

CATALOG NO.

Apr 2026

GP International

GPI TUBE FITTINGS



OD size from 1/16" thru 2"

OD 2mm thru 50mm

Engineered with Precision Trusted Across Industries
Connecting trust through honest engineering.

GP International,
chosen by industries worldwide.



Design & Manufacture

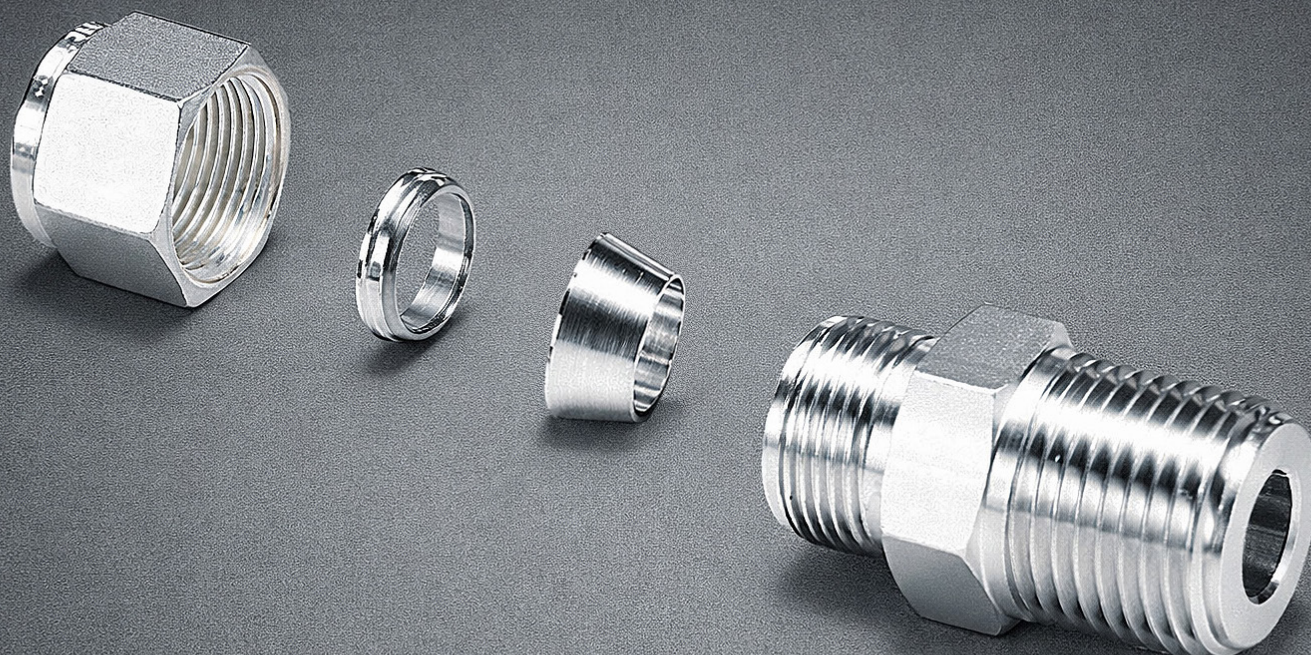
GPI tube fittings have been designed and manufactured with great care to meet the specifications required for a wide range of applications in chemical, petrochemical, oil refineries, power generation, shipbuilding, pulp and papers, semiconductor micro-electronics, etc. Each GPI tube fittings consists of four parts ; body, front ferrule, back ferrule, and nut. The two-ferrule design, front and back, compensates for any tolerances in tube O.D., wall thickness, material hardness and always ensures outstanding leak-tight connections.

Torque & Distortion during Installation

When the nut is tightened, the back and front ferrules move axially. This axial movement does not allow any torque transfer from the fitting to the tubing, and the mechanical properties of tubing are maintained. During makeup, the back ferrule moves in such a controlled manner that the tubing is not overstressed and the tubing I.D is not excessively reduced, resulting in safe operation under high pressure or vibration. The front ferrule does not force the body to expand, which allows the nut to be back off easily for disassembly and allows multiple remakes.

Table headers are differentiated with color :

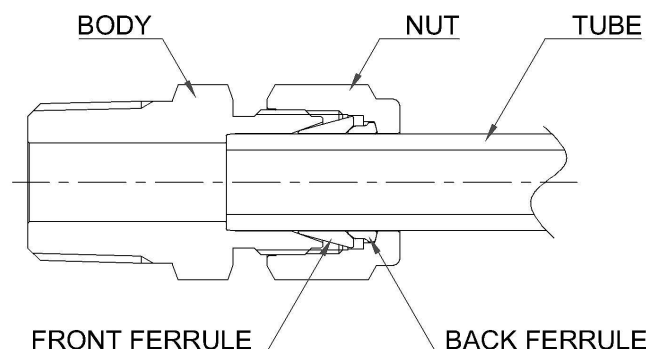
		Shows Fractional
		Shows Metric



Construction of GPI Tube Fittings

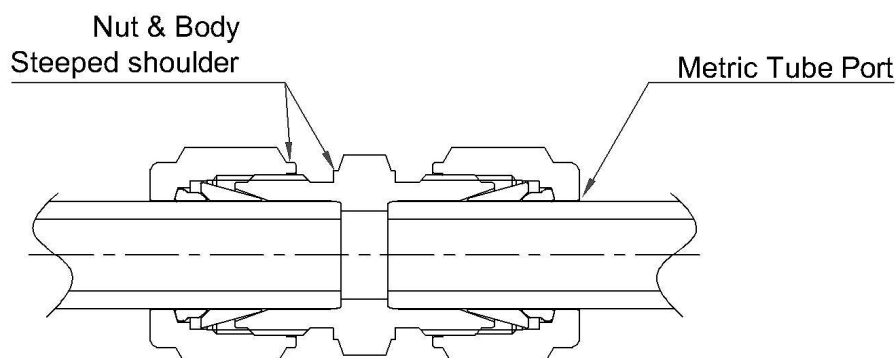
GPI Tube fitting consists of body, front ferrule, back ferrule and nut.

Feature
1. Excellent product range up to 2 inch and 50mm O.D
2. Additional engineering on sealing integrity & swaging action.
3. Reusable and predictable quality.
4. Excellent leak free sealing integrity on heavy vibration, vacuum and impulse.
5. Heat code Traceability.
6. No torque transferring to connective tubing during installation.



Identification of Metric GPI Tube Fittings

Metric GPI Tube Fitting has stepped shoulder on body and nut hex. Shaped fitting such as tee, elbow, and cross forging has such step on body as well.



Material

Fitting Material	Bar Stock	Forging
Stainless Steel 316	ASTM A479 / A276 TYPE 316	ASTM A182 F316
Duplex Stainless Steel	ASTM A479 / A276 UNS S31803	A182 F51
Super Duplex Stainless Steel	ASTM A479 / A276 UNS S32750	A182 F53
Alloy 20	ASTM B473 UNS N08020	ASTM B462 UNS N08020
Alloy 400	ASTM B164 UNS N04400	ASTM B564 UNS N04400
Alloy 625	ASTM B446 UNS N06625	ASTM B564 UNS N06625
Alloy 825	ASTM B425 UNS N08825	ASTM B564 UNS N08825
Alloy C-276	ASTM B574 UNS N10276	ASTM B564 UNS N10276
Carbon Steel	ASTM A108, JIS G4051 S45C	ASTM A105, JIS G4051 S45C
Brass	ASTM B16 C3600, JIS H3250 C3604	ASTM B124 C3770, JIS H3250 C3771
Titanium Gr.2	ASTM B338 Gr.2	ASTM B381 F3

Temperature Ranges

Tubing Material	Temperature Range	Tubing Material	Temperature Range
Stainless Steel 316	-196°C to 649°C (-321°F to 1200°F)	Alloy 600	-130°C to 649°C (-205°F to 1200°F)
Carbon Steel	-53°C to 426°C (-65°F to 800°F)	Alloy C-276	-195°C to 537°C (-320°F to 1000°F)
Copper	-40°C to 204°C (-40°F to 400°F)	Titanium	-195°C to 315°C (-320°F to 600°F)
Alloy 400	-198°C to 426°C (-324°F to 800°F)	PTFE	-17°C to 65°C (0°F to 150°F)

Tubing

Variety of tubing materials and wide range of wall thickness can be used with GPI tube fittings. However, it is essential to specify, select, and handle the tubing with care in order to ensure reliable, safe, leak tight installation using GPI tube fittings.

General Rules

1. The tubing material must be compatible with process fluid.
2. Temperature, pressure, vibration and shock conditions must be considered when selecting the wall thickness. Further extremely thick wall may not be properly deformed and extremely thin wall may be collapsed by ferrule action.
3. The metal tubing must be softer than the fitting materials. In general, metal tubing should be fully annealed to work properly with GPI tube fittings.
4. For leak tight installation, the tubing surface finish must be smooth and free from weld seam, scratches and draw marks.
5. The tubing with high tolerance in ovality or O.D. may not fit in the fitting or may cause improper performance.
6. Best performance is achieved when the tubing ends are squarely cut and deburred properly.

The followings are the recommended tubing specifications for best performance with GPI tube fittings.

Stainless Steel Tubing

Fully annealed seamless type 304 / 304L, 316 / 316L to ASTM A269 or equivalent with hardness Rockwell Rb90 or less.

Copper Tubing

Seamless soft annealed temper O60 with hardness 60 max. (Rockwell hardness, 15T) to ASTM B75, or seamless water tubing type K or type L annealed temper O60 with hardness 50 max. In coils or annealed temper O50 with hardness 55 max. (Rockwell hardness, F) in straight lengths to ASTM B88, or equivalent.

Monel Tubing

Fully annealed seamless Alloy 400 to ASTM B165 or equivalent with hardness Rb75 max.

Temperature De-rating Factors

The allowable working pressure is determined by various temperatures. To determine the working pressure at the specific temperatures, multiply the working pressure at ambient temperature and factor.

Table 1													
Temp		Stainless Steel A269		Carbon Steel A179	Copper ASTM B75	Alloy 400 B165	Alloy 600 B167	Alloy 625 B444	Alloy 825 B423	Alloy 20 B729	Alloy C276 B622	Super Duplex A789	Titanium Gr.2 B338
°F	°C	304	316										
100	37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
200	93	1.00	1.00	0.95	0.80	0.88	1.00	1.00	0.92	0.90	1.00	0.90	0.88
300	148	1.00	1.00	0.90	0.78	0.79	1.00	1.00	0.87	0.86	1.00	0.85	0.72
400	204	0.93	0.96	0.86	0.50	0.79	1.00	1.00	0.83	0.83	1.00	0.82	0.61
500	260	0.87	0.90	0.82	0.13	0.79	1.00	0.97	0.79	0.79	0.98	0.81	0.53
600	315	0.82	0.85	0.77	-	0.79	1.00	0.95	0.76	0.77	0.96	0.80	0.45
700	370	0.80	0.82	0.73	-	0.79	1.00	0.93	0.74	0.76	0.87	-	-
800	426	0.76	0.79	0.59	-	0.76	1.00	0.93	0.73	0.73	0.84	-	-
900	480	0.73	0.78	-	-	-	0.80	0.93	0.73	-	0.81	-	-
1000	537	0.69	0.76	-	-	-	0.35	0.93	0.71	-	0.79	-	-
1200	649	0.30	0.37	-	-	-	0.10	0.33	-	-	0.35	-	-

1. To determine allowable working pressure at elevated temperature, multiply allowable room temperature working pressure by De-rating factor from table 1.

$$\text{De-rating factor} = \frac{\text{suggested allowable working pressure at elevated temperature}}{\text{suggested allowable working pressure at room temperature}}$$

2. Based on the lower derating factor for stainless steel, in accordance with ASME B31.3.
3. To determine allowable working pressure at elevated temperatures, multiply allowable working pressures from Table 2 though 22 by a factor shown in Table 1.

Example

Type stainless steel 316 1/2 in. O.D x 0.083 in. wall thickness at 500°F

1. The allowable working pressure at -20 to 100°F (-28 to 37°C) is 6600 psig (Table 2.)
2. The De-rating factor for 500°F (260°C) is 0.9 (Table 1. above) : 6,600 psi x 0.9 = 5,940 psig

Therefore 5,940 psi is the maximum allowable working pressure of stainless steel 316 1/2 in. O.D x 0.083" wall thickness tubing.

Pressure Ratings

GPI tube fittings are rated to the maximum working pressure of tubing recommended for using with GPI tube fittings. The maximum working pressure of tubings are listed in MAWP Table on the following pages.

* Material strength and allowable working pressure decrease as the temperature increases.

Stainless Steel Tubing

Fully annealed 304 or 316 high quality seamless steel tube to ASTM A269 or equivalent.

Recommended Hardness : HRB 90 or less

Table 2. Stainless Steel Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)															
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	5500	6700	8000	9300	11900											
1/8						8400	10800									
3/16						5300	6900	10100								
1/4						3900	5000	7400	10100							
5/16							3900	5700	7900							
3/8							3200	4700	6400	7400						
1/2							2500	3600	5000	6600						
5/8								2800	3900	5100	5900					
3/4								2300	3200	4100	4800	5700				
7/8								1900	2700	3500	4100	4700				
1									2300	3000	3500	4100	4600			
1-1/4										2300	2700	3200	3500	4000	4800	
1-1/2											2200	2600	2900	3300	3900	4800
2												1900	2100	2400	2800	3500

For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.

Table 3. Stainless Steel Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)															
	0.3	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	5.0	
2	200	650														
3		660														
4		490	650								Working pressure (bar)					
6		300	410	530	700											
8			300	380	510											
10			230	290	390	500	570									
12			190	240	320	400	460									
14			150	190	260	330	370	420								
15			140	180	240	300	350	390								
16				160	220	280	320	360	390							
18				140	190	250	280	310	360							
20				130	170	220	250	280	320	370						
22				130	170	190	220	250	290	330						
25						170	190	220	250	280	310					
28							170	190	220	250	270	320				
30		For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.					160	170	200	230	250	300				
32							150	160	190	210	230	280	320			
38								130	150	180	190	230	260	300		
50											140	170	200	230	260	

For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.

- Working pressure are based on allowable stress value of 20,000 psi (137,800kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 75,000 psi (516,700 kPa).
- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion. Example : ASTM A 269 Type 316 Tubing, O.D 1/2 inch. O.D x 0.083 inch. WT. ASTM A269 standard specifies permissible O.D tolerance : ±0.005 in. (±0.13mm), permissible WT tolerance : ±16% Allowable working pressure is therefore calculated with maximum O.D 0.505 in. and minimum WT 0.0697 in.
- Safety Factor 3.75 to 1.

Welded Stainless Steel Tubing

Welded tubing Based on ASME B31.3 for weld integrity, a de-rating factor must be applied to welded tubing. For double butt seam tubing, multiply by 0.85, For single butt seam tubing, multiply by 0.80.

Carbon Steel Tubing

Soft annealed seamless carbon steel tube to ASTM A179 or equivalent.

Recommended Hardness : HRB 72 or less

Table 4. Carbon Steel Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)													
	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.148	0.165	0.180	0.220
1/16	9600													
1/8		7900	10100											
3/16		5000	6500	9500							Working pressure (psig)			
1/4		3600	4700	6900	9500									
5/16			3600	5400	7400									
3/8			3000	4400	6100									
1/2			2200	3100	4400	5800								
5/8			1700	2500	3400	4500	5200							
3/4				2000	2800	3600	4200	5000						
7/8	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			1700	2300	3100	3600	4200						
1				1400	2000	2600	3100	3600	4000					
1-1/4					1500	2000	2400	2800	3100	3500	3900	4500	4900	
1-1/2						1700	1900	2300	2500	2800	3200	3600	4000	5000
2							1400	1600	1800	2000	2300	2600	2900	3600

Table 5. Carbon Steel Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)												
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5
3	620	780											
6	280	360	450	580									
8		260	320	420						Working pressure (bar)			
10		200	250	320									
12		160	200	260	320	370	410						
14		140	170	220	270	310	340						
15		130	160	200	250	280	320						
16		120	140	190	230	260	290	340					
18			130	160	200	230	260	300					
20			110	150	180	200	230	260	300				
22			100	130	160	180	200	230	270				
25			90	110	140	160	170	200	230	250			
28	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.					140	150	180	200	220	260		
30						130	140	160	190	200	240		
32						120	130	150	170	190	220	260	
38							110	120	140	150	180	220	250

- Working pressure are based on allowable stress value of 15,700 psi (108,200kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 47,000 psi (324,000 kPa).
- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosion and erosion.
- To determine working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.85.Safety Factor 3 to 1.

Copper Tubing

High quality soft annealed seamless copper tube to ASTM B75 or equivalent. Also soft annealed seamless copper water tube ASTM B88 Type K or L. Recommended Hardness : HRB 60 or less

Table 6. Copper Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)								
	0.028	0.030	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8	2600	2900	3500						
3/16	1700	1800	2200	3300					
1/4	1200	1300	1500	2400	3400		Working pressure (psig)		
5/16			1200	1800	2600				
3/8			900	1500	2100				
1/2			700	1000	1500	2000			
5/8	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			800	1100	1500	1800		
3/4				600	900	1200	1400	1700	
7/8				500	700	1000	1200	1400	
1				400	600	800	1000	1200	1400

Table 7. Copper Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)									
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0
3	190									
4	130	190								
6	100	130	160	210				Working pressure (bar)		
8		90	110	150						
10		70	90	120						
12		50	70	90	120	130				
14		40	50	80	100	110				
15			50	70	90	100	110			
16				60	80	90	100	110		
18	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			50	70	80	90	100		
20				50	60	70	80	90	100	
22				40	50	60	70	80	90	
25				30	40	50	60	70	80	90
28					30	40	50	60	70	80

- Working pressure are based on allowable stress value of 6,000 psi (41,300kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 30,000 psi (206,700 kPa).
- Pressure calculation are based on Maximum O.D and minimum wall thickness and no allowance is made for corrosio and erosion.
- Safety Factor 5 to 1.

Alloy 400 Tubing

Fully annealed seamless Alloy 400 tube to ASTM B165 or equivalent. Recommended Hardness : HRB 75 or less

Table 8. Alloy 400 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)							
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8	7800	10000						
3/16	5000	6400	9400					
1/4	3600	4700	6900	9400		Working pressure (psig)		
5/16		3600	5300	7200				
3/8		3000	4300	6000				
1/2		2200	3100	4300				
5/8	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.		2600	3600	4700	5500		
3/4			2100	2900	3900	4500		
7/8			1800	2500	3300	3800	4400	
1				2100	2800	3300	3800	4200

Table 9. Alloy 400 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)									
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0
3	620									
4	390									
6	300	380	480	610				Working pressure (bar)		
8		280	340	440						
10		210	270	340						
12		170	220	280						
14		170	180	230	260					
15			180	230	280	320	320			
16			160	210	260	300	310			
18			140	190	230	260	290			
20	For gas service, applying tube wall thickness should only be selected from the outside of the shaded boundary.			170	200	230	260	280		
22				160	190	220	240	280	300	
25					160	180	200	230	260	280
28										

- Working pressure are based on allowable stress value of 18,700 psi (128,900kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 70,000 psi (482,300 kPa). Safety Factor 3.7 to 1.

Alloy 600 Tubing

Fully annealed seamless Alloy 600 tube to ASTM B167 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : HRB 92 or less

Table 10. Alloy 600 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)			
	0.028	0.035	0.049	0.065
1/4	3900	5000	7400	10100
3/8		3200	4700	6400
1/2		2300	3400	4600

Working pressure (psig)

Table 11. Alloy 600 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)			
	0.8	1.0	1.2	1.5
6	300	420	510	660
10		230	290	370
12		190	230	300

Working pressure (bar)

- Working pressure are based on allowable stress value of 20,000 psi (137,800kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 80,000 psi (551,500 kPa). Safety Factor 4 to 1.

Alloy 625 Tubing

Fully annealed seamless Alloy 625 tube to ASTM B444 Grade 2 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : HRB 25 or less

Table 12. Alloy 625 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)		
	0.035	0.049	0.065
1/8	10800		
1/4	7200	10600	14500
3/8	4600	6700	9300
1/2	3400	4900	6700

Working pressure (psig)

- Working pressure are based on allowable stress value of 26,700 psi (184,000kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 100,000 psi (689,400 kPa). Safety Factor 3.75 to 1.

Table 13. Alloy 625 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)				
	0.8	1.0	1.2	1.5	1.8
6	460	600	740		
10		340	420	540	
12		280	340	430	540

Working pressure (bar)

Alloy 825 Tubing

Fully annealed seamless Alloy 825 tube to ASTM B423 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : 201 HV or less.

Table 14. Alloy 825 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)			
	0.035	0.049	0.065	0.083
1/8	10800			
1/4	6300	9200	11500	
3/8	4000	5800	8100	
1/2	2900	4200	5800	

Working pressure (psig)

- Working pressure are based on allowable stress value of 23,300 psi (160,600kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 85,000 psi (586,000 kPa). Safety Factor 3.65 to 1.

Table 15. Alloy 825 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)				
	0.8	1.0	1.2	1.5	1.8
6	400	520	650		
10		290	360	470	
12		240	290	380	470

Working pressure (bar)

Alloy 20 Tubing

Fully annealed seamless Alloy 20 tube to ASTM B729, welded tubing ASTM B468 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : HRB 95 or less

Table 16. Alloy 20 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)			
	0.028	0.035	0.049	0.065
1/4	3900	5000	7400	10100
3/8		3200	4700	6400
1/2		2500	3600	5000

Working pressure (psig)

- Working pressure are based on allowable stress value of 23,300 psi (160,600kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 80,000 psi (551,500 kPa). Safety Factor 3.4 to 1.
- To determine working pressure of ASME B31.1, multiply the ASME B31.3 rating by 0.98.

Table 17. Alloy 20 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)			
	0.8	1.0	1.2	1.5
6	300	420	540	660
10		230	300	370
12		190	240	300

Working pressure (bar)

Alloy C-276 Tubing

Fully annealed seamless Alloy C276 tube to ASTM B622 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : HRB 100 or less.

Table 18. Alloy C276 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)			
	0.028	0.035	0.049	0.065
1/4	3900	5000	7400	10100
5/16		3900	5700	7700
3/8		3200	4700	6400
1/2		2500	3600	5000

Working pressure (psig)

- Working pressure are based on allowable stress value of 27,300 psi (188,200kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 100,000 psi (689,400 kPa). Safety Factor 3.66 to 1.

Table 19. Alloy C276 Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)			
	0.8	1.0	1.2	1.5
6	310	420	540	660
8		300	380	490
10		230	300	370
12		190	230	300

Working pressure (bar)

Alloy 2507 Super Duplex Tubing

Fully annealed seamless super duplex tubing, Alloy 2507 tube to ASTM A789 S32750 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring. Recommended Hardness : HRC 32 or less

Table 20. Alloy 2507 Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)				
	0.035	0.049	0.065	0.083	0.095
1/4	9900	14900			
3/8	6400	10000	12600		
1/2	4900	7100	10000	12800	
5/8		5600	7600	10000	
3/4		4600	6200	8400	9900

Working pressure (psig)

- Working pressure are based on allowable stress value of 38,700 psi (266,800kPa) as specified in ASME B31.3 within the temperature range of 29° C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 116,000 psi (799,700 kPa). Safety Factor 3 to 1.

Titanium Grade 2 Tubing

Fully annealed seamless Titanium Grade 2 tubing, tube to ASTM B338 or equivalent. Tubing to be free from scratches, and suitable for bending and flaring.

Table 21. Fractional Tubing

Tube O.D (inch)	Tube Wall Thickness (inch)			
	0.028	0.035	0.049	0.065
1/4	2900	3800	5600	7700
3/8		2400	3500	4900
1/2		1700	2500	3500

Working pressure (psig)

- Working pressure are based on allowable stress value of 14,300 psi (98,600kPa) as specified in ASME B31.3 within the temperature range of -29°C to 37°C (-20°F to 100°F) , considering ultimate tensile strength 40,000 psi (275,700 kPa). Safety Factor 2.8 to 1.

Table 22. Metric Tubing

Tube O.D (mm)	Tube Wall Thickness (mm)			
	0.8	1.0	1.2	1.5
6	320	420	510	660
10		230	290	370
12		190	230	300

Working pressure (bar)

Gas Service

Gases have very small molecules and can escape through minute leak paths due to surface imperfections. These leak paths can be coined out when heavy wall tubing is used as it resists the ferrule action more than thin wall tubing does. The minimum wall thickness for gas service is shown below.

Fractional Tubing			
Tubing O.D. (inch)	Nominal Min. Wall Thickness (inch)	Tubing O.D. (inch)	Nominal Min. Wall Thickness (inch)
1/8	0.028	3/4	0.065
3/16	0.028	7/8	0.083
1/4	0.028	1	0.083
5/16	0.035	1-1/4	0.109
3/8	0.035	1-1/2	0.134
1/2	0.049	2	0.180
5/8	0.065		

Metric Tubing			
Tubing O.D. (mm)	Nominal Min. Wall Thickness (mm)	Tubing O.D. (mm)	Nominal Min. Wall Thickness (mm)
3	0.8	18	1.5
6	0.8	20	1.8
8	1.0	22	2.0
10	1.0	25	2.2
12	1.0	28	2.8
14	1.2	32	3.0
16	1.5	38	3.5

Cryogenic Service

GPI tube fittings in stainless steel 316 provide highly reliable performance from cryogenic temperatures to high temperature levels. Stainless steel 316 temperature range : -196°C to 649°C (-321°F to 1200°F). Cryogenic temperature are considered to be temperatures below : -73°C (-100°F)

Proper Tube Handling

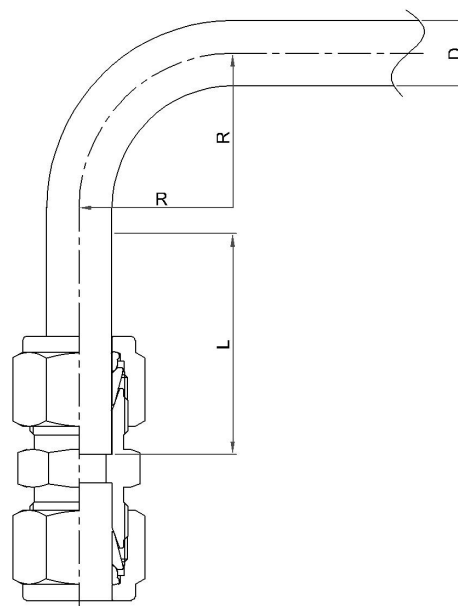
Good handling practices can greatly save the good surface finish of the supplied tube.

1. Tubing should never be dragged out of a tubing rack.
2. Tubing should never be dragged across cement, asphalt, gravel or any other rough surface.
3. Tubing cutter wheel and hacksaw blade should always be sharp.
4. Try not to take deep cuts with each turn of the cutter or stroke of the saw.
5. Tube end should always be de burred.
6. Tubing should be stored to avoid collection of dirt and contamination.
7. If possible, tubing ends should be plugged, so any foreign materials will not fall inside.

Tube Bending

For sealing installation in case of bended tubing being near GPI tube fittings, there should be enough lineal distance from bending point to the fittings. When tube bend is too close to the fitting, the deformed section of the bend may enter the fitting, and it may result in leaking. Also the bending radius should not be too short of bending radius may affect the working pressure and may cause insufficient flow. Minimum bending radius is usually recommended by the bending manufacturer.

Tube O.D. (D) (inch)	Straight Length (L)	Tube O.D. (D) (mm)	Straight Length (L)
1/16	1/2	3	19
1/8	23/32	6	21
3/16	3/4	8	23
1/4	13/16	10	25
5/16	7/8	12	31
3/8	15/16	14	32
1/2	1-3/16	15	32
5/8	1-1/4	16	32
3/4	1-1/4	18	32
7/8	1-5/16	20	34
1	1-1/2	22	40
1-1/4	2	25	46
1-1/2	2-13/32	28	50
2	3-1/4	32	54
		38	63
		50	80



- D : Tube O.D
- R : Radius
- L : Straight tubing length is required from the beginning of the bend to the tubing end.

Elastomer Seal Temperature Rating

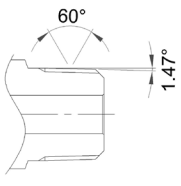
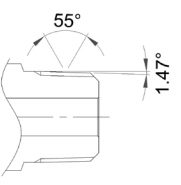
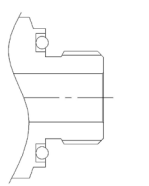
When elastomer seal is used in the fitting, care must be taken for allowable working temperature.

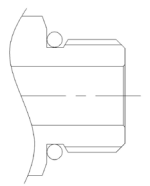
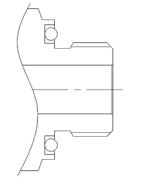
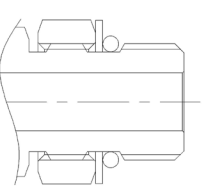
Elastomer Seal Material	Temperature Range
NBR	-20°C to 105°C (-4°F to 221°F)
FKM	-28°C to 204°C (-20°F to 400°F)
EPDM	-28°C to 148°C (-20°F to 300°F)
FFKM	-25°C to 275°C (-13°F to 527°F)

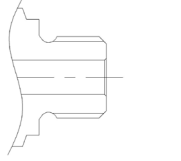
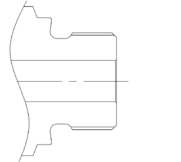
- Brass and Carbon steel O-ring fittings are supplied with 70 durometer NBR O-ring.
- Stainless Steel O-ring fittings are supplied with 90 durometer FKM O-ring.

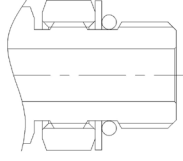
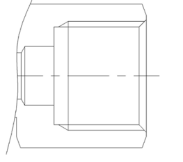
Thread Standards

The table below contains the thread designator and relevant information of entire pipe thread constructed to GPI tube fittings.

Taper Pipe Standard			
DESIGN & PART NO.	Image	Standard	Equiv- alent
N		ASME B1.20.1 (NPT)	-
R		ISO 7/1 BS EN 10226 (BSPT) JIS B0203 (PT)	RT
GOPTC		ASME B1.20.1 SAE AS71051 SAE J514 O-Seal NPT Thread Seal by O-ring	OR

SAE Straight Threads			
DESIGN & PART NO.	Image	Standard	Equiv- alent
GSMC-U		ASME B1.1, SAE J514, ISO R725, DIN 3852 (FORM F) NON-POSITION- ABLE Seal by O-ring to SAE J1926/1 Straight Thread Boss	SR
GOSTC		ASME B1.1, SAE J514, ISO R725, O-Seal SAE straight thread Seal by O-ring to SAE J1926/1 Straight Thread Boss	OR
GSML-U		ASME B1.1, SAE J514, ISO R725, POSITIONABLE Seal by O-ring to SAE J1926/1 Straight Thread Boss	ST

Parallel Pipe Threads			
DESIGN & PART NO.	Image	Standard	Equiv- alent
G		ISO 228/1 BS 2779 (BSPP) DIN 3852 (FORM A) JIS B0202 (PF) Seal by Bonded Gasket or Copper Gasket	RS
GMO-G		ISO 228/1 BS 2779 (BSPP) DIN 3852 (FORM B) JIS B0202 (PF) Seal by Copper Gasket, Compression against Female flat face.	RP

Parallel Pipe Threads			
DESIGN & PART NO.	Image	Standard	Equiv- alent
GSML-G		ISO 228/1 BS 2779 (BSPP) JIS B0202 (PF) POSITIONABLE Seal by O-ring	PR
GGC		ISO 228/1 BS 2779 (BSPP) EN837-1, 837-3 JIS B0202 (PF) Gauge Port Seal by Copper Gasket at the bottom of female port	RG

NPT / ISO Pipe Pressure Rating

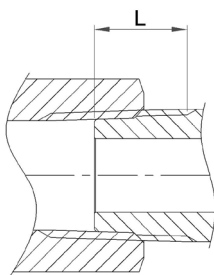
Many GPI tube fittings have a male or female pipe end. These ends occasionally have a lower pressure rating than the pressure rating of the tube fitting end so consider both of the rating.

PIPE SIZE (inch)	Stainless Steel 316				Carbon Steel				Brass			
	male		female		male		female		male		female	
	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
1/16	11000	758	6700	462	11000	758	6700	462	5500	378	3300	227
1/8	10000	689	6500	448	10000	689	6500	448	5000	345	3200	221
1/4	8000	551	6600	455	8000	551	6600	455	4000	276	3300	227
3/8	7800	538	5300	365	7800	538	5300	365	3900	269	2600	179
1/2	7700	531	4900	338	7700	531	4900	338	3800	262	2400	165
3/4	7300	503	4600	317	7300	503	4600	317	3600	248	2300	159
1	5300	365	4400	303	5300	365	4400	303	2600	179	2200	152
1-1/4	6000	414	5000	345	6000	414	5000	345	3000	207	2500	172
1-1/2	5000	345	4600	317	5000	345	4600	317	2500	172	2300	159
2	3900	269	3900	269	3900	269	3900	269	1900	131	1900	131

- The ratings shown above are based on ASME B31.3.
- Female pipe ends have lower ratings than male pipe in a given size due to the inner and outer diameters of female threads being larger than those of male pipe ends.
- The ratings shown above are reference only.
- Stainless steel, Carbon steel → S Value : 20000 psig, brass → S Value : 10000 psig

Pipe Thread Sealant

Pipe thread sealant is essential to ensure leak-free seal. Since the PTFE tape is commonly used, we provide information of recommended tape width, as well as the numbers of thread to be wrapped. The PTFE tape fills the voids between threads and prevents galling on pipe threads. The sealant usually contains a lubricant.



Nominal Pipe Size	Recommended Tape Width	Effective Thread External Length (L)	Approx. of Thread
1/8	1/8 - 1/4	0.2639	7
1/4	1/4	0.4018	7-1/4
3/8	1/4	0.4075	7-1/3
1/2	1/4 - 1/2	0.5337	7-1/2
3/4	1/4 - 1/2	0.5457	7-2/3
1	1/4 - 1/2	0.6828	8

Pressure Equivalents

bar	1	100	160	210	315	350	400	413.68
Mpa	0.1	10	16	21	31.5	35	40	41.36
psig	14.5	1450	2321	3045	4569	5075	5801	6000

ISO 228 / BSPP Parallel Thread Pressure Rating

The table below contains the thread designator and relevant information of entire pipe thread constructed to GPI tube fittings.

PIPE SIZE (inch)	Stainless Steel 316				Carbon Steel			
	male		female		male		female	
	psig	bar	psig	bar	psig	bar	psig	bar
1/8	5800	400	5700	392	5800	400	5700	392
1/4	5800	400	5700	392	5800	400	5700	392
3/8	5800	400	5700	392	5800	400	5700	392
1/2	4700	324	3900	288	4700	324	3900	288
3/4	3620	250	-	-	3620	250	-	-
1	3620	250	-	-	3620	250	-	-
1-1/4	2320	160	-	-	2320	160	-	-
1-1/2	2320	160	-	-	2320	160	-	-

• Hydraulic pressure ratings are based on ISO 1179 at ambient temperature.

• The ratings shown above are reference only. Stainless steel, Carbon steel
→ S Value : 20000 psig

Positionable ISO / BSPP Pressure Rating

Pressure ratings are at ambient temperature.

PIPE SIZE (inch)	Stainless Steel 316		Carbon Steel		PIPE SIZE (inch)	Stainless Steel 316		Carbon Steel	
	male		male			male		male	
	psig	bar	psig	bar		psig	bar	psig	bar
1/8	4568	315	4568	315	1/2	2320	160	2320	160
3/16	4568	315	4568	315	3/4	2320	160	2320	160
1/4	4568	315	4568	315	1	2320	160	2320	160
3/8	4568	315	4568	315					

SAE / MS Fittings Pressure Rating

Nominal SAE Dash Size	SAE Thread Size	Stainless Steel & Carbon Steel			
		Non-Positionable		Positionable	
		psig	bar	psig	bar
2	5/16-24	4568	315	4568	315
4	7/16-20	4568	315	4568	315
6	9/16-18	4568	315	3626	250
8	3/4-16	4568	315	3626	250
10	7/8-14	3626	250	2900	200
12	1-1/16-12	3626	250	2900	200
14	1-3/16-12	2900	200	2320	160
16	1-5/16-12	2900	200	2320	160
20	1-5/8-12	2320	160	1813	125
24	1-7/8-12	2320	160	1813	125
32	2-1/2-12	1813	125	1450	100

Pressure ratings are based on SAE J1926/3 at ambient temperature.

SAE J514 Flare AN Fittings Pressure Rating

Tube O.D		SAE Thread Size	Stainless Steel 316		Carbon Steel	
			male		male	
in	mm		psig	bar	psig	bar
1/8	2	5/16-24	5000	344	5000	344
1/4	6	7/16-20	5000	344	5000	344
5/16	8	1/2-20	5000	344	5000	344
3/8	10	9/16-18	4000	275	4000	275
1/2	12	3/4-16	3000	206	3000	206
5/8	16	7/8-14	3000	206	3000	206
3/4	20	1-1/16-12	2500	172	2500	172
1	25	1-5/16-12	2000	137	2000	137
1-1/4	32	1-5/8-12	1150	79.2	1150	79.2
1-1/2	38	1-7/8-12	1000	68.9	1000	68.9
2	50	2-1/2-12	1000	68.9	1000	68.9

• Pressure Ratings are extracted from SAE J514 Table 1 Standard.

O-Seal Pressure Ratings

Stainless steel and Carbon steel O-seal fittings up to 1 in. And 25mm are rated to 3000 psig (206 bar).

Pipe Butt Weld Fittings Pressure Rating

NOMINAL PIPE SIZE (inch)	Stainless Steel 316		Carbon Steel	
	male		male	
	psig	bar	psig	bar
1/8	5300	365	5300	365
1/4	5200	358	5200	358
3/8	4400	303	4400	303
1/2	4100	282	4100	282
3/4	3200	220	3200	220
1	3100	213	3100	213
1-1/4	3000	206	3000	206
1-1/2	2900	199	2900	199
2	1900	131	1900	131

• Pressure Ratings are at ambient temperature.
• Stainless steel, Carbon steel
→ S Value : 20000 psig

Tube Socket Weld End

- GTSWC, GTSWL
- Socket Weld End is rated to the working pressure of tubing connected.

GPI Tube Fitting Installation Instructions

Tube Preparation

- Check if tubing O.D. , wall thickness, ovality, hardness and their tolerances are within specs for your application. Also check if surface is free from scratches and dirt.
- Make a square cut, Always use proper tube cutter. Improper tube cutter can cause excessive tube deformation at the tube end.
- Remove burrs from inner and outer edges of tubing.

Installation Instruction GPI tube fittings of 1 inch or 25mm and Under.

GPI tube fittings are supplied fully assembled finger tight and are readily usable. A leak tight and mechanically safe installation is easily made by turning the nut 1-1/4 turns or 3/4 turn for smaller sizes.



1. Insert prepared tubing into GPI tube fittings until tubing end is firmly seated on the body shoulder making sure the nut is finger tight.

(Do not force the tubing into fitting if it does not go in easily. It may be burred or oval, or there may be foreign materials inside the fitting.)

2. Mark the nut at 6 o'clock position for identification of starting point.
3. Tighten the nut 1-1/4 turns with a wrench keeping the fitting body steady with a backup wrench. When the nut is tightened 1-1/4 turns, the mark at 6 o'clock position before tightening will be now at 9 o'clock position.

- NOTE -

Only 3/4 turn from finger tight is required for 1/16", 1/8", 3/16", 2mm, 3mm, 4mm sizes.

High Pressure Applications

Even though GPI tube fittings are designed to accept the tube variations specified in ASTM or equivalent specifications, it is more desirable to have a common starting point, or snug position, for high pressure applications. Making sure that the tubing end is fully seated, tighten the nut until the tubing can not be rotate by hand. 1-1/4 turns (or 3/4 turn for small size fittings) from snug position will ensure reliable leak tight installation.

Reassembly Instructions

GPI tube fittings can be disassembled and reassembled many times and leak tight performance can be obtained each time.

1. Insert tubing which is preswaged with ferrules into fitting body. Hand tighten the nut and further tighten the nut with a wrench.
2. To the original position keeping the body steady with a back up wrench, When a sharp rise in resistance is felt at the original position, snug slightly with a wrench.

- NOTE -

Do not use the gap inspection gauge with reassembled fittings.

GPI Tube Fitting Ordering Information

(1)	<u>G</u>	<u>MC</u>	-	<u>4M</u>	-	<u>4</u>	<u>R</u>	-	<u>S6</u>
	①	②		③		④	⑤		⑥
(2)	<u>G</u>	<u>I</u>	-	<u>8M</u>	-			-	<u>S6</u>

- ① GPI Tube Fitting.
 ② Name of Fitting.
 ③ Tube O.D Size (Ex. Inch : 4, Metric : 4M)
 ④ Pipe Thread (Ex. 1/4 → 4)
 ⑤ Thread Symbol (NPT : N, PT : R, PF : G)
 ⑥ Material : (Ex. Stainless steel 316 : S6)
 (Ex. Stainless steel 304 : S4)

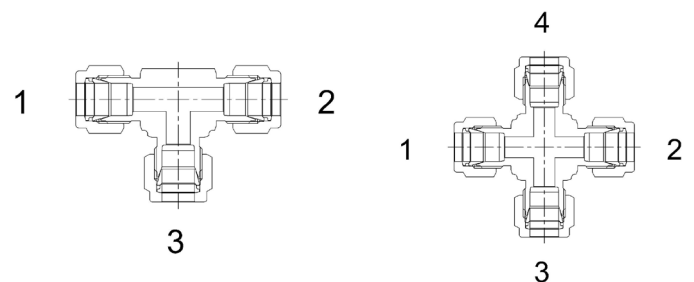
Fitting Material Designator	
Material	Identifier
SS316	S6
SS316L	6L
SS304	S4

Pipe Thread Size Designator										NPS : Nominal Pipe Size
NPS (inch)	1/16	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Identifier	1	2	4	6	8	12	16	20	24	32
N (NPT)	1N	2N	4N	6N	8N	12N	16N	20N	24N	32N
R (PT)	1R	2R	4R	6R	8R	12R	16R	20R	24R	32R
G (PF)	-	2G	4G	6G	8G	12G	16G	20G	24G	32G

Tube O.D Designator			
Fractional O.D (inch)	Designator	Fractional O.D (inch)	Designator
1/16	1	5/8	10
1/8	2	3/4	12
3/16	3	7/8	14
1/4	4	1	16
5/16	5	1-1/4	20
3/8	6	1-1/2	24
1/2	8	2	32

Tube O.D Designator			
Metric O.D (mm)	Designator	Metric O.D (mm)	Designator
2	2M	16	16M
3	3M	18	18M
4	4M	22	22M
6	6M	25	25M
8	8M	32	32M
10	10M	38	38M
12	12M	50	50M

Material Designators		
Material Grade	Designators	
	Component	Complete Assembly
Stainless Steel 316/316L	S6/6L	S6A
Carbon Steel	C	CA
Brass	B	BA
Alloy 20	L20	L20A
Monel 400	L400	L400A
Alloy 600	L600	L600A
Alloy 625	L625	L625A
Alloy 825	L825	L825A
Hastelloy (C-276)	C276	C276A
Super Duplex	SD	SDA
Titanium Gr.2	TI2	TI2A



Tee Part Number is described by first the run (1 and 2) and then the branch (3).

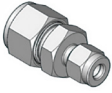
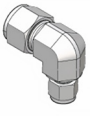
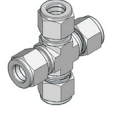
Cross Part Number is described by first the run (1 and 2) and then the branch (3 and 4).

To order component only, apply the material designator of component.

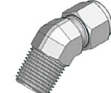
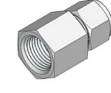
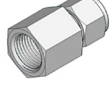
Example

- Stainless steel 316 Back Ferrule 1/4 inch O.D : GBF-4-S6
- Stainless steel 316 Union 1/4 inch O.D : GU-4-S6

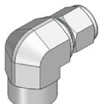
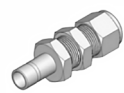
GPI Tube Fitting Index

Tube to Tube Union		
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Reducing Union		
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GRL		25
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GT		27
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GRT		28, 29
Union Cross		
GX		30
Bulkhead Union		
GBU		31
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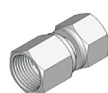
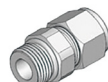
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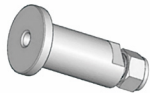
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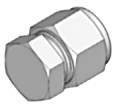
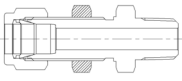
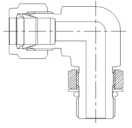
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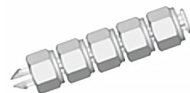
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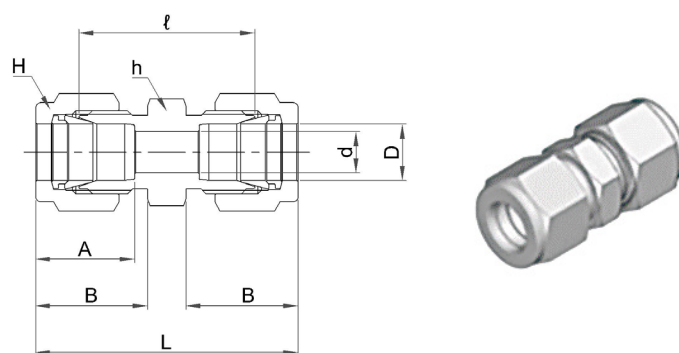
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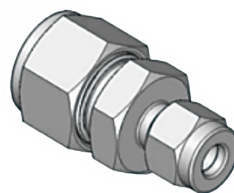
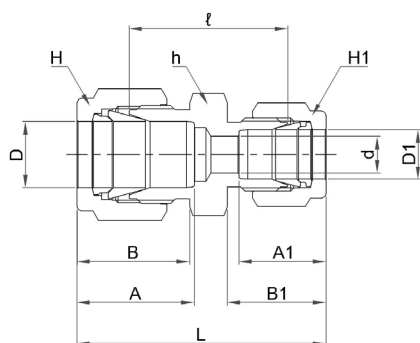


Connects fractional tube											
Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	L
	in	mm		h		H					
				in	mm	in	mm				
GU-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	17.50	25.15
GU-2	1/8	3.17	2.28	7/16	11.11	7/16	11.11	12.70	15.24	22.35	35.56
GU-3	3/16	4.76	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.13	37.33
GU-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	26.16	40.89
GU-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	28.19	42.92
GU-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	30.22	44.95
GU-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	30.98	51.30
GU-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	52.07
GU-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	53.59
GU-14	7/8	22.22	18.28	1-3/16	30.16	1-1/4	31.75	25.90	21.84	35.05	55.37
GU-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	64.77
GU-20	1-1/4	31.75	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	48.00	92.20
GU-24	1-1/2	38.10	34.03	2-1/8	53.97	2-1/4	57.15	50.03	45.21	53.60	107.95
GU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	74.70	149.35

Connects metric tube									
Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	L	
			h	H					
GU-2M	2	1.7	12	12	12.9	15.3	22.4	35.6	
GU-3M	3	2.4	12	12	12.9	15.3	22.1	35.3	
GU-4M	4	2.4	12	12	13.7	16.1	24.1	37.3	
GU-6M	6	4.8	14	14	15.3	17.7	26.2	41.0	
GU-8M	8	6.4	15	16	16.2	18.6	28.2	43.2	
GU-10M	10	7.9	18	19	17.2	19.5	31.0	46.2	
GU-12M	12	9.5	22	22	22.8	22.0	31.0	51.2	
GU-15M	15	11.9	24	25	24.4	22.0	31.8	52.0	
GU-16M	16	12.7	24	25	24.4	22.0	31.8	52.0	
GU-18M	18	15.1	27	30	24.4	22.0	33.3	53.5	
GU-20M	20	15.9	30	32	26.0	22.0	34.8	55.0	
GU-22M	22	18.3	30	32	26.0	22.0	34.8	55.0	
GU-25M	25	21.8	35	38	31.3	26.5	40.4	65.0	
GU-28M	28	21.8	41	46	36.6	36.6	43.4	85.0	
GU-32M	32	28.6	46	50	42.0	41.6	51.3	97.3	
GU-38M	38	33.7	55	60	49.4	47.9	58.4	113.6	
GU-42M	42	36.8	60	65	49.3	47.8	58.4	113.4	
GU-50M	50	45.2	70	76	67.2	62.5	74.7	149.0	

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Reducing Union GRU



Connects fractional tube

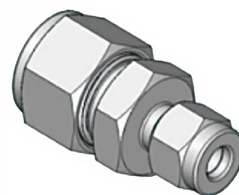
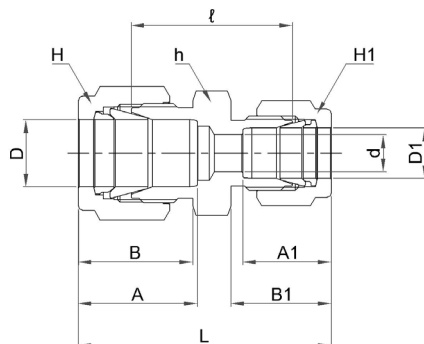
Part No.	Tube O.D D				d Min.	Width across flat						A	A1	B	B1	ℓ	L
						h		H		H1							
	in	mm	in	mm		in	mm	in	mm	in	mm						
GRU-2-1	1/8	3.18	1/16	1.59	1.27	7/16	11.11	7/16	11.11	5/16	7.93	12.70	8.63	15.24	10.92	20.60	30.91
GRU-3-1	3/16	4.76	1/16	1.59	1.27	7/16	11.11	1/2	12.70	5/16	7.93	13.71	8.63	16.00	10.92	21.84	32.25
GRU-3-2	3/16	4.76	1/8	3.17	2.28	7/16	11.11	1/2	12.70	7/16	11.11	13.71	12.70	16.00	15.24	23.36	36.57
GRU-4-1	1/4	6.35	1/16	1.59	1.27	1/2	12.70	9/16	14.28	5/16	7.93	15.24	8.63	17.78	10.92	23.11	34.29
GRU-4-2	1/4	6.35	1/8	3.17	2.28	1/2	12.70	9/16	14.28	7/16	11.11	15.24	12.70	17.78	15.24	24.63	38.60
GRU-4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	1/2	12.70	15.24	13.71	17.78	16.00	25.40	39.37
GRU-5-2	5/16	7.93	1/8	3.17	2.28	9/16	14.28	5/8	15.87	7/16	11.11	16.25	12.70	18.54	15.24	25.90	39.87
GRU-5-4	5/16	7.93	1/4	6.35	4.82	9/16	14.28	5/8	15.87	9/16	14.28	16.25	15.24	18.54	17.78	27.43	42.16
GRU-6-1	3/8	9.52	1/16	1.59	1.27	5/8	15.87	11/16	17.46	5/16	7.93	16.76	8.63	19.30	10.92	25.40	36.57
GRU-6-2	3/8	9.52	1/8	3.17	2.28	5/8	15.87	11/16	17.46	7/16	11.11	16.76	12.70	19.30	15.24	26.92	40.89
GRU-6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	9/16	14.28	16.76	15.24	19.30	17.78	28.44	43.18
GRU-6-5	3/8	9.52	5/16	7.93	6.35	5/8	15.87	11/16	17.46	5/8	15.87	16.76	16.25	19.30	18.54	29.46	44.19
GRU-8-2	1/2	12.70	1/8	3.17	2.28	13/16	20.64	7/8	22.22	7/16	11.11	22.86	12.70	21.84	15.24	28.44	45.21
GRU-8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	9/16	14.28	22.86	15.24	21.84	17.78	29.46	46.99
GRU-8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	11/16	17.46	22.86	16.76	21.84	19.30	30.98	48.51
GRU-10-6	5/8	15.87	3/8	9.52	7.11	15/16	23.81	1	25.40	11/16	17.46	24.38	16.76	21.84	19.30	31.75	49.27
GRU-10-8	5/8	15.87	1/2	12.70	10.41	15/16	23.81	1	25.40	7/8	22.22	24.38	22.86	21.84	21.84	31.75	52.07
GRU-12-4	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	1-1/8	28.57	9/16	14.28	24.38	15.24	21.84	17.78	31.75	49.27
GRU-12-6	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.38	16.76	21.84	19.30	33.27	50.80
GRU-12-8	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.38	22.86	21.84	21.84	33.27	53.59
GRU-12-10	3/4	19.05	5/8	15.87	12.70	1-1/16	26.98	1-1/8	28.57	1	25.40	24.38	24.38	21.84	21.84	33.27	53.59
GRU-16-8	1	25.40	1/2	12.70	10.41	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.24	22.86	26.41	21.84	40.89	63.24
GRU-16-12	1	25.40	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.58	31.24	24.38	26.41	21.84	40.38	62.73

Connects metric tube

Part No.	Tube O.D		d Min.	Width across flat			A	A1	B	B1	ℓ	L
	D	D1		h	H	H1						
GRU- 3M-2M	3	2	1.7	12	12	12	12.9	12.9	15.3	15.3	22.1	35.3
GRU- 6M-2M	6	2	1.7	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
GRU- 6M-3M	6	3	2.4	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
GRU- 6M-4M	6	4	2.4	14	14	12	15.3	13.7	17.7	16.1	25.4	39.4
GRU- 8M-6M	8	6	4.8	15	16	14	16.2	15.3	18.6	17.7	27.4	42.3
GRU- 10M-6M	10	6	4.8	18	19	14	17.2	15.3	19.5	17.7	29.5	44.5
GRU- 10M-8M	10	8	6.4	18	19	16	17.2	16.2	19.5	18.6	30.0	45.1
GRU- 12M-6M	12	6	4.8	22	22	14	22.8	15.3	22.0	17.7	29.5	47.0
GRU- 12M-8M	12	8	6.4	22	22	16	22.8	16.2	22.0	18.6	30.2	47.8
GRU- 12M-10M	12	10	7.9	22	22	19	22.8	17.2	22.0	19.5	31.0	48.7
GRU- 16M-10M	16	10	7.9	24	25	19	24.4	17.2	22.0	19.5	31.8	49.5
GRU- 16M-12M	16	12	9.5	24	25	22	24.4	22.8	22.0	22.0	31.8	52.0
GRU- 18M-12M	18	12	9.5	27	30	22	24.4	22.8	22.0	22.0	33.3	53.5
GRU- 25M-18M	25	18	15.1	35	38	30	31.3	24.4	26.5	22.0	38.6	61.0
GRU- 25M-20M	25	20	15.9	35	38	32	31.3	26.0	26.5	22.0	39.9	62.3

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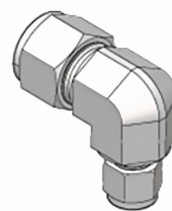
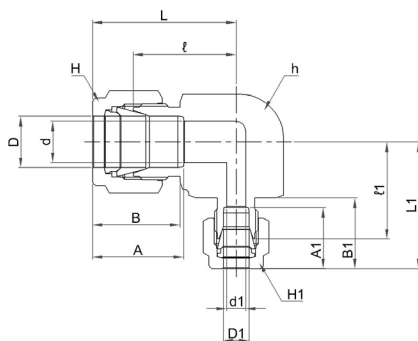
Reducing Union GRU



Connects metric tube to fractional tube

Part No.	Tube O.D			d Min.	Width across flat			A	A1	B	B1	ℓ	L
	D	D1			h	H	H1						
		in	mm										
GRU-3M-2	3	1/8	3.17	2.4	12	12	11.1	12.9	12.8	15.3	15.2	22.1	35.2
GRU-4M-2	4	1/8	3.17	2.4	12	12	11.1	13.7	12.8	16.1	15.2	23.4	36.5
GRU-4M-4	4	1/4	6.35	2.4	14	12	14.3	13.7	15.3	16.1	17.7	25.4	39.4
GRU-6M-2	6	1/8	3.17	2.4	14	14	11.1	15.3	12.8	17.7	15.2	24.6	38.5
GRU-6M-4	6	1/4	6.35	4.8	14	14	14.3	15.3	15.3	17.7	17.7	26.2	41.0
GRU-6M-5	6	5/16	7.93	4.8	14	14	15.9	15.3	16.2	17.7	18.6	27.4	42.3
GRU-8M-4	8	1/4	6.35	4.8	15	16	14.3	16.2	15.3	18.6	17.7	27.4	42.3
GRU-10M-2	10	1/8	3.17	2.4	18	19	11.1	17.2	12.8	19.5	15.2	27.7	41.8
GRU-10M-4	10	1/4	6.35	4.8	18	19	14.3	17.2	15.3	19.5	17.7	29.5	44.5
GRU-10M-5	10	5/16	7.93	6.4	18	19	15.9	17.2	16.2	19.5	18.6	30.3	45.1
GRU-10M-6	10	3/8	9.52	7.1	18	19	17.5	17.2	16.9	19.5	19.3	31.0	45.9
GRU-12M-5	12	5/16	7.93	6.4	22	22	15.9	22.8	16.2	22.0	18.6	30.2	47.8
GRU-12M-6	12	3/8	9.52	7.1	22	22	17.5	22.8	16.9	22.0	19.2	31.0	48.4
GRU-12M-8	12	1/2	12.70	9.5	22	22	22.2	22.8	22.8	22.0	22.0	31.0	51.2
GRU-15M-8	15	1/2	12.70	10.4	24	25	22.0	24.4	22.8	22.0	22.0	31.8	52.0
GRU-16M-10	16	5/8	15.87	12.7	24	25	25.4	24.4	24.4	22.0	22.0	31.8	52.0
GRU-18M-12	18	3/4	19.05	15.1	27	30	28.6	24.4	24.4	22.0	22.0	33.3	53.5
GRU-20M-12	20	3/4	19.05	15.9	30	32	28.6	26.0	24.4	22.0	22.0	34.8	54.9
GRU-20M-16	20	1	25.40	15.9	34.9	32	38.1	26.0	31.2	22.0	26.4	38.0	60.3
GRU-22M-16	22	1	25.40	18.3	34.9	32	38.1	26.0	31.2	22.0	26.4	38.2	60.3

Reducing Union Elbow GRL

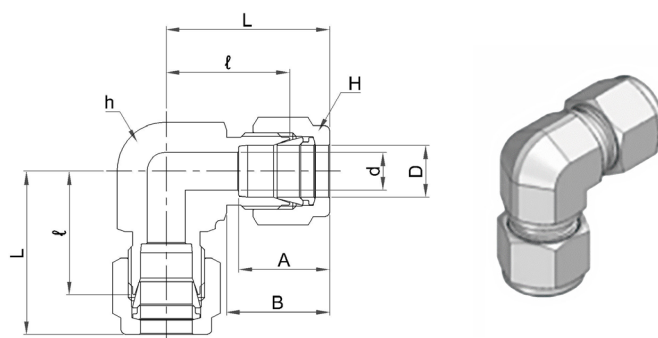


Connects fractional tube

Part No.	Tube O.D				Width across flat						d	d1	A	A1	B	B1	ℓ	ℓ1	L	L1
	D		D1		h		H		H1											
	in	mm	in	mm	in	mm	in	mm	in	mm										
GRL-2-1	1/8	3.17	1/16	1.59	3/8	9.52	7/16	11.11	5/16	7.93	2.4	1.3	12.7	8.63	15.24	10.93	15.74	14.2	22.35	18
GRL-4-2	1/4	6.35	1/8	3.17	1/2	12.7	9/16	14.28	7/16	11.11	4.8	2.4	15.24	12.7	17.78	15.24	19.55	17.9	26.92	24.5
GRL-6-4	3/8	9.52	1/4	6.35	5/8	15.87	11/16	17.46	9/16	14.28	7.1	4.8	16.76	15.24	19.3	17.78	23.1	21.92	30.47	29.29
GRL-8-4	1/2	12.7	1/4	6.35	13/16	20.64	7/8	22.22	9/16	14.28	10.41	4.8	22.86	15.24	21.84	17.78	25.9	24.4	36.06	31.77
GRL-8-6	1/2	12.7	3/8	9.52	13/16	20.64	7/8	22.22	11/16	17.46	10.41	7.1	22.86	16.76	21.84	19.3	25.9	25.9	36.06	33.27

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Union Elbow GL



Connects fractional tube

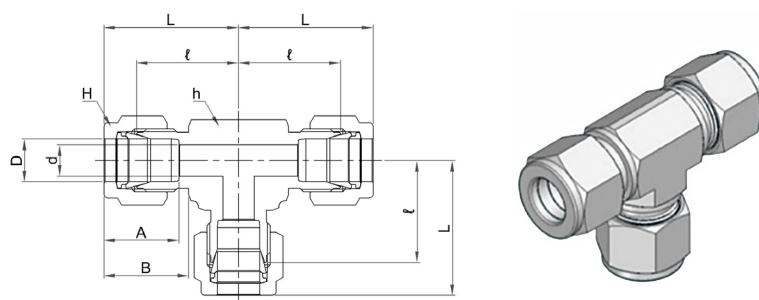
Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	L
				h		H					
				in	mm	in	mm				
GL-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
GL-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
GL-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
GL-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
GL-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
GL-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
GL-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
GL-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
GL-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
GL-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
GL-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
GL-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
GL-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
GL-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	L
			h	H				
GL-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
GL-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
GL-4M	4	2.4	12.7	12	13.7	16.4	18.8	25.4
GL-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
GL-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
GL-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
GL-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
GL-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
GL-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
GL-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
GL-20M	20	15.9	34.9	32	26.0	22.0	32.5	42.6
GL-22M	22	18.3	34.9	32	26.0	22.0	32.5	42.6
GL-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1
GL-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
GL-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
GL-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0
GL-42M	42	36.0	55.0	65	55.1	53.6	58.0	89.1
GL-50M	50	45.2	70.0	76.2	65.0	61.0	69.0	106.0

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Union Tee GT

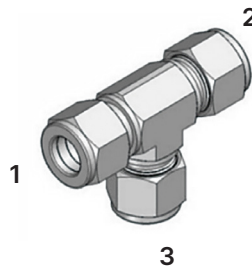


Connects fractional tube											
Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	L
				h		H					
	in	mm		in	mm	in	mm				
GT-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
GT-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
GT-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
GT-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
GT-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
GT-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
GT-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
GT-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
GT-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
GT-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
GT-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
GT-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
GT-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
GT-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube									
Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	L	
			h	H					
GT-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3	
GT-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3	
GT-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4	
GT-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0	
GT-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8	
GT-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5	
GT-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0	
GT-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8	
GT-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8	
GT-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8	
GT-20M	20	15.9	34.9	32	26.0	22.0	32.5	42.6	
GT-22M	22	18.3	34.9	32	26.0	22.0	32.5	42.6	
GT-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1	
GT-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0	
GT-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3	
GT-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0	
GT-42M	42	36.0	55.0	65	55.1	53.6	58.0	89.1	
GT-50M	50	45.2	70.0	76.2	65.0	61.0	69.0	106.0	

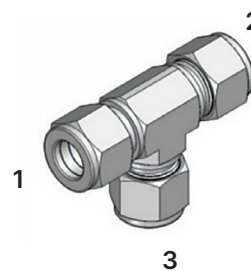
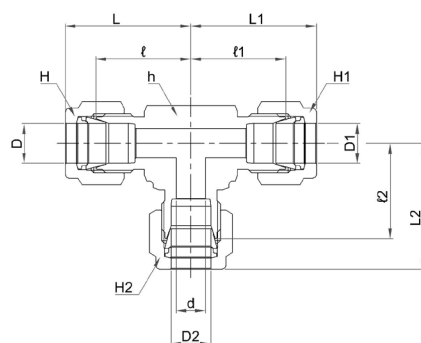
• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

U



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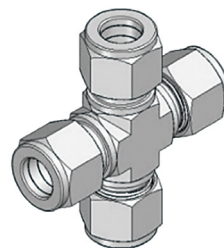
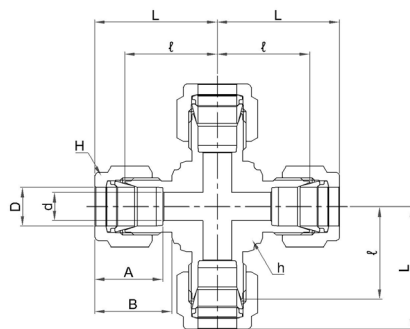
Connects metric tube														
Part No.	Port 1	Port 2	Port 3	d Min.	Width across flat				ℓ	ℓ1	ℓ2	L	L1	L2
	D	D1	D2		h	H	H1	H2						
GRT-3M-3M-6M	3	3	6	2.40	12.7	12	12	14	18.00	18.00	19.60	24.60	24.60	27.00
GRT-8M-8M-6M	8	8	6	4.80	15	16	16	14	21.30	21.30	20.50	28.80	28.80	28.00
GRT-10M-10M-6M	10	10	6	4.80	17.4	19	19	14	23.90	23.90	22.40	31.50	31.50	29.80
GRT-10M-10M-12M	10	10	12	7.90	20.6	19	19	22	25.90	25.90	25.90	33.50	33.50	36.00
GRT-12M-6M-10M	12	6	10	4.80	20.6	22	14	19	25.90	24.40	25.90	36.00	31.80	33.50
GRT-12M-6M-12M	12	6	12	4.80	20.6	22	14	22	25.90	24.40	25.90	36.00	31.80	36.00
GRT-12M-10M-10M	12	10	10	7.90	20.6	22	19	19	25.90	25.90	25.90	36.00	33.50	33.50
GRT-12M-12M-10M	12	12	10	7.90	20.6	22	22	19	25.90	25.90	25.90	36.00	36.00	33.50
GRT-12M-12M-6M	12	12	6	4.80	20.6	22	22	14	25.90	25.90	24.40	36.00	36.00	31.80
GRT-15M-15M-12M	15	15	12	9.50	25.4	25	25	22	28.70	28.70	28.70	38.80	38.80	38.80
GRT-16M-16M-12M	16	16	12	9.50	25.4	25	25	22	28.70	28.70	28.70	38.80	38.80	38.80
GRT-18M-18M-12M	18	18	12	9.50	27	30	30	22	29.70	29.70	28.20	39.80	39.80	38.30
GRT-20M-12M-20M	20	12	20	9.50	34.9	32	22	32	32.50	32.50	32.50	42.60	42.60	42.60
GRT-20M-20M-6M	20	20	6	4.80	34.9	32	32	14	32.50	32.50	31.00	42.60	42.60	38.40
GRT-20M-20M-10M	20	20	10	7.90	34.9	32	32	19	32.50	32.50	32.50	42.60	42.60	40.10
GRT-20M-20M-12M	20	20	12	9.50	34.9	32	32	22	32.50	32.50	32.50	42.60	42.60	42.60
GRT-20M-20M-25M	20	20	25	15.90	34.9	32	32	38	34.30	34.30	36.80	44.40	44.40	49.10
GRT-20M-20M-32M	20	20	32	15.90	46	32	32	50	42.50	42.50	49.30	52.60	52.60	72.30
GRT-22M-22M-12M	22	22	12	9.50	34.9	32	32	22	32.50	32.50	32.50	42.60	42.60	42.60
GRT-25M-20M-20M	25	20	20	15.90	34.9	38	32	32	36.80	34.30	34.30	49.10	44.40	44.40
GRT-25M-25M-10M	25	25	10	7.90	34.9	38	38	19	36.80	36.80	34.30	49.10	49.10	38.90
GRT-25M-25M-12M	25	25	12	9.50	34.9	38	38	22	36.80	36.80	34.30	49.10	49.10	44.40
GRT-25M-25M-20M	25	25	20	15.90	34.9	38	38	32	36.80	36.80	34.30	49.10	49.10	44.40
GRT-32M-32M-20M	32	32	20	15.90	46	38	38	32	49.30	49.30	42.50	72.30	72.30	72.60
GRT-38M-32M-32M	38	32	32	28.60	50.8	60	38	38	56.40	54.70	54.70	84.00	77.70	77.70
GRT-38M-38M-20M	38	38	20	15.90	50.8	60	60	32	56.40	56.40	47.90	84.00	84.00	58.00
GRT-38M-38M-25M	38	38	25	21.80	50.8	60	60	38	56.40	56.40	50.40	84.00	84.00	62.70

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Union Cross GX

- NOTE -

Cross may be made from plate stock



Connects fractional tube

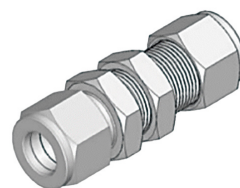
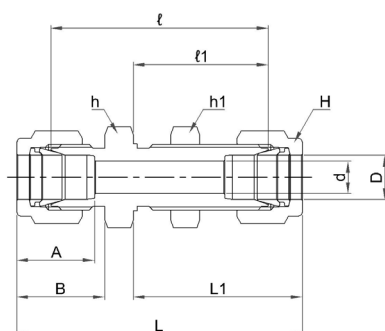
Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	L
				h		H					
				in	mm	in	mm				
GX-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
GX-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
GX-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
GX-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
GX-5	5/16	7.93	6.35	1/2	12.70	5/8	15.87	16.25	18.54	21.33	28.70
GX-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
GX-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
GX-10	5/8	15.87	12.70	13/16	20.64	1	25.40	24.38	21.84	28.70	38.80
GX-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
GX-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
GX-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
GX-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
GX-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
GX-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	L
			h	H				
GX-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
GX-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
GX-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
GX-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
GX-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
GX-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
GX-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
GX-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
GX-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
GX-20M	20	15.9	34.9	32	26.0	22.0	32.5	42.6
GX-22M	22	18.3	34.9	32	26.0	22.0	32.5	42.6
GX-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1
GX-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
GX-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
GX-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0

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Bulkhead Union GBU



Connects fractional tube

Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick
	in	mm		h, h1		H									
				in	mm	in	mm								
GBU-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
GBU-2	1/8	3.17	2.28	1/2	12.70	7/16	11.11	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
GBU-3	3/16	4.76	3.04	9/16	14.28	1/2	12.70	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
GBU-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
GBU-5	5/16	7.93	6.35	11/16	17.46	5/8	15.87	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
GBU-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
GBU-8	1/2	12.70	10.41	15/16	23.81	7/8	22.22	22.86	21.84	50.80	31.75	71.12	41.91	19.44	12.70
GBU-10	5/8	15.87	12.70	1-1/16	26.98	1	25.40	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
GBU-12	3/4	19.05	15.74	1-3/16	30.16	1-1/8	28.58	24.38	21.84	58.67	37.33	78.99	47.49	25.79	16.76
GBU-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
GBU-16	1	25.40	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05
GBU-20	1-1/4	31.75	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	78.99	47.75	123.19	69.85	41.67	19.05
GBU-24	1-1/2	38.10	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	84.83	49.27	139.19	76.45	49.61	19.05
GBU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	105.66	56.38	180.34	93.72	67.07	19.05

Connects metric tube

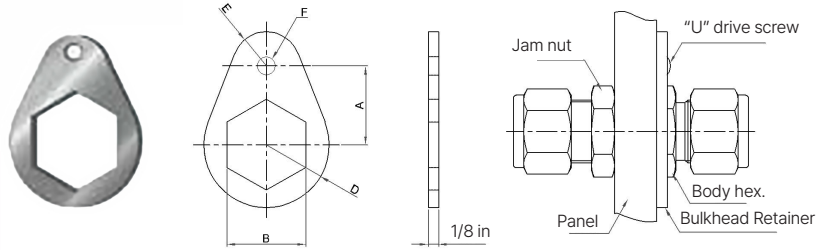
Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
			h, h1	H								
GBU-3M	3	2.4	14	12	12.9	15.3	38.1	24.6	51.3	31.2	8.3	12.7
GBU-4M	4	2.4	14	12	13.7	16.1	40.4	25.4	53.6	32.0	9.9	12.7
GBU-6M	6	4.8	16	14	15.3	17.7	42.9	26.2	57.7	33.6	11.5	10.2
GBU-8M	8	6.4	18	16	16.2	18.6	46.0	28.6	61.0	36.1	13.1	11.2
GBU-10M	10	7.9	22	19	17.2	19.5	48.5	29.4	63.7	37.0	16.2	11.2
GBU-12M	12	9.5	24	22	22.8	22.0	50.8	31.8	71.0	41.9	19.5	12.7
GBU-15M	15	11.9	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
GBU-16M	16	12.7	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
GBU-18M	18	15.1	30	30	24.4	22.0	58.7	37.3	78.9	47.4	26.0	16.8
GBU-20M	20	15.9	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	17.0
GBU-22M	22	18.3	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	19.0
GBU-25M	25	21.8	41.3	38	31.3	26.5	71.4	45.2	95.9	57.5	33.7	19.0
GBU-32M	32	28.6	50	50	42.0	41.6	82.3	49.5	128.3	72.5	42.5	19.0
GBU-38M	38	33.7	60	60	49.4	47.9	89.4	51.5	144.6	79.1	50.5	19.0

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Bulkhead Retainer

GBR

Keeping the bulkhead retainer and jam nut tightened over panel, bulkhead retainer acts as a backup wrench when tube ports are pulled up. "U" drive screw is not supplied.

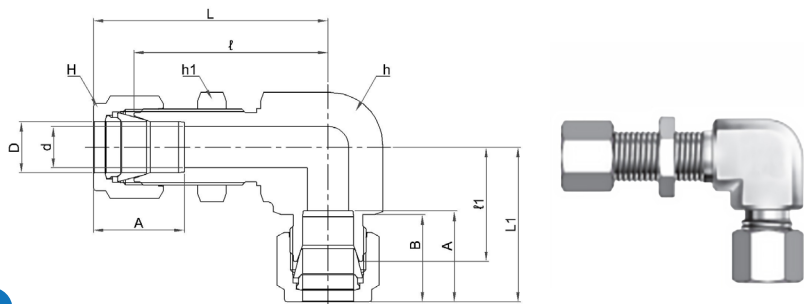


Connects fractional tube

Part No.	Tube O.D		A	B	D	E	F	“U” Drive Screw	Drill Number	Drill Hole Dia.
	D									
	in	mm								
GBR-1	1/16	-	9.52	7.94	7.94	3.97	3.97	#6-3/8	31	3.05
GBR-2	1/8	-	12.7	12.7	10.31	5.55	3.97	#6-3/8	31	3.05
GBR-3	3/16	3M, 4M	14.28	14.28	11.9	6.35	3.97	#6-3/8	31	3.05
GBR-4	1/4	6M	15.87	15.87	12.7	7.14	3.97	#6-3/8	31	3.05
GBR-5	5/16	-	17.46	17.46	14.28	7.94	3.97	#6-3/8	31	3.05
GBR-8M	-	8M	17.46	18	14.28	7.94	3.97	#6-3/8	31	3.05
GBR-6	3/8	-	19.05	19.05	15.87	8.73	3.97	#6-3/8	31	3.05
GBR-10M	-	10M	23.81	22	19.05	10.31	5.55	#10-1/2	27	3.66
GBR-8	1/2	12M	23.81	23.81	19.05	10.31	5.55	#10-1/2	27	3.66
GBR-10	5/8	15M, 16M	25.4	26.98	20.64	10.31	5.55	#10-1/2	27	3.66
GBR-12	3/4	18M	26.98	30.16	23.02	11.9	5.55	#10-1/2	27	3.66
GBR-14	7/8	-	28.57	33.33	26.19	13.49	5.55	#10-1/2	27	3.66
GBR-16	1	-	32.54	41.27	29.37	14.28	5.55	#10-1/2	27	3.66

Bulkhead Elbow Union

GBL



Connects fractional tube

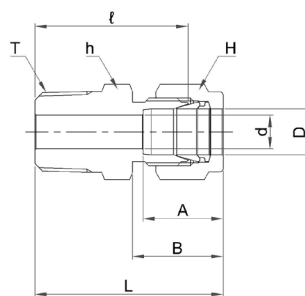
Part No.	Tube O.D		d Min.	Width across flat				A	B	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
	D			h, h1		H									
	in	mm		in	mm	in	mm								
GBL-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	17.78	36.5	20.6	48.04	32.11	11.5	10.16
GBL-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	19.3	43.5	25.9	50.82	33.22	14.68	11.17
GBL-8	1/2	12.7	10.41	15/16	23.81	7/8	22.22	22.86	21.84	48.7	28.7	58.84	38.84	19.44	12.7
GBL-12	3/4	19.05	15.74	1-3/16	30.16	1-1/8	28.58	24.38	21.84	60	34.5	69.88	44.38	25.79	16.76

Connects metric tube

Part No.	Tube O.D D	d Min.	Width across flat			A	B	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
			h	h1	H								
GBL-6M	6	4.8	15.8	14.2	14	15.3	17.7	36.5	20.6	43.9	30.0	11.5	10.2
GBL-8M	8	6.4	17.4	17.4	16	16.2	18.6	40.9	23.2	48.4	30.7	13.1	11.2
GBL-10M	10	7.9	22	22	19	17.2	19.5	44.5	26.9	52.1	34.5	16.2	11.2
GBL-12M	12	9.5	23.8	23.8	22	22.8	22.0	46.9	26.9	57.0	37.0	19.5	12.7
GBL-16M	16	12.7	27	27	25	24.4	22.0	53.5	34.1	63.7	44.5	22.8	12.7
GBL-20M	20	15.9	35	35	32	26.0	22.0	68.4	39.0	78.2	48.7	29.0	17.0
GBL-25M	25	21.8	41	41	38	31.3	26.5	74.2	46.1	86.5	58.4	33.7	19.1

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

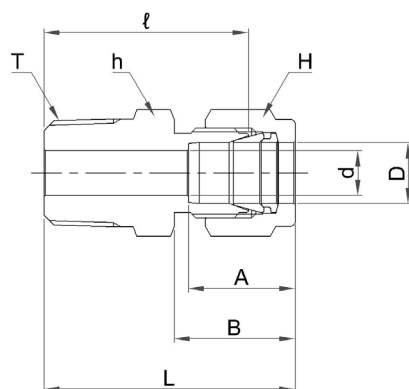
Male Connector GMC-N



Connects fractional tube					L							
Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L
	in	mm			h		H					
					in	mm	in	mm				
GMC-1-1N	1/16	1.59	1/16	1.27	5/16	7.93	5/16	7.93	8.63	10.92	20.00	23.83
GMC-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	22.35	26.23
GMC-1-4N	1/16	1.59	1/4	1.27	9/16	14.28	5/16	7.93	8.63	10.92	27.17	30.98
GMC-2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.11	29.71
GMC-2-2N	1/8	3.17	1/8	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	30.48
GMC-2-4N	1/8	3.17	1/4	2.28	9/16	14.28	7/16	11.11	12.70	15.24	28.95	35.56
GMC-2-6N	1/8	3.17	3/8	2.28	11/16	17.46	7/16	11.11	12.70	15.24	29.21	35.81
GMC-2-8N	1/8	3.17	1/2	2.28	7/8	22.22	7/16	11.11	12.70	15.24	35.56	42.16
GMC-3-2N	3/16	4.76	1/8	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	31.24
GMC-3-4N	3/16	4.76	1/4	3.04	9/16	14.28	1/2	12.70	13.71	16.00	29.71	36.32
GMC-4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
GMC-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
GMC-4-4N	1/4	6.35	1/4	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	37.84
GMC-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	30.98	38.35
GMC-4-8N	1/4	6.35	1/2	4.82	7/8	22.22	9/16	14.28	15.24	17.78	37.33	44.70
GMC-4-12N	1/4	6.35	3/4	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	38.86	46.22
GMC-5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	26.67	34.03
GMC-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	38.60
GMC-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	31.75	39.11
GMC-5-8N	5/16	7.93	1/2	6.35	7/8	22.22	5/8	15.87	16.25	18.54	38.11	45.60
GMC-6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	27.94	35.30
GMC-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	39.87
GMC-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	39.87
GMC-6-8N	3/8	9.52	1/2	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	46.22
GMC-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	47.75
GMC-8-2N	1/2	12.70	1/8	4.82	13/16	20.64	7/8	22.22	22.86	21.84	28.70	38.86
GMC-8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
GMC-8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
GMC-8-8N	1/2	12.70	1/2	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	49.02
GMC-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	50.54
GMC-8-16N	1/2	12.70	1	10.41	1-3/8	34.92	7/8	22.22	22.86	21.84	46.99	57.15
GMC-10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	34.03	44.19
GMC-10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	38.86	49.02
GMC-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	40.38	50.54
GMC-12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
GMC-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
GMC-12-16N	3/4	19.05	1	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	46.99	57.15
GMC-14-12N	7/8	22.22	3/4	15.74	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
GMC-14-16N	7/8	22.22	1	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	46.99	57.15
GMC-16-8N	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
GMC-16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
GMC-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	50.03	62.23
GMC-20-16N	1-1/4	31.75	1	22.35	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
GMC-20-20N	1-1/4	31.75	1-1/4	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
GMC-20-24N	1-1/4	31.75	1-1/2	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	60.54	82.64
GMC-24-20N	1-1/2	38.10	1-1/4	27.68	2-1/8	53.98	2-1/4	57.15	50.03	45.21	59.42	86.60
GMC-24-24N	1-1/2	38.10	1-1/2	34.03	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	88.90
GMC-24-32N	1-1/2	38.10	2	34.03	2-3/4	69.85	2-1/4	57.15	50.03	45.21	62.42	99.75
GMC-32-8N	2	50.80	1/2	11.93	2-3/4	69.85	3	76.20	67.56	62.73	68.40	105.73
GMC-32-20N	2	50.80	1-1/4	45.97	2-3/4	69.85	3	76.20	67.56	62.73	71.40	108.73
GMC-32-24N	2	50.80	1-1/2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	75.50	112.83
GMC-32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	113.53

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Connector GMC-R

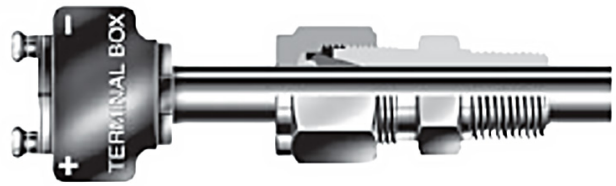


Connects metric tube to female ISO tapered thread

Part No.	Tube O.D D	T R(PT)	d Min.	Width across flat		A	B	ℓ	L
				h	H				
GMC-2M-2R	2	1/8	1.7	12	12	12.9	15.3	23.9	30.5
GMC-3M-2R	3	1/8	2.4	12	12	12.9	15.3	23.1	29.7
GMC-3M-4R	3	1/4	2.4	14	12	12.9	15.3	29.0	35.6
GMC-4M-2R	4	1/8	2.4	12	12	13.7	16.1	24.6	31.2
GMC-4M-4R	4	1/4	2.4	14	12	13.7	16.1	29.7	36.3
GMC-6M-2R	6	1/8	4.8	14	14	15.3	17.7	25.4	32.8
GMC-6M-4R	6	1/4	4.8	14	14	15.3	17.7	30.2	37.6
GMC-6M-6R	6	3/8	4.8	18	14	15.3	17.7	31.0	38.4
GMC-6M-8R	6	1/2	4.8	22	14	15.3	17.7	36.6	44.0
GMC-8M-2R	8	1/8	4.8	15	16	16.2	18.6	26.7	34.2
GMC-8M-4R	8	1/4	6.4	15	16	16.2	18.6	31.2	38.7
GMC-8M-6R	8	3/8	6.4	18	16	16.2	18.6	31.8	39.2
GMC-8M-8R	8	1/2	6.4	22	16	16.2	18.6	37.3	44.8
GMC-10M-2R	10	1/8	4.8	18	19	17.2	19.5	28.7	36.3
GMC-10M-4R	10	1/4	7.1	18	19	17.2	19.5	33.3	40.9
GMC-10M-6R	10	3/8	7.9	18	19	17.2	19.5	33.3	40.9
GMC-10M-8R	10	1/2	7.9	22	19	17.2	19.5	38.1	45.7
GMC-12M-4R	12	1/4	7.1	22	22	22.8	22.0	33.3	43.4
GMC-12M-6R	12	3/8	9.5	22	22	22.8	22.0	33.3	43.4
GMC-12M-8R	12	1/2	9.5	22	22	22.8	22.0	38.1	48.2
GMC-12M-12R	12	3/4	9.5	27	22	22.8	22.0	38.9	49.0
GMC-15M-8R	15	1/2	11.9	24	25	24.4	22.0	38.9	49.0
GMC-16M-4R	16	1/4	7.1	24	25	24.4	22.0	34.0	44.1
GMC-16M-6R	16	3/8	9.5	24	25	24.4	22.0	34.0	44.1
GMC-16M-8R	16	1/2	11.9	24	25	24.4	22.0	38.9	49.0
GMC-16M-12R	16	3/4	12.7	27	25	24.4	22.0	38.9	49.0
GMC-18M-8R	18	1/2	11.9	27	30	24.4	22.0	40.4	50.5
GMC-18M-12R	18	3/4	15.1	27	30	24.4	22.0	40.4	50.5
GMC-20M-8R	20	1/2	11.9	30	32	26.0	22.0	42.2	52.3
GMC-20M-12R	20	3/4	15.9	30	32	26.0	22.0	42.2	52.3
GMC-22M-12R	22	3/4	15.9	30	32	26.0	22.0	42.2	52.3
GMC-22M-16R	22	1	18.3	35	32	26.0	22.0	47.8	57.9
GMC-25M-12R	25	3/4	15.9	35	38	31.3	26.5	45.2	57.5
GMC-25M-16R	25	1	21.8	35	38	31.3	26.5	50.0	62.3
GMC-28M-16R	28	1	21.8	41	46	36.6	36.6	51.6	72.4
GMC-28M-20R	28	1-1/4	21.8	46	46	36.6	36.6	52.3	73.1
GMC-32M-20R	32	1-1/4	28.6	46	50	42.0	41.6	56.6	79.6
GMC-38M-24R	38	1-1/2	33.7	55	60	49.4	47.9	64.0	91.6

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Thermocouple Connector GMTC



GPI thermocouple connector has no shoulder nor sizing angle inside the fitting, the features enable thermocoupler to go through fitting's thread end. Suffix "T" to Male Connector identifier.

Example : GMTC 6-6N-S6 for ordering Thermocouple connector
O.D 3/8" x 3/8" NPT S316.

Assembly Instructions

1. Position the length of the Thermocouple passed through fitting's thread end and hold it to prevent shifting during assembly.
2. Turn the nut 1-1/4 after finger tight with a wrench by holding the body with a back up wrench for size 1/4" (6mm) or above.

• ISO 7/1

The ISO 7/1 is a tapered thread that is sealing threads working by interference fit. This still requires thread sealant for pressure-tight seal by filling the voids between threads further this prevents galling on piping threads. The sealant usually contains a lubricant.

The 7/1 is described in following codes.

1. BS 21 (BSPT)
2. JIS B0203 (PT)
3. ISO 7/1
4. DIN 2999(male thread only)

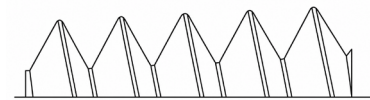
The 7/1 looks similar to the NPT thread. See how different they are as illustrated below.

ISO 7/1 tapered pipe thread



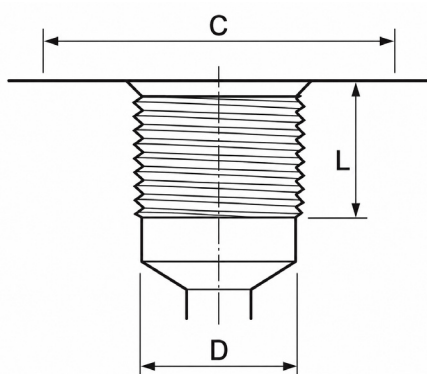
- 55° thread angle
- Pitch measured in millimeters
- Truncation of root and crest are round
- Taper angle 1°47'

NPT tapered pipe threads



- 60° thread angle
- Pitch measured in Inches
- Truncation of root and crest are flat
- Taper angle 1°47'

The International Standards Organization created the ISO 228/1 and 7/1 threads to standardize the nomenclature of several international pipe threads.



ISO Internal Parallel Pipe Thread

GPI Pipe Thread Designator	ISO Female Parallel Pipe Size	Minimum Full Thread Depth L	Thread Minor Diameter D	Minimum Flat Diameter for GPI-GB, GO, GG
2	1/8	0.31	0.337 / 0.348	0.59
4	1/4	0.47	0.450 / 0.468	0.75
6	3/8	0.47	0.588 / 0.606	0.91
8	1/2	0.55	0.733 / 0.755	1.06
12	3/4	0.63	0.949 / 0.971	1.30
16	1	0.71	1.193 / 1.218	1.57

• ISO Pipe Thread 228/1

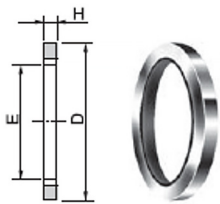
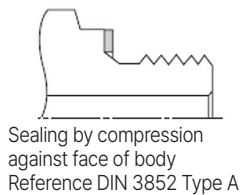
The ISO 228/1 is a parallel thread that is no sealing threads. The pressure tight seal is usually made metal to metal against the female port or with a gasket.

The 228/1 is described in following codes.

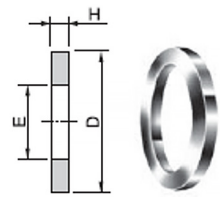
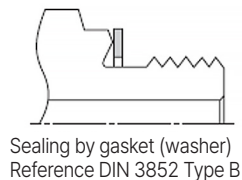
1. BS 2779 (BSPP)
2. DIN-ISO 228/1
3. JIS B0202(PF)
4. ISO 228/1

The 228/1 threads sealing available in GPI are listed below.

A self-centering taper is constructed at the hex. This taper centers a bonded washer to seal to the surface surrounding the female thread.

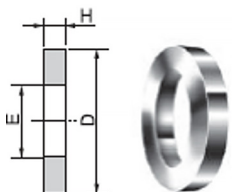
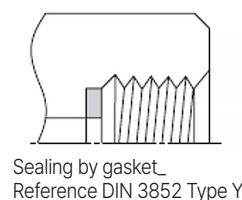


GPI-GB Bonded Seal Gasket		(Buna inner ring bonded to carbon steel outer ring)				
Ordering Number	E		H		D	
	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
GPI-GB-2-	10.4	0.41	2.0	0.08	16.0	0.63
GPI-GB-4-	13.7	0.54	2.0	0.08	20.6	0.81
GPI-GB-6-	17.3	0.68	2.0	0.08	23.9	0.94
GPI-GB-8-	21.6	0.85	2.5	0.10	28.7	1.13
GPI-GB-12-	27.2	1.06	2.5	0.10	35.1	1.38
GPI-GB-16-	33.8	1.33	2.5	0.10	42.9	1.69
GPI-GB-20-	42.4	1.67	2.5	0.10	51.05	2.01
GPI-GB-24-	48.8	1.92	2.5	0.10	59.18	2.33



GPI-GO Copper Gasket						
Ordering Number	E		H		D	
	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
GPI-GO-2-	9.9	0.39	2.0	0.08	15.0	0.59
GPI-GO-4-	13.2	0.52	2.0	0.08	19.1	0.75
GPI-GO-6-	16.8	0.66	2.0	0.08	23.1	0.91
GPI-GO-8-	21.1	0.83	2.0	0.08	26.9	1.06
GPI-GO-12-	26.7	1.05	2.0	0.08	33.0	1.30
GPI-GO-16-	33.3	1.31	2.0	0.08	40.1	1.58
GPI-GO-20-	42.2	1.66	2.0	0.08	49.8	1.96
GPI-GO-24-	48.0	1.89	2.0	0.08	58.4	2.30

A metal gasket performs the sealing between the reverse bevel of the fitting and the face of the female threaded component.



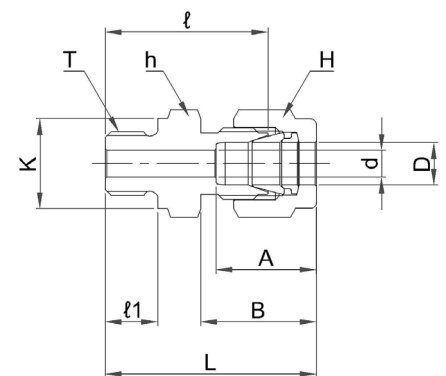
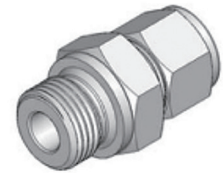
GPI-GG Copper Gasket						
Ordering Number	E		H		D	
	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
GPI-GG-4-	7.6	0.30	1.8	0.07	10.7	0.42
GPI-GG-6-	8.6	0.34	2.3	0.09	14.2	0.56
GPI-GG-8-	9.1	0.36	2.5	0.10	17.8	0.70

A gasket is dropped into the flat bottom of the female thread. The face of the male thread exerts a load on the gasket to seal.

Connects fractional tube														
Part No.	Tube O.D D		T (PF)	d Min.	Width across flat				A	B	ℓ	ℓ1	L	K
					h		H							
	in	mm			in	mm	in	mm						
GMC-2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	8.00	29.97	13.72
GMC-2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	12.00	35.31	18.03
GMC-2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	12.00	36.21	21.84
GMC-4-2G	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	8.00	32.26	13.72
GMC-4-4G	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	12.00	37.59	18.03
GMC-4-6G	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	31.50	12.00	38.86	21.84
GMC-4-8G	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.00	44.70	25.91
GMC-6-4G	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	12.00	39.12	18.03
GMC-6-6G	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	12.00	40.39	21.84
GMC-6-8G	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.00	46.23	25.91
GMC-8-4G	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	12.00	42.67	18.03
GMC-8-6G	1/2	12.70	3/8	7.90	7/8	22.22	7/8	22.22	22.86	21.84	33.02	12.00	43.18	21.84
GMC-8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.00	49.02	25.91
GMC-12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.00	49.02	25.91
GMC-12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	16.00	52.83	32.00
GMC-16-8G	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.00	55.88	25.91
GMC-16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	16.00	59.94	39.12
GMC-20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
GMC-24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	55.00

Connects metric tube to female ISO parallel thread											
Part No.	Tube O.D D	T G(PF)	d Min.	Width across flat		A	B	ℓ	ℓ1	L	K
				h	H						
GMC-2M-2G	2	1/8	1.7	14	12	12.9	15.3	23.4	8.0	30.0	13.8
GMC-3M-2G	3	1/8	2.4	14	12	12.9	15.3	23.4	8.0	30.0	13.8
GMC-3M-4G	3	1/4	2.4	19	12	12.9	15.3	28.7	12.0	35.3	18.0
GMC-4M-2G	4	1/8	2.4	14	12	13.7	16.1	24.1	8.0	30.7	13.8
GMC-4M-4G	4	1/4	2.4	19	12	13.7	16.1	29.4	12.0	36.0	18.0
GMC-6M-2G	6	1/8	4.0	14	14	15.3	17.7	24.9	8.0	32.3	13.8
GMC-6M-4G	6	1/4	4.8	19	14	15.3	17.7	30.2	12.0	37.6	18.0
GMC-6M-6G	6	3/8	4.8	22	14	15.3	17.7	31.5	12.0	38.9	21.8
GMC-6M-8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.0	44.7	26.0
GMC-8M-2G	8	1/8	4.0	15	16	16.2	18.6	25.7	8.0	33.2	13.8
GMC-8M-4G	8	1/4	6.4	19	16	16.2	18.6	31.0	12.0	38.5	13.8
GMC-8M-6G	8	3/8	6.4	22	16	16.2	18.6	32.3	12.0	39.8	21.8
GMC-8M-8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.0	45.6	26.0
GMC-10M-4G	10	1/4	5.9	19	19	17.2	19.5	31.8	12.0	39.4	18.0
GMC-10M-6G	10	3/8	7.9	22	19	17.2	19.5	33.0	12.0	40.6	21.8
GMC-10M-8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.0	46.5	26.0
GMC-12M-4G	12	1/4	5.9	22	22	22.8	22.0	32.5	12.0	42.6	18.0
GMC-12M-6G	12	3/8	7.9	22	22	22.8	22.0	33.0	12.0	43.1	21.8
GMC-12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.0	49.0	26.0
GMC-12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	16.0	52.8	32.0
GMC-16M-6G	16	3/8	7.9	24	25	24.4	22.0	33.8	12.0	43.9	21.8
GMC-16M-8G	16	1/2	11.9	27	25	24.4	22.0	38.9	14.0	49.0	26.0
GMC-18M-8G	18	1/2	11.9	27	30	24.4	22.0	38.9	14.0	49.0	26.0
GMC-18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	16.0	52.8	32.0
GMC-20M-8G	20	1/2	11.9	30	32	26.0	22.0	40.4	14.0	50.5	26.0
GMC-20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	16.0	52.8	32.0
GMC-22M-12G	22	3/4	15.9	35	32	26.0	22.0	42.7	16.0	52.8	32.0
GMC-22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.0	55.3	39.0
GMC-25M-12G	25	3/4	15.9	35	38	31.3	26.5	45.2	16.0	57.5	32.0
GMC-25M-16G	25	1	19.8	41	38	31.3	26.5	47.8	18.0	60.1	39.0
GMC-28M-16G	28	1	19.8	41	46	36.6	36.6	49.3	18.0	70.1	39.0
GMC-28M-20G	28	1-1/4	21.8	50	46	36.6	36.6	53.1	20.0	73.9	49.0
GMC-32M-20G	32	1-1/4	25.0	50	50	42.0	41.6	55.9	20.0	78.9	49.0
GMC-38M-24G	38	1-1/2	31.8	55	60	49.4	47.9	63.2	22.0	90.8	54.7

Male Connector for Bonded Seal GMC-G



- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Connects fractional tube to female ISO parallel thread

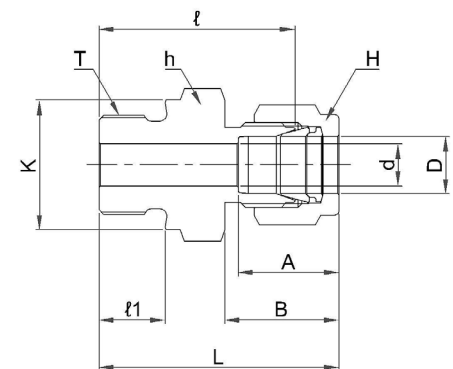
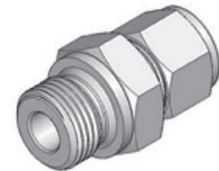
Part No.	Tube O.D D		T (PF)	d Min.	Width across flat				A	B	ℓ	ℓ1	L	K
	in	mm			h		H							
					in	mm	in	mm						
GMO-2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	8.00	29.97	13.72
GMO-2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	12.00	35.31	18.03
GMO-2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	12.00	36.21	21.84
GMO-4-2G	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	8.00	32.26	13.72
GMO-4-4G	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	12.00	37.59	18.03
GMO-4-6G	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	31.50	12.00	38.86	21.84
GMO-4-8G	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.00	44.70	25.91
GMO-6-4G	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	12.00	39.12	18.03
GMO-6-6G	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	12.00	40.39	21.84
GMO-6-8G	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.00	46.23	25.91
GMO-8-4G	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	12.00	42.67	18.03
GMO-8-6G	1/2	12.70	3/8	7.90	7/8	22.22	7/8	22.22	22.86	21.84	33.02	12.00	43.18	21.84
GMO-8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.00	49.02	25.91
GMO-12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.00	49.02	25.91
GMO-12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	16.00	52.83	32.00
GMO-16-8G	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.00	55.88	25.91
GMO-16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.00	59.94	39.12
GMO-20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
GMO-24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	55.00

Connects metric tube to female ISO parallel thread

Part No.	Tube O.D D	T G(PF)	d Min.	Width across flat		A	B	ℓ	ℓ1	L	K
				h	H						
GMO-3M-2G	3	1/8	2.4	14	12	12.9	15.3	23.4	8.0	30.0	13.8
GMO-3M-4G	3	1/4	2.4	19	12	12.9	15.3	28.7	12.0	35.3	18.0
GMO-4M-2G	4	1/8	2.4	14	12	13.7	16.1	24.1	8.0	30.7	13.8
GMO-6M-2G	6	1/8	4.0	14	14	15.3	17.7	24.9	8.0	32.3	13.8
GMO-6M-4G	6	1/4	4.8	19	14	15.3	17.7	30.2	12.0	37.6	18.0
GMO-6M-6G	6	3/8	4.8	22	14	15.3	17.7	31.5	12.0	38.9	21.8
GMO-6M-8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.0	44.7	26.0
GMO-8M-2G	8	1/8	4.0	15	16	16.2	18.6	25.7	8.0	33.2	13.8
GMO-8M-4G	8	1/4	6.4	19	16	16.2	18.6	31.0	12.0	38.5	13.8
GMO-8M-6G	8	3/8	6.4	22	16	16.2	18.6	32.3	12.0	39.8	21.8
GMO-8M-8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.0	45.6	26.0
GMO-10M-4G	10	1/4	5.9	19	19	17.2	19.5	31.8	12.0	39.4	18.0
GMO-10M-6G	10	3/8	7.9	22	19	17.2	19.5	33.0	12.0	40.6	21.8
GMO-10M-8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.0	46.5	26.0
GMO-12M-4G	12	1/4	5.9	22	22	22.8	22.0	32.5	12.0	42.6	18.0
GMO-12M-6G	12	3/8	7.9	22	22	22.8	22.0	33.0	12.0	43.1	21.8
GMO-12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.0	49.0	26.0
GMO-12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	16.0	52.8	32.0
GMO-15M-8G	15	1/2	11.9	27	25	24.4	22.0	33.9	14.0	49.0	26.0
GMO-16M-6G	16	3/8	7.9	24	25	24.4	22.0	33.8	12.0	43.9	21.8
GMO-16M-8G	16	1/2	11.9	27	25	24.4	22.0	38.9	14.0	49.0	26.0
GMO-18M-8G	18	1/2	11.9	27	30	24.4	22.0	38.9	14.0	49.0	26.0
GMO-18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	16.0	52.8	32.0
GMO-20M-8G	20	1/2	11.9	30	32	26.0	22.0	40.4	14.0	50.5	26.0
GMO-20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	16.0	52.8	32.0
GMO-22M-12G	22	3/4	15.9	35	32	26.0	22.0	42.7	16.0	52.8	32.0
GMO-22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.0	55.3	39.0
GMO-25M-12G	25	3/4	15.9	35	38	31.3	26.5	45.2	16.0	57.5	32.0
GMO-25M-16G	25	1	19.8	41	38	31.3	26.5	47.8	18.0	60.1	39.0
GMO-28M-16G	28	1	19.8	41	46	36.6	36.6	49.3	18.0	70.1	39.0
GMO-28M-20G	28	1-1/4	21.8	50	46	36.6	36.6	53.1	20.0	73.9	49.0
GMO-32M-20G	32	1-1/4	28.6	50	50	42.0	41.6	55.9	20.0	78.9	49.0
GMO-38M-24G	38	1-1/2	31.8	55	60	49.4	47.9	61.7	22.0	89.3	54.7

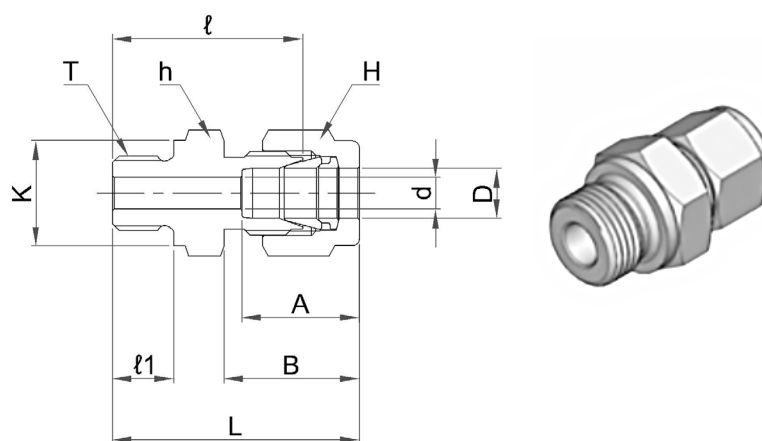
Male Connector for Metal Gasket

GMO



- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Metric Connector GMC-M

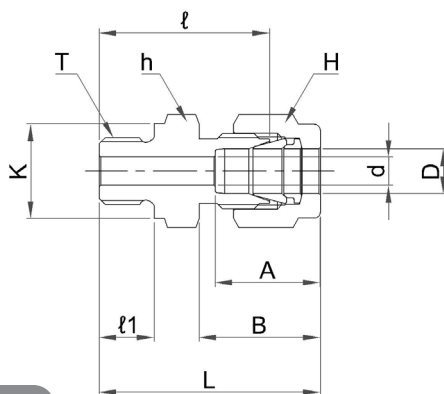


Connects fractional tube to metric thread

Part No.	Tube O.D D		T Metric	d Min.	Width across flat				A	B	ℓ	ℓ1	L	K
					h		H							
	in	mm			in	mm	in	mm						
GMC-1-5M08	1/16	1.58	M5X0.8	1.3	5/16	7.94	5/16	7.94	8.54	10.82	16.6	5	20.32	7.9
GMC-4-10M10	1/4	6.35	M10X1.0	4.8	9/16	14.28	9/16	14.28	15.24	17.78	24.9	8	32.16	13.8
GMC-4-20M15	1/4	6.35	M20X1.5	4.8	15/16	23.81	9/16	14.28	15.24	17.78	37.4	14	44.66	24
GMC-6-10M10	3/8	9.52	M10X1.0	7.1	5/8	15.87	11/16	17.46	16.76	19.3	28.6	8	35.92	17
GMC-6-12M10	3/8	9.52	M12X1.0	6.4	3/4	19.05	11/16	17.46	16.76	19.3	33.5	12	40.82	17
GMC-6-16M15	3/8	9.52	M16X1.5	7.1	7/8	22.22	11/16	17.46	16.76	19.3	33.0	12	40.32	21
GMC-8-12M15	1/2	12.70	M12X1.5	10.41	13/16	20.64	7/8	22.22	22.86	21.84	31.5	10	41.64	16.8
GMC-8-14M10	1/2	12.70	M14X1.0	10.41	13/16	20.64	7/8	22.22	22.86	21.84	30.3	10	40.44	19
GMC-8-14M15	1/2	12.70	M14X1.5	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.2	12	43.32	19
GMC-8-16M15	1/2	12.70	M16X1.5	10.41	7/8	22.22	7/8	22.22	22.86	21.84	33.0	12	43.14	21
GMC-8-20M15	1/2	12.70	M20X1.5	10.41	15/16	23.81	7/8	22.22	22.86	21.84	38.9	14	49.04	24
GMC-10-18M15	5/8	15.87	M18X1.5	12.7	15/16	23.81	1	25.4	24.38	21.84	34.6	12	44.67	23

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Male Metric Connector GMC-M

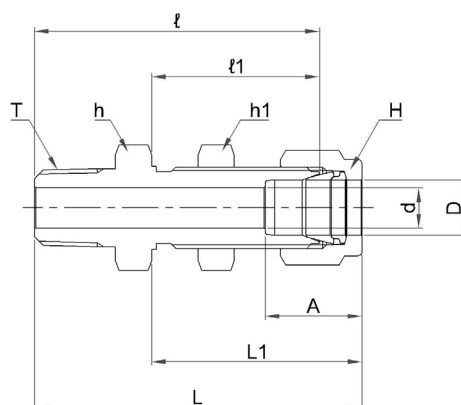


Connects metric tube to metric thread

Part No.	Tube O.D. D	T Metric	d Min.	Width across flat		A	B	l	l1	L	K
				h	H						
GMC-3M-5M08	3	M5×0.8	2.4	12	12	12.90	15.30	25.70	5.00	30.00	7.90
GMC-4M-5M08	4	M5×0.8	2.4	12	12	13.70	16.10	20.60	6.00	27.10	11.50
GMC-6M-8M10	6	M8×1.0	4.8	14	14	15.30	17.70	25.50	8.00	32.80	12.00
GMC-6M-10M10	6	M10×1.0	4.8	14	14	15.30	17.70	25.90	8.00	33.20	13.80
GMC-6M-10M15	6	M10×1.5	4.8	14	14	15.30	17.70	29.90	12.00	37.20	13.80
GMC-6M-12M10	6	M12×1.0	4.8	17	14	15.30	17.70	29.20	10.00	36.50	16.80
GMC-6M-12M15	6	M12×1.5	4.8	17	14	15.30	17.70	29.20	10.00	36.50	16.80
GMC-6M-16M15	6	M16×1.5	4.8	22	14	15.30	17.70	31.50	12.00	38.80	21.00
GMC-6M-20M15	6	M20×1.5	4.8	27	14	15.30	17.70	37.40	14.00	44.70	25.00
GMC-8M-10M10	8	M10×1.0	6.4	14	16	16.20	18.60	25.70	8.00	32.95	14.00
GMC-8M-12M10	8	M12×1.0	6.4	17	16	16.20	18.60	30.00	10.00	37.25	16.80
GMC-8M-12M15	8	M12×1.5	6.4	17	16	16.20	18.60	30.00	10.00	37.25	16.80
GMC-8M-14M15	8	M14×1.5	6.4	19	16	16.20	18.60	31.00	12.00	38.25	19.00
GMC-8M-16M15	8	M16×1.5	6.4	22	19	16.20	18.60	32.30	12.00	39.55	21.00
GMC-8M-20M15	8	M20×1.5	6.4	27	19	16.20	18.60	38.90	14.00	44.55	24.00
GMC-10M-10M10	10	M10×1.0	7.9	18	19	17.20	19.50	27.40	8.00	34.90	14.00
GMC-10M-12M10	10	M12×1.0	7.9	18	19	17.20	19.50	29.00	10.00	36.90	16.80
GMC-10M-12M15	10	M12×1.5	7.9	18	19	17.20	19.50	29.00	10.00	36.90	16.80
GMC-10M-14M15	10	M14×1.5	7.9	19	19	17.20	19.50	31.80	12.00	39.30	19.00
GMC-10M-16M15	10	M16×1.5	7.9	22	19	17.20	19.50	33.00	12.00	40.50	21.00
GMC-10M-18M15	10	M18×1.5	7.9	24	19	17.20	19.50	33.00	12.00	39.50	23.00
GMC-10M-20M15	10	M20×1.5	7.9	27	19	17.20	19.50	38.90	14.00	45.40	24.00
GMC-10M-22M15	10	M22×1.5	7.9	27	19	17.20	19.50	38.90	14.00	45.40	27.00
GMC-12M-10M10	12	M10×1.0	4.8	22	22	22.80	22.00	29.50	8.00	38.60	14.00
GMC-12M-12M10	12	M12×1.0	6.4	22	22	22.80	22.00	33.50	12.00	42.60	17.00
GMC-12M-12M15	12	M12×1.5	6.4	22	22	22.80	22.00	31.50	10.00	40.60	16.80
GMC-12M-14M15	12	M14×1.5	9.5	22	22	22.80	22.00	33.00	12.00	42.60	19.00
GMC-12M-16M15	12	M16×1.5	9.5	22	22	22.80	22.00	33.00	12.00	42.10	21.00
GMC-12M-18M15	12	M18×1.5	9.5	24	22	22.80	22.00	33.80	12.00	43.10	23.00
GMC-12M-20M15	12	M20×1.5	9.5	27	22	22.80	22.00	38.90	14.00	48.00	25.00
GMC-14M-20M15	14	M20×1.5	9.5	27	22	22.80	22.00	38.90	14.00	48.00	25.00
GMC-15M-18M15	15	M18×1.5	11.9	24	25	24.40	22.00	34.40	12.00	41.90	23.00
GMC-15M-20M15	15	M20×1.5	11.9	27	25	24.40	22.00	38.90	14.00	48.90	24.00
GMC-15M-22M15	15	M22×1.5	11.9	27	25	24.40	22.00	38.90	14.00	48.90	27.00
GMC-16M-18M15	16	M18×1.5	12.7	24	25	24.20	22.00	33.80	12.00	44.00	23.00
GMC-16M-20M15	16	M20×1.5	12.7	27	25	24.20	22.00	38.50	14.00	48.70	24.00
GMC-16M-22M15	16	M22×1.5	12.7	27	25	24.20	22.00	38.90	14.00	49.10	27.00
GMC-18M-20M15	18	M20×1.5	15.1	27	30	24.40	22.00	38.50	14.00	48.60	24.00
GMC-18M-27M20	18	M27×2.0	15.1	35	30	24.40	22.00	42.70	16.00	52.80	32.00
GMC-18M-33M15	18	M33×1.5	15.1	41	30	24.40	22.00	45.90	18.00	55.95	39.00
GMC-20M-22M15	20	M22×1.5	15.9	30	32	26.00	22.00	40.40	14.00	50.20	27.00
GMC-20M-27M20	20	M27×2.0	15.9	35	32	26.00	22.00	42.70	16.00	50.50	32.00
GMC-25M-20M15	25	M20×1.5	21.8	35	38	31.30	26.50	43.50	16.00	55.75	25.00
GMC-25M-27M20	25	M27×2.0	21.8	35	38	31.30	26.50	45.20	16.00	57.45	32.00
GMC-25M-30M15	25	M30×1.5	21.8	41	38	31.30	26.50	45.80	16.00	58.05	36.00
GMC-25M-33M20	25	M33×2.0	21.8	41	38	31.30	26.50	47.80	18.00	60.05	39.00
GMC-30M-42M20	30	M42×2.0	26.2	50	50	39.70	39.30	54.90	20.00	76.60	49.00

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Bulkhead Male NPT Connector GMBC-N



Connects fractional tube to NPT thread

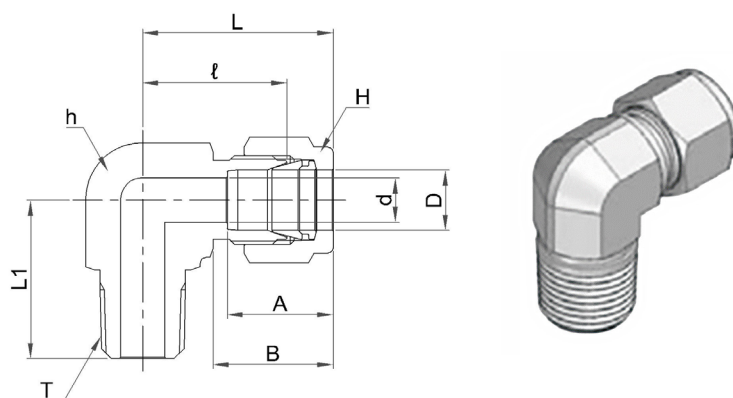
Part No.	Tube O.D		T NPT	d Min.	Width across flat						A	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
	D				h		h1		H								
	in	mm			in	mm	in	mm	in	mm							
GMBC-2-2N	1/8	3.17	1/8	2.28	1/2	12.7	1/2	12.7	7/16	11.11	12.7	39.87	24.63	46.48	31.24	8.33	12.7
GMBC-4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	42.16	26.16	49.53	33.52	11.5	10.16
GMBC-4-4N	1/4	6.35	1/4	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.5	10.16
GMBC-6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.4	36.83	14.68	11.17
GMBC-6-6N	3/8	9.52	3/8	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.4	36.83	14.68	11.17
GMBC-6-8N	3/8	9.52	1/2	7.11	7/8	22.22	3/4	19.05	11/16	17.46	16.76	56.38	29.46	63.75	36.83	14.68	11.17
GMBC-8-6N	1/2	12.7	3/8	9.5	15/16	23.81	15/16	23.81	7/8	22.22	22.86	53.08	31.75	63.24	41.91	19.44	12.7
GMBC-8-8N	1/2	12.7	1/2	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	58.67	31.75	68.83	41.91	19.44	12.7
GMBC-12-12N	3/4	19.05	3/4	15.74	1-3/16	30.16	1-3/16	30.16	1-1/8	28.58	24.38	66.04	37.33	76.2	47.49	25.76	16.76
GMBC-16-16N	1	25.4	1	22.35	1-5/8	41.28	1-5/8	41.28	1-1/2	38.1	31.24	81.02	45.21	93.21	57.4	33.73	19.05
GMBC-20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	85.97	47.75	108.07	69.85	41.67	19.05
GMBC-24-24N	1-1/2	38.1	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	93.03	49.27	120.21	76.45	49.61	19.05
GMBC-32-32N	2	50.8	2	45.97	2-3/4	69.85	2-3/4	69.85	3	76.2	67.56	107.29	56.38	144.62	93.71	67.07	19.05

Connects metric tube to NPT thread

Part No.	Tube O.D D	T NPT	d Min.	Width across flat			A	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
				h	h1	H							
GMBC-6M-2N	6	1/8	4.82	16	16	14	15.3	42.2	26.2	49.6	33.6	11.5	10.2
GMBC-6M-4N	6	1/4	4.82	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
GMBC-6M-6N	6	3/8	4.82	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
GMBC-6M-8N	6	1/2	4.82	16	16	14	15.3	52.6	26.2	60	33.6	11.5	10.2
GMBC-8M-6N	8	3/8	6.4	18	18	16	16.2	50	28.6	57.5	36.1	13.1	11.2
GMBC-10M-4N	10	1/4	7.11	22	22	19	17.2	50	29.4	57.5	37	16.2	11.2
GMBC-10M-6N	10	3/8	7.9	22	22	19	17.2	50	29.4	57.5	37	16.2	11.2
GMBC-10M-8N	10	1/2	7.9	22	22	19	17.2	55.9	29.4	63.5	37	16.2	11.2
GMBC-12M-6N	12	3/8	9.5	24	24	22	22.8	53.3	31.8	63.4	41.9	19.5	12.7
GMBC-12M-8N	12	1/2	9.5	24	24	22	22.8	58.7	31.8	68.8	41.9	19.5	12.7

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Elbow GML

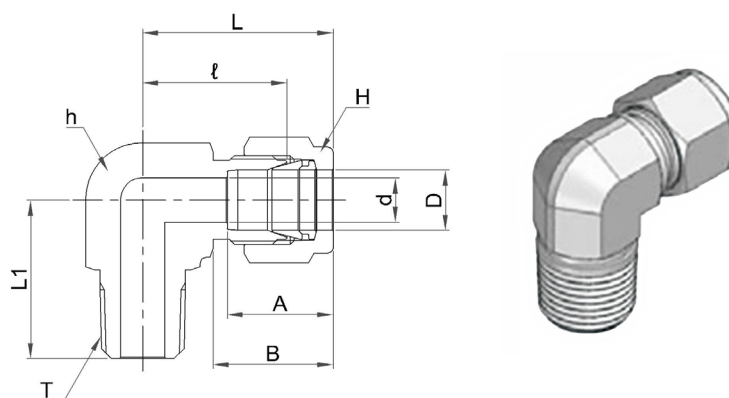


Connects fractional tube

Connectors - Fractional Sizes					Width across flat				A	B	ℓ	L	L1
Part No.	Tube O.D D		T (NPT)	d Min.	h		H						
	in	mm			in	mm	in	mm					
GML-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GML-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GML-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
GML-2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
GML-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	18.79
GML-3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
GML-4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
GML-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	19.10
GML-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
GML-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
GML-4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
GML-5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.81
GML-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
GML-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
GML-6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	20.60
GML-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
GML-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
GML-6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
GML-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
GML-8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GML-8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GML-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
GML-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
GML-10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
GML-10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
GML-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
GML-12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	37.00
GML-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	36.83
GML-14-12N	7/8	22.22	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
GML-16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
GML-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
GML-20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
GML-24-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
GML-32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	62.73	63.73	69.80	107.18	70.61

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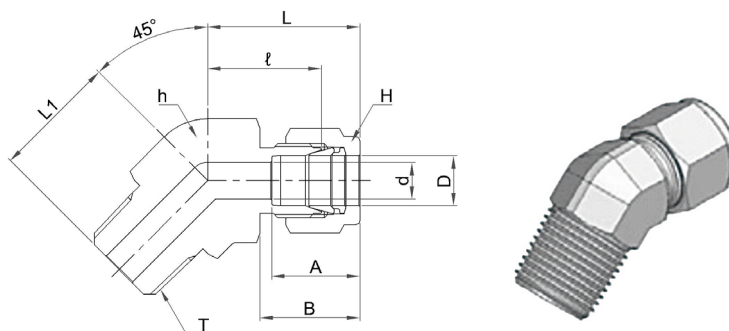
Male Elbow GML



Connects metric tube				Width across flat		A	B	l	L	L1
Part No.	Tube O.D D	T R(PT)	d Min.	h	H					
GML-3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
GML-3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
GML-4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
GML-4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
GML-6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
GML-6M-4R	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
GML-6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
GML-6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
GML-8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
GML-8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
GML-8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
GML-8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
GML-10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
GML-10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
GML-10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
GML-10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
GML-12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
GML-12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
GML-12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
GML-12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
GML-12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
GML-16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
GML-16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
GML-16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
GML-18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
GML-18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
GML-20M-8R	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GML-20M-12R	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GML-22M-12R	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GML-22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
GML-25M-12R	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
GML-25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5

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45° Male Elbow GMBL

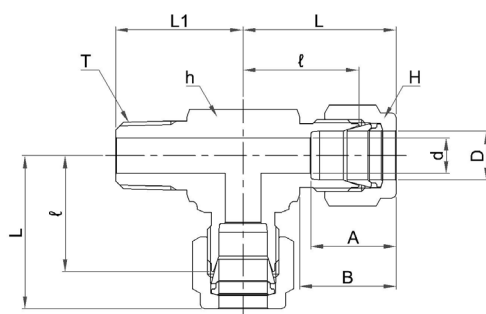


Connects fractional tube to female NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GMBL-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	16.51
GMBL-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	21.08
GMBL-6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	18.28
GMBL-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	22.86
GMBL-6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	21.84	29.21	24.13
GMBL-8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	24.13
GMBL-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	28.95
GMBL-12-12N	3/4	19.05	3/4	15.74	1-1/8	28.58	1-1/8	28.58	24.38	21.84	23.87	34.03	30.98
GMBL-16-16N	1	25.40	1	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	28.19	40.38	37.84

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Male Run Tee GMRT

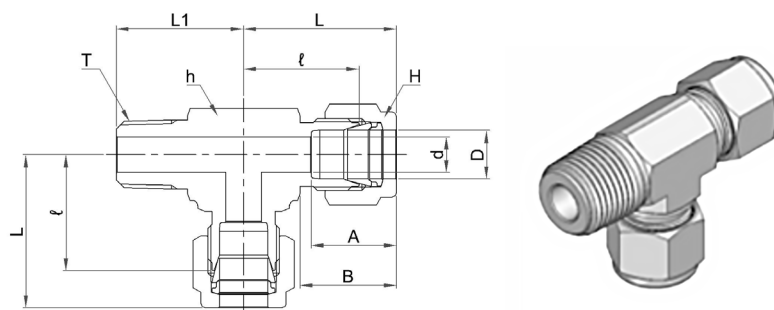


Connects fractional tube to female NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GMRT-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GMRT-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GMRT-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
GMRT-2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
GMRT-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
GMRT-3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
GMRT-4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
GMRT-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	18.79
GMRT-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
GMRT-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
GMRT-4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	35.10
GMRT-5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	19.81
GMRT-5-4N	5/16	7.94	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
GMRT-5-6N	5/16	7.94	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	28.40
GMRT-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
GMRT-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
GMRT-6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	33.02
GMRT-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
GMRT-8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GMRT-8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GMRT-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
GMRT-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.84	36.83
GMRT-10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	29.40
GMRT-10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00
GMRT-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
GMRT-12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
GMRT-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.81	36.83
GMRT-14-12N	7/8	22.23	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
GMRT-16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
GMRT-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
GMRT-20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
GMRT-24-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
GMRT-32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18	70.61

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Male Run Tee GMRT

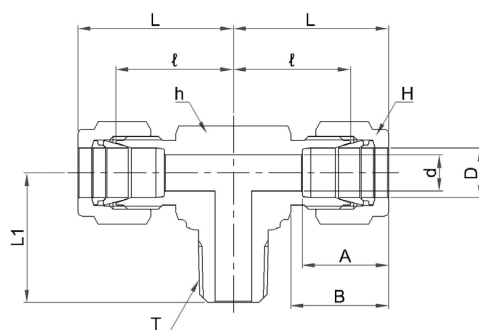


Connects metric tube to female ISO tapered thread

Part No.	Tube O.D D	T R(PT)	d Min.	Width across flat		A	B	ℓ	L	L1
				h	H					
GMRT-3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
GMRT-3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
GMRT-4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
GMRT-4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
GMRT-6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
GMRT-6M-4R	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
GMRT-6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
GMRT-6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
GMRT-8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
GMRT-8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
GMRT-8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
GMRT-8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
GMRT-10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
GMRT-10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
GMRT-10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
GMRT-10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
GMRT-12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
GMRT-12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
GMRT-12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
GMRT-12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
GMRT-12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
GMRT-16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
GMRT-16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
GMRT-16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
GMRT-18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
GMRT-18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
GMRT-20M-8R	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMRT-20M-12R	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMRT-22M-12R	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMRT-22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
GMRT-25M-12R	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
GMRT-25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5

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Male Branch Tee GMBT

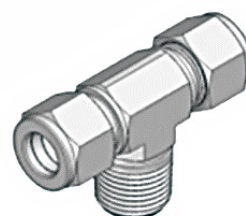
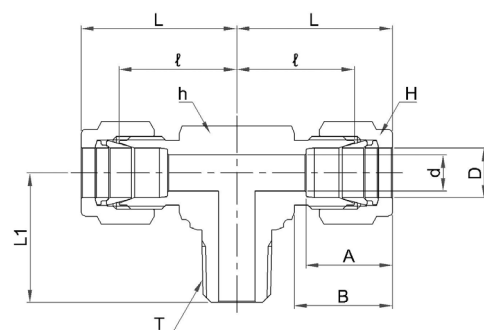


Connects fractional tube to female NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GMBT-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GMBT-1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
GMBT-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
GMBT-2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
GMBT-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
GMBT-3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
GMBT-4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
GMBT-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.10
GMBT-4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
GMBT-4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
GMBT-4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	35.10
GMBT-5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	19.81
GMBT-5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
GMBT-5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	28.40
GMBT-6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
GMBT-6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
GMBT-6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	33.02
GMBT-6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
GMBT-8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GMBT-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
GMBT-8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
GMBT-8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
GMBT-10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	29.40
GMBT-10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00
GMBT-10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
GMBT-12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
GMBT-12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	36.83
GMBT-14-12N	7/8	22.22	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
GMBT-16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
GMBT-16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
GMBT-20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
GMBT-24-24N	1-1/2	38.10	1-1/2	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
GMBT-32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18	70.61

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Branch Tee GMBT

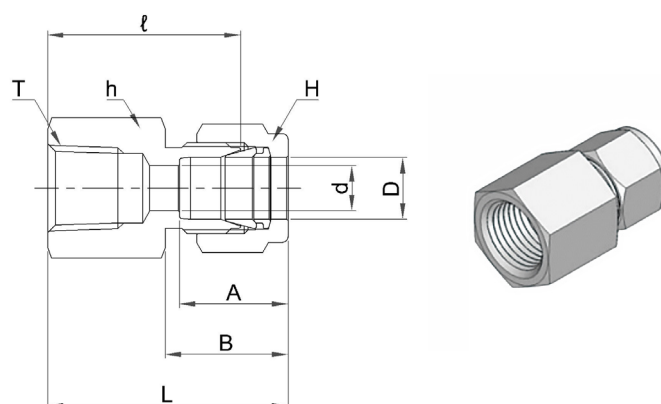


Connects metric tube to female ISO tapered thread

Part No.	Tube O.D D	T R(PT)	d Min.	Width across flat		A	B	ℓ	L	L1
				h	H					
GMBT-3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
GMBT-3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
GMBT-4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
GMBT-4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
GMBT-6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
GMBT-6M-4R	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
GMBT-6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
GMBT-6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
GMBT-8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
GMBT-8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
GMBT-8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
GMBT-8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
GMBT-10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
GMBT-10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
GMBT-10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
GMBT-10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
GMBT-12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
GMBT-12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
GMBT-12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
GMBT-12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
GMBT-12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
GMBT-16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
GMBT-16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
GMBT-16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
GMBT-18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
GMBT-18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
GMBT-20M-8R	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMBT-20M-12R	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMBT-22M-12R	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
GMBT-22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
GMBT-25M-12R	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
GMBT-25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5

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Female Connector GFC

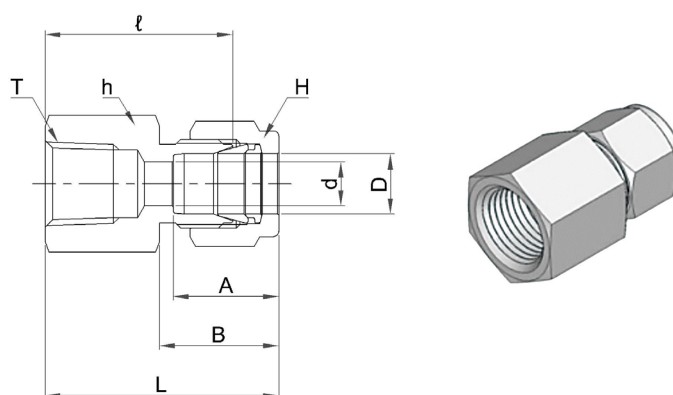


Connects fractional tube to female NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L
	in	mm			h		H					
					in	mm	in	mm				
GFC-1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	19.81	23.62
GFC-1-2N	1/16	1.59	1/8	1.27	9/16	14.28	5/16	7.93	8.63	10.92	20.57	24.38
GFC-2-2N	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	22.09	28.70
GFC-2-4N	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.92	33.52
GFC-3-2N	3/16	4.76	1/8	3.04	9/16	14.28	1/2	12.70	13.71	16.00	23.11	29.71
GFC-4-2N	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	23.87	31.24
GFC-4-4N	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	28.44	35.81
GFC-4-6N	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	37.59
GFC-4-8N	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	35.05	42.41
GFC-5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	24.63	32.00
GFC-5-4N	5/16	7.93	1/4	6.35	3/4	19.05	5/8	15.87	16.25	18.54	29.46	36.83
GFC-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	25.40	32.76
GFC-6-4N	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	30.22	37.59
GFC-6-6N	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	39.11
GFC-6-8N	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	36.57	43.94
GFC-6-12N	3/8	9.52	3/4	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	40.38	47.75
GFC-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	30.22	40.38
GFC-8-6N	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	41.91
GFC-8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	36.57	46.73
GFC-8-12N	1/2	12.70	3/4	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	38.10	48.26
GFC-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	41.91
GFC-10-8N	5/8	15.87	1/2	12.70	1-1/16	26.98	1	25.40	24.38	21.84	36.57	46.73
GFC-10-12N	5/8	15.87	3/4	12.70	1-5/16	33.33	1	25.40	24.38	21.84	38.10	48.26
GFC-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	36.57	46.73
GFC-12-12N	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	38.10	48.26
GFC-14-12N	7/8	22.22	3/4	18.28	1-5/16	33.33	1-1/4	31.75	25.90	21.84	39.62	49.78
GFC-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	53.34
GFC-16-16N	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	50.03	62.23
GFC-20-20N	1-1/4	31.75	1-1/4	27.68	2-1/8	53.98	1-7/8	47.63	41.14	38.86	52.57	74.67
GFC-24-24N	1-1/2	58.10	1-1/2	34.03	2-3/8	60.33	2-1/4	57.15	50.03	45.21	56.13	83.31
GFC-32-32N	2	50.80	2	45.97	2-7/8	73.03	3	76.20	67.56	62.73	64.26	101.60

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

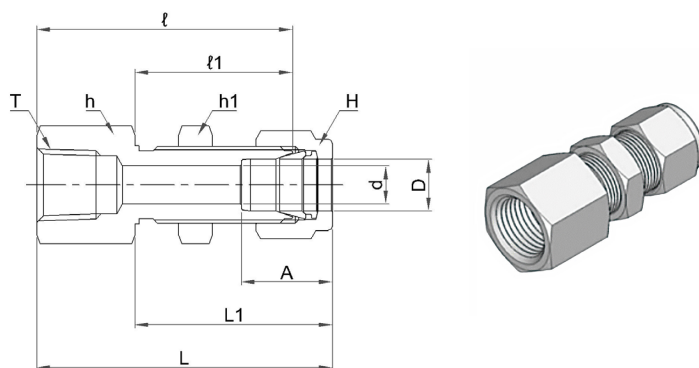
Female Connector GFC



Connects metric tube to female ISO tapered thread									
Part No.	Tube O.D D	T R(PT)	d Min.	Width across flat		A	B	ℓ	L
				h	H				
GFC-3M-2R	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
GFC-3M-4R	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
GFC-4M-2R	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
GFC-6M-2R	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
GFC-6M-4R	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
GFC-6M-6R	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
GFC-6M-8R	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
GFC-8M-2R	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
GFC-8M-4R	8	1/4	6.4	19	16	16.2	18.6	29.5	37
GFC-8M-6R	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
GFC-8M-8R	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
GFC-10M-2R	10	1/8	7.9	18	19	17.2	19.5	25.4	33
GFC-10M-4R	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
GFC-10M-6R	10	3/8	7.9	22	19	17.2	19.5	31	38.6
GFC-10M-8R	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
GFC-12M-2R	12	1/8	8.3	22	22	22.8	22	28.4	38.5
GFC-12M-4R	12	1/4	9.5	22	22	22.8	22	30.2	40.3
GFC-12M-6R	12	3/8	9.5	22	22	22.8	22	31	41.1
GFC-12M-8R	12	1/2	9.5	27	22	22.8	22	36.6	46.7
GFC-12M-12R	12	3/4	9.5	35	22	22.8	22	38.9	49
GFC-15M-8R	15	1/2	11.9	27	25	24.4	22	36.6	46.7
GFC-16M-8R	16	1/2	12.7	27	25	24.4	22	36.8	46.9
GFC-20M-8R	20	1/2	15.9	30	32	26	22	37.8	47.9
GFC-20M-12R	20	3/4	15.9	35	32	26	22	39.6	49.7
GFC-22M-12R	22	3/4	18.3	35	32	26	22	39.6	49.7
GFC-22M-16R	22	1	18.3	41	32	26	22	47.8	57.9
GFC-25M-12R	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
GFC-25M-16R	25	1	21.8	41	38	31.3	26.5	50	62.3

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Bulkhead Female Connector GBFC



Connects fractional tube to male NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat						A	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
					h		h1		H								
	in	mm			in	mm	in	mm	in	mm							
GBFC-2-2N	1/8	3.17	1/8	2.28	9/16	14.28	1/2	12.70	7/16	11.11	12.70	38.10	24.63	44.70	31.24	8.33	12.70
GBFC-4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	39.62	26.16	46.99	33.52	11.50	10.16
GBFC-4-4N	1/4	6.35	1/4	4.82	3/4	19.05	5/8	15.87	9/16	14.28	15.24	44.45	26.16	51.81	33.52	11.50	10.16
GBFC-6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	47.75	29.46	55.11	36.83	14.68	11.17
GBFC-6-6N	3/8	9.52	3/8	7.11	7/8	22.22	3/4	19.05	11/16	17.46	16.76	49.41	29.46	56.77	36.83	14.68	11.17
GBFC-8-6N	1/2	12.70	3/8	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	51.56	31.75	61.72	41.91	19.44	12.70
GBFC-8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	15/16	23.81	7/8	22.22	22.86	56.38	31.75	66.54	41.91	19.44	12.70
GBFC-12-12N	3/4	19.05	3/4	15.74	1-1/4	31.75	1-3/16	30.16	1-1/8	28.57	24.38	63.60	38.30	73.51	47.21	25.79	16.76
GBFC-16-16N	1	25.40	1	22.35	1-5/8	41.27	1-5/8	41.27	1-1/2	38.10	31.24	81.04	45.21	93.23	57.40	33.73	19.05
GBFC-20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	83.49	47.75	105.59	69.85	41.67	19.05
GBFC-24-24N	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	87.39	49.27	114.57	76.45	49.61	19.05
GBFC-32-32N	2	50.80	2	45.97	2-3/4	69.85	2-3/4	69.85	3	76.20	67.56	95.30	56.38	132.63	93.71	67.07	19.05

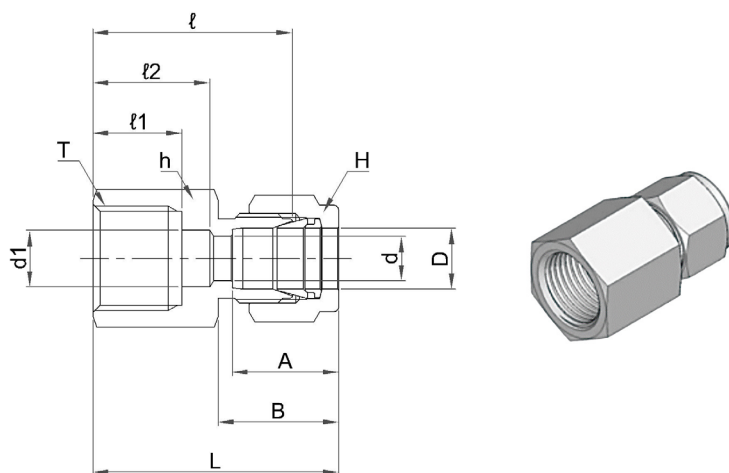
Connects metric tube to male NPT thread

Part No.	Tube O.D D	T (NPT)	d Min.	Width across flat			A	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max Thick.
				h	h1	H							
GBFC-6M-2N	6	1/8	4.8	15.8	15.8	14	15.3	39.6	26.2	46.90	35.00	11.5	10.2
GBFC-6M-4N	6	1/4	4.8	19.0	16.0	14	15.3	44.4	26.2	51.80	33.60	11.5	10.2
GBFC-8M-4N	8	1/4	6.3	19.0	17.4	16	16.2	46.7	28.6	53.85	35.55	13.1	11.2
GBFC-12M-8N	12	1/2	9.5	27.0	24.0	22	22.8	56.4	31.8	66.50	41.90	19.5	12.7

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Gauge Connector GGC

See page 36 for GPI-GG gasket



Connects fractional tube to ISO parallel thread (gauge)

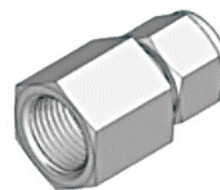
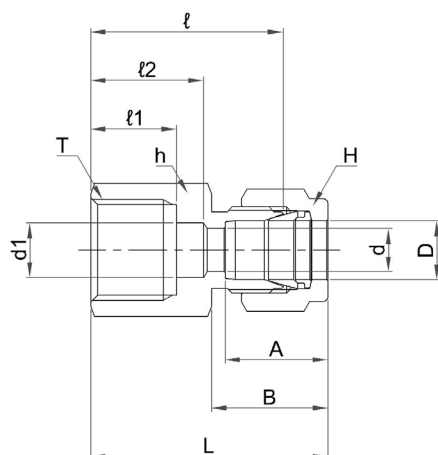
Part No.	Tube O.D D		T G(PF)	d Min.	d1	Width across flat				A	B	ℓ	ℓ1	L
	in	mm				h		H						
						in	mm	in	mm					
GGC-4-2G	1/4	6.35	1/8	4.82	4.00	9/16	14.28	9/16	14.28	15.24	17.78	26.30	12.00	33.55
GGC-4-4G	1/4	6.35	1/4	4.82	5.50	3/4	19.05	9/16	14.28	15.24	17.78	30.22	13.00	37.59
GGC-4-6G	1/4	6.35	3/8	4.82	6.50	15/16	23.81	9/16	14.28	15.24	17.78	30.22	14.22	37.59
GGC-4-8G	1/4	6.35	1/2	4.82	7.00	1-1/16	26.98	9/16	14.28	15.24	17.78	30.07	18.80	43.43
GGC-5-4G	5/16	7.93	1/4	5.58	5.50	3/4	19.05	5/8	15.87	16.25	18.54	30.98	13.00	38.35
GGC-5-8G	5/16	7.93	1/2	7.11	7.00	1-1/16	26.98	5/8	15.87	16.25	18.54	33.02	18.80	40.38
GGC-6-4G	3/8	9.52	1/4	5.58	5.50	3/4	19.05	11/16	17.46	16.76	19.30	31.75	12.95	39.12
GGC-6-6G	3/8	9.52	3/8	6.60	6.50	15/16	23.81	11/16	17.46	16.76	19.30	31.24	14.22	38.61
GGC-6-8G	3/8	9.52	1/2	7.11	7.00	1-1/16	26.98	11/16	17.46	16.76	19.30	34.54	18.80	41.91
GGC-8-4G	1/2	12.70	1/4	5.50	5.50	7/8	22.22	7/8	22.22	22.86	21.84	31.80	13.00	41.95
GGC-8-6G	1/2	12.70	3/8	6.60	6.50	15/16	23.81	7/8	22.22	22.86	21.84	34.29	14.24	44.45
GGC-8-8G	1/2	12.70	1/2	7.11	7.00	1-1/16	26.98	7/8	22.22	22.86	21.84	38.10	18.80	48.26

Connects metric tube to ISO parallel thread (gauge)

Part No.	Tube O.D D	T G(PF)	d Min.	d1	Width across flat		A	B	ℓ	ℓ1	L
					h	H					
GGC-3M-4G	3	1/4	2.4	5.5	19	12	12.9	15.3	28.7	13	35.3
GGC-6M-4G	6	1/4	4.8	5.5	19	14	15.3	17.7	30.2	13	37.6
GGC-6M-6G	6	3/8	4.8	6.5	24	14	15.3	17.7	30.2	14	37.6
GGC-6M-8G	6	1/2	4.8	7.0	27	14	15.3	17.7	36.3	19	43.0
GGC-8M-4G	8	1/4	5.5	5.5	19	16	16.2	18.6	31.0	13	38.5
GGC-8M-6G	8	3/8	6.5	6.5	24	16	16.2	18.6	28.7	14	36.2
GGC-8M-8G	8	1/2	7.0	7.0	27	16	16.2	18.6	33.0	19	40.5
GGC-10M-4G	10	1/4	5.5	5.5	19	19	17.2	19.5	31.8	13	39.4
GGC-10M-6G	10	3/8	6.5	6.5	24	19	17.2	19.5	31.2	14	38.8
GGC-10M-8G	10	1/2	7.0	7.0	27	19	17.2	19.5	33.8	19	41.4
GGC-12M-4G	12	1/4	5.5	5.5	22	22	22.8	22.0	31.8	13	41.9
GGC-12M-6G	12	3/8	6.5	6.5	24	22	22.8	22.0	34.3	14	44.4
GGC-12M-8G	12	1/2	7.0	7.0	27	22	22.8	22.0	38.1	19	48.2
GGC-20M-8G	20	1/2	7.0	7.0	30	32	26.0	22.0	44.2	19	54.3
GGC-22M-8G	22	1/2	7.0	7.0	30	32	26.0	22.0	44.2	19	54.3

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Female Gauge Connector GGC-M



Connects fractional tube to Gauge (Male metric thread)

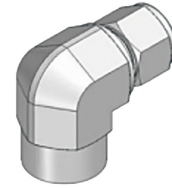
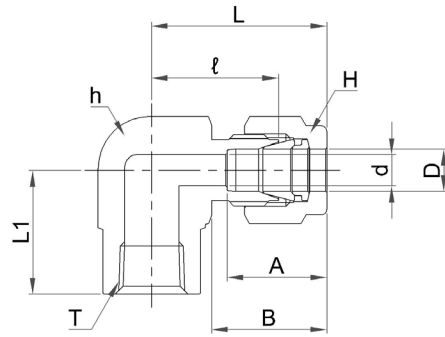
Part No.	Tube O.D D		T Metric	d Min.	d1	Width across flat				A	B	ℓ	ℓ1	L
	in	mm				h		H						
						in	mm	in	mm					
GGC-4-12M15	1/4	6.35	M12×1.5	4.82	5.5	3/4	19.05	9/16	14.28	15.24	17.78	30.30	13.00	37.70
GGC-4-20M15	1/4	6.35	M20×1.5	4.82	7	1-1/16	26.98	9/16	14.28	15.24	17.78	36.60	19.00	44.10
GGC-5-20M15	5/16	7.93	M20×1.5	6.35	7	1-1/16	26.98	5/8	15.87	16.25	18.54	37.80	19.00	44.80
GGC-6-12M15	3/8	9.52	M12×1.5	7.11	5.5	3/4	19.05	11/16	17.46	16.76	19.30	31.80	13.00	39.20
GGC-6-20M15	3/8	9.52	M20×1.5	7.11	7	1-1/16	26.98	11/16	17.46	16.76	19.30	38.10	19.00	45.60
GGC-8-12M15	1/2	12.7	M12×1.5	10.4	5.5	7/8	19.05	7/8	22.22	22.86	21.84	31.80	13.00	42.00
GGC-8-20M15	1/2	12.7	M20×1.5	10.4	7	1-1/16	26.98	7/8	22.22	22.86	21.84	38.10	19.00	48.10

Connects metric tube to Gauge (Male metric thread)

Part No.	Tube O.D D	T Metric	d Min.	d1	Width across flat		A	B	ℓ	ℓ1	L
					h	H					
GGC-3M-20M15	3	M20×1.5	2.4	7	27	12	12.90	15.30	35.00	19.00	41.60
GGC-4M-20M15	4	M20×1.5	2.4	7	27	12	13.70	16.10	35.80	19.00	42.40
GGC-6M-12M15	6	M12×1.5	4.8	5.5	19	14	15.30	17.70	30.30	13.00	35.60
GGC-6M-20M15	6	M20×1.5	4.8	7	27	14	15.30	17.70	36.60	19.00	44.00
GGC-8M-12M15	8	M12×1.5	6.4	5.5	19	16	16.20	18.60	31.00	13.00	38.30
GGC-8M-20M15	8	M20×1.5	6.4	7	27	16	16.20	18.60	37.40	19.00	44.90
GGC-10M-12M15	10	M12×1.5	7.9	5.5	22	19	17.20	19.50	31.80	13.00	39.30
GGC-10M-20M15	10	M20×1.5	7.9	7	27	19	17.20	19.50	38.10	19.00	45.80
GGC-12M-12M15	12	M12×1.5	9.5	5.5	22	22	22.80	22.00	31.80	13.00	40.90
GGC-12M-20M15	12	M20×1.5	9.5	7	27	22	22.80	22.00	38.10	19.00	48.30
GGC-14M-20M15	14	M20×1.5	11.1	7	27	25	24.40	22.00	38.10	19.00	48.30
GGC-15M-20M15	15	M20×1.5	11.9	7	27	25	24.40	22.00	38.10	19.00	48.30
GGC-16M-20M15	16	M20×1.5	12.7	7	27	25	24.40	22.00	38.10	19.00	48.30
GGC-18M-20M15	18	M20×1.5	15.1	7	27	30	24.40	22.00	38.10	19.00	48.30
GGC-20M-20M15	20	M20×1.5	15.9	7	30	32	26.00	22.00	38.10	19.00	48.30
GGC-22M-20M15	22	M20×1.5	18.3	7	30	32	26.00	22.00	38.30	19.00	48.30
GGC-25M-20M15	25	M20×1.5	21.8	7	35	38	31.30	26.50	40.60	19.00	52.80

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Female Elbow GFL



Connects fractional tube to male NPT thread

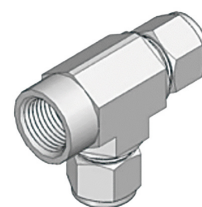
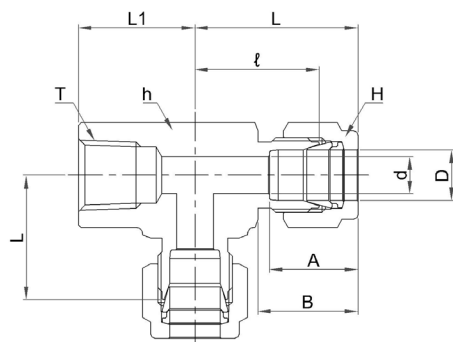
Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GFL-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.63	19.05
GFL-2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
GFL-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
GFL-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
GFL-4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
GFL-4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
GFL-4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
GFL-5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
GFL-5-4N	5/16	7.93	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
GFL-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
GFL-6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
GFL-6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
GFL-6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
GFL-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFL-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFL-8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	28.70	38.86	28.44
GFL-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
GFL-10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	29.71	39.87	28.44
GFL-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
GFL-12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
GFL-14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	31.75
GFL-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
GFL-16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	50.29	38.10

Connects metric tube to male NPT thread

Part No.	Tube O.D D	T (NPT)	d Min.	Width across flat		A	B	ℓ	L	L1
				h	H					
GFL-6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
GFL-6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
GFL-6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
GFL-6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.6	28.40
GFL-8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
GFL-8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
GFL-8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
GFL-10M-2N	10	1/8	7.9	17.46	19	17.2	19.5	23.9	31.5	19.00
GFL-10M-4N	10	1/4	7.9	17.46	19	17.2	19.5	25.9	33.5	22.35
GFL-10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
GFL-10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	28.7	36.1	28.40
GFL-12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
GFL-12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.2	22.35
GFL-12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	28.7	38.8	28.40
GFL-16M-8N	16	1/2	12.7	26.98	25	24.4	22.0	29.7	39.5	28.40

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Female Run Tee GFRT



Connects fractional tube to male NPT thread

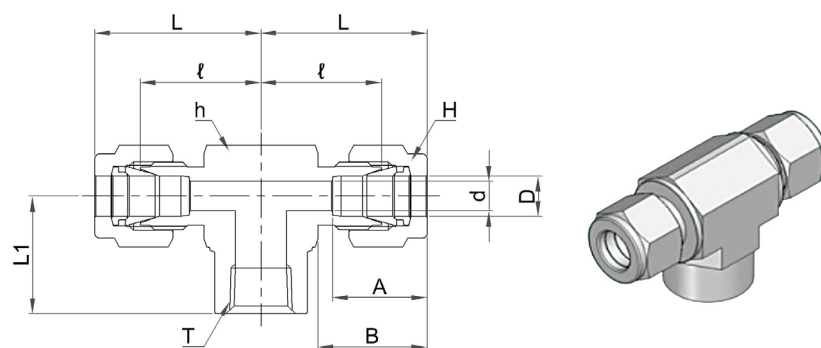
Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GFRT-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.63	19.05
GFRT-2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
GFRT-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
GFRT-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
GFRT-4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.86	29.71	22.35
GFRT-4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
GFRT-4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
GFRT-5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
GFRT-5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
GFRT-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
GFRT-6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
GFRT-6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
GFRT-6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
GFRT-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFRT-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFRT-8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
GFRT-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
GFRT-10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
GFRT-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
GFRT-12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
GFRT-14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	31.75	21.84	34.54	44.70	31.75
GFRT-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	38.10	26.41	36.83	49.02	31.75
GFRT-16-16N	1	25.40	1	22.35	1-1/16	42.86	1-1/2	38.10	38.10	26.41	41.40	50.29	38.10

Connects metric tube to male NPT thread

Part No.	Tube O.D D	T (NPT)	d Min.	Width across flat		A	B	ℓ	L	L1
				h	H					
GFRT-6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
GFRT-6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
GFRT-6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
GFRT-6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
GFRT-8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
GFRT-8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
GFRT-8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
GFRT-8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
GFRT-10M-2N	10	1/8	7.9	20.64	19	17.2	19.5	23.9	31.5	19.00
GFRT-10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
GFRT-10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
GFRT-10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	26.2	33.6	28.40
GFRT-12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
GFRT-12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
GFRT-12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
GFRT-16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.40

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Female Branch Tee GFBT



Connects fractional tube to male NPT thread

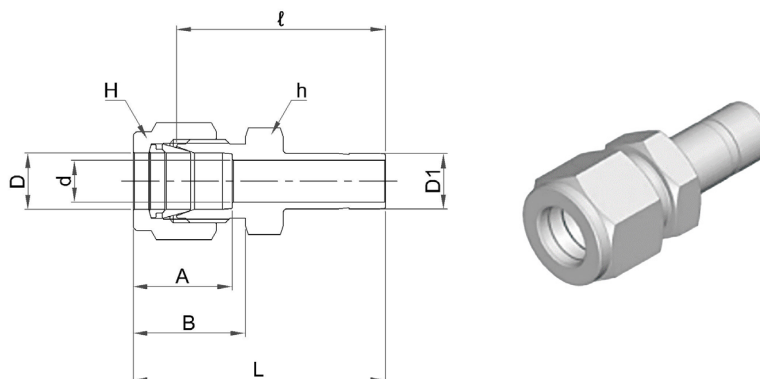
Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat				A	B	ℓ	L	L1
	in	mm			h		H						
					in	mm	in	mm					
GFBT-2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.38	19.05
GFBT-2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
GFBT-3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
GFBT-4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
GFBT-4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
GFBT-4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
GFBT-4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
GFBT-5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
GFBT-5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
GFBT-6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
GFBT-6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
GFBT-6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
GFBT-6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
GFBT-8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFBT-8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
GFBT-8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
GFBT-10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
GFBT-10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
GFBT-12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
GFBT-12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
GFBT-14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	31.75
GFBT-16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
GFBT-16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	53.59	38.10

Connects metric tube to male NPT thread

Part No.	Tube O.D D	T (NPT)	d Min.	Width across flat		A	B	ℓ	L	L1
				h	H					
GFBT-6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
GFBT-6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
GFBT-6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
GFBT-6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
GFBT-8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
GFBT-8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
GFBT-8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
GFBT-8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
GFBT-10M-2N	10	1/8	7.9	17.50	19	17.2	19.5	23.9	31.5	19.00
GFBT-10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
GFBT-10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
GFBT-10M-8N	10	1/2	9.5	25.40	19	17.2	19.5	26.2	33.6	22.40
GFBT-12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
GFBT-12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
GFBT-12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
GFBT-16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.70

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Reducer GR

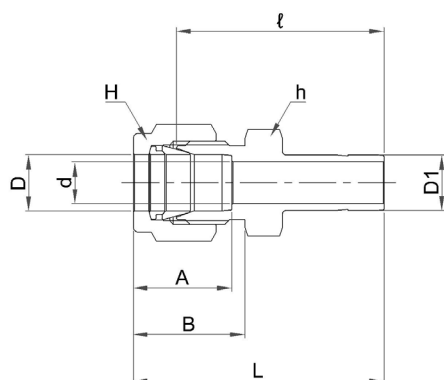


Connects fractional tube to fractional GPI port

Part No.	Tube O.D				d Min.	Width across flat				A	B	ℓ	L
	D		D1			h		H					
	in	mm	in	mm		in	mm	in	mm				
GR-1-2	1/16	1.59	1/8	3.17	1.27	5/16	7.93	5/16	7.93	8.63	10.92	25.40	29.21
GR-1-4	1/16	1.59	1/4	6.35	1.27	5/16	7.93	5/16	7.93	8.63	10.92	27.68	31.49
GR-2-1	1/8	3.17	1/16	1.59	0.80	7/16	11.11	7/16	11.11	12.70	15.24	22.35	28.95
GR-2-2	1/8	3.17	1/8	3.17	2.03	7/16	11.11	7/16	11.11	12.70	15.24	26.92	33.52
GR-2-3	1/8	3.17	3/16	4.76	2.28	7/16	11.11	7/16	11.11	12.70	15.24	27.68	34.29
GR-2-4	1/8	3.17	1/4	6.35	2.28	7/16	11.11	7/16	11.11	12.70	15.24	29.46	36.06
GR-2-6	1/8	3.17	3/8	9.52	2.28	7/16	11.11	7/16	11.11	12.70	15.24	30.98	37.59
GR-2-8	1/8	3.17	1/2	12.70	2.28	9/16	14.28	7/16	11.11	12.70	15.24	37.59	44.19
GR-3-2	3/16	4.76	1/8	3.17	2.03	7/16	11.11	1/2	12.70	13.71	16.00	28.19	34.79
GR-3-4	3/16	4.76	1/4	6.35	3.04	7/16	11.11	1/2	12.70	13.71	16.00	30.48	37.08
GR-4-2	1/4	6.35	1/8	3.17	2.03	1/2	12.70	9/16	14.28	15.24	17.78	29.46	36.83
GR-4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
GR-4-4	1/4	6.35	1/4	6.35	4.57	1/2	12.70	9/16	14.28	15.24	17.78	31.75	39.11
GR-4-5	1/4	6.35	5/16	7.93	4.82	1/2	12.70	9/16	14.28	15.24	17.78	32.51	39.87
GR-4-6	1/4	6.35	3/8	9.52	4.82	1/2	12.70	9/16	14.28	15.24	17.78	33.27	40.64
GR-4-8	1/4	6.35	1/2	12.70	4.82	9/16	14.28	9/16	14.28	15.24	17.78	38.86	46.22
GR-4-10	1/4	6.35	5/8	15.87	4.82	11/16	17.46	9/16	14.28	15.24	17.78	40.64	48.00
GR-4-12	1/4	6.35	3/4	19.05	4.82	13/16	20.64	9/16	14.28	15.24	17.78	40.38	47.75
GR-5-6	5/16	7.93	3/8	9.52	6.35	9/16	14.28	5/8	15.87	16.25	18.54	34.54	41.91
GR-5-8	5/16	7.93	1/2	12.70	6.35	9/16	14.28	5/8	15.87	16.25	18.54	40.13	47.49
GR-6-4	3/8	9.52	1/4	6.35	4.57	5/8	15.87	11/16	17.46	16.76	19.30	34.03	41.40
GR-6-6	3/8	9.52	3/8	9.52	6.90	5/8	15.87	11/16	17.46	16.76	19.30	35.81	43.18
GR-6-8	3/8	9.52	1/2	12.70	7.11	5/8	15.87	11/16	17.46	16.76	19.30	41.14	48.51
GR-6-10	3/8	9.52	5/8	15.87	7.11	11/16	17.46	11/16	17.46	16.76	19.30	42.92	50.29
GR-6-12	3/8	9.52	3/4	19.05	7.11	13/16	20.64	11/16	17.46	16.76	19.30	42.92	50.29
GR-8-4	1/2	12.70	1/4	6.35	4.57	13/16	20.64	7/8	22.22	22.86	21.84	34.79	44.95
GR-8-6	1/2	12.70	3/8	9.52	6.90	13/16	20.64	7/8	22.22	22.86	21.84	36.57	46.73
GR-8-8	1/2	12.70	1/2	12.70	9.40	13/16	20.64	7/8	22.22	22.86	21.84	42.16	52.32
GR-8-10	1/2	12.70	5/8	15.87	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
GR-8-12	1/2	12.70	3/4	19.05	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
GR-8-16	1/2	12.70	1	25.40	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	50.03	60.19
GR-10-12	5/8	15.87	3/4	19.05	12.70	15/16	23.81	1	25.40	24.38	21.84	44.45	54.61
GR-10-14	5/8	15.87	7/8	22.22	12.70	15/16	23.81	1	25.40	24.38	21.84	45.97	56.13
GR-10-16	5/8	15.87	1	25.40	12.70	1-1/16	26.98	1	25.40	24.38	21.84	50.80	60.96
GR-12-8	3/4	19.05	1/2	12.70	9.40	1-1/16	26.98	1-1/8	28.57	24.38	21.84	44.45	54.61
GR-12-16	3/4	19.05	1	25.40	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	52.32	62.48
GR-16-20	1	25.40	1-1/4	31.75	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	68.32	80.51
GR-16-24	1	25.40	1-1/2	38.10	22.35	1-5/8	41.28	1-1/2	38.10	31.24	26.41	76.96	89.15
GR-16-32	1	25.40	2	50.80	22.35	2-1/8	53.98	1-1/2	38.10	31.24	26.41	100.33	112.52
GR-20-24	1-1/4	31.75	1-1/2	38.10	27.68	1-7/8	47.63	2-1/4	57.15	41.14	38.86	82.04	104.14
GR-20-32	1-1/4	31.75	2	50.80	27.68	1-7/8	47.63	3	76.20	41.14	38.86	103.12	125.22
GR-24-32	1-1/2	38.10	2	50.80	34.03	2-1/4	57.15	3	76.20	50.03	45.21	104.14	131.31

- A, B & L are approximate figures in finger-tight
- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Reducer GR



- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

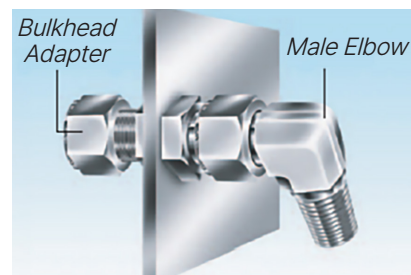
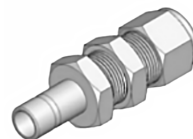
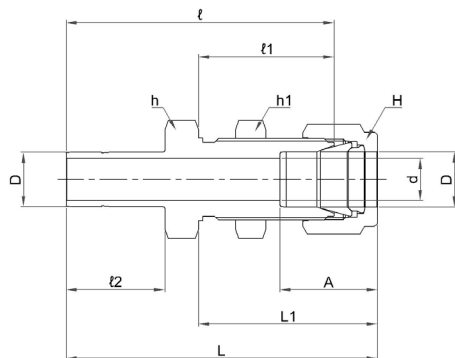
Connects metric tube to metric GPI port

Part No.	Tube O.D.		d Min.	Width across flat		A	B	ℓ	L
	D	D1		h	H				
GR 2M-3M	2	3	1.7	12	12	12.9	15.3	26.9	35.3
GR 3M-4M	3	4	2.4	12	12	12.9	15.3	28.4	35.0
GR 3M-6M	3	6	2.4	12	12	12.9	15.3	29.5	36.1
GR 3M-10M	3	10	2.4	12	12	12.9	15.3	31.8	38.4
GR 4M-6M	4	6	2.4	12	12	13.7	16.1	30.5	37.1
GR 6M-3M	6	3	1.9	14	14	15.3	17.7	29.5	36.9
GR 6M-8M	6	8	4.8	14	14	15.3	17.7	32.5	39.9
GR 6M-10M	6	10	4.8	14	14	15.3	17.7	33.3	40.7
GR 6M-12M	6	12	4.8	14	14	15.3	17.7	38.9	46.3
GR 8M-6M	8	6	4.1	15	16	16.2	18.6	32.8	40.3
GR 8M-10M	8	10	6.4	15	16	16.2	18.6	34.5	42.0
GR 8M-12M	8	12	6.4	15	16	16.2	18.6	40.1	47.6
GR 10M-6M	10	6	4.1	18	19	17.2	19.5	34.8	42.4
GR 10M-12M	10	12	7.9	18	19	17.2	19.5	42.2	49.8
GR 10M-15M	10	15	7.9	18	19	17.2	19.5	43.7	51.3
GR 10M-18M	10	18	7.9	19	19	17.2	19.5	43.7	51.3
GR 12M-6M	12	6	4.1	22	22	22.8	22.0	34.8	44.9
GR 12M-10M	12	10	7.1	22	22	22.8	22.0	36.6	46.7
GR 12M-16M	12	16	9.5	22	22	22.8	22.0	43.7	53.8
GR 12M-18M	12	18	9.5	22	22	22.8	22.0	43.7	53.8
GR 12M-20M	12	20	9.5	22	22	22.8	22.0	46.0	56.1
GR 12M-22M	12	22	9.5	24	22	22.8	22.0	46.0	56.1
GR 12M-25M	12	25	9.5	27	22	22.8	22.0	52.3	62.4
GR 16M-12M	16	12	8.8	24	25	24.4	22.0	42.9	53.0
GR 18M-12M	18	12	8.8	27	30	24.4	22.0	44.5	54.6
GR 18M-16M	18	16	12.0	27	30	24.4	22.0	46.0	56.7
GR 18M-20M	18	20	15.1	27	30	24.4	22.0	47.5	57.6
GR 18M-22M	18	22	15.1	27	30	24.4	22.0	47.5	57.6
GR 18M-25M	18	25	15.1	27	30	24.4	22.0	52.3	62.4
GR 20M-16M	20	16	12.0	30	32	26.0	22.0	47.8	57.9
GR 20M-18M	20	18	13.9	30	32	26.0	22.0	47.8	57.9
GR 20M-22M	20	22	15.8	30	32	26.0	22.0	49.3	59.4
GR 20M-25M	20	25	15.8	30	32	26.0	22.0	54.1	64.2
GR 22M-18M	22	18	13.9	30	32	26.0	22.0	47.8	57.9
GR 22M-20M	22	20	15.5	30	32	26.0	22.0	49.3	59.4
GR 22M-25M	22	25	18.3	30	32	26.0	22.0	54.1	64.2
GR 25M-18M	25	18	13.9	35	38	31.3	26.5	50.8	63.1
GR 25M-20M	25	20	15.1	35	38	31.3	26.5	52.3	64.6

Connects metric tube to fractional GPI port

Part No.	Tube O.D.			d Min.	Width across flat		A	B	ℓ	L
	D	in	mm		h	H				
GR 2M-2	2	1/8	3.17	1.7	12	12	12.9	15.3	26.9	33.5
GR 3M-2	3	1/8	3.17	2.0	12	12	12.9	15.3	26.9	33.5
GR 3M-4	3	1/4	6.35	2.4	12	12	12.9	15.3	29.5	36.1
GR 4M-4	4	1/4	6.35	2.4	12	12	13.7	16.1	30.5	37.1
GR 6M-2	6	1/8	3.18	2.0	14	14	15.3	17.7	29.5	36.9
GR 6M-4	6	1/4	6.35	4.6	14	14	15.3	17.7	31.8	39.2
GR 6M-5	6	5/16	7.93	4.8	14	14	15.3	17.7	32.5	39.9
GR 6M-6	6	3/8	9.52	4.8	14	14	15.3	17.7	33.3	40.7
GR 6M-8	6	1/2	12.70	4.8	14	14	15.3	17.7	38.9	46.3
GR 8M-6	8	3/8	9.52	6.4	15	16	16.2	18.6	34.5	42.0
GR 8M-8	8	1/2	12.70	6.4	15	16	16.2	18.6	40.1	47.6
GR 10M-6	10	3/8	9.52	6.9	18	19	17.2	19.5	36.6	44.2
GR 10M-8	10	1/2	12.70	7.9	18	19	17.2	19.5	42.2	49.8
GR 12M-8	12	1/2	12.70	9.4	22	22	22.8	22.0	42.2	52.3
GR 12M-12	12	3/4	19.05	9.5	22	22	22.8	22.0	43.7	53.8
GR 18M-12	18	3/4	19.05	14.7	27	30	24.4	22.0	46.0	56.1
GR 18M-16	18	1	25.40	15.1	27	30	24.4	22.0	52.3	62.4
GR 25M-16	25	1	25.40	20.3	35	38	31.3	26.5	57.2	69.5

Bulkhead Adapter GBA



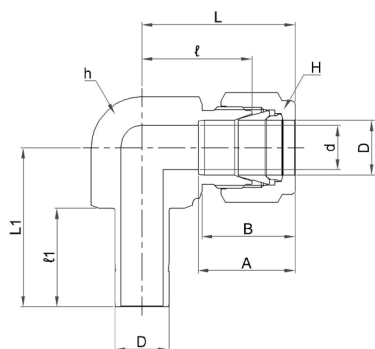
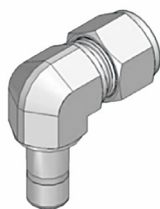
Set a direction

The bulkhead adapter is useful for panel construction when you need to set a direction.

Connects fractional tube to fractional GPI port

Part No.	Tube O.D D		d Min.	Width across flat						A	ℓ	ℓ1	ℓ2	L	L1	Panel Hole Drill size	Panel Max Thick.
				h		H		H1									
	in	mm		in	mm	in	mm	in	mm								
GBA-2-2	1/8	3.17	2.03	1/2	12.7	7/16	11.11	1/2	12.7	12.70	42.92	24.63	13.45	49.53	31.24	8.33	12.70
GBA-4-4	1/4	6.35	4.57	5/8	15.87	9/16	14.28	5/8	15.87	15.24	48.51	26.16	15.74	55.88	33.52	11.50	10.16
GBA-6-6	3/8	9.52	6.9	3/4	19.05	11/16	17.46	3/4	19.05	16.76	53.84	29.46	17.50	61.21	36.83	14.68	11.17
GBA-8-8	1/2	12.70	9.4	15/16	23.81	7/8	22.22	15/16	23.81	22.86	62.73	31.75	23.11	72.89	41.91	19.44	12.70
GBA-10-10	5/8	15.87	11.9	1-1/16	26.98	1	25.4	1-1/16	26.98	24.38	65.02	32.51	24.70	75.18	42.67	22.62	12.70
GBA-12-12	3/4	19.05	14.7	1-3/16	30.16	1-1/8	28.58	1-3/16	30.16	24.38	71.44	37.33	24.70	81.53	47.49	25.79	16.76
GBA-16-16	1	25.40	20.3	1-5/8	41.28	1-1/2	38.1	1-5/8	41.28	31.24	88.13	45.21	31.70	100.33	57.40	33.73	19.05
GBA-20-20	1-1/4	31.75	25.9	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	102.07	47.75	40.00	124.17	69.85	41.67	19.05
GBA-24-24	1-1/2	38.10	31.75	2-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	118.33	49.27	51.50	145.51	76.45	49.61	19.05
GBA-32-32	2	50.80	43.7	2-3/4	69.85	3	76.2	2-3/4	69.85	67.56	148.79	56.38	68.40	185.82	93.71	67.07	19.05

Elbow Adapter GLA



Connects fractional tube to fractional GPI port

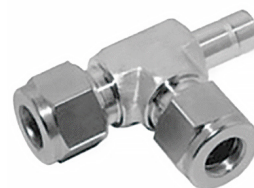
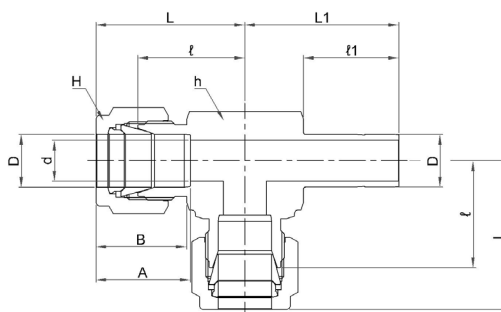
Part No.	Tube O.D D		d Min.	Width across flat						ℓ	ℓ1	L	L1
				h		H		A	B				
	in	mm		in	mm	in	mm						
GLA-4	1/4	6.35	4.57	1/2	12.7	9/16	14.28	15.24	17.78	19.55	15.75	27.00	25.00
GLA-6	3/8	9.52	6.9	5/8	15.87	11/16	17.46	16.76	19.30	23.11	17.50	31.50	29.10
GLA-8	1/2	12.7	9.4	13/16	20.63	7/8	22.22	22.86	21.84	25.90	23.10	36.00	37.30
GLA-12	3/4	19.05	14.7	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	24.70	38.80	42.60
GLA-16	1	25.4	20.3	1-3/8	34.92	1-1/2	38.1	31.24	26.41	36.83	31.70	49.02	54.40

Connects Metric tube to Metric GPI port

Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	ℓ1	L	L1
			h	H						
GLA-6M	6	4.1	12.7	14	15.30	17.70	19.60	15.70	27.00	25.00
GLA-8M	8	5.6	14.3	16	16.20	18.60	21.30	16.80	28.80	27.05
GLA-10M	10	7.1	17.4	19	17.20	19.50	23.90	17.50	31.50	30.00
GLA-12M	12	8.8	20.6	22	22.80	22.00	25.90	23.10	36.00	37.30
GLA-14M	14	11.1	25.4	25	24.40	22.00	28.70	24.60	38.80	41.50
GLA-15M	15	11.2	25.4	25	24.40	22.00	28.70	24.65	38.80	41.55
GLA-16M	16	12.0	25.4	25	24.40	22.00	28.70	24.60	38.80	41.50
GLA-18M	18	13.9	26.9	30	24.40	22.00	29.70	24.60	39.80	42.50
GLA-20M	20	15.5	31.8	32	26.00	22.00	32.50	26.20	42.60	47.00
GLA-22M	22	18.3	31.8	32	26.00	22.00	32.50	26.60	42.60	47.15
GLA-25M	25	19.8	34.9	38	31.30	26.50	36.80	31.70	49.10	55.20
GLA-28M	28	21.8	41.0	46	36.60	36.60	43.20	37.50	64.00	64.90

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Run Tee Adapter GRTA



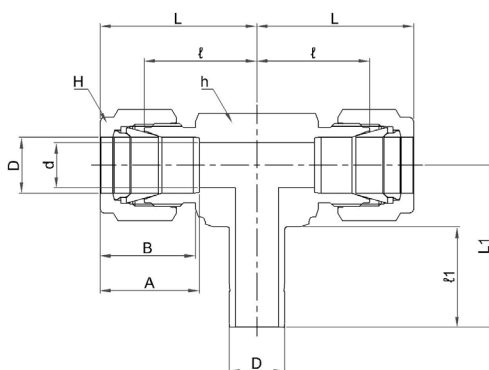
Connects fractional tube to fractional GPI port

Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	ℓ1	L	L1
	in	mm		h		H							
				in	mm	in	mm						
GRTA-4	1/4	6.35	4.57	1/2	12.7	9/16	14.28	15.24	17.78	19.55	15.75	27.00	25.00
GRTA-6	3/8	9.52	6.9	5/8	15.87	11/16	17.46	16.76	19.30	23.11	17.50	31.50	29.10
GRTA-8	1/2	12.7	9.4	13/16	20.63	7/8	22.22	22.86	21.84	25.90	23.10	36.00	37.30
GRTA-12	3/4	19.05	14.7	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	24.70	38.80	42.60
GRTA-16	1	25.4	20.3	1-3/8	34.92	1-1/2	38.1	31.24	26.41	36.83	31.70	49.02	54.40

Connects Metric tube to Metric GPI port

Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	ℓ1	L	L1
			h	H						
GRTA-8M	8	5.6	14.3	16	16.20	18.60	21.30	16.80	28.80	27.05
GRTA-10M	10	7.1	17.4	19	17.20	19.50	23.90	17.50	31.50	30.00

Branch Tee Adapter GBTA



Connects fractional tube to fractional GPI port

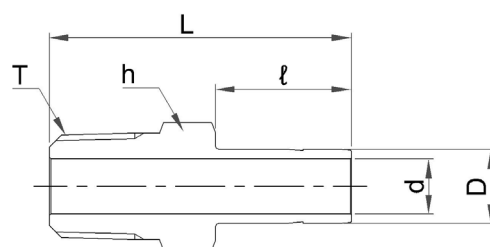
Part No.	Tube O.D D		d Min.	Width across flat				A	B	ℓ	ℓ1	L	L1
	in	mm		h		H							
				in	mm	in	mm						
GBTA-4	1/4	6.35	4.57	1/2	12.7	9/16	14.28	15.24	17.78	19.55	15.75	27.00	25.00
GBTA-6	3/8	9.52	6.9	5/8	15.87	11/16	17.46	16.76	19.30	23.11	17.50	31.50	29.10
GBTA-8	1/2	12.7	9.4	13/16	20.63	7/8	22.22	22.86	21.84	25.90	23.10	36.00	37.30
GBTA-12	3/4	19.05	14.7	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	24.70	38.80	42.60
GBTA-16	1	25.4	20.3	1-3/8	34.92	1-1/2	38.1	31.24	26.41	36.83	31.70	49.02	54.40

Connects Metric tube to Metric GPI port

Part No.	Tube O.D D	d Min.	Width across flat		A	B	ℓ	ℓ1	L	L1
			h	H						
GBTA-8M	8	5.6	14.3	16	16.20	18.60	21.30	16.80	28.80	27.05

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Adapter GMA



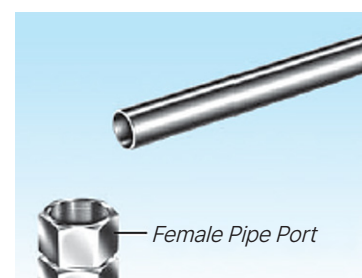
Connects fractional GPI port to female NPT thread

Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat h		ℓ	L
	in	mm			in	mm		
GMA-2-2N	1/8	3.17	1/8	2.00	7/16	11.11	13.45	29.50
GMA-2-4N	1/8	3.17	1/4	2.00	9/16	14.28	13.45	34.80
GMA-3-2N	3/16	4.76	1/8	3.04	7/16	11.11	14.20	30.22
GMA-3-4N	3/16	4.76	1/4	3.04	9/16	14.28	14.20	35.56
GMA-4-2N	1/4	6.35	1/8	4.57	7/16	11.11	15.75	31.80
GMA-4-4N	1/4	6.35	1/4	4.57	9/16	14.28	15.75	37.08
GMA-4-6N	1/4	6.35	3/8	4.57	11/16	17.46	15.75	37.84
GMA-4-8N	1/4	6.35	1/2	4.57	7/8	22.22	15.75	43.43
GMA-5-2N	5/16	7.93	1/8	4.80	7/16	11.11	16.80	32.76
GMA-5-4N	5/16	7.93	1/4	5.60	9/16	14.28	16.80	38.10
GMA-6-2N	3/8	9.52	1/8	4.80	7/16	11.11	17.50	33.50
GMA-6-4N	3/8	9.52	1/4	6.90	9/16	14.28	17.50	38.90
GMA-6-6N	3/8	9.52	3/8	6.90	11/16	17.46	17.50	39.60
GMA-6-8N	3/8	9.52	1/2	6.90	7/8	22.22	17.50	45.20
GMA-8-4N	1/2	12.70	1/4	7.10	9/16	14.28	23.20	44.50
GMA-8-6N	1/2	12.70	3/8	9.40	11/16	17.46	23.20	45.20
GMA-8-8N	1/2	12.70	1/2	9.40	7/8	22.22	23.20	50.50
GMA-10-6N	5/8	15.87	3/8	9.50	11/16	17.46	24.70	47.40
GMA-10-8N	5/8	15.87	1/2	11.90	7/8	22.22	24.70	52.30
GMA-10-12N	5/8	15.87	3/4	11.90	1-1/16	26.98	24.70	52.30
GMA-12-8N	3/4	19.05	1/2	11.90	7/8	22.22	24.70	52.30
GMA-12-12N	3/4	19.05	3/4	14.70	1-1/16	26.98	24.70	52.30
GMA-12-16N	3/4	19.05	1	14.70	1-3/8	34.92	24.70	57.91
GMA-14-12N	7/8	22.22	3/4	15.70	1-1/16	26.98	26.70	54.30
GMA-16-12N	1	25.40	3/4	15.70	1-1/16	26.98	31.70	58.70
GMA-16-16N	1	25.40	1	20.30	1-3/8	34.92	31.70	66.00
GMA-20-20N	1-1/4	31.75	1-1/4	-	1-3/4	44.45	40.00	80.26
GMA-24-24N	1-1/2	38.10	1-1/2	-	2-1/8	53.98	51.50	94.48
GMA-32-32N	2	50.80	2	-	2-3/4	69.85	68.40	119.38

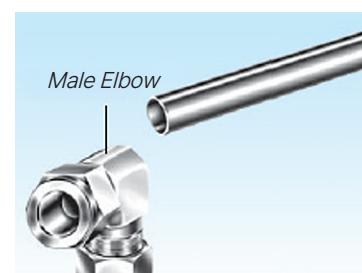
Connects metric tube

Part No.w	Tube O.D D	T R(PT)	d Min.	Width across flat h	ℓ	L
GMA 3M-2R	3	1/8	1.8	12	13.15	29.4
GMA 6M-2R	6	1/8	4.1	12	15.75	32.8
GMA 6M-4R	6	1/4	4.1	14	15.75	38.1
GMA 8M-4R	8	1/4	5.6	14	16.50	39.1
GMA 10M-4R	10	1/4	7.1	14	17.50	39.9
GMA 10M-6R	10	3/8	7.1	17	17.50	40.6
GMA 10M-8R	10	1/2	7.1	22	17.50	45.2
GMA 12M-4R	12	1/4	7.1	14	23.50	46.5
GMA 12M-6R	12	3/8	8.8	17	23.50	46.5
GMA 12M-8R	12	1/2	8.8	22	23.50	51.8
GMA 18M-8R	18	1/2	11.9	22	24.90	53.2
GMA 18M-12R	18	3/4	13.9	27	24.90	53.2
GMA 28M-16R	28	1	22.5	35	31.70	74.7
GMA 28M-20R	28	1-1/4	22.5	46	31.70	76.2
GMA 32M-20R	32	1-1/4	26.5	46	40.00	81.0
GMA 38M-24R	38	1-1/2	31.6	55	51.50	92.2

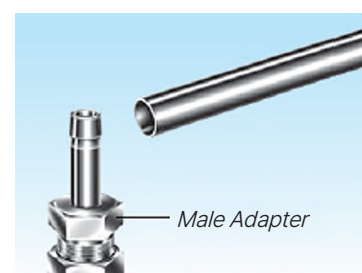
GPI Adapter eliminates alignment problems



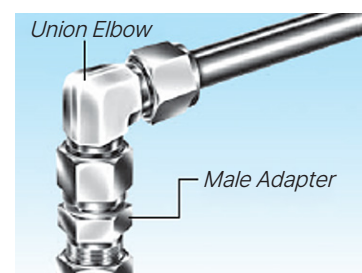
In the direction shown the female port is required to connect with tubing.



The male elbow is positioning in the wrong direction.



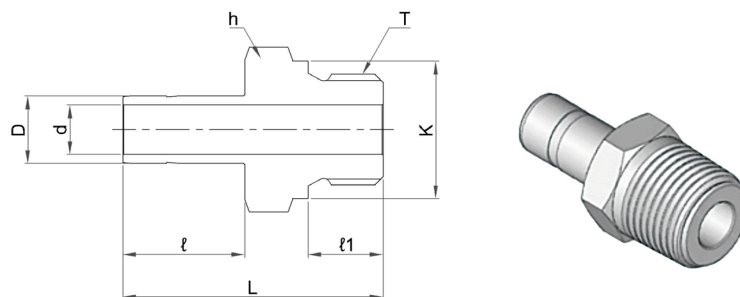
To eliminate the problem, use a male adapter into the female port.



Connect a union elbow to the adapter by tightening the GPI port with a wrench while holding the elbow wrench pad in the desired direction.

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Adapter GMA-G



Connects fractional GPI Port to female ISO Parallel thread

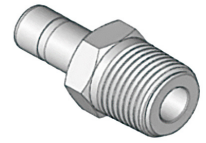
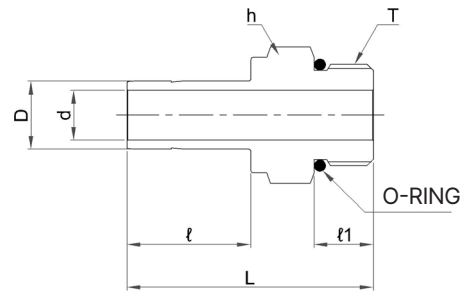
Part No.	Tube O.D D		T G(PF)	d Min.	Width across flat h		ℓ	ℓ1	L	K
	in	mm			in	mm				
GMA-2-2G	1/8	3.17	1/8	2.0	9/16	14.28	13.45	8.00	40.00	13.80
GMA-2-4G	1/8	3.17	1/4	2.0	3/4	19.05	13.45	12.00	35.80	18.00
GMA-4-2G	1/4	6.35	1/8	4.0	9/16	14.28	15.75	8.00	33.27	13.80
GMA-4-4G	1/4	6.35	1/4	4.57	3/4	19.05	15.75	12.00	38.10	18.00
GMA-6-4G	3/8	9.52	1/4	5.0	3/4	19.05	17.50	12.00	39.80	18.00
GMA-6-6G	3/8	9.52	3/8	7.0	7/8	22.22	17.50	12.00	40.64	21.80
GMA-8-4G	1/2	12.7	1/4	5.0	3/4	19.05	23.10	12.00	45.50	18.00
GMA-8-6G	1/2	12.7	3/8	8.0	7/8	22.22	23.10	12.00	46.20	21.80
GMA-8-8G	1/2	12.7	1/2	9.4	1-1/16	26.98	23.10	14.00	49.30	26.00
GMA-12-12G	3/4	19.05	3/4	14.7	1-5/16	33.33	24.70	16.00	54.86	32.00
GMA-16-16G	1	25.4	1	20.0	1-5/8	41.28	31.70	18.00	64.50	39.00

Connects Metric GPI Port to female ISO Parallel thread

Part No.	Tube O.D D	T G(PF)	d Min.	Width across flat	ℓ	ℓ1	L	K
				h				
GMA-6M-2G	6	1/8	4.0	14	15.70	8.00	34.30	13.80
GMA-6M-4G	6	1/4	4.0	19	15.70	12.00	39.10	18.00
GMA-8M-4G	8	1/4	5.6	19	16.80	12.00	40.10	18.00
GMA-10M-4G	10	1/4	5.0	19	17.50	12.00	40.90	18.00
GMA-10M-6G	10	3/8	7.1	22	17.50	12.00	41.70	21.80
GMA-10M-8G	10	1/2	7.1	27	17.50	14.00	44.70	26.00
GMA-12M-4G	12	1/4	5.0	19	23.10	12.00	46.70	18.00
GMA-12M-6G	12	3/8	8.0	22	23.10	12.00	47.20	21.80
GMA-12M-8G	12	1/2	8.8	27	23.10	14.00	50.50	26.00
GMA-18M-8G	18	1/2	12.0	27	24.60	14.00	52.10	26.00
GMA-18M-12G	18	3/4	13.9	32	24.60	16.00	56.10	32.00
GMA-22M-12G	22	3/4	15.9	35	26.60	16.00	57.40	32.00
GMA-25M-16G	25	1	19.8	41	31.70	18.00	67.10	39.00
GMA-28M-16G	28	1	20.0	41	37.50	18.00	72.90	39.00
GMA-28M-20G	28	1-1/4	22.5	50	37.50	20.00	77.00	49.00
GMA-30M-20G	30	1-1/4	24.3	50	40.66	20.00	80.80	49.00
GMA-32M-20G	32	1-1/4	25.0	50	40.00	20.00	81.80	49.00
GMA-38M-24G	38	1-1/2	31.8	55	50.40	22.00	94.50	54.70

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Male SAE Adapter GMA-U

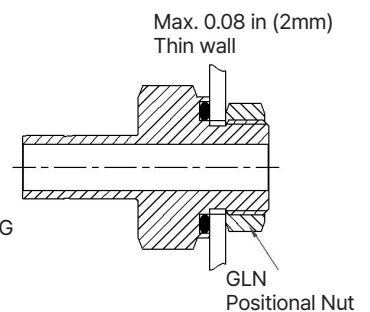
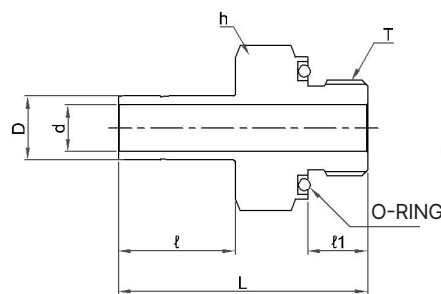


Connectors Fractional GPI Port to SAE
/ MS Straight Thread Boss

Part No.	Tube O.D D		T SAE/MS	d Min.	Width across flat h		ℓ	ℓ1	L	O-Ring Uniform Size No.
	in	mm			in	mm				
GMA-2-2U	1/8	3.17	5/16-24	2.03	7/16	11.11	13.45	7.62	30.48	-902
GMA-4-4U	1/4	6.35	7/16-20	4.4	9/16	14.28	15.75	9.14	35.30	-904
GMA-6-4U	3/8	9.52	7/16-20	5.08	9/16	14.28	17.50	9.14	37.08	-904
GMA-6-6U	3/8	9.52	9/16-18	6.85	11/16	17.46	17.50	9.90	38.60	-906
GMA-6-8U	3/8	9.52	3/4-16	6.85	7/8	22.22	17.50	11.17	40.64	-908
GMA-8-6U	1/2	12.7	9/16-18	7.5	11/16	17.46	23.10	9.90	44.20	-906
GMA-8-8U	1/2	12.7	3/4-16	9.4	7/8	22.22	23.10	11.17	46.22	-908
GMA-12-12U	3/4	19.05	1-1/16-12	14.7	1-1/4	31.75	24.70	15.10	53.34	-912
GMA-16-16U	1	25.4	1-5/16-12	20.3	1-1/2	38.1	31.70	15.10	61.21	-916

Male O-Seal Adapter GMA-UO

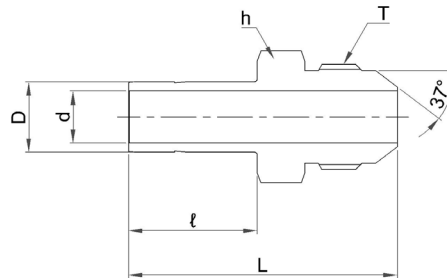
On thin wall tanks or vessels, O-seal fitting works as a leak-tight bulkhead fitting along with a positionable nut GLN without brazing or welding.



Connectors Fractional GPI Port to
O-Seal Female Straight Thread

Part No.	Tube O.D D		T SAE/MS	d Min.	Width across flat h		ℓ	ℓ1	L	O-Ring Uniform Size No.
	in	mm			in	mm				
GMA-2-2UO	1/8	3.17	5/16-24	2.03	9/16	14.28	13.45	8.63	32.51	-011
GMA-3-3UO	3/16	4.76	3/8-24	3.05	5/8	15.87	14.20	9.65	35.05	-012
GMA-4-4UO	1/4	6.35	7/16-20	4.4	3/4	19.05	15.75	10.41	39.11	-013
GMA-5-5UO	5/16	7.93	1/2-20	5.59	7/8	22.22	16.80	11.17	41.65	-112
GMA-6-6UO	3/8	9.52	9/16-18	6.85	15/16	23.81	17.50	11.93	43.18	-113
GMA-8-8UO	1/2	12.7	3/4-16	9.40	1-1/8	28.57	23.10	11.93	49.53	-116

37° Flared Adapter GAMF

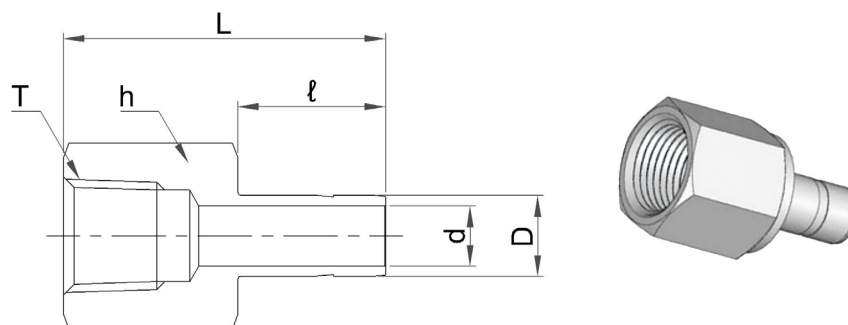


Connectors Fractional GPI Port to
37° Flared Tube

Part No.	Tube O.D D		AN Tube O.D D		T (U)	d Min.	Width across flat h		ℓ	L
	in	mm	in	mm			in	mm		
GAMF-4-4	1/4	6.35	1/4	6.35	7/16-20	4.4	1/2	12.7	15.75	37.10
GAMF-6-6	3/8	9.52	3/8	9.52	9/16-18	6.9	5/8	15.87	17.50	39.63
GAMF-8-6	1/2	12.7	3/8	9.52	9/16-18	7.5	5/8	15.87	23.10	45.70
GAMF-8-8	1/2	12.7	1/2	12.7	3/4-16	9.4	13/16	20.64	23.10	48.52
GAMF-8-10	1/2	12.7	5/8	15.87	7/8-14	9.4	15/16	23.81	23.10	52.00
GAMF-10-10	5/8	15.87	5/8	15.87	7/8-14	11.9	15/16	23.81	27.68	56.13
GAMF-12-12	3/4	19.05	3/4	19.05	1-1/16-12	14.7	1-1/8	28.58	24.70	56.13
GAMF-16-16	1	25.4	1	25.4	1-5/16-12	20.3	1-3/8	34.92	31.70	65.33

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Female Adapter GFA



Connects fractional GPI port to male NPT thread

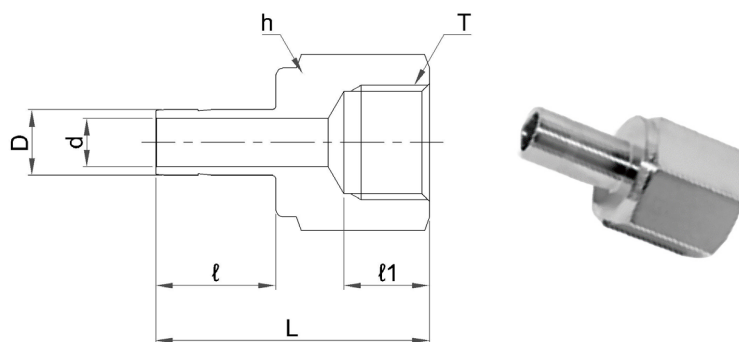
Part No.	Tube O.D D		T (NPT)	d Min.	Width across flat		ℓ	L
					h			
	in	mm			in	mm		
GFA-2-2N	1/8	3.17	1/8	2.00	9/16	14.28	13.45	31.50
GFA-2-4N	1/8	3.17	1/4	2.00	3/4	19.05	13.45	35.30
GFA-3-2N	3/16	4.76	1/8	3.00	9/16	14.28	14.20	32.00
GFA-3-4N	3/16	4.76	1/4	3.00	3/4	19.05	14.20	35.81
GFA-4-2N	1/4	6.35	1/8	4.57	9/16	14.28	15.75	33.02
GFA-4-4N	1/4	6.35	1/4	4.57	3/4	19.05	15.75	37.10
GFA-4-6N	1/4	6.35	3/8	4.57	7/8	22.22	15.75	39.37
GFA-4-8N	1/4	6.35	1/2	4.57	1-1/16	26.98	15.75	45.50
GFA-5-2N	5/16	7.93	1/8	5.60	9/16	14.28	16.80	34.29
GFA-5-4N	5/16	7.93	1/4	5.60	3/4	19.05	16.80	37.59
GFA-6-2N	3/8	9.52	1/8	6.90	9/16	14.28	17.50	34.29
GFA-6-4N	3/8	9.52	1/4	6.90	3/4	19.05	17.50	38.10
GFA-6-6N	3/8	9.52	3/8	6.90	7/8	22.22	17.50	40.38
GFA-6-8N	3/8	9.52	1/2	6.90	1-1/16	26.98	17.50	46.73
GFA-8-4N	1/2	12.70	1/4	9.40	3/4	19.05	23.20	43.43
GFA-8-6N	1/2	12.70	3/8	9.40	7/8	22.22	23.20	45.46
GFA-8-8N	1/2	12.70	1/2	9.40	1-1/16	26.98	23.20	51.80
GFA-10-6N	5/8	15.87	3/8	11.90	7/8	22.22	24.70	48.26
GFA-10-8N	5/8	15.87	1/2	11.90	1-1/16	26.98	24.70	53.84
GFA-10-12N	5/8	15.87	3/4	11.90	1-5/16	33.33	24.70	55.37
GFA-12-8N	3/4	19.05	1/2	14.70	1-1/16	26.98	24.70	52.83
GFA-12-12N	3/4	19.05	3/4	14.70	1-5/16	33.33	24.70	54.86
GFA-12-16N	3/4	19.05	1	14.70	1-5/8	41.27	24.70	58.42
GFA-14-12N	7/8	22.22	3/4	18.20	1-5/16	33.33	26.70	57.15
GFA-16-12N	1	25.40	3/4	20.30	1-5/16	33.33	31.70	60.70
GFA-16-16N	1	25.40	1	20.30	1-5/8	41.27	31.70	64.26
GFA-20-20N	1-1/4	31.75	1-1/4	25.90	2-1/8	53.98	40.00	77.72
GFA-24-24N	1-1/2	38.10	1-1/2	31.80	2-3/8	60.33	51.50	88.90
GFA-32-32N	2	50.80	2	43.70	2-7/8	73.03	68.40	107.44

Connects metric GPI port to male ISO tapered thread

Part No.	Tube O.D D	T R(PT)	d Min.	Width across flat h	ℓ	L
GFA-3M-2R	3	1/8	1.9	14	13.15	31.15
GFA-6M-2R	6	1/8	4.1	14	15.75	32.50
GFA-6M-4R	6	1/4	4.1	19	15.75	37.10
GFA-8M-4R	8	1/4	5.6	19	16.50	37.60
GFA-10M-4R	10	1/4	7.1	19	17.50	38.10
GFA-10M-6R	10	3/8	7.1	22	17.50	40.10
GFA-10M-8R	10	1/2	7.1	27	17.50	46.50
GFA-12M-4R	12	1/4	8.8	19	23.50	43.70
GFA-12M-6R	12	3/8	8.8	22	23.50	46.00
GFA-12M-8R	12	1/2	8.8	27	23.50	52.30
GFA-18M-12R	18	3/4	13.9	32	24.90	54.80

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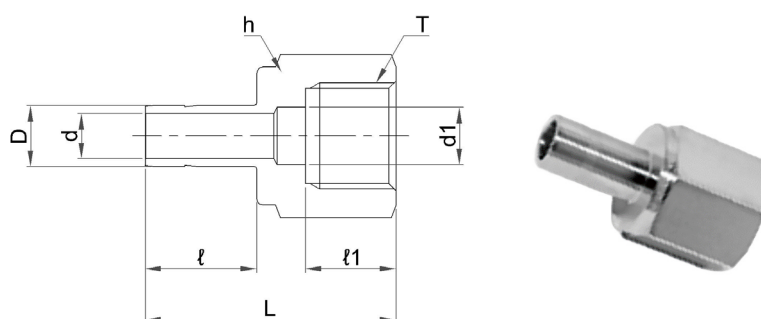
Female ISO Parallel Adapter GFA-GZ



Connectors Fractional GPI Port to Male ISO Parallel Thread

Part No.	Tube O.D D		T G(PF)	d Min.	Width across flat h		ℓ	ℓ1	L
	in	mm			in	mm			
GFA-4-2GZ	1/4	6.35	1/8	4.57	9/16	14.28	15.75	13.00	31.75
GFA-4-4GZ	1/4	6.35	1/4	4.57	3/4	19.05	15.75	18.50	38.10
GFA-6-4GZ	3/8	9.52	1/4	6.9	3/4	19.05	17.50	18.50	39.40
GFA-6-6GZ	3/8	9.52	3/8	6.9	7/8	22.22	17.50	18.50	39.90
GFA-8-8GZ	1/2	12.7	1/2	9.4	1-1/16	26.98	23.20	22.10	49.50

Female ISO Parallel Adapter GFA-GG



Connects Fractional GPI Port to Gauge (Male ISO Parallel Thread)

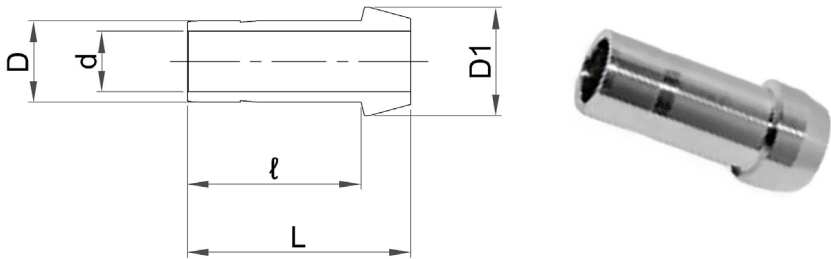
Part No.	Tube O.D D		T G(PF)	d Min.	d1	Width across flat h		ℓ	ℓ1	L
	in	mm				in	mm			
GFA-4-2GG	1/4	6.35	1/8	4.57	4.0	9/16	14.28	15.75	12.00	32.00
GFA-4-4GG	1/4	6.35	1/4	4.57	5.5	3/4	19.05	15.75	12.90	35.30
GFA-6-6GG	3/8	9.52	3/8	6.9	6.5	15/16	23.81	17.50	14.10	39.37
GFA-8-8GG	1/2	12.7	1/2	9.4	7.0	1-1/16	26.98	23.20	18.90	45.72

Connects Metric GPI Port to Gauge (Male ISO Parallel Thread)

Part No.	Tube O.D D	T G(PF)	d Min.	d1	Width across flat	ℓ	ℓ1	L
					h			
GFA-6M-2GG	6	1/8	4.1	4.0	14	15.70	12.00	32.00
GFA-6M-4GG	6	1/4	4.1	5.5	19	15.70	13.00	35.30
GFA-6M-6GG	6	3/8	4.1	6.5	24	15.70	14.22	38.40
GFA-6M-8GG	6	1/2	4.1	7.0	27	15.70	18.90	42.90
GFA-8M-4GG	8	1/4	5.6	5.5	19	16.80	13.00	33.00
GFA-8M-6GG	8	3/8	5.6	6.5	24	16.80	14.22	39.30
GFA-8M-8GG	8	1/2	5.6	7.0	27	16.80	18.90	43.70
GFA-10M-4GG	10	1/4	7.1	5.5	19	17.50	13.00	34.50
GFA-10M-6GG	10	3/8	7.1	6.5	24	17.50	14.22	39.30
GFA-10M-8GG	10	1/2	7.1	7.0	27	17.50	18.90	40.10
GFA-12M-4GG	12	1/4	8.8	5.5	19	23.10	13.00	40.10
GFA-12M-6GG	12	3/8	8.8	6.5	24	23.10	14.22	44.90
GFA-12M-8GG	12	1/2	8.8	7.0	27	23.10	18.90	48.80
GFA-15M-8GG	15	1/2	11.2	7.0	27	24.65	18.90	49.00
GFA-16M-8GG	16	1/2	12.0	7.0	27	24.60	18.90	49.00
GFA-18M-8GG	18	1/2	13.9	7.0	27	24.90	18.90	49.30
GFA-22M-8GG	22	1/2	18.3	7.0	27	26.60	18.90	52.00
GFA-25M-8GG	25	1/2	19.8	7.0	30	31.70	18.90	56.10

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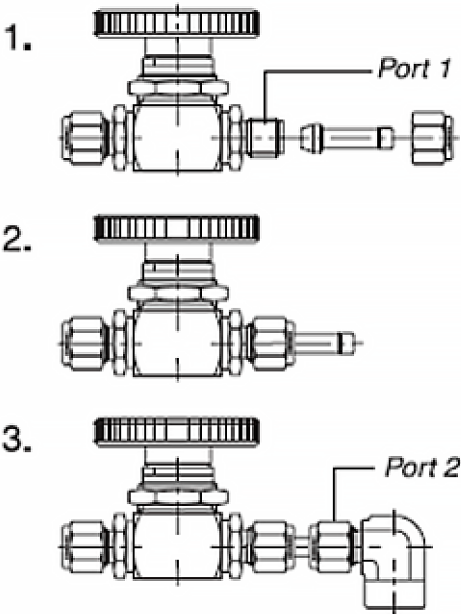
Port Connector GPC



GPI port connector facilitates close connection to another port.

Connects two fractional GPI ports						
Part No.	Tube O.D D		d Min.	D1	ℓ	L
	in	mm				
GPC-1	1/16	1.59	0.80	3.30	10.66	13.72
GPC-2	1/8	3.17	2.00	6.09	15.75	22.35
GPC-4	1/4	6.35	4.57	9.39	18.79	24.64
GPC-5	5/16	7.93	5.60	10.92	20.06	25.90
GPC-6	3/8	9.52	6.90	12.70	20.32	26.16
GPC-8	1/2	12.70	9.40	15.74	25.90	35.81
GPC-12	3/4	19.05	14.70	22.09	27.68	37.33
GPC-16	1	25.40	20.30	28.44	34.54	48.00

Connects two metric GPI ports					
Part No.	Tube O.D D	d Min.	D1	ℓ	L
GPC-3M	3	1.9	6.0	15.70	22.20
GPC-4M	4	2.2	7.0	16.67	25.81
GPC-6M	6	4.1	9.0	18.70	24.60
GPC-8M	8	5.6	11.0	20.00	25.90
GPC-10M	10	7.1	13.1	20.20	26.10
GPC-12M	12	8.8	15.0	26.00	35.80
GPC-15M	15	11.2	19.0	27.78	37.40
GPC-16M	16	12.0	19.0	27.60	37.40
GPC-18M	18	13.9	21.0	27.91	37.40
GPC-20M	20	15.5	23.0	29.20	38.90
GPC-22M	22	16.1	24.97	29.30	39.20
GPC-25M	25	19.9	28.0	35.60	49.50
GPC-28M	28	22.5	34.3	48.30	63.50
GPC-32M	32	26.5	39.5	52.40	69.70
GPC-38M	38	31.6	47.1	61.40	81.90

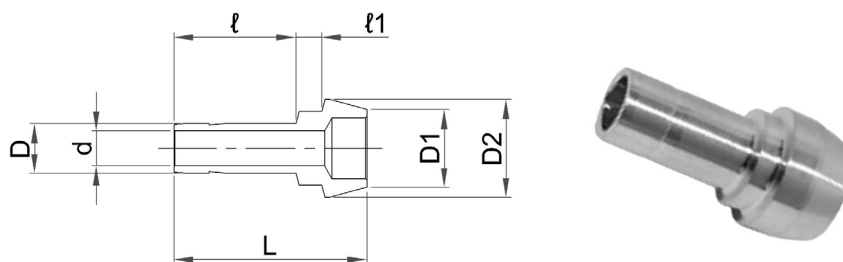


Installation Instructions

1. Remove the nut and ferrules from GPI Tube fittings port 1 and set nut only (no ferrules) over the port connector.
2. Tighten the nut with wrench until sharp rise in torque is felt.
3. Insert the other end of port connector into port 2 and tighten nut 1-1/4 turns with wrench. for 1/8", 3mm only 3/4 turn from finger tight.

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Reducing Port Connector GRPC



Connects Two fractional GPI Ports

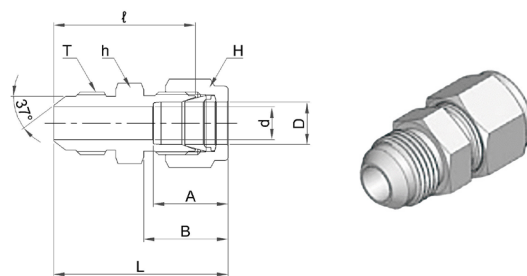
Connects Two Fractional Pipe O.D.					d Min.	D2	ℓ	ℓ1	L
Part No.	Tube O.D		D						
	in	mm	in	mm					
GRPC-2-1	1/8	3.17	1/16	1.59	0.80	6.10	8.64	2.03	17.27
GRPC-4-2	1/4	6.35	1/8	3.17	2.00	9.39	13.45	3.30	22.60
GRPC-6-2	3/8	9.52	1/8	3.17	2.00	12.70	13.45	3.81	23.11
GRPC-6-4	3/8	9.52	1/4	6.35	4.57	12.70	15.75	3.30	24.89
GRPC-8-4	1/2	12.7	1/4	6.35	4.57	15.74	15.75	3.81	29.21
GRPC-8-6	1/2	12.7	3/8	9.52	6.90	15.74	17.67	3.30	30.48
GRPC-12-8	3/4	19.05	1/2	12.7	9.40	22.09	23.20	3.81	37.85
GRPC-16-8	1	25.4	1/2	12.7	9.40	28.40	24.47	4.82	42.67
GRPC-16-12	1	25.4	3/4	19.05	14.70	28.40	25.90	4.06	43.43

Connects Two Metric GPI Ports

Part No.	Tube O.D		d Min.	D2	ℓ	ℓ1	L
	D1	D					
GRPC-6M-3M	6	3	1.90	9.00	13.50	3.20	22.60
GRPC-8M-6M	8	6	4.10	11.00	15.70	3.10	24.70
GRPC-10M-6M	10	6	4.10	13.10	15.70	3.40	25.00
GRPC-10M-8M	10	8	5.60	13.10	16.80	3.10	26.00
GRPC-12M-6M	12	6	4.10	15.00	15.70	3.60	29.10
GRPC-12M-8M	12	8	5.60	15.00	16.80	3.40	29.80
GRPC-12M-10M	12	10	7.10	15.00	17.50	3.10	30.40
GRPC-16M-6M	16	6	4.10	19.00	15.75	3.60	30.40
GRPC-16M-12M	16	12	8.80	19.00	23.10	3.40	36.20
GRPC-28M-25M	28	25	19.90	34.30	33.00	8.20	56.50
GRPC-32M-25M	32	25	19.90	39.50	33.00	9.90	60.30
GRPC-38M-25M	38	25	19.90	47.10	33.00	12.30	65.80

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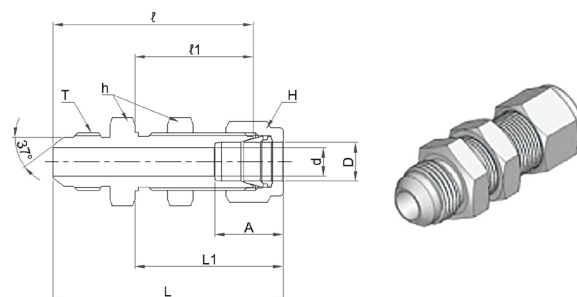
AN Union GAU



Connects fractional tube to AN flared tube

Part No.	Tube O.D D		AN Tube Flare Size		Straight Thread T(U)	d Min.	Width across flat				A	B	ℓ	L
	in	mm	in	mm			h		H					
							in	mm	in	mm				
GAU-1-2	1/16	1.59	1/8	3.17	5/16-24	1.27	7/16	11.11	5/16	7.93	8.63	10.92	23.36	27.17
GAU-2-2	1/8	3.17	1/8	3.17	5/16-24	1.52	7/16	11.11	7/16	11.11	12.70	15.24	24.89	31.49
GAU-2-4	1/8	3.17	1/4	6.35	7/16-20	2.28	1/2	12.70	7/16	11.11	12.70	15.24	28.44	35.05
GAU-4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
GAU-5-5	5/16	7.93	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	16.25	18.54	30.98	38.35
GAU-6-4	3/8	9.52	1/4	6.35	7/16-20	4.31	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
GAU-6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
GAU-8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	13/16	20.64	7/8	22.22	22.86	21.84	35.81	45.97
GAU-12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-1/8	28.58	1-1/8	28.58	24.38	21.84	43.18	53.34
GAU-16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-3/8	34.92	1-1/2	38.10	31.24	26.41	49.27	61.46
GAU-20-20	1-1/4	31.75	1-1/4	31.75	1-5/8-12	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.46	77.56
GAU-24-24	1-1/2	38.10	1-1/2	38.10	1-7/8-12	34.03	2-1/8	53.97	2-1/4	57.15	50.03	45.21	63.07	90.25
GAU-32-32	2	50.80	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	62.73	83.24	120.57

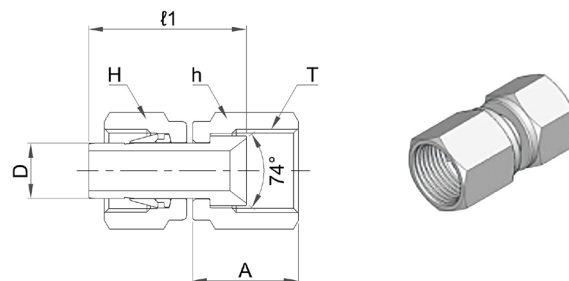
AN Bulkhead Union GABU



Connects fractional tube to AN flared tube

Part No.	Tube O.D D		AN Tube Flare Size		Straight Thread T(U)	d Min.	Width across flat				A	ℓ	ℓ1	L	L1	Panel Hole Drill size	Panel Max. Thick.
							h		H								
	in	mm	in	mm			in	mm	in	mm							
GABU-2-2	1/8	3.17	1/8	3.17	5/16-24	1.77	1/2	12.70	7/16	11.11	13.71	40.85	24.63	47.45	31.23	8.33	12.70
GABU-4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	5/8	15.87	9/16	14.28	15.24	46.48	26.16	53.84	33.52	11.50	10.16
GABU-6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	3/4	19.05	11/16	17.46	16.76	49.78	29.46	57.15	36.83	14.68	11.17
GABU-8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	15/16	23.81	7/8	22.22	22.86	55.62	31.75	65.78	41.91	19.44	12.70
GABU-12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-3/16	30.16	1-1/8	28.58	24.38	68.83	37.33	78.99	47.49	25.79	16.76
GABU-16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-5/8	41.27	1-1/2	38.10	31.24	80.26	45.21	92.45	57.40	33.73	19.05
GABU-20-20	1-1/4	31.75	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.63	1-7/8	47.63	41.14	86.37	47.75	108.47	69.85	41.67	19.05
GABU-24-24	1-1/2	38.10	1-1/2	38.10	1-7/8-12	34.03	2-1/4	57.15	2-1/4	57.15	50.03	94.33	49.27	121.51	76.45	49.61	19.05
GABU-32-32	2	50.80	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	114.29	56.38	151.62	93.71	67.07	19.05

AN Adapter GAA



Connects fractional GPI port to male AN

					Straight Thread T(U)	Width across flat				A	ℓ1
Part No.	Tube O.D D		AN Tube Flare Size			h		H			
	in	mm	in	mm		in	mm	in	mm		
GAA-2-2	1/8	3.17	1/8	3.17	5/16-24	3/8	9.52	7/16	11.11	13.71	18.54
GAA-2-4	1/8	3.17	1/4	6.35	7/16-20	9/16	14.28	7/16	11.11	15.74	19.05
GAA-4-4	1/4	6.35	1/4	6.35	7/16-20	9/16	14.28	9/16	14.28	15.74	21.33
GAA-6-6	3/8	9.52	3/8	9.52	9/16-18	11/16	17.46	11/16	17.46	18.28	24.89
GAA-8-8	1/2	12.70	1/2	12.70	3/4-16	7/8	22.22	7/8	22.22	21.59	31.75

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

• GPI-SAE Fittings

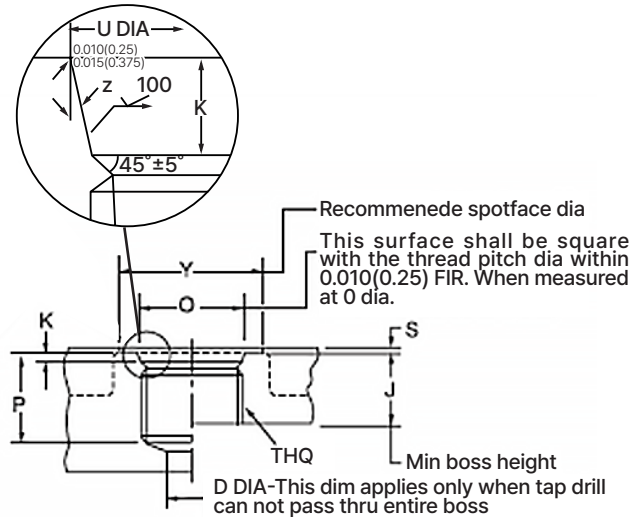
GPI SAE Straight O-Ring Seal Fittings are of positionable feature and provide connection tube to straight thread boss. Further this has an advantage of eliminating welding and brazing process when used as bulkhead fitting on thin wall tanks or vessels.

These fittings are designed and manufactured to SAE standards as below :

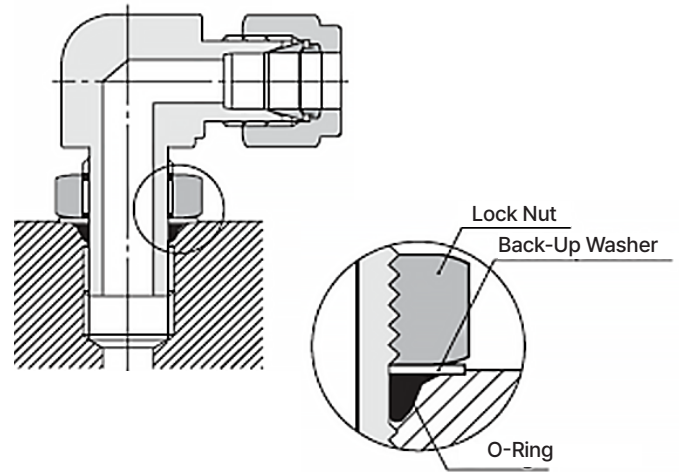
Male or External Fitting End Dimensions to SAE J514, Straight thread to SAE J475

(equivalent to ANSI B1.1 or ISO R725), Female or Internal Straight Thread Boss to SAEJ1926, See diagram below.

• SAE Internal Straight Thread Boss



• O-Ring position after Installation



Details of GPI-SAE Internal Straight Thread Boss										
Nom. Tube O.D.	Thread Size	D Min.	J Min.	K (± 0.2)	O Min.	P _d Min.	U _w (+0.13, -0)	Y _c	S _{bc} Max	Z ($\pm 1^\circ$)
1/8	5/16-24	1.6	10.0	1.9	11	12.0	9.1	17	1.6	12°
3/16	3/8-24	3.2	10.0	1.9	13	12.0	10.7	19	1.6	12°
1/4	7/16-20	4.4	11.5	2.4	15	14.0	12.4	21	1.6	12°
5/16	1/2-20	6.0	11.5	2.4	16	14.0	14.0	23	1.6	12°
3/8	9/16-18	7.5	12.7	2.5	18	15.5	15.6	25	1.6	12°
1/2	3/4-16	10.0	14.3	2.5	22	17.5	20.6	30	2.4	15°
5/8	7/8-14	12.5	16.7	2.5	26	20.0	23.9	34	2.4	15°
3/4	1-1/16-12	16.0	19.0	3.3	32	23.0	29.2	41	2.4	15°
7/8	1-3/16-12	18.0	19.0	3.3	35	23.0	32.3	45	2.4	15°
1	1-5/16-12	21.0	19.0	3.3	38	23.0	35.5	49	3.2	15°
1-1/4	1-5/8-12	27.0	19.0	3.3	48	23.0	43.5	58	3.2	15°
1-1/2	1-7/8-12	33.0	19.0	3.3	54	23.0	49.8	65	3.2	15°
2	2-1/2-12	70.0	19.0	3.3	70	23.0	65.7	88	3.2	15°

a. Diameter U shall be concentric with the thread pitch diameter within 0.13 full indicator reading (FIR) and shall be free from longitudinal and spiral tool marks. Annular tool marks up to 2.5 Micro meters max. shall be permissible.

b. This is the Maximum recommended spotface depth to permit sufficient wrench grip for the proper tightening of the fitting or locknut.

c. If the face of the boss is on a machined surface, dimensions Y and S need not apply as long as R 0.25/ 0.375 is maintained to avoid damage to the O-Ring during installation.

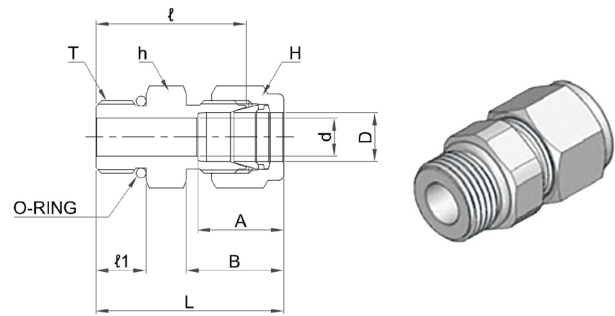
d. Tap drill depths given require the use of bottoming taps to produce the specified full thread lengths. Where standard taps are used, the tap drill depths must be increased accordingly.

O-Ring and straight thread size for SAE Fittings Bosses					
Nominal Tube O.D.	Port Size	Thread Size	O-Ring		
			Size No.	I.D. inch	Cross Section inch
1/8	2	5/16-24	902	0.239	0.064
3/16	3	3/8-24	903	0.301	0.064
1/4	4	7/16-20	904	0.351	0.072
5/16	5	1/2-20	905	0.414	0.072
3/8	6	9/16-18	906	0.468	0.078
1/2	8	3/4-16	908	0.644	0.087
5/8	10	7/8-14	910	0.755	0.097
3/4	12	1-1/16-12	912	0.924	0.116
7/8	14	1-3/16-12	914	1.048	0.116
1	16	1-5/16-12	916	1.171	0.116
1-1/4	20	1-5/8-12	920	1.475	0.118
1-1/2	24	1-7/8-12	924	1.720	0.118
2	32	2-1/2-12	932	2.337	0.118

Installation Instructions

1. Ensure the locknut is fully raised.
 2. Lubricate the O-Ring with a light oil or petroleum and turn the fitting into the straight thread boss until the metal washer is in contact with the boss
 3. Position the fitting by backing it out (not more than 1 turn counter-clockwise) until the GPI-Tube fitting is oriented in the desired direction.
 4. With a back up wrench, hold the wrench pad and tighten the locknut until the washer is set against the face of the boss
- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

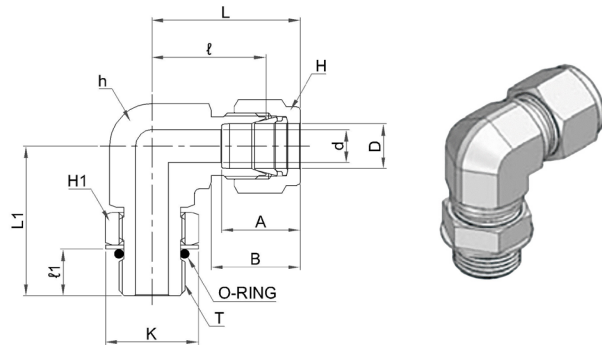
SAE Male Connector GSMC



Connects fractional tube to GPI-**SAE** straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	d Min.	Width across flat				A	B	ℓ	ℓ1	L	O-Ring Uniform Size No.
	in	mm			h		H							
					in	mm	in	mm						
GSMC-2-2U	1/8	3.17	5/16-24	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.26	7.62	29.97	-902
GSMC-4-4U	1/4	6.35	7/16-20	4.82	9/16	14.28	9/16	14.28	15.24	17.78	26.67	9.14	34.03	-904
GSMC-4-6U	1/4	6.35	9/16-18	4.82	11/16	17.46	9/16	14.28	15.24	17.78	28.19	9.90	35.56	-906
GSMC-4-8U	1/4	6.35	3/4-16	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	11.17	37.59	-908
GSMC-4-10U	1/4	6.35	7/8-14	4.82	1	25.40	9/16	14.28	15.24	17.78	33.27	12.70	40.64	-910
GSMC-5-5U	5/16	7.93	1/2-20	5.84	5/8	15.87	5/8	15.87	16.25	18.54	27.43	9.14	34.79	-905
GSMC-6-4U	3/8	9.52	7/16-20	5.08	5/8	15.87	11/16	17.46	16.76	19.30	28.19	9.14	35.56	-904
GSMC-6-6U	3/8	9.52	9/16-18	7.11	11/16	17.46	11/16	17.46	16.76	19.30	29.71	9.90	37.08	-906
GSMC-6-8U	3/8	9.52	3/4-16	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	11.17	39.11	-908
GSMC-6-10U	3/8	9.52	7/8-14	7.11	1	25.40	11/16	17.46	16.76	19.30	34.79	12.70	42.16	-910
GSMC-8-6U	1/2	12.70	9/16-18	7.11	13/16	20.64	7/8	22.22	22.86	21.84	28.95	9.90	39.11	-906
GSMC-8-8U	1/2	12.70	3/4-16	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	11.17	41.91	-908
GSMC-8-10U	1/2	12.70	7/8-14	10.41	1	25.40	7/8	22.22	22.86	21.84	34.79	12.70	44.95	-910
GSMC-8-12U	1/2	12.70	1-1/16-12	10.41	1-1/4	31.75	7/8	22.22	22.86	21.84	38.86	14.98	49.02	-912
GSMC-10-8U	5/8	15.87	3/4-16	10.66	15/16	23.81	1	25.40	24.38	21.84	31.75	11.17	41.91	-908
GSMC-10-10U	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	24.38	21.84	35.05	12.70	45.21	-910
GSMC-12-8U	3/4	19.05	3/4-16	10.66	1-1/16	26.98	1-1/8	28.57	24.38	21.84	35.81	11.17	45.97	-908
GSMC-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/4	31.75	1-1/8	28.57	24.38	21.84	38.86	14.98	49.02	-912
GSMC-14-14U	7/8	22.22	1-3/16-12	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	38.86	14.98	49.02	-914
GSMC-16-12U	1	25.40	1-1/16-12	16.76	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	14.98	53.34	-912
GSMC-16-16U	1	25.40	1-5/16-12	22.35	1-1/2	38.10	1-1/2	38.10	31.24	26.41	42.16	14.98	54.35	-916
GSMC-20-20U	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	46.22	14.98	68.32	-920
GSMC-24-24U	1-1/2	38.10	1-7/8-12	34.03	2-1/8	53.98	2-1/4	57.15	50.03	45.21	50.54	14.98	77.72	-924
GSMC-32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	62.73	64.26	14.98	101.6	-932

Positionable SAE Male Elbow GSML-U

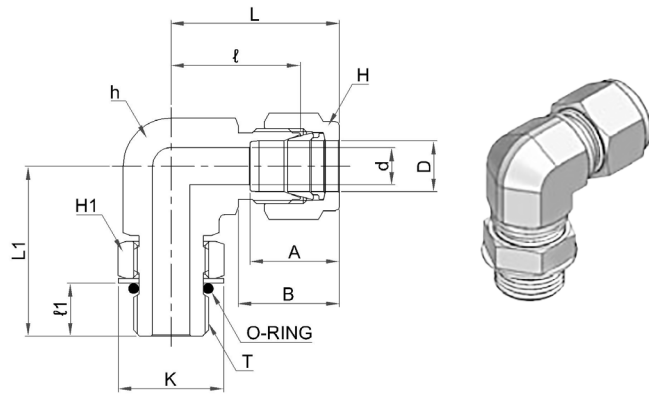


Connects fractional tube to GPI-**SAE** straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	d Min.	Width across flat						A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
	in	mm			h		H		H1									
					in	mm	in	mm	in	mm								
GSML-4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
GSML-5-5U	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	5/8	15.87	16.25	18.54	22.86	9.90	30.22	29.46	18.28	-905
GSML-6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
GSML-6-8U	3/8	9.52	3/4-16	7.11	13/16	20.64	11/16	17.46	7/8	22.22	16.76	19.30	27.43	12.70	34.79	37.84	25.65	-908
GSML-8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
GSML-10-10U	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	1	25.40	24.38	21.84	29.46	14.22	39.62	43.43	29.46	-910
GSML-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
GSML-14-14U	7/8	22.22	1-3/16-12	18.28	1-1/4	31.75	1-1/4	31.75	1-3/8	34.92	25.90	21.84	33.02	16.76	43.18	50.54	40.38	-914
GSML-16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.59	43.94	-916
GSML-20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.76	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
GSML-24-24U	1-1/2	38.10	1-7/8-12	34.03	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
GSML-32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Positionable Male Elbow GSML-G



Connects fractional tube to ISO parallel thread

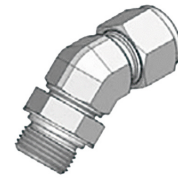
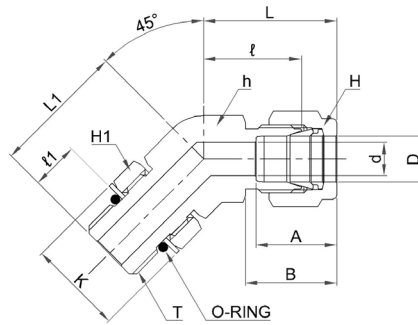
Part No.	Tube O.D.		T G(PF)	d Min.	Width across flat						A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
	D				h		H		H1									
	in	mm			in	mm	in	mm	in	mm								
GSML-4-2G	1/4	6.35	1/8	4.06	1/2	12.7	9/16	14.28	9/16	14.28	15.24	17.78	19.60	8.12	26.92	26.42	15.20	P8
GSML-4-4G	1/4	6.35	1/4	4.82	5/8	15.87	11/16	17.46	3/4	19.05	15.24	17.78	21.60	9.14	28.95	32.30	20.30	-111
GSML-6-4G	3/8	9.52	1/4	5.84	5/8	15.87	11/16	17.46	3/4	19.05	16.76	19.30	23.10	9.14	30.48	32.30	20.30	-111
GSML-6-6G	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	3/4	19.05	16.76	19.30	25.90	9.39	33.27	37.10	24.40	-113
GSML-8-4G	1/2	12.7	1/4	5.84	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.90	9.14	36.06	35.10	20.30	-111
GSML-8-6G	1/2	12.7	3/8	7.87	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.90	9.39	36.06	37.10	24.40	-113
GSML-8-8G	1/2	12.7	1/2	10.41	15/16	23.81	7/8	22.22	1-1/16	26.98	22.86	21.84	27.90	12.95	38.10	43.40	29.50	P18
GSML-12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	1-1/16	26.98	24.38	21.84	29.70	12.95	39.87	45.21	29.50	P18
GSML-12-12G	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	1-3/8	34.92	24.38	21.84	29.70	12.95	39.87	48.77	36.30	-119
GSML-16-16G	1	25.4	1	19.81	1-3/8	34.92	1-1/2	38.1	1-5/8	41.28	31.24	26.41	36.80	13.97	49.02	53.60	46.20	-217

Connects metric tube to ISO parallel thread

Part No.	Tube O.D. D	T G(PF)	d Min.	Width across flat			A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
				h	H	H1								
GSML-6M-2G	6	1/8	4.0	12.7	14	14.28	15.30	17.70	19.60	8.10	27.00	26.40	15.20	P8
GSML-6M-4G	6	1/4	4.8	15.8	14	19.05	15.30	17.70	21.60	9.10	29.00	32.30	20.30	-111
GSML-6M-6G	6	3/8	4.8	20.6	14	22.22	15.30	17.70	24.40	9.40	31.80	37.10	24.40	-113
GSML-8M-2G	8	1/8	4.0	14.2	16	14.28	16.20	18.60	21.30	8.10	28.80	27.40	15.20	P8
GSML-8M-4G	8	1/4	5.9	15.8	16	19.05	16.20	18.60	22.40	9.10	29.90	32.20	20.30	-111
GSML-10M-4G	10	1/4	5.9	20.6	19	19.05	17.20	19.50	25.90	9.10	33.50	35.00	20.30	-113
GSML-10M-6G	10	3/8	7.9	20.6	19	22.22	17.20	19.50	25.90	9.40	33.50	37.10	24.40	-111
GSML-12M-4G	12	1/4	5.9	20.6	22	19.05	22.80	22.00	25.90	9.10	36.00	35.00	20.30	-113
GSML-12M-6G	12	3/8	7.9	20.6	22	22.22	22.80	22.00	25.90	9.40	36.00	37.10	24.40	-113
GSML-12M-8G	12	1/2	9.5	23.8	22	26.98	22.80	22.00	27.90	13.00	38.00	43.40	29.50	P18

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

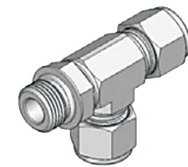
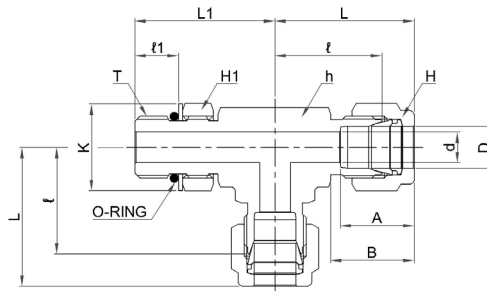
Positionable 45° SAE Male Elbow GSMBL



Connects fractional tube to
GPI-SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	d Min.	Width across flat						A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
	in	mm			h		H		H1									
					in	mm	in	mm	in	mm								
GSMBL-4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	18.28	9.90	25.65	25.65	16.51	-904
GSMBL-6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	20.57	11.17	27.94	28.19	20.06	-906
GSMBL-8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	21.84	12.70	32.00	32.25	25.65	-908
GSMBL-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/8	28.58	1-1/8	28.58	1-1/4	31.75	24.38	21.84	29.71	16.76	39.87	47.24	36.57	-912
GSMBL-16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	35.30	16.76	47.49	50.54	43.94	-916

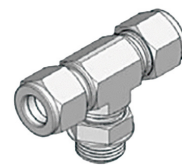
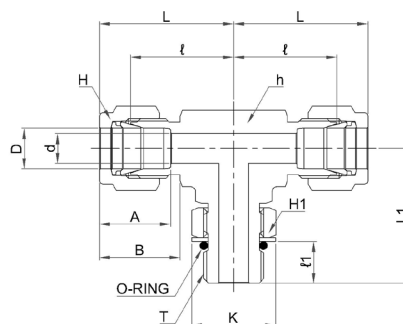
Positionable SAE Male Run Tee GSMRT



Connects fractional tube to
GPI-SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	d Min.	Width across flat						A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
	in	mm			h		H		H1									
					in	mm	in	mm	in	mm								
GSMRT-4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
GSMRT-6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
GSMRT-8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
GSMRT-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/8	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
GSMRT-16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.60	43.94	-916
GSMRT-20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
GSMRT-24-24U	1-1/2	38.10	1-7/8-12	34.03	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
GSMRT-32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

Positionable SAE Male Branch Tee GSMBT



Connects fractional tube to
GPI-SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	d Min.	Width across flat						A	B	ℓ	ℓ1	L	L1	K	O-Ring Uniform Size No.
					h		H		H1									
	in	mm			in	mm	in	mm	in	mm								
GSMBT-4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
GSMBT-6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
GSMBT-8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
GSMBT-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
GSMBT-16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.60	43.94	-916
GSMBT-20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
GSMBT-24-24U	1-1/2	38.10	1-7/8-12	34.03	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
GSMBT-32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

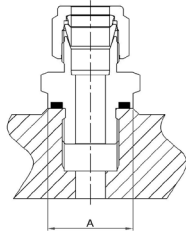
• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

• O-Seal Connector

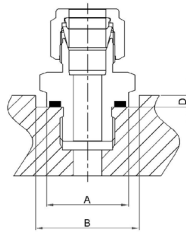
GPI O-ring seal fittings provide leak-tight sealing on both vacuum and high pressure with a smooth & flat surface perpendicular to the threaded port to ensure metal to metal contact.

The standard Buna N O-ring is contained in a precision groove to prevent O-ring extrusion at high pressure and for a controlled squeeze in a vacuum service.

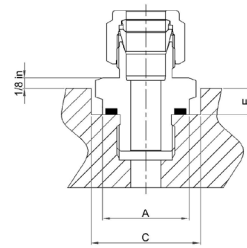
Raised Port



Counter-Bored Port



Recessed Port



Mounting Dimensions for O-seal connectors

GPI Part No.	Straight Thread	Pipe Thread	Diameter						Depth			
			A		B		C		D		E	
			Min	Min	Min	Min	Min	Min	Max	Max	Max	Max
			inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
GOSTC-2-2U	5/16-24	-	0.50	12.7	0.59	15.0	0.66	16.8	0.09	2.3	0.16	5.6
GOSTC-3-3U	3/8-24	-	0.56	14.2	0.66	16.8	0.75	19.1	0.09	2.3	0.22	5.6
GOSTC-4-4U	7/16-20	-	0.69	17.5	0.78	19.8	0.88	22.4	0.16	4.1	0.28	7.1
GOSTC-5-5U	1/2-20	-	0.75	19.1	0.91	23.1	1.03	26.2	0.16	4.1	0.31	7.9
GOSTC-6-6U	9/16-18	-	0.81	20.6	0.97	24.6	1.09	27.7	0.16	4.1	0.31	7.9
GOSTC-8-8U	3/4-16	-	1.00	25.4	1.16	29.5	1.31	33.3	0.16	4.1	0.34	8.6
GOSTC-12-12U	1-1/16-12	-	1.41	35.8	1.53	38.9	1.75	44.5	0.22	5.6	0.50	12.7
GOSTC-16-16U	1-5/16-12	-	1.69	42.9	1.78	45.2	2.03	51.6	0.22	5.6	0.56	14.2
GOPTC-2-2	-	1/8 NPT	0.69	17.5	0.78	19.8	0.88	22.4	0.16	4.1	0.28	7.1
GOPTC-4-2	-	1/8 NPT	0.69	17.5	0.78	19.8	0.88	22.4	0.16	4.1	0.28	7.1
GOPTC-4-4	-	1/4 NPT	0.87	22.1	0.97	24.6	1.09	27.7	0.16	4.1	0.31	7.9
GOPTC-6-6	-	3/8 NPT	1.00	25.4	1.16	29.5	1.31	33.3	0.16	4.1	0.34	8.6
GOPTC-6-8	-	1/2 NPT	1.22	31.0	1.34	34.0	1.53	38.9	0.22	5.6	0.44	11.2
GOPTC-8-8	-	1/2 NPT	1.22	31.0	1.34	34.0	1.53	38.9	0.22	5.6	0.44	11.2

• When installing an O-ring seal fitting:

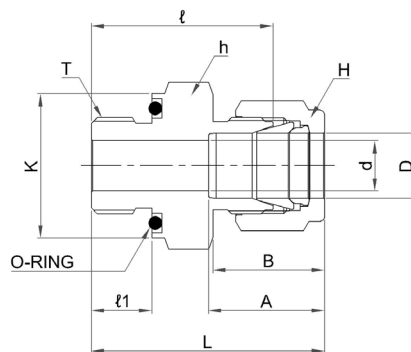
1. Hand-tighten in until the squeeze on the O-ring can be felt during the last 1/4 turn
2. Snug the fitting lightly with a wrench

• When connecting & disconnecting the tubing to the O-ring fitting:

1. Use a back-up wrench on the fitting hex so it does not turn while the nut is being tightened at the tubing connection.
2. When disconnecting the tubing also use a back-up wrench so the fitting does not turn.
3. For a recessed port, use a thin back-up wrench (1/8") to hold the fitting hex (Fig. 3).

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

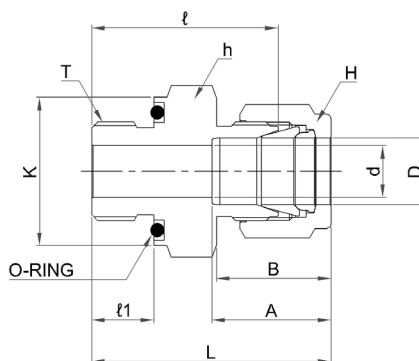
O-Seal Straight Thread Connector GOSTC



Connects fractional tube to female straight thread

Part No.	Tube O.D. D		Straight Thread T(u)	d Min.	Width across flat				A	B	ℓ	ℓ1	L	K	O-Ring Uniform Size No.
	in	mm			h		H								
					in	mm	in	mm							
GOSTC-2-2U	1/8	3.17	5/16-24	2.28	9/16	14.28	7/16	11.11	12.70	15.24	26.16	8.63	32.76	14.00	-011
GOSTC-3-3U	3/16	4.76	3/8-24	3.04	5/8	15.87	1/2	12.70	13.71	16.00	27.68	9.65	34.29	15.80	-012
GOSTC-4-4U	1/4	6.35	7/16-20	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.98	10.41	38.35	18.80	-111
GOSTC-5-5U	5/16	7.93	1/2-20	5.80	7/8	22.22	5/8	15.87	16.25	18.54	33.27	11.17	40.64	21.80	-112
GOSTC-6-6U	3/8	9.52	9/16-18	7.11	15/16	23.81	11/16	17.46	16.76	19.30	35.05	11.93	42.41	23.60	-113
GOSTC-8-8U	1/2	12.70	3/4-16	10.41	1-1/8	28.57	7/8	22.22	22.86	21.84	35.81	11.93	45.97	28.50	-116
GOSTC-12-12U	3/4	19.05	1-1/16-12	15.74	1-1/2	38.10	1-1/8	28.58	24.38	21.84	42.16	14.22	52.32	37.90	-215
GOSTC-16-16U	1	25.40	1-5/16-12	22.35	1-3/4	44.45	1-1/2	38.10	31.24	26.41	45.97	14.22	58.16	44.20	-219

O-Seal Pipe Thread Connector GOPTC

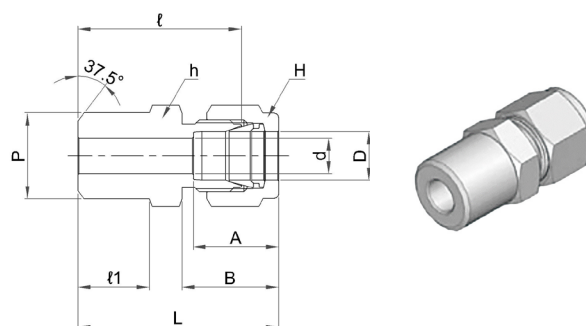


Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T (NPT)	d Min.	Width across flat				A	B	ℓ	ℓ1	L	K	O-Ring Uniform Size No.
	in	mm			h		H								
					in	mm	in	mm							
GOPTC-2-2N	1/8	3.17	1/8	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.16	7.11	32.76	18.80	-111
GOPTC-4-2N	1/4	6.35	1/8	4.82	3/4	19.05	9/16	14.28	15.24	17.78	27.68	7.11	35.05	18.80	-111
GOPTC-4-4N	1/4	6.35	1/4	4.82	15/16	23.81	9/16	14.28	15.24	17.78	30.98	9.65	38.35	23.60	-113
GOPTC-6-4N	3/8	9.52	1/4	7.11	15/16	23.81	11/16	17.46	16.76	19.30	32.51	9.65	39.87	23.60	-113
GOPTC-6-6N	3/8	9.52	3/8	7.11	1-1/8	28.58	11/16	17.46	16.76	19.30	34.03	10.41	41.40	28.50	-116
GOPTC-6-8N	3/8	9.52	1/2	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	39.62	13.46	46.99	33.00	-212
GOPTC-8-8N	1/2	12.70	1/2	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	39.62	13.46	49.78	33.00	-212

- ISO Paralled Threads are available upon request.
- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Male Pipe Weld Connector GMPWC



Connects fractional tube to pipe

Part No.	Tube O.D. D		Male Pipe Size P		d Min.	Width across flat				A	B	ℓ	ℓ1	L
	in	mm	Nom.	O.D.		h		H						
						in	mm	in	mm					
GMPWC-2-2P	1/8	3.17	1/8	10.29	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	9.65	31.24
GMPWC-3-2P	3/16	4.76	1/8	10.29	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	9.65	31.24
GMPWC-4-2P	1/4	6.35	1/8	10.29	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	9.65	32.76
GMPWC-4-4P	1/4	6.35	1/4	13.72	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	14.22	37.84
GMPWC-5-2P	5/16	7.93	1/8	10.29	5.08	9/16	14.28	5/8	15.87	16.25	18.54	26.67	9.65	34.03
GMPWC-5-4P	5/16	7.93	1/4	13.72	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	14.22	38.60
GMPWC-6-4P	3/8	9.52	1/4	13.72	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	14.22	39.87
GMPWC-6-6P	3/8	9.52	3/8	17.15	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	14.22	39.87
GMPWC-6-8P	3/8	9.52	1/2	21.34	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	19.05	43.23
GMPWC-8-6P	1/2	12.70	3/8	17.15	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.27	14.22	43.43
GMPWC-8-8P	1/2	12.70	1/2	21.34	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	19.05	49.02
GMPWC-8-12P	1/2	12.70	3/4	26.67	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	19.05	50.54
GMPWC-10-8P	5/8	15.87	1/2	21.34	12.70	15/16	23.81	1	25.40	24.38	21.84	38.86	19.05	49.02
GMPWC-12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	19.05	50.54
GMPWC-16-16P	1	25.40	1	33.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	50.03	23.87	62.23
GMPWC-20-20P	1-1/4	31.75	1-1/4	42.16	27.68	1-3/4	44.45	1-7/8	47.62	41.14	38.86	55.11	23.87	77.21
GMPWC-24-24P	1-1/2	38.10	1-1/2	48.26	34.03	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	26.16	88.90
GMPWC-32-32P	2	50.80	2	60.33	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	26.92	113.53

Connects metric tube to pipe

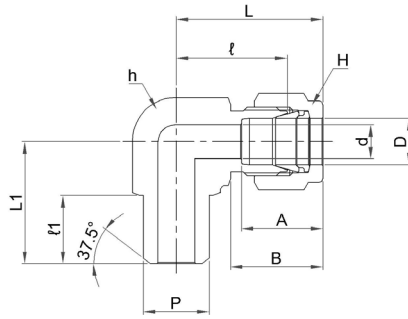
Part No.	Tube O.D. D	Male Pipe Size P		d Min.	With across flat		A	B	ℓ	ℓ1	L
		Nom.	O.D.		h	H					
GMPWC-3M-2P	3	1/8	10.29	2.4	12	12	12.9	15.3	23.1	9.7	29.7
GMPWC-4M-2P	4	1/8	10.29	2.4	12	12	13.7	16.1	24.1	9.7	30.7
GMPWC-6M-2P	6	1/8	10.29	4.8	14	14	15.3	17.7	25.4	9.7	32.8
GMPWC-6M-4P	6	1/4	13.72	4.8	14	14	15.3	17.7	30.2	14.2	37.6
GMPWC-8M-2P	8	1/8	10.29	5.1	15	16	16.2	18.6	26.7	9.7	34.2
GMPWC-8M-4P	8	1/4	13.72	6.4	15	16	16.2	18.6	31.2	14.2	38.7
GMPWC-8M-8P	8	1/2	21.34	6.4	22	16	16.2	18.6	37.3	19.0	44.8
GMPWC-10M-4P	10	1/4	13.72	7.1	18	19	17.2	19.5	33.3	14.2	40.9
GMPWC-10M-6P	10	3/8	17.15	7.9	18	19	17.2	19.5	32.5	14.2	40.1
GMPWC-10M-8P	10	1/2	21.34	7.9	22	19	17.2	19.5	38.1	19.0	45.7
GMPWC-12M-4P	12	1/4	13.72	7.1	22	22	22.8	22.0	33.3	14.2	43.4
GMPWC-12M-6P	12	3/8	17.15	9.5	22	22	22.8	22.0	33.3	14.2	43.4
GMPWC-12M-8P	12	1/2	21.34	9.5	22	22	22.8	22.0	38.1	19.0	48.2
GMPWC-14M-6P	14	3/8	17.15	10.3	24	25	24.4	22.0	34.0	14.2	44.1
GMPWC-15M-8P	15	1/2	21.34	11.9	24	25	24.4	22.0	38.9	19.0	49.0
GMPWC-16M-8P	16	1/2	21.34	12.7	24	25	24.4	22.0	38.9	19.0	49.0
GMPWC-18M-8P	18	1/2	21.34	13.5	27	30	24.4	22.0	40.4	19.0	50.5
GMPWC-32M-20P	32	1-1/4	42.16	28.6	46	50	42.0	41.6	56.6	23.9	79.6
GMPWC-38M-24P	38	1-1/2	48.26	33.7	55	60	49.4	47.9	64.0	26.2	91.6

• GPI welding information

GPI weld ends are constructed to Schedule 80 wall or greater. The first step is to remove the nut and ferrules from the GPI Tube fitting to protect them from weld heat and cover the threads with a protective device (i.e. another nut or a plug) GP to protect the GPI port threads & sealing surface from weld spatter. Only finger-tighten the protective device so that you can use it many times. The Second step is to tack weld at four positions 90° apart to hold the fitting in place to ensure alignment and concentricity of the components, then complete the weld.

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

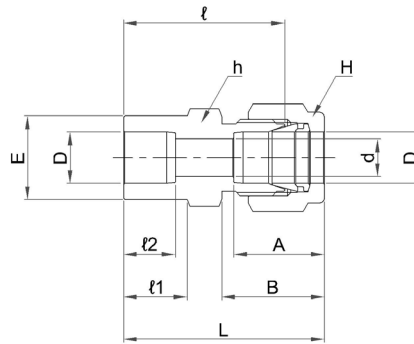
Male Pipe Weld Elbow GMPWL



Connects fractional tube to pipe

Part No.	Tube O.D. D		Male Pipe Size P		d Min.	Width across flat				A	B	ℓ	ℓ1	L	L1
	in	mm	Nom.	O.D.		h		H							
						in	mm	in	mm						
GMPWL-2-2P	1/8	3.17	1/8	10.29	2.30	1/2	12.70	7/16	11.11	12.70	15.24	18.30	9.65	26.92	18.79
GMPWL-4-4P	1/4	6.35	1/4	13.72	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	14.22	26.92	23.36
GMPWL-6-4P	3/8	9.52	1/4	13.72	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	14.22	30.48	25.40
GMPWL-8-8P	1/2	12.70	1/2	21.34	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	19.05	36.06	33.02
GMPWL-12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	19.05	39.87	36.83

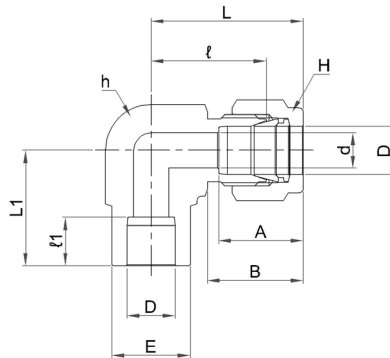
Tube Socket Weld Connector GTSWC



Connects fractional tubes

Part No.	Tube O.D. D		d Min.	E	Width across flat				A	B	ℓ	ℓ1	ℓ2	L
	in	mm			h		H							
					in	mm	in	mm						
GTSWC-2-2	1/8	3.17	2.28	7.87	7/16	11.11	7/16	11.11	12.70	15.24	22.35	8.63	6.35	28.95
GTSWC-4-4	1/4	6.35	4.82	11.17	1/2	12.70	9/16	14.28	15.24	17.78	26.16	10.41	7.87	33.52
GTSWC-6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	30.22	11.93	9.65	37.59
GTSWC-8-8	1/2	12.70	10.41	19.05	13/16	20.64	7/8	22.22	22.86	21.84	30.98	11.93	12.70	41.14
GTSWC-12-12	3/4	19.05	15.74	26.67	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	11.93	14.22	43.43
GTSWC-16-16	1	25.40	22.35	33.27	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	14.22	19.05	52.57

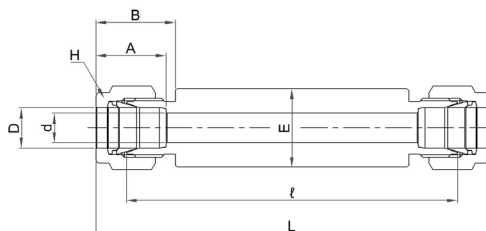
Tube Socket Weld Elbow GTSWL



Connects fractional tubes

Part No.	Tube O.D. D		d Min.	E	Width across flat				A	B	ℓ	ℓ1	L	L1
					h		H							
	in	mm			in	mm	in	mm						
GTSWL-4-4	1/4	6.35	4.82	12.70	1/2	12.70	9/16	14.28	15.24	17.78	19.55	7.87	26.92	19.55
GTSWL-6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	23.11	9.65	30.48	23.11
GTSWL-8-8	1/2	12.70	10.41	20.57	13/16	20.64	7/8	22.22	22.86	21.84	25.90	12.70	36.06	25.90
GTSWL-12-12	3/4	19.05	15.74	26.92	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	14.22	39.87	29.71
GTSWL-16-16	1	25.40	22.35	35.05	1-3/8	34.93	1-1/2	38.10	31.24	26.41	36.83	19.05	49.02	36.83

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.



Connects fractional tubes										
Part No.	Tube O.D. D		d Min.	E Dia.	Width across flat H		A	B	ℓ	L
	in	mm			in	mm				
GBUW-1	1/16	1.58	1.3	10.0	5/16	7.94	8.60	10.90	64.20	71.80
GBUW-2	1/8	3.17	2.3	12.0	7/16	11.11	12.70	15.20	67.20	80.50
GBUW-3	3/16	4.76	3.0	12.0	1/2	12.7	13.70	16.00	69.00	82.00
GBUW-4	1/4	6.35	4.8	14.0	9/16	14.28	15.20	17.80	70.80	86.00
GBUW-5	5/16	7.93	6.3	16.0	5/8	15.87	16.30	18.50	73.70	87.10
GBUW-6	3/8	9.52	7.0	19.0	11/16	17.46	16.80	19.30	73.70	88.60
GBUW-8	1/2	12.7	10.4	23.0	7/8	22.22	22.90	21.80	73.70	93.70
GBUW-10	5/8	15.87	12.7	25.0	1	25.4	24.40	21.80	73.70	93.70
GBUW-12	3/4	19.02	15.7	28.0	1-1/8	28.58	24.40	21.80	73.70	93.70
GBUW-14	7/8	22.22	18.3	32.0	1-1/4	31.75	25.90	21.80	73.70	93.70
GBUW-16	1	25.4	22.3	38.0	1-1/2	38.1	31.20	26.40	78.50	102.80
GBUW-20	1-1/4	31.75	28.0	50.0	1-7/8	47.63	41.10	38.90	83.90	127.70
GBUW-24	1-1/2	38.1	34.0	55.0	2-1/4	57.15	50.00	45.20	86.10	140.40
GBUW-32	2	50.8	46.0	80.0	3	76.2	67.60	62.70	100.90	175.50

Flange Connector GF

Flanged Piping and Instrumentation Thread fitting are integrated in a compact one-piece flange connector. The design eliminates welding or threading.

- Flange design meets ASME, DIN, and JIS standards
- Stainless Steel 316 material standard.

Tube Fitting	Flange		
	Standard	nominal flange sizes	Pressure class rating
	ANSI / ASME B16.5	NPS 1/2 to 2 in.	Class 150 to 2500
	EN 1092-1	DN 15 to 50	PN 40 to 100
1/8 to 2 in. OD 3 to 50 mm OD	JIS B2220	DN 15 to 50	PN 10K to 63K

Pressure-Temperature Ratings

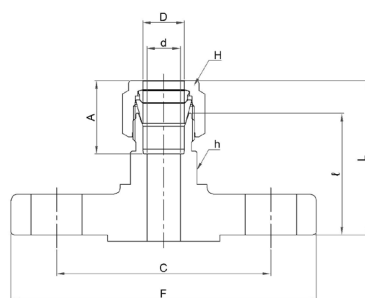
Stainless Steel ANSI Flange Ratings as per ASME B16.5 Group 2.2 Material. The ultimate pressure rating of flange connector is determined by the lower pressure rating end either flange end or Thread Fitting end.

Working Pressure by classes, psig							
Temp. °F	ASME Class						
	150	300	400	600	900	1500	2500
-20 to 100	275	720	960	1440	2160	3600	6000
200	235	620	825	1240	1860	3095	5160
300	215	560	745	1120	1680	2795	4660
400	195	515	685	1025	1540	2570	4280
500	170	480	635	955	1435	2390	3980
600	140	450	600	900	1355	2255	3760
650	125	440	590	885	1325	2210	3680
700	110	435	580	870	1305	2170	3620
750	95	425	570	855	1280	2135	3560
800	80	420	565	845	1265	2110	3520
850	65	420	555	835	1255	2090	3480
900	50	415	555	830	1245	2075	3460
950	35	385	515	775	1160	1930	3220
1000	20	365	485	725	1090	1820	3030
1100	-	305	405	610	915	1525	2545

Working Pressure by classes, bar							
TEMP. °C	ASME Class						
	150	300	400	600	900	1500	2500
-29 to 38	19.0	49.6	66.2	99.3	148.9	248.2	413.7
50	18.4	48.1	64.2	96.2	144.3	240.6	400.9
100	16.2	42.2	56.3	84.4	126.6	211.0	351.6
150	14.8	38.5	51.3	77.0	115.5	192.5	320.8
200	13.7	35.7	47.6	71.3	107.0	178.3	297.2
250	12.1	33.4	44.5	66.8	100.1	166.9	278.1
300	10.2	31.6	42.2	63.2	94.9	158.1	263.5
325	9.3	30.9	41.2	61.8	92.7	154.4	257.4
350	8.4	30.3	40.4	60.7	91.0	151.6	252.7
375	7.4	29.9	39.8	59.8	89.6	149.4	249.0
400	6.5	29.4	39.3	58.9	88.3	147.2	245.3
425	5.5	29.1	38.9	58.3	87.4	145.7	242.9
450	4.6	28.8	38.5	57.7	86.5	144.2	240.4
475	3.7	28.7	38.2	57.3	86.0	143.4	238.9
500	2.8	28.2	37.6	56.5	84.7	140.9	235.0
538	1.4	25.2	33.4	50.0	75.2	125.5	208.9
600	-	20.3	27.0	40.5	60.8	101.3	168.9

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Flange Connector GF



Connects ANSI Flange to Fractional Tube

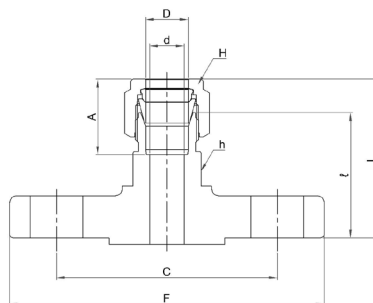
Part No. Raised Face Flange	Tube O.D. D		ANSI Flange NPS	ANSI Class	d Min.	Wrench Flat h	A	ℓ	L	C	F	H
	in	mm										
GF-4TF8-150	1/4	6.35	1/2	150	4.82	20.63	15.24	33.52	40.89	60.45	88.90	9/16
GF-6TF8-150	3/8	9.52	1/2	150	4.82	20.63	16.76	34.85	42.21	60.45	88.90	11/16
GF-6TF8-300	3/8	9.52	1/2	300	7.11	20.63	16.76	38.1	45.46	66.54	95.25	11/16
GF-6TF16-150	3/8	9.52	1	150	7.11	20.63	16.76	37.85	45.21	79.20	108.00	11/16
GF-8TF8-150	1/2	12.7	1/2	150	10.41	20.63	22.86	35.05	45.21	60.45	88.90	7/8
GF-8TF8-300	1/2	12.7	1/2	300	10.41	20.63	22.86	37.85	48.01	66.54	95.25	7/8
GF-8TF8-1500	1/2	12.7	1/2	1500	10.41	20.63	22.86	46.05	56.21	82.60	121.00	7/8
GF-8TF16-150	1/2	12.7	1	150	10.41	20.63	22.86	38.01	48.26	79.21	107.95	7/8
GF-8TF32-150	1/2	12.7	2	150	10.41	20.63	22.86	42.92	53.08	120.65	152.40	7/8
GF-12TF16-150	3/4	19.05	1	150	15.74	31.75	24.38	40.13	50.29	79.24	107.95	1-1/8
GF-12TF16-900	3/4	19.05	1	900	15.74	31.75	24.38	46.05	56.21	101.60	150.00	1-1/8
GF-16TF16-150	1	25.4	1	150	22.35	34.92	31.24	48.26	60.45	79.24	107.95	1-1/2
GF-24TF32-150	1-1/2	38.1	2	150	34.03	53.97	50.03	59.18	86.36	120.65	152.40	2-1/4
GF-32TF32-150	2	50.8	2	150	45.97	69.85	67.56	67.05	104.39	120.65	152.40	3

Connects DIN Flange to Metric tube, Pressure Class PN40

Part No. Raised Face Flange	Tube O.D. D (mm)	DIN Flange Size, DN	d Min.	Wrench Flat h	A	ℓ	L	C	F	H (mm)
GF-6MF25-40-C	6	25	4.8	20	15.3	40.1	47.50	85.00	115.00	14
GF-12MF15-40-C	12	15	9.5	20	22.8	38.4	48.50	65.00	95.00	22
GF-12MF25-40-C	12	25	9.5	20	22.8	40.4	50.50	85.00	115.00	22
GF-12MF50-40-C	12	50	9.5	20	22.8	45.2	55.30	125.00	165.00	22
GF-18MF15-40-C	18	15	15.1	32	24.4	41.7	51.80	65.00	95.00	30
GF-18MF25-40-C	18	25	15.1	32	24.4	43.7	53.80	85.00	115.00	30
GF-25MF25-40-C	25	25	21.8	35	31.3	51.8	64.00	85.00	115.00	38
GF-38MF50-40-C	38	50	33.7	55	49.4	62.7	90.40	125.00	165.00	60
GF-50MF50-40-C	50	50	45.2	70	65.0	66.3	103.00	125.00	165.00	76

• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Flange Connector GF



Connects JIS Flange to Fractional tube, Pressure Class 10K

Part No. Raised Face Flange	Tube O.D. D		JIS Flange Size, DN	d Min.	Wrench Flat h	A	ℓ	L	C	F	H
	in	mm									
GF-4TF15-10RF	1/4	6.35	15	4.82	20.63	15.24	34.79	42.16	70.10	94.99	9/16
GF-6TF15-10RF	3/8	9.52	15	7.11	20.63	16.76	36.32	43.68	70.10	94.99	11/16
GF-8TF15-10RF	1/2	12.7	15	10.41	20.63	22.86	36.32	46.48	70.10	94.99	7/8
GF-12TF15-10RF	3/4	19.05	15	15.74	31.75	24.38	38.35	48.51	70.10	94.99	1-1/8
GF-16TF25-10RF	1	25.4	25	22.35	34.92	31.24	48.76	60.96	89.91	124.96	1-1/2
GF-32TF50-10RF	2	50.8	50	45.97	69.85	67.56	64.51	101.85	119.88	154.94	3

Connects JIS Flange to Metric tube, Pressure Class 10K

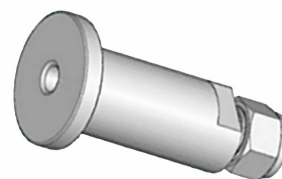
Part No. Raised Face Flange	Tube O.D. D (mm)	JIS Flange Size, DN	d Min.	Wrench Flat h	A	ℓ	L	C	F	H (mm)
GF-12MF15-10RF	12	15	9.5	20	22.80	36.30	46.50	70.00	95.00	22
GF-18MF15-10RF	18	15	15.1	32	24.40	38.40	48.50	70.00	95.00	30
GF-25MF25-10RF	25	25	21.8	35	31.30	48.80	61.00	90.00	125.00	38

Lab Joint Flange Connector GFJ

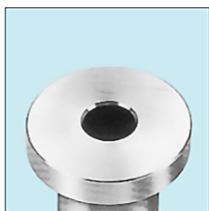
GPI Tube Fittings Lapped flange connector provides safe and easy connections between process lines and instruments. It provides GPI tube Fittings connection ends by a lap joint pipe flange to ANSI B 16.5 or BS 1560. Both "smooth" and "serrated" surface finishes are available. For identification of serrated surface finish, groove is provided.

Connects ANSI Flange to Fractional Tube

Part No.	Tube O.D. (D)	Dimensions, mm				
	in	L	ℓ1	ℓ	B	B1
Serrated Finish						
GFJ-4T8F-SR-SSA	1/4	80.8	56.5	6.5	35	22.2
GFJ-6T8F-SR-SSA	3/8	82.3	56.5	6.5	35	22.2
GFJ-8T8F-SR-SSA	1/2	84.8	56.5	6.5	35	22.2
Smooth Finish						
GFJ-4T8F-SM-SSA	1/4	80.8	56.5	6.5	35	22.2
GFJ-6T8F-SM-SSA	3/8	82.3	56.5	6.5	35	22.2
GFJ-8T8F-SM-SSA	1/2	84.8	56.5	6.5	35	22.2



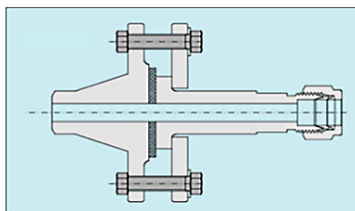
Installation



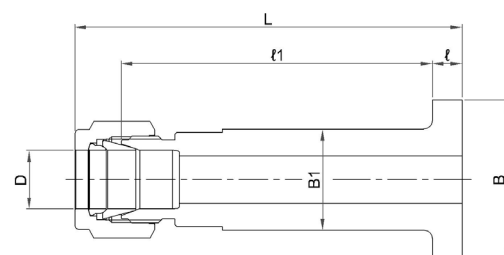
Smooth (SM)



Serrated (SR)



Lapped flange connector installed with gasket between seal faces



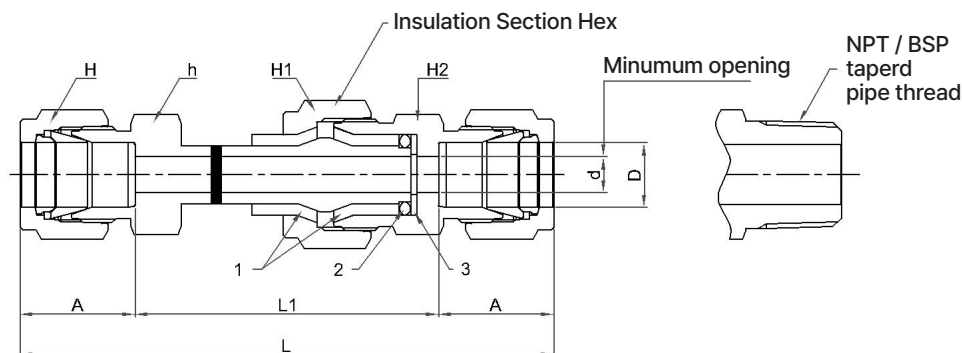
- Smooth (SM) Seal Face Roughness :
Ra 3.2 to 6.3
Micrometer
- External Groove Serrated (SR) Seal
Face Roughness :
Ra 6.3 to 12.5
Micrometer

Lap joint flange connector is designed to connect process flange to instrument. GPI Tube Fitting port is constructed integrally out of ANSI B16.5 Class 2500 flange, **Smooth** and **Concentric Serrated** flange seal face are available. External groove is provided to identify the serrated face.

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Dielectric Fittings GDF

1. Thermoplastic insulators
2. VITON Quad seal (O-ring)
3. PTFE backup ring



The GPI Dielectric tube fittings are for use in applications where electrical current flowing through a pipe or tube line must be interrupted to protect vital instrumentation and metering equipment.

Part No.	Tube O.D. (D)		Pipe Thread T (NPT)	Dimensions, in. (mm)							
	in	mm		d Min.	A (mm)	L (mm)	L1 (mm)	h	H	H1	H2
GDF-4	1/4	6.35	-	0.19 (4.8)	15.24	95.80	65.30	1/2 (12.7)	9/16 (14.28)	7/8 (22.22)	-
GDF-6	3/8	9.52	-	0.28 (7.1)	16.76	99.60	65.80	5/8 (15.87)	11/16 (17.46)	7/8 (22.22)	13/16 (20.64)
GDF-8	1/2	12.7	-	0.28 (7.1)	22.86	106.00	60.20	13/16 (20.64)	7/8 (22.22)	7/8 (22.22)	-
GDF-12M	-	12	-	0.28 (7.1)	22.80	107.00	61.70	22 mm	22 mm	7/8 (22.22)	22 mm
GDF-6-4N	3/8	9.52	1/4	0.28 (7.1)	16.76	94.70	-	5/8 (15.87)	11/16 (17.46)	7/8 (22.22)	7/8 (22.22)
GDF-12M-10M	-	12	-	0.39 (10.1)	22.80	107.00	61.70	22 mm	22 mm	1 (25.4)	22 mm
GDF-12M-8GB-E10M	-	12	PF 1/2	0.39 (10.1)		107.00	92.40	22 mm	22 mm	1 (25.4)	22 mm

Features

- Metal components are machined from 316 stainless steel for use in rugged environments.
- Thermoplastic insulation with excellent electrical, chemical, ultraviolet resistance and low water absorption maintains dielectric strength and integrity over a wide range of operating and climate conditions.
- Gageable GPI tube fitting or tapered pipe thread end connections provide direct connection to tubing or piping system.

Benefits

- Maximum safety and protection to critical monitoring station instrumentation.
- Long component life in rugged environment.
- Maximum flow capability provided by all sizes of GPI dielectric tube fittings.
- The unique value and performance offered by GPI tube fitting connections

Caution

This "NO wrenching label" is placed on the insulation section hex. This insulation connection must not be disconnected.



CAUTION
DO NOT WRENCH THIS HEX
NOR DISASSEMBLE THIS CONNECTION

Technical data

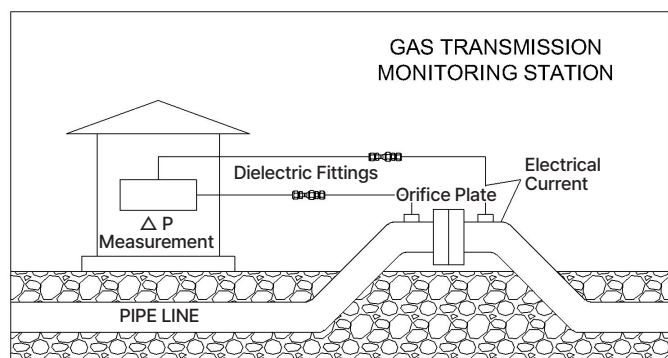
- Electrical resistance of insulators @ 70°F (20°C) : $10 \times 10^6 \Omega$ @ 10 V (dc)
- Pressure Rating : 5,000 psig (344 bar)
- Temperature Rating : -40 to 200°F (-40 to 93°C)

Materials

- Body : 316 stainless steel
- insulations : PEEK
- Quad seal (O-ring) : 70 durometer VITON
- Backup ring : Virgin PTFE

Function

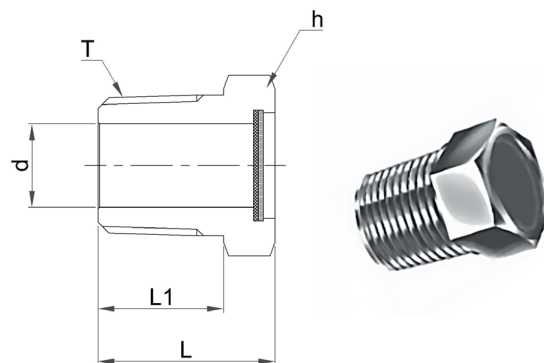
- The insulation function is performed by thermoplastic insulators.
- FKM O-ring and PTFE back up ring provide fluid containment function within the fitting.
- GPI twin ferrule system provides reliable sealing in the impulse line tubing.



- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Vent Protector GVP

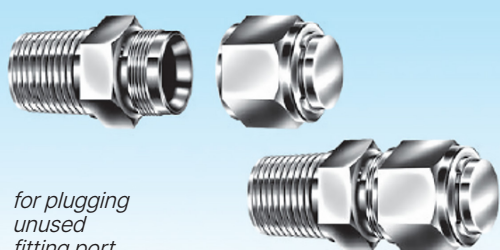
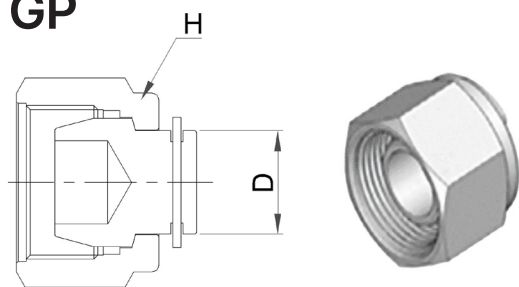
- Construction with bored-through pipe plug and stainless steel 40 × 40 mesh, 0.01 in. diameter.
- GPI vent protector known as bug protector protects foreign particles like insects or debris from entering open ends of instruments or outlet vents.



Connects to female NPT Port

Part No.	T NPT	d Min.	h		L	L1
			in	mm		
GVP-4N	1/4	7.11	9/16	14.28	19.8	14.22
GVP-6N	3/8	10.4	11/16	17.46	20.57	14.22
GVP-8N	1/2	12.7	7/8	22.22	26.92	19.05
GVP-12N	3/4	18.3	1-1/16	26.98	28.70	19.05

Plug GP



for plugging
unused
fitting port

fractional

Part No.	Tube O.D. D		Width across flat H	
	in	mm	in	mm
GP-1	1/16	1.59	5/16	7.93
GP-2	1/8	3.17	7/16	11.11
GP-3	3/16	4.76	1/2	12.70
GP-4	1/4	6.35	9/16	14.28
GP-5	5/16	7.93	5/8	15.87
GP-6	3/8	9.52	11/16	17.46
GP-8	1/2	12.70	7/8	22.22
GP-10	5/8	15.87	1	25.40
GP-12	3/4	19.05	1-1/8	28.58
GP-14	7/8	22.22	1-1/4	31.75
GP-16	1	25.40	1-1/2	38.10
GP-20	1-1/4	31.75	1-7/8	47.63
GP-24	1-1/2	38.10	2-1/4	57.15
GP-32	2	50.80	3	76.20

Installation Instructions

1. Remove the nut and ferrules from the body
2. With a wrench, 1/4 turn from the finger-tight position, (1/8 turn for 1/8", 3/16" and 2mm, 3mm and 4mm)

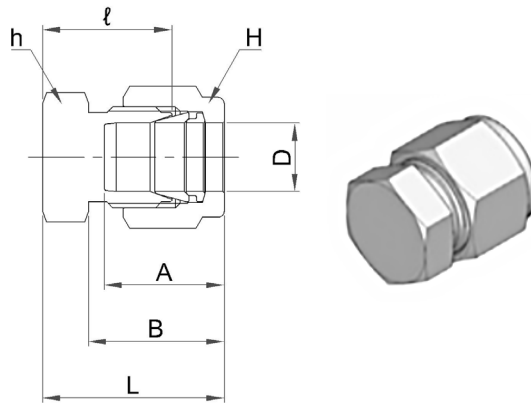
- NOTE -

Do not tighten 1-1/4 turns as this has machined ferrule not the standard ferrules. Tighten 1/8 turn for 1/16, 1/8, and 3/16 inch and 2,3 and 4mm size plug, 1/2 turn for over 1 and 25mm size plug.

metric

Part No.	Tube O.D. D	Width Across flat H	Part No.	Tube O.D. D	Width across flat H
	D	H		D	H
GP-2M	2	12.0	GP-16M	16	25
GP-3M	3	12.0	GP-18M	18	30
GP-4M	4	12.0	GP-20M	20	32
GP-6M	6	14.0	GP-22M	22	32
GP-8M	8	16.0	GP-25M	25	38
GP-10M	10	19.0	GP-28M	28	46
GP-12M	12	22.0	GP-32M	32	50
GP-15M	15	25.0	GP-38M	38	60

- All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.



Cap end of fractional tube

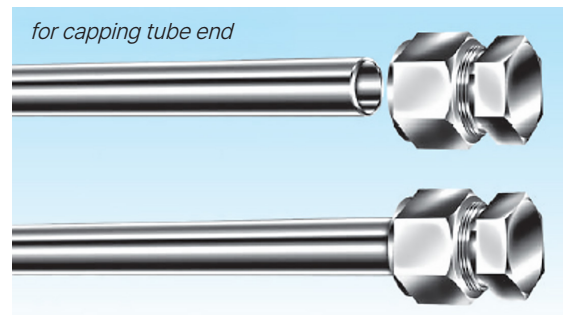
Part No.	Tube O.D. D		Width across flat				A	B	ℓ	L
			h		H					
	in	mm	in	mm	in	mm				
GC-1	1/16	1.59	5/16	7.93	5/16	7.93	8.63	10.92	11.20	14.18
GC-2	1/8	3.17	7/16	11.11	7/16	11.11	12.70	15.24	13.46	20.06
GC-3	3/16	4.76	7/16	11.11	1/2	12.70	13.71	16.00	14.73	21.33
GC-4	1/4	6.35	1/2	12.70	9/16	14.28	15.24	17.78	16.00	23.26
GC-5	5/16	7.93	9/16	14.28	5/8	15.87	16.25	18.54	17.01	24.38
GC-6	3/8	9.52	5/8	15.87	11/16	17.46	16.76	19.30	18.28	25.65
GC-8	1/2	12.70	13/16	20.63	7/8	22.22	22.86	21.84	19.05	29.21
GC-10	5/8	15.87	15/16	23.81	1	25.40	24.38	21.84	19.81	29.97
GC-12	3/4	19.05	1-1/16	26.98	1-1/8	28.57	24.38	21.84	21.33	31.49
GC-14	7/8	22.22	1-3/16	30.16	1-1/4	31.75	25.90	21.84	23.87	34.03
GC-16	1	25.40	1-3/8	34.92	1-1/2	38.10	31.24	26.41	26.16	38.35
GC-20	1-1/4	31.75	1-3/4	44.45	1-7/8	47.63	41.14	38.86	31.24	53.34
GC-24	1-1/2	38.10	2-1/8	53.98	2-1/4	57.15	50.15	45.21	37.33	64.51
GC-32	2	50.80	2-3/4	69.85	3	76.20	67.56	62.73	49.27	86.61

Cap end of metric tube

Part No.	Tube O.D. D	Width across flat		A	B	ℓ	L
		h	H				
GC-2M	2	12	12	12.9	15.3	13.5	20.1
GC-3M	3	12	12	12.9	15.3	13.5	20.1
GC-4M	4	12	12	13.7	16.1	14.7	21.3
GC-6M	6	14	14	15.3	17.7	15.7	23.1
GC-8M	8	15	16	16.2	18.6	17.0	24.5
GC-10M	10	18	19	17.2	19.5	19.0	26.6
GC-12M	12	22	22	22.8	22.0	19.0	29.1
GC-15M	15	24	25	24.4	22.0	19.8	29.9
GC-16M	16	24	25	24.4	22.0	19.8	29.9
GC-18M	18	27	30	24.4	22.0	21.3	31.4
GC-20M	20	30	32	26.0	22.0	23.9	34.0
GC-22M	22	30	32	26.0	22.0	23.9	34.0
GC-25M	25	35	38	31.3	26.5	26.2	38.5
GC-28M	28	41	46	36.6	36.6	27.7	48.5
GC-32M	32	46	50	42.0	41.6	32.8	55.8
GC-38M	38	55	60	49.4	47.9	37.8	65.4

Installation Instructions

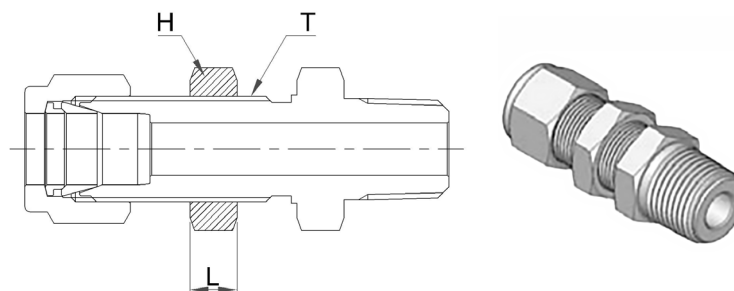
1. Inert the tube end into the Cap
2. With a wrench, 1-1/4 turns from the finger-tight position, (3/4 turn for 1/8", 3/16" 3mm and 4mm)



• All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Bulkhead Jam nut

GJN



Fractional tube OD

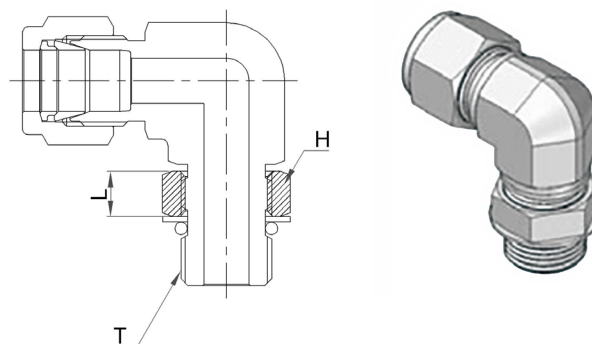
Part No.	Straight Thread T (U)	Width across flat H		L
		in	mm	
GJN-1	10-32	5/16	7.93	3.3
GJN-2	5/16-20	1/2	12.7	4.83
GJN-3	3/8-20	9/16	14.28	5.59
GJN-4	7/16-20	5/8	15.87	5.59
GJN-5	1/2-20	11/16	17.46	5.84
GJN-6	9/16-20	3/4	19.05	6.35
GJN-8	3/4-20	15/16	23.81	7.11
GJN-10	7/8-20	1-1/16	26.98	7.87
GJN-12	1-20	1-3/16	30.16	8.64
GJN-14	1-1/8-20	1-3/8	34.92	9.65
GJN-16	1-5/16-20	1-5/8	41.27	9.65

Metric tube OD

Part No.	Straight Thread T (U)	Width across flat H	L
		mm	
GJN-2M	5/16-20	13	4.80
GJN-3M	5/16-20	13	4.80
GJN-4M	3/8-20	14	5.60
GJN-6M	7/16-20	16	5.60
GJN-8M	1/2-20	17	5.60
GJN-10M	5/8-20	21	6.40
GJN-12M	3/4-20	24	7.10
GJN-14M	7/8-20	27	7.90
GJN-15M	7/8-20	27	7.90
GJN-16M	7/8-20	27	7.90
GJN-18M	1-20	30	8.60
GJN-20M	1-1/8-20	33	9.70
GJN-22M	1-1/8-20	33	9.70
GJN-25M	1-5/16-20	41	9.70

Positionable Lock nut

GLN-U / G



For SAE Straight Thread

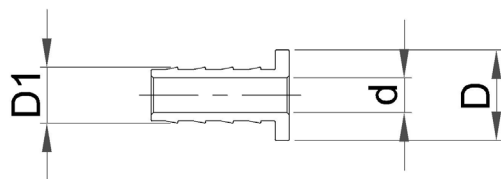
Part No.	Straight Thread T (U)	Width across flat H		L
		in	mm	
GLN-2U	5/16-24	7/16	11.11	5.59
GLN-3U	3/8-24	1/2	12.7	5.59
GLN-4U	7/16-20	9/16	14.28	7.11
GLN-5U	1/2-20	5/8	15.87	7.11
GLN-6U	9/16-18	11/16	17.46	7.11
GLN-8U	3/4-16	7/8	22.22	7.87
GLN-10U	7/8-14	1	25.4	9.14
GLN-12U	1-1/16-12	1-1/4	31.75	10.41
GLN-14U	1-3/16-12	1-3/8	34.92	10.41
GLN-16U	1-5/16-12	1-5/8	38.1	10.41

For ISO Parallel Thread

Part No.	Straight Thread T (PF)	Width across flat H		L
		in	mm	
GLN-2G	1/8	9/16	14.28	7.11
GLN-4G	1/4	3/4	19.05	7.11
GLN-6G	3/8	3/4	19.05	7.11
GLN-8G	1/2	7/8	22.22	7.87
GLN-12G	3/4	1-3/8	34.92	10.41
GLN-16G	1	1-5/8	41.28	10.41

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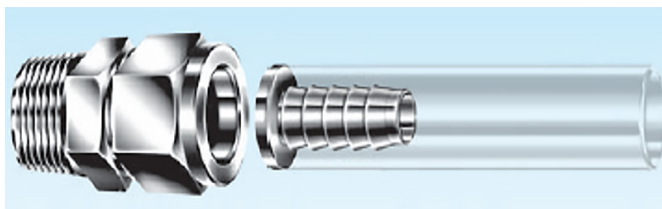
Tube Insert GI



fractional					
Part No.	Tube O.D. D		Tube I.D. D1		d
	inch	mm	inch	mm	
GI-0302	3/16	4.76	1/8	3.17	1.7
GI-0402	1/4	6.35	1/8	3.17	1.7
GI-0403	1/4	6.35	3/16	4.76	3.5
GI-0502	5/16	7.93	1/8	3.17	1.7
GI-0503	5/16	7.93	3/16	4.76	3.5
GI-0504	5/16	7.93	1/4	6.35	4.8
GI-0603	3/8	9.52	3/16	4.76	3.5
GI-0604	3/8	9.52	1/4	6.35	4.8
GI-0804	1/2	12.7	1/4	6.35	4.8
GI-0806	1/2	12.7	3/8	9.52	7.8
GI-1006	5/8	15.87	3/8	9.52	7.8
GI-1008	5/8	15.87	1/2	12.7	11.0
GI-1208	3/4	19.05	1/2	12.7	11.0
GI-1210	3/4	19.05	5/8	15.87	14.2
GI-1612	1	25.4	3/4	19.05	17.5

metric			
Part No.	Tube O.D. D	Tube I.D. D1	d
	mm	mm	
GI-M06M04	6	4	2.4
GI-M08M06	8	6	4.8
GI-M10M08	10	8	6.4
GI-M12M08	12	8	6.4
GI-M12M10	12	10	8.3

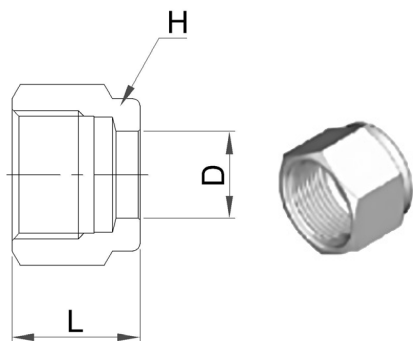
for Nylon or Soft Plastic Tubing



Installation Instructions

The GPI Tube Insert supports the soft plastic tubing, thus the tubing does not collapse when the ferrules deform it. When you select a size of Tube Insert, check if the tubing O.D and I.D conform to those of the insert.

Nut GN

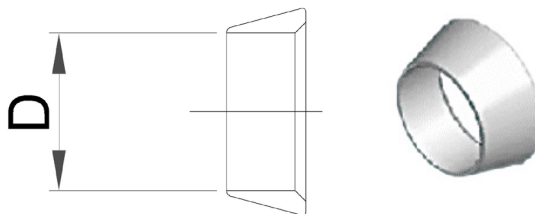


fractional					
Part No.	Tube O.D. D		Width across flat (H)		L
	inch	mm	inch	mm	
GN-01	1/16	1.58	5/16	7.94	7.9
GN-02	1/8	3.17	7/16	11.11	11.9
GN-03	3/16	4.76	1/2	12.7	11.9
GN-04	1/4	6.35	9/16	14.28	12.7
GN-05	5/16	7.93	5/8	15.87	13.5
GN-06	3/8	9.52	11/16	17.46	14.2
GN-08	1/2	12.7	7/8	22.22	17.5
GN-10	5/8	15.87	1	25.4	17.5
GN-12	3/4	19.05	1-1/8	28.57	17.5
GN-14	7/8	22.22	1-1/4	31.75	17.5
GN-16	1	25.4	1-1/2	38.1	20.6
GN-20	1-1/4	31.75	1-7/8	47.63	31.7
GN-24	1-1/2	38.1	2-1/4	57.15	38.1
GN-32	2	50.8	3	76.2	52.3

metric			
Part No.	Tube O.D. D	Width across flat H	L
	mm	mm	
GN-M02	2	12	11.9
GN-M03	3	12	11.9
GN-M04	4	12	11.9
GN-M06	6	14	12.7
GN-M08	8	16	13.5
GN-M10	10	19	15.1
GN-M12	12	22	17.4
GN-M15	15	25	17.4
GN-M16	16	25	17.4
GN-M18	18	30	17.4
GN-M20	20	32	17.4
GN-M22	22	32	17.4
GN-M25	25	38	20.6
GN-M28	28	46	30.6
GN-M30	30	50	32.7
GN-M32	32	50	34.4
GN-M38	38	60	40.6
GN-M42	42	65	44.7
GN-M50	50	76.2	54.8

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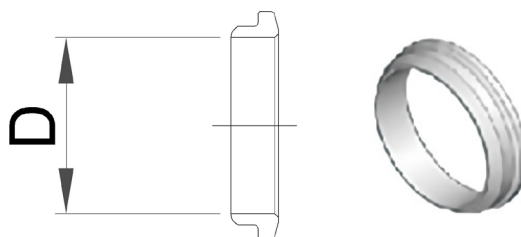
Front Ferrule GFF



fractional		
Part No.	Tube O.D. D	
	inch	mm
GFF-01	1/16	1.58
GFF-02	1/8	3.17
GFF-03	3/16	4.76
GFF-04	1/4	6.35
GFF-05	5/16	7.93
GFF-06	3/8	9.52
GFF-08	1/2	12.7
GFF-10	5/8	15.87
GFF-12	3/4	19.05
GFF-14	7/8	22.22
GFF-16	1	25.4
GFF-20	1-1/4	31.75
GFF-24	1-1/2	38.1
GFF-32	2	50.8

metric		
Part No.	Tube O.D. D	
GFF-M02	2	
GFF-M03	3	
GFF-M04	4	
GFF-M06	6	
GFF-M08	8	
GFF-M10	10	
GFF-M12	12	
GFF-M15	15	
GFF-M16	16	
GFF-M18	18	
GFF-M20	20	
GFF-M22	22	
GFF-M25	25	
GFF-M28	28	
GFF-M30	30	
GFF-M32	32	
GFF-M38	38	
GFF-M42	42	
GFF-M50	50	

Back Ferrule GBF



fractional		
Part No.	Tube O.D. D	
	inch	mm
GBF-01	1/16	1.59
GBF-02	1/8	3.17
GBF-03	3/16	4.76
GBF-04	1/4	6.35
GBF-05	5/16	7.93
GBF-06	3/8	9.52
GBF-08	1/2	12.7
GBF-10	5/8	15.87
GBF-12	3/4	19.05
GBF-14	7/8	22.22
GBF-16	1	25.4
GBF-20	1-1/4	31.75
GBF-24	1-1/2	38.1
GBF-32	2	50.8

metric		
Part No.	Tube O.D. D	
GBF-M02	2	
GBF-M03	3	
GBF-M04	4	
GBF-M06	6	
GBF-M08	8	
GBF-M10	10	
GBF-M12	12	
GBF-M15	15	
GBF-M16	16	
GBF-M18	18	
GBF-M20	20	
GBF-M22	22	
GBF-M25	25	
GBF-M28	28	
GBF-M30	30	
GBF-M32	32	
GBF-M38	38	
GBF-M42	42	
GBF-M50	50	

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Ferrule Set GFS

* Ferrules can be ordered as a set with an arbor.
Each arbor holds 10 ferrule sets.

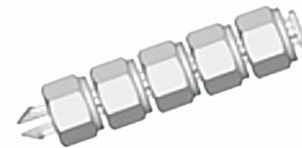


fractional		
Part No.	Tube O.D. D	
	inch	mm
GFS-01	1/16	1.58
GFS-02	1/8	3.17
GFS-03	3/16	4.76
GFS-04	1/4	6.35
GFS-05	5/16	7.93
GFS-06	3/8	9.52
GFS-08	1/2	12.7
GFS-10	5/8	15.87
GFS-12	3/4	19.05
GFS-14	7/8	22.22
GFS-16	1	25.4

metric		
Part No.	Tube O.D. D	
GFS-M02		2
GFS-M03		3
GFS-M04		4
GFS-M06		6
GFS-M08		8
GFS-M10		10
GFS-M12		12
GFS-M15		15
GFS-M16		16
GFS-M18		18
GFS-M20		20
GFS-M22		22
GFS-M25		25

Ferrule & Nut Set GFNS

* Ferrules and nut can be ordered as a set with an arbor.
Each arbor holds 5 ferrule and nut sets.



fractional		
Part No.	Tube O.D. D	
	inch	mm
GFNS-01	1/16	1.58
GFNS-02	1/8	3.17
GFNS-03	3/16	4.76
GFNS-04	1/4	6.35
GFNS-05	5/16	7.93
GFNS-06	3/8	9.52
GFNS-08	1/2	12.7
GFNS-10	5/8	15.87
GFNS-12	3/4	19.05
GFNS-14	7/8	22.22
GFNS-16	1	25.4

metric		
Part No.	Tube O.D. D	
GFNS-M02		2
GFNS-M03		3
GFNS-M04		4
GFNS-M06		6
GFNS-M08		8
GFNS-M10		10
GFNS-M12		12
GFNS-M15		15
GFNS-M16		16
GFNS-M18		18
GFNS-M20		20
GFNS-M22		22
GFNS-M25		25

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Preswaging Tool GJ



fractional		
Part No.	Tube O.D.	
	inch	mm
GJ-1	1/16	1.57
GJ-2	1/8	3.17
GJ-3	3/16	4.76
GJ-4	1/4	6.35
GJ-5	5/16	7.93
GJ-6	3/8	9.52
GJ-8	1/2	12.7
GJ-10	5/8	15.87
GJ-12	3/4	19.05
GJ-14	7/8	22.22
GJ-16	1	25.4

metric		
Part No.	Tube O.D.	
GJ-2M	2	
GJ-3M	3	
GJ-4M	4	
GJ-6M	6	
GJ-8M	8	
GJ-10M	10	
GJ-12M	12	
GJ-15M	15	
GJ-16M	16	
GJ-18M	18	
GJ-20M	20	
GJ-22M	22	
GJ-25M	25	



Operation Instructions

1. Clamp the preswaging tool over the vise firmly.
2. Follow the standard Tube Fitting installation instruction.
- 3.unthread the nut then remove the ferrules-preswaged tubing from the vise.
- 4.Reassembly the tubing by Following Tube Fitting reassembly instruction.

※ lubricate the preswaging tool threads on every operation.

Warning

do not rotate the tubing, but gently rock back and forth if you face difficulty in removing the tubing from the preswaging tool.

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