

- **I Series**
 - Micro Weld Fittings
- **B Series**
 - Tube Butt Weld Fittings
- **G Series**
 - Face Seal Fittings

High Purity & Ultra High Purity FITTINGS

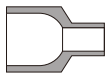


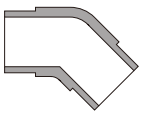

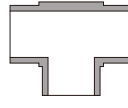
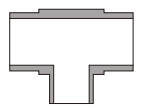
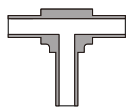
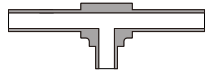
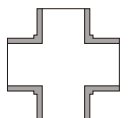
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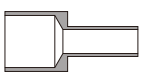
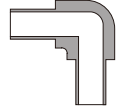

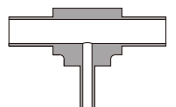
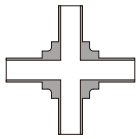



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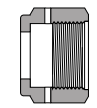
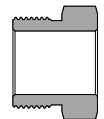
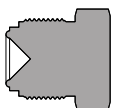
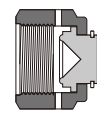
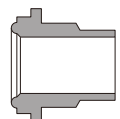
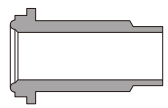
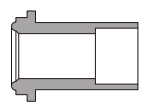
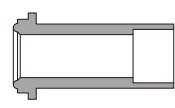
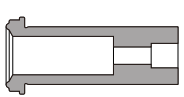
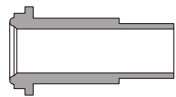
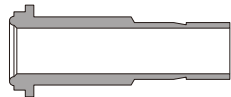
I Series - Micro Weld Fittings

	Reducing Unions A02		90° Union Elbows A02		Reducing 90° Union Elbows A03
	45° Union Elbows A03		Tribows A03		Union Tees A04
	Reducing Tees A04		Extended Branch Leg Union Tees A04		Extended Run Leg Union Tees A05
	Union Crosses A05				

B Series - Tube Butt Weld Fittings



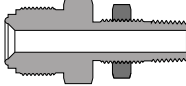
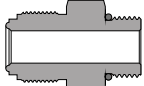
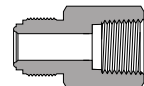

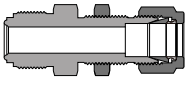
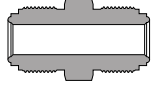

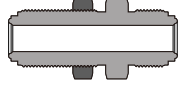
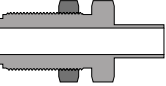
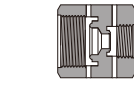
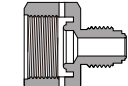

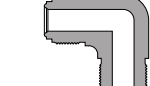
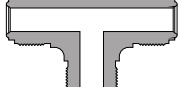
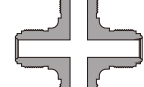
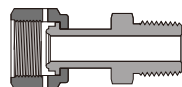
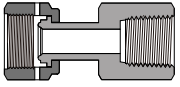
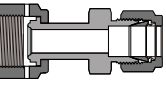
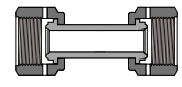
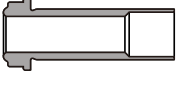


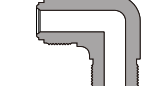

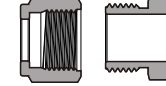
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	Reducing Tees A07		Union Crosses A08		Weld Rings A08

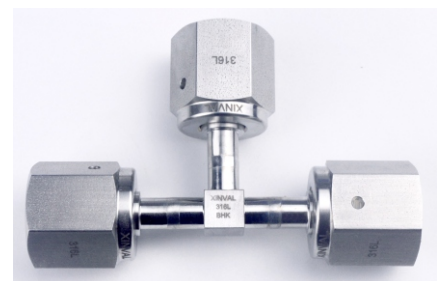
G Series - Face Seal Fittings

	Gaskets A10 - A11		Female Nuts A11		Male Nuts A11
	Plugs A12		Caps A12		Short Butt Weld Glands A12
	Long Butt Weld Glands A13		Short Socket Weld Glands A13		Long Socket Weld Glands A14
	Reducing Socket Weld Glands A14		Male Weld Glands A15		Tube Port Glands A15

Contents

G Series - Face Seal Fittings

	Blind Glands A15		Male NPT Bodies A16		Bulkhead Male Bodies A16
	SAE/MS Thread Bodies A17		Female NPT Bodies A17		Tube Fitting Bodies A18
	Bulkhead Tube Fitting Bodies A18		Union Bodies A19		Reducing Union Bodies A19
	Bulkhead Union Bodies A19		Bulkhead Butt Weld Bodies A20		Female Reducing Bodies A20
	Reducing Adapters A20		Male NPT Elbows A21		Union Elbows A21
	Union Tees A21		Union Crosses A21		Welded Glands to Male NPT A22
	Welded Glands to Female NPT A22		Welded Glands to Tube Fittings A22		Welded Glands Unions A23
	High Flow Butt Weld Glands A23		High Flow Butt Weld Bodies A23		High Flow Bulkhead Butt Weld Bodies A24
	High Flow Elbows A24		High Flow Tees A24		High Flow Nuts A24



Weld Fittings

Features

- ◇ Elbows with radius junction to provide smooth flow path
- ◇ Precision machined to match tube diameter
- ◇ Burr-free tube ends to enhance alignment
- ◇ 100% visual inspection on key parts under magnifier and good light conditions
- ◇ Standard surface roughness finished to an average of Ra 10 µin. (0.25 µm) or electropolished to Ra 5 µin. (0.13 µm)
- ◇ Permanent traceable identification marked on each fitting

Materials

Materials	Bar Stock ^①	Forging ^②	Designator
316 SS	ASTM A479	ASTM A182	316
316L SS			316L
316L VAR SS	SEMI F20	---	6V
316L VIM-VAR SS			6VV

1. Only for straight configurations and all I series micro weld fittings
2. Refers to all elbows, tees and crosses, I series micro weld fittings are not included

Working Pressure

1. Working pressures shown in the catalog are calculated according to ASME B31.3 and B31.1 at ambient temperature
2. To get the allowable working temperature at elevated temperature, use the allowable working pressure at ambient temperature to multiply the elevated temperature factors on the right side table

Material Type	316 SS	316L SS
Temperature °C (°F)	factors	
-254 to 37 (-425 to 100)	1.00	1.00
93 (200)	1.00	0.83
204 (400)	0.96	0.77
315 (600)	0.85	0.67
426 (800)	0.79	0.62
538 (1000)	0.76	0.56

Working Temperature

Material	Min. Temperature	Max. Temperature
316 SS	-198°C (-325°F)	538°C (1000°F)
316L SS		
316L VAR SS		
316L VIM-VAR SS		

Cleaning and Packaging

1. GP refers to standard cleaning and packaging, applied for general industrial procedures, add "-GP" as a suffix when needed..
2. HP refers to high purity application specification, no suffix is needed.
3. UHP refers to ultra-high purity process specification, add "-UHP" as a suffix when needed.
Example: 1/4" 316L VAR-VIM micro weld 90° elbow with UHP requirement, the ordering number is 6VV-IE-TB4-UHP.

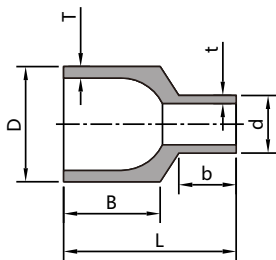
I Series - Micro Weld Fittings

Features

- ◆ Compact design, applicable for small size weld system
- ◆ Sizes range from 1/8" to 1/2", and 6 mm to 12 mm

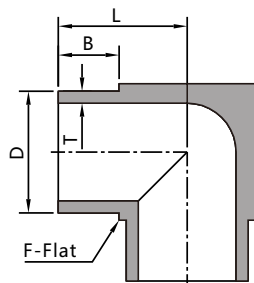


Reducing Unions



Tube OD D(in.)	Wall Thk. T(in.)	Tube OD d(in.)	Wall Thk. t(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
					L	B	b	
1/4	0.035	1/8	0.028	-IU-TB4-TB2	19.1 (0.75)	10.8 (0.42)	6.4 (0.25)	351 (5100)
3/8	0.035	1/4	0.035	-IU-TB6-TB4	19.1 (0.75)	10.8 (0.42)	6.4 (0.25)	227 (3300)
1/2	0.049	1/4	0.035	-IU-TB8-TB4	19.1 (0.75)	10.8 (0.42)	6.4 (0.25)	254 (3700)
1/2	0.049	3/8	0.035	-IU-TB8-TB6	19.1 (0.75)	10.8 (0.42)	6.4 (0.25)	227 (3300)

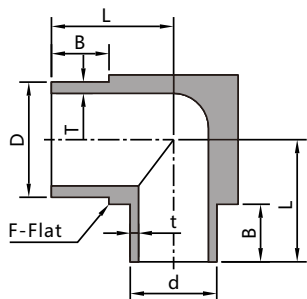
90° Union Elbows



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/8	0.028	-IE-TB2	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	585 (8500)
1/4	0.035	-IE-TB4	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	351 (5100)
3/8	0.035	-IE-TB6	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	-IE-TB8	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)

Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-IE-TB6M	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	420 (6095)
8	1.0	-IE-TB8M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	310 (4499)
10	1.0	-IE-TB10M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	240 (3483)
12	1.0	-IE-TB12M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)

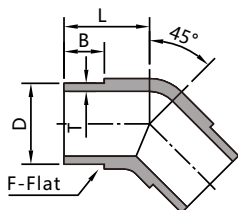
Reducing 90° Union Elbows



Tube OD D(in.)	Wall Thk. T(in.)	Tube OD d(in.)	Wall Thk. t(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
					L	B	F	
3/8	0.035	1/4	0.035	-IE-TB6-TB4	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	1/4	0.035	-IE-TB8-TB4	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)
1/2	0.049	3/8	0.035	-IE-TB8-TB6	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	227 (3300)

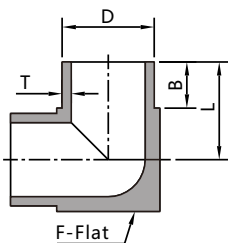
Tube OD D(mm)	Wall Thk. T(mm)	Tube OD d(mm)	Wall Thk. t(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
					L	B	F	
8	1.0	6	1.0	-IE-TB8M-TB6M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	310 (4499)
10	1.0	6	1.0	-IE-TB10M-TB6M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	240 (3483)
12	1.0	6	1.0	-IE-TB12M-TB6M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)
12	1.0	8	1.0	-IE-TB12M-TB8M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)

45° Union Elbows

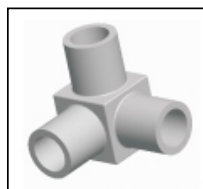


Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/4	0.035	-IV-TB4	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	351 (5100)
3/8	0.035	-IV-TB6	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	-IV-TB8	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)

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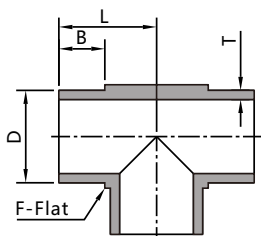


Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/4	0.035	-ID-TB4	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	351 (5100)
3/8	0.035	-ID-TB6	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	-ID-TB8	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)



Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-ID-TB6M	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	420 (6095)

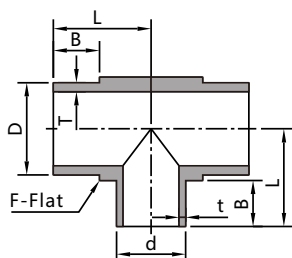
Union Tees



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/8	0.028	-IT-TB2	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	585 (8500)
1/4	0.035	-IT-TB4	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	351 (5100)
3/8	0.035	-IT-TB6	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	-IT-TB8	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)

Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-IT-TB6M	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	420 (6095)
8	1.0	-IT-TB8M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	310 (4499)
10	1.0	-IT-TB10M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	240 (3483)
12	1.0	-IT-TB12M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)

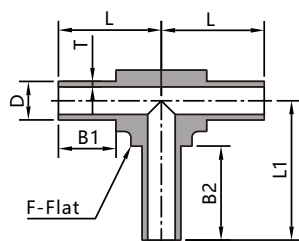
Reducing Tees



Tube OD D(in.)	Wall Thk. T(in.)	Tube OD d(in.)	Wall Thk. t(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
					L	B	F	
3/8	0.035	1/4	0.035	-IT-TB6-TB6-TB4	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	1/4	0.035	-IT-TB8-TB8-TB4	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)
1/2	0.049	3/8	0.035	-IT-TB8-TB8-TB6	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	227 (3300)

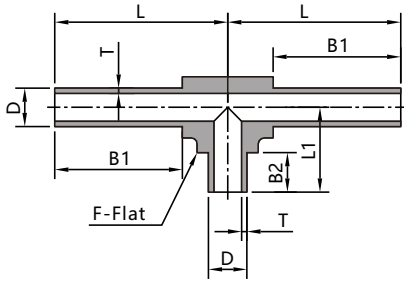
Tube OD D(mm)	Wall Thk. T(mm)	Tube OD d(mm)	Wall Thk. t(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
					L	B	F	
10	1.0	6	1.0	-IT-TB10M-TB10M-TB6M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	240 (3483)
12	1.0	6	1.0	-IT-TB12M-TB12M-TB6M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)
12	1.0	6	1.0	-IT-TB12M-TB12M-TB8M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)

Extended Branch Leg Union Tees



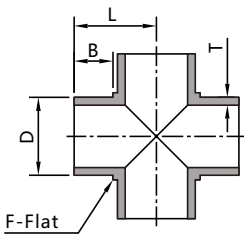
Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating bar (psig)
			L	L1	B1	B2	F	
1/4	0.035	-IT-TB4-45	10.4 (0.41)	15.5 (0.61)	6.4 (0.25)	11.4 (0.45)	7.9 (5/16)	351 (5100)

Extended Run Leg Union Tees



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating bar (psig)
			L	L1	B1	B2	F	
1/4	0.035	-IT-TB4-25	24.9 (0.98)	10.4 (0.41)	21.1 (0.83)	6.4 (0.25)	7.9 (5/16)	351 (5100)

Union Crosses



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/8	0.028	-IC-TB2	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	585 (8500)
1/4	0.035	-IC-TB4	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	351 (5100)
3/8	0.035	-IC-TB6	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	227 (3300)
1/2	0.049	-IC-TB8	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	254 (3700)

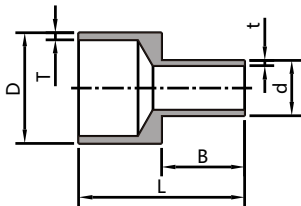
Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-IC-TB6M	10.4 (0.41)	6.4 (0.25)	7.9 (5/16)	420 (6095)
8	1.0	-IC-TB8M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	310 (4499)
10	1.0	-IC-TB10M	11.9 (0.47)	6.4 (0.25)	11.1 (7/16)	240 (3483)
12	1.0	-IC-TB12M	13.5 (0.53)	6.4 (0.25)	14.3 (9/16)	200 (2902)

B Series Tube Butt Weld Fittings

Features

- ◇ Extended tube design
- ◇ Machined from forging blanks except for straight configurations

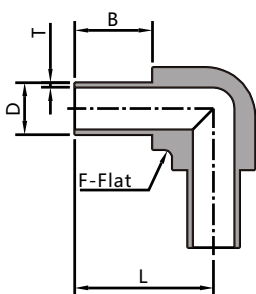
Reducing Unions



Tube OD D(in.)	Wall Thk. T(in.)	Tube OD d(in.)	Wall Thk. t(in.)	Basic Ordering No.	Dimensions, mm (in.)		Pressure Rating bar (psig)
					L	B	
3/8	0.035	1/4	0.035	-BU-TB6-TB4	38.1 (1.50)	19.1 (0.75)	227 (3300)
1/2	0.049	1/4	0.035	-BU-TB8-TB4	38.1 (1.50)	19.1 (0.75)	254 (3700)
1/2	0.049	3/8	0.035	-BU-TB8-TB6	38.1 (1.50)	19.1 (0.75)	227 (3300)
3/4	0.049	1/2	0.049	-BU-TB12-TB4	38.1 (1.50)	19.1 (0.75)	165 (2400)
1	0.065	1/2	0.049	-BU-TB16-TB8	38.1 (1.50)	19.1 (0.75)	165 (2400)
1	0.065	3/4	0.049	-BU-TB16-TB12	38.1 (1.50)	19.1 (0.75)	165 (2400)

Tube OD D(mm)	Wall Thk. T(mm)	Tube OD d(mm)	Wall Thk. t(mm)	Basic Ordering No.	Dimensions, mm (in.)		Pressure Rating bar (psig)
					L	B	
10	1.0	6	1.0	-BU-TB10M-TB6M	38.1 (1.50)	19.1 (0.75)	240 (3483)
12	1.0	6	1.0	-BU-TB12M-TB6M	38.1 (1.50)	19.1 (0.75)	200 (2902)
12	1.0	8	1.0	-BU-TB12M-TB8M	38.1 (1.50)	19.1 (0.75)	200 (2902)
12	1.0	10	1.0	-BU-TB12M-TB10M	38.1 (1.50)	19.1 (0.75)	200 (2902)
18	1.5	6	1.5	-BU-TB18M-TB6M	38.1 (1.50)	19.1 (0.75)	200 (2902)
18	1.5	12	1.5	-BU-TB18M-TB12M	38.1 (1.50)	19.1 (0.75)	200 (2902)

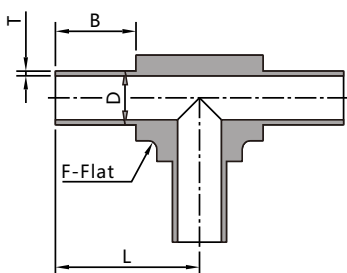
90° Union Elbows



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/4	0.035	-BE-TB4	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	351 (5100)
3/8	0.035	-BE-TB6	30.5 (1.20)	19.1 (0.75)	11.1 (7/16)	227 (3300)
1/2	0.049	-BE-TB8	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	254 (3700)
3/4	0.049	-BE-TB12	37.1 (1.46)	19.1 (0.75)	23.8 (15/16)	165 (2400)

Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-BE-TB6M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	420 (6095)
8	1.0	-BE-TB8M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	310 (4499)
10	1.0	-BE-TB10M	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	240 (3483)
12	1.0	-BE-TB12M	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	200 (2902)
18	1.5	-BE-TB18M	37.6 (1.48)	19.1 (0.75)	23.8 (15/16)	200 (2902)

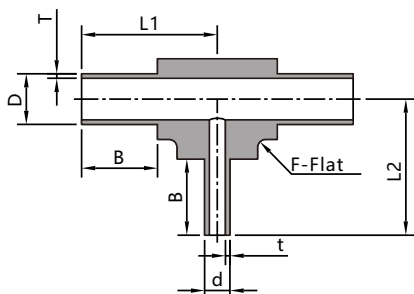
Union Tees



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/4	0.035	-BT-TB4	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	351 (5100)
3/8	0.035	-BT-TB6	30.5 (1.20)	19.1 (0.75)	11.1 (7/16)	227 (3300)
1/2	0.049	-BT-TB8	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	254 (3700)
3/4	0.049	-BT-TB12	37.1 (1.46)	19.1 (0.75)	23.8 (15/16)	165 (2400)

Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-BT-TB6M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	420 (6095)
8	1.0	-BT-TB8M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	310 (4499)
10	1.0	-BT-TB10M	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	240 (3483)
12	1.0	-BT-TB12M	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	200 (2902)
18	1.5	-BT-TB18M	37.6 (1.48)	19.1 (0.75)	23.8 (15/16)	200 (2902)

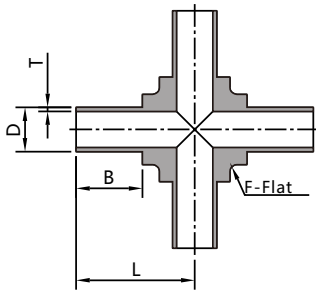
Reducing Tees



Tube OD D(in.)	Wall Thk. T(in.)	Tube OD d(in.)	Wall Thk. t(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating bar (psig)
					L1	L2	B	F	
3/8	0.035	1/4	0.035	-BT-TB6-TB6-TB4	30.5 (1.20)	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	227 (3300)
1/2	0.049	1/4	0.035	-BT-TB8-TB8-TB4	34.0 (1.34)	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	254 (3700)
1/2	0.049	3/8	0.035	-BT-TB8-TB8-TB6	34.0 (1.34)	34.3 (1.35)	19.1 (0.75)	17.5 (11/16)	227 (3300)
3/4	0.049	1/4	0.035	-BT-TB12-TB12-TB4	37.1 (1.46)	37.6 (1.48)	19.1 (0.75)	23.8 (15/16)	165 (2400)
3/4	0.049	3/8	0.035	-BT-TB12-TB12-TB6	37.1 (1.46)	34.3 (1.35)	19.1 (0.75)	23.8 (15/16)	165 (2400)

Tube OD D(mm)	Wall Thk. T(mm)	Tube OD d(mm)	Wall Thk. t(mm)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating bar (psig)
					L1	L2	B	F	
8	1.0	6	1.0	-BT-TB8M-TB8M-TB6M	31.2 (1.23)	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	310 (4499)
10	1.0	6	1.0	-BT-TB10M-TB10M-TB6M	34.0 (1.34)	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	240 (3483)
10	1.0	8	1.0	-BT-TB10M-TB10M-TB8M	34.0 (1.34)	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	240 (3483)
12	1.0	6	1.0	-BT-TB12M-TB12M-TB6M	34.0 (1.34)	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	200 (2902)
12	1.0	8	1.0	-BT-TB12M-TB12M-TB8M	34.0 (1.34)	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	200 (2902)

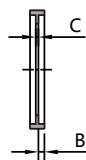
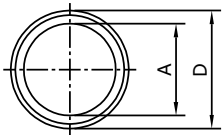
Union Crosses



Tube OD D(in.)	Wall Thk. T(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
1/4	0.035	-BC-TB4	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	351 (5100)
3/8	0.035	-BC-TB6	30.5 (1.20)	19.1 (0.75)	11.1 (7/16)	227 (3300)
1/2	0.049	-BC-TB8	34.0 (1.34)	19.1 (0.75)	17.5 (11/16)	254 (3700)

Tube OD D(mm)	Wall Thk. T(mm)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating bar (psig)
			L	B	F	
6	1.0	-BC-TB6M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	420 (6095)
8	1.0	-BC-TB8M	31.2 (1.23)	19.1 (0.75)	11.1 (7/16)	310 (4499)
10	1.0	-BC-TB10M	34.0 (1.34)	19.1 (0.75)	15.9 (5/8)	240 (3483)
12	1.0	-BC-TB12M	34.0 (1.34)	19.1 (0.75)	15.9 (5/8)	200 (2902)

Weld Rings



Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)			
		A	B	C	D
1/4	-BWR-4	5.1 (0.20)	0.51 (0.02)	0.25 (0.01)	7.1 (0.28)
3/8	-BWR-6	8.1 (0.32)	0.51 (0.02)	0.25 (0.01)	10.4 (0.41)
1/2	-BWR-8	10.7 (0.42)	0.51 (0.02)	0.25 (0.01)	13.7 (0.54)



G Series Face Seal Fittings

Features

- ◇ Metal to metal seal to provide perfect leak-tight service for work conditions from vacuum to high pressure
- ◇ Test port at nut for easy leak testing
- ◇ Silver plated female threads to prevent galling and ensure easy and consistent assembly
- ◇ Standard surface roughness finished to an average of Ra 10 µin. (0.25 µm) or electropolished to Ra 5 µin. (0.13 µm)
- ◇ Permanent traceable identification marked on each fitting

Materials

Material	Bar Stock	Forging	Designator
Fitting Material			
316 SS	ASTM A276 ASTM A479	ASTM A182	316
316L SS			316L
316L VAR SS	SEMI F20		6V
Gasket Materials			
316L SS	ASTM A240		316L
Copper	ASTM B152		CU
Nickel	ASTM B162		NI

Working Pressure

1. Working pressures shown in the catalog are calculated according to ASME B31.3 and B31.1 at ambient temperature
2. Working pressure ratings determined at room temperature with gasket materials shown.
3. To determine elevated-temperature pressure ratings in accordance with B31.3 and B31.1, multiply the pressure ratings provided in the ordering number tables on the pages that follow by the factors in the table at right.

Material	316 SS	316L SS
Temperature, °C (°F)	Factors	
-254 to 37 (-425 to 100)	1.00	1.00
93 (200)	1.00	0.83
204 (400)	0.96	0.77
315 (600)	0.85	0.67
426 (800)	0.79	0.62
538 (1000)	0.76	0.56

Working Temperature

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

Cleaning and Packaging

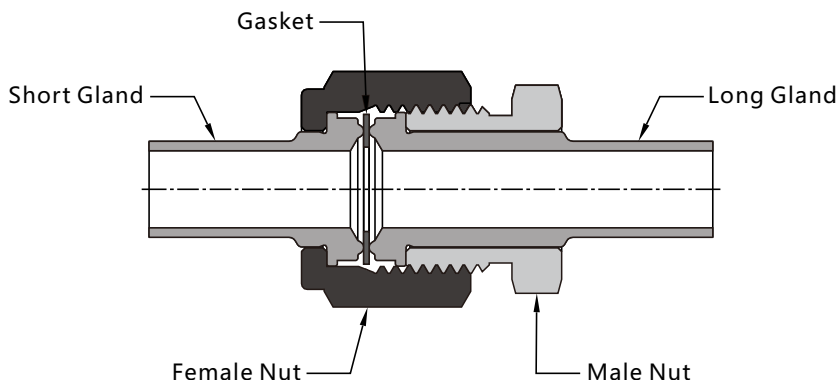
1. GP refers to standard cleaning and packaging, applied for general industrial procedures, add "-GP" as a suffix when needed.
2. HP refers to high purity application specification, no suffix is needed.
3. UHP refers to ultra-high purity process specification, add "-UHP" as a suffix when needed.

Example: 1/4" 316L VAR face seal connection to 1/4" butt weld gland with UHP requirement, the ordering number is 6V-GJ-MR4-TB4-4-UHP

Helium Leak Testing

G Series fitting design has been helium leak tested to a maximum leak rate of 4×10^{-9} std cm^3/s with silver-plated and copper gaskets, and to a maximum leak rate of 4×10^{-11} std cm^3/s

Installation Instructions



1. Assemble the gland, nut, gasket and male nut as shown above, finger tight the nut.
2. For fittings with 316L and Nickel gaskets, tighten the nut 1/8 turn with a wrench while holding the male nut or the fitting body steady. Tighten the nut 1/4 turn for those with Copper gaskets.

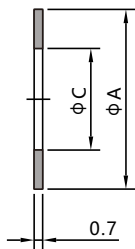
Cautions

1. Over-tightening will damage the sealing beads and lead to possible leak.
2. Use a new gasket for each assembly.
3. Do not loosen or tighten fittings when system is pressurized.

Gaskets

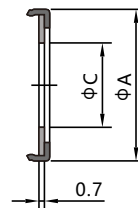
1. Copper gaskets are unplated
2. Unplated stainless steel and Nickel gaskets are electropolished.
3. If silver-plated 316L gaskets are needed, please add the suffix "-P" from the ordering number.
Example: 316L-GG-MR4-P-GP

Nonretained Gasket



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)	
		A	C
1/8	-GG-MR2	6.6 (0.26)	2.3 (0.09)
1/4	-GG-MR4	11.9 (0.47)	5.6 (0.22)
1/2	-GG-MR8	19.8 (0.78)	11.2 (0.44)
3/4	-GG-MR12	29.0 (1.14)	16.8 (0.66)
1	-GG-MR16	35.6 (1.40)	22.6 (0.89)

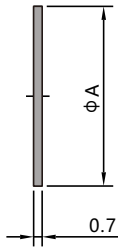
Gasket Retainer Assembly



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)	
		A	C
1/4	-GG-MR4-R	12.7 (0.50)	6.1 (0.24)
1/2	-GG-MR8-R	20.1 (0.79)	11.2 (0.44)
3/4	-GG-MR12-R	29.0 (1.14)	16.8 (0.66)
1	-GG-MR16-R	35.6 (1.40)	22.6 (0.89)

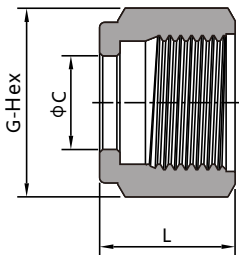
1. Retainer material is 316L stainless steel

Blind Gasket



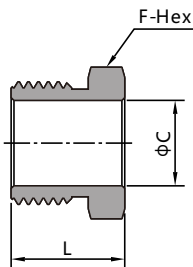
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)
		A
1/8	-GGB-MR2	6.6 (0.26)
1/4	-GGB-MR4	11.9 (0.47)
1/2	-GGB-MR8	19.8 (0.78)
3/4	-GGB-MR12	29.0 (1.14)
1	-GGB-MR16	35.6 (1.40)

Female Nuts



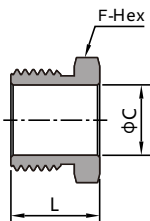
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)		
		L	C	G
1/8	-GN-FMR2	13.5 (0.53)	5.3 (0.21)	11.1 (7/16)
1/4	-GN-FMR4	20.6 (0.81)	9.1 (0.36)	19.1 (3/4)
1/2	-GN-FMR8	22.4 (0.88)	15.5 (0.61)	27.0 (1 1/16)
3/4	-GN-FMR12	28.4 (1.12)	22.6 (0.89)	38.1 (1 1/2)
1	-GN-FMR16	34.0 (1.34)	30.5 (1.20)	44.5 (1 3/4)

Male Nuts



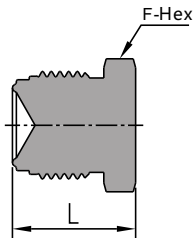
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)		
		L	C	F
1/8	-GMN-MR2	12.7 (0.50)	5.3 (0.21)	9.5 (3/8)
1/4	-GMN-MR4	18.0 (0.71)	9.1 (0.36)	15.9 (5/8)
1/2	-GMN-MR8	20.6 (0.81)	15.5 (0.61)	23.8 (15/16)
3/4	-GMN-MR12	25.4 (1.00)	22.6 (0.89)	33.3 (1 5/16)
1	-GMN-MR16	30.2 (1.19)	30.5 (1.20)	41.3 (1 5/8)

Short Male Nuts

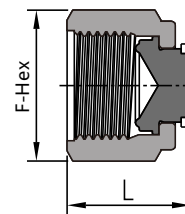


MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)		
		L	C	F
1/4	-GMN-MR4-0.54	13.7 (0.54)	9.1 (0.36)	15.9 (5/8)
1/4	-GMN-MR4-0.65	16.5 (0.65)	9.1 (0.36)	15.9 (5/8)

Plugs



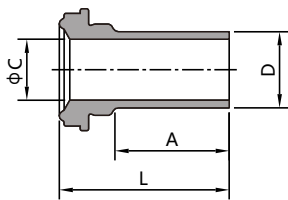
Caps



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)	
		L	F
1/8	-GP-MR2	17.3 (0.68)	9.5 (3/8)
1/4	-GP-MR4	23.4 (0.92)	15.9 (5/8)
1/2	-GP-MR8	27.4 (1.08)	23.8 (15/16)
3/4	-GP-MR12	36.3 (1.43)	33.3 (1 5/16)
1	-GP-MR16	38.6 (1.52)	41.3 (1 5/8)

MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)	
		L	F
1/8	-GCP-FMR2	16.0 (0.63)	11.1 (7/16)
1/4	-GCP-FMR4	23.9 (0.94)	19.1 (3/4)
1/2	-GCP-FMR8	25.6 (1.01)	27.0 (1 1/16)
3/4	-GCP-FMR12	32.8 (1.29)	38.1 (1 1/2)
1	-GCP-FMR16	39.1 (1.54)	44.5 (1 3/4)

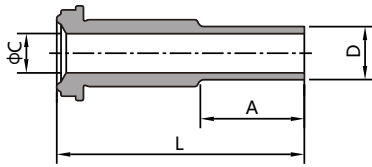
Short Butt Weld Glands



MR Size (in.)	Tube OD D(in.)	Wall Thk. (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
				L	A	C	316L	CU	NI
1/8	1/8	0.028	-GJS-MR2-TB2-12	27.4 (1.08)	19.1 (0.75)	1.8 (0.07)	586 (8500)	468 (6800)	586 (8500)
1/4	1/8	0.028	-GJS-MR4-TB2-12	27.9 (1.10)	19.1 (0.75)	1.8 (0.07)	351 (5100)	351 (5100)	351 (5100)
1/4	1/4	0.035	-GJS-MR4-TB4-4	15.2 (0.60)	6.4 (0.25)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/4	1/4	0.035	-GJS-MR4-TB4-6	18.3 (0.72)	9.6 (0.38)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/4	1/4	0.035	-GJS-MR4-TB4-12	27.9 (1.10)	19.1 (0.75)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/2	1/4	0.035	-GJS-MR8-TB4-12	28.4 (1.12)	19.1 (0.75)	4.6 (0.18)	296 (4300)	192 (2800)	241 (3500)
1/2	3/8	0.035	-GJS-MR8-TB6-4	15.7 (0.62)	6.4 (0.25)	7.9 (0.31)	227 (3300)	179 (2600)	227 (3300)
1/2	3/8	0.035	-GJS-MR8-TB6-12	28.4 (1.12)	19.1 (0.75)	7.9 (0.31)	227 (3300)	179 (2600)	227 (3300)
1/2	1/2	0.049	-GJS-MR8-TB8-4	15.7 (0.62)	6.4 (0.25)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)
1/2	1/2	0.049	-GJS-MR8-TB8-6	18.8 (0.74)	9.6 (0.38)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)
1/2	1/2	0.049	-GJS-MR8-TB8-12	28.4 (1.12)	19.1 (0.75)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)

MR Size (in.)	Tube OD D(mm)	Wall Thk. (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
				L	A	B	316L	CU	NI
1/4	6	1.0	-GJS-MR4-TB6M-12	29.5 (1.16)	19.1 (0.75)	4.0 (0.16)	468 (6800)	372 (5400)	468 (6800)
1/4	8	1.0	-GJS-MR4-TB8M-12	29.5 (1.16)	19.1 (0.75)	6.0 (0.24)	337 (4900)	337 (4900)	337 (4900)
1/2	10	1.0	-GJS-MR8-TB10M-12	29.5 (1.16)	19.1 (0.75)	8.0 (0.31)	241 (3500)	192 (2800)	241 (3500)
1/2	12	1.0	-GJS-MR8-TB12M-12	29.5 (1.16)	19.1 (0.75)	10.0 (0.39)	213 (3100)	165 (2400)	213 (3100)
3/4	18	1.0	-GJS-MR12-TB18M-12	31.0 (1.22)	19.1 (0.75)	15.0 (0.59)	206 (3000)	165 (2400)	206 (3000)

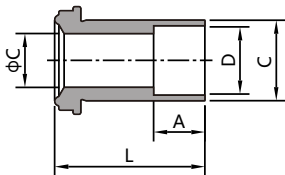
Long Butt Weld Glands



MR Size (in.)	Tube OD D(in.)	Wall Thk. (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
				L	A	C	316L	CU	NI
1/8	1/8	0.028	-GJ-MR2-TB2-12	36.1 (1.42)	19.1 (0.75)	1.8 (0.07)	586 (8500)	468 (6800)	586 (8500)
1/4	1/4	0.035	-GJ-MR4-TB4-4	30.5 (1.20)	6.4 (0.25)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/4	1/4	0.035	-GJ-MR4-TB4-6	33.5 (1.32)	9.6 (0.38)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/4	1/4	0.035	-GJ-MR4-TB4-12	43.2 (1.70)	19.1 (0.75)	4.6 (0.18)	351 (5100)	351 (5100)	351 (5100)
1/2	1/4	0.035	-GJ-MR8-TB4-12	45.7 (1.80)	19.1 (0.75)	4.6 (0.18)	296 (4300)	192 (2800)	241 (3500)
1/2	3/8	0.035	-GJ-MR8-TB6-4	32.8 (1.29)	6.4 (0.25)	7.9 (0.31)	227 (3300)	179 (2600)	227 (3300)
1/2	3/8	0.035	-GJ-MR8-TB6-12	45.5 (1.79)	19.1 (0.75)	7.9 (0.31)	227 (3300)	179 (2600)	227 (3300)
1/2	1/2	0.049	-GJ-MR8-TB8-4	32.8 (1.29)	6.4 (0.25)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)
1/2	1/2	0.049	-GJ-MR8-TB8-6	35.8 (0.74)	9.6 (0.38)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)
1/2	1/2	0.049	-GJ-MR8-TB8-12	45.5 (1.79)	19.1 (0.75)	10.2 (0.40)	241 (3500)	192 (2800)	241 (3500)
3/4	3/4	0.049	-GJ-MR12-TB12-12	51.6 (2.03)	19.1 (0.75)	16.5 (0.65)	165 (2400)	130 (1900)	165 (2400)
1	1	0.065	-GJ-MR16-TB16-12	58.9 (2.32)	19.1 (0.75)	22.1 (0.87)	165 (2400)	130 (1900)	165 (2400)

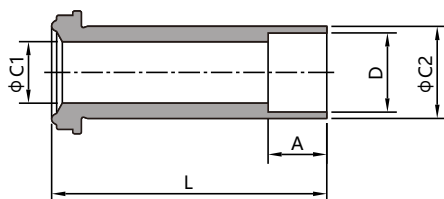
MR Size (in.)	Tube OD D(mm)	Wall Thk. (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
				L	A	C	316L	CU	NI
1/4	6	1.0	-GJ-MR4-TB6M-12	43.2 (1.70)	19.1 (0.75)	4.0 (0.16)	468 (6800)	372 (5400)	468 (6800)
1/4	8	1.0	-GJ-MR4-TB8M-12	43.2 (1.70)	19.1 (0.75)	6.0 (0.24)	337 (4900)	337 (4900)	337 (4900)
1/2	10	1.0	-GJ-MR8-TB10M-12	45.5 (1.79)	19.1 (0.75)	8.0 (0.31)	241 (3500)	192 (2800)	241 (3500)
1/2	12	1.0	-GJ-MR8-TB12M-12	45.5 (1.79)	19.1 (0.75)	10.0 (0.39)	213 (3100)	165 (2400)	213 (3100)
3/4	18	1.5	-GJ-MR12-TB18M-12	51.6 (2.03)	19.1 (0.75)	15.0 (0.59)	206 (3000)	165 (2400)	206 (3000)

Shourt Socket Weld Glands



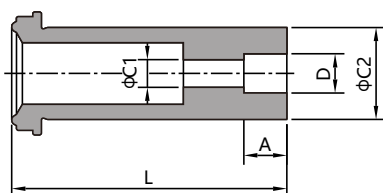
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	B	C	316L	CU	NI
1/4	1/4	-GJS-MR4-TS4-0.50	12.7 (0.50)	7.1 (0.28)	4.6 (0.18)	8.9 (0.35)	378 (5500)	378 (5500)	378 (5500)
1/4	1/4	-GJS-MR4-TS4-0.75	19.1 (0.75)	7.1 (0.28)	4.6 (0.18)	8.9 (0.35)	378 (5500)	378 (5500)	378 (5500)

Long Socket Weld Glands



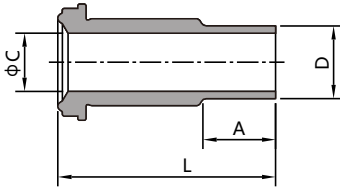
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	C1	C2	316L	CU	NI
1/8	1/16	-GJ-MR2-TS1	17.8 (0.70)	2.5 (0.10)	1.3 (0.05)	3.3 (0.13)	620 (9000)	496 (7200)	620 (9000)
1/8	1/8	-GJ-MR2-TS2	17.8 (0.70)	2.5 (0.10)	2.3 (0.09)	5.1 (0.20)	489 (7100)	489 (7100)	489 (7100)
1/4	1/4	-GJ-MR4-TS4	33.3 (1.31)	7.1 (0.28)	4.6 (0.18)	8.9 (0.35)	378 (5500)	378 (5500)	378 (5500)
1/2	3/8	-GJ-MR8-TS6	38.1 (1.50)	7.9 (0.31)	7.1 (0.28)	15.2 (0.60)	269 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GJ-MR8-TS8	38.1 (1.50)	9.7 (0.38)	10.2 (0.40)	15.2 (0.60)	206 (3000)	165 (2400)	206 (3000)
3/4	3/4	-GJ-MR12-TS12	50.8 (2.00)	11.2 (0.44)	15.7 (0.62)	22.4 (0.88)	192 (2800)	151 (2200)	192 (2800)
1	1	-GJ-MR16-TS16	56.4 (2.22)	15.7 (0.62)	22.1 (0.87)	30.2 (1.19)	206 (3000)	130 (1900)	165 (2400)

Reducing Socket Weld Glands



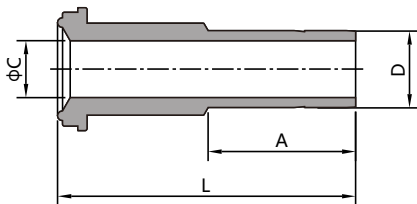
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	C1	C2	316L	CU	NI
1/4	1/8	-GJ-MR4-TS2	33.3 (1.31)	2.5 (0.10)	2.3 (0.09)	8.9 (0.35)	551 (8000)	551 (8000)	551 (8000)
1/2	1/4	-GJ-MR8-TS4	38.1 (1.50)	7.1 (0.28)	4.6 (0.18)	15.2 (0.60)	241 (3500)	241 (3500)	241 (3500)

Male Weld Glands



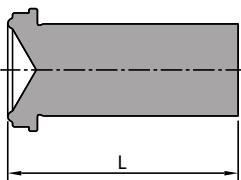
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
			L	A	C	316L	CU	NI
1/8	1/8	-GJ-MR2-TB2	17.8 (0.70)	7.1 (0.28)	1.8 (0.07)	772 (11200)	496 (7200)	620 (9000)
1/4	1/8	-GJ-MR4-TB2	33.3 (1.31)	7.1 (0.28)	1.8 (0.07)	690 (10000)	440 (6400)	551 (8000)
1/4	1/4	-GJ-MR4-TB4	33.3 (1.31)	10.4 (0.41)	3.0 (0.12)	690 (10000)	440 (6400)	551 (8000)
1/2	1/4	-GJ-MR8-TB4	38.1 (1.50)	10.4 (0.41)	3.0 (0.12)	296 (4300)	192 (2800)	241 (3500)
1/2	3/8	-GJ-MR8-TB6	38.1 (1.50)	10.4 (0.41)	7.1 (0.28)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GJ-MR8-TB8	38.1 (1.50)	12.7 (0.50)	10.2 (0.40)	241 (3500)	241 (3500)	241 (3500)
3/4	3/4	-GJ-MR12-TB12	50.8 (2.00)	15.7 (0.62)	13.5 (0.53)	254 (3700)	165 (2400)	206 (3000)
1	1	-GJ-MR16-TB16	56.4 (2.22)	20.6 (0.81)	19.1 (0.75)	206 (3000)	130 (1900)	165 (2400)

Tube Port Glands



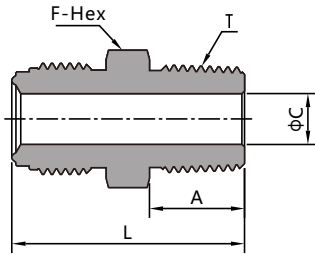
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
			L	A	C	316L	CU	NI
1/4	1/4	-GJ-MR4-TF4	41.0 (1.62)	16.2 (0.64)	4.3 (0.17)	690 (10000)	440 (6400)	551 (8000)
1/2	3/8	-GJ-MR8-TF6	46.0 (1.81)	17.8 (0.70)	6.9 (0.27)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GJ-MR8-TF8	49.3 (1.94)	24.4 (0.96)	9.4 (0.37)	296 (4300)	192 (2800)	241 (3500)

Blind Glands



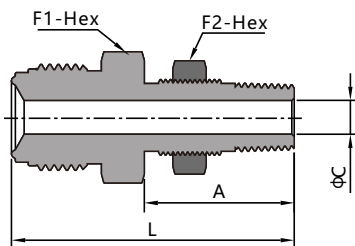
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)
		L
1/8	-GJB-MR2	17.8 (0.70)
1/4	-GJB-MR4	33.3 (1.31)
1/2	-GJB-MR8	38.1 (1.50)
3/4	-GJB-MR12	50.8 (2.00)
1	-GJB-MR16	56.4 (2.22)

Male NPT Bodies



MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	C	F	316L	CU	NI
1/8	1/16	-GU-MR2-N1	27.2 (1.07)	9.7 (0.38)	2.3 (0.09)	9.5 (3/8)	620 (9000)	496 (7200)	620 (9000)
1/8	1/8	-GU-MR2-N2	27.2 (1.07)	9.7 (0.38)	2.3 (0.09)	11.1 (7/16)	620 (9000)	496 (7200)	620 (9000)
1/4	1/8	-GU-MR4-N2	33.3 (1.31)	9.7 (0.38)	4.6 (0.18)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/4	1/4	-GU-MR4-N4	37.8 (1.49)	14.2 (0.56)	4.6 (0.18)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/2	1/4	-GU-MR8-N4	41.9 (1.65)	14.2 (0.56)	7.1 (0.28)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
1/2	3/8	-GU-MR8-N6	41.9 (1.65)	14.2 (0.56)	9.7 (0.38)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GU-MR8-N8	46.7 (1.84)	19.1 (0.75)	10.2 (0.40)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
3/4	3/4	-GU-MR12-N12	55.6 (2.19)	19.1 (0.75)	15.7 (0.62)	33.3 (1 5/16)	254 (3700)	165 (2400)	206 (3000)
1	1	-GU-MR16-N16	62.7 (2.47)	23.9 (0.94)	22.1 (0.87)	41.3 (1 5/8)	206 (3000)	130 (1900)	206 (3000)

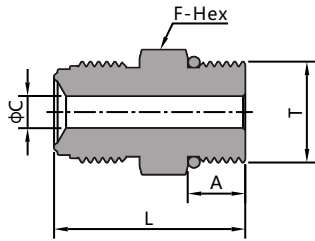
Bulkhead Male Bodies



MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	C	F1	F2	316L	CU	NI
1/4	1/4	-GUB-MR4-N4	56.1 (2.21)	31.5 (1.24)	7.1 (0.28)	20.6 (13/16)	20.6 (13/16)	551 (8000)	440 (6400)	551 (8000)
1/2	1/4	-GUB-MR8-N4	59.4 (2.34)	31.5 (1.24)	7.1 (0.28)	23.8 (15/16)	20.6 (13/16)	301 (4370)	192 (2800)	241 (3500)

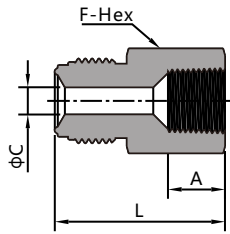
1. The proper panel is with hole size of 16.7 mm (21/32 in.), the max. panel thickness is 9.7 mm (0.38 in.)
2. Contact XINVAL for other configurations.

SAE/MS Thread Bodies



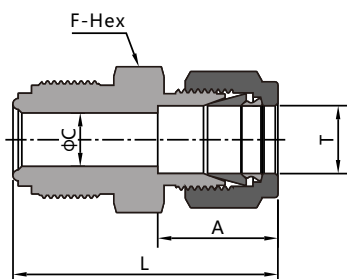
MR Size (in.)	NPT Size T(in.)	O-ring Size	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
				L	A	C	F	316L	CU	NI
1/4	9/16-18	906	-GU-MR4-ST9	33.8 (1.33)	9.9 (0.39)	4.6 (0.18)	19.1 (3/4)	310 (4500)	310 (4500)	310 (4500)
1/2	9/16-18	906	-GU-MR8-ST9	59.4 (2.34)	31.5 (1.24)	7.1 (0.28)	23.8 (15/16)	241 (3500)	192 (2800)	241 (3500)
1/2	7/8-14	910	-GU-MR8-ST14	59.4 (2.34)	31.5 (1.24)	7.1 (0.28)	23.8 (15/16)	241 (3500)	192 (2800)	241 (3500)

Female NPT Bodies



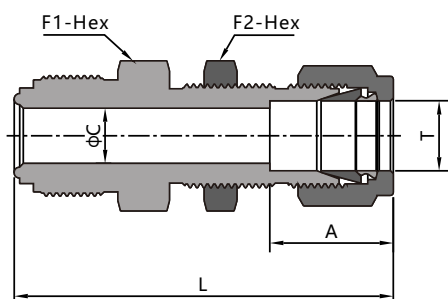
MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	C	F	316L	CU	NI
1/8	1/16	-GU-MR2-FN1	27.9 (1.10)	9.9 (0.39)	2.3 (0.09)	11.1 (7/16)	461 (6700)	461 (6700)	461 (6700)
1/8	1/8	-GU-MR2-FN2	30.2 (1.19)	10.4 (0.41)	2.3 (0.09)	14.3 (9/16)	447 (6500)	447 (6500)	447 (6500)
1/4	1/8	-GU-MR4-FN2	35.8 (1.41)	10.4 (0.41)	4.6 (0.18)	15.9 (5/8)	551 (8000)	440 (6400)	551 (8000)
1/4	1/4	-GU-MR4-FN4	39.1 (1.54)	15.0 (0.59)	4.6 (0.18)	19.1 (3/4)	545 (6600)	358 (5200)	545 (6600)
1/2	3/8	-GU-MR8-FN6	44.7 (1.76)	15.0 (0.59)	10.2 (0.40)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GU-MR8-FN8	50.5 (1.99)	19.8 (0.78)	10.2 (0.40)	27.0 (1 1/16)	296 (4300)	192 (2800)	241 (3500)
3/4	3/4	-GU-MR12-FN12	59.9 (2.36)	20.6 (0.81)	15.7 (0.62)	33.3 (1 5/16)	254 (3700)	165 (2400)	206 (3000)
1	1	-GU-MR16-FN16	63.8 (2.51)	25.4 (1.00)	22.1 (0.87)	41.3 (1 5/8)	206 (3000)	130 (1900)	206 (3000)

Tube Fitting Bodies



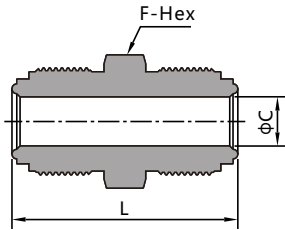
MR Size (in.)	Tube Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	A	C	F	316L	CU	NI
1/4	1/8	-GU-MR4-F2	38.9 (1.53)	12.7 (0.50)	2.3 (0.09)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/4	1/4	-GU-MR4-F4	41.4 (1.62)	15.2 (0.60)	4.6 (0.18)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/2	3/8	-GU-MR8-F6	46.7 (1.84)	16.8 (0.66)	7.1 (0.28)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GU-MR8-F8	49.5 (1.95)	22.9 (0.90)	10.2 (0.40)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)

Bulkhead Tube Fitting Bodies



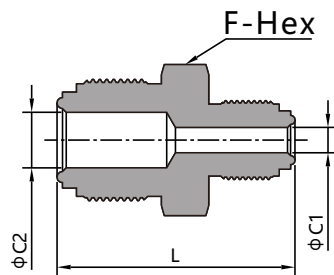
MR Size (in.)	Tube Size (in.)	Basic Ordering No.	Dimensions, mm (in.)					Panel Hole Size mm (in.)	Max. Panel Thk. mm (in.)	Pressure Rating, bar (psig)		
			L	A	C	F1	F2			316L	CU	NI
1/4	1/4	-GUB-MR4-F4	57.2 (2.25)	15.2 (0.60)	4.6 (0.18)	15.9 (5/8)	15.9 (5/8)	11.9 (15/32)	10.2 (0.40)	690 (10000)	440 (6400)	551 (8000)
1/2	3/8	-GUB-MR8-F6	64.5 (2.54)	16.8 (0.66)	7.1 (0.28)	23.8 (15/16)	19.1 (3/4)	15.0 (19/32)	11.2 (0.44)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GUB-MR8-F8	69.6 (2.74)	22.9 (0.90)	10.2 (0.40)	23.8 (15/16)	23.8 (15/16)	19.8 (25/32)	12.7 (0.50)	296 (4300)	192 (2800)	241 (3500)

Union Bodies



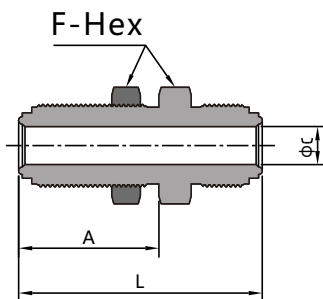
MR Size (in.)	MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
			L	C	F	316L	CU	NI
1/8	1/8	-GU-MR2	28.7 (1.13)	2.3 (0.09)	9.5 (3/8)	772 (11200)	496 (7200)	620 (9000)
1/4	1/4	-GU-MR4	39.4 (1.55)	4.6 (0.18)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/2	1/2	-GU-MR8	46.7 (1.84)	10.2 (0.40)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
3/4	3/4	-GU-MR12	62.0 (2.44)	15.7 (0.62)	33.3 (1 5/16)	254 (3700)	165 (2400)	206 (3000)
1	1	-GU-MR16	65.8 (2.59)	22.1 (0.87)	41.3 (1 5/8)	206 (3000)	130 (1900)	206 (3000)

Reducing Union Bodies



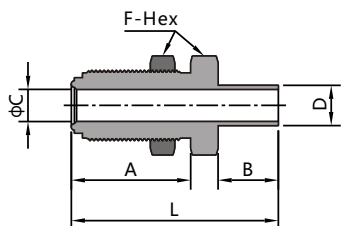
MR Size (in.)	MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
			L	C1	C2	F	316L	CU	NI
1/4	1/8	-GU-MR4-MR2	34.8 (1.37)	2.3 (0.09)	4.6 (0.18)	15.9 (5/8)	690 (10000)	440 (6400)	551 (8000)
1/2	1/4	-GU-MR8-MR4	43.4 (1.71)	4.6 (0.18)	10.2 (0.40)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)

Bulkhead Union Bodies



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)				Panel Hole Size mm (in.)	Max. Panel Thk. mm (in.)	Pressure Rating, bar (psig)		
		L	A	C	F			316L	CU	NI
1/4	-GUB-MR4	56.6 (2.23)	33.3 (1.30)	4.6 (0.18)	19.1 (3/4)	15.0 (19/32)	11.2 (0.44)	690 (10000)	440 (6400)	551 (8000)
1/2	-GUB-MR8	65.3 (2.57)	37.6 (1.48)	10.2 (0.40)	27.0 (1 1/16)	23.1 (29/32)	12.7 (0.50)	296 (4300)	192 (2800)	241 (3500)

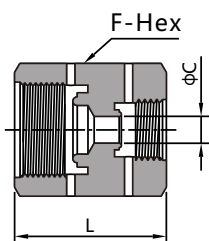
Bulkhead Butt Weld Bodies



MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	B	C	F	316L	CU	NI
1/4	1/4	-GUB-MR4-TB4	59.5 (2.36)	33.0 (1.30)	19.1 (0.75)	4.6 (0.18)	19.1 (0.75)	351 (5100)	351 (5100)	351 (5100)

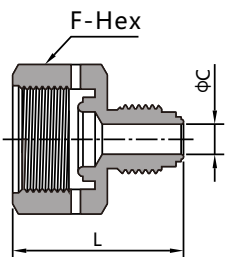
- Contact XINVAL for the suggested max. panel thickness.

Female Reducing Bodies



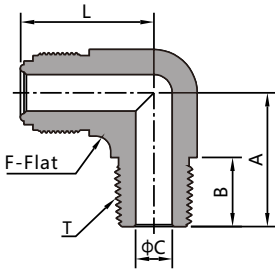
MR Size (in.)	MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
			L	C	F	316L	CU	NI
1/4	1/8	-GFC-FMR4-FMR2	29.5 (1.16)	3.3 (0.13)	19.1 (3/4)	690 (1000)	440 (6400)	551 (8000)
1/2	1/4	-GFC-FMR8-FMR4	35.8 (1.41)	6.4 (0.25)	27.0 (1 1/16)	296 (4300)	192 (2800)	241 (3500)

Reducing Adapters



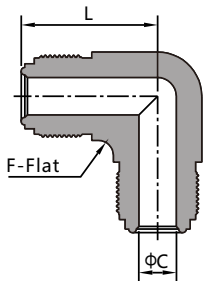
Female MR Size (in.)	Male MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
			L	C	F	316L	CU	NI
1/8	1/4	-GA-FMR2-MR4	26.9 (1.06)	3.3 (0.13)	15.9 (5/8)	690 (1000)	440 (6400)	551 (8000)
1/4	1/8	-GA-FMR4-MR2	30.2 (1.19)	2.3 (0.09)	19.1 (3/4)	690 (1000)	440 (6400)	551 (8000)
1/4	1/2	-GA-FMR4-MR8	35.8 (1.41)	6.4 (0.25)	23.8 (15/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/4	-GA-FMR8-MR4	35.8 (1.41)	4.6 (0.18)	27.0 (1 1/16)	296 (4300)	192 (2800)	241 (3500)

Male NPT Elbows



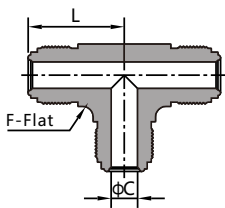
MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	B	C	F	316L	CU	NI
1/4	1/8	-GE-MR4-N2	27.2 (1.07)	22.1 (0.87)	9.6 (0.38)	4.6 (0.18)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)
1/4	1/4	-GE-MR4-N4	27.2 (1.07)	26.7 (1.05)	14.2 (0.56)	4.6 (0.18)	12.7 (1/2)	551 (8000)	551 (8000)	551 (8000)
1/2	3/8	-GE-MR8-N6	36.8 (1.45)	32.0 (1.26)	14.2 (0.56)	10.2 (0.40)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GE-MR8-N8	36.8 (1.45)	36.8 (1.45)	19.1 (0.75)	10.2 (0.40)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)

Union Elbows



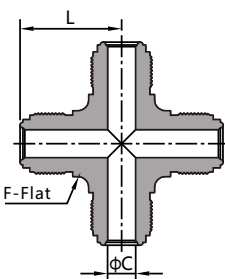
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	F	316L	CU	NI
1/8	-GE-MR2	22.6 (0.89)	2.3 (0.09)	11.1 (7/16)	772 (11200)	496 (7200)	620 (9000)
1/4	-GE-MR4	27.2 (1.07)	4.6 (0.18)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)
1/2	-GE-MR8	36.8 (1.45)	10.2 (0.40)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)
3/4	-GE-MR12	48.8 (1.92)	15.7 (0.62)	31.8 (1 1/4)	254 (3700)	165 (2400)	206 (3000)
1	-GE-MR16	50.8 (2.00)	22.1 (0.87)	42.9 (1 11/16)	206 (3000)	130 (1900)	165 (2400)

Union Tees



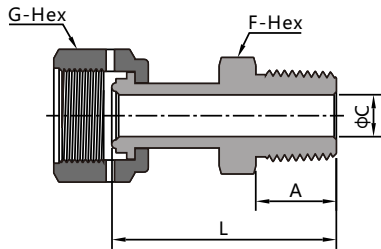
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	F	316L	CU	NI
1/8	-GT-MR2	22.6 (0.89)	2.3 (0.09)	11.1 (7/16)	772 (11200)	496 (7200)	620 (9000)
1/4	-GT-MR4	27.2 (1.07)	4.6 (0.18)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)
1/2	-GT-MR8	36.8 (1.45)	10.2 (0.40)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)
3/4	-GT-MR12	48.8 (1.92)	15.7 (0.62)	31.8 (1 1/4)	254 (3700)	165 (2400)	206 (3000)
1	-GT-MR16	50.8 (2.00)	22.1 (0.87)	42.9 (1 11/16)	206 (3000)	130 (1900)	165 (2400)

Union Crosses



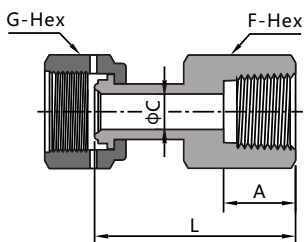
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	F	316L	CU	NI
1/8	-GC-MR2	22.6 (0.89)	2.3 (0.09)	11.1 (7/16)	772 (11200)	496 (7200)	620 (9000)
1/4	-GC-MR4	27.2 (1.07)	4.6 (0.18)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)
1/2	-GC-MR8	36.8 (1.45)	10.2 (0.40)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)
3/4	-GC-MR12	48.8 (1.92)	15.7 (0.62)	31.8 (1 1/4)	254 (3700)	165 (2400)	206 (3000)
1	-GC-MR16	50.8 (2.00)	22.1 (0.87)	42.9 (1 11/16)	206 (3000)	130 (1900)	165 (2400)

Welded Glands to Male NPT



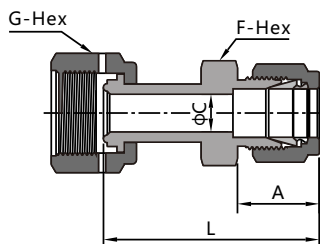
MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	C	G	F	316L	CU	NI
1/4	1/8	-GJW-FMR4-N2	40.1 (1.58)	9.7 (0.38)	4.6 (0.18)	19.1 (3/4)	11.1 (7/16)	551 (8000)	446 (6400)	551 (8000)
1/4	1/4	-GJW-FMR4-N4	45.5 (1.79)	14.2 (0.56)	4.6 (0.18)	19.1 (3/4)	14.3 (3/4)	551 (8000)	446 (6400)	551 (8000)
1/2	3/8	-GJW-FMR8-N6	48.0 (1.89)	14.2 (0.56)	10.2 (0.40)	27.0 (1 1/16)	17.5 (11/16)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GJW-FMR8-N8	53.1 (2.09)	19.1 (0.75)	10.2 (0.40)	27.0 (1 1/16)	22.2 (7/8)	296 (4300)	192 (2800)	241 (3500)

Welded Glands to Female NPT



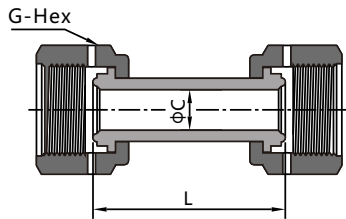
MR Size (in.)	NPT Size T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	C	G	F	316L	CU	NI
1/4	1/4	-GJW-FMR4-FN4	45.0 (1.77)	15.0 (0.59)	4.6 (0.18)	19.1 (3/4)	14.3 (3/4)	454 (6600)	458 (5200)	454 (6600)
1/2	3/8	-GJW-FMR8-FN6	49.5 (1.95)	15.0 (0.59)	10.2 (0.40)	27.0 (1 1/16)	22.2 (7/8)	296 (4300)	192 (2800)	241 (3500)
1/2	1/2	-GJW-FMR8-FN8	55.4 (2.18)	19.8 (0.78)	10.2 (0.40)	27.0 (1 1/16)	27.0 (1 1/16)	296 (4300)	192 (2800)	241 (3500)

Welded Glands to Tube Fittings



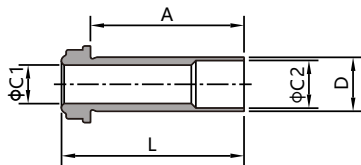
MR Size (in.)	Tube OD T(in.)	Basic Ordering No.	Dimensions, mm (in.)					Pressure Rating, bar (psig)		
			L	A	C	G	F	316L	CU	NI
1/4	1/4	-GJW-FMR4-F4	49.3 (1.94)	15.2 (0.60)	4.6 (0.18)	19.1 (3/4)	12.7 (1/2)	551 (8000)	440 (6400)	551 (8000)
1/2	3/8	-GJW-FMR8-F6	50.0 (1.97)	16.8 (0.66)	4.6 (0.18)	19.1 (3/4)	15.9 (5/8)	447 (6500)	358 (5200)	447 (6500)
1/2	1/2	-GJW-FMR8-F8	56.6 (2.23)	22.9 (0.90)	10.2 (0.40)	27.0 (1 1/16)	20.6 (13/16)	296 (4300)	192 (2800)	241 (3500)

Welded Glands Unions



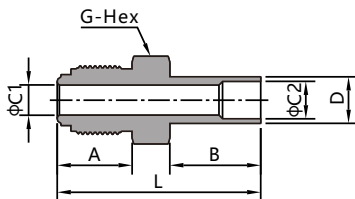
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	G	316L	CU	NI
1/4	-GJW-FMR4	43.4 (1.71)	4.6 (0.18)	19.1 (3/4)	551 (8000)	440 (6400)	551 (8000)
1/2	-GJW-FMR8	46.7 (1.84)	10.2 (0.40)	27.0 (1 1/16)	296 (4300)	192 (2800)	241 (3500)

High Flow-Butt Weld Glands



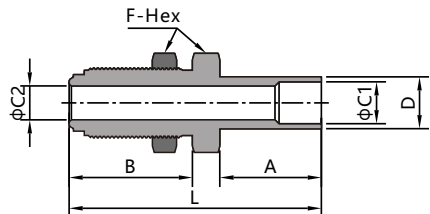
MR Size (in.)	Tube OD D(in.)	Wall Thk. H(in.)	Basic Ordering No.	Dimensions, mm (in.)				Pressure Rating, bar (psig)		
				L	A	C1	C2	316L	CU	NI
1/4	3/8	0.035	-GJ-HMR4-TB6-0.60	15.2 (0.60)	10.4 (0.41)	6.4 (0.25)	7.9 (0.31)	227 (3300)	227 (3300)	227 (3300)
1/4	3/8	0.035	-GJ-HMR4-TB6-1.19	30.2 (1.19)	25.4 (1.00)	6.4 (0.25)	7.9 (0.31)	227 (3300)	227 (3300)	227 (3300)
1/4	3/8	0.035	-GJ-HMR4-TB6-1.31	33.3 (1.31)	28.4 (1.12)	6.4 (0.25)	7.9 (0.31)	227 (3300)	227 (3300)	227 (3300)

High Flow-Butt Weld Bodies



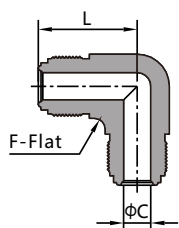
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)						Pressure Rating, bar (psig)		
			L	A	B	C1	C2	F	316L	CU	NI
1/4	3/8	-GU-HMR4-TB6	42.7 (1.68)	15.7 (0.62)	19.1 (0.75)	6.4 (0.25)	7.9 (0.31)	15.9 (5/8)	227 (3300)	227 (3300)	227 (3300)

High Flow-Bulkhead Butt Weld Bodies



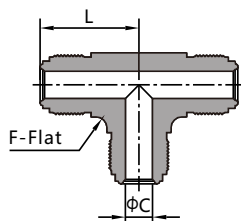
MR Size (in.)	Tube OD D(in.)	Basic Ordering No.	Dimensions, mm (in.)						Pressure Rating, bar (psig)		
			L	A	B	C1	C2	F	316L	CU	NI
1/4	3/8	-GUB-HMR4-TB6	59.9 (2.36)	19.1 (0.75)	33.0 (1.30)	7.9 (0.31)	6.4 (0.25)	19.1 (3/4)	227 (3300)	227 (3300)	227 (3300)

High Flow-Elbows



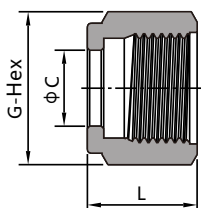
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	F	316L	CU	NI
1/4	-GE-HMR4	27.2 (1.07)	6.4 (0.25)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)

High Flow-Tees



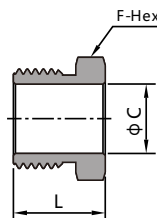
MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)			Pressure Rating, bar (psig)		
		L	C	F	316L	CU	NI
1/4	-GT-HMR4	27.2 (1.07)	6.4 (0.25)	12.7 (1/2)	690 (10000)	440 (6400)	551 (8000)

High Flow-Female Nuts



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)		
		L	C	G
1/4	-GN-HMR4-9.9	20.6 (0.81)	9.9 (0.39)	19.1 (3/4)
1/4	-GN-HMR4-11.7	20.6 (0.81)	11.7 (0.46)	19.1 (3/4)

High Flow-Male Nuts



MR Size (in.)	Basic Ordering No.	Dimensions, mm (in.)		
		L	C	F
1/4	-GMN-HMR4	18.0 (0.71)	9.9 (0.39)	15.9 (5/8)

XINVAL



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