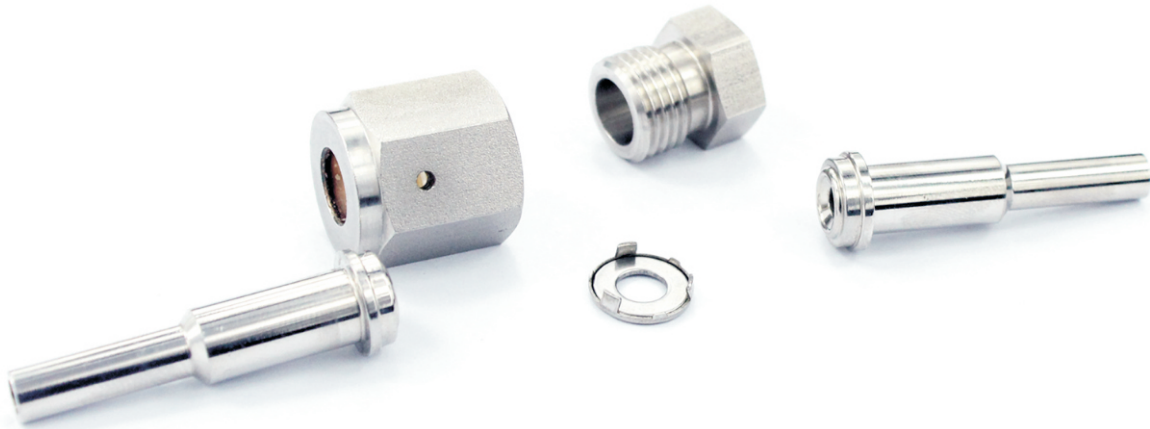


# Metal Gasket Face Seal Fittings

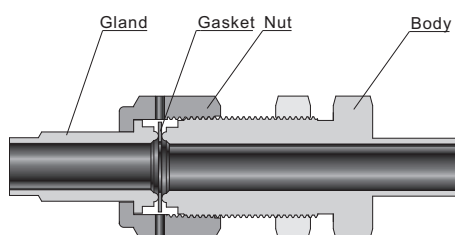
GFS Series



- ❖ 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 10µin. (0.25µm) 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                   | -325°F to 600°F (-198°C to 316°C)  |

## Standard Materials

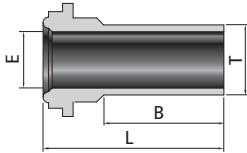
| Material                 | Bar Stock                | Forging                  |
|--------------------------|--------------------------|--------------------------|
| Fitting Material         |                          |                          |
| 316 stainless steel      | ASTM A276,<br>ASME SA479 | ASTM A182,<br>ASME SA182 |
| 316L stainless steel     |                          |                          |
| 316L VAR stainless steel |                          |                          |
| Gasket Material          |                          |                          |
| 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

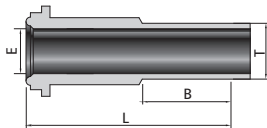


**GFS Gland to Short Fractional Tube Butt Weld**

| 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) |



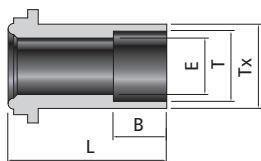
**GFS Gland to Long Fractional Tube Butt Weld**

| 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**

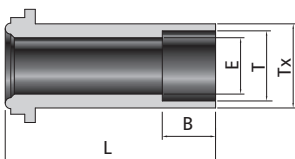
| GFS Size (in.) | T-Tube O.D. (mm) | Nominal Wall Thickness (mm) | Basic Ordering Number | Dimension, mm |      |      | Working Pressure, psig (bar) |           |           |
|----------------|------------------|-----------------------------|-----------------------|---------------|------|------|------------------------------|-----------|-----------|
|                |                  |                             |                       | 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



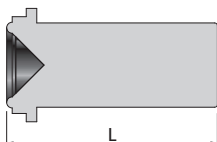
**GFS Gland to Short Tube Socket Weld**

| 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**

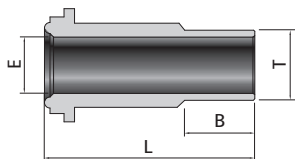
| GFS Size (in.) | T-Tube O.D. (in.) | Basic Ordering Number | Dimension, mm |      |      |      | Working Pressure, psig (bar) |            |            |
|----------------|-------------------|-----------------------|---------------|------|------|------|------------------------------|------------|------------|
|                |                   |                       | 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**

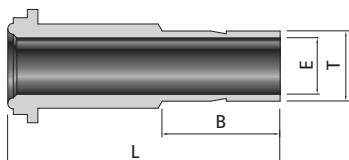
| GFS Size (in.) | Basic Ordering Number | Dimension, mm |
|----------------|-----------------------|---------------|
|                |                       | L             |
| 1/8            | BB-GFS2-              | 17.8          |
| 1/4            | BB-GFS4-              | 33.3          |
| 1/2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

## Glands



**GFS Gland to Male Weld**

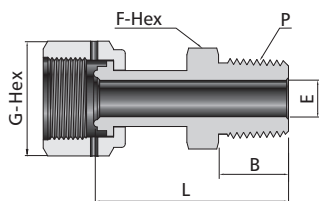
| GFS Size (in.) | T-Tube O.D. (in.) | Basic Ordering Number | Dimension, mm |      |      | Working Pressure, psig (bar) |            |            |
|----------------|-------------------|-----------------------|---------------|------|------|------------------------------|------------|------------|
|                |                   |                       | 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) |

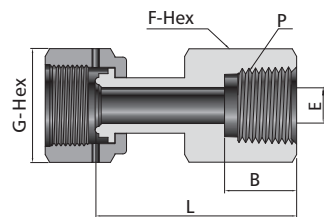
## Welded Assemblies



**GFS Welded Assemblies to Male NPT**

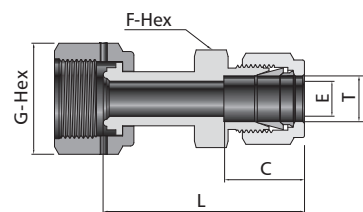
| GFS Size (in.) | P-NPT Size | Basic Ordering Number | Dimension, mm |      |      |       |      | Working Pressure, psig (bar) |            |            |
|----------------|------------|-----------------------|---------------|------|------|-------|------|------------------------------|------------|------------|
|                |            |                       | 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



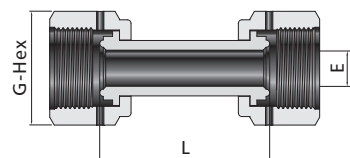
**GFS Welded Assemblies to Female NPT**

| 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**

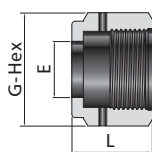
| GFS Size (in.) | T-Tube O.D. (in.) | Basic Ordering Number | Dimension, mm |      |      |      |      | Working Pressure, psig (bar) |            |            |
|----------------|-------------------|-----------------------|---------------|------|------|------|------|------------------------------|------------|------------|
|                |                   |                       | 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) |



**GFS Welded Assemblies Union**

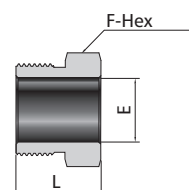
| GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |      | Working Pressure, psig (bar) |            |            |
|----------------|-----------------------|---------------|------|------|------------------------------|------------|------------|
|                |                       | 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) |

## Nuts



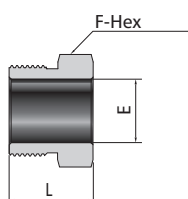
### Female Nut

| 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 |

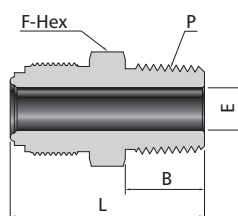


### Short Male Nut

| 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

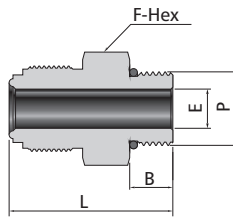
## Bodies



### GFS Body to Male NPT

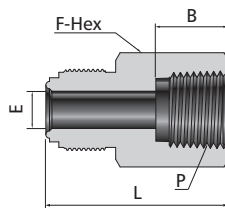
| GFS Size (in.) | P-NPT Size | Basic Ordering Number | Dimension, mm |      |      |      | Working Pressure, psig (bar) |            |            |
|----------------|------------|-----------------------|---------------|------|------|------|------------------------------|------------|------------|
|                |            |                       | 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



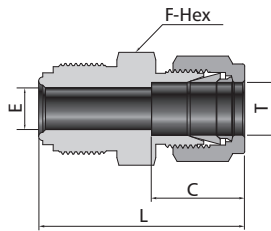
### GFS Body to SAE/MS Thread

| GFS Size (in.) | P-Thread Size | 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) |



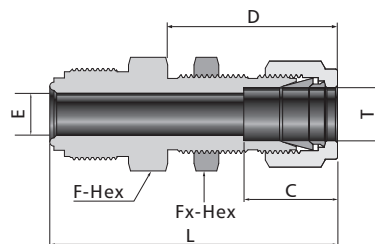
### GFS Body to Female NPT

| 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

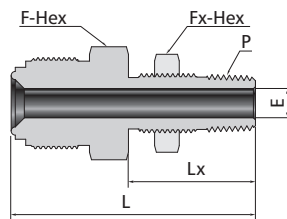
| GFS T-Tube Size (in.) | O.D. (in.) | Basic Ordering Number | Dimension, mm |      |      |      | Working Pressure, psig (bar) |            |            |
|-----------------------|------------|-----------------------|---------------|------|------|------|------------------------------|------------|------------|
|                       |            |                       | 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

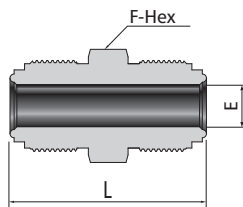
| GFS T-Tube Size (in.) | O.D. (in.) | Basic Ordering Number | Dimension, mm |      |      |      |      |      | Panel Max. Hole Size (mm) | Panel Thickness (mm) | Working Pressure, psig (bar) |            |            |
|-----------------------|------------|-----------------------|---------------|------|------|------|------|------|---------------------------|----------------------|------------------------------|------------|------------|
|                       |            |                       | L             | F    | Fx   | D    | C    | E    |                           |                      | 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



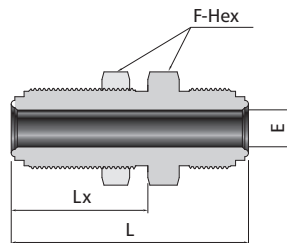
**GFS Body to Bulkhead Male Connector**

| 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**

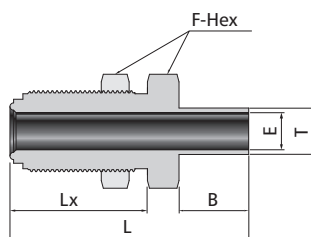
| GFS Size (in.) | GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |      | Working Pressure, psig (bar) |            |            |
|----------------|----------------|-----------------------|---------------|------|------|------------------------------|------------|------------|
|                |                |                       | 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**

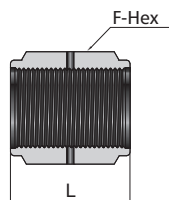
| GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |      |      | Panel Hole Drill Size(mm) | Max. Panel Thickness (mm) | Working Pressure, psig (bar) |            |            |
|----------------|-----------------------|---------------|------|------|------|---------------------------|---------------------------|------------------------------|------------|------------|
|                |                       | 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



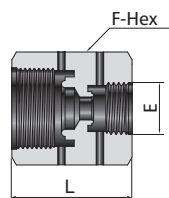
### GFS Bulkhead Body to Tube Butt Weld

| GFS Size (in.) | T-Tube 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) |



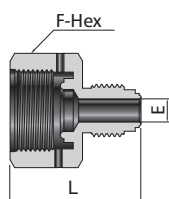
### Coupling

| 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

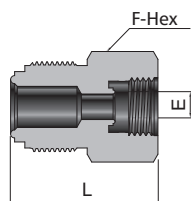
| GFS Size (in.) | GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |     | Working Pressure, psig (bar) |            |            |
|----------------|----------------|-----------------------|---------------|------|-----|------------------------------|------------|------------|
|                |                |                       | 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

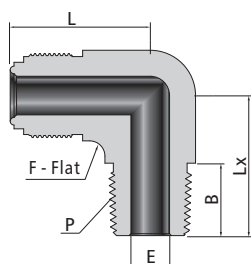
| GFS Size (in.) | GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |     | Working Pressure, psig (bar) |            |            |
|----------------|----------------|-----------------------|---------------|------|-----|------------------------------|------------|------------|
|                |                |                       | L             | F    | E   | 6L                           | CU         | NI         |
| 1/4            | 1/8            | FGFS4-RA-FGFS2-       | 30.2          | 19.1 | 2.3 | 10000 (689)                  | 6400 (440) | 8000 (551) |
| 1/2            | 1/4            | FGFS8-RA-FGFS4-       | 35.8          | 27.0 | 4.6 | 4300 (296)                   | 2800 (192) | 3500 (241) |

## Bodies



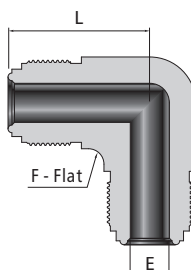
### Reducing Bushing

| 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) |



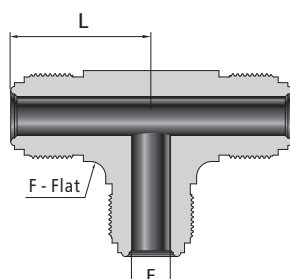
### GFS Body to Male NPT Elbow

| 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

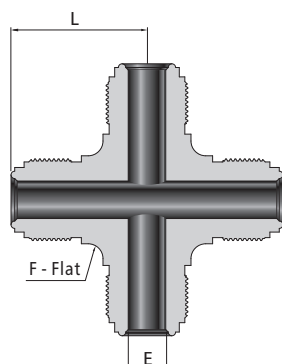
| GFS Size (in.) | Basic Ordering Number | Dimension, mm |      |      | Working Pressure, psig (bar) |            |            |
|----------------|-----------------------|---------------|------|------|------------------------------|------------|------------|
|                |                       | 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) |

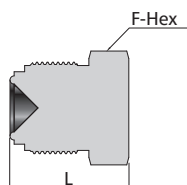
## Bodies



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) |

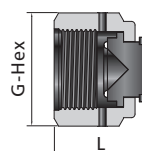
## Plugs



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



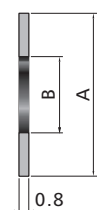
Cap

| 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

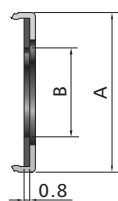
- ❖ Nickel and Copper gasket retainer assemblies use a 316L stainless steel retainer
- ❖ Copper and Nickel gaskets are unplated

### 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 |

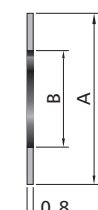


#### Gasket Retainer Assembly

| 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 |

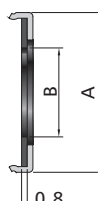
Gasket and retainer must be used as an assembly.

### 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

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

