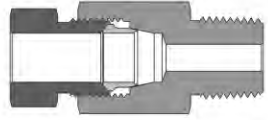




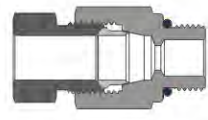
Contents

15 Series Tubing

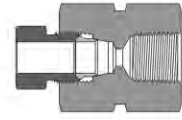
08 Male Connectors
NPT Thread - CM



08 Heavy-Duty
SAE/MS - CM

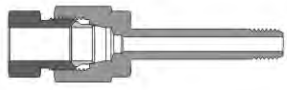


08 Female Connectors -
CF

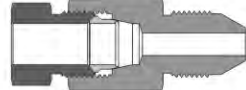


20 Series Cone and Thread Adapters

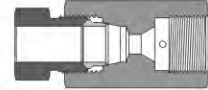
09 Female Connectors



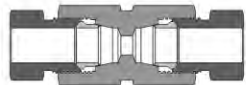
09 Unions



10 Large Hex Unions



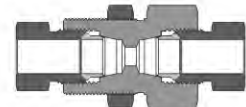
10 Reducing Adapters



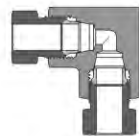
10 Bulkhead Unions



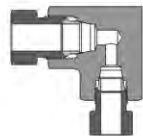
11 Bulkhead Lock Nuts



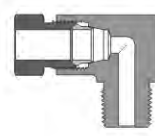
11 Tube Plugs



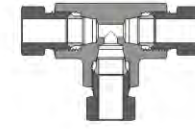
12 Tube Caps



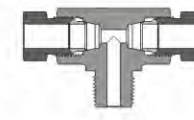
12 Male Elbows



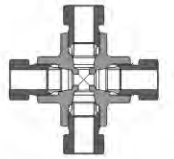
13 Adjustable Male Elbows



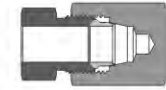
13 45° Male Elbows



13 Female Elbows



14 Union Elbows



14 Male Branch Tees



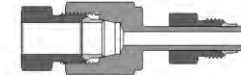
14 Adjustable Male
Branch Tees



14 Male Run Tees



15 Female Branch Tees



15 Female Run Tees



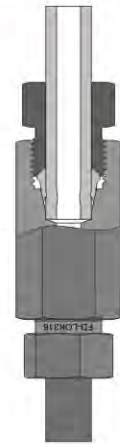
15 Union Tees



15 Series Tube Fittings and Tubes

Features

- Pressures up to 15000 psig (1034 bar).
- Fittings are easy to disconnect and retighten.
- Every fitting is stamped with size, material, and heat code.
- Radius junction design with elbows provides smooth flow path.
- Male nut threads are molybdenum disulfide-based lubricant to minimize the friction.
- Hardened threads and smoothed surface finishes extend fitting life and prevent sticking of the matching threads.



Materials of Construction

| Component | Material | ASTM |
|---------------|---------------------|------|
| Body, ferrule | 316 stainless steel | A276 |
| Nut | 316 stainless steel | A276 |

Wetted component listed italics.

Working Pressure

Working pressure are dependent on the end connection with the lowest working pressures. Working pressure for the end connections used in this catalog are identified below.

15 Series Tube Ends

The maximum working pressure of the 15 Series tube ends at ambient temperature are rated by the used FD-LOK 15 Series tubings. Refer to FD-LOK 15 Series tubing data.

Heavy-Duty SAE/MS Ends

Heavy-duty SAE/MS end connections listed in this catalog are rated to 63 Mpa (9137 psig), in according to SAE J1926-2.

20 Series Cone and Thread Ends

Cone and thread end connections listed in this catalog are manufactured to 20 Series cone and thread design standards and are rated to 20 000 psig (1379 bar).

NPT Pipe Thread Ends^①

| NPT Size | Working Pressure, psig(bar) |
|----------|-----------------------------|
| 1/16 | 15000 (1034) |
| 1/8 | |
| 1/4 | |
| 3/8 | |
| 1/2 | |
| 3/4 | 10000 (689) |
| 1 | |

① No allowance is made for corrosion, erosion, or elevated temperatures.

15 Series Tube Fittings and Tubes

2 Tube Fittings and Tubes

Elevated Temperature Factors

To get the maximum working pressure at elevated temperature, use the maximum working pressure at ambient temperature to multiply the factors in the table below.

| Temperature | | Material |
|-------------|-----|----------|
| °F | °C | 316 |
| 100 | 38 | 1 |
| 200 | 93 | 1 |
| 300 | 149 | 1 |
| 400 | 204 | 0.97 |
| 500 | 260 | 0.90 |
| 600 | 316 | 0.85 |
| 700 | 371 | 0.82 |
| 800 | 427 | 0.80 |

Installation Instructions

15 Series Tube Fitting Assembly

1. Put nut and ferrule on tubing in proper sequence and orientation (Fig 1).
2. Install hand-tight into the body of the fitting or the valve, make sure that the tubing rests firmly on the shoulder of the port (Fig.2).
3. Tighten the nut until the tubing cannot be turned by hand, then scribe the nut and the body (Fig. 3).
4. Tighten the nut 1/4 turns with wrench while holding steady the body of the fitting or the valve (Fig.4).

Fig.1

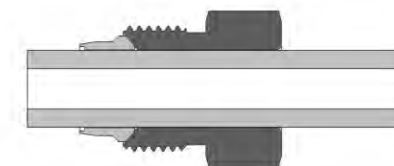


Fig.2

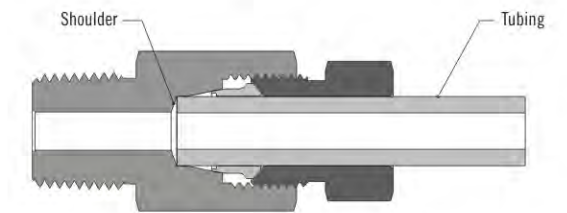


Fig.3

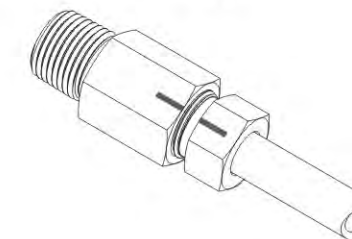
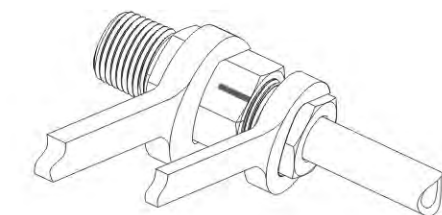


Fig.4



Preswaging Tool

1. Put nut and ferrule on tubing in proper sequence and orientation (Fig.1).
2. Install hand-tight into the preswaging tool, make sure that the tubing rests firmly on the shoulder of the port (Fig.5).
3. Tighten the nut until the tubing cannot be turned by hand, then scribe the nut and the preswaging tool (Fig. 6).
4. Tighten the nut 1/4 turns with wrench while holding steady the preswaging tool.
5. Loosen the nut and remove the tubing with preswaged ferrule from the preswaging tool (Fig.7).
Note: If the tubing sticks in the preswaging tool, remove the tube by gently rocking it back and forth.
Do not turn the tubing.
6. Insert tubing with preswaged ferrule into the body of the fitting or the valve, rotate the nut finger-tight (Fig.8).
7. Tighten the nut 3/8 turns with wrench while holding steady the body.

Fig.5

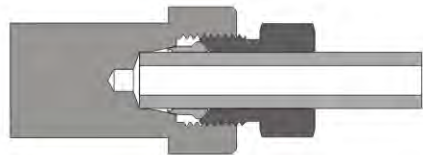


Fig.6

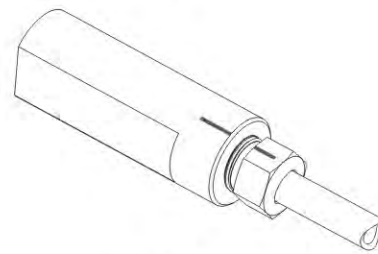


Fig.7

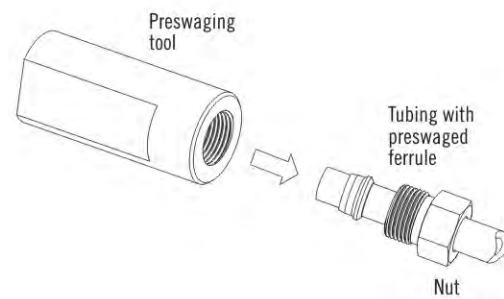
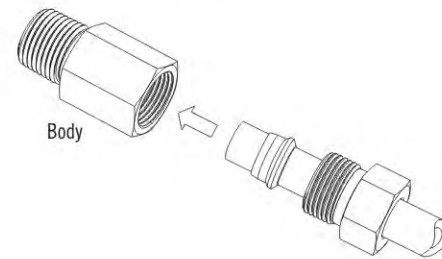


Fig.8



Caps

The Cap's installation is the same as the 15 Series Tube Fitting.

Plugs

Hold the body steady and tighten the plug one-quarter turn from the finger-tight position.

Tube Adapters and Reducers

1. Insert tubing with preswaging ferrule into the fitting body, rotate the nut finger-tight.
2. Tighten the nut 1/4 turns with wrench while holding steady the fitting body.

Port Connectors

1. For installation of the machined ferrule end of the port connector, the same as the Plugs.
2. For installation of the pre-swaged ferrule end of the port connector, the same as the Tube Adapters and Reducers.

Reinstallation Instructions

- You may disassemble and reassemble the tube fitting many times.
1. Insert tubing with preswaged ferrule into the fitting body, rotate the nut finger-tight.
 2. Tighten the nut 3/8 turns with wrench while holding steady the fitting body. After frequent reassemblies, it may take less than 3/8 turn to affect a gas-tight seal and as little as 1/8 of a turn may be sufficient.

Tools and Accessories

Preswaging Tool

| Tube O.D. | Ordering Number |
|-----------|-----------------|
| 1/4 in. | PST-15S-4 |
| 3/8 in. | PST-15S-6 |
| 1/2 in. | PST-15S-8 |
| 9/16 in. | PST-15S-9 |
| 3/4 in. | PST-15S-12 |

Fig.9



Features

- Working pressures up to 15 000 psig (1034 bar)
- Material, size, specification and heat code are indicated on the tubing surface

Material Standards

FD-LOK 15 Series Tube Fittings Used with Heavy-Wall Annealed Stainless Steel Tubing.

| Grade | UNS | Specification |
|----------|---------------|----------------|
| 316/316L | S31600/S31603 | ASTM A213, 269 |
| | | ASME SA213 |

Working Pressure

- The allowable working pressures in the table below are based on ASME B31.3 at ambient temperature.
- To work out the allowable working pressure at elevated temperature, take allowable working pressure at ambient temperature to multiply the factors in the table of Elevated Temperature Factors in page 2.

| Tube O.D. (in.) | Wall Thickness (in.) | Working Pressure ^① psig (bar) |
|-----------------|----------------------|--|
| 1/4 | 0.083 | 15000 (1034) |
| 1/4 | 0.065 | 10300 (710) |
| 3/8 | 0.118 | 15000 (1034) |
| 3/8 | 0.095 | 10000 (689) |
| 1/2 | 0.156 | 15000 (1034) |
| 1/2 | 0.134 | 11200 (772) |
| 9/16 | 0.188 | 15000 (1034) |
| 3/4 | 0.240 | 15000 (1034) |
| 3/4 | 0.188 | 10000 (689) |

① No allowance is made for corrosion, erosion, or elevated temperatures.

Ordering Information

| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Weight lb/ft (kg/m) |
|-----------------|----------------------|-----------------------|---------------------|
| 1/4 | 0.083 | SS-15T4-083- | 0.15 (0.22) |
| 1/4 | 0.065 | SS-15T4-065- | 0.13 (0.19) |
| 3/8 | 0.118 | SS-15T6-118- | 0.33 (0.49) |
| 3/8 | 0.095 | SS-15T6-095- | 0.29 (0.43) |
| 1/2 | 0.156 | SS-15T8-156- | 0.58 (0.87) |
| 1/2 | 0.134 | SS-15T8-134- | 0.53 (0.79) |
| 9/16 | 0.188 | SS-15T9-188- | 0.77 (1.14) |
| 3/4 | 0.240 | SS-15T12-240- | 1.33 (1.98) |
| 3/4 | 0.188 | SS-15T12-188- | 1.15 (1.71) |

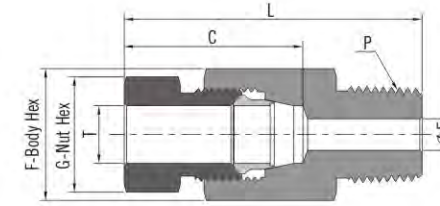
Add the actual foot (feet) /meter (meters) and "-MP" as a suffix to the basic ordering number to get the complete ordering number.

For example:

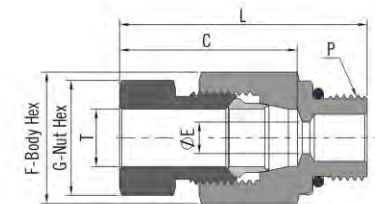
1. 10 feet length, outside diameter 1/2", wall thickness 0.156", 316 SS seamless tube, the complete ordering number is: SS-15T8-156-10-MP.

2. 3 meters length, outside diameter 3/4", wall thickness 0.188", 316 SS seamless tube, the complete ordering number is: SS-15T12-188-3M-MP.

Male Connectors

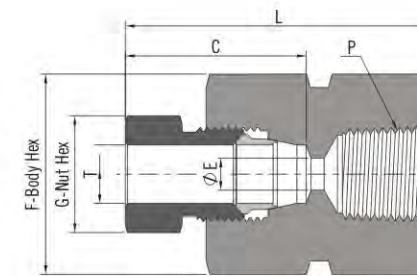


| T-Tube O.D. (in.) | P-NPT Size | Ordering Number | Dimensions, mm | | | | |
|-------------------|------------|------------------|----------------|------|------|------|------|
| | | | L | C | E | F | G |
| 1/4 | 1/8 | SS-CM-15S4-NT2 | 43.0 | 28.7 | 3.3 | 15.9 | 15.9 |
| 1/4 | 1/4 | SS-CM-15S4-NT4 | 46.3 | 28.7 | 4.8 | 15.9 | 15.9 |
| 1/4 | 3/8 | SS-CM-15S4-NT6 | 48.6 | 28.7 | 4.8 | 17.5 | 15.9 |
| 1/4 | 1/2 | SS-CM-15S4-NT8 | 52.5 | 28.7 | 4.8 | 22.2 | 15.9 |
| 3/8 | 1/4 | SS-CM-15S6-NT4 | 51.6 | 32.6 | 6.4 | 19.1 | 19.1 |
| 3/8 | 3/8 | SS-CM-15S6-NT6 | 51.6 | 32.6 | 6.4 | 19.1 | 19.1 |
| 3/8 | 1/2 | SS-CM-15S6-NT8 | 54.8 | 32.6 | 6.4 | 22.2 | 19.1 |
| 1/2 | 1/4 | SS-CM-15S8-NT4 | 58.0 | 34.1 | 6.4 | 25.4 | 23.8 |
| 1/2 | 3/8 | SS-CM-15S8-NT6 | 58.0 | 34.1 | 7.1 | 25.4 | 23.8 |
| 1/2 | 1/2 | SS-CM-15S8-NT8 | 61.1 | 34.1 | 9.5 | 25.4 | 23.8 |
| 1/2 | 3/4 | SS-CM-15S8-NT12 | 57.9 | 34.1 | 9.5 | 27.0 | 23.8 |
| 9/16 | 1/4 | SS-CM-15S9-NT4 | 71.1 | 44.5 | 6.4 | 28.6 | 27.0 |
| 9/16 | 1/2 | SS-CM-15S9-NT8 | 73.2 | 44.5 | 10.4 | 28.6 | 27.0 |
| 3/4 | 1/2 | SS-CM-15S12-NT8 | 87.6 | 60.2 | 10.4 | 38.1 | 34.9 |
| 3/4 | 3/4 | SS-CM-15S12-NT12 | 87.6 | 60.2 | 14.2 | 38.1 | 34.9 |
| 3/4 | 1 | SS-CM-15S12-NT16 | 89.9 | 60.2 | 14.2 | 38.1 | 34.9 |



| T-Tube O.D. (in.) | P-SAE/MS Thread Size | Ordering Number | Dimensions, mm | | | | |
|-------------------|----------------------|-----------------|----------------|------|-----|------|------|
| | | | L | C | E | F | G |
| 1/4 | 7/16-20 | SS-CM-15S4-SH7 | 43.2 | 28.7 | 4.8 | 15.9 | 15.9 |
| 1/4 | 9/16-18 | SS-CM-15S4-SH9 | 44.2 | 28.7 | 4.8 | 19.1 | 15.9 |
| 3/8 | 7/16-20 | SS-CM-15S6-SH7 | 48.5 | 32.6 | 5.1 | 19.1 | 19.1 |
| 3/8 | 9/16-18 | SS-CM-15S6-SH9 | 49.5 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | 7/16-20 | SS-CM-15S8-SH7 | 57.0 | 34.1 | 5.1 | 25.4 | 23.8 |
| 1/2 | 9/16-18 | SS-CM-15S8-SH9 | 57.0 | 34.1 | 7.1 | 25.4 | 23.8 |

Female Connectors

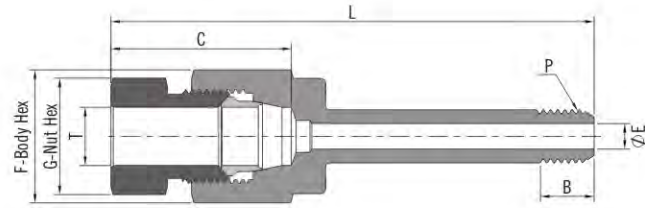


| T-Tube O.D. (in.) | P-NPT Size | Ordering Number | Dimensions, mm | | | | |
|-------------------|------------|-----------------|----------------|------|------|------|------|
| | | | L | C | E | F | G |
| 1/4 | 1/4 | SS-CF-15S4-NT4 | 52.5 | 28.7 | 4.8 | 25.4 | 15.9 |
| 3/8 | 1/4 | SS-CF-15S6-NT4 | 58.0 | 32.6 | 6.4 | 25.4 | 19.1 |
| 1/2 | 1/4 | SS-CF-15S8-NT4 | 64.3 | 34.1 | 7.1 | 25.4 | 23.8 |
| 1/2 | 1/2 | SS-CF-15S8-NT8 | 70.7 | 34.1 | 9.5 | 38.1 | 23.8 |
| 3/4 | 1/2 | SS-CF-15S12-NT8 | 90.3 | 60.2 | 14.2 | 38.1 | 34.9 |

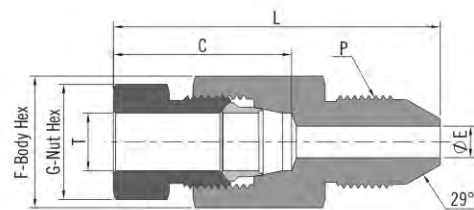
Dimensions are for reference only, subject to change.

15 Series Tube Fittings and Tubes

20 Series Cone and Thread Adapters



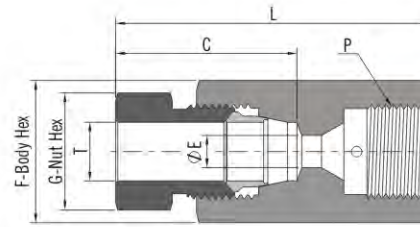
| Fractional Tube | | | | Cone and Thread Tube | | | | | |
|-------------------|--------------------------------|-----------------|---------------------|----------------------|------|------|-----|------|------|
| T-Tube O.D. (in.) | Cone and Thread Tube Size, in. | Ordering Number | P-Thread Size (in.) | Dimensions, mm | | | | | |
| | | | | L | C | B | F | E | G |
| 1/4 | 1/4 | SS-CM-15S4-CT4 | 1/4-28 LH | 70.6 | 28.7 | 7.9 | 2.8 | 15.9 | 15.9 |
| 3/8 | 3/8 | SS-CM-15S6-CT6 | 3/8-24 LH | 79.8 | 32.6 | 9.9 | 5.1 | 19.1 | 19.1 |
| 1/2 | 9/16 | SS-CM-15S8-CT9 | 9/16-18 LH | 97.6 | 34.1 | 11.9 | 7.1 | 25.4 | 23.8 |
| 3/4 | 9/16 | SS-CM-15S12-CT9 | 9/16-18 LH | 124.7 | 60.2 | 11.9 | 7.8 | 38.1 | 34.9 |



| Fractional Tube | | | | Male | | | | | |
|-------------------|--------------------------------|------------------|---------------------|----------------|------|------|------|------|--|
| T-Tube O.D. (in.) | Cone and Thread Tube Size, in. | Ordering Number | P-Thread Size (in.) | Dimensions, mm | | | | | |
| | | | | L | C | F | E | G | |
| 1/4 | 1/4 | SS-CM-15S4-MP4 | 7/16-20 UN | 51.2 | 28.7 | 2.8 | 15.9 | 15.9 | |
| 1/4 | 3/8 | SS-CM-15S4-MP6 | 9/16-18 UN | 57.1 | 28.7 | 4.8 | 15.9 | 15.9 | |
| 3/8 | 3/8 | SS-CM-15S6-MP6 | 9/16-18 UN | 66.5 | 32.6 | 5.1 | 19.1 | 19.1 | |
| 3/8 | 9/16 | SS-CM-15S6-MP9 | 13/16-16 UN | 67.0 | 32.6 | 6.4 | 22.2 | 19.1 | |
| 1/2 | 9/16 | SS-CM-15S8-MP9 | 13/16-16 UN | 67.9 | 34.1 | 7.9 | 25.4 | 23.8 | |
| 9/16 | 9/16 | SS-CM-15S9-MP9 | 13/16-16 UN | 77.7 | 44.5 | 7.9 | 28.6 | 27.0 | |
| 3/4 | 9/16 | SS-CM-15S12-MP9 | 13/16-16 UN | 96.7 | 60.2 | 7.9 | 38.1 | 34.9 | |
| 3/4 | 3/4 | SS-CM-15S12-MP12 | 3/4-14 NPSM | 99.0 | 60.2 | 11.1 | 38.1 | 34.9 | |

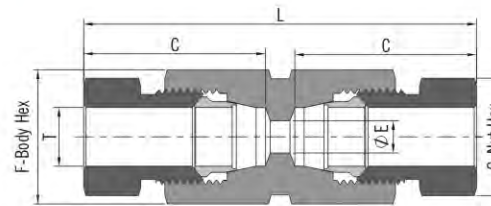
15 Series Tube Fittings and Tubes

20 Series Cone and Thread Adapters



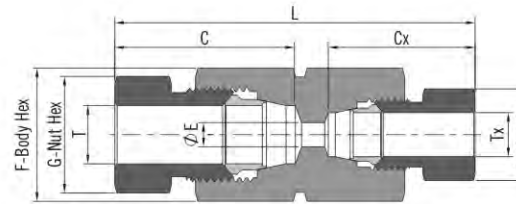
| Fractional Tube | | | | Female | | | | | |
|-------------------|--------------------------------|------------------|---------------------|----------------|------|------|------|------|--|
| T-Tube O.D. (in.) | Cone and Thread Tube Size, in. | Ordering Number | P-Thread Size (in.) | Dimensions, mm | | | | | |
| | | | | L | C | F | E | G | |
| 1/4 | 1/4 | SS-CF-15S4-MP4 | 7/16-20 UN | 50.0 | 28.7 | 2.8 | 17.5 | 15.9 | |
| 3/8 | 3/8 | SS-CF-15S6-MP6 | 9/16-18 UN | 58.1 | 32.6 | 5.1 | 22.2 | 19.1 | |
| 1/2 | 9/16 | SS-CF-15S8-MP9 | 13/16-16 UN | 66.1 | 34.1 | 7.9 | 27.0 | 23.8 | |
| 9/16 | 9/16 | SS-CF-15S9-MP9 | 13/16-16 UN | 72.6 | 44.5 | 7.9 | 28.6 | 27.0 | |
| 3/4 | 3/4 | SS-CF-15S12-MP12 | 3/4-14 NPSM | 98.5 | 60.2 | 11.1 | 38.1 | 34.9 | |

Unions



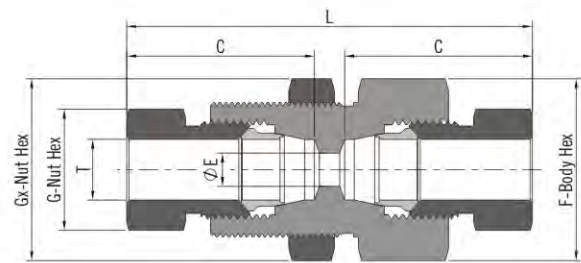
| Fractional Tube | | Dimensions, mm | | | | |
|-------------------|-----------------|----------------|------|------|------|------|
| T-Tube O.D. (in.) | Ordering Number | L | C | F | E | G |
| 1/4 | SS-U-15S4 | 63.5 | 28.7 | 4.8 | 15.9 | 15.9 |
| 3/8 | SS-U-15S6 | 71.4 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | SS-U-15S8 | 77.8 | 34.1 | 9.5 | 25.4 | 23.8 |
| 9/16 | SS-U-15S9 | 101.1 | 44.5 | 10.4 | 28.6 | 27.0 |
| 3/4 | SS-U-15S12 | 132.9 | 60.2 | 14.2 | 38.1 | 34.9 |

Reducing Unions



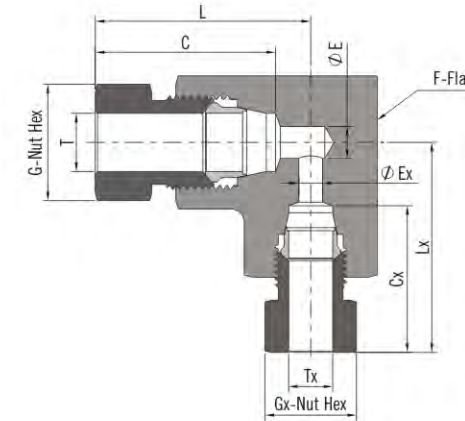
| Fractional Tube | | | NPT Thread | | | | | | |
|-------------------|-------------------|-----------------|----------------|------|------|-----|------|------|------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (mm) | Ordering Number | Dimensions, mm | | | | | | |
| | | | L | C | Cx | E | F | G | Gx |
| 3/8 | 1/4 | SS-U-15S6-15S4 | 67.5 | 32.6 | 28.7 | 4.8 | 19.1 | 19.1 | 15.9 |
| 1/2 | 1/4 | SS-U-15S8-154 | 72.5 | 34.1 | 28.7 | 4.8 | 25.4 | 23.8 | 15.9 |
| 1/2 | 3/8 | SS-U-15S8-15S6 | 74.7 | 34.1 | 32.6 | 6.4 | 25.4 | 23.8 | 19.1 |
| 9/16 | 1/2 | SS-U-15S9-15S8 | 92.2 | 44.5 | 34.1 | 9.5 | 28.6 | 27.0 | 23.8 |
| 3/4 | 1/2 | SS-U-15S12-15S8 | 108.2 | 60.2 | 34.1 | 9.5 | 38.1 | 34.9 | 23.8 |

Bulkhead Unions



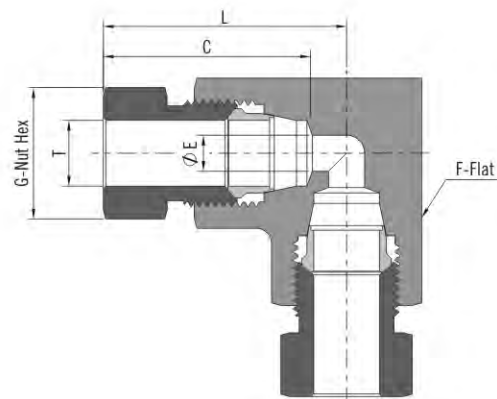
| Fractional Tube | | Dimensions, mm | | | | | | | | |
|-------------------|-----------------|----------------|------|------|------|------|------|-----------------|-------------------------|--|
| T-Tube O.D. (in.) | Ordering Number | L | C | E | F | G | Gx | Panel Hole Size | Maximum Panel Thickness | |
| 1/4 | SS-BU-15S4 | 80.8 | 28.7 | 4.8 | 25.4 | 15.9 | 25.4 | 23.8 | 9.5 | |
| 3/8 | SS-BU-15S6 | 74.7 | 32.6 | 6.4 | 25.4 | 19.1 | 25.4 | 23.8 | 9.5 | |
| 1/2 | SS-BU-15S8 | 87.4 | 34.1 | 9.5 | 34.9 | 23.8 | 34.9 | 28.5 | 9.5 | |
| 9/16 | SS-BU-15S9 | 106.1 | 44.5 | 10.4 | 41.3 | 27.0 | 41.3 | 33.7 | 9.5 | |
| 3/4 | SS-BU-15S12 | 132.9 | 60.2 | 14.2 | 47.6 | 34.9 | 47.6 | 41.7 | 9.5 | |

Union Reducing Elbows



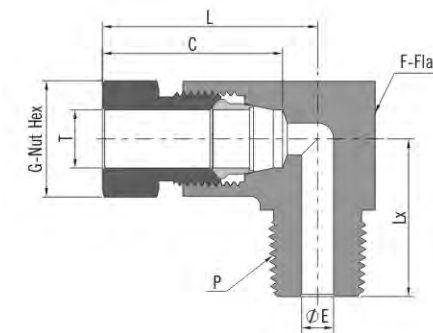
| Fractional Tube | | Dimensions, mm | | | | | | | | |
|-------------------|--------------------|------------------|------|------|------|------|-----|------|------|------|
| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Ordering Number | L | Lx | C | Cx | E | F | G | Gx |
| 3/8 | 1/4 | SS-LU-15S6-15S4 | 40.9 | 35.6 | 32.6 | 28.7 | 4.8 | 19.1 | 19.1 | 15.9 |
| 1/2 | 1/4 | SS-LU-15S8-15S4 | 48.5 | 42.9 | 34.1 | 28.7 | 4.8 | 25.4 | 23.8 | 15.9 |
| 1/2 | 3/8 | SS-LU-15S8-15S6 | 48.5 | 46.2 | 34.1 | 32.6 | 6.5 | 25.4 | 23.8 | 19.1 |
| 9/16 | 1/2 | SS-LU-15S9-15S8 | 56.9 | 54.4 | 44.5 | 34.1 | 9.5 | 38.1 | 27.0 | 23.8 |
| 3/4 | 1/2 | SS-LU-15S12-15S8 | 76.9 | 63.8 | 60.2 | 34.1 | 9.5 | 38.1 | 34.9 | 23.8 |

Union Elbows



| Fractional Tube | | Dimensions, mm | | | | |
|-------------------|-----------------|----------------|------|------|------|------|
| T-Tube O.D. (in.) | Ordering Number | L | C | F | E | G |
| 1/4 | SS-LU-15S4 | 36.6 | 28.7 | 4.8 | 15.9 | 15.9 |
| 3/8 | SS-LU-15S6 | 38.9 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | SS-LU-15S8 | 45.2 | 34.1 | 9.5 | 25.4 | 23.8 |
| 9/16 | SS-LU-15S9 | 56.9 | 44.5 | 10.4 | 38.1 | 27.0 |
| 3/4 | SS-LU-15S12 | 76.9 | 60.2 | 14.2 | 38.1 | 34.9 |

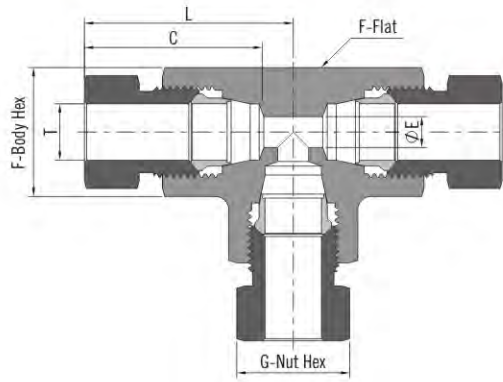
Male Elbows



| Fractional Tube | | | NPT Thread | | | | | |
|-------------------|------------|------------------|----------------|------|------|------|------|------|
| T-Tube O.D. (in.) | P-NPT Size | Ordering Number | Dimensions, mm | | | | | |
| | | | L | Lx | C | E | F | G |
| 1/4 | 1/4 | SS-LM-15S4-NT4 | 37.1 | 24.6 | 28.7 | 4.8 | 19.1 | 15.9 |
| 1/4 | 3/8 | SS-LM-15S4-NT6 | 37.1 | 24.6 | 28.7 | 4.8 | 19.1 | 15.9 |
| 1/4 | 1/2 | SS-LM-15S4-NT8 | 42.4 | 34.8 | 28.7 | 4.8 | 25.4 | 15.9 |
| 3/8 | 1/4 | SS-LM-15S6-NT4 | 34.1 | 24.6 | 32.6 | 6.4 | 19.1 | 19.1 |
| 3/8 | 3/8 | SS-LM-15S6-NT6 | 34.1 | 24.6 | 32.6 | 6.4 | 19.1 | 19.1 |
| 3/8 | 1/2 | SS-LM-15S6-NT8 | 45.7 | 34.8 | 32.6 | 6.4 | 25.4 | 19.1 |
| 1/2 | 1/4 | SS-LM-15S8-NT4 | 47.8 | 30.0 | 34.1 | 6.4 | 25.4 | 23.8 |
| 1/2 | 3/8 | SS-LM-15S8-NT6 | 47.8 | 30.0 | 34.1 | 7.1 | 25.4 | 23.8 |
| 1/2 | 1/2 | SS-LM-15S8-NT8 | 47.8 | 34.8 | 34.1 | 9.5 | 25.4 | 23.8 |
| 9/16 | 1/2 | SS-LM-15S9-NT8 | 56.9 | 43.9 | 44.5 | 10.4 | 38.1 | 27.0 |
| 3/4 | 1/2 | SS-LM-15S12-NT8 | 76.9 | 43.9 | 60.2 | 10.4 | 38.1 | 34.9 |
| 3/4 | 3/4 | SS-LM-15S12-NT12 | 76.9 | 43.9 | 60.2 | 14.2 | 38.1 | 34.9 |

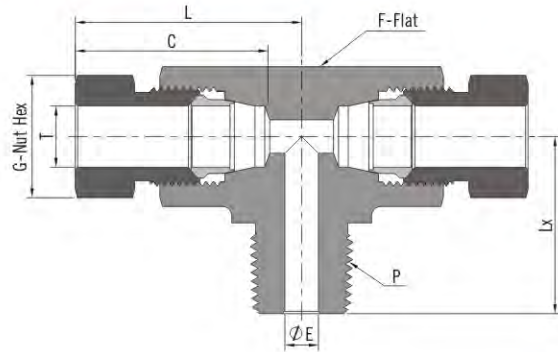
15 Series Tube Fittings and Tubes

Union Tees



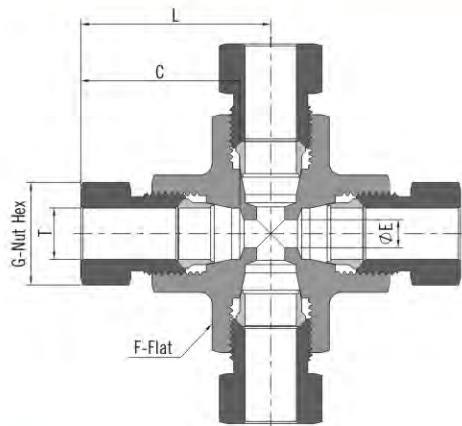
| Fractional Tube | | Dimensions, mm | | | | |
|-------------------|-----------------|----------------|------|------|------|------|
| T-Tube O.D. (in.) | Ordering Number | L | C | E | F | G |
| 1/4 | SS-TTT-15S4 | 36.6 | 28.7 | 4.8 | 15.9 | 15.9 |
| 3/8 | SS-TTT-15S6 | 38.9 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | SS-TTT-15S8 | 45.2 | 34.1 | 9.5 | 25.4 | 23.8 |
| 9/16 | SS-TTT-15S9 | 56.9 | 44.5 | 10.4 | 38.1 | 27.0 |
| 3/4 | SS-TTT-15S12 | 76.9 | 60.2 | 14.2 | 38.1 | 34.9 |

Male Branch Tees



| Fractional Tube | | | NPT Thread | | | | | |
|-------------------|------------|-------------------|----------------|------|------|------|------|------|
| T-Tube O.D. (in.) | P-NPT Size | Ordering Number | Dimensions, mm | | | | | |
| | | | L | Lx | C | E | F | G |
| 1/4 | 1/8 | SS-TTM-15S4-NT2 | 36.6 | 19.8 | 28.7 | 4.8 | 15.9 | 15.9 |
| 1/4 | 1/4 | SS-TTM-15S4-NT4 | 37.1 | 24.6 | 28.7 | 4.8 | 19.1 | 15.9 |
| 3/8 | 1/4 | SS-TTM-15S6-NT4 | 40.4 | 24.6 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | 1/4 | SS-TTM-15S8-NT4 | 47.8 | 30.0 | 34.1 | 6.4 | 25.4 | 23.8 |
| 1/2 | 3/8 | SS-TTM-15S8-NT6 | 47.8 | 30.0 | 34.1 | 7.1 | 25.4 | 23.8 |
| 3/4 | 3/4 | SS-TTM-15S12-NT12 | 76.9 | 46.0 | 60.2 | 14.2 | 38.1 | 34.9 |

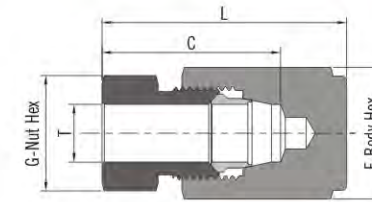
Union Crosses



| Fractional Tube | | Dimensions, mm | | | | |
|-------------------|-----------------|----------------|------|-----|------|------|
| T-Tube O.D. (in.) | Ordering Number | L | C | E | F | G |
| 1/4 | SS-C-15S4 | 36.6 | 28.7 | 4.8 | 15.9 | 15.9 |
| 3/8 | SS-C-15S6 | 38.9 | 32.6 | 6.4 | 19.1 | 19.1 |
| 1/2 | SS-C-15S8 | 45.2 | 34.1 | 9.5 | 25.4 | 23.8 |

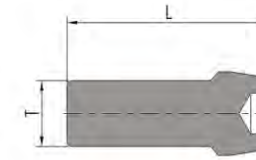
15 Series Tube Fittings and Tubes

Caps



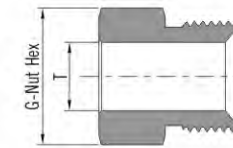
| Fractional Tube | | Dimensions, mm | | | |
|-------------------|-----------------|----------------|------|------|------|
| T-Tube O.D. (in.) | Ordering Number | L | C | F | G |
| 1/4 | SS-TC-15S4 | 36.6 | 28.7 | 15.9 | 15.9 |
| 3/8 | SS-TC-15S6 | 41.3 | 32.6 | 19.1 | 19.1 |
| 1/2 | SS-TC-15S8 | 45.3 | 34.1 | 25.4 | 23.8 |
| 9/16 | SS-TC-15S9 | 56.9 | 44.5 | 28.6 | 27.0 |
| 3/4 | SS-TC-15S12 | 76.9 | 60.2 | 38.1 | 34.9 |

Plugs



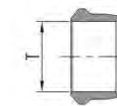
| Fractional Tube | | Dimensions, mm |
|-------------------|-----------------|----------------|
| T-Tube O.D. (in.) | Ordering Number | G |
| 1/4 | SS-TP-15S4 | 26.2 |
| 3/8 | SS-TP-15S6 | 29.4 |
| 1/2 | SS-TP-15S8 | 31.8 |
| 9/16 | SS-TP-15S9 | 39.5 |
| 3/4 | SS-TP-15S12 | 52.8 |

Nuts



| Fractional Tube | | Dimensions, mm |
|-------------------|-----------------|----------------|
| T-Tube O.D. (in.) | Ordering Number | G |
| 1/4 | SS-N-15S4 | 15.9 |
| 3/8 | SS-N-15S6 | 19.1 |
| 1/2 | SS-N-15S8 | 23.8 |
| 9/16 | SS-N-15S9 | 27.0 |
| 3/4 | SS-N-15S12 | 34.9 |

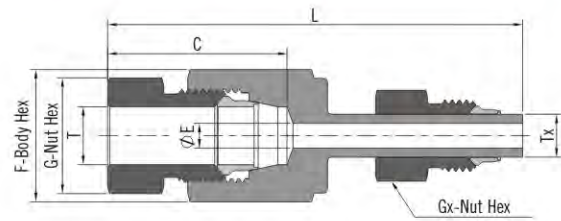
Ferrules



| Fractional Tube | | Ordering Number |
|-------------------|--|-----------------|
| T-Tube O.D. (in.) | | |
| 1/4 | | SS-FE-S4 |
| 3/8 | | SS-FE-S6 |
| 1/2 | | SS-FE-S8 |
| 9/16 | | SS-FE-S9 |
| 3/4 | | SS-FE-S12 |

15 Series Tube Fittings and Tubes

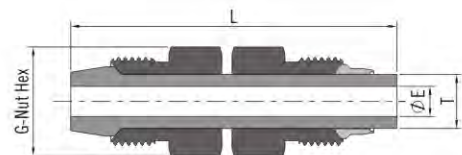
Reducers



Fractional Tube

| T-Tube O.D. (in.) | Tx-Tube O.D. (in.) | Ordering Number | Dimensions, mm | | | | | |
|-------------------------|--------------------------|--------------------|----------------|------|------|------|------|------|
| | | | L | C | E | F | G | Gx |
| 1/4 | 3/8 | SS-R-15S4-FM6 | 75.4 | 28.7 | 4.8 | 15.9 | 15.9 | 19.1 |
| 1/4 | 1/2 | SS-R-15S4-FM8 | 84.1 | 28.7 | 4.8 | 15.9 | 15.9 | 23.8 |
| 3/8 | 1/2 | SS-R-15S6-FM8 | 89.4 | 32.6 | 6.4 | 19.1 | 19.1 | 23.8 |
| 1/2 | 3/8 | SS-R-15S8-FM6 | 92.7 | 34.1 | 5.3 | 25.4 | 23.8 | 19.1 |
| 1/2 | 3/4 | SS-R-15S8-FM12 | 118.4 | 34.1 | 9.5 | 25.4 | 23.8 | 34.9 |
| 9/16 | 3/4 | SS-R-15S9-FM12 | 121.7 | 44.5 | 10.4 | 28.6 | 27.0 | 34.9 |
| 3/4 | 9/16 | SS-R-15S12-FM9 | 125.2 | 60.2 | 7.9 | 38.1 | 34.9 | 27.0 |

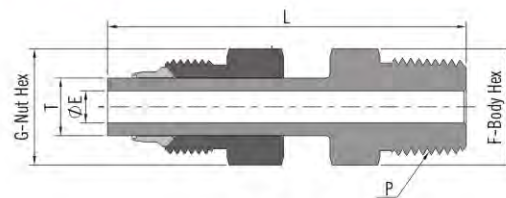
Port Connectors



Fractional Tube

| T-Tube O.D. (in.) | Ordering Number | Dimensions, mm | | |
|-------------------------|--------------------|----------------|------|------|
| | | L | E | G |
| 1/4 | SS-P-15S4 | 54.3 | 3.0 | 15.9 |
| 3/8 | SS-P-15S6 | 64.5 | 5.3 | 19.1 |
| 1/2 | SS-P-15S8 | 75.9 | 7.1 | 23.8 |
| 9/16 | SS-P-15S9 | 83.6 | 9.7 | 27.0 |
| 3/4 | SS-P-15S12 | 111.5 | 10.7 | 34.9 |

Adapters



Fractional Tube

NPT Thread

| T-Tube O.D. (in.) | P-NPT Size | Ordering Number | Dimensions, mm | | | |
|-------------------------|---------------|--------------------|----------------|------|------|------|
| | | | L | E | F | G |
| 1/4 | 1/4 | SS-AM-FM4-NT4 | 55.4 | 3.0 | 15.9 | 15.9 |
| 3/8 | 1/4 | SS-AM-FM6-NT4 | 64.3 | 5.3 | 15.9 | 19.1 |
| 3/8 | 1/2 | SS-AM-FM6-NT8 | 70.6 | 5.3 | 22.2 | 19.1 |
| 1/2 | 1/4 | SS-AM-FM8-NT4 | 65.8 | 6.4 | 15.9 | 23.8 |
| 1/2 | 1/2 | SS-AM-FM8-NT8 | 76.2 | 7.1 | 22.2 | 23.8 |
| 9/16 | 1/2 | SS-AM-FM9-NT8 | 86.5 | 7.9 | 22.2 | 27.0 |
| 3/4 | 3/4 | SS-AM-FM12-NT12 | 99.6 | 10.0 | 27.0 | 34.9 |



Instrumentation Solutions

www.fd-lok.com

20 Series Tube Fittings

20,000 psi (1379 bar)



ZHEJIANG FANGDUN INSTRUMENT VALVE CO.,LTD
No.177, Zhanwang Road,Longwan Industry Center,
Wenzhou,Zhejiang,China 325024

Tel: 86-577-8692 7952
Fax: 86-577-8598 9788
E-mail: fangdun@fd-lok.com

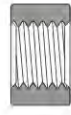
ZHEJIANG FANGDUN INSTRUMENT VALVE CO.,LTD

Contents

02 Glands - G



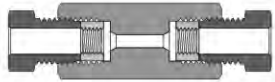
02 Collars - CO



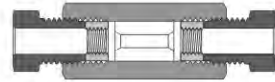
02 Plugs - TP



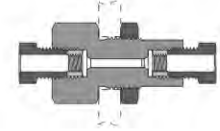
02 Union Couplings - U



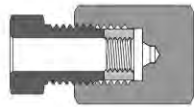
03 Union Couplings (Slip Type) - SU



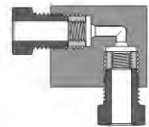
03 Bulkhead Couplings - BU



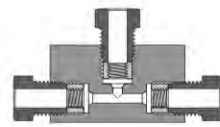
03 Caps - TC



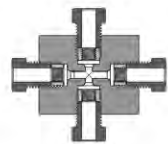
04 Elbows - LU



04 Tees - TTT



05 Crosses - C



06 Anti-Vibration Gland Assemblies - AVGA



06 Coned and Threaded Nipples - CTN



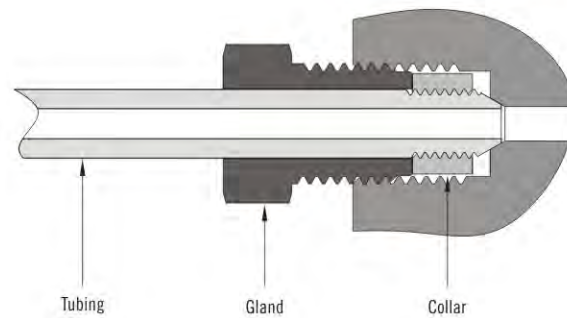
07 20 Series Tubing

20 Series Tube Fittings

Features

- Coned-and-Threaded Connection.
- Metal-to-metal seal provides perfect leak-tight service from critical vacuum to high pressure.
- Anti-vibration connection components available.
- Fittings are easy to disconnect and retighten.
- 316 stainless steel is standard material. Other materials are available upon request.
- Every fitting is stamped with size, material, and heat code.

Composition



Technical Data

- Available sizes are 1/4", 3/8", 9/16", 3/4" and 1".
- Temperature Rating: -325 to 800°F (-198 to 427°C).
- Working Pressure:

| T-Tube O.D. (in.) | Working Pressure, psi (bar) | | | | |
|-------------------|--------------------------------|--------------|---------------|---------------|---------------|
| | -325 to 100°F (-198 to 37.8°C) | 200°F (93°C) | 400°F (204°C) | 600°F (316°C) | 800°F (427°C) |
| 1/4 | 20000 (1379) | 20000 (1379) | 19250 (1327) | 18050 (1244) | 16800 (1158) |
| 3/8 | 20000 (1379) | 20000 (1379) | 19250 (1327) | 18050 (1244) | 16800 (1158) |
| 9/16 | 20000 (1379) | 20000 (1379) | 19250 (1327) | 18050 (1244) | 16800 (1158) |
| 3/4 | 20000 (1379) | 20000 (1379) | 19250 (1327) | 18050 (1244) | 16800 (1158) |
| 1 | 20000 (1379) | 20000 (1379) | 19250 (1327) | 18050 (1244) | 16800 (1158) |

Installation Instructions

- refer to the Tools and Installation.

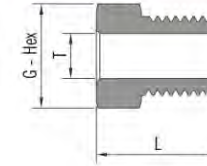
Cautions

- Do not loosen or tighten fittings when system is pressurized.

20 Series Tube Fittings

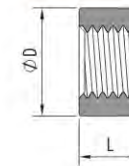
Dimensions

Glands



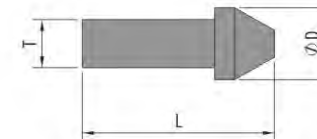
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-------------|
| | | G | L |
| 1/4 | SS-G-20S4 | 0.50 (12.7) | 0.58 (14.7) |
| 3/8 | SS-G-20S6 | 0.63 (15.9) | 0.73 (18.5) |
| 9/16 | SS-G-20S9 | 0.94 (23.8) | 0.88 (22.4) |
| 3/4 | SS-G-20S12 | 1.19 (30.2) | 1.00 (25.4) |
| 1 | SS-G-20S16 | 1.38 (34.9) | 1.38 (35.1) |

Collars



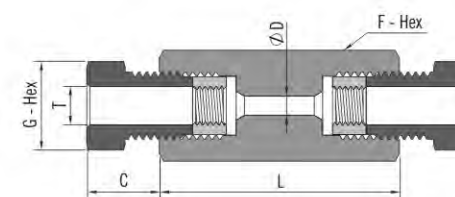
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-------------|
| | | D | L |
| 1/4 | SS-CO-20S4 | 0.38 (9.7) | 0.22 (5.6) |
| 3/8 | SS-CO-20S6 | 0.47 (11.9) | 0.25 (6.4) |
| 9/16 | SS-CO-20S9 | 0.72 (18.3) | 0.31 (7.9) |
| 3/4 | SS-CO-20S12 | 0.94 (23.8) | 0.37 (9.4) |
| 1 | SS-CO-20S16 | 1.25 (31.8) | 0.50 (12.7) |

Plugs



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-------------|
| | | D | L |
| 1/4 | SS-TP-20S4 | 0.38 (9.7) | 0.94 (23.8) |
| 3/8 | SS-TP-20S6 | 0.47 (11.9) | 1.18 (30.0) |
| 9/16 | SS-TP-20S9 | 0.72 (18.3) | 1.40 (35.6) |
| 3/4 | SS-TP-20S12 | 0.94 (23.8) | 1.69 (42.9) |
| 1 | SS-TP-20S16 | 1.25 (31.8) | 2.20 (55.9) |

Union Couplings

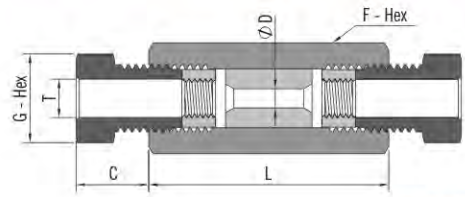


| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|-------------|
| | | L | C | D | G | F |
| 1/4 | SS-U-20S4 | 1.62 (41.1) | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 0.63 (15.9) |
| 3/8 | SS-U-20S6 | 1.75 (44.5) | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 0.75 (19.1) |
| 9/16 | SS-U-20S9 | 2.12 (53.9) | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 1.00 (25.4) |
| 3/4 | SS-U-20S12 | 2.50 (63.5) | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 1.38 (34.9) |
| 1 | SS-U-20S16 | 3.50 (88.9) | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 1.75 (44.5) |

Dimensions are for reference only, subject to change.

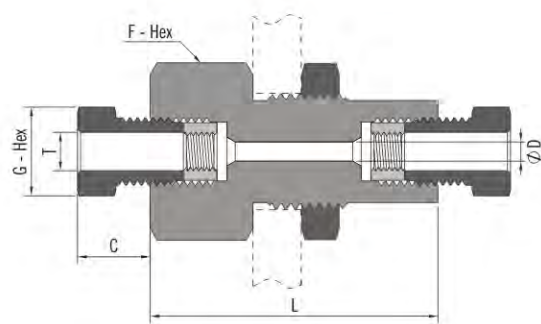
20 Series Tube Fittings

Union Couplings (Slip Type)



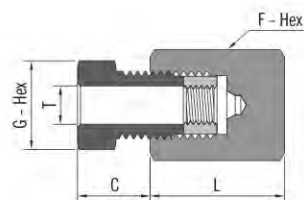
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|-------------|
| | | L | C | D | G | F |
| 1/4 | SS-SU-20S4 | 1.62 (41.1) | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 0.63 (15.9) |
| 3/8 | SS-SU-20S6 | 1.75 (44.5) | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 0.75 (19.1) |
| 9/16 | SS-SU-20S9 | 2.12 (53.9) | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 1.00 (25.4) |
| 3/4 | SS-SU-20S12 | 2.50 (63.5) | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 1.38 (34.9) |
| 1 | SS-SU-20S16 | 3.50 (88.9) | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 1.75 (44.5) |

Bulkhead Couplings



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|-------------|-----------------|----------------------|
| | | L | C | D | G | F | Panel Hole Size | Max. Panel Thickness |
| 1/4 | SS-BU-20S4 | 1.88 (47.8) | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 1.00 (25.4) | 0.81 (20.6) | 0.38 (9.7) |
| 3/8 | SS-BU-20S6 | 2.00 (50.8) | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 1.06 (27.0) | 0.94 (23.8) | 0.38 (9.7) |
| 9/16 | SS-BU-20S9 | 2.38 (60.5) | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 1.38 (34.9) | 1.13 (28.6) | 0.38 (9.7) |
| 3/4 | SS-BU-20S12 | 2.62 (66.5) | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 1.88 (47.6) | 1.69 (42.9) | 0.38 (9.7) |
| 1 | SS-BU-20S16 | 3.50 (88.9) | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 2.13 (54.0) | 1.94 (49.2) | 0.38 (9.7) |

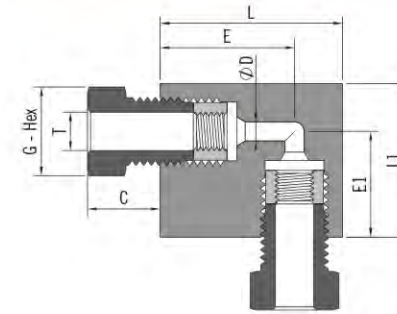
Caps



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|
| | | L | C | G | F |
| 1/4 | SS-TC-20S4 | 1.00 (25.4) | 0.38 (9.7) | 0.50 (12.7) | 0.63 (15.9) |
| 3/8 | SS-TC-20S6 | 1.19 (30.2) | 0.44 (11.2) | 0.63 (15.9) | 0.75 (19.1) |
| 9/16 | SS-TC-20S9 | 1.50 (38.1) | 0.53 (13.5) | 0.94 (23.8) | 1.00 (25.4) |
| 3/4 | SS-TC-20S12 | 1.88 (47.7) | 0.62 (15.7) | 1.19 (30.2) | 1.38 (34.9) |
| 1 | SS-TC-20S16 | 2.50 (63.5) | 0.72 (18.3) | 1.38 (34.9) | 1.75 (44.5) |

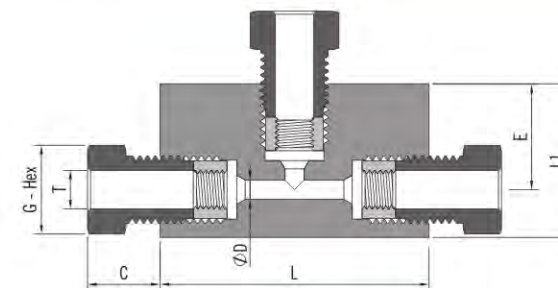
20 Series Tube Fittings

Elbows



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | C | D | G | L | E | L1 | E1 | Thickness |
| 1/4 | SS-LU-20S4 | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 1.12 (28.4) | 0.75 (19.1) | 1.12 (28.4) | 0.75 (19.1) | 0.63 (15.9) |
| 3/8 | SS-LU-20S6 | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 1.38 (34.9) | 1.00 (25.4) | 1.38 (34.9) | 1.00 (25.4) | 0.75 (19.1) |
| 9/16 | SS-LU-20S9 | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 1.75 (44.5) | 1.25 (31.8) | 1.75 (44.5) | 1.25 (31.8) | 1.00 (25.4) |
| 3/4 | SS-LU-20S12 | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 2.25 (57.2) | 1.50 (38.1) | 2.25 (57.2) | 1.50 (38.1) | 1.38 (34.9) |
| 1 | SS-LU-20S16 | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 3.00 (76.2) | 2.06 (52.3) | 3.00 (76.2) | 2.06 (52.3) | 1.75 (44.5) |

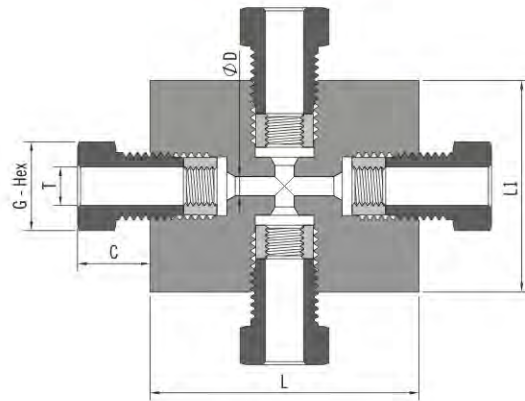
Tees



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|--------------|-------------|-------------|-------------|
| | | C | D | G | L | L1 | E | Thickness |
| 1/4 | SS-TT-20S4 | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 1.50 (38.1) | 1.12 (28.4) | 0.75 (19.1) | 0.63 (15.9) |
| 3/8 | SS-TT-20S6 | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 2.00 (50.8) | 1.38 (34.9) | 1.00 (25.4) | 0.75 (19.1) |
| 9/16 | SS-TT-20S9 | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 2.50 (63.5) | 1.75 (44.5) | 1.25 (31.8) | 1.00 (25.4) |
| 3/4 | SS-TT-20S12 | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 3.00 (76.2) | 2.25 (57.2) | 1.50 (38.1) | 1.38 (34.9) |
| 1 | SS-TT-20S16 | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 4.12 (104.6) | 3.00 (76.2) | 2.06 (52.3) | 1.75 (44.5) |

20 Series Tube Fittings

Crosses



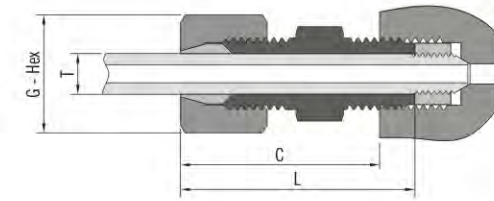
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | |
|-------------------|-----------------|---------------------|-------------|-------------|--------------|--------------|-------------|
| | | C | D | G | L | L1 | Thickness |
| 1/4 | SS-C-20S4 | 0.38 (9.7) | 0.11 (2.8) | 0.50 (12.7) | 1.50 (38.1) | 1.50 (38.1) | 0.63 (15.9) |
| 3/8 | SS-C-20S6 | 0.44 (11.2) | 0.20 (5.1) | 0.63 (15.9) | 2.00 (50.8) | 2.00 (50.8) | 0.75 (19.1) |
| 9/16 | SS-C-20S9 | 0.53 (13.5) | 0.31 (7.9) | 0.94 (23.8) | 2.50 (63.5) | 2.50 (63.5) | 1.00 (25.4) |
| 3/4 | SS-C-20S12 | 0.62 (15.7) | 0.44 (11.1) | 1.19 (30.2) | 3.00 (76.2) | 3.00 (76.2) | 1.38 (34.9) |
| 1 | SS-C-20S16 | 0.72 (18.3) | 0.56 (14.3) | 1.38 (34.9) | 4.12 (104.6) | 4.12 (104.6) | 1.75 (44.5) |

20 Series Tube Fittings

Anti-Vibration Gland Assemblies

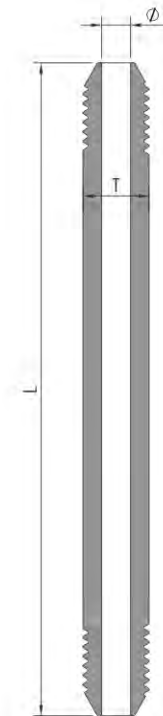
The extreme vibration or shock, such as mobile pressure systems or long tubing runs culminating at a compressor that the tubing systems are subjected to, will be prevented by using FD-LOK Anti-Vibration Gland Assemblies. These assemblies use the same reliable connection geometries as the standard FD-LOK fittings, with the added advantage of essentially unlimited vibrational fatigue life.

A coned and threaded tube, when subjected to unusual or excessive vibration, may fail prematurely and break at the last thread. FD-LOK Anti-Vibration Gland Assembly acts to move the fulcrum of vibration away from the threaded part of the tube and onto the strong, solid wall of the tubing. A wedge-like collet firmly holds the assembly in place, virtually eliminating premature tubing failure while reliably maintaining a leakage-free connection between the tube and the connection seat.



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | |
|-------------------|-----------------|---------------------|-------------|-------------|
| | | L | C | G |
| 1/4 | SS-AVGA-20S4 | 1.19 (30.2) | 0.94 (23.8) | 0.63 (15.9) |
| 3/8 | SS-AVGA-20S6 | 1.50 (38.1) | 1.19 (30.2) | 0.81 (20.6) |
| 9/16 | SS-AVGA-20S9 | 1.78 (45.2) | 1.41 (35.8) | 0.94 (23.8) |
| 3/4 | SS-AVGA-20S12 | 2.00 (50.8) | 1.59 (40.4) | 1.25 (31.8) |
| 1 | SS-AVGA-20S16 | 2.38 (60.5) | 1.69 (42.9) | 1.50 (38.1) |

Coned and Threaded Nipples



| T-Tube O.D. (in.) | Tx-Tube I.D. (in.) | Ordering Number | L in (mm) |
|-------------------|--------------------|------------------|-------------|
| 1/4 | 0.109 | SS-CTN-20S4-2.75 | 2.75 (69.9) |
| 1/4 | 0.109 | SS-CTN-20S4-3 | 3 (76.2) |
| 1/4 | 0.109 | SS-CTN-20S4-4 | 4 (101.6) |
| 1/4 | 0.109 | SS-CTN-20S4-6 | 6 (152.4) |
| 1/4 | 0.109 | SS-CTN-20S4-8 | 8 (203.2) |
| 1/4 | 0.109 | SS-CTN-20S4-10 | 10 (254.0) |
| 1/4 | 0.109 | SS-CTN-20S4-12 | 12 (304.8) |
| 3/8 | 0.203 | SS-CTN-20S6-3 | 3 (76.2) |
| 3/8 | 0.203 | SS-CTN-20S6-4 | 4 (101.6) |
| 3/8 | 0.203 | SS-CTN-20S6-6 | 6 (152.4) |
| 3/8 | 0.203 | SS-CTN-20S6-8 | 8 (203.2) |
| 3/8 | 0.203 | SS-CTN-20S6-10 | 10 (254.0) |
| 3/8 | 0.203 | SS-CTN-20S6-12 | 12 (304.8) |
| 9/16 | 0.312 | SS-CTN-20S9-4 | 4 (101.6) |
| 9/16 | 0.312 | SS-CTN-20S9-6 | 6 (152.4) |
| 9/16 | 0.312 | SS-CTN-20S9-8 | 8 (203.2) |
| 9/16 | 0.312 | SS-CTN-20S9-10 | 10 (254.0) |
| 9/16 | 0.312 | SS-CTN-20S9-12 | 12 (304.8) |
| 3/4 | 0.438 | SS-CTN-20S12-4 | 4 (101.6) |
| 3/4 | 0.438 | SS-CTN-20S12-6 | 6 (152.4) |
| 3/4 | 0.438 | SS-CTN-20S12-8 | 8 (203.2) |
| 3/4 | 0.438 | SS-CTN-20S12-10 | 10 (254.0) |
| 3/4 | 0.438 | SS-CTN-20S12-12 | 12 (304.8) |
| 1 | 0.562 | SS-CTN-20S16-6 | 6 (152.4) |
| 1 | 0.562 | SS-CTN-20S16-8 | 8 (203.2) |
| 1 | 0.562 | SS-CTN-20S16-10 | 10 (254.0) |
| 1 | 0.562 | SS-CTN-20S16-12 | 12 (304.8) |

20 Series Tube Fittings

20 Series Tubing

- Work pressure: 20000 psi (1379 bar).
- 316 and 304 stainless steel are standard material. Other materials are available upon request.
- Material, size, and heat code are indicated on the tubing surface.

| T-Tube O.D. (in.) | Tx-Tube I.D. (in.) | Material | Basic Ordering Number | Tolerance O.D. in. (mm) |
|-------------------|--------------------|----------|-----------------------|---------------------------|
| 1/4 | 0.109 | 316 SS | SS-MT-20S4- | 0.248/0.243 (6.30/6.17) |
| 1/4 | 0.109 | 304 SS | S4-MT-20S4- | 0.248/0.243 (6.30/6.17) |
| 3/8 | 0.203 | 316 SS | SS-MT-20S6- | 0.370/0.365 (9.40/9.27) |
| 3/8 | 0.203 | 304 SS | S4-MT-20S6- | 0.370/0.365 (9.40/9.27) |
| 9/16 | 0.312 | 316 SS | SS-MT-20S9- | 0.557/0.552 (14.15/14.02) |
| 9/16 | 0.312 | 304 SS | S4-MT-20S9- | 0.557/0.552 (14.15/14.02) |
| 3/4 | 0.438 | 316 SS | SS-MT-20S12- | 0.745/0.740 (18.92/18.80) |
| 3/4 | 0.438 | 304 SS | S4-MT-20S12- | 0.745/0.740 (18.92/18.80) |
| 1 | 0.562 | 316 SS | SS-MT-20S16- | 0.995/0.990 (25.27/25.14) |
| 1 | 0.562 | 304 SS | S4-MT-20S16- | 0.995/0.990 (25.27/25.14) |

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

For example:

1. 10 feet length, O.D. is 3/8", I.D. is 0.203", 316 SS 20 Series tube, the complete ordering number is: SS-MT-20S6-10.
2. 6 meters length, O.D. is 3/4", I.D. is 0.438", 304 SS 20 Series tube, the complete ordering number is: S4-MT-20S12-6M.



Instrumentation Solutions

www.fd-lok.com

60 Series Tube Fittings

60,000 psi (4137 bar)



ZHEJIANG FANGDUN INSTRUMENT VALVE CO.,LTD
No.177, Zhanwang Road, Longwan Industry Center,
Wenzhou, Zhejiang, China 325024

Tel: 86-577-8692 7952
Fax: 86-577-8598 9788
E-mail: fangdun@fd-lok.com

ZHEJIANG FANGDUN INSTRUMENT VALVE CO.,LTD

Contents

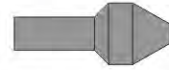
02 Glands - G



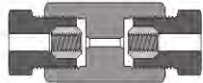
02 Collars - CO



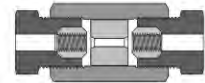
02 Plugs - TP



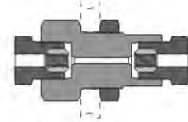
02 Union Couplings - U



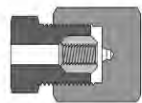
03 Union Couplings (Slip Type) - SU



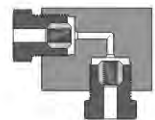
03 Bulkhead Couplings - BU



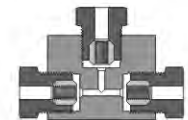
03 Caps - TC



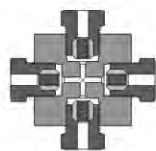
04 Elbows - LU



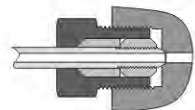
04 Tees - TTT



05 Crosses - C



06 Anti-Vibration Gland Assemblies - AVGA



06 Coned and Threaded Nipples - CTN



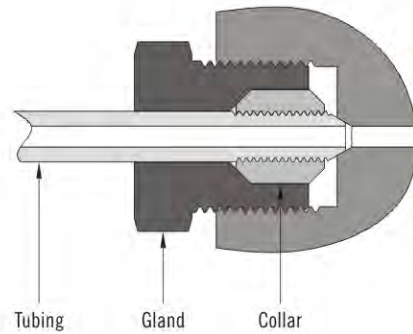
07 60 Series Tubing

60 Series Tube Fittings

Features

- Coned-and-Threaded Connection.
- Metal-to-metal seal provides perfect leak-tight service from critical vacuum to high pressure.
- Anti-vibration connection components available.
- Fittings are easy to disconnect and retighten.
- Material is high tensile 316 stainless steel.
- Every fitting is stamped with size, material, and heat code.

Composition



Technical Data

- Available sizes are 1/4", 3/8", 9/16"
- Temperature Rating: -325 to 800°F (-198 to 427°C).
- Working Pressure:

| T-Tube O.D. (in.) | Working Pressure, psi (bar) | | | | |
|-------------------|--------------------------------|--------------|---------------|---------------|---------------|
| | -325 to 100°F (-198 to 37.8°C) | 200°F (93°C) | 400°F (204°C) | 600°F (316°C) | 800°F (427°C) |
| 1/4 | 60000 (4137) | 60000 (4137) | 57750 (3982) | 54250 (3740) | 50700 (3496) |
| 3/8 | 60000 (4137) | 60000 (4137) | 57750 (3982) | 54250 (3740) | 50700 (3496) |
| 9/16 | 60000 (4137) | 60000 (4137) | 57750 (3982) | 54250 (3740) | 50700 (3496) |

Installation Instructions

- Refer to the Tools & Installation Instructions.

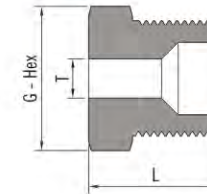
Cautions

- Do not loosen or tighten fittings when system is pressurized.

60 Series Tube Fittings

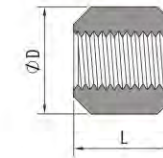
Dimensions

Glands



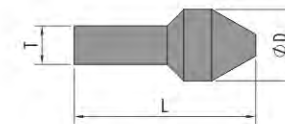
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-------------|
| | | G | L |
| 1/4 | SS-G-60S4 | 0.63 (15.9) | 0.82 (20.8) |
| 3/8 | SS-G-60S6 | 0.81 (20.6) | 1.13 (28.7) |
| 9/16 | SS-G-60S9 | 1.19 (30.2) | 1.50 (38.1) |

Collars



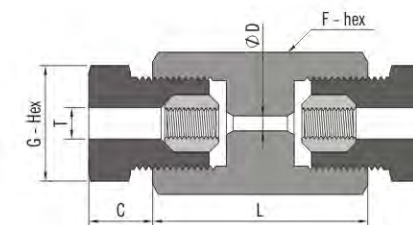
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-----------|
| | | D | L |
| 1/4 | SS-CO-60S4 | 0.38 (9.6) | 0.38 9.6 |
| 3/8 | SS-CO-60S6 | 0.50 12.7 | 0.54 13.7 |
| 9/16 | SS-CO-60S9 | 0.81 20.6 | 0.62 15.8 |

Plugs



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | |
|-------------------|-----------------|---------------------|-------------|
| | | D | L |
| 1/4 | SS-TP-60S4 | 0.38 (9.6) | 1.04 (28.4) |
| 3/8 | SS-TP-60S6 | 0.50 12.7 | 1.35 (34.3) |
| 9/16 | SS-TP-60S9 | 0.81 20.6 | 1.89 (48.0) |

Union Couplings

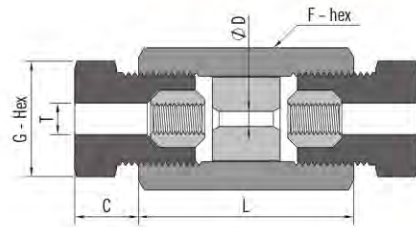


| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | |
|-------------------|-----------------|---------------------|-------------|------------|-------------|-------------|
| | | L | C | D | G | F |
| 1/4 | SS-U-60S4 | 1.38 (34.9) | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 0.75 (19.1) |
| 3/8 | SS-U-60S6 | 1.75 (44.5) | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 1.00 (25.4) |
| 9/16 | SS-U-60S9 | 2.19 (55.6) | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 1.38 (34.9) |

Dimensions are for reference only, subject to change.

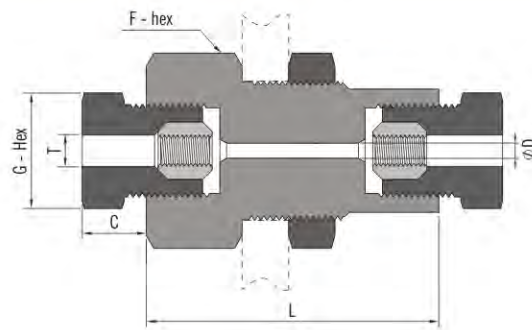
60 Series Tube Fittings

Union Couplings (Slip Type)



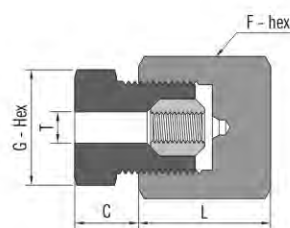
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | |
|-------------------|-----------------|---------------------|-------------|------------|-------------|-------------|
| | | L | C | D | G | F |
| 1/4 | SS-SU-60S4 | 1.38 (34.9) | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 0.75 (19.1) |
| 3/8 | SS-SU-60S6 | 1.75 (44.5) | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 1.00 (25.4) |
| 9/16 | SS-SU-60S9 | 2.19 (55.6) | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 1.38 (34.9) |

Bulkhead Couplings



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | |
|-------------------|-----------------|---------------------|-------------|------------|-------------|-------------|-----------------|----------------------|
| | | L | C | D | G | F | Panel Hole Size | Max. Panel Thickness |
| 1/4 | SS-BU-60S4 | 1.88 (47.8) | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 1.06 (27.0) | 0.94 (23.8) | 0.38 (9.7) |
| 3/8 | SS-BU-60S6 | 2.38 (60.5) | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 1.38 (34.9) | 1.13 (28.6) | 0.38 (9.7) |
| 9/16 | SS-BU-60S9 | 2.75 (69.7) | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 1.88 (47.6) | 1.69 (42.9) | 0.38 (9.7) |

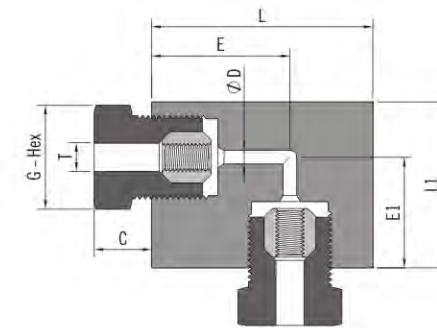
Caps



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | |
|-------------------|-----------------|---------------------|-------------|-------------|-------------|
| | | L | C | G | F |
| 1/4 | SS-TC-60S4 | 1.00 (25.4) | 0.50 (12.7) | 0.63 (15.9) | 0.75 (19.1) |
| 3/8 | SS-TC-60S6 | 1.50 (38.1) | 0.53 (13.5) | 0.81 (20.6) | 1.00 (25.4) |
| 9/16 | SS-TC-60S9 | 1.75 (44.5) | 0.81 (20.6) | 1.19 (30.2) | 1.38 (34.9) |

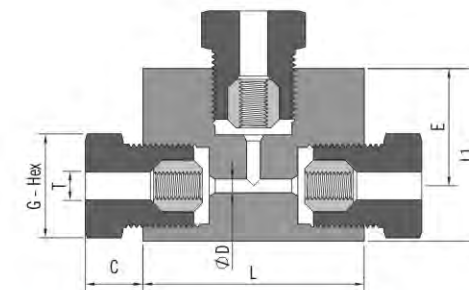
60 Series Tube Fittings

Elbows



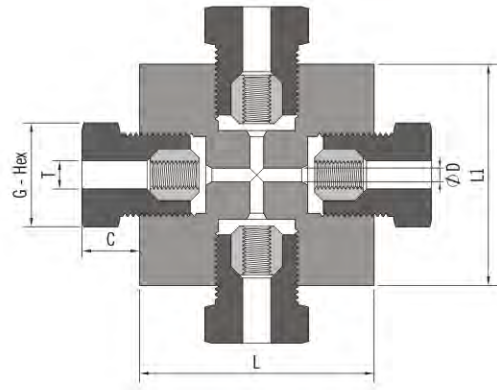
| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | | |
|-------------------|-----------------|---------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | C | D | G | L | E | L1 | E1 | Thickness |
| 1/4 | SS-LU-60S4 | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 1.50 (38.1) | 0.88 (22.4) | 1.00 (25.4) | 0.62 (15.7) | 0.75 (19.1) |
| 3/8 | SS-LU-60S6 | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 2.00 (50.8) | 1.25 (31.8) | 1.50 (38.1) | 1.00 (25.4) | 1.00 (25.4) |
| 9/16 | SS-LU-60S9 | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 2.62 (66.5) | 1.88 (47.8) | 1.88 (47.8) | 1.12 (28.4) | 1.50 (38.1) |

Tees



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | | |
|-------------------|-----------------|---------------------|------------|-------------|-------------|-------------|-------------|-------------|
| | | C | D | G | L | L1 | E | Thickness |
| 1/4 | SS-TTT-60S4 | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 2.00 (50.8) | 1.25 (31.8) | 0.88 (22.4) | 0.75 (19.1) |
| 3/8 | SS-TTT-60S6 | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 2.00 (50.8) | 1.56 (39.6) | 1.06 (26.9) | 1.00 (25.4) |
| 9/16 | SS-TTT-60S9 | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 2.62 (66.5) | 2.12 (53.8) | 1.38 (35.0) | 1.50 (38.1) |

Crosses

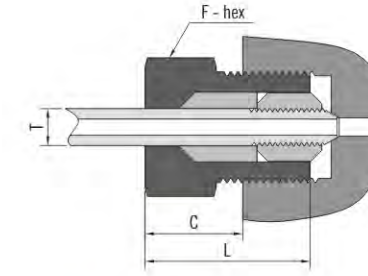


| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | | | | |
|-------------------|-----------------|---------------------|------------|-------------|-------------|-------------|-------------|
| | | C | D | G | L | L1 | Thickness |
| 1/4 | SS-C-60S4 | 0.50 (12.7) | 0.09 (2.3) | 0.63 (15.9) | 2.00 (50.8) | 1.25 (31.8) | 0.75 (19.1) |
| 3/8 | SS-C-60S6 | 0.53 (13.5) | 0.13 (3.3) | 0.81 (20.6) | 2.00 (50.8) | 2.12 (53.8) | 1.00 (25.4) |
| 9/16 | SS-C-60S9 | 0.81 (20.6) | 0.19 (4.8) | 1.19 (30.2) | 2.62 (66.5) | 2.75 (69.9) | 1.50 (38.1) |

Anti-Vibration Gland Assemblies

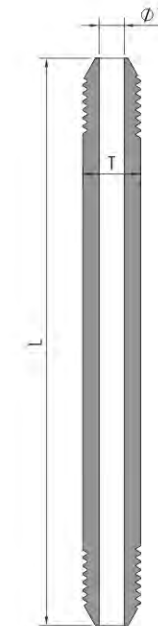
The extreme vibration or shock, such as mobile pressure systems or long tubing runs culminating at a compressor that the tubing systems are subjected to, will be prevented by using FD-LOK Anti-Vibration Gland Assemblies. These assemblies use the same reliable connection geometries as the standard FD-LOK fittings, with the added advantage of essentially unlimited vibrational fatigue life.

A coned and threaded tube, when subjected to unusual or excessive vibration, may fail prematurely and break at the last thread. FD-LOK Anti-Vibration Gland Assembly acts to move the fulcrum of vibration away from the threaded part of the tube and onto the strong, solid wall of the tubing. A wedge-like collet firmly holds the assembly in place, virtually eliminating premature tubing failure while reliably maintaining a leakage-free connection between the tube and the connection seat.



| T-Tube O.D. (in.) | Ordering Number | Dimensions, in (mm) | | |
|-------------------|-----------------|---------------------|-------------|-------------|
| | | L | G | F |
| 1/4 | SS-AVGA-60S4 | 0.81 (20.6) | 0.50 (12.7) | 0.63 (15.9) |
| 3/8 | SS-AVGA-60S6 | 1.12 (28.4) | 0.62 (15.7) | 0.81 (20.6) |
| 9/16 | SS-AVGA-60S9 | 1.50 (38.1) | 1.00 (25.4) | 1.19 (30.2) |

Coned and Threaded Nipples



| T-Tube O.D. (in.) | Tx-Tube I.D. (in.) | Ordering Number | L in (mm) |
|-------------------|--------------------|------------------|-------------|
| 1/4 | 0.083 | SS-CTN-60S4-2.75 | 2.75 (69.9) |
| 1/4 | 0.083 | SS-CTN-60S4-3 | 3 (76.2) |
| 1/4 | 0.083 | SS-CTN-60S4-4 | 4 (101.6) |
| 1/4 | 0.083 | SS-CTN-60S4-6 | 6 (152.4) |
| 1/4 | 0.083 | SS-CTN-60S4-8 | 8 (203.2) |
| 1/4 | 0.083 | SS-CTN-60S4-10 | 10 (254.0) |
| 1/4 | 0.083 | SS-CTN-60S4-12 | 12 (304.8) |
| 3/8 | 0.125 | SS-CTN-60S6-3 | 3 (76.2) |
| 3/8 | 0.125 | SS-CTN-60S6-4 | 4 (101.6) |
| 3/8 | 0.125 | SS-CTN-60S6-6 | 6 (152.4) |
| 3/8 | 0.125 | SS-CTN-60S6-8 | 8 (203.2) |
| 3/8 | 0.125 | SS-CTN-60S6-10 | 10 (254.0) |
| 3/8 | 0.125 | SS-CTN-60S6-12 | 12 (304.8) |
| 9/16 | 0.188 | SS-CTN-60S9-4 | 4 (101.6) |
| 9/16 | 0.188 | SS-CTN-60S9-6 | 6 (152.4) |
| 9/16 | 0.188 | SS-CTN-60S9-8 | 8 (203.2) |
| 9/16 | 0.188 | SS-CTN-60S9-10 | 10 (254.0) |
| 9/16 | 0.188 | SS-CTN-60S9-12 | 12 (304.8) |

60 Series Tube Fittings

60 Series Tubing

- Work pressure: 60000 psi (4137 bar).
- 316 and 304 stainless steel are standard material. Other materials are available upon request.
- Material, size, and heat code are indicated on the tubing surface.

| T-Tube O.D. (in.) | Tx-Tube I.D. (in.) | Material | Basic Ordering Number | Tolerance O.D. in. (mm) |
|-------------------|--------------------|----------|-----------------------|---------------------------|
| 1/4 | 0.083 | 316 SS | SS-HT-60S4- | 0.248/0.243 (6.30/6.17) |
| 1/4 | 0.083 | 304 SS | S4-HT-60S4- | 0.248/0.243 (6.30/6.17) |
| 3/8 | 0.125 | 316 SS | SS-HT-60S6- | 0.370/0.365 (9.40/9.27) |
| 3/8 | 0.125 | 304 SS | S4-HT-60S6- | 0.370/0.365 (9.40/9.27) |
| 9/16 | 0.188 | 316 SS | SS-HT-60S9- | 0.557/0.552 (14.15/14.02) |
| 9/16 | 0.188 | 304 SS | S4-HT-60S9- | 0.557/0.552 (14.15/14.02) |

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

For example:

1. 10 feet length, O.D. is 1/4", I.D. is 0.083", 316 SS 60 Series tube, the complete ordering number is: SS-HT-60S4-10.
2. 3 meters length, O.D. is 9/16", I.D. is 0.188", 304 SS 60 Series tube, the complete ordering number is: S4-HT-60S9-3M.