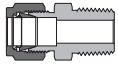


6 Series Tube Fittings



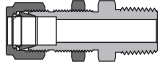
Contents

Male Connectors - CM



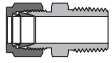
A-13

Bulkhead Male Connectors - BCM



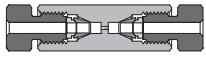
A-24

Thermocouple Connectors - TCM



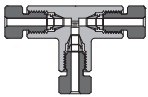
A-25

Chromatograph Fittings - U



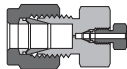
A-26

Chromatograph Fittings - TTT



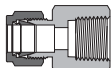
A-26

Column End Fittings - U



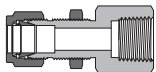
A-27

Female Connectors - CF



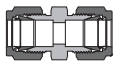
A-27

Bulkhead Female Connectors - BCF



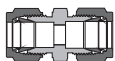
A-32

Unions - U



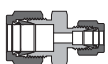
A-33

Conversion Unions - U



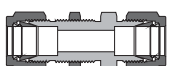
A-34

Reducing Unions - U



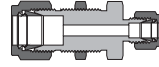
A-35

Bulkhead Unions - BU



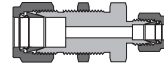
A-36

Bulkhead Reducing Unions - BU



A-36

Bulkhead Conversion Unions - BU



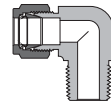
A-37

Bulkhead Locknuts - BN



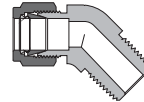
A-37

Male Elbows - LM



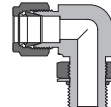
A-38

45° Male Elbows - VM



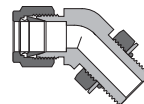
A-41

Adjustable Male Elbows - LP



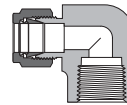
A-42

45° Adjustable Male Elbows - VP



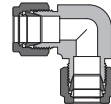
A-44

Female Elbows - LF



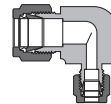
A-45

Union Elbows - LU



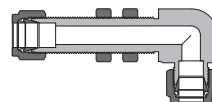
A-46

Union Reducing Elbows - LU



A-47

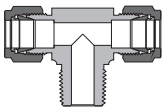
Bulkhead Union Elbows - BBLU



A-48

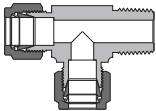
Contents

Male Branch Tees - TTM



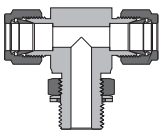
A-49

Male Run Tees - TMT



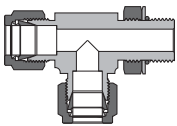
A-50

Adjustable Male Branch Tees - TTP



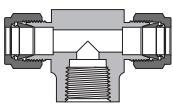
A-51

Adjustable Male Run Tees - TPT



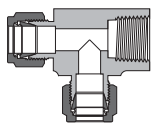
A-52

Female Branch Tees - TTF



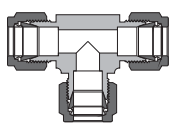
A-53

Female Run Tees - TFT



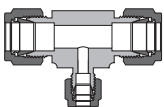
A-54

Union Tees - TTT



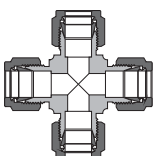
A-55

Reducing Union Tees - TTT



A-56

Union Crosses - C



A-58

Caps - TC



A-58

Plugs - TP



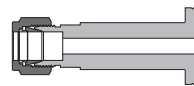
A-59

Vent Protectors - VPF



A-59

Lapped Flange Connectors - LFC



A-59

Nuts - N



A-60

Knurled Nuts



A-60

Male Nuts - MN



A-60

Front Ferrules - FF



A-61

Rear Ferrules - RF



A-61

Nuts + Ferrules - NFR



A-61

Nuts - Ferrule Sets - NFS



A-62

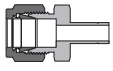
Ferrule Sets - FRS



A-62

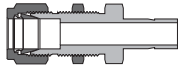
Contents

Reducers - R



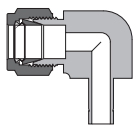
A-63

Bulkhead Reducers - BR



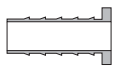
A-65

Reducer Elbows - LR



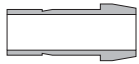
A-65

Insert for Soft Plastic Tubings - IN



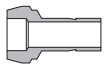
A-66

Port Connectors - P



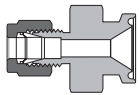
A-66

Reducing Port Connectors - P



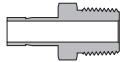
A-67

Sanitary Flange Fittings - SFF



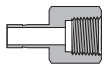
A-67

Male Adapters - AM



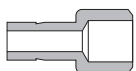
A-68

Female Adapters - AF



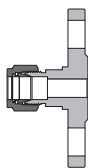
A-73

Weld Adapters - AW



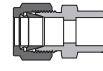
A-76

Flange Adapters - FA



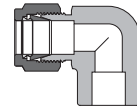
A-77

Weld Connectors - CW



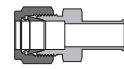
A-79

Weld Elbows - LW



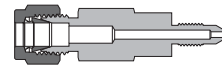
A-80

Automatic Tube Weld Connectors - CW



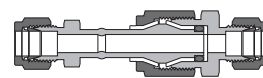
A-81

Calibration Fittings - FC



A-81

Dielectric Fittings - DF



A-82

RS, RSD Gaskets - RS, RSD



A-83

RP Gaskets - RP



A-83

RG Gaskets - RG

A-84

RJ Gaskets - RJ

A-84

O-rings - VI, BN



A-85

Ordering Number Description

A-87

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



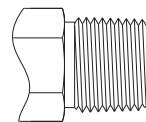
Technical Data

⦿ 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

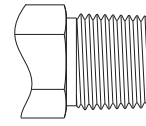
| Working Pressures of NPT Thread Ends | | | | | | | | |
|--------------------------------------|--------------------------------------|-----|--------|-----|-------|-----|--------|-----|
| Thread Size | 316 Stainless Steel and Carbon Steel | | | | Brass | | | |
| | Male | | Female | | Male | | Female | |
| | 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

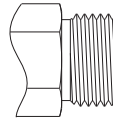
Working Pressures of ISO Tapered Thread Ends

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.

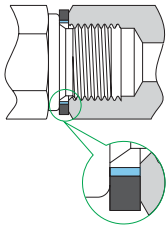
| Thread Data | | | | |
|-------------|------------|-----------------|------------|-----------|
| Thread Size | Thread/in. | Basic Dia. (mm) | | |
| | | Max. Dia. | Pitch Dia. | Min. Dia. |
| 1/16 | 28 | 7.723 | 7.142 | 6.561 |
| 1/8 | | 9.728 | 9.147 | 8.566 |
| 1/4 | 19 | 13.157 | 12.301 | 11.445 |
| 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

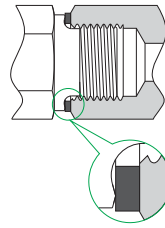
Types of Sealing for ISO Parallel Threads

1. RS Stud End, RS Gasket and RP Port



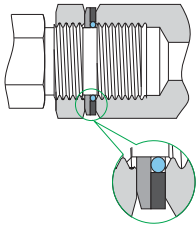
- RS stud end complies with DIN 3852-2 type A
- For RS gasket, see page A-83
- RP port complies with DIN 3852-2 type X

2. RP Stud End, RP Gasket and RP Port



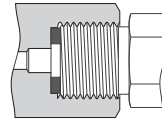
- RP stud end complies with DIN 3852-2 type B
- For RP gasket, see page A-83
- RP port complies with DIN 3852-2 type X

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-84

Working Pressures of Adjustable ISO Parallel Thread Ends (PP)

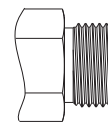
| Thread Size | 316 Stainless Steel and Carbon Steel | |
|-------------|--------------------------------------|-----|
| | psig | bar |
| 1/8 | 4568 | 315 |
| 1/4 | | |
| 3/8 | | |
| 1/2 | 2320 | 160 |
| 3/4 | | |
| 1 | | |

SAE/MS Straight Threads (UN, UNJ)

☉ Comply with ASME B1.1, ISO R725.

Thread Data

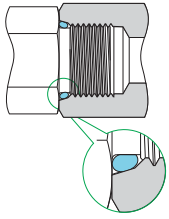
| Thread Size | Thread/ in. | Basic Dia. (mm) | | |
|-------------|-------------|-----------------|------------|-----------|
| | | Max. Dia. | Pitch Dia. | Min. Dia. |
| 5/16-24 | 24 | 7.938 | 7.249 | 6.792 |
| 3/8-24 | 24 | 9.525 | 8.837 | 8.380 |
| 7/16-20 | 20 | 11.113 | 10.287 | 9.738 |
| 1/2-20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



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

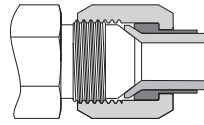
Types of Sealing for SAE/MS Threads

1. ST Stud End and ISO 11926-1 Port



- ST stud end complies with ISO 11926-3
- For O-ring, see page A-85

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



- The type of sealing complies with SAE J514

Working Pressures of SAE/MS Thread Ends

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

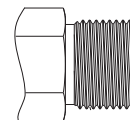
Working pressures are based on ISO 11926-3 at ambient temperature.

Metric Threads (M)

☉ Comply with ISO 261.

Thread Data

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

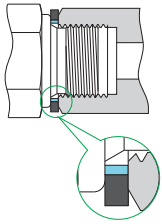


- 60° thread angle
- Pitch measured in mm
- Truncation of root and crest are parallel

Types of Sealing for Metric Threads

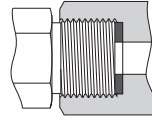
Tube Fittings

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



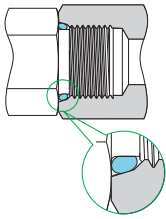
- MRS stud end complies with DIN 3852-1 type A
- For RS-M gasket, see page A-83

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



- For RG-M gasket, see page A-84

3. MST Stud End and ISO 6149-1 Port



- MST stud end complies with ISO 6149-3
- For O-ring, see page A-85

| Working Pressures for MST Stud Ends | | | | |
|-------------------------------------|----------------------------------|-----|------------|-----|
| Thread Size | Stainless Steel and Carbon Steel | | | |
| | Non-adjustable | | Adjustable | |
| | psig | bar | psig | bar |
| M8 x 1 | 5800 | 400 | 4568 | 315 |
| M10 x 1 | | | | |
| M12 x 1.5 | | | | |
| M14 x 1.5 | | | | |
| M16 x 1.5 | 4568 | 315 | 3626 | 250 |
| M18 x 1.5 | | | | |
| M20 x 1.5 | | | | |
| M22 x 1.5 | | | | |
| M27 x 2 | 2900 | 200 | 2320 | 160 |
| M30 x 2 | | | | |
| 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 |
|----------------------|--|--|------------|
| 316 stainless steel | ASTM A276, ASME SA479, EN 1.4401 | ASTM A182, ASME SA182, EN 1.4401 | SS |
| 304 stainless steel | ASTM A276, ASME SA479, EN 1.4301 | ASTM A182, ASME SA182, EN 1.4301 | S4 |
| 321 stainless steel | ASTM A276, ASME SA479, EN 1.4541 | ASTM A182, ASME SA182, EN 1.4541 | S1 |
| 904L stainless steel | ASTM B649 | ASTM A182 | 904L |
| Titanium (grade 4) | ASTM B348 | ASTM B381 | TI |
| Duplex 2205 | ASTM A479 | ASTM A182 | D5 |
| Duplex 2507 | ASTM A479 | ASTM A182 | D7 |
| Alloy 20 | ASTM B473 | ASTM B462 | A20 |
| Alloy 400 | ASTM B164, ASME SB164 | ASTM B564, ASME SB564 | M |
| Alloy 600 | ASTM B166, ASME SB166 | ASTM B564, ASME SB564 | INC |
| Alloy 625 | ASTM B446 | ASTM B564, ASME SB564 | A65 |
| Alloy C-276 | ASTM B574 | ASTM B564 | HC |
| Carbon steel | ASTM A108 | ASTM A105 | CS |
| Aluminum | ASTM B211 | ASTM B247 | AL |
| Brass | ASTM B16/B453 | ASTM B283 | B |
| Nylon | ASTM D4066 | / | PA |
| PTFE | ASTM D1710 | / | T |

Installation Instructions

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

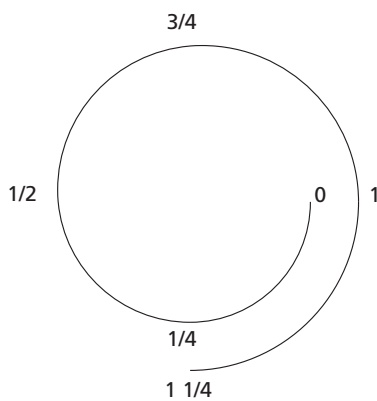


Fig.1

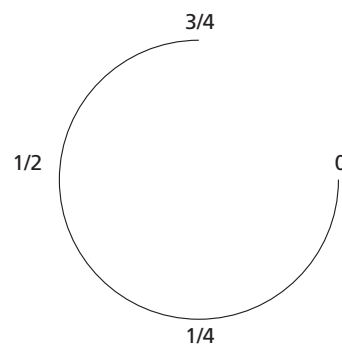


Fig.2

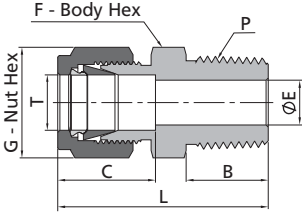
Cautions:

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

Dimensions

1. Dimensions are for reference only and are subject to change; Dimensions are shown with FITOK nuts finger-tight.
2. The E dimension refers to the smallest nominal orifice. It might be larger at tapered thread end, straight thread end and welding end.

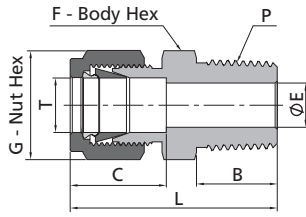
Male Connectors



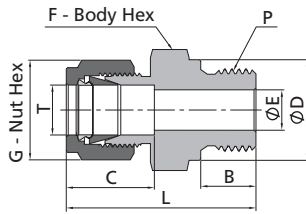
| Fractional Tube | | | NPT Thread | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | |
| | | | L | B | C | E | G | F |
| 1/16 | 1/16 | -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) |

A-14 6 Series Tube Fittings

Male Connectors

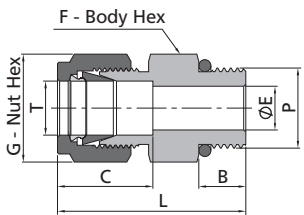
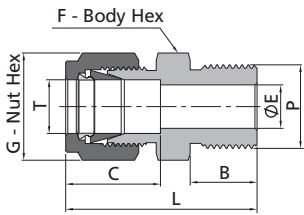
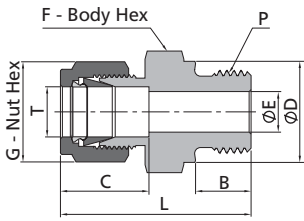


| Fractional Tube | | | ISO Tapered Thread (RT) | | | | | | |
|-------------------|-----------|-----------------------|-------------------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-RT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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) | |



| 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



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

| Fractional Tube | | | ISO Parallel Thread (RP) | | | | | | |
|-------------------|-----------|-----------------------|--------------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-RP Size | Basic Ordering Number | 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) |

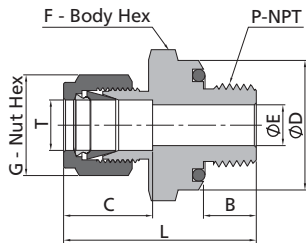
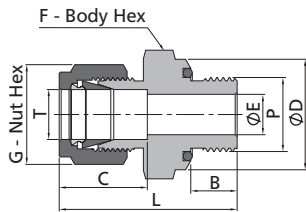
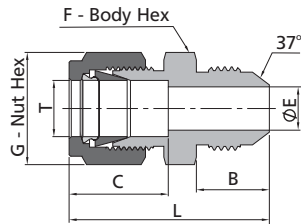
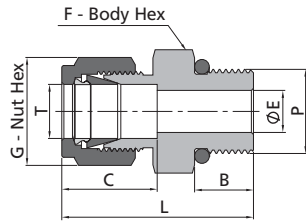
| Fractional Tube | | | ISO Parallel Thread (BP) | | | | | |
|-------------------|-----------|-----------------------|--------------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (in.) | P-BP Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | |
| | | | 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) |

| 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) | |

A-16 6 Series Tube Fittings

Male Connectors

Tube Fittings



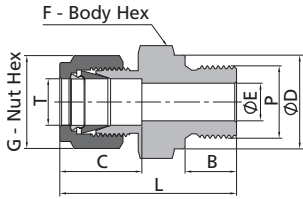
| Fractional Tube | | | | SAE/MS Straight Thread | | | | | |
|-------------------|----------------------|-----------------------|----------------------|------------------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-SAE/MS Thread Size | Basic Ordering Number | 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) | |

| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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) | |
| 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 | 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) | |

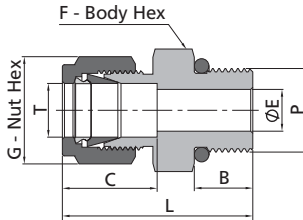
| Fractional Tube | | | | O-Seal with SAE/MS Straight Thread | | | | | |
|-------------------|----------------------|-----------------------|----------------------|------------------------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-SAE/MS Thread 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) |

| 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

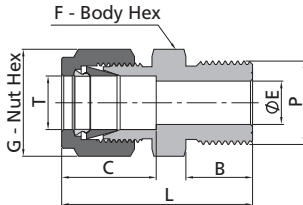


| Fractional Tube | | | Metric Thread (MRS) | | | | | | | |
|-------------------|----------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-Metric Thread Size | Basic Ordering Number | 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) | |



Adapt to straight thread boss of ISO 6149-1.

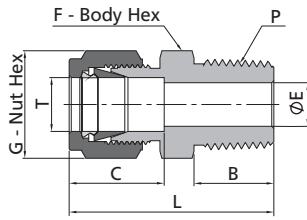
| Fractional Tube | | | Metric Thread (MST) | | | | | |
|-------------------|----------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-Metric Thread Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | |
| | | | 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) |

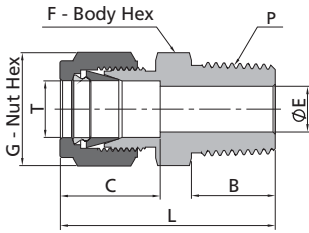
A-18 6 Series Tube Fittings

Male 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 | |
| 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) | |

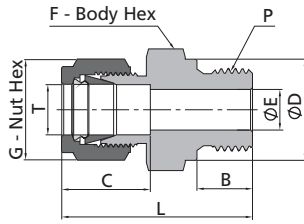
Male Connectors



| 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) |

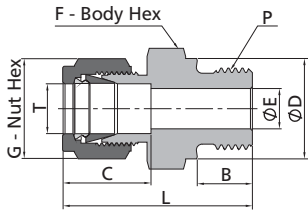
A-20 6 Series Tube Fittings

Male Connectors

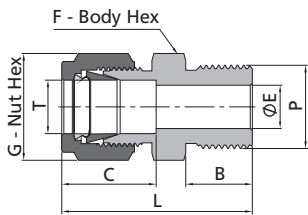


| Metric Tube | | | ISO Parallel Thread (RS) | | | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-RS Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | | |
| | | | 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



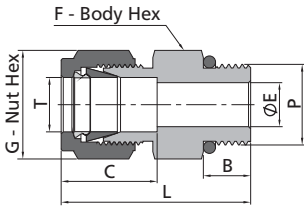
| Metric Tube | | | ISO Parallel Thread (RP) | | | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-RP Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | | |
| | | | 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) |



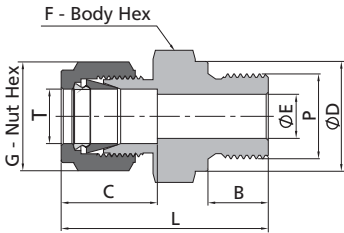
| Metric Tube | | | ISO Parallel Thread (BP) | | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (mm) | P-BP Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | |
| | | | 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) |

A-22 6 Series Tube Fittings

Male Connectors

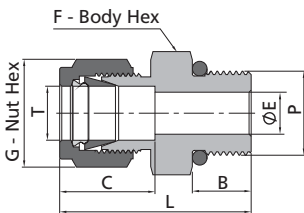


Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



| Metric Tube | | | SAE/MS Straight Thread | | | | | |
|------------------|----------------------|-----------------------|------------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (mm) | P-SAE/MS Thread Size | Basic Ordering Number | 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) |

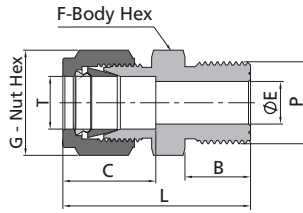
| Metric Tube | | | Metric Thread (MRS) | | | | | | |
|------------------|----------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-Metric Thread Size | Basic Ordering Number | Dimensions, 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) |



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) |

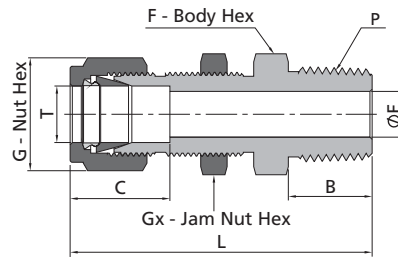
Male Connectors



| 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

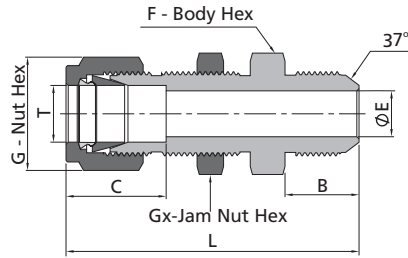
Tube Fittings



| 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) | |

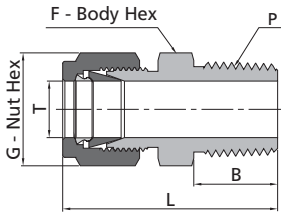
Bulkhead Male Connectors



Tube Fittings

| 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) | 0.51(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) |

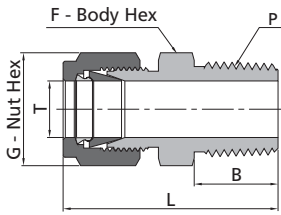
Thermocouple Connectors



| 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) |

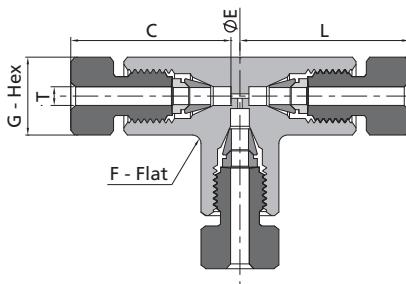
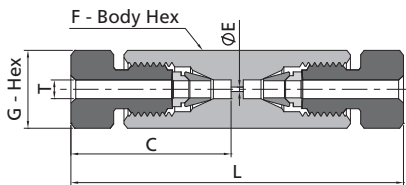
Thermocouple Connectors

Tube Fittings



| 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) |

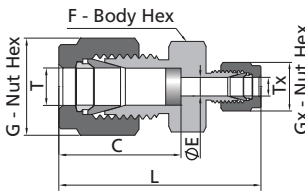
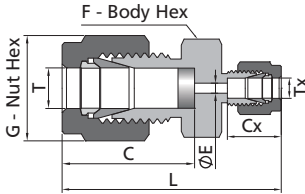
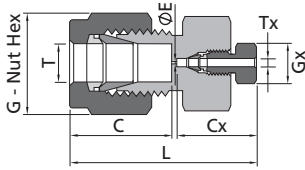
Chromatograph Fittings



| 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 ⁻⁵ cm ³ |

| 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 ⁻⁴ cm ³ |

Column End Fittings



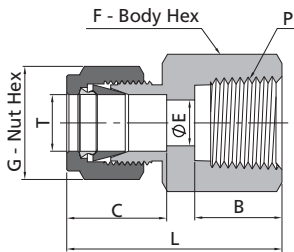
| Fractional Tube | | | | | | | | | | |
|-------------------|--------------------|-----------------------|----------------------|------------|------------|-----------|------------|-----------|--|--|
| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | Dead 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 ⁻⁵ cm ³ | |
| 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 ⁻⁵ cm ³ | |

| 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 ⁻³ cm ³ | |
| 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 ⁻³ cm ³ | |
| 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 ⁻³ cm ³ | |

| 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 | |

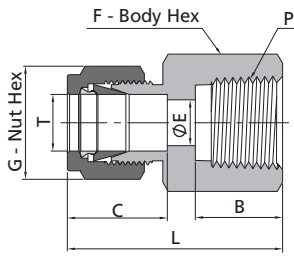
Nominal pore size of SN7 Stainless steel sinter is 7 um, and other nominal pore sizes are available. Stainless steel sinters are loosely installed to facilitate removal and replacement.

Female Connectors



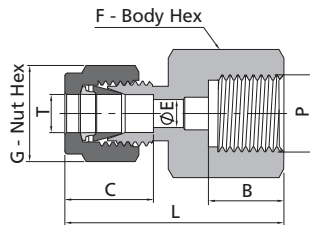
| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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

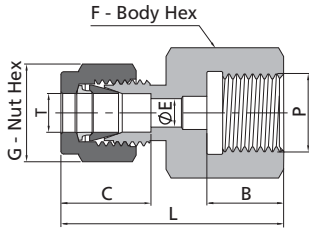


| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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) | |

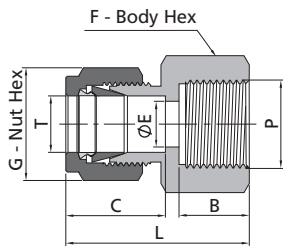


| Fractional Tube | | | ISO Parallel Thread (RG) | | | | | | |
|-------------------|-----------|-----------------------|--------------------------|------------|------------|-----------|------------|------------|--|
| T-Tube O.D. (in.) | P-RG Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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) | |



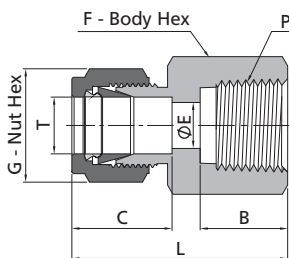
Adapt to Japanese gauge stud (JIS B7505)

| 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) |



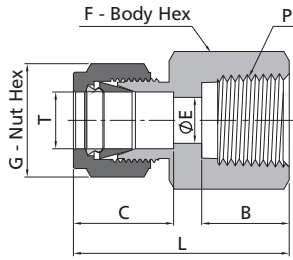
| Fractional Tube | | | Metric Thread | | | | | |
|-------------------|----------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-Metric Thread Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | |
| | | | 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



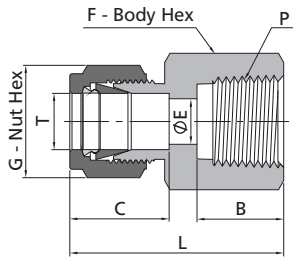
| Metric Tube | | | NPT Thread | | | | | |
|------------------|------------|-----------------------|----------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (mm) | P-NPT Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | |
| | | | L | B | C | E | 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



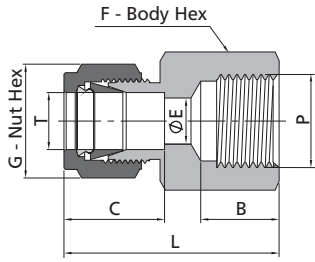
| Metric Tube | | | | NPT Thread | | | | | |
|------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (mm) | P-NPT Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | | |
| | | | L | B | 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

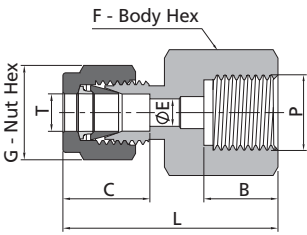


| Metric Tube | | | | ISO Tapered Thread (RT) | | | | | |
|------------------|-----------|-----------------------|----------------------|-------------------------|------------|------------|------------|------------|--|
| T-Tube O.D. (mm) | P-RT Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | | |
| | | | 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) | |

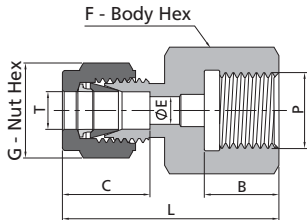
Female Connectors



| 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) |



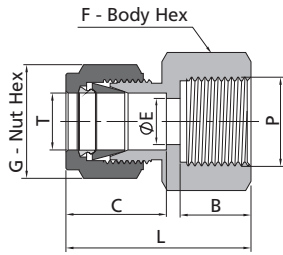
| Metric Tube | | | ISO Parallel Thread (RG) | | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (mm) | P-RG Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | |
| | | | 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)

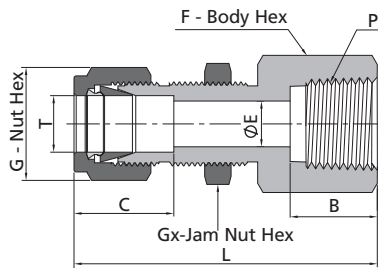
| Metric Tube | | | ISO Parallel Thread (RJ) | | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (mm) | P-RJ Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | |
| | | | 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-32 6 Series Tube Fittings



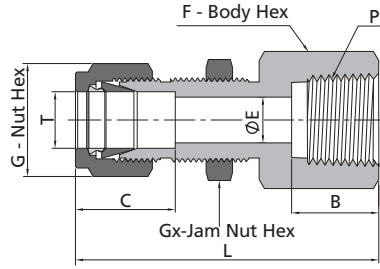
| Metric Tube | | | Metric Thread | | | | | |
|------------------|----------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-Metric Thread Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | |
| | | | 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) |

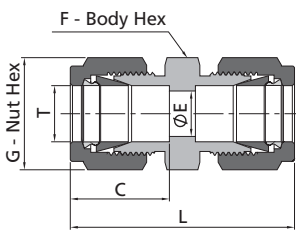
Bulkhead Female Connectors



| 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) |

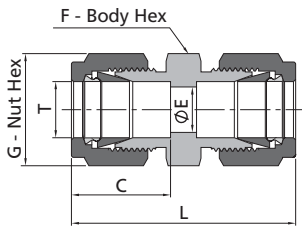
| Metric Tube | | | NPT Thread | | | | | | | | |
|------------------|------------|-----------------------|----------------------|------------|------------|-----------|------------|------------|------------|--------------------------|-------------------------------|
| T-Tube O.D. (mm) | P-NPT Size | Basic 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



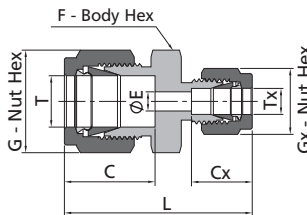
| Fractional Tube | | NPT Thread | | | | |
|-------------------|-----------------------|----------------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | |
| | | L | C | G | F | E |
| 1/16 | -U-FL1 | 0.99(25.1) | 0.34(8.6) | 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 | | | | | | |
|------------------|-----------------------|----------------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | Basic Ordering Number | Dimensions, mm (in.) | | | | |
| | | 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) |

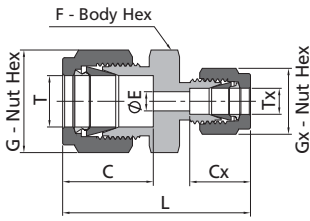
Conversion Unions



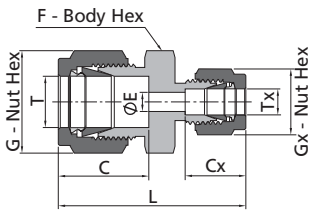
| Fractional Tube | | | | | | | | | |
|-------------------|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (mm) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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

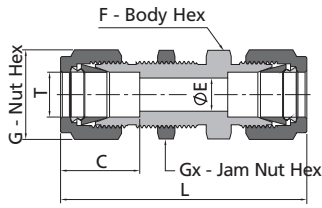


| Fractional Tube | | | Dimensions, in. (mm) | | | | | | | |
|-------------------|--------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Basic Ordering Number | L | 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 | | | Dimensions, mm (in.) | | | | | | | |
|------------------|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (mm) | Tx-Tube O.D. (mm) | Basic Ordering Number | 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) | |

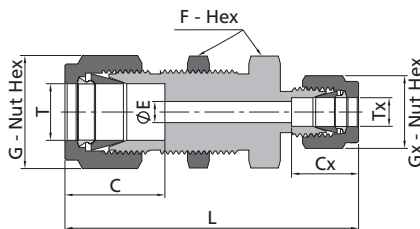
Bulkhead Unions



| 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) | |

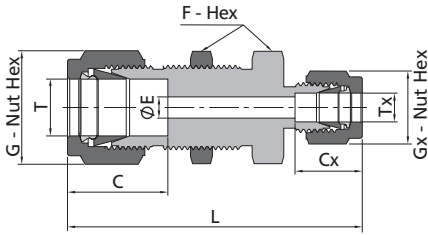
| Metric Tube | | Dimensions, mm (in.) | | | | | | | Panel Hole Size mm (in.) | Max. Panel Thickness mm (in.) |
|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|--------------------------|-------------------------------|
| 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) |

Bulkhead Locknuts

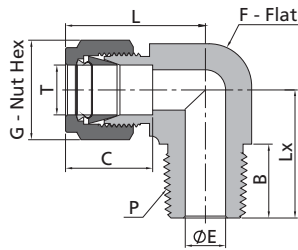


| Fractional Tube | |
|-------------------|-----------------------|
| T-Tube O.D. (in.) | Basic Ordering Number |
| 1/16 | -BN-FL1 |
| 1/8 | -BN-FL2 |
| 3/16 | -BN-FL3 |
| 1/4 | -BN-FL4 |
| 5/16 | -BN-FL5 |
| 3/8 | -BN-FL6 |
| 1/2 | -BN-FL8 |
| 5/8 | -BN-FL10 |
| 3/4 | -BN-FL12 |
| 7/8 | -BN-FL14 |
|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

A-38 6 Series Tube Fittings

Male Elbows

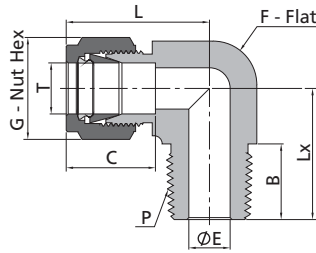


Tube Fittings

| 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

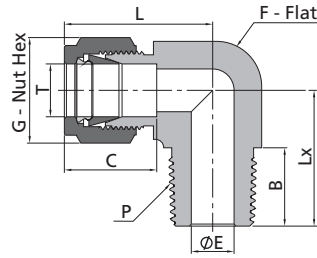


Tube Fittings

| 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) | |

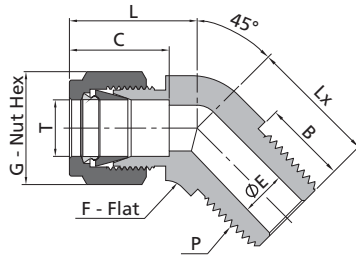
Male Elbows

Tube Fittings



| 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



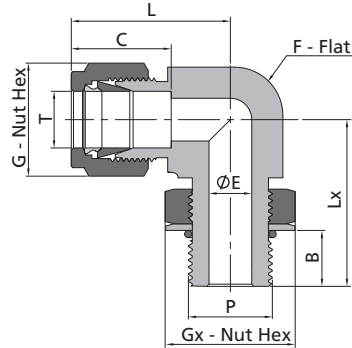
| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | L | C | G | F | E | B | Lx |
| 1/16 | 1/16 | -VM-FL1-NS1 | 0.62(15.7) | 0.34(8.6) | 0.31(7.9) | 0.37(9.5) | 0.05(1.3) | 0.38(9.7) | 0.57(14.5) |
| 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

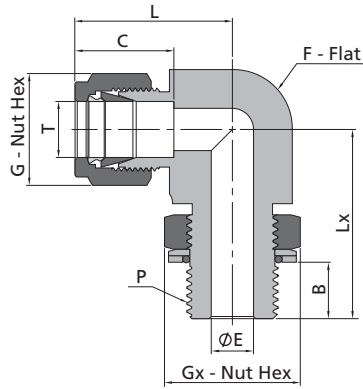
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



| 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) | 1.19(30.2) | 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



Tube Fittings

| 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) | |

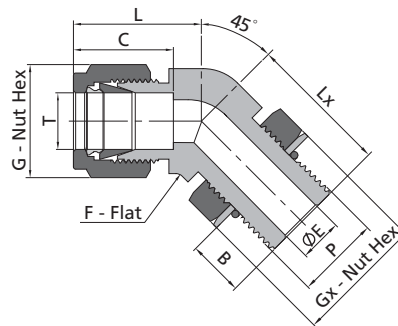
| Metric Tube | | | ISO Parallel Thread (PP) | | | | | | | | |
|------------------|----------------------------|-----------------------|--------------------------|------------|------------|------------|-----------|------------|------------|------------|--|
| T-Tube O.D. (mm) | P-ISO Parallel Thread Size | 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) | |

A-44 6 Series Tube Fittings

45° Adjustable Male Elbows

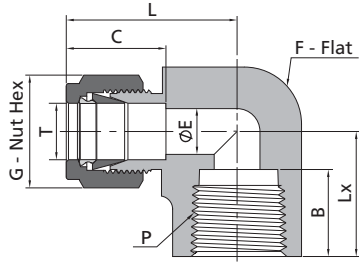
SAE/MS Straight Thread

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



| Fractional Tube | | | SAE/MS Straight Thread | | | | | | | |
|-------------------------|----------------------------|-----------------------------|------------------------|------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-SAE/MS Thread Size | Basic Ordering Number | 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

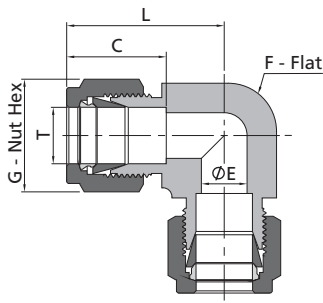


Tube Fittings

| 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

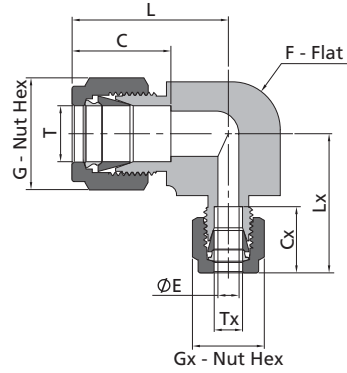


Tube Fittings

| 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



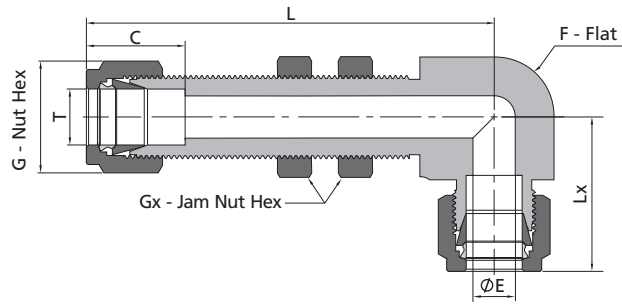
Tube Fittings

| 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) |

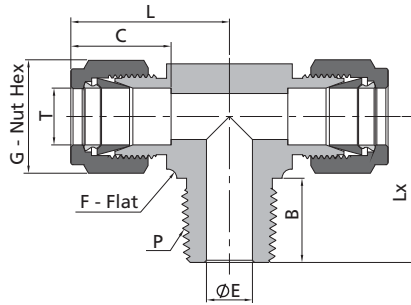
Bulkhead Union Elbows

Tube Fittings



| 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

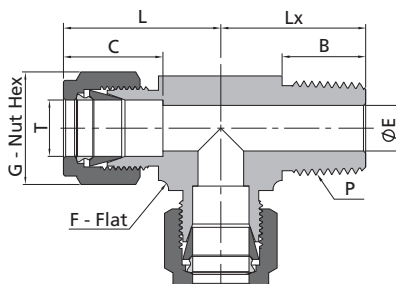


| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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 | 1.76(44.7) | 1.02(25.9) | 1.25(31.8) | 1.37(34.9) | 0.62(15.7) | 0.75(19.1) | 1.50(38.1) |
| 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) | 1.67(42.4) |
| 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

Tube Fittings



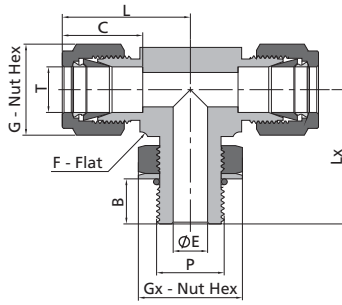
| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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 | 1.76(44.7) | 1.02(25.9) | 1.25(31.8) | 1.37(34.9) | 0.62(15.7) | 0.75(19.1) | 1.50(38.1) |
| 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) | 1.67(42.4) |
| 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

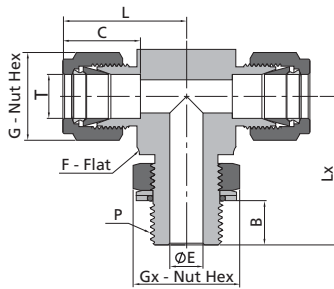
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



| 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



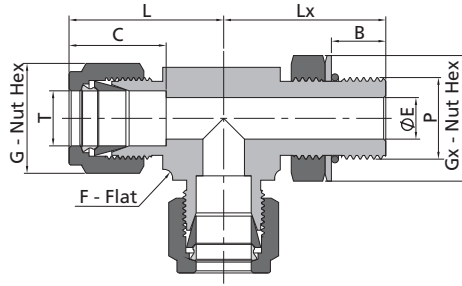
| Fractional Tube | | | ISO Parallel Thread (PP) | | | | | | | | |
|-------------------|----------------------------|-----------------------|--------------------------|------------|------------|------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | P-ISO Parallel Thread 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

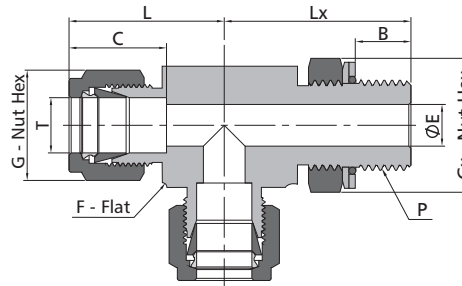
Adapt to straight thread boss of SAE J1926-1, ISO 11926-1 and MS 16142.



| 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

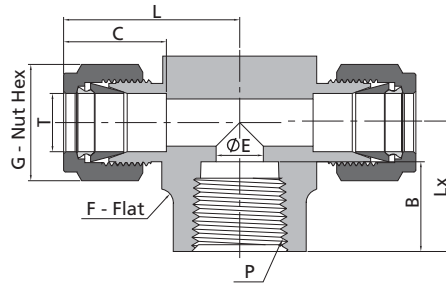
ISO Parallel Thread



| 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



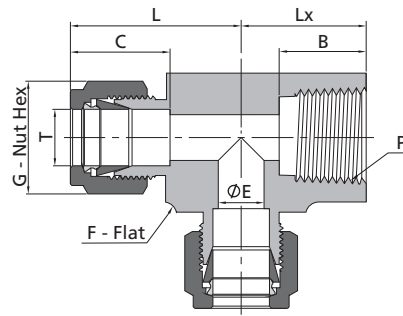
Tube Fittings

| 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

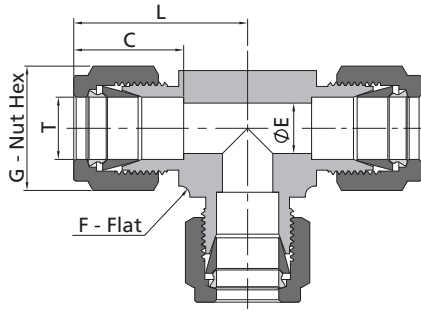
Tube Fittings



| 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

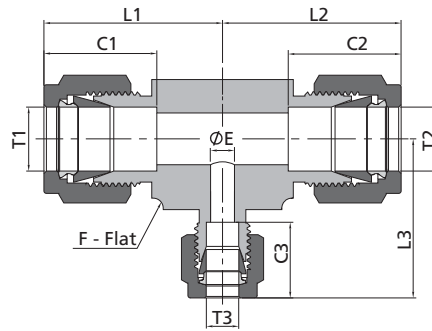


| Fractional Tube | | | | | | |
|-------------------|-----------------------|----------------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | |
| | | L | C | G | F | E |
| 1/16 | -TTT-FL1 | 0.70(17.8) | 0.34(8.6) | 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) |

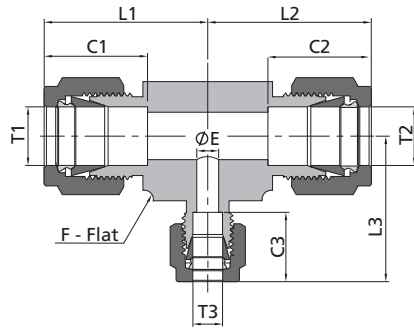
Reducing Union Tees

Tube Fittings



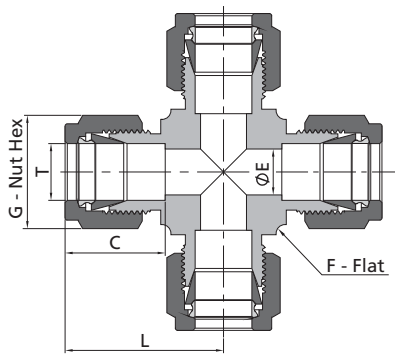
| Fractional Tube | | | | Dimensions, in. (mm) | | | | | | | | |
|--------------------|--------------------|--------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|------------|--|
| T1-Tube O.D. (in.) | T2-Tube 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) | 0.60(15.2) | 0.66(16.8) | 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) | 0.96(24.4) | 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) | |

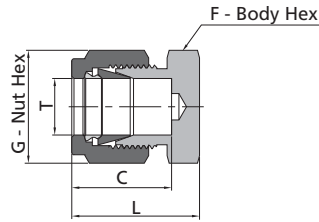
Union Crosses



| 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) |

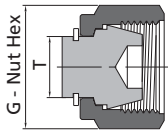
Caps



| 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) |

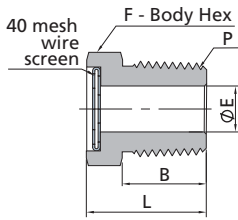
Plugs



| 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

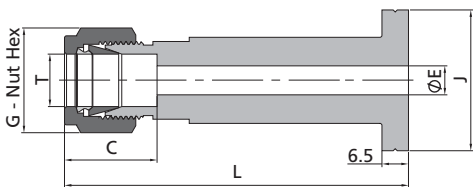


40 mesh 300 series stainless steel wire screen assembly

| 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



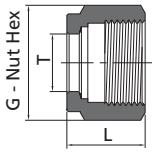
- Standard material is 316 or Monel.
- The flange ends are used with NPS 1/2 lap joint pipe flanges.
- The flange ends are dimensioned to meet "ANSI B16.5 Class 2500" flange specifications.
- The Flange Seal A means surface finish Ra 3.2-6.3 µm, the flange Seal B means Ra 6.3-12.5 µm.

| Fractional Tube | | | | | | | |
|-------------------|-------------|-----------------------|----------------------|------------|------------|-----------|------------|
| T-Tube O.D. (in.) | 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) |

A-60 6 Series Tube Fittings

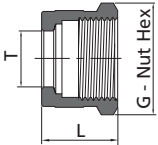
Nuts



| 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) |

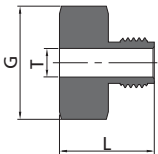
| Metric Tube | | | |
|------------------|-----------------------|----------------------|------------|
| T-Tube O.D. (mm) | Basic Ordering Number | Dimensions, mm (in.) | |
| | | L | G |
| 2 | -N-ML2 | 11.9(0.47) | 12.0(0.47) |
| 3 | -N-ML3 | 11.9(0.47) | 12.0(0.47) |
| 4 | -N-ML4 | 11.9(0.47) | 12.0(0.47) |
| 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**

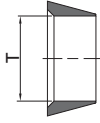
Male Nuts



| 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) |

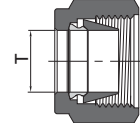
Front Ferrules



Rear Ferrules



Nuts + 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* |

| 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* |

| 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 | -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* |

| 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* |

| 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 |

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

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

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

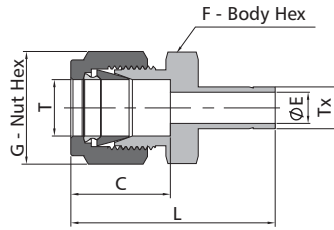


Each Ferrule Set contains 10 front ferrules and 10 rear ferrules.

| 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

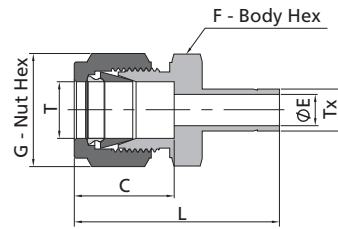


Tube Fittings

| 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) |

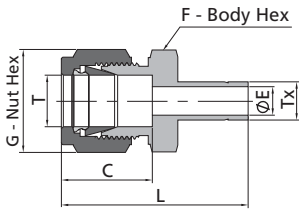
Reducers

Tube Fittings



| 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) |

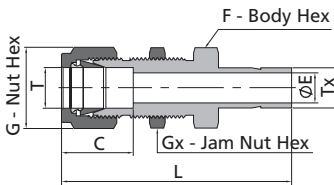
Reducers



| 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) |

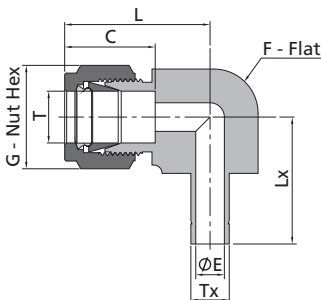
| Fractional Tube | | | Metric Tube | | | | |
|-------------------|-------------------|-----------------------|----------------------|------------|------------|------------|-----------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (mm) | Basic Ordering Number | Dimensions, in. (mm) | | | | |
| | | | L | C | G | 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



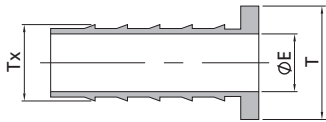
| Fractional Tube | | | Metric Tube | | | | | |
|-------------------|--------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | |
| | | | 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) | 4.6(0.18) | 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) |

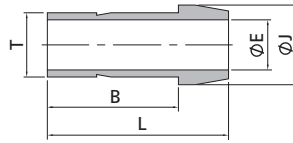
Insert for Soft Plastic Tubings



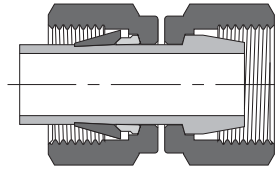
| Fractional Tube | | | |
|-------------------|--------------------|-----------------------|------------|
| T-Tube O.D. (in.) | Tx-Tube I.D. (in.) | Basic Ordering Number | E in. (mm) |
| 3/16 | 1/8 | -IN-3-2 | 0.09(2.3) |
| 1/4 | 1/8 | -IN-4-2 | 0.09(2.3) |
| 1/4 | 0.17 | -IN-4-017 | 0.11(2.8) |
| 1/4 | 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

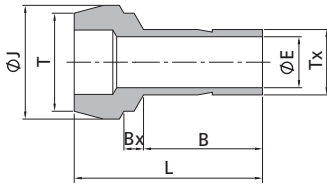


1 1/4" /28 mm and above

| 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 | 3.31(84.1) | 2.34(59.4) | 1.25(31.8) | 1.80(45.8) |

| 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) |

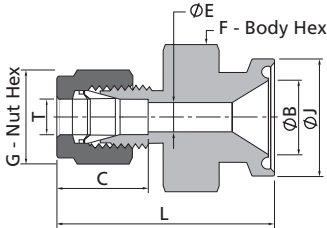
Reducing Port Connectors



| 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) | |

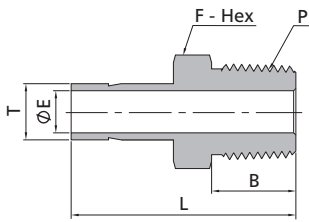
Sanitary Flange Fittings



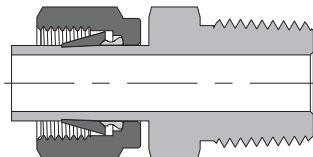
| Fractional Tube | | | | | | | | | |
|-------------------|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Flange Size (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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

Tube Fittings



1" and below

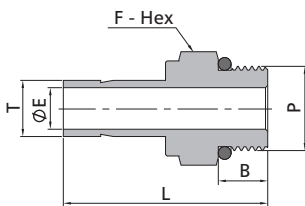
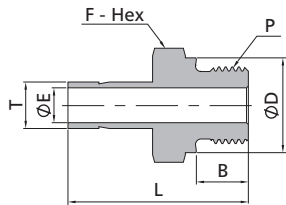
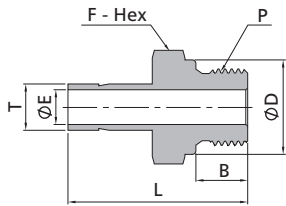


1 1/4" and above

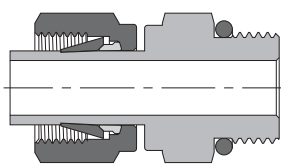
| Fractional Tube | | | NPT Thread | | | |
|-------------------|------------|-----------------------|----------------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-NPT Size | Basic Ordering Number | Dimensions, in. (mm) | | | |
| | | | L | B | E | F |
| 1/16 | 1/8 | -AM-FT1-NS2 | 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



1" and below



1 1/4" and above

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

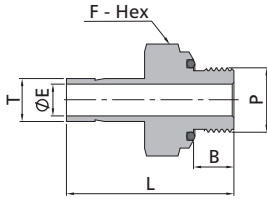
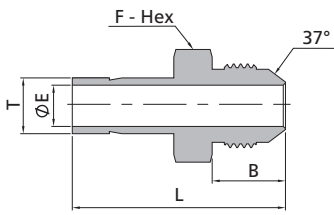
| Fractional Tube | | | ISO Parallel Thread (RS) | | | | |
|-------------------|-----------|-----------------------|--------------------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | P-RS Size | Basic Ordering Number | Dimensions, in. (mm) | | | | |
| | | | L | B | 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) |

| 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) |

A-70 6 Series Tube Fittings

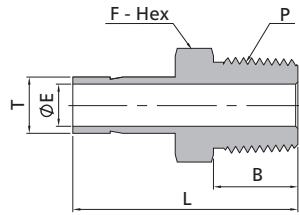
Male Adapters



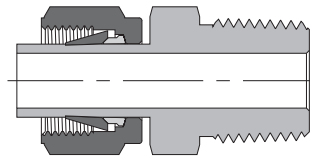
| Fractional Tube | | | 37° Flare (AN) | | | |
|-------------------|--------------------|-----------------------|----------------------|------------|------------|------------|
| T-Tube O.D. (in.) | AN Tube Flare Size | Basic Ordering Number | Dimensions, in. (mm) | | | |
| | | | L | B | E | F |
| 1/4 | 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) |

| 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) |

Male Adapters



25 mm and below

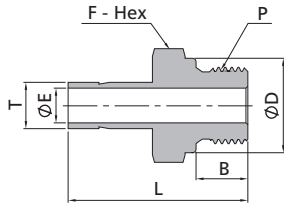


28 mm and above

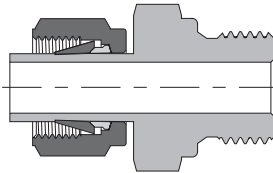
| Metric Tube | | | NPT Thread | | | |
|------------------|------------|-----------------------|----------------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-NPT Size | Basic Ordering Number | Dimensions, mm (in.) | | | |
| | | | L | B | E | F |
| 3 | 1/8 | -AM-MT3-NS2 | 29.4(1.16) | 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) |

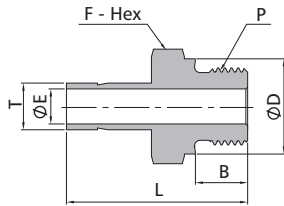
Male Adapters



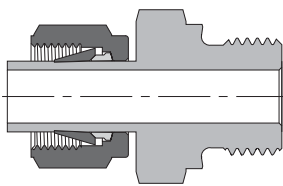
25 mm and below



28 mm and above



25 mm and below

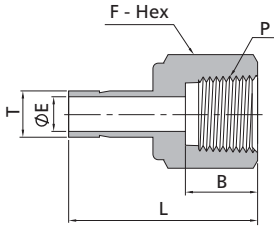


28 mm and above

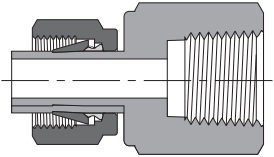
| Metric Tube | | | ISO Parallel Thread (RS) | | | | |
|------------------|-----------|-----------------------|--------------------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-RS Size | Basic Ordering Number | Dimensions, mm (in.) | | | | |
| | | | L | B | E | F | 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



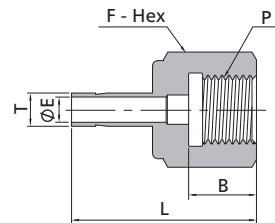
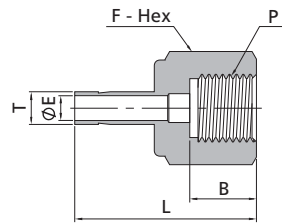
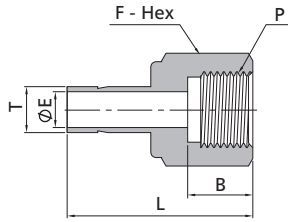
1 1/4" and above

| 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) |

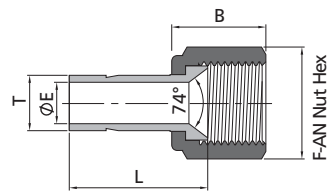
| Fractional Tube | | | ISO Tapered Thread (RT) | | | |
|-------------------|-----------|-----------------------|-------------------------|------------|-----------|------------|
| T-Tube O.D. (in.) | P-RT Size | Basic Ordering Number | Dimensions, in. (mm) | | | |
| | | | L | B | E | F |
| 1/4 | 1/8 | -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-74 6 Series Tube Fittings

Female Adapters



Adapt to Japanese gauge stud.



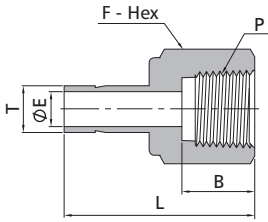
| Fractional Tube | | | ISO Parallel Thread (RP) | | | |
|-------------------|-----------|-----------------------|--------------------------|------------|-----------|------------|
| T-Tube O.D. (in.) | P-RP Size | Basic Ordering Number | Dimensions, in. (mm) | | | |
| | | | L | B | E | F |
| 1/8 | 1/8 | -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) |

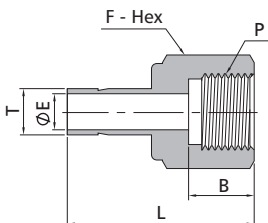
| Fractional Tube | | | AN Thread | | | |
|-------------------|-------------------------|-----------------------|----------------------|------------|------------|-------------|
| T-Tube O.D. (in.) | AN Tube Flare Size(in.) | Basic Ordering Number | Dimensions, in. (mm) | | | |
| | | | L | B | E | F |
| 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) |

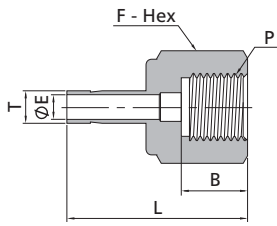
| Metric Tube | | | ISO Tapered Thread (RT) | | | |
|------------------|-----------|-----------------------|-------------------------|------------|------------|------------|
| T-Tube O.D. (mm) | P-RT Size | Basic Ordering Number | Dimensions, mm (in.) | | | |
| | | | L | B | E | F |
| 3 | 1/8 | -AF-MT3-RT2 | 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) |



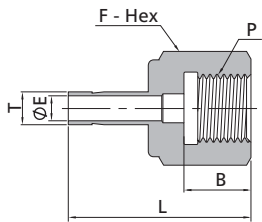
| Metric Tube | | | ISO Parallel Thread (RP) | | | |
|------------------|-----------|-----------------------|--------------------------|------------|-----------|------------|
| T-Tube O.D. (mm) | P-RP Size | Basic Ordering Number | Dimensions, mm (in.) | | | |
| | | | L | B | E | F |
| 6 | 1/8 | -AF-MT6-RP2 | 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

Tube Fittings



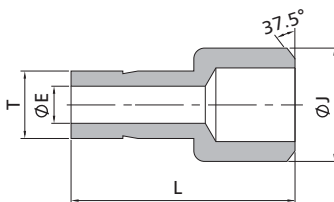
| Metric Tube | | | ISO Parallel Thread (RG) | | | |
|------------------|-----------|-----------------------|--------------------------|------------|-----------|------------|
| T-Tube O.D. (mm) | P-RG Size | Basic Ordering Number | Dimensions, mm (in.) | | | |
| | | | L | B | E | F |
| 3 | 1/8 | -AF-MT3-RG2 | 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.

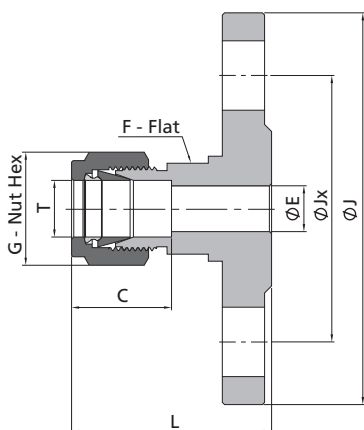
| Metric Tube | | | ISO Parallel Thread (RJ) | | | |
|------------------|-----------|-----------------------|--------------------------|------------|-----------|------------|
| T-Tube O.D. (mm) | P-RJ Size | Basic Ordering Number | Dimensions, mm (in.) | | | |
| | | | L | B | E | F |
| 6 | 1/4 | -AF-MT6-RJ4 | 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

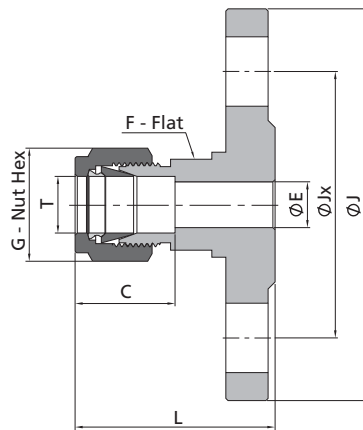


- ⊙ Integrally forged body.
- ⊙ ANSI flanges comply with ANSI B16.5.
- ⊙ DIN flanges comply with DIN 2501/2526.
- ⊙ GB flanges comply with GB/T 9123.1.
- ⊙ EN flanges comply with EN 1092-1.
- ⊙ JIS flanges comply with JIS B 2220.

| ANSI Flanges | | | | Dimensions, in. (mm) | | | | | | | |
|-------------------|-----------------|-------|--|----------------------|-------------|-------------|------------|------------|------------|------------|--|
| T-Tube O.D. (in.) | ANSI 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

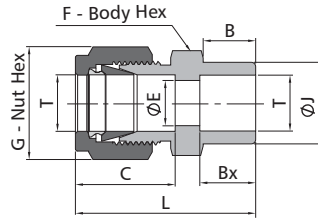


- ⊙ Integrally forged body.
- ⊙ ANSI flanges comply with ANSI B16.5.
- ⊙ DIN flanges comply with DIN 2501/2526.
- ⊙ GB flanges comply with GB/T 9123.1.
- ⊙ EN flanges comply with EN 1092-1.
- ⊙ JIS flanges comply with JIS B 2220.

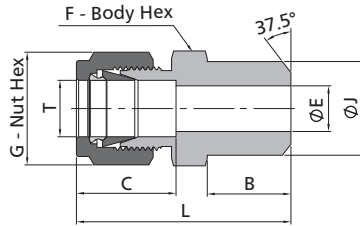
| EN Flanges, Pressure Class PN 40 | | | | | | | | | |
|----------------------------------|-------------------|--|----------------------|-------------|-------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | EN Flange Size DN | Basic Ordering Number Raised Face Flange | 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

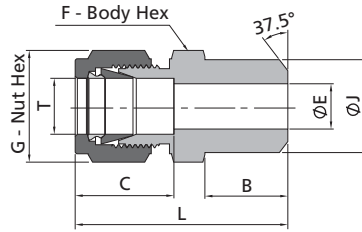


| Fractional Tube | | Tube Socket Weld | | | | | | | |
|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | | |
| | | 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) |



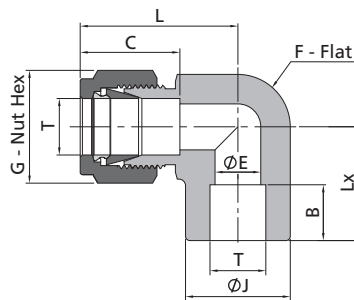
| Fractional Tube | | | Pipe Butt Weld | | | | | | |
|-------------------|----------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Pipe Weld Size | Basic Ordering Number | Dimensions, in. (mm) | | | | | | |
| | | | 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



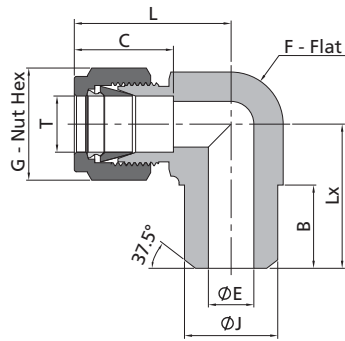
| Metric Tube | | | Pipe Butt Weld | | | | | | |
|------------------|----------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (mm) | Pipe Weld Size | Basic Ordering Number | Dimensions, mm (in.) | | | | | | |
| | | | 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



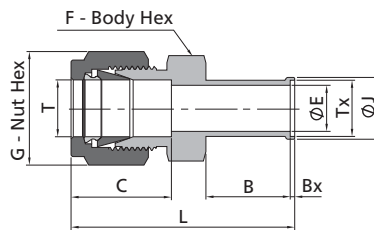
| Fractional Tube | | Tube Socket Weld | | | | | | | |
|-------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | | |
| | | 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



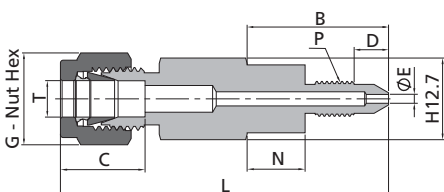
| Fractional Tube | | | Pipe Butt Weld | | | | | | | |
|-------------------|----------------|-----------------------|----------------------|------------|------------|------------|------------|------------|------------|------------|
| T-Tube O.D. (in.) | Pipe Weld Size | Basic Ordering Number | Dimensions, 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) |

Automatic Tube Weld Connectors



| Fractional Tube | | | Automatic Tube Weld | | | | | | | |
|-------------------|--------------------|-----------------------|----------------------|------------|------------|------------|------------|------------|-----------|------------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Basic Ordering Number | Dimensions, in. (mm) | | | | | | | |
| | | | L | C | G | F | B | E | Bx | J |
| 1/4 | 1/4 | -CW-FL4-TB4A | 1.74(44.2) | 0.60(15.2) | 0.56(14.3) | 0.50(12.7) | 0.75(19.1) | 0.18(4.5) | 0.02(0.5) | 0.29(7.4) |
| 3/8 | 3/8 | -CW-FL6-TB6A | 1.84(46.7) | 0.66(16.8) | 0.69(17.5) | 0.63(15.9) | 0.75(19.1) | 0.31(7.8) | 0.03(0.8) | 0.41(10.4) |
| 1/2 | 1/2 | -CW-FL8-TB8A | 1.99(50.5) | 0.90(22.9) | 0.87(22.2) | 0.81(20.6) | 0.75(19.1) | 0.41(10.4) | 0.04(1.0) | 0.55(14.0) |

Calibration Fittings



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

| T-Tube O.D. (in.) | P-SAE/MS Thread Size | Basic Ordering Number | 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) |

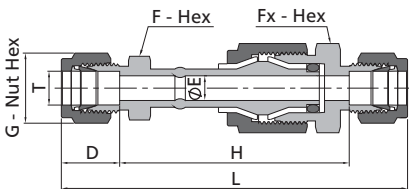
Dielectric Fittings

Materials

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

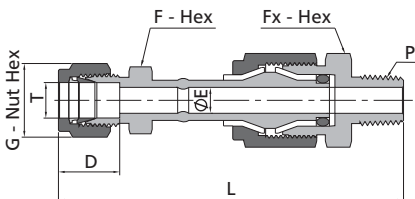
Technical Data

- ⦿ Electrical Resistance of Insulators at 70°F (20°C): 10×10⁶ Ω 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)



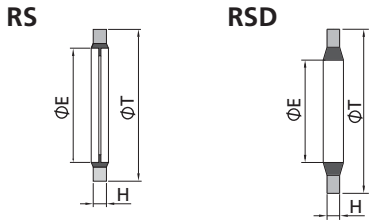
| Fractional Tube | | Dimensions, in. (mm) | | | | | | |
|-------------------|-----------------------|----------------------|------------|------------|------------|-----------|------------|------------|
| T-Tube O.D. (in.) | Basic Ordering Number | L | D | G | H | E | F | Fx |
| 1/4 | -DF-FL4 | 3.77(95.7) | 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) |



| 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



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) | 0.08(2) |
| 3/4 | -RSD-12 | 1.28(32.5) | 1.15(29.2) | |
| 1 | -RSD-16 | 1.56(39.5) | 1.42(36.1) | |

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) | 2.0(0.08) |
| 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) | |
| M22 x 1.5 | -RS-M22 | 30.0(1.10) | 22.7(0.89) | 2.5(0.10) |
| 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) | 3.0(0.12) |
| M33 x 2 | -RS-M33 | 42.0(1.50) | 33.7(1.30) | |
| 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) | 3.0(0.12) |
| 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) | |

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) | 2.0(0.08) |
| 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) | |
| M20 x 1.5 | -RP-M20 | 26.2(0.95) | 20.2(0.80) | 2.5(0.10) |
| 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) | 2.5(0.10) |
| M30 x 2 | -RP-M30 | 37.3(1.30) | 30.2(1.20) | |
| 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) | 2.5(0.10) |
| 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) | 2.5(0.10) |
| 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) | 2.5(0.10) |
| M27 x 2 | -RG-M27 | 24.0(0.90) | 13.9(0.50) | |
| 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-86 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

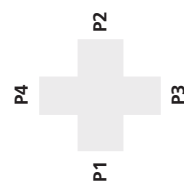
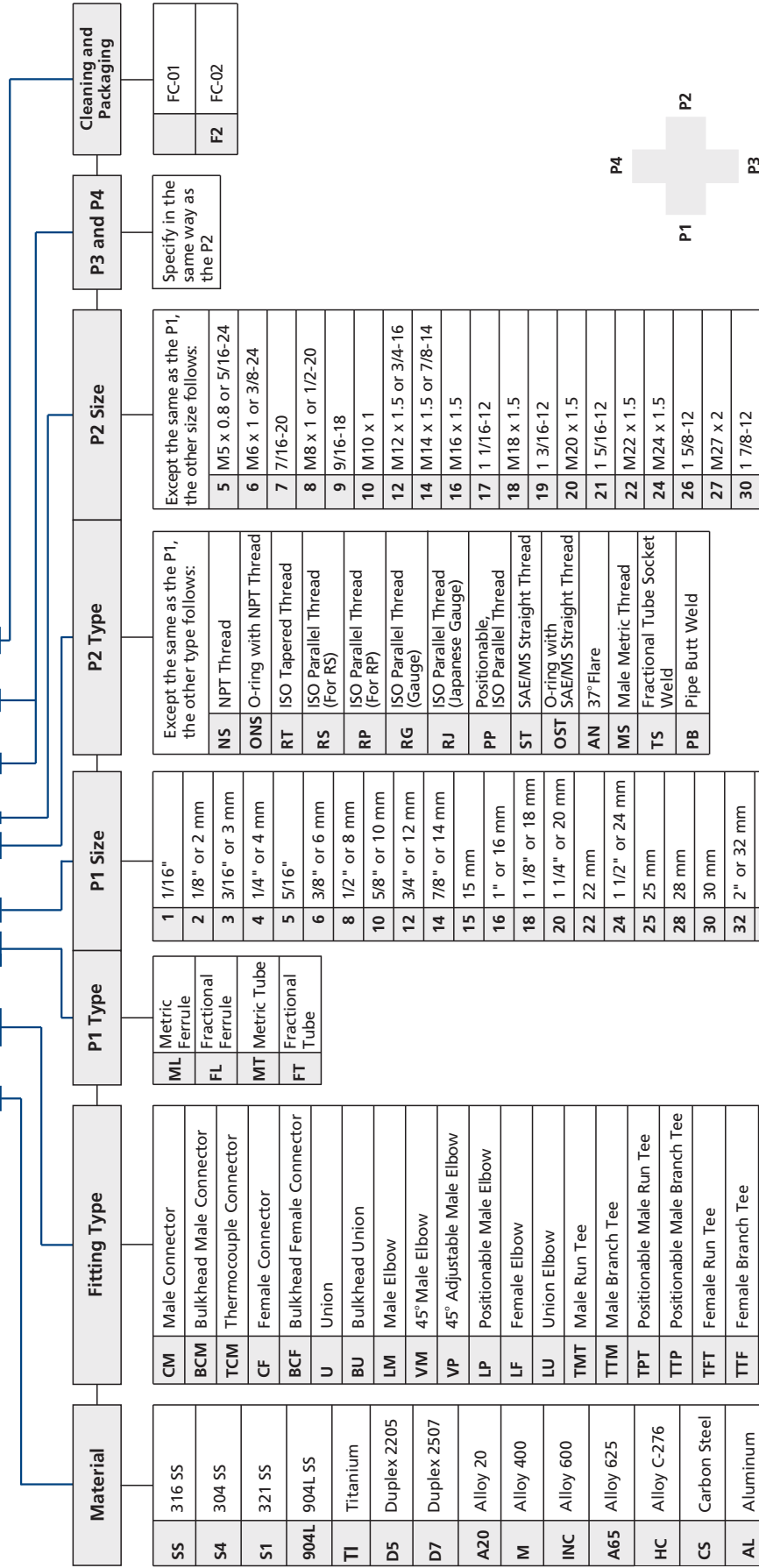
| SAE/MS Thread Size | Ordering Number | Material |
|--------------------|-----------------|---------------------|
| 5/16-24 | BN7-011 | 70 Durometer NBR |
| 3/8-24 | BN7-012 | |
| 7/16-20 | BN7-013 | |
| 1/2-20 | BN7-112 | |
| 9/16-18 | BN7-113 | |
| 3/4-16 | BN7-116 | |
| 1 1/16-12 | BN7-121 | |
|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



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

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



info@fitokgroup.com
www.fitokgroup.com

FK-IC-GF-01-EN-190912