

L-Ring Face Seal Fittings

TFO Series

Features

- ⦿ Reduced internal entrapment
- ⦿ Lubricant-free L-ring seal
- ⦿ Controlled L-ring extrusion to prevent over-tightening
- ⦿ Butt weld connection to ensure the system unhindered
- ⦿ Standard surface roughness finished to an average of Ra 20 µin. (0.51 µm)
- ⦿ Sizes range from 1/4" to 1"
- ⦿ Each fitting marked with size, material and heat number



Technical Data

⦿ Materials

Material	Designator
316 SS	SS
316L SS	6L

⦿ Working Temperature

Temperature ranges for TFO fittings are restricted by the L-ring materials.

Material	Designator	Working Temperature
PTFE	T	-50 °F to 450 °F (-45 °C to 232 °C)

⦿ Working Pressure @ 100°F (37°C)

Tube O.D.	Working Pressure psig (bar)
1/4 in.	2500 (172)
1/2 in.	2000 (137)
3/4 in.	1500 (103)
1 in.	
12 mm	2000 (137)

⦿ Weld End Tube O.D. and Wall Thickness

Fractional		Metric	
Tube O.D. in.	Wall Thickness in.	Tube O.D. mm	Wall Thickness mm
1/8	0.028	6	1.0
1/4	0.035	8	1.0
3/8	0.035	10	1.0
1/2	0.049	12	1.0
3/4	0.065	18	1.5
1	0.065		
1 1/2	0.065		
2	0.065		

For other sizes or wall thicknesses of welded ports, please contact FITOK Group or our authorized distributors.

Process Specification

Item	Process Specification	Standard Cleaning and Packaging Process (FC-01)	Special Cleaning and Packaging Process (FC-02)
	Material		316 SS, 316L SS
Wetted Surface Roughness		Ra 20 µin. (0.5µm)	
Polishing Process		Machine finished	

Fittings
Valves
Regulators
Filters
Tubing
Integrated Systems
Other Products
Technical Information

Testing

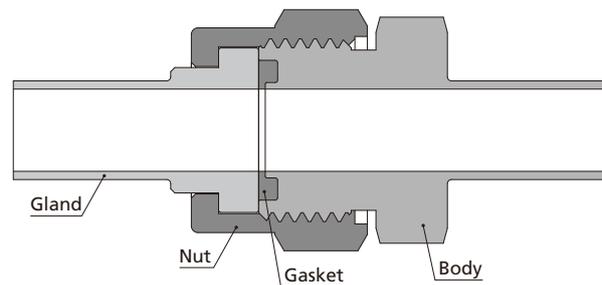
Every TFO fitting is helium leak tested to a maximum allowable leak rate of 4×10^{-9} std-cm³/s.

Ordering Information

- ⦿ Each component can be ordered separately.
 - ⦿ Add the material designator as a prefix, cleaning and packaging designator as a suffix to the basic ordering number to get the complete ordering number.
 - ⦿ Cleaning and Packaging
 - a. Standard Cleaning and Packaging Process (FC-01) for general industrial procedures. No suffix is needed.
 - b. Special Cleaning and Packaging Process (FC-02), to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C. Add "-F2" as a suffix when needed.
- Example: For 316L SS standard 1/4" gland with Special Cleaning and Packaging Process (FC-02), the ordering number is 6L-G-TFO4-TB4-F2.

Installation Instructions

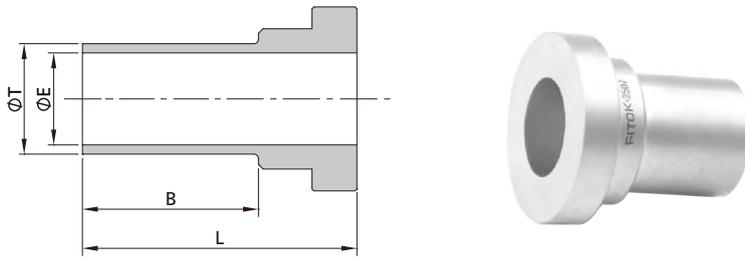
1. Assemble the gland, nut and gasket as below. Finger tight the nut.
2. Tighten the nut 1/8 turn with a wrench while holding the fitting body steady.



Cautions

- ⦿ Dimensions are for reference only and are subject to change.
- ⦿ Inspect the L-ring each time the groove housing is dismantled.
- ⦿ Before welding the body, the L-ring should be removed to prevent possible damages.
- ⦿ Tungsten Inert Gas Welding (TIG) is recommended.
- ⦿ Do not loosen or tighten fittings when system is pressurized.

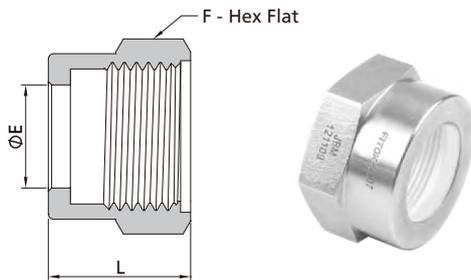
Glands



Fractional				Dimensions, in. (mm)		
TFO Size (in.)	T-Tube O.D. (in.)	Wall Thickness (in.)	Basic Ordering Number	L	B	E
1/4	1/4	0.035	-G-TFO4-TB4	0.67 (17.0)	0.25 (6.4)	0.18 (4.6)
1/4	1/4	0.035	-G-TFO4-TB4-12	1.17 (29.7)	0.75 (19.1)	0.18 (4.6)
1/2	1/2	0.049	-G-TFO8-TB8	1.17 (29.7)	0.75 (19.1)	0.40 (10.2)
1/2	1/2	0.065	-G-TFO8-TB8×065	1.17 (29.7)	0.75 (19.1)	0.37 (9.4)
3/4	3/4	0.065	-G-TFO12-TB12	1.24 (31.5)	0.75 (19.1)	0.62 (15.7)
1	1	0.065	-G-TFO16-TB16	1.45 (36.8)	0.96 (24.4)	0.87 (22.1)

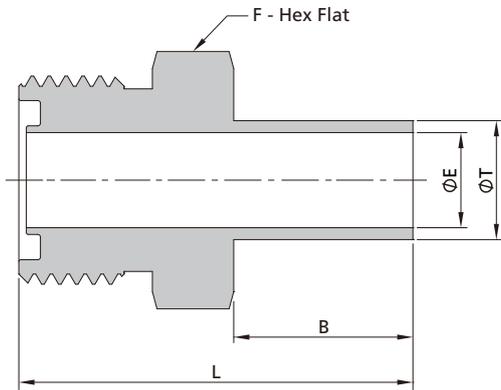
Metric				Dimensions, in. (mm)		
TFO Size (in.)	T-Tube O.D. (mm)	Wall Thickness (mm)	Basic Ordering Number	L	B	E
1/2	12	1	-G-TFO8-MTB12	1.17 (29.7)	0.75 (19.1)	0.39 (10.0)

Nuts



Fractional		Dimensions, in. (mm)		
TFO Size (in.)	Basic Ordering Number	L	E	F
1/4	-N-TFO4	0.75 (19.1)	0.39 (9.9)	11/16 (17.5)
1/2	-N-TFO8	0.84 (21.3)	0.61 (15.5)	1 (25.4)
3/4	-N-TFO12	0.90 (22.9)	0.94 (23.9)	1 1/2 (38.1)
1	-N-TFO16	0.90 (22.9)	1.25 (31.8)	1 3/4 (44.5)

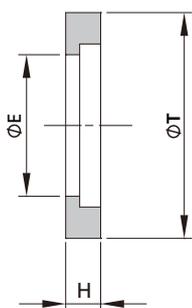
Tube Butt Weld Bodies



Fractional				Dimensions, in. (mm)			
TFO Size (in.)	T-Tube OD. (in.)	Wall Thickness (in.)	Basic Ordering Number	L	B	E	F
1/4	1/4	0.035	-CW-TFO4-TB4	1.03 (26.2)	0.25 (6.4)	0.18 (4.6)	5/8 (15.9)
1/4	1/4	0.035	-CW-TFO4-TB4-12	1.53 (38.9)	0.75 (19.1)	0.18 (4.6)	5/8 (15.9)
1/2	1/2	0.049	-CW-TFO8-TB8	1.65 (41.9)	0.75 (19.1)	0.40 (10.2)	15/16 (23.8)
1/2	1/2	0.065	-CW-TFO8-TB8x065	1.65 (41.9)	0.75 (19.1)	0.37 (9.4)	15/16 (23.8)
3/4	3/4	0.065	-CW-TFO12-TB12	1.75 (44.4)	0.75 (19.1)	0.62 (15.7)	1 5/16 (33.3)
1	1	0.065	-CW-TFO16-TB16	1.99 (50.5)	0.96 (24.4)	0.87 (22.1)	1 5/8 (41.3)

Metric				Dimensions, in. (mm)			
TFO Size (in.)	T-Tube OD. (mm)	Wall Thickness (mm)	Basic Ordering Number	L	B	E	F
1/2	12	1	-CW-TFO8-MTB12	1.65 (41.9)	0.75 (19.1)	0.39 (10.0)	15/16 (23.8)

L-Ring Seal



Fractional		Dimensions, in. (mm)		
TFO Size (in.)	Basic Ordering Number	T	E	H
1/4	-GT-TFO4	0.38 (9.6)	0.18 (4.6)	0.07 (1.8)
1/2	-GT-TFO8	0.64 (16.2)	0.40 (10.2)	0.10 (2.5)
3/4	-GT-TFO12	0.92 (23.4)	0.62 (15.7)	0.10 (2.5)
1	-GT-TFO16	1.30 (33.0)	0.87 (22.1)	0.14 (3.6)

Add the designator of L-ring material in page F-39 as a prefix to the basic ordering number to get the complete ordering number.
Example: T-GT-TFO4