

Face Seal Fittings

FR Series Metal Gasket Face Seal Fittings

Features

- ⦿ Metal-to-metal seal to provide perfect leak-tight service for working conditions from critical vacuum to high pressure
- ⦿ Precision manufactured gasket to ensure best performance
- ⦿ Test port at nut for easy leak testing
- ⦿ Silver-plated female threads
- ⦿ Mechanically polished surface roughness finished to an average of Ra 10 µin. (0.25 µm) or electropolished to Ra 5 µin. (0.13 µm) optional
- ⦿ All seal faces and male threads protected with plastic caps
- ⦿ Sizes range from 1/16" to 1" and 6 mm to 18 mm
- ⦿ Every gland and body marked with size, material and heat number



Technical Data

- ⦿ Thread Specifications

Thread Type	Specification
NPT	ASME B1.20.1, SAE AS71051
Unified (SAE)	ASME B1.1, SAE J475

- ⦿ Materials

Material	Bar Stock	Forging	Designator
Fitting Material			
316 SS	ASTM A479	ASTM A182	SS
316L SS	SEMI F20	SEMI F20	6L
316L VAR SS			6LV
316L VIM-VAR SS			6LW
Gasket Material			
316L SS	ASTM A240		6L
Copper	ASTM B152		CU
Nickel	ASTM B162		NI

- ⦿ 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	0.049	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.

⦿ Working Pressure

Working pressures shown in the Catalog are calculated according to ASME B31.3 and B31.1 at ambient temperature.

⦿ Working Temperature

Component	Material	Max. Temperature
Fittings	316 SS	1000 °F (538 °C)
	316L SS	
	316L VAR SS	
	316L VIM-VAR SS	
Gaskets	316L SS	400 °F (204 °C)
	Copper	
	Nickel	

Testing

FR fittings are rated to a maximum helium leak rate of 4×10^{-11} std cm^3/s .

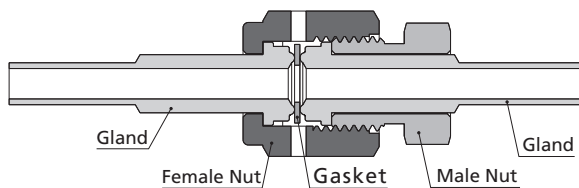
Ordering Information

- ⦿ 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. FC-01 Standard Cleaning and Packaging for general industrial procedures. No suffix is needed.
 - b. FC-02 Special Cleaning and Packaging, to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C. Add "-F2" as a suffix when needed.
 - c. FC-03 Ultra High Purity Process Specification is applied to products with wetted surface roughness finished to an average of Ra 5 μin . (0.13 μm). Add "-F3" as a suffix when needed.

Example: For 1/2" 316L VAR SS gland with FC-03 Ultra High Purity Process Specification, the complete ordering number is 6LV-G-FR8-TB8-6-F3.

Installation Instructions

1. Assemble the gland, nut, gasket and male nut as below. Finger tight the nut.

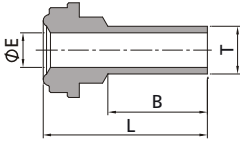


2. For fittings with 316L SS and nickel gaskets, tighten the nut 1/8 turn with a wrench while holding the male nut or the fitting body steady. Tighten the nut 1/4 turn for those with copper gaskets.

Cautions

- ⦿ Dimensions are for reference only and are subject to change.
- ⦿ Over-tightening will damage the sealing beads and lead to possible leak.
- ⦿ Utilize a new gasket for each assembly.
- ⦿ Tungsten Inert Gas Welding (TIG) is recommended.
- ⦿ Always apply sealing materials compatible with the fluid on tapered pipe threads.
- ⦿ Do not loosen or tighten fittings when the system is pressurized.

Glands



FR Gland to Short Fractional Tube Butt Weld

FR Size (in.)	T-Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/8	1/8	0.028	-G-FR2-TB2-12S	1.08 (27.4)	0.75 (19.1)	0.07 (1.8)	8500 (586)	6800 (468)	8500 (586)
1/4	1/8	0.028	-G-FR4-TB2-12S	1.10 (27.9)	0.75 (19.1)	0.07 (1.8)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-4S	0.60 (15.2)	0.25 (6.4)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-6S	0.72 (18.3)	0.38 (9.6)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-12S	1.10 (27.9)	0.75 (19.1)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/2	1/4	0.035	-G-FR8-TB4-12S	1.12 (28.4)	0.75 (19.1)	0.18 (4.6)	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	0.035	-G-FR8-TB6-4S	0.62 (15.7)	0.25 (6.4)	0.31 (7.9)	3300 (227)	2600 (179)	3300 (227)
1/2	3/8	0.035	-G-FR8-TB6-12S	1.12 (28.4)	0.75 (19.1)	0.31 (7.9)	3300 (227)	2600 (179)	3300 (227)
1/2	1/2	0.049	-G-FR8-TB8-4S	0.62 (15.7)	0.25 (6.4)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	-G-FR8-TB8-6S	0.74 (18.8)	0.38 (9.6)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	-G-FR8-TB8-12S	1.12 (28.4)	0.75 (19.1)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)

FR Gland to Short Metric Tube Butt Weld

FR Size (in.)	T-Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimensions, mm (in.)			Working Pressure, bar (psig)		
				L	B	E	6L	CU	NI
1/4	6	1.0	-G-FR4-MTB6-12S	29.5 (1.16)	19.1 (0.75)	4.0 (0.16)	468 (6800)	372 (5400)	468 (6800)
1/4	8	1.0	-G-FR4-MTB8-12S	29.5 (1.16)	19.1 (0.75)	6.0 (0.24)	337 (4900)	337 (4900)	337 (4900)
1/2	10	1.0	-G-FR8-MTB10-12S	29.5 (1.16)	19.1 (0.75)	8.0 (0.31)	241 (3500)	192 (2800)	241 (3500)
1/2	12	1.0	-G-FR8-MTB12-12S	29.5 (1.16)	19.1 (0.75)	10.0 (0.39)	213 (3100)	165 (2400)	213 (3100)
3/4	18	1.5	-G-FR12-MTB18-12S	31.0 (1.22)	19.1 (0.75)	15.0 (0.59)	206 (3000)	165 (2400)	206 (3000)

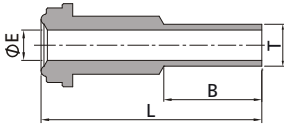
Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification



FR Gland to Long Fractional Tube Butt Weld

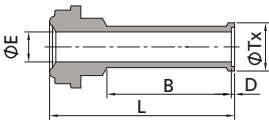
FR Size (in.)	T-Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/8	1/8	0.028	-G-FR2-TB2-12	1.42 (36.1)	0.75 (19.1)	0.07 (1.8)	8500 (586)	6800 (468)	8500 (586)
1/4	1/4	0.035	-G-FR4-TB4-4	1.20 (30.5)	0.25 (6.4)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-1.31 ^①	1.31 (33.3)	0.36 (9.1)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-6	1.32 (33.5)	0.38 (9.6)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	-G-FR4-TB4-12	1.70 (43.2)	0.75 (19.1)	0.18 (4.6)	5100 (351)	5100 (351)	5100 (351)
1/2	1/4	0.035	-G-FR8-TB4-12	1.80 (45.7)	0.75 (19.1)	0.18 (4.6)	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	0.035	-G-FR8-TB6-4	1.29 (32.8)	0.25 (6.4)	0.31 (7.9)	3300 (227)	2600 (179)	3300 (227)
1/2	3/8	0.035	-G-FR8-TB6-12	1.79 (45.5)	0.75 (19.1)	0.31 (7.9)	3300 (227)	2600 (179)	3300 (227)
1/2	1/2	0.049	-G-FR8-TB8-4	1.29 (32.8)	0.25 (6.4)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	-G-FR8-TB8-6	1.41 (35.8)	0.38 (9.6)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	-G-FR8-TB8-12	1.79 (45.5)	0.75 (19.1)	0.40 (10.2)	3500 (241)	2800 (192)	3500 (241)
3/4	3/4	0.049	-G-FR12-TB12-12	2.03 (51.6)	0.75 (19.1)	0.65 (16.5)	2400 (165)	1900 (130)	2400 (165)
1	1	0.065	-G-FR16-TB16-12	2.32 (58.9)	0.75 (19.1)	0.87 (22.1)	2400 (165)	1900 (130)	2400 (165)

FR Gland to Long Metric Tube Butt Weld

FR Size (in.)	T-Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimensions, mm (in.)			Working Pressure, bar (psig)		
				L	B	E	6L	CU	NI
1/4	6	1.0	-G-FR4-MTB6-12	43.2 (1.7)	19.1 (0.75)	4.0 (0.16)	468 (6800)	372 (5400)	468 (6800)
1/4	8	1.0	-G-FR4-MTB8-12	43.2 (1.7)	19.1 (0.75)	6.0 (0.24)	337 (4900)	337 (4900)	337 (4900)
1/2	10	1.0	-G-FR8-MTB10-12	45.5 (1.79)	19.1 (0.75)	8.0 (0.31)	241 (3500)	192 (2800)	241 (3500)
1/2	12	1.0	-G-FR8-MTB12-12	45.5 (1.79)	19.1 (0.75)	10.0 (0.39)	213 (3100)	165 (2400)	213 (3100)
3/4	18	1.5	-G-FR12-MTB18-12	51.6 (2.03)	19.1 (0.75)	15.0 (0.59)	206 (3000)	165 (2400)	206 (3000)

Suffix -4, -6, -12 indicates that Dimension B equals to the specific suffix value times 1/16. Example: With suffix "12", Dimension B = 12/16 = 3/4" or 19.1 mm.

① -1.31 means the length of Dimension L.



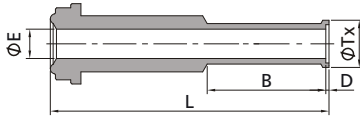
FR Gland to Short Fractional Automatic Tube Butt Weld

FR Size (in.)	Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
				L	B	D	E	Tx	6L	CU	NI
1/4	1/4	0.035	-AG-FR4-TB4-12S	1.12 (28.4)	0.75 (19.1)	0.02 (0.5)	0.18 (4.6)	0.29 (7.4)	5100 (351)	5100 (351)	5100 (351)
1/2	3/8	0.035	-AG-FR8-TB6-12S	1.15 (29.2)	0.75 (19.1)	0.03 (0.8)	0.31 (7.9)	0.41 (10.4)	3300 (227)	2600 (179)	3300 (227)
1/2	1/2	0.049	-AG-FR8-TB8-12S	1.16 (29.5)	0.75 (19.1)	0.04 (1.0)	0.40 (10.2)	0.55 (14.0)	3500 (241)	2800 (192)	3500 (241)

FR Gland to Short Metric Automatic Tube Butt Weld

FR Size (in.)	Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimensions, mm (in.)					Working Pressure, bar (psig)		
				L	B	D	E	Tx	6L	CU	NI
1/4	6	1.0	-AG-FR4-MTB6-12S	30.0 (1.18)	19.1 (0.75)	0.5 (0.02)	4.0 (0.16)	6.8 (0.27)	468 (6800)	372 (5400)	468 (6800)
1/4	8	1.0	-AG-FR4-MTB8-12S	30.2 (1.19)	19.1 (0.75)	0.8 (0.03)	6.0 (0.24)	8.9 (0.35)	337 (4900)	337 (4900)	337 (4900)
1/2	10	1.0	-AG-FR8-MTB10-12S	31.0 (1.22)	19.1 (0.75)	0.8 (0.03)	8.0 (0.31)	10.9 (0.43)	241 (3500)	192 (2800)	241 (3500)
1/2	12	1.0	-AG-FR8-MTB12-12S	30.5 (1.20)	19.1 (0.75)	1.0 (0.04)	10.0 (0.39)	13.2 (0.52)	213 (3100)	165 (2400)	213 (3100)

F-21 Face Seal Fittings

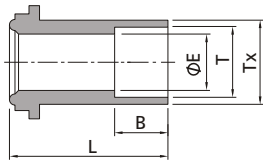


FR Gland to Long Fractional Automatic Tube Butt Weld

FR Size (in.)	Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
				L	B	D	E	Tx	6L	CU	NI
1/4	1/4	0.035	-AG-FR4-TB4-12	1.72 (43.7)	0.75 (19.1)	0.02 (0.5)	0.18 (4.6)	0.29 (7.4)	5100 (351)	5100 (351)	5100 (351)
1/2	1/4	0.035	-AG-FR8-TB4-12	1.82 (46.2)	0.75 (19.1)	0.02 (0.5)	0.18 (4.6)	0.29 (7.4)	3500 (241)	2800 (192)	3500 (241)
1/2	3/8	0.035	-AG-FR8-TB6-12	1.82 (46.2)	0.75 (19.1)	0.03 (0.8)	0.31 (7.9)	0.41 (10.4)	3300 (227)	2600 (179)	3300 (227)
1/2	1/2	0.049	-AG-FR8-TB8-12	1.83 (46.5)	0.75 (19.1)	0.04 (1.0)	0.40 (10.2)	0.55 (14.0)	3500 (241)	2800 (192)	3500 (241)
3/4	3/4	0.049	-AG-FR12-TB12-12	2.07 (52.6)	0.75 (19.1)	0.04 (1.0)	0.65 (16.5)	0.80 (20.3)	2400 (165)	2400 (165)	2400 (165)
1	1	0.065	-AG-FR16-TB16-16	2.57 (65.3)	0.96 (24.4)	0.04 (1.0)	0.87 (22.1)	1.06 (26.9)	2400 (165)	1900 (130)	2400 (165)

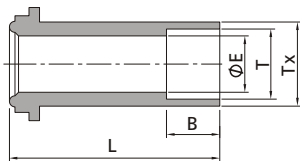
FR Gland to Long Metric Automatic Tube Butt Weld

FR Size (in.)	Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimensions, mm (in.)					Working Pressure, bar (psig)		
				L	B	D	E	Tx	6L	CU	NI
1/4	6	1.0	-AG-FR4-MTB6-12	43.7 (1.72)	19.1 (0.75)	0.5 (0.02)	4.0 (0.16)	6.8 (0.27)	468 (6800)	372 (5400)	468 (6800)
1/2	12	1.0	-AG-FR8-MTB12-12	46.5 (1.83)	19.1 (0.75)	1.0 (0.04)	10.0 (0.39)	13.2 (0.52)	213 (3100)	165 (2400)	213 (3100)
3/4	18	1.5	-AG-FR12-MTB18-12	52.6 (2.07)	19.1 (0.75)	1.0 (0.04)	15.0 (0.59)	19.3 (0.76)	206 (3000)	165 (2400)	206 (3000)



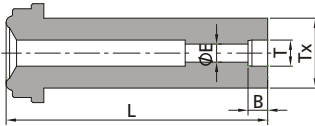
FR Gland to Short Tube Socket Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	B	E	Tx	6L	CU	NI
1/4	1/4	-G-FR4-TS4-0.50	0.50 (12.7)	0.28 (7.1)	0.18 (4.6)	0.35 (8.9)	5500 (378)	5500 (378)	5500 (378)
1/4	1/4	-G-FR4-TS4-0.75	0.75 (19.1)	0.28 (7.1)	0.18 (4.6)	0.35 (8.9)	5500 (378)	5500 (378)	5500 (378)



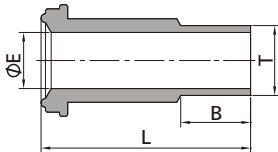
FR Gland to Tube Socket Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	B	E	Tx	6L	CU	NI
1/8	1/16	-G-FR2-TS1	0.70 (17.8)	0.10 (2.5)	0.05 (1.3)	0.13 (3.3)	9000 (620)	7200 (496)	9000 (620)
1/8	1/8	-G-FR2-TS2	0.70 (17.8)	0.10 (2.5)	0.09 (2.3)	0.20 (5.1)	7100 (489)	7100 (489)	7100 (489)
1/4	1/4	-G-FR4-TS4	1.31 (33.3)	0.28 (7.1)	0.18 (4.6)	0.35 (8.9)	5500 (378)	5500 (378)	5500 (378)
1/2	3/8	-G-FR8-TS6	1.50 (38.1)	0.31 (7.9)	0.28 (7.1)	0.60 (15.2)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-G-FR8-TS8	1.50 (38.1)	0.38 (9.7)	0.40 (10.2)	0.60 (15.2)	3000 (206)	2400 (165)	3000 (206)
5/8	5/8	-G-FR10-TS10	1.56 (39.6)	0.41 (10.4)	0.50 (12.7)	0.72 (18.3)	2800 (192)	2200 (151)	2800 (192)
3/4	3/4	-G-FR12-TS12	2.00 (50.8)	0.44 (11.2)	0.62 (15.7)	0.88 (22.4)	2800 (192)	2200 (151)	2800 (192)
1	1	-G-FR16-TS16	2.22 (56.4)	0.62 (15.7)	0.87 (22.1)	1.19 (30.2)	3000 (206)	1900 (130)	2400 (165)



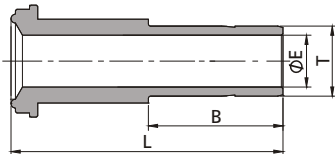
Reducing Socket Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	B	E	Tx	6L	CU	NI
1/4	1/8	-G-FR4-RTS2	1.31 (33.3)	0.10 (2.5)	0.09 (2.3)	0.35 (8.9)	8000 (551)	8000 (551)	8000 (551)
1/2	1/4	-G-FR8-RTS4	1.50 (38.1)	0.28 (7.1)	0.18 (4.6)	0.60 (15.2)	3500 (241)	3500 (241)	3500 (241)



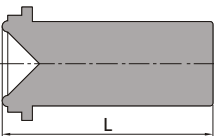
FR Gland to Male Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	B	E	6L	CU	NI
1/8	1/8	-G-FR2-TB2	0.70 (17.8)	0.28 (7.1)	0.07 (1.8)	11200 (772)	7200 (496)	9000 (620)
1/4	1/8	-G-FR4-TB2	1.31 (33.3)	0.28 (7.1)	0.07 (1.8)	10000 (690)	6400 (440)	8000 (551)
1/4	1/4	-G-FR4-TB4	1.31 (33.3)	0.41 (10.4)	0.12 (3.0)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-G-FR8-TB4	1.50 (38.1)	0.41 (10.4)	0.12 (3.0)	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	-G-FR8-TB6	1.50 (38.1)	0.41 (10.4)	0.28 (7.1)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-G-FR8-TB8	1.50 (38.1)	0.50 (12.7)	0.40 (10.2)	3500 (241)	3500 (241)	3500 (241)
3/4	3/4	-G-FR12-TB12	2.00 (50.8)	0.62 (15.7)	0.53 (13.5)	3700 (254)	2400 (165)	3000 (206)
1	1	-G-FR16-TB16	2.22 (56.4)	0.81 (20.6)	0.75 (19.1)	3000 (206)	1900 (130)	2400 (165)



FR Gland to Tube Port

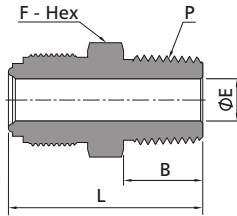
FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	B	E	6L	CU	NI
1/4	1/4	-G-FR4-FT4	1.62 (41.0)	0.64 (16.2)	0.17 (4.3)	10000 (690)	6400 (440)	8000 (551)
1/2	3/8	-G-FR8-FT6	1.81 (46.0)	0.70 (17.8)	0.27 (6.9)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-G-FR8-FT8	1.94 (49.3)	0.96 (24.4)	0.37 (9.4)	4300 (296)	2800 (192)	3500 (241)



Blind Gland

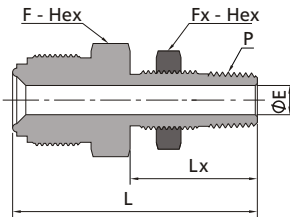
FR Size (in.)	Basic Ordering Number	Dimension, in. (mm)
		L
1/8	-G-FR2-B	0.70 (17.8)
1/4	-G-FR4-B	1.31 (33.3)
1/2	-G-FR8-B	1.50 (38.1)
3/4	-G-FR12-B	2.00 (50.8)
1	-G-FR16-B	2.22 (56.4)

Bodies



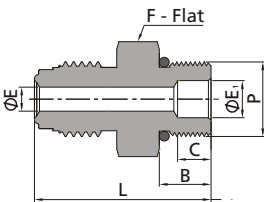
FR Body to Male NPT

FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	B	E	F	6L	CU	NI
1/8	1/16	-CM-FR2-NS1	1.07 (27.2)	0.38 (9.7)	0.09 (2.3)	3/8 (9.5)	9000 (620)	7200 (496)	9000 (620)
1/8	1/8	-CM-FR2-NS2	1.07 (27.2)	0.38 (9.7)	0.09 (2.3)	7/16 (11.1)	9000 (620)	7200 (496)	9000 (620)
1/4	1/8	-CM-FR4-NS2	1.31 (33.3)	0.38 (9.7)	0.18 (4.6)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/4	1/4	-CM-FR4-NS4	1.49 (37.8)	0.56 (14.2)	0.18 (4.6)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-CM-FR8-NS4	1.65 (41.9)	0.56 (14.2)	0.28 (7.1)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	-CM-FR8-NS6	1.65 (41.9)	0.56 (14.2)	0.38 (9.7)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-CM-FR8-NS8	1.84 (46.7)	0.75 (19.1)	0.40 (10.2)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
3/4	3/4	-CM-FR12-NS12	2.19 (55.6)	0.75 (19.1)	0.62 (15.7)	1 15/16 (33.3)	3700 (254)	2400 (165)	3000 (206)
1	1	-CM-FR16-NS16	2.47 (62.7)	0.94 (23.9)	0.87 (22.1)	1 5/8 (41.3)	3000 (206)	1900 (130)	3000 (206)



FR Body to Bulkhead Male Connector

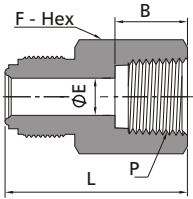
FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					Panel Hole Size in. (mm)	Max. Panel Thickness in. (mm)	Working Pressure, psig (bar)		
			L	Lx	E	F	Fx			6L	CU	NI
1/4	1/4	-CMB-FR4-NS4	2.21 (56.1)	1.24 (31.5)	0.28 (7.1)	13/16 (20.6)	13/16 (20.6)	21/32 (16.7)	0.38 (9.7)	8000 (551)	6400 (440)	8000 (551)
1/2	1/4	-CMB-FR8-NS4	2.34 (59.4)	1.24 (31.5)	0.28 (7.1)	15/16 (23.8)	13/16 (20.6)	21/32 (16.7)	0.38 (9.7)	4370 (301)	2800 (192)	3500 (241)



FR Body to SAE/MS Thread

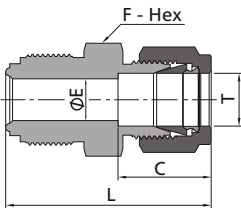
FR Size (in.)	P-SAE/MS Thread Size	Uniform O-Ring ^① Size	Basic Ordering Number	Dimensions, in. (mm)						Working Pressure, psig (bar)		
				L	B	C	E	E ₁	F	6L	CU	NI
1/4	9/16-18	906	-CM-FR4-ST9	1.33 (33.8)	0.39 (9.9)	0.25 (6.4)	0.18 (4.6)	0.28 (7.1)	3/4 (19.1)	4500 (310)	4500 (310)	4500 (310)
1/2	9/16-18	906	-CM-FR8-ST9	1.48 (37.6)	0.39 (9.9)	-	0.28 (7.1)	0.28 (7.1)	15/16 (23.8)	3500 (241)	2800 (192)	3500 (241)
1/2	7/8-14	910	-CM-FR8-ST14	1.66 (42.2)	0.50 (12.7)	0.40 (10.2)	0.28 (7.1)	0.59 (15.0)	1 (25.4)	3500 (241)	2800 (192)	3500 (241)

① The bodies are supplied with O-rings. Fluorocarbon FKM is standard O-ring material, contact FITOK Group for other materials. Fluorocarbon FKM O-rings are internally lubricated, no external lubricants are required.



FR Body to Female NPT

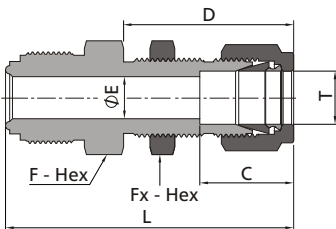
FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	B	E	F	6L	CU	NI
1/8	1/16	-CF-FR2-NS1	1.10 (27.9)	0.39 (9.9)	0.09 (2.3)	7/16 (11.1)	6700 (461)	6700 (461)	6700 (461)
1/8	1/8	-CF-FR2-NS2	1.19 (30.2)	0.41 (10.4)	0.09 (2.3)	9/16 (14.3)	6500 (447)	6500 (447)	6500 (447)
1/4	1/8	-CF-FR4-NS2	1.41 (35.8)	0.41 (10.4)	0.18 (4.6)	5/8 (15.9)	8000 (551)	6400 (440)	8000 (551)
1/4	1/4	-CF-FR4-NS4	1.54 (39.1)	0.59 (15.0)	0.18 (4.6)	3/4 (19.1)	6600 (454)	5200 (358)	6600 (454)
1/2	3/8	-CF-FR8-NS6	1.76 (44.7)	0.59 (15.0)	0.40 (10.2)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-CF-FR8-NS8	1.99 (50.5)	0.78 (19.8)	0.40 (10.2)	1 1/16 (27.0)	4300 (296)	2800 (192)	3500 (241)
3/4	3/4	-CF-FR12-NS12	2.36 (59.9)	0.81 (20.6)	0.62 (15.7)	1 5/16 (33.3)	3700 (254)	2400 (165)	3000 (206)
1	1	-CF-FR16-NS16	2.51 (63.8)	1.00 (25.4)	0.87 (22.1)	1 5/8 (41.3)	3000 (206)	1900 (130)	2400 (165)



FR Body to Tube Fitting

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L ^①	C	E	F	6L	CU	NI
1/4	1/8	-U-FR4-FL2	1.53 (38.9)	0.50 (12.7)	0.09 (2.3)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/4	1/4	-U-FR4-FL4	1.62 (41.1)	0.60 (15.2)	0.18 (4.6)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/2	3/8	-U-FR8-FL6	1.84 (46.7)	0.66 (16.8)	0.28 (7.1)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-U-FR8-FL8	1.95 (49.5)	0.90 (22.9)	0.40 (10.2)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)

① Dimension L is with FITOK nuts finger-tight.

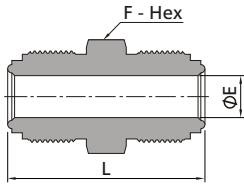


FR Body to Bulkhead Tube Fitting Union

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Panel Hole Size (in. (mm))	Max. Panel Thickness (in. (mm))	Working Pressure, psig (bar)		
			L ^①	C	D	E	F	Fx			6L	CU	NI
1/4	1/4	-UB-FR4-FL4	2.25 (57.2)	0.60 (15.2)	1.32 (33.5)	0.18 (4.6)	5/8 (15.9)	5/8 (15.9)	15/32 (11.9)	0.40 (10.2)	10000 (690)	6400 (440)	8000 (551)
1/4	1/4	-UB-FR4-FL4-1.88	1.88 (47.8)	0.60 (15.2)	1.05 (26.7)	0.18 (4.6)	5/8 (15.9)	5/8 (15.9)	15/32 (11.9)	0.13 (3.3)	10000 (690)	6400 (440)	8000 (551)
1/2	3/8	-UB-FR8-FL6	2.54 (64.5)	0.66 (16.8)	1.45 (36.8)	0.28 (7.1)	15/16 (23.8)	3/4 (19.1)	19/32 (15.0)	0.44 (11.2)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-UB-FR8-FL8	2.74 (69.6)	0.90 (22.9)	1.65 (41.9)	0.40 (10.2)	15/16 (23.8)	15/16 (23.8)	25/32 (19.8)	0.50 (12.7)	4300 (296)	2800 (192)	3500 (241)

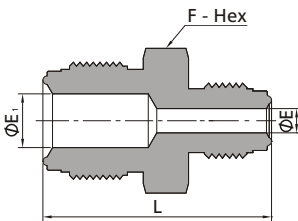
① Dimension L is with FITOK nuts finger-tight.

F-25 Face Seal Fittings



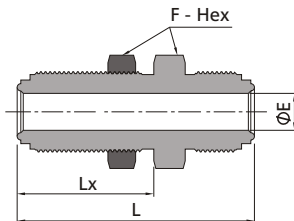
Union Body

FR Size (in.)	FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	E	F	6L	CU	NI
1/8	1/8	-U-FR2	1.13 (28.7)	0.09 (2.3)	3/8 (9.5)	11200 (772)	7200 (496)	9000 (620)
1/4	1/4	-U-FR4	1.55 (39.4)	0.18 (4.6)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/2	1/2	-U-FR8	1.84 (46.7)	0.40 (10.2)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)
3/4	3/4	-U-FR12	2.44 (62.0)	0.62 (15.7)	1 5/16 (33.3)	3700 (254)	2400 (165)	3000 (206)
1	1	-U-FR16	2.59 (65.8)	0.87 (22.1)	1 5/8 (41.3)	3000 (206)	1900 (130)	2400 (165)



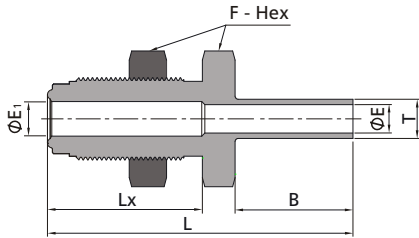
Reducing Union

FR Size (in.)	FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
			L	E	E ₁	F	6L	CU	NI
1/4	1/8	-U-FR4-FR2	1.37 (34.8)	0.09 (2.3)	0.18 (4.6)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-U-FR8-FR4	1.71 (43.4)	0.18 (4.6)	0.40 (10.2)	5/16 (23.8)	4300 (296)	2800 (192)	3500 (241)



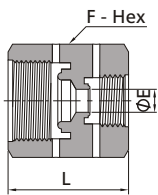
Bulkhead Union Body

FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)				Panel Hole Drill Size in. (mm)	Max. Panel Thickness in. (mm)	Working Pressure, psig (bar)		
		L	Lx	E	F			6L	CU	NI
1/4	-BU-FR4-1.82	1.82 (46.2)	0.99 (25.1)	0.18 (4.6)	3/4 (19.1)	19/32 (15.0)	0.13 (3.3)	10000 (690)	6400 (440)	8000 (551)
1/4	-BU-FR4	2.23 (56.6)	1.30 (33.3)	0.18 (4.6)	3/4 (19.1)	19/32 (15.0)	0.44 (11.2)	10000 (690)	6400 (440)	8000 (551)
1/2	-BU-FR8-2.14	2.14 (54.4)	1.11 (28.2)	0.40 (10.2)	1 1/16 (27.0)	29/32 (23.1)	0.13 (3.3)	4300 (296)	2800 (192)	3500 (241)
1/2	-BU-FR8	2.57 (65.3)	1.48 (37.6)	0.40 (10.2)	1 1/16 (27.0)	29/32 (23.1)	0.50 (12.7)	4300 (296)	2800 (192)	3500 (241)



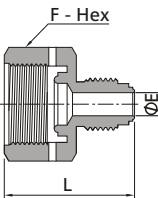
FR Bulkhead Body to Tube Butt Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Panel Hole Drill Size in. (mm)	Max. Panel Thickness in. (mm)	Working Pressure, psig (bar)		
			L	Lx	B	E	E ₁	F			6L	CU	NI
1/4	1/4	-BW-FR4-TB4-1.95	1.95 (49.5)	0.99 (25.1)	0.75 (19.1)	0.18 (4.6)	0.22 (5.6)	0.75 (19.1)	19/32 (15.1)	0.13 (3.3)	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	-BW-FR4-TB4	2.36 (59.9)	1.30 (33.0)	0.75 (19.1)	0.18 (4.6)	0.22 (5.6)	0.75 (19.1)	19/32 (15.1)	0.44 (11.2)	5100 (351)	5100 (351)	5100 (351)



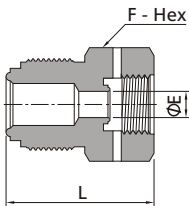
Female Reducing Union

FR Size (in.)	FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	E	F	6L	CU	NI
1/4	1/8	-RU-FR4-FR2	1.16 (29.5)	0.13 (3.3)	3/4 (19.1)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-RU-FR8-FR4	1.41 (35.8)	0.25 (6.4)	1 1/16 (27.0)	4300 (296)	2800 (192)	3500 (241)



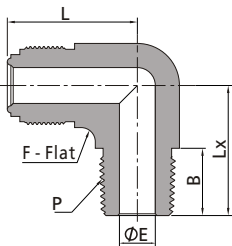
Reducing Adapter

FR Size (in.)	FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	E	F	6L	CU	NI
1/4	1/8	-RA-FR4-FR2	1.19 (30.2)	0.09 (2.3)	3/4 (19.1)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-RA-FR8-FR4	1.41 (35.8)	0.18 (4.6)	1 1/16 (27.0)	4300 (296)	2800 (192)	3500 (241)



Reducing Bushing

FR Size (in.)	FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
			L	E	F	6L	CU	NI
1/4	1/8	-RB-FR4-FR2	1.06 (26.9)	0.13 (3.3)	5/8 (15.9)	10000 (690)	6400 (440)	8000 (551)
1/2	1/4	-RB-FR8-FR4	1.41 (35.8)	0.25 (6.4)	15/16 (23.8)	4300 (296)	2800 (192)	3500 (241)



FR Body to Male NPT Elbow

FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
			L	Lx	B	E	F	6L	CU	NI
1/4	1/8	-LM-FR4-NS2	1.07 (27.2)	0.87 (22.1)	0.38 (9.6)	0.18 (4.6)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)
1/4	1/4	-LM-FR4-NS4	1.07 (27.2)	1.05 (26.7)	0.56 (14.2)	0.18 (4.6)	1/2 (12.7)	8000 (551)	8000 (551)	8000 (551)
1/2	3/8	-LM-FR8-NS6	1.45 (36.8)	1.26 (32.0)	0.56 (14.2)	0.40 (10.2)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-LM-FR8-NS8	1.45 (36.8)	1.45 (36.8)	0.75 (19.1)	0.40 (10.2)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)

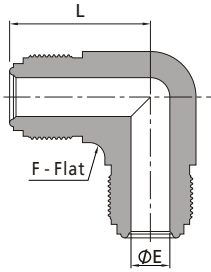
Fittings

Valves

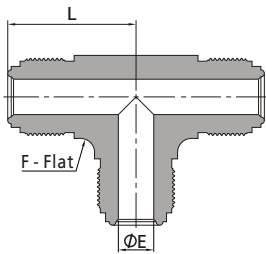
Pressure Gauges

Integrated Systems and Others

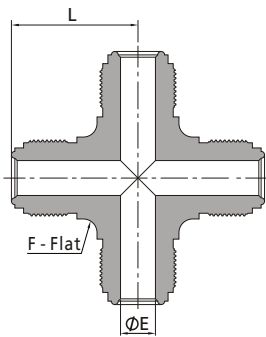
Process Specification



FR Body Union Elbow							
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
		L	E	F	6L	CU	NI
1/8	-LU-FR2	0.89 (22.6)	0.09 (2.3)	7/16 (11.1)	11200 (772)	7200 (496)	9000 (620)
1/4	-LU-FR4	1.07 (27.2)	0.18 (4.6)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)
1/2	-LU-FR8	1.45 (36.8)	0.40 (10.2)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)
3/4	-LU-FR12	1.92 (48.8)	0.62 (15.7)	1 1/4 (31.8)	3700 (254)	2400 (165)	3000 (206)
1	-LU-FR16	2.00 (50.8)	0.87 (22.1)	1 11/16 (42.9)	3000 (206)	1900 (130)	2400 (165)



FR Body Union Tee							
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
		L	E	F	6L	CU	NI
1/8	-TTT-FR2	0.89 (22.6)	0.09 (2.3)	7/16 (11.1)	11200 (772)	7200 (496)	9000 (620)
1/4	-TTT-FR4	1.07 (27.2)	0.18 (4.6)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)
1/2	-TTT-FR8	1.45 (36.8)	0.40 (10.2)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)
3/4	-TTT-FR12	1.92 (48.8)	0.62 (15.7)	1 1/4 (31.8)	3700 (254)	2400 (165)	3000 (206)
1	-TTT-FR16	2.00 (50.8)	0.87 (22.1)	1 11/16 (42.9)	3000 (206)	1900 (130)	2400 (165)



FR Body Union Cross							
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
		L	E	F	6L	CU	NI
1/8	-C-FR2	0.89 (22.6)	0.09 (2.3)	7/16 (11.1)	11200 (772)	7200 (496)	9000 (620)
1/4	-C-FR4	1.07 (27.2)	0.18 (4.6)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)
1/2	-C-FR8	1.45 (36.8)	0.40 (10.2)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)
3/4	-C-FR12	1.92 (48.8)	0.62 (15.7)	1 1/4 (31.8)	3700 (254)	2400 (165)	3000 (206)
1	-C-FR16	2.00 (50.8)	0.87 (22.1)	1 11/16 (42.9)	3000 (206)	1900 (130)	2400 (165)

Fittings

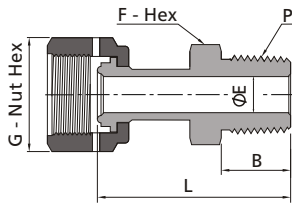
Valves

Pressure Gauges

Integrated Systems and Others

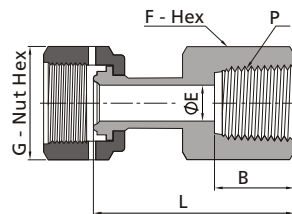
Process Specification

Welded Glands



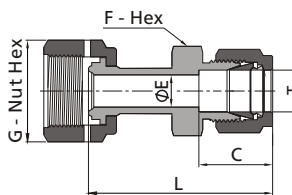
FR Welded Gland to Male NPT

FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
			L	B	E	G	F	6L	CU	NI
1/4	1/8	-WG-FR4-NS2	1.58 (40.1)	0.38 (9.7)	0.18 (4.6)	3/4 (19.1)	7/16 (11.1)	8000 (551)	6400 (446)	8000 (551)
1/4	1/4	-WG-FR4-NS4	1.79 (45.5)	0.56 (14.2)	0.18 (4.6)	3/4 (19.1)	9/16 (14.3)	8000 (551)	6400 (446)	8000 (551)
1/2	3/8	-WG-FR8-NS6	1.89 (48.0)	0.56 (14.2)	0.40 (10.2)	1 1/16 (27.0)	11/16 (17.5)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-WG-FR8-NS8	2.09 (53.1)	0.75 (19.1)	0.40 (10.2)	1 1/16 (27.0)	7/8 (22.2)	4300 (296)	2800 (192)	3500 (241)



FR Welded Gland to Female NPT

FR Size (in.)	P-NPT Size	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
			L	B	E	G	F	6L	CU	NI
1/4	1/4	-WG-FR4-FNS4	1.77 (45.0)	0.59 (15.0)	0.18 (4.6)	3/4 (19.1)	3/4 (19.1)	6600 (454)	5200 (458)	6600 (454)
1/2	3/8	-WG-FR8-FNS6	1.95 (49.5)	0.59 (15.0)	0.40 (10.2)	1 1/16 (27.0)	7/8 (22.2)	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	-WG-FR8-FNS8	2.18 (55.4)	0.78 (19.8)	0.40 (10.2)	1 1/16 (27.0)	1 1/16 (27.0)	4300 (296)	2800 (192)	3500 (241)



FR Welded Gland to Tube Fitting

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)					Working Pressure, psig (bar)		
			L ^①	C	E	G	F	6L	CU	NI
1/4	1/4	-WG-FR4-FL4	1.94 (49.3)	0.60 (15.2)	0.18 (4.6)	3/4 (19.1)	1/2 (12.7)	8000 (551)	6400 (440)	8000 (551)
1/4	3/8	-WG-FR4-FL6	1.97 (50.0)	0.66 (16.8)	0.18 (4.6)	3/4 (19.1)	5/8 (15.9)	6500 (447)	5200 (358)	6500 (447)
1/2	1/2	-WG-FR8-FL8	2.23 (56.6)	0.90 (22.9)	0.40 (10.2)	1 1/16 (27.0)	13/16 (20.6)	4300 (296)	2800 (192)	3500 (241)

① Dimension L is with FITOK nuts finger-tight.

Fittings

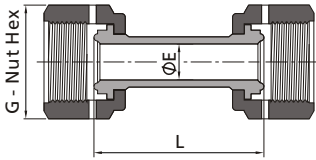
Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

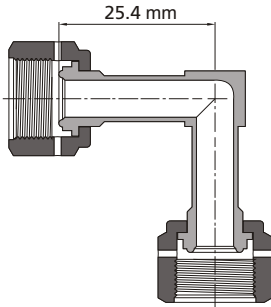
F-29 Face Seal Fittings



FR Welded Gland Union		Dimensions, in. (mm)			Working Pressure, psig (bar)		
FR Size (in.)	Basic Ordering Number	L	E	G	6L	CU	NI
		1/4	-WG-FR4	1.71 (43.4)	0.18 (4.6)	3/4 (19.1)	8000 (551)
1/2	-WG-FR8	1.84 (46.7)	0.40 (10.2)	1 1/16 (27.0)	4300 (296)	2800 (192)	3500 (241)

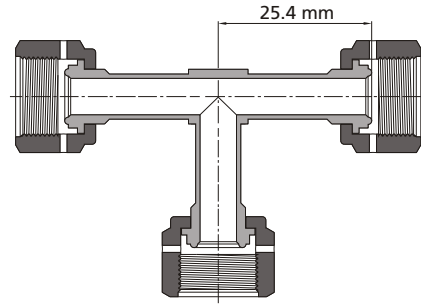
Female Elbows

Basic ordering number: **-LWG-FR4**

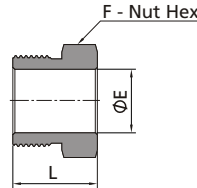
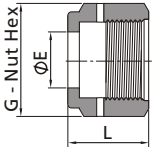


Female Tees

Basic ordering number: **-TWG-FR4**

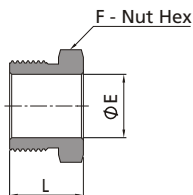


Nuts



Female Nut		Dimensions, in. (mm)		
FR Size (in.)	Basic Ordering Number	L	E	G
		1/8	-N-FR2	0.53 (13.5)
1/4	-N-FR4	0.81 (20.6)	0.36 (9.1)	3/4 (19.1)
1/2	-N-FR8	0.88 (22.4)	0.61 (15.5)	1 1/16 (27.0)
5/8	-N-FR10	0.88 (22.4)	0.74 (18.8)	1 3/16 (30.2)
3/4	-N-FR12	1.12 (28.4)	0.89 (22.6)	1 1/2 (38.1)
1	-N-FR16	1.34 (34.0)	1.20 (30.5)	1 3/4 (44.5)

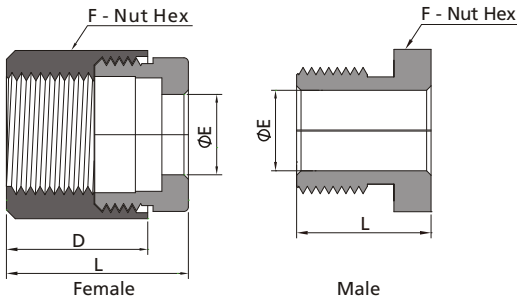
Male Nut		Dimensions, in. (mm)		
FR Size (in.)	Basic Ordering Number	L	E	F
		1/8	-MN-FR2	0.50 (12.7)
1/4	-MN-FR4	0.71 (18.0)	0.36 (9.1)	5/8 (15.9)
1/2	-MN-FR8	0.81 (20.6)	0.61 (15.5)	15/16 (23.8)
5/8	-MN-FR10	0.81 (20.6)	0.74 (18.8)	1 1/16 (27.0)
3/4	-MN-FR12	1.00 (25.4)	0.89 (22.6)	1 5/16 (33.3)
1	-MN-FR16	1.19 (30.2)	1.20 (30.5)	1 5/8 (41.3)



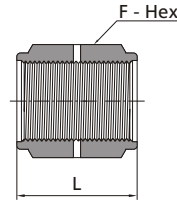
Short Male Nut		Dimensions, in. (mm)		
FR Size (in.)	Basic Ordering Number	L	E	F
		1/4	-MN-FR4-0.54	0.54 (13.7)
1/4	-MN-FR4-0.65	0.65 (16.5)	0.36 (9.1)	5/8 (15.9)

For use with Gland to Short Tube Butt Weld

Split-Nut Assemblies

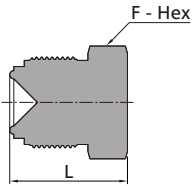


Split-Nut Assemblies							
FR Size (in.)	Split Nut Type	Basic Ordering Number	Dimensions, in. (mm)				
			L	E	F	D	
1/4	Female	-N-FR4-SN	0.81 (20.6)	0.36 (9.1)	3/4 (19.1)	0.63 (16.0)	
1/4	Male	-MN-FR4-SN	0.60 (15.2)	0.36 (9.1)	5/8 (15.9)	-	



Coupling			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
1/8	-BC-FR2	0.66 (16.8)	7/16 (11.1)
1/4	-BC-FR4	1.19 (30.2)	3/4 (19.1)
1/2	-BC-FR8	1.31 (33.3)	1 1/16 (27.0)
3/4	-BC-FR12	1.68 (42.7)	1 1/2 (38.1)
1	-BC-FR16	2.04 (51.8)	1 3/4 (44.5)

Plugs



Plug			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
1/8	-PG-FR2	0.68 (17.3)	3/8 (9.5)
1/4	-PG-FR4	0.92 (23.4)	5/8 (15.9)
1/2	-PG-FR8	1.08 (27.4)	15/16 (23.8)
3/4	-PG-FR12	1.43 (36.3)	1 5/16 (33.3)
1	-PG-FR16	1.52 (38.6)	1 5/8 (41.3)

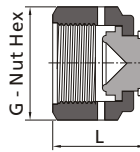
Plugs with Lanyard

- ⊙ Lanyard material: 304 SS.
- ⊙ Lanyard length: 15.2 cm.



Plug with Lanyard			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	F
1/4	-PG-FR4-BP	0.92 (23.4)	5/8 (15.9)
1/2	-PG-FR8-BP	1.08 (27.4)	15/16 (23.8)

Caps



Cap			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	G
1/8	-CP-FR2	0.63 (16.0)	7/16 (11.1)
1/4	-CP-FR4	0.94 (23.9)	3/4 (19.1)
1/2	-CP-FR8	1.01 (25.6)	1 1/16 (27.0)
3/4	-CP-FR12	1.29 (32.8)	1 1/2 (38.1)
1	-CP-FR16	1.54 (39.1)	1 3/4 (44.5)

Caps with Lanyard

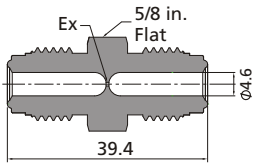
- ⊙ Lanyard material: 304 SS.
- ⊙ Lanyard length: 15.2 cm.



Cap with Lanyard			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		L	G
1/4	-CP-FR4-BP	0.94 (23.9)	3/4 (19.1)
1/2	-CP-FR8-BP	1.01 (25.6)	1 1/16 (27.0)

Flow Restrictors

⊙ Working pressure up to: 10,000 psig (690 bar)



FR Body to Male FR	
Ex, in. (mm)	Ordering Number
0.015 (0.381)	6LV-R-FR4-015
0.017 (0.432)	6LV-R-FR4-017
0.020 (0.508)	6LV-R-FR4-020
0.023 (0.584)	6LV-R-FR4-023
0.025 (0.635)	6LV-R-FR4-025
0.026 (0.660)	6LV-R-FR4-026
0.027 (0.686)	6LV-R-FR4-027
0.030 (0.762)	6LV-R-FR4-030
0.035 (0.889)	6LV-R-FR4-035
0.040 (1.016)	6LV-R-FR4-040
0.045 (1.143)	6LV-R-FR4-045
0.050 (1.270)	6LV-R-FR4-050
0.055 (1.397)	6LV-R-FR4-055
0.060 (1.529)	6LV-R-FR4-060
0.065 (1.651)	6LV-R-FR4-065
0.070 (1.778)	6LV-R-FR4-070
0.075 (1.905)	6LV-R-FR4-075
0.080 (2.032)	6LV-R-FR4-080
0.085 (2.159)	6LV-R-FR4-085
0.090 (2.286)	6LV-R-FR4-090
0.093 (2.362)	6LV-R-FR4-093
0.095 (2.413)	6LV-R-FR4-095
0.100 (2.540)	6LV-R-FR4-100

Locking Device

- ⊙ To help prevent unintentional disassembly of FR connections.
- ⊙ Used for FITOK FR metal gasket face seal assemblies with standard male and female nuts.



Locking Device	
FR Size (in.)	Ordering Number
1/4	S4-FR4-LD
1/2	S4-FR8-LD

Fittings

Valves

Pressure Gauges

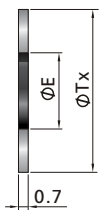
Integrated Systems and Others

Process Specification

Gaskets

- ⊙ Copper gaskets are unplated and with FC-02 Special Cleaning and Packaging.
- ⊙ Unplated SS gaskets and nickel gaskets are electropolished and with FC-03 Ultra High Purity Process Specification.
- ⊙ For silver-plated 316 SS or nickel gaskets, delete the suffix "-UP" from the ordering number, and the products are processed with FC-02 Special Cleaning and Packaging.
- ⊙ For 316L SS, nickel EP gaskets, the maximum allowable leak rate is 4×10^{-11} std cm^3/s .
- ⊙ For silver-plated 316L SS, silver-plated nickel and copper gaskets, the maximum allowable leak rate is 4×10^{-9} std cm^3/s .

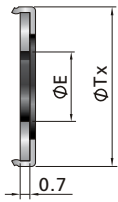
Nonretained



Unplated (UP)			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		Tx	E
1/8	-GT-FR2-UP	0.26 (6.6)	0.09 (2.3)
1/4	-GT-FR4-UP	0.47 (11.9)	0.22 (5.6)
1/2	-GT-FR8-UP	0.78 (19.8)	0.44 (11.2)
5/8	-GT-FR10-UP	0.91 (23.1)	0.58 (14.7)
3/4	-GT-FR12-UP	1.14 (29.0)	0.66 (16.8)
1	-GT-FR16-UP	1.40 (35.6)	0.89 (22.6)

Gaskets are used without retainers.

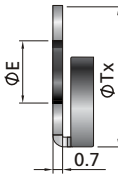
Gasket Retainer Assemblies



Unplated (UP)			
FR Size (in.)	Basic Ordering Number	Dimensions, mm	
		Tx	E
1/4	-GT-FR4-A-UP	0.50 (12.7)	0.24 (6.1)
1/2	-GT-FR8-A-UP	0.79 (20.1)	0.44 (11.2)
3/4	-GT-FR12-A-UP	1.14 (29.0)	0.66 (16.8)
1	-GT-FR16-A-UP	1.40 (35.6)	0.89 (22.6)

1. Gaskets are used with retainers.
2. Retainer material is 316L SS.
3. Retainers are available in different colors, please contact FITOK Group for more details.

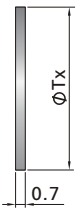
Side-Load Retainer



Unplated (UP)			
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)	
		Tx	E
1/4	-GT-FR4-AS-UP	0.45 (11.4)	0.24 (6.1)
1/2	-GT-FR8-AS-UP	0.75 (19.1)	0.43 (11.0)

1. Gaskets are only available in 316L SS and nickel.
2. Silver-plated gaskets are not available.

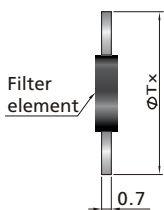
Blind Gaskets



Unplated (UP)		
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)
		Tx
1/8	-GT-FR2-B-UP	0.26 (6.6)
1/4	-GT-FR4-B-UP	0.47 (11.9)
1/2	-GT-FR8-B-UP	0.78 (19.8)
5/8	-GT-FR10-B-UP	0.91 (23.1)
3/4	-GT-FR12-B-UP	1.14 (29.0)
1	-GT-FR16-B-UP	1.40 (35.6)

Blind gasket retainer assemblies are available, please contact FITOK Group for more details.

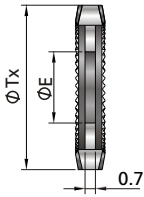
Snubber Gaskets



Unplated (UP)		
FR Size (in.)	Basic Ordering Number	Dimensions, mm
		Tx
1/4	-GT-FR4-UP-**M	0.47 (11.9)
1/2	-GT-FR8-UP-**M	0.78 (19.8)
3/4	-GT-FR12-UP-**M	1.14 (29.0)
1	-GT-FR16-UP-**M	1.40 (35.6)

1. Add the designator of filtration accuracy as a suffix to the basic ordering number to get the complete ordering number.
Example: For 1/4" 316L SS snubber gaskets with filtration accuracy of 0.5 μ m, the ordering number is 6L-GT-FR4-UP-05M.
2. Snubber gaskets with filtration accuracy of 0.5 to 60 μ m for 1/4 through 1 in. FR fittings are available.

Knurled

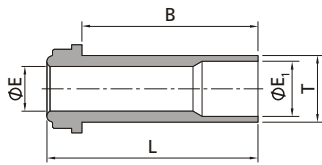


Unplated (UP)			
FR Size (in.)	Basic Ordering Number	Dimensions, in.(mm)	
		Tx	E
1/4	-GT-FR4-KN-A-UP	0.5(12.7)	0.22(5.5)

- Used to prevent nuts from loosening from vibration.
- General 316L SS or Nickle gaskets are tightened with 1/8 turn, while knurled gaskets are assembled by 3/8 turn.

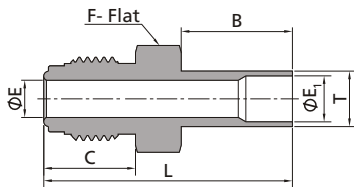
High-Flow Connections - "H" Type FR

"H" type FR connections with high flow capacity are compatible with regular FR connections. Gasket retainer assemblies are recommended to minimize flow resistance.



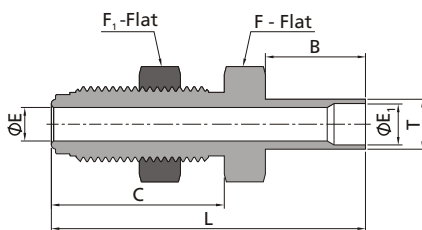
HFR Gland to Tube Butt Weld

FR Size (in.)	T-Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimensions, in. (mm)				Working Pressure, psig (bar)		
				L	B	E	E ₁	6L	CU	NI
1/4	3/8	0.035	-G-HFR4-TB6-0.60	0.60 (15.2)	0.41 (10.4)	0.25 (6.4)	0.31 (7.9)	3300 (227)	3300 (227)	3300 (227)
1/4	3/8	0.035	-G-HFR4-TB6-1.19	1.19 (30.2)	1.00 (25.4)	0.25 (6.4)	0.31 (7.9)	3300 (227)	3300 (227)	3300 (227)
1/4	3/8	0.035	-G-HFR4-TB6-1.31	1.31 (33.3)	1.12 (28.4)	0.25 (6.4)	0.31 (7.9)	3300 (227)	3300 (227)	3300 (227)



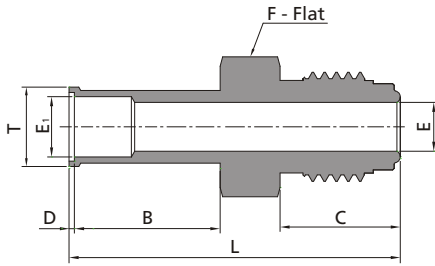
HFR Body to Tube Butt Weld

FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)						Working Pressure, psig (bar)		
			L	B	C	E	E ₁	F	6L	CU	NI
1/4	3/8	-CW-HFR4-TB6	1.68 (42.7)	0.75 (19.1)	0.62 (15.7)	0.25 (6.4)	0.31 (7.9)	5/8 (15.9)	3300 (227)	3300 (227)	3300 (227)

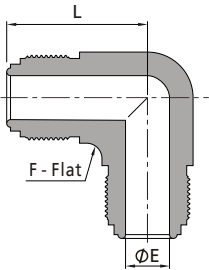


HFR Bulkhead Body to Tube Butt Weld

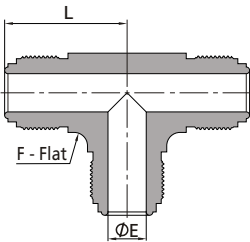
FR Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimensions, in. (mm)							Panel Hole Dia	Max. Panel Thickness	Working Pressure, psig (bar)		
			L	B	C	E	E ₁	F	F ₁			6L	CU	NI
1/4	3/8	-BW-HFR4-TB6	2.36 (59.9)	0.75 (19.1)	1.30 (33.0)	0.31 (7.9)	0.25 (6.4)	3/4 (19.1)	3/4 (19.1)	19/32 (15.0)	0.44 (11.2)	3300 (227)	3300 (227)	3300 (227)



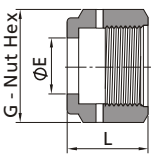
HFR Body to Automatic Tube Weld															
FR Size (in.)	Tube Size (in.)	Basic Ordering Number	Dimensions, in. (mm)										Working Pressure, psig (bar)		
			L	B	C	D	E	E ₁	F	T	6L	CU	NI		
1/4	3/8	-AW-HFR4-TB6	1.71 (43.4)	0.75 (19.1)	0.62 (15.7)	0.03 (0.8)	0.25 (6.4)	0.31 (7.9)	5/8 (15.9)	0.41 (10.4)	3300 (227)	3300 (227)	3300 (227)		



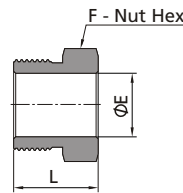
HFR Body Union Elbow							
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
		L	E	F	6L	CU	NI
1/4	-LU-HFR4	1.07 (27.2)	0.25 (6.4)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)



HFR Body Union Tee							
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)			Working Pressure, psig (bar)		
		L	E	F	6L	CU	NI
1/4	-TTT-HFR4	1.07 (27.2)	0.25 (6.4)	1/2 (12.7)	10000 (690)	6400 (440)	8000 (551)



HFR Female Nut				
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)		
		L	E	G
1/4	-N-HFR4-9.9	0.81 (20.6)	0.39 (9.9)	3/4 (19.1)
1/4	-N-HFR4-11.7	0.81 (20.6)	0.46 (11.7)	3/4 (19.1)



HFR Male Nut				
FR Size (in.)	Basic Ordering Number	Dimensions, in. (mm)		
		L	E	F
1/4	-MN-HFR4	0.71 (18.0)	0.39 (9.9)	5/8 (15.9)