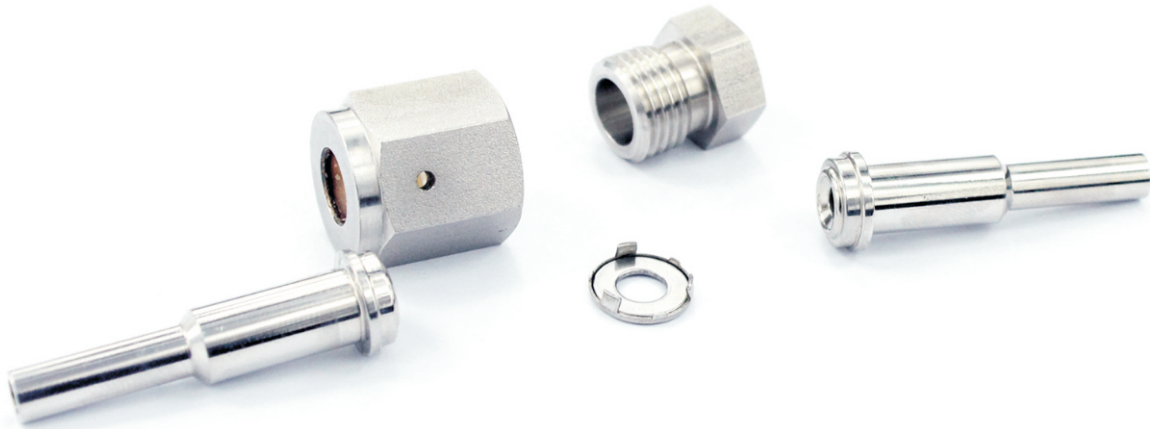


# Metal Gasket Face Seal Fittings

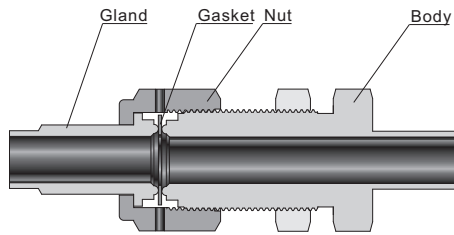
GFS Series



- ❖ Metal-to-metal seal provides perfect leak-tight service from critical vacuum to high pressure
- ❖ Standard surface finish on glands and bodies is a roughness average of  $10\mu\text{in.}$  ( $0.25\mu\text{m}$ ) Ra
- ❖ Sizes from 1/16 to 1 in.
- ❖ 316, 316L, and 316L VAR (Vacuum Arc Remelt) stainless steel materials are available

## Features

- ❖ Metal-to-metal seal provides perfect leak-tight service from critical vacuum to high pressure
- ❖ Female threads are silver plated to prevent galling
- ❖ Two test port for easy leak testing
- ❖ Non-rotational female nut to prevent transmission of torque
- ❖ Smooth transition into the Internal Diameter minimizes entrapment areas
- ❖ Standard surface finish on glands and bodies is a roughness average of 10µin. (0.25µm) Ra
- ❖ Sizes from 1/16 to 1 in.
- ❖ 316, 316L, and 316L VAR (Vacuum Arc Remelt) stainless steel materials are available



## Pressure Ratings

Pressure ratings is calculated in accordance with ANSI/ASME B31.3. To determine working pressure in accordance with ANSI/ASME B31.1, multiply by 0.94.

## Temperature ratings

Component	Material	Working Temperature
Fittings	316 stainless steel	-425°F to 1000°F (-254°C to 538°C)
	316L stainless steel	
	316L VAR stainless steel	
Gaskets	316L stainless steel	-425°F to 400°F (-254°C to 204°C)
	Copper	
	Nickel	

## Standard Materials

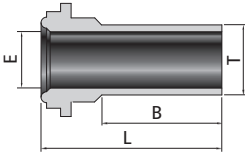
Material	Bar Stock	Forging
<b>Fitting Material</b>		
316 stainless steel	ASTM A276, ASME SA479	ASTM A182, ASME SA182
316L stainless steel		
316L VAR stainless steel		
<b>Gasket Material</b>		
316L stainless steel	ASTM A240, A167	
Copper	ASTM B152	
Nickel	ASTM B162	

## Testing

The GFS fitting has been helium leak tested to a maximum leak rate of  $4 \times 10^{-9}$  std cm<sup>3</sup>/s with silver-plated.

## Pressure Ratings and Dimensions

### Glands

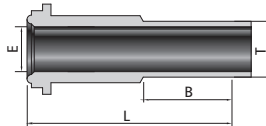


GFS Gland to Short Fractional Tube Butt Weld

GFS Size (in.)	T-Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/8	1/8	0.028	GFS2-SG-FBW2-	27.4	19.1	1.5	8500 (586)	6800 (468)	8500 (586)
1/4	1/8	0.028	GFS4-SG-FBW2-	27.9	19.1	1.5	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	GFS4-SG-FBW4-	15.2	6.4	4.6	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	GFS4-SG-FBW4-2-	18.3	9.7	4.6	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	0.035	GFS4-SG-FBW4-4-	27.9	19.1	4.6	5100 (351)	5100 (351)	5100 (351)
1/2	1/4	0.035	GFS8-SG-FBW4-	28.4	19.1	4.6	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	0.035	GFS8-SG-FBW6-	15.7	6.4	7.9	3300 (227)	2600 (179)	3300 (227)
1/2	3/8	0.035	GFS8-SG-FBW6-2-	28.4	19.1	7.9	3300 (227)	2600 (179)	3300 (227)
1/2	1/2	0.049	GFS8-SG-FBW8-	15.7	6.4	10.2	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	GFS8-SG-FBW8-2-	18.8	9.7	10.2	3500 (241)	2800 (192)	3500 (241)
1/2	1/2	0.049	GFS8-SG-FBW8-4-	28.4	19.1	10.2	3500 (241)	2800 (192)	3500 (241)

GFS Gland to Short Metric Tube Butt Weld

GFS Size (in.)	T-Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/4	6	1.0	GFS4-SG-MBW6-	29.5	19.1	4.0	6800(468)	5400(372)	6800(468)
1/4	8	1.0	GFS4-SG-MBW8-	29.5	19.1	6.0	4900(337)	4900(337)	4900(337)
1/2	10	1.0	GFS8-SG-MBW10-	29.5	19.1	8.0	3500(241)	2800(192)	3500(241)
1/2	12	1.0	GFS8-SG-MBW12-	29.5	19.1	10.0	3100(213)	2400(165)	3100(213)
3/4	18	1.5	GFS12-SG-MBW18-	31.0	19.1	15.0	3000(206)	2400(165)	3000(206)



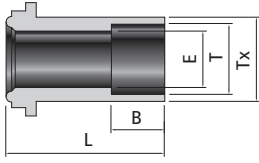
GFS Gland to Long Fractional Tube Butt Weld

GFS Size (in.)	T-Tube O.D. (in.)	Nominal Wall Thickness (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/8	1/8	0.028	GFS2-G-FBW2-	36.1	19.1	1.5	8500(586)	6800(468)	8500(586)
1/4	1/4	0.035	GFS4-G-FBW4-	30.5	6.4	4.6	5100(351)	5100(351)	5100(351)
1/4	1/4	0.035	GFS4-G-FBW4-2-	33.3	9.1	4.6	5100(351)	5100(351)	5100(351)
1/4	1/4	0.035	GFS4-G-FBW4-4-	33.5	9.7	4.6	5100(351)	5100(351)	5100(351)
1/4	1/4	0.035	GFS4-G-FBW4-6-	43.2	19.1	4.6	5100(351)	5100(351)	5100(351)
1/2	1/4	0.035	GFS8-G-FBW4-	45.7	19.1	4.6	4300(296)	2800(192)	3500(241)
1/2	3/8	0.035	GFS8-G-FBW6-	32.8	6.4	7.9	3300(227)	2600(179)	3300(227)
1/2	3/8	0.035	GFS8-G-FBW6-2-	45.5	19.1	7.9	3300(227)	2600(179)	3300(227)
1/2	1/2	0.049	GFS8-G-FBW8-	32.8	6.4	10.2	3500(241)	2800(192)	3500(241)
1/2	1/2	0.049	GFS8-G-FBW8-2-	35.8	9.7	10.2	3500(241)	2800(192)	3500(241)
1/2	1/2	0.049	GFS8-G-FBW8-4-	45.5	19.1	10.2	3500(241)	1900(130)	3500(241)
3/4	3/4	0.049	GFS12-G-FBW12-	51.6	19.1	16.5	2400(165)	1900(130)	2400(165)
1	1	0.065	GFS16-G-FBW16-	58.9	19.1	22.1	2400(165)	2400(165)	2400(165)

GFS Gland to Long Metric Tube Butt Weld

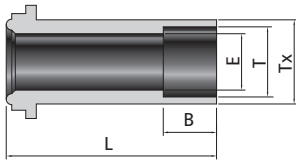
GFS Size (in.)	T-Tube O.D. (mm)	Nominal Wall Thickness (mm)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
				L	B	E	6L	CU	NI
1/4	6	1.0	GFS4-G-MBW6-	43.2	19.1	4.0	6800(468)	5400(372)	6800(468)
1/4	8	1.0	GFS4-G-MBW8-	43.2	19.1	6.0	4900(337)	4900(337)	4900(337)
1/2	10	1.0	GFS8-G-MBW10-	45.5	19.1	8.0	3500(241)	2800(192)	3500(241)
1/2	12	1.0	GFS8-G-MBW12-	45.5	19.1	10.0	3100(213)	2400(165)	3100(213)
3/4	18	1.5	GFS12-G-MBW18-	51.6	19.1	15.0	3000(207)	2400(165)	3000(207)

## Glands



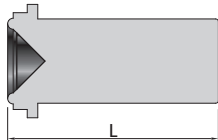
**GFS Gland to Short Tube Socket Weld**

GFS Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	B	E	Tx	6L	CU	NI
1/4	1/4	GFS4-SG-FSW4-	12.7	7.1	4.6	8.9	5500 (378)	5500 (378)	5500 (378)
1/4	1/4	GFS4-SG-FSW4-2-	19.1	7.1	4.6	8.9	5500 (378)	5500 (378)	5500 (378)



**GFS Gland to Tube Socket Weld**

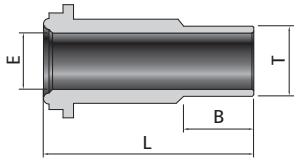
GFS Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	B	E	Tx	6L	CU	NI
1/8	1/16	GFS2-G-FSW1-	17.8	2.5	1.3	3.3	9000 (620)	7200 (496)	9000 (620)
1/8	1/8	GFS2-G-FSW2-	17.8	2.5	2.3	5.1	7100 (489)	7100 (489)	7100 (489)
1/4	1/8	GFS4-G-FSW2-	33.3	2.5	2.3	8.9	8000 (551)	8000 (551)	8000 (551)
1/4	1/4	GFS4-G-FSW4-	33.3	7.1	4.6	8.9	5500 (378)	5500 (378)	5500 (378)
1/2	1/4	GFS8-G-FSW4-	38.1	7.1	4.6	15.2	4300 (196)	3500 (241)	3500 (241)
1/2	3/8	GFS8-G-FSW6-	38.1	7.9	7.1	15.2	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-G-FSW8-	38.1	9.7	10.2	15.2	3000 (206)	2400 (165)	3000 (206)
5/8	5/8	GFS10-G-FSW10-	39.6	10.4	12.7	18.3	2800 (192)	2200 (151)	2800 (192)
3/4	3/4	GFS12-G-FSW12-	50.8	11.2	15.7	22.4	2800 (192)	2200 (151)	2800 (192)
1	1	GFS16-G-FSW16-	56.4	15.7	22.1	30.2	3000 (206)	1900 (130)	2400 (165)



**Blind Gland**

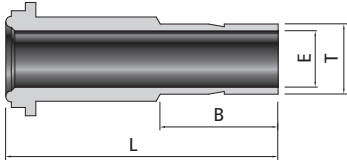
GFS Size (in.)	Basic Ordering Number	Dimension, mm
		L
1/8	BB-GFS2-	17.8
1/4	BB-GFS4-	33.3
1/2	BB-GFS8-	38.1
3/4	BB-GFS12-	50.8
1	BB-GFS16-	56.4

**Glands**



**GFS Gland to Male Weld**

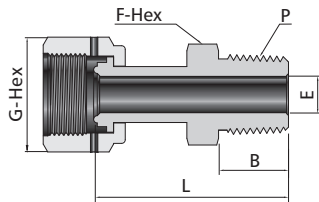
GFS Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	B	E	6L	CU	NI
1/8	1/8	GFS2-G-MFBW2-	17.8	7.1	1.5	11200 (772)	7200 (496)	9000 (620)
1/4	1/8	GFS4-G-MFBW2-	33.3	7.1	1.5	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-G-MFBW4-	33.3	10.4	3.0	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	GFS8-G-MFBW4-	38.1	10.4	3.0	4300 (296)	2800 (192)	3500 (241)
1/2	3/8	GFS8-G-MFBW6-	38.1	10.4	7.1	4300 (196)	2800 (192)	3500 (241)
1/2	1/2	GFS8-G-MFBW8-	38.1	12.7	10.2	3500 (241)	3500 (241)	3500 (241)
3/4	3/4	GFS12-G-MFBW12-	50.8	15.7	13.5	3700 (254)	2400 (165)	3000 (206)
1	1	GFS16-G-MFBW16-	56.4	20.6	19.1	3000 (206)	1900 (130)	2400 (165)



**GFS Gland to Tube Port**

GFS Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	B	E	6L	CU	NI
1/4	1/4	GFS4-G-FT4-	41.1	16.3	4.3	10000 (689)	6400 (440)	8000 (551)
1/2	3/8	GFS8-G-FT6-	46.0	17.8	16.9	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-G-FT8-	49.3	24.4	9.4	4300 (296)	2800 (192)	3500 (241)

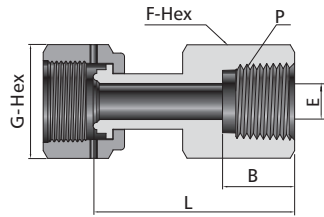
**Welded Assemblies**



**GFS Welded Assemblies to Male NPT**

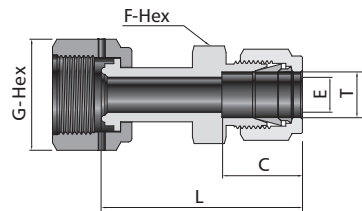
GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure, psig (bar)		
			L	B	E	G	F	6L	CU	NI
1/4	1/8	FGFS4-WA-NPT2-	40.1	9.7	4.6	19.05	11.1	8000 (551)	6400 (446)	8000 (551)
1/4	1/4	FGFS4-WA-NPT4-	45.5	14.2	4.6	19.05	14.3	8000 (551)	6400 (446)	8000 (551)
1/2	3/8	FGFS8-WA-NPT6-	48.0	14.2	10.2	26.99	17.5	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	FGFS8-WA-NPT8-	53.1	19.1	10.2	26.99	22.2	4300 (296)	2800 (192)	3500 (241)

**Welded Glands**



**GFS Welded Assemblies to Female NPT**

GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure, psig (bar)		
			L	B	E	G	F	6L	CU	NI
1/4	1/4	FGFS4-WA-FNPT4-	45.0	15.0	4.6	19.1	19.1	6600 (454)	5200 (458)	6600 (454)
1/2	3/8	FGFS8-WA-FNPT6-	49.5	15.0	10.2	27.0	22.2	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	FGFS8-WA-FNPT8-	55.4	19.8	10.2	27.0	27.0	4300 (296)	2800 (192)	3500 (241)

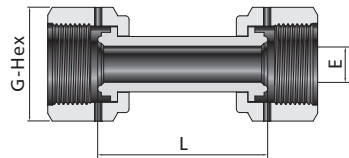


**GFS Welded Assemblies to Tube Fitting**

GFS Size (in.)	T-Tube O.D. (in.)	Basic Ordering Number	Dimension, mm					Working Pressure, psig (bar)		
			L	C	E	G	F	6L	CU	NI
1/4	1/4	FGFS4-WA-F4-	49.3	15.2	4.6	19.1	12.7	10000 (689)	6400 (440)	8000 (551)
1/4	3/8	FGFS4-WA-F6-	50.0	16.8	4.6	19.1	15.9	6500 (447)	5200 (358)	6500 (447)
1/2	1/2	FGFS8-WA-F8-	56.6	22.9	10.2	27.0	20.6	4300 (296)	2800 (192)	3500 (241)



WUE-Weld Union Elbow



**GFS Welded Assemblies Union**

GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
		L	E	G	6L	CU	NI
1/4	FGFS4-WU-FGFS4-	43.4	4.6	19.1	10000 (689)	6400 (440)	8000 (551)
1/2	FGFS8-WU-FGFS8-	46.7	10.2	27.0	4300 (296)	2800 (192)	3500 (241)

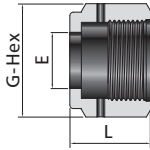


WUT-Weld Union Tee



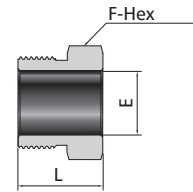
WUC-Weld Union Cross

## Nuts



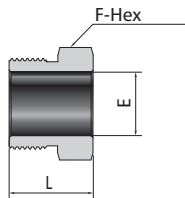
### Female Nut

GFS Size (in.)	Basic Ordering Number	Dimension, mm		
		L	G	E
1/8	FN-FGFS2-	13.5	11.1	5.3
1/4	FN-FGFS4-	20.6	19.1	9.1
1/2	FN-FGFS8-	22.4	27.0	15.5
5/8	FN-FGFS10-	22.4	30.2	18.8
3/4	FN-FGFS12-	28.4	38.1	22.6
1	FN-FGFS16-	34.0	44.5	30.5



### Male Nut

GFS Size (in.)	Basic Ordering Number	Dimension, mm		
		L	F	E
1/8	MN-GFS2-	12.7	9.5	5.3
1/4	MN-GFS4-	18.0	15.9	9.1
1/2	MN-GFS8-	20.6	23.8	15.5
5/8	MN-GFS10-	20.6	27.0	18.8
3/4	MN-GFS12-	25.4	33.3	22.6
1	MN-GFS16-	30.2	41.3	30.5

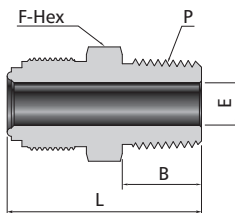


### Short Male Nut

GFS Size (in.)	Basic Ordering Number	Dimension, mm		
		L	F	E
1/4	SMN-GFS4-0.54-	13.7	15.9	9.1
1/4	SMN-GFS4-0.65-	16.5	15.9	9.1

For use with short gland

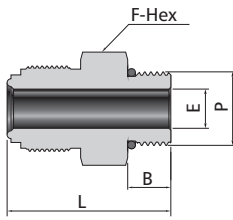
## Bodies



### GFS Body to Male NPT

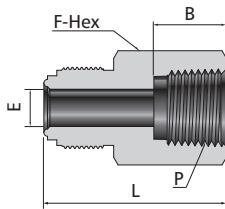
GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	F	B	E	6L	CU	NI
1/8	1/16	GFS2-MC-NPT1-	27.2	9.5	9.7	2.3	9000 (620)	7200 (496)	9000 (620)
1/8	1/8	GFS2-MC-NPT2-	27.2	11.1	9.7	2.3	9000 (620)	7200 (496)	9000 (620)
1/4	1/8	GFS4-MC-NPT2-	33.3	15.9	9.7	4.6	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-MC-NPT4-	37.9	15.9	14.2	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	GFS8-MC-NPT4-	41.9	23.8	14.2	10.2	4300 (296)	2800 (196)	3500 (241)
1/2	3/8	GFS8-MC-NPT6-	41.9	23.8	19.1	9.7	4300 (296)	2800 (196)	3500 (241)
1/2	1/2	GFS8-MC-NPT8-	46.7	23.8	19.1	10.2	4300 (296)	2800 (196)	3500 (241)
3/4	3/4	GFS12-MC-NPT12-	55.6	33.3	19.1	15.8	3700 (254)	2400 (165)	3000 (206)
1	1	GFS16-MC-NPT16-	62.7	41.3	23.9	22.1	3000 (206)	1900 (130)	2400 (165)

**Bodies**



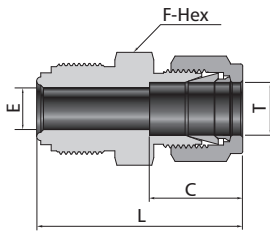
**GFS Body to SAE/MS Thread**

GFS Size (in.)	P-Thread	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	F	B	E	6L	CU	NI
1/4	9/16-18	GFS4-MC-OST9-	33.8	19.1	9.9	4.6	4500 (310)	4500 (310)	4500 (310)
1/2	9/16-18	GFS8-MC-OST9-	37.6	23.8	9.9	7.1	3500 (241)	2800 (192)	3500 (241)
1/2	7/8-14	GFS8-MC-OST12-	42.2	25.4	12.7	7.1	3500 (241)	2800 (192)	3500 (241)



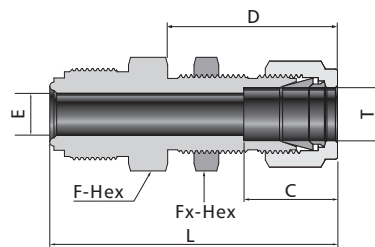
**GFS Body to Female NPT**

GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	F	B	E	6L	CU	NI
1/8	1/16	GFS2-FC-FNPT1-	27.9	11.1	9.9	2.3	6700 (461)	6700 (461)	6700 (461)
1/8	1/8	GFS2-FC-FNPT2-	30.2	14.3	10.4	2.3	6500 (447)	6500 (447)	6500 (447)
1/4	1/8	GFS4-FC-FNPT2-	35.8	15.9	10.4	4.6	8000 (551)	6400 (440)	8000 (551)
1/4	1/4	GFS4-FC-FNPT4-	39.1	19.1	15.0	4.6	6600 (454)	5200 (358)	6600 (454)
1/2	3/8	GFS8-FC-FNPT6-	44.7	23.8	15.0	10.2	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-FC-FNPT8-	50.5	27.0	19.8	10.2	4300 (296)	2800 (192)	3500 (241)
3/4	3/4	GFS12-FC-FNPT12-	59.9	33.3	20.6	15.7	3700 (254)	2400 (165)	3000 (207)
1	1	GFS16-FC-FNPT16-	63.8	41.3	25.4	22.1	3000 (207)	1900 (130)	2400 (165)



**GFS Body to Tube Fitting**

GFS T-Tube Size (in.)	O.D. (in.)	Basic Ordering Number	Dimension, mm				Working Pressure, psig (bar)		
			L	F	C	E	6L	CU	NI
1/4	1/8	GFS4-TF-F2-	38.9	15.9	12.7	2.3	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-TF-F4-	41.1	15.9	15.2	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	3/8	GFS8-TF-F6-	46.7	23.8	16.8	7.1	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-TF-F8-	49.5	23.8	22.9	10.2	4300 (296)	2800 (192)	3500 (241)

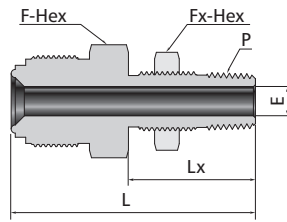


**GFS Body to Bulkhead Tube Fitting**

GFS T-Tube Size (in.)	O.D. (in.)	Basic Ordering Number	Dimension, mm					Panel Max. Panel Hole Thickness		Working Pressure, psig (bar)			
			L	F	Fx	D	C	E	Size(mm)	Thickness (mm)	6L	CU	NI
1/4	1/4	GFS4-BTF-F4-	57.2	15.9	15.9	33.5	15.2	4.6	11.9	10.2	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-BTF-F4-2-	47.8	15.9	15.9	26.7	15.2	4.6	11.9	3.3	10000 (689)	6400 (440)	8000 (551)
1/2	3/8	GFS8-BTF-F6-	64.5	23.8	19.1	36.8	16.8	7.1	15.1	11.2	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-BTF-F8-	69.6	23.8	23.8	41.9	22.9	10.2	19.8	12.7	4300 (296)	2800 (192)	3500 (241)



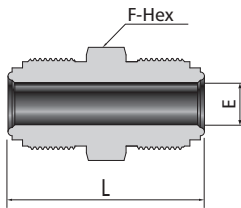
**Bodies**



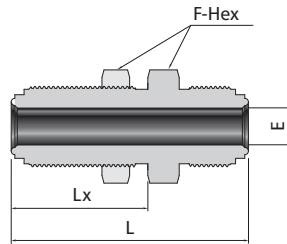
**GFS Body to Bulkhead Male Connector**

GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					Panel Hole Size(mm)	Max. Panel Thickness (mm)	Working Pressure, psig (bar)		
			L	F	Fx	Lx	E			6L	CU	NI
1/4	1/4	GFS4-BMC-NPT4-	56.1	20.6	20.6	31.5	7.1	16.7	9.7	8000 (551)	6400 (440)	8000 (551)
1/2	1/4	GFS8-BMC-NPT4-	59.4	23.8	20.6	31.5	7.1	16.7	9.7	4370 (301)	2800 (192)	3500 (241)

**Union Body**



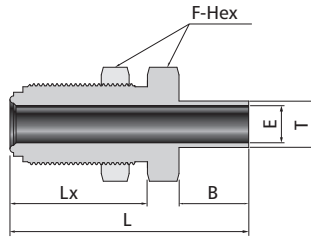
GFS Size (in.)	GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	F	E	6L	CU	NI
1/8	1/8	GFS2-U-GFS2-	28.7	9.5	2.3	11200 (772)	7200 (496)	9000 (620)
1/4	1/8	GFS4-U-GFS2-	34.8	15.9	2.3	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-U-GFS4-	39.4	15.9	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	GFS4-U-GFS4-	43.4	23.8	4.6	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-U-GFS8-	46.7	23.8	10.2	4300 (296)	2800 (192)	3500 (241)
3/4	3/4	GFS12-U-GFS12-	62.0	33.3	15.7	3700 (254)	2400 (165)	3000 (207)
1	1	GFS16-U-GFS16-	65.8	41.3	22.1	3000 (207)	1900 (130)	2400 (165)



**Bulkhead Union Body**

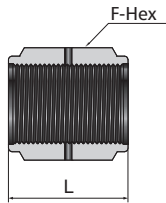
GFS Size (in.)	Basic Ordering Number	Dimension, mm				Panel Hole Drill Size(mm)	Max. Panel Thickness (mm)	Working Pressure, psig (bar)		
		L	Lx	F	E			6L	CU	NI
1/4	GFS4-BU-GFS4-	46.2	25.1	19.1	4.6	15.1	3.3	10000 (689)	6400 (440)	8000 (551)
1/4	GFS4-BU-GFS4-2-	26.6	33.0	19.1	4.6	15.1	11.2	10000 (689)	6400 (440)	8000 (551)
1/2	GFS8-BU-GFS8-	54.4	28.2	27.0	10.2	23.0	3.3	4300 (296)	2800 (192)	3500 (241)
1/2	GFS8-BU-GFS8-2-	65.3	37.6	27.0	10.2	23.0	12.7	4300 (296)	2800 (192)	3500 (241)

**Bodies**



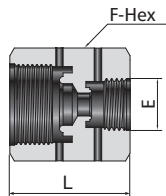
**GFS Bulkhead Body to Tube Butt Weld**

GFS T-Tube Size (in.)	O.D. (in.)	Basic Ordering Number	Dimension, mm					Panel Hole Drill Size, mm	Max. Panel Thickness mm	Working Pressure, psig (bar)		
			L	Lx	F	E	B			6L	CU	NI
1/4	1/4	GFS4-BTB-FBW4-	49.5	25.1	19.1	4.6	19.1	15.1	3.3	5100 (351)	5100 (351)	5100 (351)
1/4	1/4	GFS4-BTB-FBW4-2-	59.9	33.0	19.1	4.6	19.1	15.1	11.2	5100 (351)	5100 (351)	5100 (351)



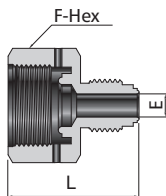
**Coupling**

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		L	F
1/8	C-FGFS2-	16.8	11.1
1/4	C-FGFS4-	30.2	19.1
1/2	C-FGFS8-	33.3	27.0
3/4	C-FGFS12-	42.7	38.1
1	C-FGFS16-	51.8	44.5



**Female Reducing Union**

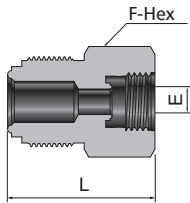
GFS Size (in.)	GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	F	E	6L	CU	NI
1/4	1/8	FGFS4-FU-FGFS2-	29.5	19.1	3.3	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	FGFS8-FU-FGFS4-	35.8	27.0	6.4	4300 (296)	2800 (192)	3500 (241)



**Reducing Adapter**

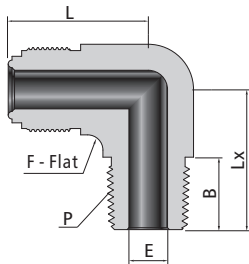
GFS Size (in.)	GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	F	E	6L	CU	NI
1/4	1/8	FGFS4-RA-GFS2-	30.2	19.1	2.3	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	FGFS8-RA-GFS4-	35.8	27.0	4.6	4300 (296)	2800 (192)	3500 (241)

**Bodies**



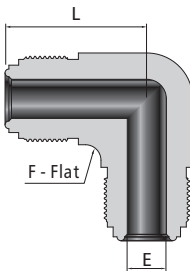
**Reducing Bushing**

GFS Size (in.)	GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
			L	F	E	6L	CU	NI
1/4	1/8	GFS4-RB-FGFS2-	26.9	15.9	3.3	10000 (689)	6400 (440)	8000 (551)
1/2	1/4	GFS8-RB-FGFS4-	35.8	23.8	6.4	4300 (296)	2800 (192)	3500 (241)



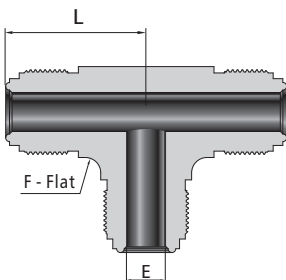
**GFS Body to Male NPT Elbow**

GFS Size (in.)	P-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure, psig (bar)		
			L	F	B	E	Lx	6L	CU	NI
1/4	1/8	GFS4-ME-NPT2-	27.2	12.7	9.6	4.6	22.1	10000 (689)	6400 (440)	8000 (551)
1/4	1/4	GFS4-ME-NPT4-	27.2	12.7	14.2	4.6	26.7	8000 (551)	8000 (551)	8000 (551)
1/2	3/8	GFS8-ME-NPT6-	36.8	20.6	14.2	10.2	32.0	4300 (296)	2800 (192)	3500 (241)
1/2	1/2	GFS8-ME-NPT8-	36.8	20.6	19.1	10.2	36.8	4300 (296)	2800 (192)	3500 (241)



**GFS Body Union Elbow**

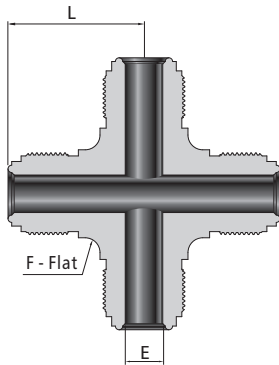
GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
		L	F	E	6L	CU	NI
1/8	GFS2-UE-GFS2-	22.6	11.1	2.3	11200 (772)	7200 (496)	9000 (620)
1/4	GFS4-UE-GFS4-	27.2	12.7	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	GFS8-LU-GFS8-	36.8	20.6	10.2	4300 (296)	2800 (192)	3500 (241)
3/4	GFS12-UE-GFS12-	48.8	31.8	15.7	3700 (254)	2400 (165)	3000 (207)
1	GFS16-UE-GFS16-	50.8	42.9	22.1	3000 (207)	1900 (130)	2400 (165)



**GFS Body Union Tee**

GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
		L	F	E	6L	CU	NI
1/8	GFS2-UT-GFS2-GFS2-	22.6	11.1	2.3	11200 (772)	7200 (496)	9000 (620)
1/4	GFS4-UT-GFS4-GFS4-	27.2	12.7	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	GFS8-UT-GFS8-GFS8-	36.8	20.6	10.2	4300 (296)	2800 (192)	3500 (241)
3/4	GFS12-UT-GFS12-GFS12-	48.8	31.8	15.7	3700 (254)	2400 (165)	3000 (207)
1	GFS16-UT-GFS16-GFS16-	50.8	42.9	22.1	3000 (207)	1900 (130)	2400 (165)

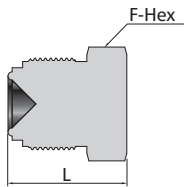
**Bodies**



**GFS Body Union Cross**

GFS Size (in.)	Basic Ordering Number	Dimension, mm			Working Pressure, psig (bar)		
		L	F	E	6L	CU	NI
1/8	GFS2-UC-GFS2-GFS2-GFS2-	22.6	11.1	2.3	11200 (772)	7200 (496)	9000 (620)
1/4	GFS4-UC-GFS4-GFS4-GFS4-	27.2	12.7	4.6	10000 (689)	6400 (440)	8000 (551)
1/2	GFS8-UC-GFS8-GFS8-GFS8-	36.8	20.6	10.2	4300 (296)	2800 (192)	3500 (241)
3/4	GFS12-UC-GFS12-GFS12-GFS12-	48.8	31.8	15.7	3700 (254)	2400 (165)	3000 (206)
1	GFS16-UC-GFS16-GFS16-GFS16-	50.8	42.9	22.1	3000 (206)	1900 (130)	2400 (165)

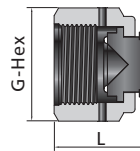
**Plugs**



**Plug**

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		L	F
1/8	PL-GFS2-	17.3	9.5
1/4	PL-GFS4-	23.4	15.9
1/2	PL-GFS8-	27.4	23.8
3/4	PL-GFS12-	36.3	33.3
1	PL-GFS16-	38.6	41.3

**Caps**



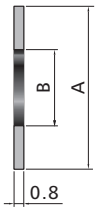
**Cap**

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		L	G
1/8	CA-FGFS2-	16.0	11.1
1/4	CA-FGFS4-	23.9	19.1
1/2	CA-FGFS8-	25.6	27.0
3/4	CA-FGFS12-	32.8	38.1
1	CA-FGFS16-	39.1	44.5

## Gaskets

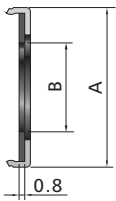
- ❖ Nickel and Copper gasket retainer assemblies use a 316L stainless steel retainer
- ❖ Copper and Nickel gaskets are unplated

### Silver Plated



#### Nonretained

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		A	B
1/8	GA-GFS2-	6.6	2.3
1/4	GA-GFS4-	11.9	5.6
1/2	GA-GFS8-	19.8	11.2
5/8	GA-GFS10-	23.1	14.7
3/4	GA-GFS12-	29.0	16.8
1	GA-GFS16-	35.6	22.6

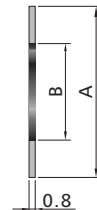


#### Gasket Retainer Assembly

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		A	B
1/4	GA-GFS4-A-	12.7	6.1
1/2	GA-GFS8-A-	20.1	11.2
3/4	GA-GFS12-A-	29.0	16.8
1	GA-GFS16-A-	35.6	22.6

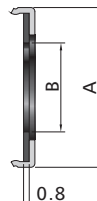
Gasket and retainer must be used as an assembly.

### Unplated



#### Nonretained

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		A	B
1/8	GA-GFS2-UN-	6.6	2.3
1/4	GA-GFS4-UN-	11.9	5.6
1/2	GA-GFS8-UN-	19.8	11.2
5/8	GA-GFS10-UN-	23.1	14.7
3/4	GA-GFS12-UN-	29.0	16.8
1	GA-GFS16-UN-	35.6	22.6



#### Gaskets Retainer Assembly

GFS Size (in.)	Basic Ordering Number	Dimension, mm	
		A	B
1/4	GA-GFS4-A-UN-	12.7	6.1
1/2	GA-GFS8-A-UN-	20.1	11.2
3/4	GA-GFS12-A-UN-	29.0	16.8
1	GA-GFS16-A-UN-	35.6	22.6

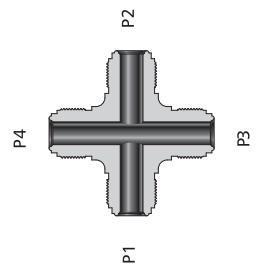
Gasket and retainer must be used as an assembly.

- ❖ To order a gasket, add material designator (316L, Brass or Nickel) as a prefix to the basic ordering number  
Example: GA-GFS4-316L

**How to Order**

**GFS8** — **UT** — **GFS8** — **316L**

Port 1 Type	Port 1 Size	Fitting Type	Port 2 Type	Port 2 Size	Port 3 and Port 4	Material
<b>GFS</b> Metal Gasket Face Seal	2 1/8 in. 4 1/4 in.	<b>SG</b> Short Gland <b>G</b> Gland	<b>FGFS</b> Metal Gasket Face Seal	Same as the Port 1 or follow :	Same as Port 2	<b>316</b> 316 S.S. <b>316L</b> 316L S.S. <b>316LV</b> 316L VAR <b>NI</b> Nickel <b>CO</b> Copper
<b>FGFS</b> Metal Gasket Face Seal	8 1/2 in. or 3/8 in. 12 3/4 in. 16 1 in.	<b>WA</b> Weld Assemblies <b>FN</b> Female Nut <b>MN</b> Male Nut <b>SMN</b> Short Male Nut <b>MC</b> Male Connector Body <b>FC</b> Female Connector Body <b>U</b> Union Body <b>TF</b> Body to Tube Fitting <b>BTF</b> Body to Bulkhead Tube Fitting <b>BMC</b> Body to Bulkhead Male Connector <b>BB</b> Blind Body <b>BU</b> Bulkhead Union Body <b>BTB</b> Bulkhead Body to Tube Butt Weld <b>C</b> Coupling <b>BSW</b> Body to Tube Socket Weld <b>RA</b> Reducing Adapter <b>RB</b> Reducing Bushing <b>ME</b> Male Elbow <b>UE</b> Union Elbow <b>UT</b> Union Tee <b>UC</b> Union Cross <b>PL</b> Plug <b>CA</b> Cap <b>GA</b> Gasket	<b>FBW</b> Fractional Tube Butt Weld <b>F5W</b> Fractional Tube Socket Weld <b>MSW</b> Metric Tube Socket Weld <b>MBW</b> Metric Tube Butt Weld <b>F</b> Fractional Tube Fitting <b>M</b> Metric Tube Fitting <b>FNPT</b> Female NPT <b>NPT</b> Male NPT <b>FBT</b> Female BSPT <b>MBT</b> Male BSPT	1 1/16 in. 2 1/8 in. 4 1/4 in. 6 3/8 in. or 6 mm 7 7/16-20 8 8mm 9 9/16-18 10 10 mm 12 3/4 in. or 3/4-16 or 12 mm 17 1 1/16-12 18 18mm 21 1 5/16-12		



WUE-Weld Union Elbow



WUT-Weld Union Tee



WUC-Weld Union Cross