15	15	12	-TTT-ML15-ML15-ML12	38.8(1.53)	38.8(1.53)	38.8(1.53)	24.4(0.96)	24.4(0.96)	22.8(0.90)	25.4(1.00)	9.5(0.37)	
16	8	16	-TTT-ML16-ML8-ML16	38.8(1.53)	35.5(1.40)	38.8(1.53)	24.4(0.96)	16.2(0.64)	24.4(0.96)	25.4(1.00)	6.4(0.25)	
16	16	12	-TTT-ML16-ML16-ML12	38.8(1.53)	38.8(1.53)	38.9(1.53)	24.4(0.96)	24.4(0.96)	22.8(0.90)	25.4(1.00)	9.5(0.37)	
18	18	8	-TTT-ML18-ML18-ML8	39.8(1.57)	39.8(1.57)	39.0(1.54)	24.4(0.96)	24.4(0.96)	16.2(0.64)	27.0(1.06)	6.4(0.25)	
18	18	10	-TTT-ML18-ML18-ML10	39.8(1.57)	39.8(1.57)	37.4(1.47)	24.4(0.96)	24.4(0.96)	17.2(0.68)	27.0(1.06)	7.9(0.31)	
18	18	12	-TTT-ML18-ML18-ML12	39.8(1.57)	39.8(1.57)	39.8(1.57)	24.4(0.96)	24.4(0.96)	22.8(0.90)	27.0(1.06)	9.5(0.37)	
18	18	14	-TTT-ML18-ML18-ML14	39.8(1.57)	39.8(1.57)	39.8(1.57)	24.4(0.96)	24.4(0.96)	24.4(0.96)	27.0(1.06)	11.1(0.44)	
20	20	14	-TTT-ML20-ML20-ML14	44.6(1.76)	44.6(1.76)	44.6(1.76)	26.0(1.02)	26.0(1.02)	24.4(0.96)	34.9(1.37)	11.1(0.44)	
22	22	12	-TTT-ML22-ML22-ML12	44.6(1.76)	44.6(1.76)	44.6(1.76)	26.0(1.02)	26.0(1.02)	22.8(0.90)	34.9(1.37)	9.5(0.37)	
25	25	12	-TTT-ML25-ML25-ML12	49.1(1.93)	49.1(1.93)	44.7(1.76)	31.3(1.23)	31.3(1.23)	22.8(0.90)	34.9(1.37)	9.5(0.37)	

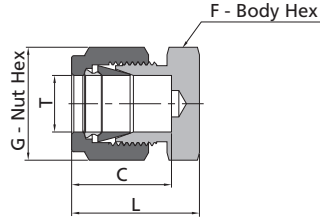
Union Crosses



Fractional Tube						
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				
		L	C	G	F	E
1/8	-C-FL2	0.88(22.4)	0.50(12.7)	0.44(11.1)	0.37(9.5)	0.09(2.3)
3/16	-C-FL3	0.96(24.4)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)
1/4	-C-FL4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
5/16	-C-FL5	1.17(29.7)	0.64(16.2)	0.63(15.9)	0.63(15.9)	0.25(6.4)
3/8	-C-FL6	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)
1/2	-C-FL8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
5/8	-C-FL10	1.53(38.8)	0.96(24.4)	1.00(25.4)	1.0(25.4)	0.50(12.7)
3/4	-C-FL12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)
7/8	-C-FL14	1.76(44.7)	1.02(25.9)	1.25(31.8)	1.37(34.9)	0.72(18.3)
1	-C-FL16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)

Metric Tube						
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)				
		L	C	G	F	E
3	-C-ML3	22.3(0.88)	12.9(0.51)	12.0(0.47)	9.5(0.37)	2.4(0.09)
4	-C-ML4	25.4(1.00)	13.7(0.54)	12.0(0.47)	12.7(0.50)	2.4(0.09)
6	-C-ML6	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.8(0.19)
8	-C-ML8	29.9(1.18)	16.2(0.64)	16.0(0.63)	15.9(0.63)	6.4(0.25)
10	-C-ML10	33.5(1.32)	17.2(0.68)	19.0(0.75)	20.6(0.81)	7.9(0.31)
12	-C-ML12	36.0(1.42)	22.8(0.90)	22.0(0.87)	20.6(0.81)	9.5(0.37)
16	-C-ML16	37.0(1.46)	24.4(0.96)	25.0(0.98)	23.8(0.94)	12.7(0.50)
18	-C-ML18	38.3(1.51)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
20	-C-ML20	44.6(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	15.9(0.63)
22	-C-ML22	44.7(1.76)	26.0(1.02)	32.0(1.26)	34.9(1.37)	18.3(0.72)
25	-C-ML25	49.2(1.94)	31.3(1.23)	38.0(1.50)	34.9(1.37)	21.8(0.86)

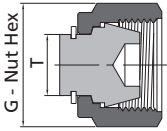
Caps



Fractional Tube					
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)			
		L	C	G	F
1/16	-TC-FL1	0.59(15.0)	0.34(8.6)	0.31(7.9)	0.31(7.9)
1/8	-TC-FL2	0.79(20.1)	0.50(12.7)	0.44(11.1)	0.44(11.1)
3/16	-TC-FL3	0.84(21.3)	0.54(13.7)	0.50(12.7)	0.44(11.1)
1/4	-TC-FL4	0.92(23.4)	0.60(15.2)	0.56(14.3)	0.50(12.7)
5/16	-TC-FL5	0.96(24.4)	0.64(16.3)	0.63(15.9)	0.56(14.3)
3/8	-TC-FL6	1.01(25.7)	0.66(16.8)	0.69(17.5)	0.63(15.9)
1/2	-TC-FL8	1.15(29.2)	0.90(22.9)	0.87(22.2)	0.81(20.6)
5/8	-TC-FL10	1.18(30.0)	0.96(24.4)	1.00(25.4)	0.94(23.8)
3/4	-TC-FL12	1.24(31.5)	0.96(24.4)	1.13(28.6)	1.06(27.0)
7/8	-TC-FL14	1.34(34.0)	1.02(25.9)	1.25(31.8)	1.19(30.2)
1	-TC-FL16	1.51(38.4)	1.23(31.2)	1.50(38.1)	1.37(34.9)
1 1/8	-TC-FL18	1.51(38.4)	1.44(36.7)	1.75(44.5)	1.63(41.3)
1 1/4	-TC-FL20	2.10(53.3)	1.62(41.1)	1.87(47.6)	1.75(44.5)
1 1/2	-TC-FL24	2.54(64.5)	1.97(50.0)	2.25(57.2)	2.13(54.0)

Metric Tube					
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)			
		L	C	G	F
2	-TC-ML2	20.1(0.79)	12.9(0.51)	12.0(0.47)	12.0(0.47)
3	-TC-ML3	20.1(0.79)	12.9(0.51)	12.0(0.47)	12.0(0.47)
4	-TC-ML4	21.3(0.84)	13.7(0.54)	12.0(0.47)	12.0(0.47)
6	-TC-ML6	23.1(0.91)	15.3(0.60)	14.0(0.55)	14.0(0.55)
8	-TC-ML8	24.5(0.96)	16.2(0.64)	16.0(0.63)	15.0(0.59)
10	-TC-ML10	26.6(1.05)	17.2(0.68)	19.0(0.75)	18.0(0.71)
12	-TC-ML12	29.1(1.15)	22.8(0.90)	22.0(0.87)	22.0(0.87)
14	-TC-ML14	29.9(1.18)	24.4(0.96)	25.0(0.98)	24.0(0.94)
15	-TC-ML15	29.9(1.18)	24.4(0.96)	25.0(0.98)	24.0(0.94)
16	-TC-ML16	29.9(1.18)	24.4(0.96)	25.0(0.98)	24.0(0.94)
18	-TC-ML18	31.4(1.24)	24.4(0.96)	30.0(1.18)	27.0(1.06)
20	-TC-ML20	34.0(1.34)	26.0(1.02)	32.0(1.26)	30.0(1.18)
22	-TC-ML22	34.0(1.34)	26.0(1.02)	32.0(1.26)	30.0(1.18)
25	-TC-ML25	38.5(1.52)	31.3(1.23)	38.0(1.50)	35.0(1.38)
28	-TC-ML28	48.5(1.91)	36.6(1.44)	46.0(1.81)	41.0(1.61)
30	-TC-ML30	53.4(2.10)	39.6(1.56)	50.0(1.97)	46.0(1.81)
32	-TC-ML32	55.8(2.20)	42.0(1.65)	50.0(1.97)	46.0(1.81)
38	-TC-ML38	65.4(2.57)	49.4(1.94)	60.0(2.36)	55.0(2.17)

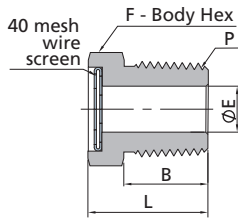
Plugs



Fractional Tube		
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)
		G
1/16	-TP-FL1	0.31(7.9)
1/8	-TP-FL2	0.44(11.1)
3/16	-TP-FL3	0.50(12.7)
1/4	-TP-FL4	0.56(14.3)
5/16	-TP-FL5	0.63(15.9)
3/8	-TP-FL6	0.69(17.5)
1/2	-TP-FL8	0.87(22.2)
5/8	-TP-FL10	1.00(25.4)
3/4	-TP-FL12	1.13(28.6)
7/8	-TP-FL14	1.25(31.8)
1	-TP-FL16	1.50(38.1)
1 1/4	-TP-FL20	1.87(47.6)
1 1/2	-TP-FL24	2.25(57.2)

Metric Tube		
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)
		G
2	-TP-ML2	12.0(0.47)
3	-TP-ML3	12.0(0.47)
4	-TP-ML4	12.0(0.47)
6	-TP-ML6	14.0(0.55)
8	-TP-ML8	16.0(0.63)
10	-TP-ML10	19.0(0.75)
12	-TP-ML12	22.0(0.87)
14	-TP-ML14	25.0(0.98)
15	-TP-ML15	25.0(0.98)
16	-TP-ML16	25.0(0.98)
18	-TP-ML18	30.0(1.18)
20	-TP-ML20	32.0(1.26)
22	-TP-ML22	32.0(1.26)
25	-TP-ML25	38.0(1.50)
28	-TP-ML28	46.0(1.81)
30	-TP-ML30	50.0(1.97)
32	-TP-ML32	50.0(1.97)
38	-TP-ML38	60.0(2.36)

Vent Protectors

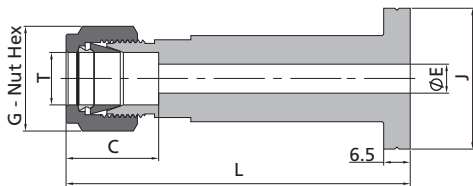


40 mesh 300 series stainless steel wire screen assembly

NPT Thread					
P-NPT Size	Ordering Number	Dimensions, in. (mm)			
		L	F	B	E
1/8	-VPF-NS2	0.56(14.2)	0.50(12.7)	0.38(9.7)	0.19(4.8)
1/4	-VPF-NS4	0.78(19.8)	0.56(14.3)	0.56(14.2)	0.28(7.1)
3/8	-VPF-NS6	0.81(20.6)	0.69(17.5)	0.56(14.2)	0.41(10.4)
1/2	-VPF-NS8	1.03(26.2)	0.87(22.2)	0.75(19.1)	0.50(12.7)
3/4	-VPF-NS12	1.06(26.9)	1.06(27.0)	0.76(19.2)	0.72(18.3)
1	-VPF-NS16	1.37(34.8)	1.37(34.9)	0.94(23.9)	0.88(22.4)

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

Lapped Flange Connectors

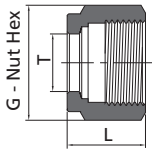


- Standard material is 316 or Monel.
- The flange ends are used with NPS 1/2 lap joint pipe flanges.
- The flange ends are dimensioned to meet "ASME B16.5 Class 2500" flange specifications.
- The Flange Seal A means surface finish Ra 3.2-6.3 µm, the flange Seal B means Ra 6.3-12.5 µm.

Fractional Tube							
T-Tube O.D. (in.)	Flange Seal	Basic Ordering Number	Dimensions, in. (mm)				
			L	G	C	E	J
1/4	A	-LFC-FL4A	3.18(80.8)	0.56(14.3)	0.60(15.2)	0.19(4.8)	1.36(34.5)
1/4	B	-LFC-FL4B	3.18(80.8)	0.56(14.3)	0.60(15.2)	0.19(4.8)	1.36(34.5)
3/8	A	-LFC-FL6A	3.24(82.3)	0.69(17.5)	0.66(16.8)	0.28(7.1)	1.36(34.5)
3/8	B	-LFC-FL6B	3.24(82.3)	0.69(17.5)	0.66(16.8)	0.28(7.1)	1.36(34.5)
1/2	A	-LFC-FL8A	3.35(85.1)	0.87(22.2)	0.90(22.9)	0.31(7.9)	1.36(34.5)
1/2	B	-LFC-FL8B	3.35(85.1)	0.87(22.2)	0.90(22.9)	0.31(7.9)	1.36(34.5)

Metric Tube							
T-Tube O.D. (mm)	Flange Seal	Basic Ordering Number	Dimensions, mm (in.)				
			L	G	C	E	J
10	A	-LFC-ML10A	82.6(3.25)	19.0(0.75)	17.2(0.68)	7.9(0.31)	34.5(1.36)
10	B	-LFC-ML10B	82.6(3.25)	19.0(0.75)	17.2(0.68)	7.9(0.31)	34.5(1.36)

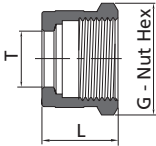
## Nuts



Fractional Tube			
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	G
1/16	-N-FL1	0.31(7.9)	0.31(7.9)
1/8	-N-FL2	0.47(11.9)	0.44(11.1)
3/16	-N-FL3	0.47(11.9)	0.50(12.7)
1/4	-N-FL4	0.50(12.7)	0.56(14.3)
5/16	-N-FL5	0.53(13.5)	0.63(15.9)
3/8	-N-FL6	0.56(14.2)	0.69(17.5)
1/2	-N-FL8	0.69(17.5)	0.87(22.2)
5/8	-N-FL10	0.69(17.5)	1.00(25.4)
3/4	-N-FL12	0.69(17.5)	1.13(28.6)
7/8	-N-FL14	0.69(17.5)	1.25(31.8)
1	-N-FL16	0.81(20.6)	1.50(38.1)
1 1/8	-N-FL18	1.21(30.8)	1.75(44.5)
1 1/4	-N-FL20	1.25(31.8)	1.87(47.6)
1 1/2	-N-FL24	1.50(38.1)	2.25(57.2)

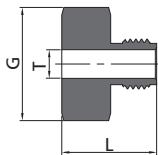
Metric Tube			
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)	
		L	G
2	-N-ML2	11.9(0.47)	12.0(0.47)
3	-N-ML3	11.9(0.47)	12.0(0.47)
4	-N-ML4	11.9(0.47)	12.0(0.47)
6	-N-ML6	12.7(0.50)	14.0(0.55)
8	-N-ML8	13.5(0.53)	16.0(0.63)
10	-N-ML10	15.1(0.59)	19.0(0.75)
12	-N-ML12	17.4(0.69)	22.0(0.87)
14	-N-ML14	17.4(0.69)	25.0(0.98)
15	-N-ML15	17.4(0.69)	25.0(0.98)
16	-N-ML16	17.4(0.69)	25.0(0.98)
18	-N-ML18	17.4(0.69)	30.0(1.18)
20	-N-ML20	17.4(0.69)	32.0(1.26)
22	-N-ML22	17.4(0.69)	32.0(1.26)
25	-N-ML25	20.6(0.81)	38.0(1.50)
28	-N-ML28	30.6(1.20)	46.0(1.81)
30	-N-ML30	32.7(1.29)	50.0(1.97)
32	-N-ML32	34.4(1.35)	50.0(1.97)
38	-N-ML38	40.6(1.60)	60.0(2.36)

## Knurled Nuts



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

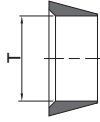
## Male Nuts



Fractional Tube			
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	G
1/16	-MN-FL1	0.38(9.7)	0.25(6.4)
1/8	-MN-FL2	0.53(13.5)	0.37(9.5)
1/4	-MN-FL4	0.62(15.7)	0.50(12.7)
1/2	-MN-FL8	0.87(22.1)	0.94(23.8)

Metric Tube			
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)	
		L	G
3	-MN-ML3	13.5(0.53)	10.0(0.39)
6	-MN-ML6	15.7(0.62)	14.0(0.55)
10	-MN-ML10	22.1(0.87)	22.0(0.87)
12	-MN-ML12	22.1(0.87)	24.0(0.94)

**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**

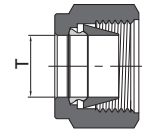


Fractional Tube	
T-Tube O.D. (in.)	Basic Ordering Number
1/16	-RF-FL1
1/8	-RF-FL2
3/16	-RF-FL3
1/4	-RF-FL4
5/16	-RF-FL5
3/8	-RF-FL6
1/2	-RF-FL8
5/8	-RF-FL10
3/4	-RF-FL12
7/8	-RF-FL14
1	-RF-FL16
1 1/8	-RF-FL18*
1 1/4	-RF-FL20*
1 1/2	-RF-FL24*

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

## Nuts - Ferrule Sets



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

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

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
2	-NFS-ML2
3	-NFS-ML3
4	-NFS-ML4
6	-NFS-ML6
8	-NFS-ML8
10	-NFS-ML10
12	-NFS-ML12
14	-NFS-ML14
15	-NFS-ML15
16	-NFS-ML16
18	-NFS-ML18

## Ferrule Sets



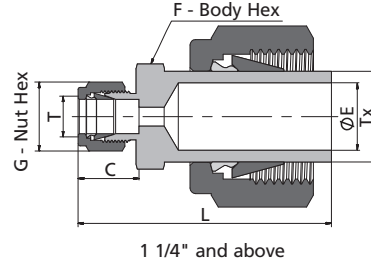
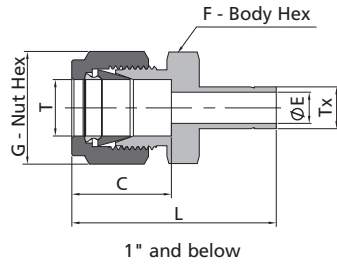
Each Ferrule Set contains 10 front ferrules and 10 rear ferrules.

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

Metric Tube	
T-Tube O.D. (mm)	Basic Ordering Number
2	-FRS-ML2
3	-FRS-ML3
4	-FRS-ML4
6	-FRS-ML6
8	-FRS-ML8
10	-FRS-ML10
12	-FRS-ML12
14	-FRS-ML14
15	-FRS-ML15
16	-FRS-ML16
18	-FRS-ML18

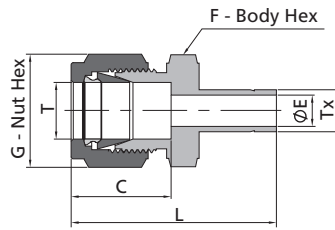


Reducers

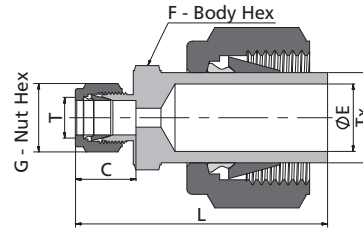


Fractional Tube			Dimensions, in. (mm)				
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	L	C	G	F	E
1/16	1/8	-R-FL1-FT2	1.15(29.2)	0.34(8.6)	0.31(7.9)	0.31(7.9)	0.05(1.3)
1/16	3/16	-R-FL1-FT3	1.18(30.0)	0.34(8.6)	0.31(7.9)	0.31(7.9)	0.05(1.3)
1/16	1/4	-R-FL1-FT4	1.24(31.5)	0.34(8.6)	0.31(7.9)	0.31(7.9)	0.05(1.3)
1/8	1/16	-R-FL2-FT1	1.14(29.0)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.03(0.8)
1/8	1/8	-R-FL2-FT2	1.32(33.5)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.08(2.0)
1/8	3/16	-R-FL2-FT3	1.35(34.3)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)
1/8	1/4	-R-FL2-FT4	1.42(36.1)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)
1/8	3/8	-R-FL2-FT6	1.48(37.6)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)
1/8	1/2	-R-FL2-FT8	1.74(44.2)	0.50(12.7)	0.44(11.1)	0.56(14.3)	0.09(2.3)
3/16	1/8	-R-FL3-FT2	1.37(34.8)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.08(2.0)
3/16	1/4	-R-FL3-FT4	1.46(37.1)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)
1/4	1/8	-R-FL4-FT2	1.45(36.8)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.08(2.0)
1/4	3/16	-R-FL4-FT3	1.48(37.6)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.12(3.0)
1/4	1/4	-R-FL4-FT4	1.54(39.1)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.17(4.3)
1/4	5/16	-R-FL4-FT5	1.57(39.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
1/4	3/8	-R-FL4-FT6	1.60(40.6)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)
1/4	1/2	-R-FL4-FT8	1.82(46.2)	0.60(15.2)	0.56(14.3)	0.56(14.3)	0.19(4.8)
1/4	5/8	-R-FL4-FT10	1.89(48.0)	0.60(15.2)	0.56(14.3)	0.69(17.5)	0.19(4.8)
1/4	3/4	-R-FL4-FT12	1.88(47.8)	0.60(15.2)	0.56(14.3)	0.81(20.6)	0.19(4.8)
5/16	3/8	-R-FL5-FT6	1.65(41.9)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)
5/16	1/2	-R-FL5-FT8	1.87(47.5)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)
3/8	1/4	-R-FL6-FT4	1.63(41.4)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.17(4.3)
3/8	3/8	-R-FL6-FT6	1.70(43.2)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.27(6.9)
3/8	1/2	-R-FL6-FT8	1.91(48.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)
3/8	5/8	-R-FL6-FT10	1.98(50.3)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)
3/8	3/4	-R-FL6-FT12	1.98(50.3)	0.66(16.8)	0.69(17.5)	0.81(20.6)	0.28(7.1)
1/2	1/4	-R-FL8-FT4	1.77(45.0)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.17(4.3)
1/2	3/8	-R-FL8-FT6	1.84(46.7)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.27(6.9)
1/2	1/2	-R-FL8-FT8	2.06(52.3)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.37(9.4)
1/2	5/8	-R-FL8-FT10	2.12(53.8)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
1/2	3/4	-R-FL8-FT12	2.12(53.8)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)
1/2	1	-R-FL8-FT16	2.37(60.2)	0.90(22.9)	0.87(22.2)	1.06(27.0)	0.41(10.4)
5/8	3/4	-R-FL10-FT12	2.15(54.6)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.50(12.7)
5/8	7/8	-R-FL10-FT14	2.21(56.1)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.50(12.7)
5/8	1	-R-FL10-FT16	2.40(61.0)	0.96(24.4)	1.00(25.4)	1.06(27.0)	0.50(12.7)
3/4	1/2	-R-FL12-FT8	2.15(54.6)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.37(9.4)
3/4	1	-R-FL12-FT16	2.46(62.5)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)
1	1 1/4	-R-FL16-FT20	3.17(80.5)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)
1	1 1/2	-R-FL16-FT24	3.51(89.2)	1.23(31.2)	1.50(38.1)	1.63(41.3)	0.88(22.4)
1	2	-R-FL16-FT32	4.43(112.5)	1.23(31.2)	1.50(38.1)	2.13(54.0)	0.88(22.4)
1 1/4	1 1/2	-R-FL20-FT24	4.10(104.1)	1.62(41.1)	1.87(47.6)	1.87(47.6)	1.09(27.7)

## Reducers



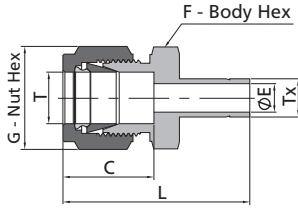
25 mm and below



28 mm and above

Metric Tube			Dimensions, mm (in.)				
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	L	C	G	F	E
2	3	-R-ML2-MT3	33.5(1.32)	12.9(0.51)	12.0(0.47)	12.0(0.47)	1.7(0.07)
3	4	-R-ML3-MT4	35.0(1.38)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.4(0.09)
3	6	-R-ML3-MT6	36.1(1.42)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.4(0.09)
3	10	-R-ML3-MT10	38.4(1.51)	12.9(0.51)	12.0(0.47)	14.0(0.55)	2.4(0.09)
4	6	-R-ML4-MT6	37.1(1.46)	13.7(0.54)	12.0(0.47)	12.0(0.47)	2.4(0.09)
6	3	-R-ML6-MT3	36.9(1.45)	15.3(0.60)	14.0(0.55)	14.0(0.55)	1.9(0.07)
6	8	-R-ML6-MT8	39.9(1.57)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
6	10	-R-ML6-MT10	40.7(1.60)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
6	12	-R-ML6-MT12	46.3(1.82)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
6	18	-R-ML6-MT18	49.6(1.95)	15.3(0.60)	14.0(0.55)	22.0(0.87)	4.8(0.19)
8	6	-R-ML8-MT6	40.3(1.59)	16.2(0.64)	16.0(0.63)	15.0(0.59)	4.1(0.16)
8	10	-R-ML8-MT10	42.0(1.65)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)
8	12	-R-ML8-MT12	47.6(1.87)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)
10	6	-R-ML10-MT6	42.4(1.67)	17.2(0.68)	19.0(0.75)	18.0(0.71)	4.1(0.16)
10	8	-R-ML10-MT8	43.4(1.71)	17.2(0.68)	19.0(0.75)	18.0(0.71)	5.6(0.22)
10	12	-R-ML10-MT12	49.8(1.96)	17.2(0.68)	19.0(0.75)	18.0(0.71)	7.9(0.31)
10	15	-R-ML10-MT15	51.3(2.02)	17.2(0.68)	19.0(0.75)	18.0(0.71)	7.9(0.31)
10	18	-R-ML10-MT18	51.3(2.02)	17.2(0.68)	19.0(0.75)	22.0(0.87)	7.9(0.31)
12	6	-R-ML12-MT6	44.9(1.77)	22.8(0.90)	22.0(0.87)	22.0(0.87)	4.1(0.16)
12	8	-R-ML12-MT8	45.9(1.81)	22.8(0.90)	22.0(0.87)	22.0(0.87)	5.6(0.22)
12	10	-R-ML12-MT10	46.7(1.84)	22.8(0.90)	22.0(0.87)	22.0(0.87)	7.1(0.28)
12	16	-R-ML12-MT16	53.8(2.12)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)
12	18	-R-ML12-MT18	53.8(2.12)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)
12	20	-R-ML12-MT20	56.1(2.21)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)
12	22	-R-ML12-MT22	56.1(2.21)	22.8(0.90)	22.0(0.87)	24.0(0.94)	9.5(0.37)
12	25	-R-ML12-MT25	62.4(2.46)	22.8(0.90)	22.0(0.87)	27.0(1.06)	9.5(0.37)
16	12	-R-ML16-MT12	53.0(2.09)	24.4(0.96)	25.0(0.98)	24.0(0.94)	8.8(0.35)
18	12	-R-ML18-MT12	54.6(2.15)	24.4(0.96)	30.0(1.18)	27.0(1.06)	8.8(0.35)
18	16	-R-ML18-MT16	56.1(2.21)	24.4(0.96)	30.0(1.18)	27.0(1.06)	12.0(0.47)
18	20	-R-ML18-MT20	57.6(2.27)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
18	22	-R-ML18-MT22	57.6(2.27)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
18	25	-R-ML18-MT25	62.4(2.46)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
20	16	-R-ML20-MT16	57.9(2.28)	26.0(1.02)	32.0(1.26)	30.0(1.18)	12.0(0.47)
20	18	-R-ML20-MT18	57.9(2.28)	26.0(1.02)	32.0(1.26)	30.0(1.18)	13.9(0.55)
20	22	-R-ML20-MT22	59.4(2.34)	26.0(1.02)	32.0(1.26)	30.0(1.18)	15.9(0.63)
20	25	-R-ML20-MT25	64.2(2.53)	26.0(1.02)	32.0(1.26)	30.0(1.18)	15.8(0.62)
22	18	-R-ML22-MT18	57.9(2.28)	26.0(1.02)	32.0(1.26)	30.0(1.18)	13.9(0.55)
22	20	-R-ML22-MT20	59.4(2.34)	26.0(1.02)	32.0(1.26)	30.0(1.18)	15.5(0.61)
22	25	-R-ML22-MT25	64.2(2.53)	26.0(1.02)	32.0(1.26)	30.0(1.18)	18.3(0.72)
25	18	-R-ML25-MT18	63.1(2.48)	31.3(1.23)	38.0(1.50)	35.0(1.38)	13.9(0.55)
25	20	-R-ML25-MT20	64.6(2.54)	31.3(1.23)	38.0(1.50)	35.0(1.38)	15.5(0.61)

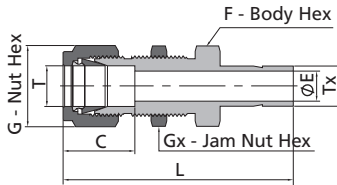
Reducers



Metric Tube			Fractional Tube				
T-Tube O.D. (mm)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, mm (in.)				
			L	C	G	F	E
2	1/8	-R-ML2-FT2	33.5(1.32)	12.9(0.51)	12.0(0.47)	12.0(0.47)	1.7(0.07)
3	1/8	-R-ML3-FT2	33.5(1.32)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.0(0.08)
3	1/4	-R-ML3-FT4	36.1(1.42)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.4(0.09)
4	1/4	-R-ML4-FT4	37.1(1.46)	13.7(0.54)	12.0(0.47)	12.0(0.47)	2.4(0.09)
6	1/8	-R-ML6-FT2	36.9(1.45)	15.3(0.60)	14.0(0.55)	14.0(0.55)	2.0(0.08)
6	1/4	-R-ML6-FT4	39.2(1.54)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.4(0.17)
6	5/16	-R-ML6-FT5	39.9(1.57)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
6	3/8	-R-ML6-FT6	40.7(1.60)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
6	1/2	-R-ML6-FT8	46.3(1.82)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)
8	1/4	-R-ML8-FT4	40.3(1.59)	16.2(0.64)	16.0(0.63)	15.0(0.59)	4.4(0.17)
8	3/8	-R-ML8-FT6	42.0(1.65)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)
8	1/2	-R-ML8-FT8	47.6(1.87)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)
10	3/8	-R-ML10-FT6	44.4(1.75)	17.2(0.68)	19.0(0.75)	18.0(0.71)	6.8(0.27)
10	1/2	-R-ML10-FT8	49.8(1.96)	17.2(0.68)	19.0(0.75)	18.0(0.71)	7.9(0.31)
12	1/2	-R-ML12-FT8	52.3(2.06)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.3(0.37)
12	3/4	-R-ML12-FT12	53.8(2.12)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)
18	3/4	-R-ML18-FT12	56.1(2.21)	24.4(0.96)	30.0(1.18)	27.0(1.06)	14.7(0.58)
18	1	-R-ML18-FT16	62.4(2.46)	24.4(0.96)	30.0(1.18)	27.0(1.06)	15.1(0.59)
25	1	-R-ML25-FT16	69.5(2.74)	31.3(1.23)	38.0(1.50)	35.0(1.38)	20.2(0.80)

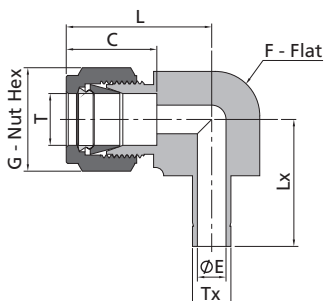
Fractional Tube			Metric Tube				
T-Tube O.D. (in.)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, in. (mm)				
			L	C	G	F	E
1/8	6	-R-FL2-MT6	1.42(36.1)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)

Bulkhead Reducers



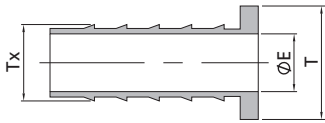
Fractional Tube			Metric Tube					
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)					
			L	C	G	F	Gx	E
1/8	1/8	-BR-FL2-FT2	1.95(49.5)	0.50(12.7)	0.44(11.1)	0.50(12.7)	0.50(12.7)	0.08(2.0)
1/4	1/4	-BR-FL4-FT4	2.20(55.9)	0.60(15.2)	0.56(14.3)	0.63(15.9)	0.63(15.9)	0.17(4.3)
3/8	3/8	-BR-FL6-FT6	2.41(61.2)	0.66(16.8)	0.69(17.5)	0.75(19.1)	0.75(19.1)	0.27(6.9)
1/2	1/2	-BR-FL8-FT8	2.87(72.9)	0.90(22.9)	0.87(22.2)	0.94(23.8)	0.94(23.8)	0.37(9.4)
5/8	5/8	-BR-FL10-FT10	2.96(75.2)	0.96(24.4)	1.00(25.4)	1.06(27.0)	1.06(27.0)	0.47(11.9)
3/4	3/4	-BR-FL12-FT12	3.21(81.5)	0.96(24.4)	1.13(28.6)	1.19(30.2)	1.19(30.2)	0.58(14.7)
1	1	-BR-FL16-FT16	3.95(100.3)	1.23(31.2)	1.50(38.1)	1.63(41.3)	1.63(41.3)	0.80(20.3)

Reducer Elbows



Metric Tube			Fractional Tube					
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)					
			L	C	G	F	E	Lx
6	6	-LR-ML6-MT6	27.0(1.06)	15.3(0.60)	14.0(0.55)	12.7(0.50)	4.1(0.16)	25.0(0.98)
12	12	-LR-ML12-MT12	38.1(1.50)	22.8(0.90)	22.0(0.87)	23.8(0.94)	8.8(0.35)	39.2(1.54)

## Insert for Soft Plastic Tubings



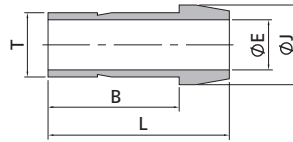
## Fractional Tube

T-Tube O.D. (in.)	Tx-Tube I.D. (in.)	Basic Ordering Number	E in. (mm)
3/16	1/8	-IN-3-2	0.09(2.3)
1/4	1/8	-IN-4-2	0.09(2.3)
1/4	0.17	-IN-4-017	0.11(2.8)
1/4	3/16	-IN-4-3	0.14(3.5)
5/16	1/8	-IN-5-2	0.09(2.3)
5/16	3/16	-IN-5-3	0.12(3.0)
5/16	1/4	-IN-5-4	0.19(4.8)
3/8	3/16	-IN-6-3	0.12(3.0)
3/8	1/4	-IN-6-4	0.19(4.8)
1/2	1/4	-IN-8-4	0.19(4.8)
1/2	3/8	-IN-8-6	0.31(7.9)
5/8	3/8	-IN-10-6	0.31(7.9)
5/8	1/2	-IN-10-8	0.44(11.1)
3/4	1/2	-IN-12-8	0.44(11.1)
3/4	5/8	-IN-12-10	0.56(14.2)
1	3/4	-IN-16-12	0.69(17.5)

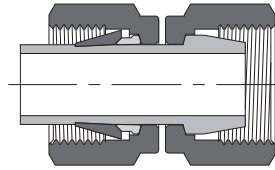
## Metric Tube

T-Tube O.D. (mm)	Tx-Tube I.D. (mm)	Basic Ordering Number	E mm (in.)
6	4	-IN-6M-4M	2.8(0.11)
8	6	-IN-8M-6M	4.4(0.17)
10	8	-IN-10M-8M	6.4(0.25)
12	8	-IN-12M-8M	6.4(0.25)
12	10	-IN-12M-10M	8.3(0.33)

## Port Connectors



1" /25 mm and below



1 1/4" /28 mm and above

## Fractional Tube

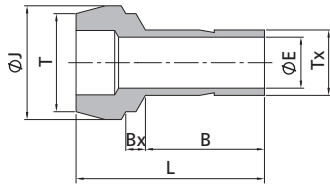
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)			
		L	B	E	J
1/16	-P-FL1	0.54(13.7)	0.42(10.7)	0.03(0.8)	0.13(3.3)
1/8	-P-FL2	0.88(22.4)	0.62(15.7)	0.08(2.0)	0.24(6.1)
1/4	-P-FL4	0.97(24.6)	0.74(18.8)	0.17(4.3)	0.37(9.4)
5/16	-P-FL5	1.02(25.9)	0.79(20.1)	0.22(5.6)	0.43(10.9)
3/8	-P-FL6	1.03(26.2)	0.80(20.3)	0.27(6.9)	0.50(12.7)
1/2	-P-FL8	1.41(35.8)	1.02(25.9)	0.37(9.4)	0.62(15.7)
5/8	-P-FL10	1.64(41.7)	1.11(28.1)	0.47(11.9)	0.81(20.5)
3/4	-P-FL12	1.65(41.9)	1.09(27.7)	0.58(14.7)	0.87(22.1)
1	-P-FL16	1.89(48.0)	1.36(34.5)	0.80(20.3)	1.12(28.4)
1 1/4	-P-FL20	2.72(69.1)	1.99(50.6)	1.02(25.9)	1.47(37.4)
1 1/2	-P-FL24	3.48(88.4)	2.5(63.6)	1.24(31.5)	1.85(47.0)

## Metric Tube

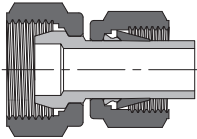
T-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)			
		L	B	E	J
3	-P-ML3	22.2(0.87)	15.7(0.62)	1.9(0.07)	6.0(0.24)
6	-P-ML6	24.6(0.97)	18.7(0.74)	4.1(0.16)	9.0(0.35)
8	-P-ML8	25.9(1.02)	20.0(0.79)	5.6(0.22)	11.0(0.43)
10	-P-ML10	26.1(1.03)	20.2(0.80)	7.1(0.28)	13.1(0.52)
12	-P-ML12	35.8(1.41)	26.0(1.02)	8.8(0.35)	15.0(0.59)
15	-P-ML15	37.8(1.49)	27.6(1.09)	11.2(0.44)	19.6(0.77)
16	-P-ML16	37.8(1.49)	27.6(1.09)	12.0(0.47)	20.6(0.81)
18	-P-ML18	37.8(1.49)	27.7(1.09)	13.9(0.55)	21.0(0.83)
20	-P-ML20	39.4(1.55)	29.2(1.15)	15.5(0.61)	24.6(0.97)
25	-P-ML25	49.3(1.94)	34.5(1.36)	19.9(0.78)	31.2(1.23)
28	-P-ML28	63.5(2.5)	48.3(1.90)	22.5(0.89)	34.4(1.35)
30	-P-ML30	67.6(2.66)	52.2(2.06)	24.3(0.96)	37.4(1.47)
32	-P-ML32	69.7(2.74)	52.4(2.06)	26.5(1.04)	39.4(1.55)
38	-P-ML38	81.9(3.22)	61.4(2.42)	31.6(1.24)	45.8(1.80)

# A-70 6 Series Tube Fittings

## Reducing Port Connectors



1" /25mm and below

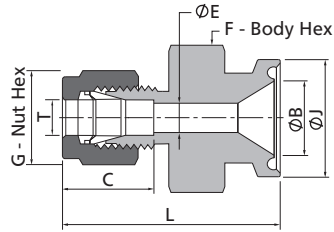


1 1/4" /28 mm and above

Fractional Tube								
T-Tube O.D. (in.)	Tx-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)					
			L	B	E	Bx	J	
1/8	1/16	-P-FL2-FL1	0.68(17.3)	0.34(8.6)	0.03(0.8)	0.08(2.0)	0.24(6.1)	
1/4	1/16	-P-FL4-FL1	0.71(18.0)	0.34(8.6)	0.03(0.8)	0.14(3.6)	0.37(9.4)	
1/4	1/8	-P-FL4-FL2	0.89(22.6)	0.53(13.5)	0.08(2.0)	0.13(3.3)	0.37(9.4)	
3/8	1/8	-P-FL6-FL2	0.91(23.1)	0.53(13.5)	0.08(2.0)	0.15(3.8)	0.50(12.7)	
3/8	1/4	-P-FL6-FL4	0.98(24.9)	0.62(15.7)	0.17(4.3)	0.13(3.3)	0.50(12.7)	
1/2	1/4	-P-FL8-FL4	1.15(29.2)	0.62(15.7)	0.17(4.3)	0.15(3.8)	0.62(15.7)	
1/2	3/8	-P-FL8-FL6	1.20(30.5)	0.69(17.5)	0.27(6.9)	0.13(3.3)	0.62(15.7)	
3/4	1/2	-P-FL12-FL8	1.49(37.8)	0.91(23.1)	0.37(9.4)	0.15(3.8)	0.87(22.1)	
1	1/2	-P-FL16-FL8	1.69(42.9)	0.96(24.4)	0.37(9.4)	0.19(4.8)	1.12(28.5)	
1	3/4	-P-FL16-FL12	1.72(43.7)	1.02(25.9)	0.58(14.7)	0.16(4.1)	1.12(28.5)	

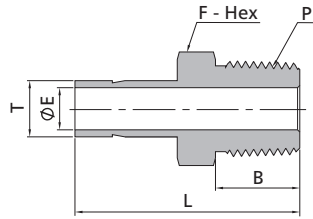
Metric Tube								
T-Tube O.D. (mm)	Tx-Tube O.D. (mm)	Basic Ordering Number	Dimensions, mm (in.)					
			L	B	E	Bx	J	
6	3	-P-ML6-ML3	22.6(0.89)	13.5(0.53)	1.9(0.07)	3.2(0.13)	9.0(0.35)	
8	6	-P-ML8-ML6	24.7(0.97)	15.7(0.62)	4.1(0.16)	3.1(0.12)	11.0(0.43)	
10	6	-P-ML10-ML6	25.0(0.98)	15.7(0.62)	4.1(0.16)	3.4(0.13)	13.1(0.52)	
10	8	-P-ML10-ML8	26.3(1.04)	17.0(0.67)	5.6(0.22)	3.1(0.12)	13.1(0.52)	
12	6	-P-ML12-ML6	29.6(1.17)	15.7(0.62)	4.1(0.16)	3.6(0.14)	15.0(0.59)	
12	8	-P-ML12-ML8	29.8(1.17)	16.8(0.66)	5.6(0.22)	3.4(0.13)	15.0(0.59)	
12	10	-P-ML12-ML10	30.4(1.20)	17.5(0.69)	7.1(0.28)	3.1(0.12)	15.0(0.59)	
16	12	-P-ML16-ML12	36.2(1.43)	23.1(0.91)	8.8(0.35)	3.4(0.13)	19.0(0.75)	
28	25	-P-ML28-ML25	56.5(2.22)	33.0(1.30)	19.8(0.78)	8.2(0.32)	34.3(1.35)	
32	25	-P-ML32-ML25	60.3(2.37)	33.0(1.30)	19.8(0.78)	9.9(0.39)	39.5(1.56)	
38	25	-P-ML38-ML25	65.8(2.59)	33.0(1.30)	19.8(0.78)	12.3(0.48)	47.1(1.85)	

## Sanitary Flange Fittings

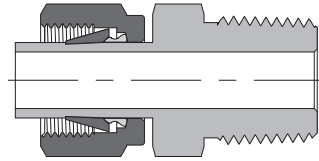


Fractional Tube			Dimensions, in. (mm)						
T-Tube O.D. (in.)	Flange Size (in.)	Basic Ordering Number	L	B	C	E	F	J	G
1/4	1/2	-SFF-FL4-SC8	1.57(39.9)	0.37(9.4)	0.60(15.2)	0.19(4.8)	1.00(25.4)	0.98(24.9)	0.56(14.3)
1/4	3/4	-SFF-FL4-SC12	1.57(39.9)	0.62(15.7)	0.60(15.2)	0.19(4.8)	1.00(25.4)	0.98(24.9)	0.56(14.3)
1/4	1	-SFF-FL4-SC16	1.57(39.9)	0.87(22.1)	0.60(15.2)	0.19(4.8)	1.37(34.9)	1.98(50.3)	0.56(14.3)
1/4	1 1/2	-SFF-FL4-SC24	1.57(39.9)	1.37(34.8)	0.60(15.2)	0.19(4.8)	1.37(34.9)	1.98(50.3)	0.56(14.3)
3/8	1/2	-SFF-FL6-SC8	1.63(41.4)	0.37(9.4)	0.66(16.8)	0.28(7.1)	1.00(25.4)	0.98(24.9)	0.69(17.5)
3/8	3/4	-SFF-FL6-SC12	1.63(41.4)	0.62(15.7)	0.66(16.8)	0.28(7.1)	1.00(25.4)	0.98(24.9)	0.69(17.5)
3/8	1	-SFF-FL6-SC16	1.63(41.4)	0.87(22.1)	0.66(16.8)	0.28(7.1)	1.37(34.9)	1.98(50.3)	0.69(17.5)
3/8	1 1/2	-SFF-FL6-SC24	1.63(41.4)	1.37(34.8)	0.66(16.8)	0.28(7.1)	1.37(34.9)	1.98(50.3)	0.69(17.5)
1/2	1/2	-SFF-FL8-SC8	1.74(44.2)	0.37(9.4)	0.90(22.9)	0.37(9.4)	1.00(25.4)	0.98(24.9)	0.87(22.2)
1/2	3/4	-SFF-FL8-SC12	1.74(44.2)	0.62(15.7)	0.90(22.9)	0.41(10.4)	1.00(25.4)	0.98(24.9)	0.87(22.2)
1/2	1	-SFF-FL8-SC16	1.74(44.2)	0.87(22.1)	0.90(22.9)	0.41(10.4)	1.37(34.9)	1.98(50.3)	0.87(22.2)
1/2	1 1/2	-SFF-FL8-SC24	1.74(44.2)	1.37(34.8)	0.90(22.9)	0.41(10.4)	1.37(34.9)	1.98(50.3)	0.87(22.2)
1	1	-SFF-FL16-SC16	1.91(48.5)	0.87(22.1)	1.23(31.2)	0.87(22.1)	1.37(34.9)	1.98(50.3)	1.50(38.1)
1	2	-SFF-FL16-SC32	2.49(63.2)	1.37(34.8)	1.23(31.2)	0.88(22.4)	2.75(69.9)	2.52(64.0)	1.50(38.1)

Male Adapters



1" and below



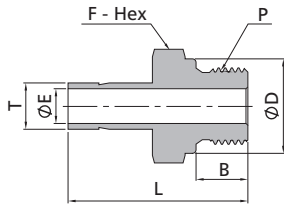
1 1/4" and above

The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

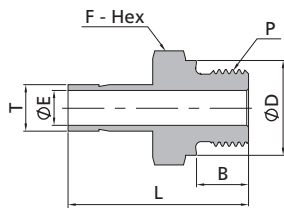
Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/16	1/8	-AM-FT1-NS2	1.00(25.4)	0.38(9.7)	0.03(0.8)	0.44(11.1)
1/8	1/8	-AM-FT2-NS2	1.16(29.5)	0.38(9.7)	0.08(2.0)	0.44(11.1)
1/8	1/4	-AM-FT2-NS4	1.37(34.8)	0.56(14.2)	0.08(2.0)	0.56(14.3)
3/16	1/8	-AM-FT3-NS2	1.19(30.2)	0.38(9.7)	0.12(3.0)	0.44(11.1)
3/16	1/4	-AM-FT3-NS4	1.40(35.6)	0.56(14.2)	0.12(3.0)	0.56(14.3)
1/4	1/8	-AM-FT4-NS2	1.25(31.8)	0.38(9.7)	0.17(4.3)	0.44(11.1)
1/4	1/4	-AM-FT4-NS4	1.46(37.1)	0.56(14.2)	0.17(4.3)	0.56(14.3)
1/4	3/8	-AM-FT4-NS6	1.49(37.8)	0.56(14.2)	0.17(4.3)	0.69(17.5)
1/4	1/2	-AM-FT4-NS8	1.71(43.4)	0.75(19.1)	0.17(4.3)	0.87(22.2)
5/16	1/8	-AM-FT5-NS2	1.29(32.8)	0.38(9.7)	0.19(4.8)	0.44(11.1)
5/16	1/4	-AM-FT5-NS4	1.50(38.1)	0.56(14.2)	0.22(5.6)	0.56(14.3)
5/16	3/8	-AM-FT5-NS6	1.53(38.9)	0.56(14.2)	0.22(5.6)	0.69(17.5)
5/16	1/2	-AM-FT5-NS8	1.74(44.2)	0.75(19.1)	0.22(5.6)	0.87(22.2)
3/8	1/8	-AM-FT6-NS2	1.32(33.5)	0.38(9.7)	0.19(4.8)	0.44(11.1)
3/8	1/4	-AM-FT6-NS4	1.53(38.9)	0.56(14.2)	0.27(6.9)	0.56(14.3)
3/8	3/8	-AM-FT6-NS6	1.56(39.6)	0.56(14.2)	0.27(6.9)	0.69(17.5)
3/8	1/2	-AM-FT6-NS8	1.78(45.2)	0.75(19.1)	0.27(6.9)	0.87(22.2)
1/2	1/4	-AM-FT8-NS4	1.75(44.5)	0.56(14.2)	0.28(7.1)	0.56(14.3)
1/2	3/8	-AM-FT8-NS6	1.78(45.2)	0.56(14.2)	0.37(9.4)	0.69(17.5)
1/2	1/2	-AM-FT8-NS8	2.00(50.8)	0.75(19.1)	0.37(9.4)	0.87(22.2)
5/8	1/2	-AM-FT10-NS8	2.06(52.3)	0.75(19.1)	0.47(11.9)	0.87(22.2)
3/4	1/2	-AM-FT12-NS8	2.06(52.3)	0.75(19.1)	0.47(11.9)	0.87(22.2)
3/4	3/4	-AM-FT12-NS12	2.06(52.3)	0.75(19.1)	0.58(14.7)	1.06(27.0)
3/4	1	-AM-FT12-NS16	2.41(61.2)	0.94(23.9)	0.58(14.7)	1.37(34.9)
1	3/4	-AM-FT16-NS12	2.31(58.7)	0.75(19.1)	0.62(15.7)	1.06(27.0)
1	1	-AM-FT16-NS16	2.60(66.0)	0.94(23.9)	0.80(20.3)	1.37(34.9)
1 1/4	1 1/4	-AM-FT20-NS20	3.16(80.3)	0.94(23.9)	1.02(25.9)	1.75(44.5)
1 1/2	1 1/2	-AM-FT24-NS24	3.72(94.5)	1.03(26.2)	1.25(31.8)	2.13(54.0)

Fractional Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/8	1/8	-AM-FT2-RT2	1.16(29.5)	0.38(9.7)	0.08(2.0)	0.44(11.1)
1/8	1/4	-AM-FT2-RT4	1.37(34.8)	0.56(14.2)	0.08(2.0)	0.56(14.3)
1/4	1/8	-AM-FT4-RT2	1.25(31.8)	0.38(9.7)	0.17(4.3)	0.44(11.1)
1/4	1/4	-AM-FT4-RT4	1.46(37.1)	0.56(14.2)	0.17(4.3)	0.56(14.3)
1/4	3/8	-AM-FT4-RT6	1.49(37.8)	0.56(14.2)	0.17(4.3)	0.69(17.5)
1/4	1/2	-AM-FT4-RT8	1.71(43.4)	0.75(19.1)	0.17(4.3)	0.87(22.2)
5/16	1/8	-AM-FT5-RT2	1.29(32.8)	0.38(9.7)	0.19(4.8)	0.44(11.1)
5/16	1/4	-AM-FT5-RT4	1.50(38.1)	0.56(14.2)	0.22(5.6)	0.56(14.3)
3/8	1/4	-AM-FT6-RT4	1.53(38.9)	0.56(14.2)	0.27(6.9)	0.56(14.3)
3/8	3/8	-AM-FT6-RT6	1.56(39.6)	0.56(14.2)	0.27(6.9)	0.69(17.5)
3/8	1/2	-AM-FT6-RT8	1.78(45.2)	0.75(19.1)	0.27(6.9)	0.87(22.2)
1/2	1/4	-AM-FT8-RT4	1.75(44.5)	0.56(14.2)	0.28(7.1)	0.56(14.3)
1/2	3/8	-AM-FT8-RT6	1.78(45.2)	0.56(14.2)	0.37(9.4)	0.69(17.5)
1/2	1/2	-AM-FT8-RT8	2.00(50.8)	0.75(19.1)	0.37(9.4)	0.87(22.2)
5/8	3/8	-AM-FT10-RT6	1.91(48.5)	0.56(14.2)	0.37(9.5)	0.69(17.5)
5/8	1/2	-AM-FT10-RT8	2.06(52.3)	0.75(19.1)	0.47(11.9)	0.87(22.2)
3/4	3/4	-AM-FT12-RT12	2.06(52.3)	0.75(19.1)	0.58(14.7)	1.06(27.0)
1	1	-AM-FT16-RT16	2.60(66.0)	0.94(23.9)	0.80(20.3)	1.37(34.9)

## Male Adapters



The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.



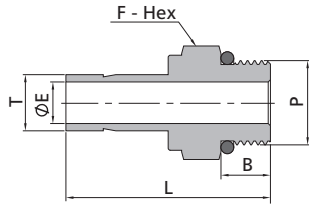
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			ISO Parallel Thread (RS)				
T-Tube O.D. (in.)	P-RS Size	Basic Ordering Number	Dimensions, in. (mm)				
			L	B	E	F	D
1/8	1/8	-AM-FT2-RS2	1.22(31.0)	0.28(7.1)	0.08(2.0)	0.56(14.3)	0.54(13.7)
1/8	1/4	-AM-FT2-RS4	1.41(35.8)	0.44(11.2)	0.08(2.0)	0.75(19.1)	0.70(17.8)
1/4	1/8	-AM-FT4-RS2	1.31(33.3)	0.28(7.1)	0.16(4.1)	0.56(14.3)	0.54(13.7)
1/4	1/4	-AM-FT4-RS4	1.50(38.1)	0.44(11.2)	0.17(4.3)	0.75(19.1)	0.70(17.8)
3/8	1/8	-AM-FT6-RS2	1.29(32.8)	0.28(7.1)	0.16(4.1)	0.56(14.3)	0.54(13.7)
3/8	1/4	-AM-FT6-RS4	1.57(39.9)	0.44(11.2)	0.23(5.8)	0.75(19.1)	0.70(17.8)
3/8	3/8	-AM-FT6-RS6	1.60(40.6)	0.44(11.2)	0.27(6.9)	0.87(22.2)	0.85(21.6)
3/8	1/2	-AM-FT6-RS8	1.69(42.9)	0.56(14.2)	0.28(7.1)	1.06(27.0)	1.02(25.9)
1/2	1/4	-AM-FT8-RS4	1.79(45.5)	0.44(11.2)	0.23(5.8)	0.75(19.1)	0.70(17.8)
1/2	3/8	-AM-FT8-RS6	1.82(46.2)	0.44(11.2)	0.31(7.9)	0.87(22.2)	0.85(21.6)
1/2	1/2	-AM-FT8-RS8	1.94(49.2)	0.56(14.2)	0.37(9.4)	1.06(27.0)	1.02(25.9)
5/8	1/2	-AM-FT10-RS8	1.97(50.0)	0.56(14.2)	0.47(11.9)	1.06(27.0)	1.02(25.9)
3/4	3/4	-AM-FT12-RS12	2.16(54.9)	0.63(16.0)	0.58(14.7)	1.31(33.3)	1.26(32.0)
1	1	-AM-FT16-RS16	2.54(64.5)	0.72(18.3)	0.80(20.3)	1.63(41.3)	1.53(38.9)

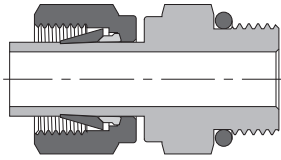
Fractional Tube			ISO Parallel Thread (RP)				
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimensions, in. (mm)				
			L	B	E	F	D
1/8	1/8	-AM-FT2-RP2	1.09(27.7)	0.28(7.1)	0.08(2.0)	0.56(14.3)	0.54(13.7)
1/8	1/4	-AM-FT2-RP4	1.31(33.3)	0.44(11.2)	0.08(2.0)	0.75(19.1)	0.70(17.8)
1/4	1/8	-AM-FT4-RP2	1.19(30.2)	0.28(7.1)	0.16(4.1)	0.56(14.3)	0.54(13.7)
1/4	1/4	-AM-FT4-RP4	1.50(38.1)	0.44(11.2)	0.18(4.6)	0.75(19.1)	0.70(17.8)
3/8	1/8	-AM-FT6-RP2	1.34(34.0)	0.28(7.1)	0.16(4.1)	0.75(19.1)	0.54(13.7)
3/8	1/4	-AM-FT6-RP4	1.47(37.3)	0.44(11.2)	0.25(6.4)	0.75(19.1)	0.70(17.8)
3/8	3/8	-AM-FT6-RP6	1.50(38.1)	0.44(11.2)	0.27(6.9)	0.87(22.2)	0.85(21.6)
3/8	1/2	-AM-FT6-RP8	1.69(42.9)	0.56(14.2)	0.27(6.9)	1.06(27.0)	1.02(25.9)
1/2	1/4	-AM-FT8-RP4	1.69(42.9)	0.44(11.2)	0.25(6.4)	0.75(19.1)	0.70(17.8)
1/2	3/8	-AM-FT8-RP6	1.72(43.7)	0.44(11.2)	0.31(7.9)	0.87(22.2)	0.85(21.6)
1/2	1/2	-AM-FT8-RP8	1.94(49.3)	0.56(14.2)	0.37(9.4)	1.06(27.0)	1.02(25.9)
5/8	1/2	-AM-FT10-RP8	1.97(50.0)	0.56(14.2)	0.47(11.9)	1.06(27.0)	1.02(25.9)
3/4	3/4	-AM-FT12-RP12	2.09(53.1)	0.63(16.0)	0.58(14.7)	1.32(33.5)	1.26(32.0)
1	1	-AM-FT16-RP16	2.49(63.3)	0.72(18.3)	0.78(19.8)	1.63(41.3)	1.53(38.9)



Male Adapters



1" and below

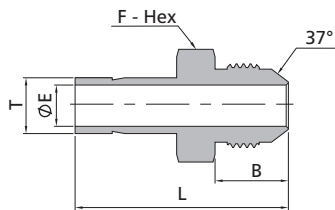


1 1/4" and above

1. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.
2. Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.

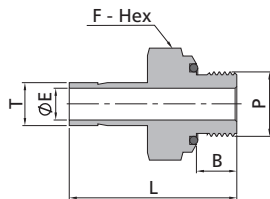
Fractional Tube			SAE/MS Straight Thread			
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/8	5/16-24	-AM-FT2-ST5	1.20(30.5)	0.30(7.6)	0.08(2.0)	0.44(11.1)
1/4	7/16-20	-AM-FT4-ST7	1.39(35.3)	0.36(9.1)	0.17(4.3)	0.56(14.3)
3/8	7/16-20	-AM-FT6-ST7	1.46(37.1)	0.36(9.1)	0.20(5.1)	0.56(14.3)
3/8	9/16-18	-AM-FT6-ST9	1.52(38.6)	0.39(9.9)	0.27(6.9)	0.69(17.5)
3/8	3/4-16	-AM-FT6-ST12	1.60(40.6)	0.44(11.2)	0.27(6.9)	0.87(22.2)
1/2	9/16-18	-AM-FT8-ST9	1.74(44.2)	0.39(9.9)	0.28(7.1)	0.69(17.5)
1/2	3/4-16	-AM-FT8-ST12	1.82(46.2)	0.44(11.2)	0.37(9.4)	0.87(22.2)
5/8	7/8-14	-AM-FT10-ST14	1.94(49.3)	0.50(12.7)	0.47(11.9)	1.00(25.4)
3/4	1 1/16-12	-AM-FT12-ST17	2.10(53.3)	0.59(15.0)	0.58(14.7)	1.25(31.8)
1	1 5/16-12	-AM-FT16-ST21	2.41(61.2)	0.59(15.0)	0.80(20.3)	1.50(38.1)
1 1/4	1 5/8-12	-AM-FT20-ST26	2.81(71.4)	0.59(15.0)	1.02(25.9)	1.87(47.6)
1 1/2	1 7/8-12	-AM-FT24-ST30	3.28(83.3)	0.59(15.0)	1.25(31.8)	2.13(54.0)

Fractional Tube			37° Flare (AN)			
T-Tube O.D. (in.)	AN Tube Flare Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/4	1/4	-AM-FT4-AN4	1.46(37.1)	0.55(14.0)	0.17(4.3)	0.50(12.7)
3/8	1/4	-AM-FT6-AN4	1.53(38.9)	0.55(14.0)	0.17(4.3)	0.50(12.7)
3/8	3/8	-AM-FT6-AN6	1.56(39.6)	0.56(14.2)	0.27(6.9)	0.63(15.9)
1/2	1/2	-AM-FT8-AN8	1.91(48.5)	0.66(16.8)	0.37(9.4)	0.81(20.6)
3/4	3/4	-AM-FT12-AN12	2.21(56.1)	0.86(21.8)	0.58(14.7)	1.13(28.6)
1	1	-AM-FT16-AN16	2.58(65.5)	0.91(23.1)	0.80(20.3)	1.37(34.9)



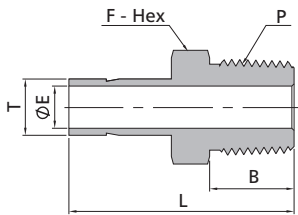
The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

Fractional Tube			O-Seal with SAE/MS Straight Thread			
T-Tube O.D. (in.)	P-SAE/MS Thread Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/8	5/16-24	-AM-FT2-OST5	1.28(32.5)	0.34(8.6)	0.08(2.0)	0.56(14.3)
3/16	3/8-24	-AM-FT3-OST6	1.38(35.1)	0.38(9.7)	0.12(3.0)	0.63(15.9)
1/4	7/16-20	-AM-FT4-OST7	1.54(39.1)	0.41(10.4)	0.17(4.3)	0.75(19.1)
5/16	1/2-20	-AM-FT5-OST8	1.64(41.7)	0.44(11.2)	0.22(5.6)	0.87(22.2)
3/8	9/16-18	-AM-FT6-OST9	1.70(43.2)	0.47(11.9)	0.27(6.9)	0.94(23.8)
1/2	3/4-16	-AM-FT8-OST12	1.95(49.5)	0.47(11.9)	0.37(9.4)	1.13(28.6)

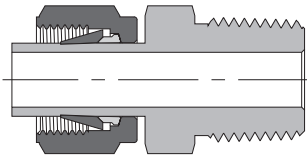


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

## Male Adapters



25 mm and below



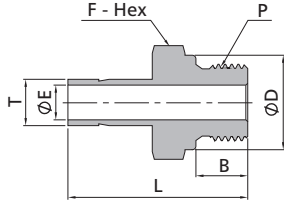
28 mm and above

The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

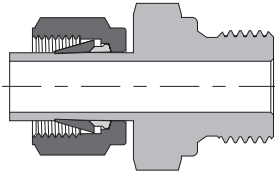
Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
3	1/8	-AM-MT3-NS2	29.4(1.16)	9.7(0.38)	1.8(0.07)	12.0(0.47)
4	1/8	-AM-MT4-NS2	29.4(1.16)	9.7(0.38)	2.4(0.09)	12.0(0.47)
6	1/8	-AM-MT6-NS2	32.8(1.29)	9.7(0.38)	4.1(0.16)	12.0(0.47)
6	1/4	-AM-MT6-NS4	38.1(1.50)	14.2(0.56)	4.1(0.16)	14.0(0.55)
6	3/8	-AM-MT6-NS6	39.2(1.54)	14.2(0.56)	4.1(0.16)	18.0(0.71)
6	1/2	-AM-MT6-NS8	42.1(1.66)	19.1(0.75)	4.1(0.16)	22.0(0.87)
8	1/4	-AM-MT8-NS4	39.1(1.54)	14.2(0.56)	5.6(0.22)	14.0(0.55)
8	3/8	-AM-MT8-NS6	39.9(1.57)	14.2(0.56)	5.6(0.22)	19.0(0.75)
10	1/4	-AM-MT10-NS4	39.9(1.57)	14.2(0.56)	7.1(0.28)	14.0(0.55)
10	3/8	-AM-MT10-NS6	40.6(1.60)	14.2(0.56)	7.1(0.28)	18.0(0.71)
10	1/2	-AM-MT10-NS8	46.2(1.82)	19.1(0.75)	7.1(0.28)	22.0(0.87)
12	1/4	-AM-MT12-NS4	46.5(1.83)	14.2(0.56)	7.1(0.28)	14.0(0.55)
12	3/8	-AM-MT12-NS6	46.2(1.82)	14.2(0.56)	8.8(0.35)	18.0(0.71)
12	1/2	-AM-MT12-NS8	52.1(2.05)	19.1(0.75)	8.8(0.35)	22.0(0.87)
16	1/2	-AM-MT16-NS8	50.8(2.00)	19.1(0.75)	11.9(0.47)	22.0(0.87)
16	3/4	-AM-MT16-NS12	51.6(2.03)	19.1(0.75)	12.0(0.47)	27.0(1.06)
18	1/2	-AM-MT18-NS8	50.8(2.00)	19.1(0.75)	11.9(0.47)	27.0(1.06)
18	3/4	-AM-MT18-NS12	51.6(2.03)	19.1(0.75)	14.0(0.55)	27.0(1.06)
20	1/2	-AM-MT20-NS8	53.3(2.1)	19.1(0.75)	11.9(0.47)	22.0(0.87)
20	3/4	-AM-MT20-NS12	53.8(2.12)	19.1(0.75)	15.5(0.61)	27.0(1.06)
25	1	-AM-MT25-NS16	65.9(2.59)	23.9(0.94)	19.8(0.78)	35.0(1.38)
28	1	-AM-MT28-NS16	74.7(2.94)	23.9(0.94)	22.2(0.87)	35.0(1.38)
28	1 1/4	-AM-MT28-NS20	76.2(3.00)	23.9(0.94)	22.5(0.89)	46.0(1.81)
30	1	-AM-MT30-NS16	79.2(3.12)	23.9(0.94)	22.2(0.87)	41.0(1.61)
30	1 1/4	-AM-MT30-NS20	80.0(3.15)	23.9(0.94)	24.3(0.96)	46.0(1.81)
32	1 1/4	-AM-MT32-NS20	81.0(3.19)	23.9(0.94)	26.5(1.04)	46.0(1.81)
38	1 1/2	-AM-MT38-NS24	92.2(3.63)	26.2(1.03)	31.6(1.24)	55.0(2.17)

Metric Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
3	1/8	-AM-MT3-RT2	29.4(1.16)	9.7(0.38)	2.4(0.09)	12.0(0.47)
4	1/8	-AM-MT4-RT2	29.4(1.16)	9.7(0.38)	2.0(0.08)	12.0(0.47)
6	1/8	-AM-MT6-RT2	32.8(1.29)	9.7(0.38)	4.1(0.16)	12.0(0.47)
6	1/4	-AM-MT6-RT4	38.1(1.50)	14.2(0.56)	4.1(0.16)	14.0(0.55)
8	1/4	-AM-MT8-RT4	39.1(1.54)	14.2(0.56)	5.6(0.22)	14.0(0.55)
8	3/8	-AM-MT8-RT6	39.9(1.57)	14.2(0.56)	5.6(0.22)	18.0(0.71)
10	1/4	-AM-MT10-RT4	39.9(1.57)	14.2(0.56)	7.1(0.28)	14.0(0.55)
10	3/8	-AM-MT10-RT6	40.6(1.60)	14.2(0.56)	7.1(0.28)	18.0(0.71)
10	1/2	-AM-MT10-RT8	44.5(1.75)	19.1(0.75)	7.1(0.28)	22.0(0.87)
12	1/4	-AM-MT12-RT4	46.5(1.83)	14.2(0.56)	7.1(0.28)	16.0(0.63)
12	3/8	-AM-MT12-RT6	46.2(1.82)	14.2(0.56)	8.8(0.35)	18.0(0.71)
12	1/2	-AM-MT12-RT8	51.8(2.04)	19.1(0.75)	8.8(0.35)	22.0(0.87)
16	1/2	-AM-MT16-RT8	50.8(2.00)	19.1(0.75)	11.9(0.47)	22.0(0.87)
18	3/4	-AM-MT18-RT12	51.6(2.03)	19.1(0.75)	14.0(0.55)	27.0(1.06)
20	3/4	-AM-MT20-RT12	52.4(2.06)	19.1(0.75)	15.5(0.61)	27.0(1.06)
25	1	-AM-MT25-RT16	65.9(2.59)	23.9(0.94)	19.8(0.78)	35.0(1.38)
28	1	-AM-MT28-RT16	74.7(2.94)	23.9(0.94)	22.2(0.87)	35.0(1.38)
28	1 1/4	-AM-MT28-RT20	76.2(3.00)	23.9(0.94)	22.5(0.89)	46.0(1.81)
30	1 1/4	-AM-MT30-RT20	80.0(3.15)	23.9(0.94)	24.3(0.96)	46.0(1.81)
32	1 1/4	-AM-MT32-RT20	81.0(3.19)	23.9(0.94)	26.5(1.04)	46.0(1.81)
38	1 1/2	-AM-MT38-RT24	92.2(3.63)	26.2(1.03)	31.6(1.24)	55.0(2.17)

Male Adapters

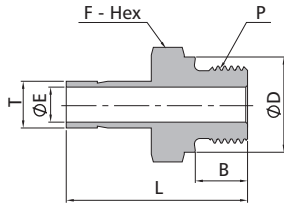


25 mm and below

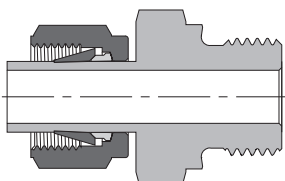


28 mm and above

The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.



25 mm and below



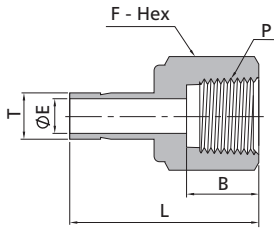
28 mm and above

The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

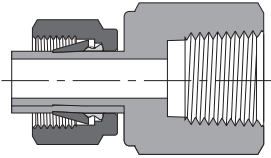
Metric Tube			ISO Parallel Thread (RS)				
T-Tube O.D. (mm)	P-RS Size	Basic Ordering Number	Dimensions, mm (in.)				
			L	B	E	F	D
3	1/8	-AM-MT3-RS2	31.0(1.22)	7.1(0.28)	1.8(0.07)	14.0(0.55)	13.7(0.54)
4	1/8	-AM-MT4-RS2	31.8(1.25)	7.1(0.28)	2.4(0.09)	14.0(0.55)	13.7(0.54)
6	1/8	-AM-MT6-RS2	34.3(1.35)	7.1(0.28)	4.0(0.16)	14.0(0.55)	13.7(0.54)
6	1/4	-AM-MT6-RS4	39.1(1.54)	11.2(0.44)	4.1(0.16)	19.0(0.75)	17.8(0.70)
8	1/4	-AM-MT8-RS4	39.6(1.56)	11.2(0.44)	5.6(0.22)	19.0(0.75)	17.8(0.70)
10	1/4	-AM-MT10-RS4	40.9(1.61)	11.2(0.44)	5.9(0.23)	19.0(0.75)	17.8(0.70)
10	3/8	-AM-MT10-RS6	41.7(1.64)	11.2(0.44)	7.1(0.28)	22.0(0.87)	21.6(0.85)
10	1/2	-AM-MT10-RS8	44.7(1.76)	14.2(0.56)	7.1(0.28)	27.0(1.06)	25.9(1.02)
12	1/4	-AM-MT12-RS4	46.7(1.84)	11.2(0.44)	5.9(0.23)	19.0(0.75)	17.8(0.70)
12	3/8	-AM-MT12-RS6	47.2(1.86)	11.2(0.44)	7.9(0.31)	22.0(0.87)	21.6(0.85)
12	1/2	-AM-MT12-RS8	50.5(1.99)	14.2(0.56)	8.8(0.35)	27.0(1.06)	25.9(1.02)
16	1/2	-AM-MT16-RS8	50.8(2.00)	14.2(0.56)	11.9(0.47)	27.0(1.06)	25.9(1.02)
18	3/4	-AM-MT18-RS12	55.9(2.20)	16.0(0.63)	13.9(0.55)	35.0(1.38)	32.0(1.26)
20	3/4	-AM-MT20-RS12	57.0(2.24)	16.0(0.63)	15.5(0.61)	35.0(1.38)	32.0(1.26)
25	1	-AM-MT25-RS16	65.1(2.56)	18.3(0.72)	19.8(0.78)	41.0(1.61)	38.9(1.53)
28	1	-AM-MT28-RS16	71.9(2.83)	18.3(0.72)	19.8(0.78)	41.0(1.61)	38.9(1.53)
28	1 1/4	-AM-MT28-RS20	77.0(3.03)	19.8(0.78)	22.5(0.89)	50.0(1.97)	49.0(1.93)
30	1 1/4	-AM-MT30-RS20	80.8(3.18)	19.8(0.78)	24.3(0.96)	50.0(1.97)	49.0(1.93)
32	1 1/4	-AM-MT32-RS20	81.8(3.22)	19.8(0.78)	26.5(1.04)	50.0(1.97)	49.0(1.93)
38	1 1/2	-AM-MT38-RS24	94.5(3.72)	20.6(0.81)	31.6(1.24)	55.0(2.17)	54.7(2.15)

Metric Tube			ISO Parallel Thread (RP)				
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimensions, mm (in.)				
			L	B	E	F	D
3	1/8	-AM-MT3-RP2	31.0(1.22)	7.1(0.28)	1.8(0.07)	14.0(0.55)	13.7(0.54)
4	1/8	-AM-MT4-RP2	31.8(1.25)	7.1(0.28)	2.0(0.08)	14.0(0.55)	13.7(0.54)
6	1/8	-AM-MT6-RP2	34.3(1.35)	7.1(0.28)	4.0(0.16)	14.0(0.55)	13.7(0.54)
6	1/4	-AM-MT6-RP4	38.1(1.50)	11.2(0.44)	4.0(0.16)	19.0(0.75)	17.8(0.70)
8	1/4	-AM-MT8-RP4	38.9(1.53)	11.2(0.44)	5.6(0.22)	19.0(0.75)	17.8(0.70)
10	1/4	-AM-MT10-RP4	38.9(1.53)	11.2(0.44)	6.4(0.25)	19.0(0.75)	17.8(0.70)
10	3/8	-AM-MT10-RP6	39.7(1.56)	11.2(0.44)	7.1(0.28)	22.0(0.87)	21.6(0.85)
10	1/2	-AM-MT10-RP8	42.9(1.69)	14.2(0.56)	7.1(0.28)	27.0(1.06)	25.9(1.02)
12	1/4	-AM-MT12-RP4	43.7(1.72)	11.2(0.44)	6.4(0.25)	19.0(0.75)	17.8(0.70)
12	3/8	-AM-MT12-RP6	44.5(1.75)	11.2(0.44)	7.9(0.31)	22.0(0.87)	21.6(0.85)
12	1/2	-AM-MT12-RP8	49.2(1.94)	14.2(0.56)	9.1(0.36)	27.0(1.06)	25.9(1.02)
16	1/2	-AM-MT16-RP8	50.8(2.00)	14.2(0.56)	11.9(0.47)	27.0(1.06)	25.9(1.02)
18	3/4	-AM-MT18-RP12	53.2(2.09)	16.0(0.63)	14.0(0.55)	33.0(1.30)	32.0(1.26)
20	3/4	-AM-MT20-RP12	54.0(2.13)	16.0(0.63)	15.5(0.61)	33.0(1.30)	32.0(1.26)
25	1	-AM-MT25-RP16	65.1(2.56)	18.3(0.72)	19.8(0.78)	41.0(1.61)	38.9(1.53)
28	1	-AM-MT28-RP16	72.7(2.86)	18.3(0.72)	19.8(0.78)	41.0(1.61)	38.9(1.53)
28	1 1/4	-AM-MT28-RP20	77.3(3.04)	19.8(0.78)	22.5(0.89)	50.0(1.97)	49.0(1.93)
30	1 1/4	-AM-MT30-RP20	80.8(3.18)	19.8(0.78)	24.3(0.96)	50.0(1.97)	49.0(1.93)
32	1 1/4	-AM-MT32-RP20	82.1(3.23)	19.8(0.78)	26.5(1.04)	50.0(1.97)	49.0(1.93)
38	1 1/2	-AM-MT38-RP24	94.5(3.72)	20.6(0.81)	31.6(1.24)	55.0(2.17)	54.7(2.15)

## Female Adapters



1" and below



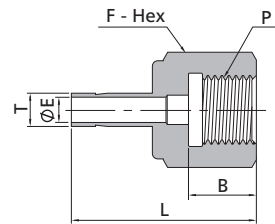
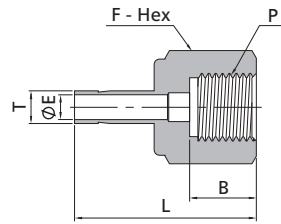
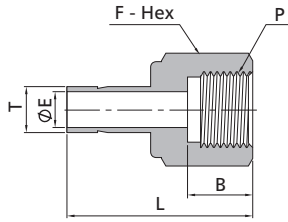
1 1/4" and above

Fractional Tube			NPT Thread			
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/16	1/8	-AF-FT1-NS2	1.07(27.2)	0.41(10.4)	0.03(0.8)	0.56(14.3)
1/8	1/8	-AF-FT2-NS2	1.24(31.5)	0.41(10.4)	0.08(2.0)	0.56(14.3)
1/8	1/4	-AF-FT2-NS4	1.39(35.3)	0.59(15.0)	0.08(2.0)	0.75(19.1)
3/16	1/8	-AF-FT3-NS2	1.25(31.8)	0.41(10.4)	0.11(2.9)	0.56(14.3)
3/16	1/4	-AF-FT3-NS4	1.41(35.8)	0.59(15.0)	0.12(3.0)	0.75(19.1)
1/4	1/8	-AF-FT4-NS2	1.30(33.0)	0.41(10.4)	0.17(4.3)	0.56(14.3)
1/4	1/4	-AF-FT4-NS4	1.46(37.1)	0.59(15.0)	0.17(4.3)	0.75(19.1)
1/4	3/8	-AF-FT4-NS6	1.55(39.4)	0.59(15.0)	0.17(4.3)	0.87(22.2)
1/4	1/2	-AF-FT4-NS8	1.79(45.5)	0.78(19.8)	0.17(4.3)	1.06(27.0)
5/16	1/8	-AF-FT5-NS2	1.34(34.0)	0.41(10.4)	0.22(5.6)	0.56(14.3)
5/16	1/4	-AF-FT5-NS4	1.48(37.6)	0.59(15.0)	0.22(5.6)	0.75(19.1)
5/16	3/8	-AF-FT5-NS6	1.59(40.4)	0.59(15.0)	0.22(5.6)	0.87(22.2)
3/8	1/8	-AF-FT6-NS2	1.35(34.3)	0.41(10.4)	0.27(6.9)	0.56(14.3)
3/8	1/4	-AF-FT6-NS4	1.50(38.1)	0.59(15.0)	0.27(6.9)	0.75(19.1)
3/8	3/8	-AF-FT6-NS6	1.59(40.4)	0.59(15.0)	0.27(6.9)	0.87(22.2)
3/8	1/2	-AF-FT6-NS8	1.84(46.7)	0.78(19.8)	0.27(6.9)	1.06(27.0)
1/2	1/4	-AF-FT8-NS4	1.71(43.4)	0.59(15.0)	0.37(9.4)	0.75(19.1)
1/2	3/8	-AF-FT8-NS6	1.79(45.5)	0.59(15.0)	0.37(9.4)	0.87(22.2)
1/2	1/2	-AF-FT8-NS8	2.04(51.8)	0.78(19.8)	0.37(9.4)	1.06(27.0)
5/8	3/8	-AF-FT10-NS6	1.86(47.2)	0.59(15.0)	0.47(11.9)	0.87(22.2)
5/8	1/2	-AF-FT10-NS8	2.09(53.1)	0.78(19.8)	0.47(11.9)	1.06(27.0)
3/4	1/2	-AF-FT12-NS8	2.08(52.8)	0.78(19.8)	0.58(14.7)	1.06(27.0)
3/4	3/4	-AF-FT12-NS12	2.16(54.9)	0.81(20.6)	0.58(14.7)	1.31(33.3)
3/4	1	-AF-FT12-NS16	2.30(58.4)	1.00(25.4)	0.58(14.7)	1.63(41.3)
7/8	3/4	-AF-FT14-NS12	2.22(56.4)	0.81(20.6)	0.58(14.7)	1.31(33.3)
1	3/4	-AF-FT16-NS12	2.39(60.7)	0.81(20.6)	0.80(20.3)	1.31(33.3)
1	1	-AF-FT16-NS16	2.53(64.3)	1.00(25.4)	0.80(20.3)	1.63(41.3)
1 1/4	1 1/4	-AF-FT20-NS20	3.06(77.7)	1.00(25.4)	1.02(25.9)	2.13(54.0)
1 1/2	1 1/2	-AF-FT24-NS24	3.50(88.9)	1.09(27.7)	1.25(31.8)	2.37(60.3)

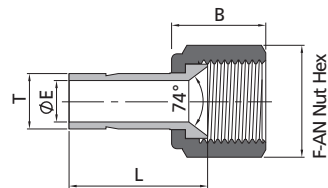
Fractional Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (in.)	P-RT Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/4	1/8	-AF-FT4-RT2	1.30(33.0)	0.41(10.4)	0.17(4.3)	0.56(14.3)
1/4	1/4	-AF-FT4-RT4	1.45(36.8)	0.59(15.0)	0.17(4.3)	0.75(19.1)
3/8	1/4	-AF-FT6-RT4	1.50(38.1)	0.59(15.0)	0.27(6.9)	0.75(19.1)
3/8	3/8	-AF-FT6-RT6	1.59(40.4)	0.59(15.0)	0.27(6.9)	0.87(22.2)
1/2	1/4	-AF-FT8-RT4	1.71(43.4)	0.59(15.0)	0.37(9.4)	0.75(19.1)
1/2	3/8	-AF-FT8-RT6	1.80(45.7)	0.59(15.0)	0.37(9.4)	0.87(22.2)
1/2	1/2	-AF-FT8-RT8	2.05(52.1)	0.78(19.8)	0.37(9.4)	1.06(27.0)

# A-78 6 Series Tube Fittings

## Female Adapters



Adapt to Japanese gauge stud.



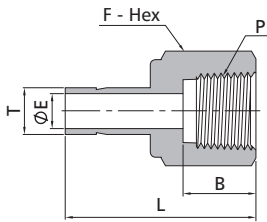
Fractional Tube			ISO Parallel Thread (RP)			
T-Tube O.D. (in.)	P-RP Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/8	1/8	-AF-FT2-RP2	1.17(29.7)	0.40(10.2)	0.08(2.0)	0.56(14.3)
1/4	1/8	-AF-FT4-RP2	1.25(31.8)	0.40(10.2)	0.17(4.3)	0.56(14.3)
1/4	1/4	-AF-FT4-RP4	1.50(38.1)	0.61(15.5)	0.17(4.3)	0.75(19.1)
3/8	1/4	-AF-FT6-RP4	1.55(39.4)	0.61(15.5)	0.27(6.9)	0.75(19.1)
3/8	3/8	-AF-FT6-RP6	1.57(39.9)	0.60(15.2)	0.27(6.9)	0.94(23.8)
1/2	3/8	-AF-FT8-RP6	1.78(45.2)	0.60(15.2)	0.38(9.7)	0.94(23.8)
1/2	1/2	-AF-FT8-RP8	1.95(49.5)	0.73(18.5)	0.38(9.7)	1.06(27.0)

Fractional Tube			ISO Parallel Thread (RG)			
T-Tube O.D. (in.)	P-RG Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/4	1/4	-AF-FT4-RG4	1.39(35.3)	0.51(12.9)	0.17(4.3)	0.75(19.1)
3/8	3/8	-AF-FT6-RG6	1.55(39.4)	0.56(14.2)	0.26(6.6)	0.94(23.8)
1/2	1/2	-AF-FT8-RG8	1.80(45.7)	0.74(18.8)	0.28(7.1)	1.06(27.0)

Fractional Tube			ISO Parallel Thread (RJ)			
T-Tube O.D. (in.)	P-RJ Size	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/4	1/4	-AF-FT4-RJ4	1.39(35.3)	0.51(12.9)	0.17(4.3)	0.75(19.1)
3/8	3/8	-AF-FT6-RJ6	1.55(39.4)	0.62(15.8)	0.26(6.6)	0.94(23.8)
1/2	1/2	-AF-FT8-RJ8	1.94(49.3)	0.74(18.8)	0.28(7.1)	1.06(27.0)

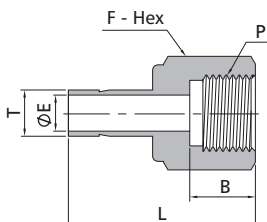
Fractional Tube			AN Thread			
T-Tube O.D. (in.)	AN Tube Flare Size(in.)	Basic Ordering Number	Dimensions, in. (mm)			
			L	B	E	F
1/8	1/8	-AF-FT2-AN2	0.88(22.4)	0.55(14.0)	0.08(2.0)	0.37(9.5)
1/8	1/4	-AF-FT2-AN4	0.88(22.4)	0.62(15.8)	0.16(4.0)	0.56(14.3)
1/4	1/4	-AF-FT4-AN4	0.96(24.4)	0.62(15.8)	0.18(4.6)	0.56(14.3)
3/8	3/8	-AF-FT6-AN6	0.98(24.9)	0.73(18.5)	0.27(6.8)	0.75(19.05)
1/2	1/2	-AF-FT8-AN8	1.42(36.1)	0.85(21.6)	0.37(9.4)	0.87(22.2)
3/4	3/4	-AF-FT12-AN12	1.49(37.8)	1.03(26.2)	0.58(14.7)	1.25(31.8)

## Female Adapters



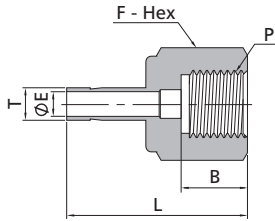
Metric Tube			NPT Thread			
T-Tube O.D. (mm)	P-NPT Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
3	1/8	-AF-MT3-NS2	28.8(1.13)	10.4(0.41)	1.3(0.05)	14.0(0.55)
4	1/8	-AF-MT4-NS2	33.3(1.31)	10.4(0.41)	2.4(0.09)	14.0(0.55)
6	1/8	-AF-MT6-NS2	32.5(1.28)	10.4(0.41)	4.1(0.16)	14.0(0.55)
6	1/4	-AF-MT6-NS4	37.1(1.46)	15.0(0.59)	4.1(0.16)	19.0(0.75)
8	1/8	-AF-MT8-NS2	35.1(1.38)	10.4(0.41)	5.6(0.22)	14.0(0.55)
8	1/4	-AF-MT8-NS4	37.6(1.48)	15.0(0.59)	5.6(0.22)	19.0(0.75)
8	3/8	-AF-MT8-NS6	36.5(1.44)	15.0(0.59)	5.6(0.22)	22.0(0.87)
10	1/4	-AF-MT10-NS4	38.1(1.50)	15.0(0.59)	7.1(0.28)	19.0(0.75)
10	3/8	-AF-MT10-NS6	40.1(1.58)	15.0(0.59)	7.1(0.28)	22.0(0.87)
10	1/2	-AF-MT10-NS8	46.5(1.83)	19.8(0.78)	7.1(0.28)	27.0(1.06)
12	1/4	-AF-MT12-NS4	43.7(1.72)	15.0(0.59)	8.8(0.35)	19.0(0.75)
12	3/8	-AF-MT12-NS6	42.9(1.69)	15.0(0.59)	8.8(0.35)	22.0(0.87)
12	1/2	-AF-MT12-NS8	52.3(2.06)	19.8(0.78)	8.8(0.35)	27.0(1.06)
16	1/2	-AF-MT16-NS8	49.2(1.94)	19.8(0.78)	12.0(0.47)	27.0(1.06)
18	3/4	-AF-MT18-NS12	52.4(2.06)	20.6(0.81)	14.0(0.55)	32.0(1.26)
20	1/2	-AF-MT20-NS8	50.0(1.97)	19.8(0.78)	15.5(0.61)	27.0(1.06)
20	3/4	-AF-MT20-NS12	57.2(2.25)	20.6(0.81)	15.5(0.61)	35.0(1.38)
25	1	-AF-MT25-NS16	66.7(2.63)	25.4(1.00)	19.8(0.78)	41.0(1.61)

Metric Tube			ISO Tapered Thread (RT)			
T-Tube O.D. (mm)	P-RT Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
3	1/8	-AF-MT3-RT2	28.8(1.13)	10.4(0.41)	1.8(0.07)	14.0(0.55)
4	1/8	-AF-MT4-RT2	28.6(1.13)	10.4(0.41)	2.4(0.09)	14.0(0.55)
6	1/8	-AF-MT6-RT2	33.0(1.30)	10.4(0.41)	4.1(0.16)	14.0(0.55)
8	1/4	-AF-MT8-RT4	37.6(1.48)	15.0(0.59)	5.6(0.22)	19.0(0.75)
10	1/4	-AF-MT10-RT4	38.1(1.50)	15.0(0.59)	7.1(0.28)	19.0(0.75)
10	3/8	-AF-MT10-RT6	36.5(1.44)	15.0(0.59)	7.1(0.28)	22.0(0.87)
10	1/2	-AF-MT10-RT8	41.3(1.63)	19.8(0.78)	7.1(0.28)	27.0(1.06)
12	1/4	-AF-MT12-RT4	43.7(1.72)	15.0(0.59)	8.8(0.35)	19.0(0.75)
12	3/8	-AF-MT12-RT6	43.7(1.72)	15.0(0.59)	8.8(0.35)	22.0(0.87)
12	1/2	-AF-MT12-RT8	46.8(1.84)	19.8(0.78)	8.8(0.35)	27.0(1.06)
16	1/2	-AF-MT16-RT8	48.4(1.91)	19.8(0.78)	12.0(0.47)	27.0(1.06)
18	3/4	-AF-MT18-RT12	52.4(2.06)	20.6(0.81)	14.0(0.55)	32.0(1.26)
20	3/4	-AF-MT20-RT12	52.4(2.06)	20.6(0.81)	15.5(0.61)	32.0(1.26)
25	1	-AF-MT25-RT16	66.7(2.63)	25.4(1.00)	19.8(0.78)	41.0(1.61)

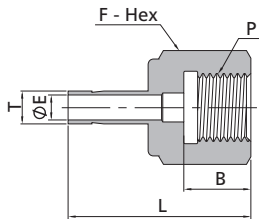


Metric Tube			ISO Parallel Thread (RP)			
T-Tube O.D. (mm)	P-RP Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
6	1/8	-AF-MT6-RP2	32.0(1.26)	10.2(0.40)	4.1(0.16)	14.0(0.55)
6	1/4	-AF-MT6-RP4	37.8(1.49)	15.2(0.60)	4.1(0.16)	19.0(0.75)
12	1/2	-AF-MT12-RP8	49.8(1.96)	18.8(0.74)	8.8(0.35)	27.0(1.06)

Female Adapters



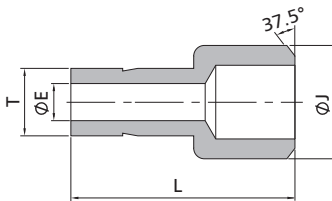
Metric Tube			ISO Parallel Thread (RG)			
T-Tube O.D. (mm)	P-RG Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
3	1/8	-AF-MT3-RG2	28.6(1.13)	9.8(0.39)	1.9(0.07)	14.0(0.55)
3	1/4	-AF-MT3-RG4	33.5(1.32)	12.9(0.50)	1.9(0.07)	19.0(0.75)
4	1/8	-AF-MT4-RG2	29.4(1.16)	9.8(0.39)	2.4(0.09)	14.0(0.55)
6	1/8	-AF-MT6-RG2	29.1(1.15)	9.8(0.39)	4.1(0.16)	14.0(0.55)
6	1/4	-AF-MT6-RG4	35.3(1.39)	12.9(0.50)	4.1(0.16)	19.0(0.75)
6	3/8	-AF-MT6-RG6	38.4(1.51)	14.2(0.56)	4.1(0.16)	24.0(0.94)
6	1/2	-AF-MT6-RG8	42.9(1.69)	18.8(0.74)	4.1(0.16)	27.0(1.06)
8	1/4	-AF-MT8-RG4	33.0(1.30)	12.9(0.50)	5.5(0.22)	19.0(0.75)
8	3/8	-AF-MT8-RG6	38.9(1.53)	14.2(0.56)	5.6(0.22)	24.0(0.94)
8	1/2	-AF-MT8-RG8	43.7(1.72)	18.8(0.74)	5.6(0.22)	27.0(1.06)
10	1/4	-AF-MT10-RG4	34.5(1.36)	12.9(0.50)	5.5(0.22)	19.0(0.75)
10	3/8	-AF-MT10-RG6	36.1(1.42)	14.2(0.56)	6.5(0.26)	24.0(0.94)
10	1/2	-AF-MT10-RG8	41.1(1.62)	18.8(0.74)	7.1(0.28)	27.0(1.06)
12	1/4	-AF-MT12-RG4	40.1(1.58)	12.9(0.50)	5.5(0.22)	19.0(0.75)
12	3/8	-AF-MT12-RG6	44.7(1.76)	14.2(0.56)	6.5(0.26)	24.0(0.94)
12	1/2	-AF-MT12-RG8	48.8(1.92)	18.8(0.74)	7.0(0.28)	27.0(1.06)
16	1/2	-AF-MT16-RG8	49.0(1.93)	18.8(0.74)	7.0(0.28)	27.0(1.06)
18	1/2	-AF-MT18-RG8	49.3(1.94)	18.8(0.74)	7.0(0.28)	27.0(1.06)



Adapt to Japanese gauge stud.

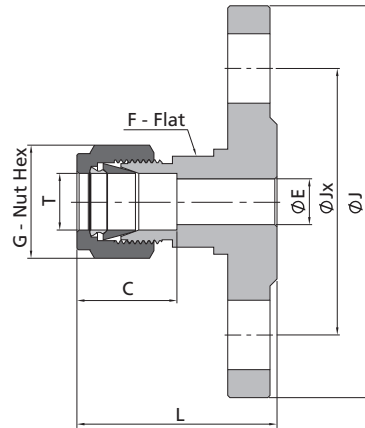
Metric Tube			ISO Parallel Thread (RJ)			
T-Tube O.D. (mm)	P-RJ Size	Basic Ordering Number	Dimensions, mm (in.)			
			L	B	E	F
6	1/4	-AF-MT6-RJ4	35.3(1.39)	12.9(0.50)	4.1(0.16)	19.0(0.75)
6	3/8	-AF-MT6-RJ6	38.6(1.52)	15.8(0.62)	4.1(0.16)	24.0(0.94)
6	1/2	-AF-MT6-RJ8	42.9(1.69)	18.8(0.74)	4.1(0.16)	27.0(1.06)
8	1/4	-AF-MT8-RJ4	33.0(1.30)	12.9(0.50)	5.5(0.22)	19.0(0.75)
8	3/8	-AF-MT8-RJ6	39.4(1.55)	15.8(0.62)	5.6(0.22)	24.0(0.94)
8	1/2	-AF-MT8-RJ8	43.7(1.72)	18.8(0.74)	5.6(0.22)	27.0(1.06)
10	1/4	-AF-MT10-RJ4	34.5(1.36)	12.9(0.50)	5.5(0.22)	19.0(0.75)
10	3/8	-AF-MT10-RJ6	36.1(1.42)	15.8(0.62)	6.5(0.26)	24.0(0.94)
10	1/2	-AF-MT10-RJ8	41.1(1.62)	18.8(0.74)	7.1(0.28)	27.0(1.06)
12	1/4	-AF-MT12-RJ4	40.1(1.58)	12.9(0.50)	5.5(0.22)	19.0(0.75)
12	3/8	-AF-MT12-RJ6	44.7(1.76)	15.8(0.62)	6.5(0.26)	24.0(0.94)
12	1/2	-AF-MT12-RJ8	48.8(1.92)	18.8(0.74)	7.0(0.28)	27.0(1.06)

Weld Adapters



Fractional Tube			Pipe Weld		
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimensions, in. (mm)		
			L	J	E
1/4	1/4	-AW-FT4-PB4	1.14(29.0)	0.54(13.7)	0.17(4.3)
3/8	1/2	-AW-FT6-PB8	1.46(37.1)	0.84(21.3)	0.27(6.9)
1/2	1/2	-AW-FT8-PB8	1.66(42.2)	0.84(21.3)	0.37(9.4)
1/2	3/4	-AW-FT8-PB12	1.68(42.7)	1.05(26.7)	0.37(9.4)
3/4	3/4	-AW-FT12-PB12	1.87(47.5)	1.05(26.7)	0.58(14.7)

## Flange Adapters



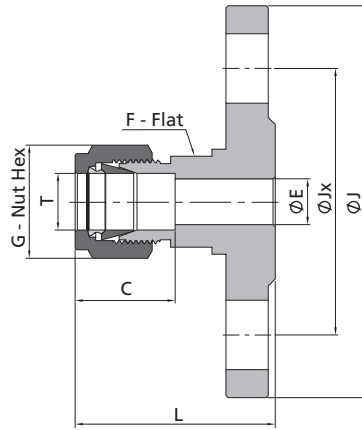
- ⊙ Integrally forged body.
- ⊙ ASME flanges comply with ASME B16.5.
- ⊙ DIN flanges comply with DIN 2501/2526.
- ⊙ GB flanges comply with GB/T 9123.1.
- ⊙ EN flanges comply with EN 1092-1.
- ⊙ JIS flanges comply with JIS B 2220.

ASME Flanges				Dimensions, in. (mm)							
T-Tube O.D. (in.)	ASME Flange NPS	Class	Basic Ordering Number Raised Face Flange	L	J	Jx	E	C	G	F	
1/4	1/2	150	-FA-FL4-F8-150	1.61(40.9)	3.50(88.9)	2.38(60.5)	0.19(4.8)	0.60(15.2)	0.56(14.3)	0.81(20.6)	
3/8	1/2	300	-FA-FL6-F8-300	1.79(45.5)	3.75(95.3)	2.62(66.5)	0.28(7.1)	0.66(16.8)	0.69(17.5)	0.81(20.6)	
1/2	1/2	150	-FA-FL8-F8-150	1.78(45.2)	3.50(88.9)	2.38(60.5)	0.41(10.4)	0.90(22.9)	0.87(22.2)	0.81(20.6)	
1/2	1	150	-FA-FL8-F16-150	1.90(48.3)	4.25(108.0)	3.12(79.2)	0.41(10.4)	0.90(22.9)	0.87(22.2)	0.81(20.6)	
1/2	2	150	-FA-FL8-F32-150	2.09(53.1)	6.00(152.4)	4.76(121.0)	0.41(10.4)	0.90(22.9)	0.87(22.2)	0.81(20.6)	
3/4	1	150	-FA-FL12-F16-150	1.98(50.3)	4.25(108.0)	3.12(79.2)	0.62(15.7)	0.96(24.4)	1.13(28.6)	1.25(31.8)	
1	1	150	-FA-FL16-F16-150	2.38(60.5)	4.25(108.0)	3.12(79.2)	0.88(22.4)	1.23(31.2)	1.50(38.1)	1.37(34.9)	

DIN/GB Flanges, Pressure Class PN 40				Dimensions, mm (in.)							
T-Tube O.D. (mm)	ANSI Flange Size DN		Basic Ordering Number Raised Face Flange	L	J	Jx	E	C	G	F	
6	25		-FA-ML6-F25-40B1	47.5(1.87)	115.0(4.53)	85.0(3.35)	4.8(0.19)	15.3(0.60)	14.0(0.55)	20.0(0.79)	
12	15		-FA-ML12-F15-40B1	48.5(1.91)	95.0(3.74)	65.0(2.56)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)	
12	25		-FA-ML12-F25-40B1	50.5(1.99)	115.0(4.53)	85.0(3.35)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)	
12	50		-FA-ML12-F50-40B1	55.3(2.18)	165.0(6.50)	125.0(4.92)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)	
18	15		-FA-ML18-F15-40B1	51.8(2.04)	95.0(3.74)	65.0(2.56)	15.1(0.59)	24.4(0.96)	30.0(1.18)	32.0(1.26)	
18	25		-FA-ML18-F25-40B1	53.8(2.12)	115.0(4.53)	85.0(3.35)	15.1(0.59)	24.4(0.96)	30.0(1.18)	32.0(1.26)	
25	25		-FA-ML25-F25-40B1	64.0(2.52)	115.0(4.53)	85.0(3.35)	21.8(0.86)	31.3(1.23)	38.0(1.50)	35.0(1.38)	



Flange Adapters

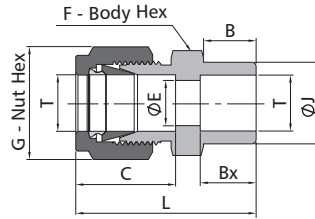


- ⊙ Integrally forged body.
- ⊙ ASME flanges comply with ASME B16.5.
- ⊙ DIN flanges comply with DIN 2501/2526.
- ⊙ GB flanges comply with GB/T 9123.1.
- ⊙ EN flanges comply with EN 1092-1.
- ⊙ JIS flanges comply with JIS B 2220.

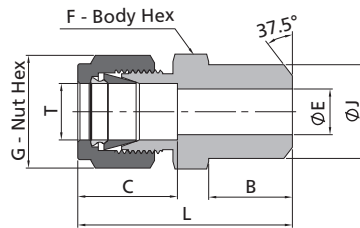
EN Flanges, Pressure Class PN 40									
T-Tube O.D. (mm)	EN Flange Size DN	Basic Ordering Number Raised Face Flange	Dimensions, mm (in.)						
			L	J	Jx	E	C	G	F
6	25	-FA-ML6-F25E-40B1	47.5(1.87)	115.0(4.53)	85.0(3.35)	4.8(0.19)	15.3(0.60)	14.0(0.55)	20.0(0.79)
12	15	-FA-ML12-F15E-40B1	48.5(1.91)	95.0(3.74)	65.0(2.56)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)
12	25	-FA-ML12-F25E-40B1	50.5(1.99)	115.0(4.53)	85.0(3.35)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)
12	50	-FA-ML12-F50E-40B1	55.3(2.18)	165.0(6.50)	125.0(4.92)	9.5(0.37)	22.8(0.90)	22.0(0.87)	20.0(0.79)
18	15	-FA-ML18-F15E-40B1	51.8(2.04)	95.0(3.74)	65.0(2.56)	15.1(0.59)	24.4(0.96)	30.0(1.18)	32.0(1.26)
18	25	-FA-ML18-F25E-40B1	53.8(2.12)	115.0(4.53)	85.0(3.35)	15.1(0.59)	24.4(0.96)	30.0(1.18)	32.0(1.26)
25	25	-FA-ML25-F25E-40B1	64.0(2.52)	115.0(4.53)	85.0(3.35)	21.8(0.86)	31.3(1.23)	38.0(1.50)	35.0(1.38)

JIS Flanges, Pressure Class 10K									
T-Tube O.D.	JIS Flange Size DN	Basic Ordering Number Raised Face Flange	Dimensions, in. (mm)						
			L	J	Jx	E	C	G	F
1/4"	15	-FA-FL4-F15-10KRF	1.66(42.2)	3.74(95.0)	2.76(70.1)	0.19(4.8)	0.60(15.2)	0.56(14.3)	0.81(20.6)
3/8"	15	-FA-FL6-F15-10KRF	1.72(43.7)	3.74(95.0)	2.76(70.1)	0.28(7.1)	0.66(16.8)	0.69(17.5)	0.81(20.6)
1/2"	15	-FA-FL8-F15-10KRF	1.83(46.5)	3.74(95.0)	2.76(70.1)	0.41(10.4)	0.90(22.9)	0.87(22.2)	0.81(20.6)
3/4"	15	-FA-FL12-F15-10KRF	1.91(48.5)	3.74(95.0)	2.76(70.1)	0.62(15.7)	0.96(24.4)	1.13(28.6)	1.25(31.8)
1"	25	-FA-FL16-F25-10KRF	2.40(61.0)	4.92(125.0)	3.54(89.9)	0.88(22.4)	1.23(31.2)	1.50(38.1)	1.37(34.9)
12mm	15	-FA-ML12-F15-10KRF	1.83(46.5)	3.74(95.0)	2.76(70.0)	0.37(9.5)	0.90(22.8)	0.87(22.0)	0.79(20.0)
18mm	15	-FA-ML18-F15-10KRF	1.91(48.5)	3.74(95.0)	2.76(70.0)	0.59(15.1)	0.96(24.4)	1.18(30.0)	1.26(32.0)
25mm	25	-FA-ML25-F25-10KRF	2.40(61.0)	4.92(125.0)	3.54(90.0)	0.86(21.8)	1.23(31.3)	1.50(38.0)	1.38(35.0)

Weld Connectors



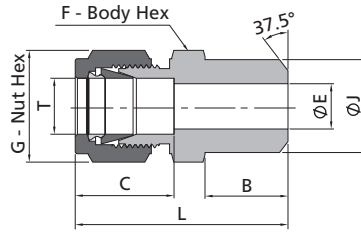
Fractional Tube			Tube Socket Weld						
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)							
		L	C	G	F	B	E	Bx	J
1/8	-CW-FL2-TS2	1.14(29.0)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.34(8.6)	0.09(2.3)	0.10(2.5)	0.31(7.9)
3/16	-CW-FL3-TS3	1.17(29.7)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.37(9.5)	0.13(3.3)	0.19(4.8)	0.42(10.7)
1/4	-CW-FL4-TS4	1.32(33.5)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.41(10.4)	0.19(4.8)	0.28(7.1)	0.48(12.2)
3/8	-CW-FL6-TS6	1.48(37.6)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.47(11.9)	0.28(7.1)	0.31(7.9)	0.62(15.7)
1/2	-CW-FL8-TS8	1.62(41.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.47(11.9)	0.41(10.4)	0.50(12.7)	0.75(19.1)
5/8	-CW-FL10-TS10	1.65(41.9)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.47(11.9)	0.50(12.7)	0.41(10.4)	0.92(23.4)
3/4	-CW-FL12-TS12	1.71(43.4)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.47(11.9)	0.62(15.7)	0.44(11.1)	1.05(26.7)
1	-CW-FL16-TS16	2.07(52.6)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.56(14.2)	0.88(22.4)	0.62(15.7)	1.36(34.5)



The E dimension refers to the smallest nominal orifice. It might be larger at welding end.

Fractional Tube			Pipe Butt Weld						
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimensions, in. (mm)						
			L	C	G	F	E	B	J
1/8	1/8	-CW-FL2-PB2	1.20(30.5)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.09(2.3)	0.38(9.7)	0.41(10.3)
3/16	1/8	-CW-FL3-PB2	1.23(31.2)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.12(3.0)	0.38(9.7)	0.41(10.3)
1/4	1/8	-CW-FL4-PB2	1.29(32.8)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.19(4.8)	0.38(9.7)	0.41(10.3)
1/4	1/4	-CW-FL4-PB4	1.49(37.8)	0.60(15.2)	0.56(14.3)	0.56(14.3)	0.19(4.8)	0.56(14.2)	0.54(13.7)
5/16	1/8	-CW-FL5-PB2	1.34(34.0)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.21(5.3)	0.38(9.7)	0.41(10.3)
5/16	1/4	-CW-FL5-PB4	1.52(38.6)	0.64(16.3)	0.63(15.9)	0.56(14.3)	0.25(6.4)	0.56(14.2)	0.54(13.7)
3/8	1/4	-CW-FL6-PB4	1.57(39.9)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.28(7.1)	0.56(14.2)	0.54(13.7)
3/8	3/8	-CW-FL6-PB6	1.57(39.9)	0.66(16.8)	0.69(17.5)	0.69(17.5)	0.28(7.1)	0.56(14.2)	0.67(17.1)
3/8	1/2	-CW-FL6-PB8	1.82(46.2)	0.66(16.8)	0.69(17.5)	0.87(22.2)	0.28(7.1)	0.75(19.1)	0.84(21.3)
3/8	3/4	-CW-FL6-PB12	1.88(47.8)	0.66(16.8)	0.69(17.5)	1.06(27.0)	0.28(7.1)	0.75(19.1)	1.05(26.7)
1/2	3/8	-CW-FL8-PB6	1.71(43.4)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.41(10.4)	0.56(14.2)	0.67(17.1)
1/2	1/2	-CW-FL8-PB8	1.93(49.0)	0.90(22.9)	0.87(22.2)	0.87(22.2)	0.41(10.4)	0.75(19.1)	0.84(21.3)
1/2	3/4	-CW-FL8-PB12	1.99(50.5)	0.90(22.9)	0.87(22.2)	1.06(27.0)	0.41(10.4)	0.75(19.1)	1.05(26.7)
5/8	1/2	-CW-FL10-PB8	1.93(49.0)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.50(12.7)	0.75(19.1)	0.84(21.3)
3/4	1/2	-CW-FL12-PB8	1.99(50.5)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.55(14.0)	0.75(19.1)	0.84(21.3)
3/4	3/4	-CW-FL12-PB12	1.99(50.5)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.62(15.7)	0.75(19.1)	1.05(26.7)
1	1	-CW-FL16-PB16	2.45(62.2)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.88(22.4)	0.94(23.9)	1.31(33.4)
1 1/4	1 1/4	-CW-FL20-PB20	3.04(77.2)	1.62(41.1)	1.87(47.6)	1.75(44.5)	1.09(27.7)	0.94(23.9)	1.66(42.2)
1 1/2	1 1/2	-CW-FL24-PB24	3.50(88.9)	1.97(50.0)	2.25(57.2)	2.13(54.0)	1.34(34.0)	1.03(26.2)	1.90(48.3)

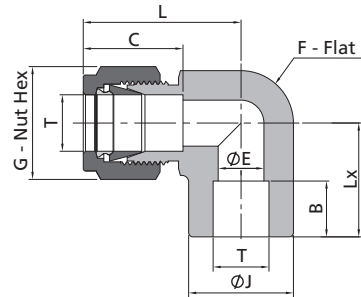
Weld Connectors



The E dimension refers to the smallest nominal orifice. It might be larger at welding end.

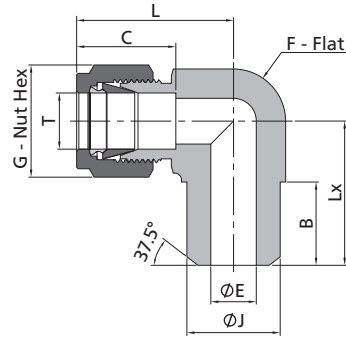
Metric Tube			Pipe Butt Weld						
T-Tube O.D. (mm)	Pipe Weld Size	Basic Ordering Number	Dimensions, mm (in.)						
			L	C	G	F	E	B	J
3	1/8	-CW-ML3-PB2	30.5(1.20)	12.9(0.51)	12.0(0.47)	12.0(0.47)	2.4(0.09)	9.7(0.38)	10.3(0.41)
4	1/8	-CW-ML4-PB2	31.5(1.24)	13.7(0.54)	12.0(0.47)	12.0(0.47)	2.4(0.09)	9.7(0.38)	10.3(0.41)
6	1/8	-CW-ML6-PB2	32.8(1.29)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)	9.7(0.38)	10.3(0.41)
6	1/4	-CW-ML6-PB4	37.9(1.49)	15.3(0.60)	14.0(0.55)	14.0(0.55)	4.8(0.19)	14.2(0.56)	13.7(0.54)
8	1/8	-CW-ML8-PB2	34.2(1.35)	16.2(0.64)	16.0(0.63)	15.0(0.59)	5.4(0.21)	9.7(0.38)	10.3(0.41)
8	1/4	-CW-ML8-PB4	38.7(1.52)	16.2(0.64)	16.0(0.63)	15.0(0.59)	6.4(0.25)	14.2(0.56)	13.7(0.54)
8	1/2	-CW-ML8-PB8	45.6(1.80)	16.2(0.64)	16.0(0.63)	22.0(0.87)	6.4(0.25)	19.1(0.75)	21.3(0.84)
10	1/4	-CW-ML10-PB4	40.9(1.60)	17.2(0.70)	19.0(0.75)	18.0(0.71)	7.5(0.30)	14.2(0.56)	13.7(0.54)
10	3/8	-CW-ML10-PB6	40.9(1.60)	17.2(0.70)	19.0(0.75)	18.0(0.71)	7.9(0.31)	14.2(0.56)	17.1(0.67)
10	1/2	-CW-ML10-PB8	46.5(1.80)	17.2(0.70)	19.0(0.75)	22.0(0.87)	7.9(0.31)	19.1(0.75)	21.3(0.84)
12	1/4	-CW-ML12-PB4	43.4(1.70)	22.8(0.90)	22.0(0.87)	22.0(0.87)	7.5(0.30)	14.2(0.56)	13.7(0.54)
12	3/8	-CW-ML12-PB6	43.4(1.70)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)	14.2(0.56)	17.1(0.67)
12	1/2	-CW-ML12-PB8	49.0(1.90)	22.8(0.90)	22.0(0.87)	22.0(0.87)	9.5(0.37)	19.1(0.75)	21.3(0.84)
14	3/8	-CW-ML14-PB6	44.1(1.70)	24.4(0.96)	25.0(0.98)	24.0(0.94)	10.7(0.42)	14.2(0.56)	17.1(0.67)
15	1/2	-CW-ML15-PB8	49.0(1.90)	24.4(0.96)	25.0(0.98)	24.0(0.94)	11.9(0.47)	19.1(0.75)	21.3(0.84)
16	1/2	-CW-ML16-PB8	49.0(1.90)	24.4(0.96)	25.0(0.98)	24.0(0.94)	12.7(0.50)	19.1(0.75)	21.3(0.84)
18	1/2	-CW-ML18-PB8	50.5(2.00)	24.4(0.96)	30.0(1.18)	27.0(1.06)	13.9(0.55)	19.1(0.75)	21.3(0.84)
30	1 1/4	-CW-ML30-PB20	77.2(3.00)	39.6(1.60)	50.0(1.97)	46.0(1.81)	26.2(1.03)	23.9(0.94)	42.2(1.66)
32	1 1/4	-CW-ML32-PB20	79.6(3.10)	42.0(1.70)	50.0(1.97)	46.0(1.81)	28.6(1.13)	23.9(0.94)	42.2(1.66)
38	1 1/2	-CW-ML38-PB24	91.6(3.60)	49.4(1.90)	60.0(2.36)	55.0(2.17)	33.7(1.33)	26.2(1.03)	48.3(1.9)

Weld Elbows



Fractional Tube		Tube Socket Weld							
T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)							
		L	C	G	F	B	E	Lx	J
1/8	-LW-FL2-TS2	0.66(16.8)	0.50(12.7)	0.44(11.1)	0.37(9.5)	0.10(2.5)	0.09(2.3)	0.63(16.0)	0.38(9.7)
3/16	-LW-FL3-TS3	0.72(18.3)	0.54(13.7)	0.50(12.7)	0.44(11.1)	0.19(4.8)	0.13(3.3)	0.69(17.5)	0.44(11.2)
1/4	-LW-FL4-TS4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.28(7.1)	0.19(4.8)	0.77(19.6)	0.50(12.7)
3/8	-LW-FL6-TS6	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.31(7.9)	0.28(7.1)	0.91(23.1)	0.62(15.7)
1/2	-LW-FL8-TS8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.38(9.7)	0.41(10.4)	1.02(25.9)	0.81(20.6)
5/8	-LW-FL10-TS10	1.16(29.5)	0.96(24.4)	1.00(25.4)	1.06(27.0)	0.41(10.4)	0.50(12.7)	1.16(29.5)	0.94(23.9)
3/4	-LW-FL12-TS12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.44(11.2)	0.62(15.7)	1.17(29.7)	1.06(26.9)
1	-LW-FL16-TS16	1.93(49.0)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.62(15.7)	0.88(22.4)	1.45(36.8)	1.38(35.1)

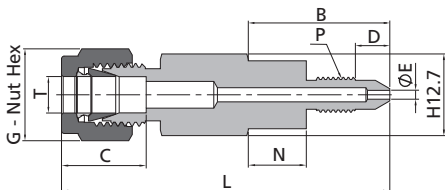
Weld Elbows



The E dimension refers to the smallest nominal orifice. It might be larger at welding end.

Fractional Tube			Pipe Butt Weld								
T-Tube O.D. (in.)	Pipe Weld Size	Basic Ordering Number	Dimensions, in. (mm)								
			L	C	G	F	B	E	Lx	J	
1/8	1/8	-LW-FL2-PB2	0.92(23.4)	0.50(12.7)	0.44(11.1)	0.44(11.1)	0.38(9.7)	0.09(2.3)	0.72(18.3)	0.41(10.3)	
3/16	1/8	-LW-FL3-PB2	1.01(25.7)	0.54(13.7)	0.50(12.7)	0.50(12.7)	0.38(9.7)	0.12(3.0)	0.74(18.8)	0.41(10.3)	
1/4	1/8	-LW-FL4-PB2	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.38(9.7)	0.19(4.8)	0.74(18.8)	0.41(10.3)	
1/4	1/4	-LW-FL4-PB4	1.06(26.9)	0.60(15.2)	0.56(14.3)	0.50(12.7)	0.56(14.2)	0.19(4.8)	0.92(23.4)	0.54(13.7)	
3/8	1/4	-LW-FL6-PB4	1.20(30.5)	0.66(16.8)	0.69(17.5)	0.63(15.9)	0.56(14.2)	0.28(7.1)	1.00(25.4)	0.54(13.7)	
1/2	3/8	-LW-FL8-PB6	1.37(34.8)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.56(14.2)	0.41(10.4)	1.13(28.8)	0.67(17.1)	
1/2	1/2	-LW-FL8-PB8	1.42(36.1)	0.90(22.9)	0.87(22.2)	0.81(20.6)	0.75(19.1)	0.41(10.4)	1.30(33.0)	0.84(21.3)	
5/8	1/2	-LW-FL10-PB8	1.43(36.3)	0.96(24.4)	1.00(25.4)	0.94(23.8)	0.75(19.1)	0.50(12.7)	1.38(35.1)	0.84(21.3)	
3/4	3/4	-LW-FL12-PB12	1.57(39.9)	0.96(24.4)	1.13(28.6)	1.06(27.0)	0.75(19.1)	0.62(15.7)	1.45(36.8)	1.05(26.7)	
1	3/4	-LW-FL16-PB12	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.75(19.1)	0.74(18.8)	1.65(41.9)	1.05(26.7)	
1	1	-LW-FL16-PB16	1.94(49.3)	1.23(31.2)	1.50(38.1)	1.37(34.9)	0.94(23.9)	0.88(22.4)	1.84(46.7)	1.31(33.4)	

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	Dimensions, in. (mm)						
			L	B	C	D	E	G	N
1/4	1/4-28	-FC-FL4-1428	1.69(42.9)	0.78(19.8)	0.60(15.2)	0.43(10.9)	0.06(1.5)	0.56(14.3)	—
1/4	5/16-24	-FC-FL4-51624	2.32(58.9)	1.41(35.8)	0.60(15.2)	0.40(10.2)	0.06(1.5)	0.56(14.3)	0.41(10.4)

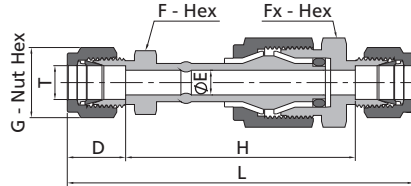
Dielectric Fittings

Materials

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

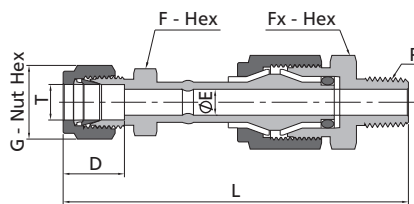
Technical Data

- ⊙ Electrical Resistance of Insulators at 70°F (20°C):  $10 \times 10^5 \Omega$  at 10 V
- ⊙ 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		Dimensions, in. (mm)						
T-Tube O.D. (in.)	Basic Ordering Number	L	D	G	H	E	F	Fx
1/4	-DF-FL4	3.77(95.7)	0.60(15.2)	0.56(14.3)	2.57(65.3)	0.19(4.8)	0.50(12.7)	0.81(20.6)
3/8	-DF-FL6	3.92(99.6)	0.66(16.8)	0.69(17.5)	2.59(65.8)	0.28(7.1)	0.63(15.9)	0.81(20.6)
1/2	-DF-FL8	4.17(106.0)	0.90(22.9)	0.87(22.2)	2.37(60.2)	0.28(7.1)	0.81(20.6)	0.81(20.6)

Metric Tube		Dimensions, mm (in.)						
T-Tube O.D. (mm)	Basic Ordering Number	L	D	G	H	E	F	Fx
12	-DF-ML12	107.0(4.21)	22.8(0.90)	22.0(0.87)	61.7(2.43)	7.1(0.28)	22.0(0.87)	22.0(0.87)

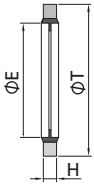


The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end.

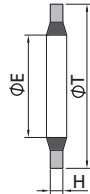
Fractional Tube			NPT Thread					
T-Tube O.D. (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					
			L	D	G	E	F	Fx
3/8	1/4	-DF-FL6-NS4	3.73(94.7)	0.66(16.8)	0.69(17.5)	0.28(7.1)	0.63(15.9)	0.87(22.2)

## RS, RSD Gaskets

### RS



### RSD



The RS and RSD gaskets provide 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	Dimensions, in. (mm)		
		T	E	H
1/8	-RS-2	0.63(16.0)	0.41(10.4)	0.08(2.0)
1/4	-RS-4	0.81(20.6)	0.54(13.7)	
3/8	-RS-6	0.94(23.9)	0.68(17.3)	
1/2	-RS-8	1.13(28.7)	0.85(21.6)	0.10(2.5)
3/4	-RS-12	1.38(35.1)	1.06(26.9)	
1	-RS-16	1.69(42.9)	1.33(33.8)	
1/8	-RSD-2	0.58(14.7)	0.47(12)	0.05(1.25)
1/4	-RSD-4	0.74(18.7)	0.62(15.75)	
3/8	-RSD-6	0.89(22.7)	0.76(19.25)	
1/2	-RSD-8	1.05(26.7)	0.93(23.55)	
3/4	-RSD-12	1.28(32.5)	1.15(29.2)	
1	-RSD-16	1.56(39.5)	1.42(36.1)	0.08(2)

## RS-M Gaskets

Metric Thread Size	Basic Ordering Number	Dimensions, mm (in.)		
		T	E	H
M8 x 1	-RS-M8	13.0(0.51)	8.7(0.34)	1.0(0.04)
M10 x 1	-RS-M10	16.0(0.63)	10.7(0.42)	1.5(0.06)
M12 x 1.5	-RS-M12	18.0(0.63)	12.7(0.42)	
M14 x 1.5	-RS-M14	22.0(0.71)	14.7(0.50)	
M16 x 1.5	-RS-M16	24.0(0.87)	16.7(0.66)	
M18 x 1.5	-RS-M18	26.0(0.94)	18.7(0.74)	
M20 x 1.5	-RS-M20	28.0(1.02)	20.7(0.81)	2.0(0.08)
M22 x 1.5	-RS-M22	30.0(1.10)	22.7(0.89)	
M24 x 1.5	-RS-M24	32.0(1.20)	24.7(1.00)	
M27 x 2	-RS-M27	36.0(1.30)	27.2(1.10)	
M30 x 2	-RS-M30	39.0(1.40)	30.7(1.20)	
M33 x 2	-RS-M33	42.0(1.50)	33.7(1.30)	2.5(0.10)
M36 x 2	-RS-M36	48.0(1.70)	37.0(1.50)	
M39 x 2	-RS-M39	51.0(1.90)	40.0(1.60)	
M42 x 2	-RS-M42	53.0(2.00)	42.7(1.70)	
M45 x 2	-RS-M45	57.0(2.10)	46.0(1.80)	
M48 x 2	-RS-M48	59.0(2.20)	48.7(1.90)	3.0(0.12)

## 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:

1. 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.
  2. A RSD gasket with an FKM inner ring bonded to stainless steel outer ring provides a seal with 1/4 male ISO parallel thread, the complete ordering number is SSF-RSD-4.
- The RS and RSD gaskets 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	Dimensions, in. (mm)		
		T	E	H
1/8	-RP-2	0.59(15.0)	0.39(9.9)	0.04(1.0)
1/4	-RP-4	0.75(19.1)	0.52(13.2)	0.06(1.5)
3/8	-RP-6	0.91(23.1)	0.66(16.8)	
1/2	-RP-8	1.06(26.9)	0.83(21.1)	
3/4	-RP-12	1.30(33.0)	1.05(26.7)	0.08(2.0)
1	-RP-16	1.58(40.1)	1.31(33.2)	

## RP-M Gaskets

Metric Thread Size	Basic Ordering Number	Dimensions, mm (in.)		
		T	E	H
M8 x 1	-RP-M8	13.2(0.52)	8.2(0.32)	1.5(0.06)
M10 x 1	-RP-M10	15.2(0.60)	10.2(0.40)	
M12 x 1.5	-RP-M12	18.2(0.60)	12.2(0.40)	
M14 x 1.5	-RP-M14	20.2(0.72)	14.2(0.48)	
M16 x 1.5	-RP-M16	22.2(0.80)	16.2(0.64)	
M18 x 1.5	-RP-M18	24.2(0.87)	18.2(0.72)	2.0(0.08)
M20 x 1.5	-RP-M20	26.2(0.95)	20.2(0.80)	
M22 x 1.5	-RP-M22	28.2(1.03)	22.2(0.87)	
M24 x 1.5	-RP-M24	30.2(1.10)	24.2(1.00)	
M27 x 2	-RP-M27	33.3(1.20)	27.2(1.10)	
M30 x 2	-RP-M30	37.3(1.30)	30.2(1.20)	2.5(0.10)
M33 x 2	-RP-M33	40.3(1.50)	33.2(1.30)	
M36 x 2	-RP-M36	43.3(1.60)	36.2(1.40)	
M39 x 2	-RP-M39	47.3(1.70)	39.2(1.50)	
M42 x 2	-RP-M42	50.3(1.90)	42.2(1.70)	
M45 x 2	-RP-M45	53.3(2.00)	45.2(1.80)	3.0(0.12)
M48 x 2	-RP-M48	56.3(2.10)	48.2(1.90)	

### RG Gaskets

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

ISO Parallel Thread Size	Basic Ordering Number	Dimensions, in. (mm)		
		T	E	H
1/4	-RG-4	0.42(10.7)	0.30(7.6)	0.07(1.8)
3/8	-RG-6	0.56(14.2)	0.34(8.6)	0.09(2.3)
1/2	-RG-8	0.70(17.8)	0.36(9.1)	0.10(2.5)

### RG-M Gaskets

ISO Parallel Thread Size	Basic Ordering Number	Dimensions, in. (mm)		
		T	E	H
M10 x 1	-RG-M10	8.3(0.33)	3.3(0.13)	1.5(0.06)
M12 x 1.5	-RG-M12	9.7(0.38)	5.4(0.21)	2.0(0.08)
M14 x 1.5	-RG-M14	11.7(0.38)	6.4(0.21)	
M16 x 1.5	-RG-M16	13.7(0.46)	8.4(0.25)	
M18 x 1.5	-RG-M18	15.7(0.54)	10.0(0.39)	
M20 x 1.5	-RG-M20	17.6(0.62)	11.4(0.45)	
M22 x 1.5	-RG-M22	19.6(0.69)	13.4(0.53)	
M24 x 1.5	-RG-M24	21.6(0.77)	14.8(0.58)	
M27 x 2	-RG-M27	24.0(0.90)	13.9(0.50)	2.5(0.10)
M30 x 2	-RG-M30	27.0(0.90)	19.5(0.80)	
M33 x 2	-RG-M33	30.0(1.10)	21.5(0.80)	
M36 x 2	-RG-M36	33.0(1.20)	23.5(0.90)	
M39 x 2	-RG-M39	36.0(1.30)	24.5(1.00)	
M42 x 2	-RG-M42	38.9(1.40)	29.5(1.20)	
M45 x 2	-RG-M45	41.9(1.50)	30.0(1.20)	
M48 x 2	-RG-M48	44.9(1.60)	32.5(1.30)	

### 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	Dimensions, in. (mm)		
		T	E	H
1/4	-RJ-4	0.43(10.9)	0.22(5.6)	0.04(1.0)
3/8	-RJ-6	0.55(13.9)	0.22(5.6)	0.04(1.0)
1/2	-RJ-8	0.70(17.8)	0.22(5.6)	0.04(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

Vulcanized Fibre and PTFE cannot be used for RP gasket.

### 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	V19-902	90 Durometer Fluorocarbon FKM
3/8-24	V19-903	
7/16-20	V19-904	
1/2-20	V19-905	
9/16-18	V19-906	
3/4-16	V19-908	
7/8-14	V19-910	
1 1/16-12	V19-912	
1 3/16-12	V19-914	
1 5/16-12	V19-916	
1 5/8-12	V19-920	
1 7/8-12	V19-924	

### 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	



## A-90 6 Series Tube Fittings

### 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

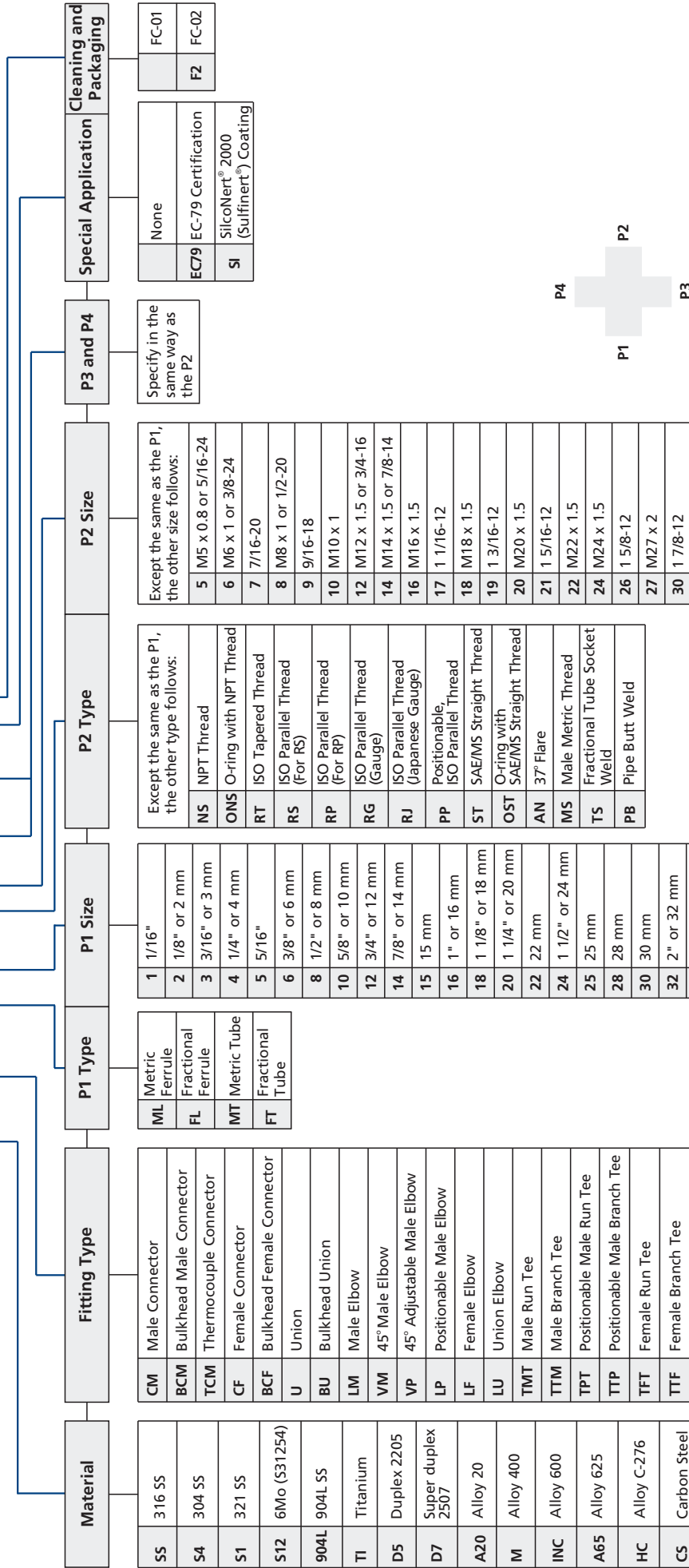
SAE/MS Thread Size	Ordering Number	Material
5/16-24	BN7-011	70 Durometer NBR
3/8-24	BN7-012	
7/16-20	BN7-013	
1/2-20	BN7-112	
9/16-18	BN7-113	
3/4-16	BN7-116	
1 1/16-12	BN7-121	
1 5/16-12	BN7-125	

### O-rings for Fittings with Metric Threads

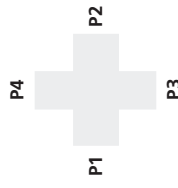
SAE/MS Thread Size	Ordering Number	Material
M14 x 1.5	BN9-M14	90 Durometer NBR
M20 x 1.5	BN9-M20	

# Ordering Number Description

SS – CM – ML12 – NS8 – □ – □ – □ – □



Material	Fitting Type	P1 Type	P1 Size	P2 Type	P2 Size	P3 and P4	Special Application	Cleaning and Packaging
SS	CM	ML	1 1/16"	NS	5		None	FC-01
S4	BCM	FL	1/8" or 2 mm	ONS	6		EC79	FC-02
S1	TCM	MT	3/16" or 3 mm	RT	7		EC-79 Certification	
S12	CF	FT	1/4" or 4 mm	RS	8		SI	
904L	BCF		5/16"	RP	9	Specify in the same way as the P2	SilcoNert® 2000 (Sulfinert®) Coating	
904L	U		3/8" or 6 mm	RG	10			
904L	BU		1/2" or 8 mm	RJ	11			
TI	LM		5/8" or 10 mm	PP	12			
D5	VM		3/4" or 12 mm	ST	13			
D7	VP		7/8" or 14 mm	OST	14			
A20	LP		15 mm	AN	15			
M	LF		1" or 16 mm	MS	16			
INC	LU		1 1/8" or 18 mm	TS	17			
A65	TMT		1 1/4" or 20 mm	PB	18			
HC	TPT		22 mm		19			
CS	TTP		1 1/2" or 24 mm		20			
AL	TFT		25 mm		21			
B	TF		28 mm		22			
PA	TTT		30 mm		23			
T	C		2" or 32 mm		24			
	TC		38 mm		25			
	TP		50 mm		26			
	R				27			
	P				28			
	AM				29			
	AF				30			
	CW							
	LW							
	DF							



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

Special Application:

Wetted metal components SilcoNert® 2000 (Sulfinert®) coated.

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.



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FK-IC-GF-01-EN-210818