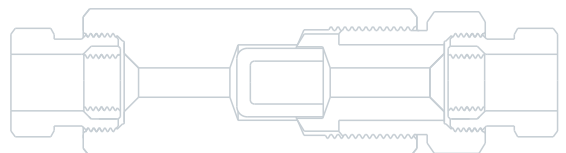
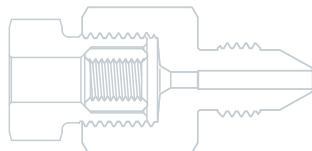
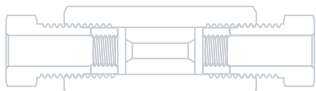
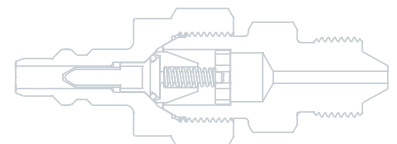
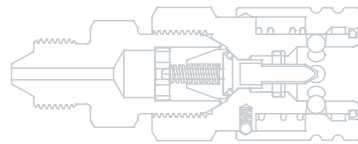
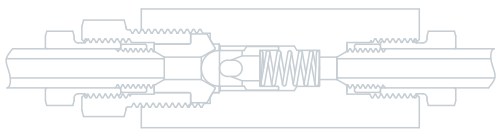


FITOK

Full Technical Catalog
For Medium & High Pressure



FITOK Full Technical Catalog
For Medium & High Pressure

Medium & High Pressure Fittings



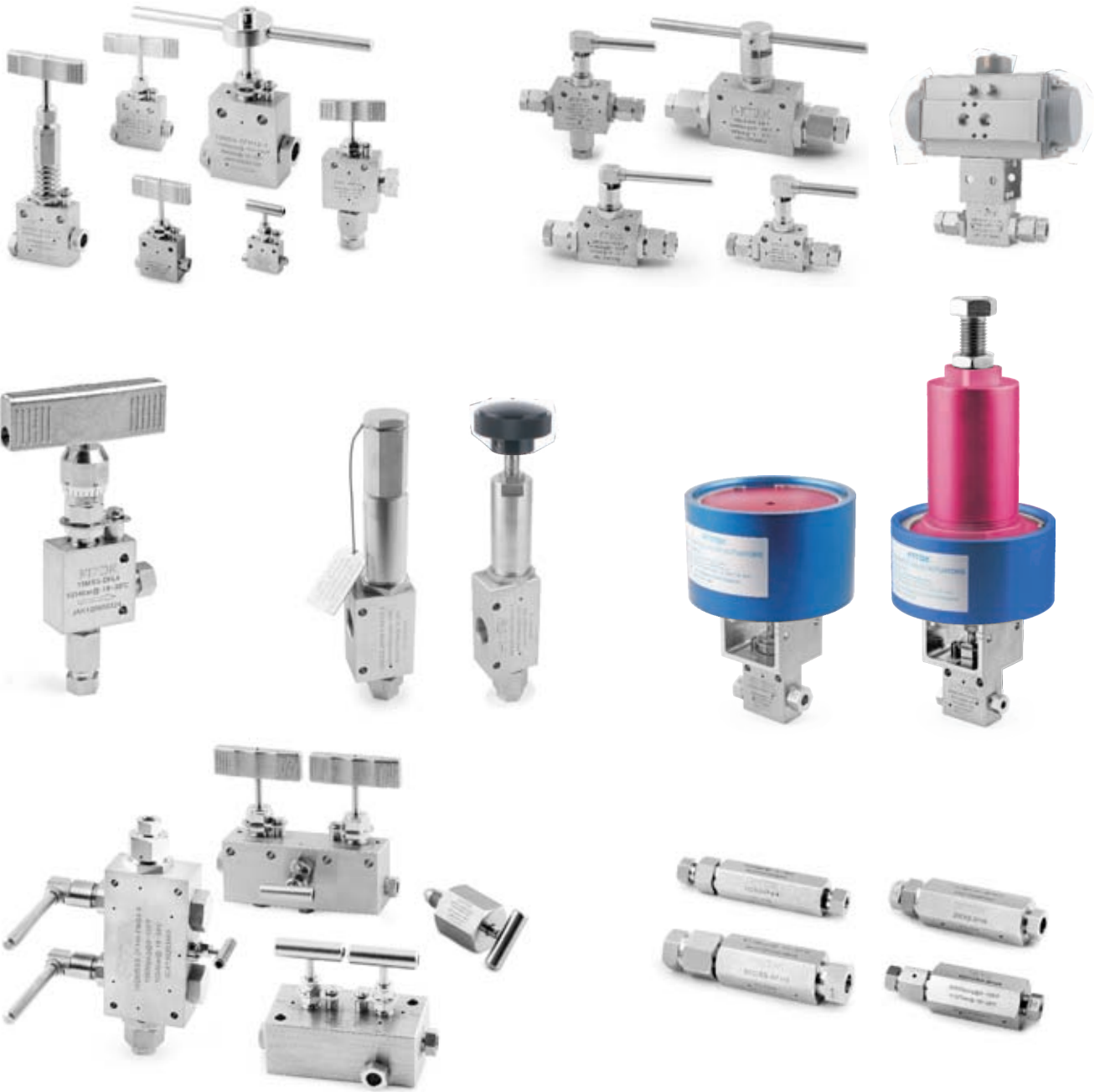
Filters



Quick Couplings



Medium & High Pressure Valves



Sour Service Products



Subsea Valves



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Technical Information

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Medium & High Pressure Fittings and Tubing

DHL Series Tube Fittings and Tubing



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Medium Pressure Tube Fittings and Tubing



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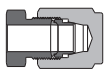
A-05

Plugs - TP



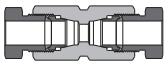
A-05

Caps - TC



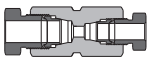
A-05

Unions - U



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Reducing Unions - U



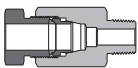
A-06

Bulkhead Unions - BU



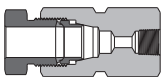
A-06

Male Connectors - CM



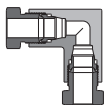
A-07

Female Connectors - CF



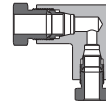
A-08

Union Elbows - LU



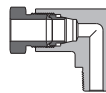
A-08

Union Reducing Elbows - LU



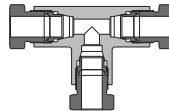
A-08

Male Elbows - LM



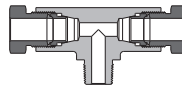
A-09

Union Tees - TTT



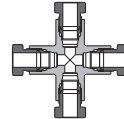
A-09

Male Branch Tees - TTM



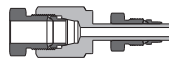
A-10

Union Crosses - C



A-10

Reducers - R



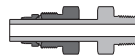
A-11

Port Connectors - P



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Ordering Number Description

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Tubing

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Medium & High Pressure Fittings and Tubing

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Technical Information

Tube Fittings

Features

- ⦿ Working pressure up to 15,000 psig (1034 bar)
- ⦿ Double ferrules to compress sleeve
- ⦿ Easy and quick connection to DHL Series tubing
- ⦿ Tubing sizes available in 1/8", 1/4", 3/8", 1/2", 9/16" and 3/4"
- ⦿ High tensile 316 Stainless Steel as raw material
- ⦿ Nut threads coated with molybdenum disulfide-based lubricant to minimize the friction
- ⦿ Every fitting marked with size, material and heat number
- ⦿ Long tube-support area to improve vibration resistance and line loads
- ⦿ 4:1 safety factor

Standard Materials of Construction

Component	Material	Specification
<i>Body, ferrule</i>	<i>316 stainless steel</i>	<i>ASTM A479</i>
Nut	316 stainless steel	ASTM A479

Wetted components listed in italics.

Working Pressure

- ⦿ Working pressure is determined by the lowest working pressure of the ends.

Tube Ends

The working pressure of the tube ends at ambient temperature is determined by the working pressure of the FITOK tubing used. For details, please refer to "Working Pressure of Tubing" on A-14.

Heavy-Duty Stud Ends (SAE J1926-2)

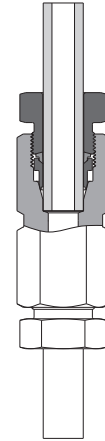
Working pressure for heavy-duty end connections listed in this Catalog is rated to 10,000 psig (690 bar).

NPT Ends

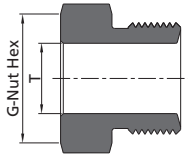
NPT Size in.	Working Pressure psig (bar)
1/8	15,000 (1034)
1/4	
3/8	
1/2	10,000 (690)
3/4	
1	

Working Temperature

Connection Type	Working Temperature Range, °F (°C)
Tube Ends	-325 to 800 (-198 to 427)
Heavy-Duty Stud Ends (SAE J1926-2)	0 to 400 (-17.8 to 204)
NPT Ends	-325 to 400 (-198 to 204)

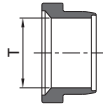


Nuts



Tube		
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)
		G
1/8	SS-N-DHL2	0.37 (9.5)
1/4	SS-N-DHL4	0.63 (15.9)
3/8	SS-N-DHL6	0.75 (19.1)
1/2	SS-N-DHL8	0.94 (23.8)
9/16	SS-N-DHL9	1.06 (27.0)
3/4	SS-N-DHL12	1.38 (34.9)

Front Ferrules



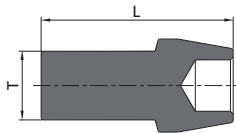
Tube	
T - Tube O.D. in.	Ordering Number
1/8	SS-FF-DHL2
1/4	SS-FF-DHL4
3/8	SS-FF-DHL6
1/2	SS-FF-DHL8
9/16	SS-FF-DHL9
3/4	SS-FF-DHL12

Rear Ferrules



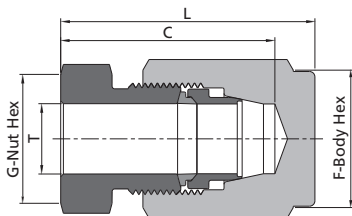
Tube	
T - Tube O.D. in.	Ordering Number
1/8	SS-RF-DHL2
1/4	SS-RF-DHL4
3/8	SS-RF-DHL6
1/2	SS-RF-DHL8
9/16	SS-RF-DHL9
3/4	SS-RF-DHL12

Plugs



Tube		
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)
		L
1/8	SS-TP-DHL2	0.95 (24.2)
1/4	SS-TP-DHL4	1.20 (30.4)
3/8	SS-TP-DHL6	1.19 (30.2)
1/2	SS-TP-DHL8	1.36 (34.6)
9/16	SS-TP-DHL9	1.73 (44.0)
3/4	SS-TP-DHL12	2.30 (58.3)

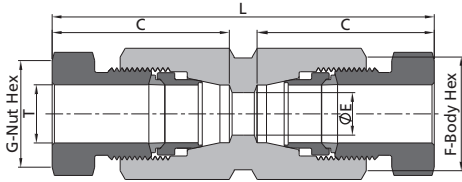
Caps



Tube					
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)			
		L	C	F	G
1/8	SS-TC-DHL2	1.22 (31.1)	1.07 (27.2)	0.50 (12.7)	0.37 (9.5)
1/4	SS-TC-DHL4	1.70 (43.1)	1.38 (35.2)	0.63 (15.9)	0.63 (15.9)
3/8	SS-TC-DHL6	1.76 (44.8)	1.42 (36.1)	0.75 (19.1)	0.75 (19.1)
1/2	SS-TC-DHL8	2.03 (51.6)	1.56 (39.6)	1.00 (25.4)	0.94 (23.8)
9/16	SS-TC-DHL9	2.47 (62.8)	1.93 (49.0)	1.13 (28.6)	1.06 (27.0)
3/4	SS-TC-DHL12	3.22 (81.9)	2.49 (63.3)	1.50 (38.1)	1.38 (34.9)

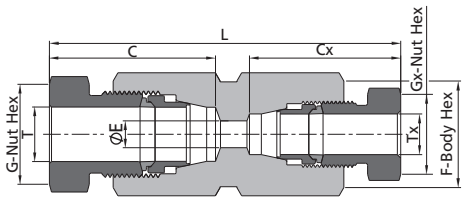
Medium & High Pressure Fittings and Tubing
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Unions



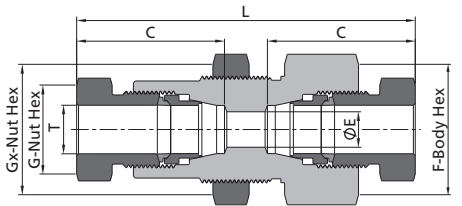
Tube		Dimensions, in. (mm)					
T - Tube O.D. in.	Ordering Number	L	C	E	F	G	
1/8	SS-U-DHL2	2.45 (62.2)	1.07 (27.2)	0.09 (2.4)	0.50 (12.7)	0.37 (9.5)	
1/4	SS-U-DHL4	3.00 (76.2)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
3/8	SS-U-DHL6	3.07 (77.9)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
1/2	SS-U-DHL8	3.36 (85.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	
9/16	SS-U-DHL9	4.11 (104.4)	1.93 (49.0)	0.41 (10.4)	1.13 (28.6)	1.06 (27.0)	
3/4	SS-U-DHL12	5.38 (136.7)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	

Reducing Unions



Tube			Dimensions, in. (mm)						
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	C	Cx	E	F	G	Gx
1/4	1/8	SS-U-DHL4-DHL2	2.73 (69.4)	1.39 (35.2)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.63 (15.9)	0.37 (9.5)
3/8	1/8	SS-U-DHL6-DHL2	2.77 (70.3)	1.42 (36.1)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.75 (19.1)	0.37 (9.5)
3/8	1/4	SS-U-DHL6-DHL4	3.06 (77.6)	1.42 (36.1)	1.39 (35.2)	0.19 (4.8)	0.75 (19.1)	0.75 (19.1)	0.63 (15.9)
1/2	1/4	SS-U-DHL8-DHL4	3.35 (85.1)	1.56 (39.6)	1.39 (35.2)	0.19 (4.8)	1.00 (25.4)	0.94 (23.8)	0.63 (15.9)
1/2	3/8	SS-U-DHL8-DHL6	3.32 (84.3)	1.56 (39.6)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	0.75 (19.1)
9/16	1/2	SS-U-DHL9-DHL8	4.04 (102.5)	1.93 (49.0)	1.56 (39.6)	0.37 (9.5)	1.13 (28.6)	1.06 (27.0)	0.94 (23.8)
3/4	1/2	SS-U-DHL12-DHL8	4.73 (120.2)	2.49 (63.3)	1.56 (39.6)	0.37 (9.5)	1.50 (38.1)	1.38 (34.9)	0.94 (23.8)

Bulkhead Unions



Tube		Dimensions, in. (mm)							
T - Tube O.D. in.	Ordering Number	L	C	E	F	G	Gx	Panel Hole Size	Maximum Panel Thickness
1/8	SS-BU-DHL2	2.95 (75.0)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.37 (9.5)	0.81 (20.6)	0.69 (17.5)	0.38 (9.7)
1/4	SS-BU-DHL4	3.27 (83.1)	1.38 (35.2)	0.19 (4.8)	1.00 (25.4)	0.63 (15.9)	1.00 (25.4)	0.94 (23.9)	0.38 (9.7)
3/8	SS-BU-DHL6	3.21 (81.6)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.75 (19.1)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
1/2	SS-BU-DHL8	3.93 (99.8)	1.56 (39.6)	0.37 (9.5)	1.38 (34.9)	0.94 (23.8)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
9/16	SS-BU-DHL9	4.64 (117.8)	1.93 (49.0)	0.41 (10.4)	1.63 (41.3)	1.06 (27.0)	1.63 (41.3)	1.33 (33.7)	0.38 (9.7)
3/4	SS-BU-DHL12	5.82 (147.9)	2.49 (63.3)	0.56 (14.2)	1.87 (47.6)	1.38 (34.9)	1.87 (47.6)	1.64 (41.7)	0.38 (9.7)

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

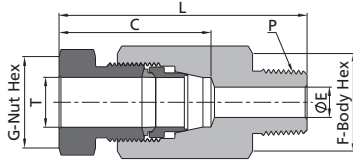
Sour Service Products

Subsea Valves

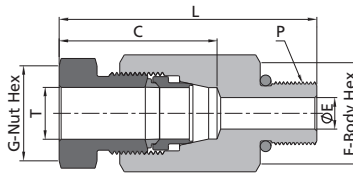
Tools and Installation Instructions

Technical Information

Male Connectors

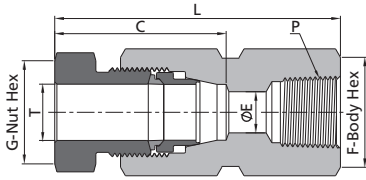


Tube			NPT Thread				
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)				
			L	C	E	F	G
1/8	1/8	SS-CM-DHL2-NS2	1.60 (40.6)	1.07 (27.2)	0.09 (2.4)	0.50 (12.7)	0.37 (9.5)
1/8	1/4	SS-CM-DHL2-NS4	1.72 (43.8)	1.07 (27.2)	0.09 (2.4)	0.56 (14.3)	0.37 (9.5)
1/8	3/8	SS-CM-DHL2-NS6	1.72 (43.8)	1.07 (27.2)	0.09 (2.4)	0.69 (17.5)	0.37 (9.5)
1/4	1/8	SS-CM-DHL4-NS2	1.95 (49.5)	1.39 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
1/4	1/4	SS-CM-DHL4-NS4	2.08 (52.8)	1.39 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
1/4	3/8	SS-CM-DHL4-NS6	2.08 (52.8)	1.39 (35.2)	0.19 (4.8)	0.69 (17.5)	0.63 (15.9)
1/4	1/2	SS-CM-DHL4-NS8	2.32 (59.0)	1.39 (35.2)	0.19 (4.8)	0.87 (22.2)	0.63 (15.9)
3/8	1/4	SS-CM-DHL6-NS4	2.17 (55.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
3/8	3/8	SS-CM-DHL6-NS6	2.17 (55.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
3/8	1/2	SS-CM-DHL6-NS8	2.30 (58.3)	1.42 (36.1)	0.25 (6.4)	0.87 (22.2)	0.75 (19.1)
1/2	1/4	SS-CM-DHL8-NS4	2.53 (64.3)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)
1/2	3/8	SS-CM-DHL8-NS6	2.53 (64.3)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)
1/2	1/2	SS-CM-DHL8-NS8	2.65 (67.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
1/2	3/4	SS-CM-DHL8-NS12	2.53 (64.3)	1.56 (39.6)	0.37 (9.5)	1.06 (27.0)	0.94 (23.8)
9/16	1/4	SS-CM-DHL9-NS4	3.03 (77.0)	1.93 (49.0)	0.25 (6.4)	1.13 (28.6)	1.06 (27.0)
9/16	1/2	SS-CM-DHL9-NS8	3.11 (79.1)	1.93 (49.0)	0.41 (10.4)	1.13 (28.6)	1.06 (27.0)
3/4	1/2	SS-CM-DHL12-NS8	3.74 (95.1)	2.49 (63.3)	0.41 (10.4)	1.50 (38.1)	1.38 (34.9)
3/4	3/4	SS-CM-DHL12-NS12	3.74 (95.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
3/4	1	SS-CM-DHL12-NS16	3.83 (97.4)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)



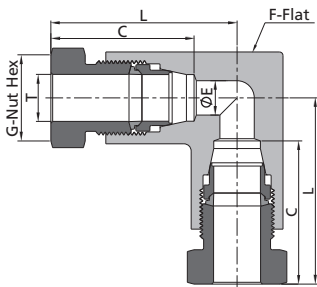
Tube			Heavy-duty SAE/MS				
T - Tube O.D. in.	P - SAE/MS Thread Size	Ordering Number	Dimensions, in. (mm)				
			L	C	E	F	G
1/8	7/16-20	SS-CM-DHL2-SH7	1.60 (40.6)	1.07 (27.2)	0.09 (2.4)	0.56 (14.3)	0.37 (9.5)
1/8	9/16-18	SS-CM-DHL2-SH9	1.66 (42.2)	1.07 (27.2)	0.09 (2.4)	0.69 (17.5)	0.37 (9.5)
1/4	7/16-20	SS-CM-DHL4-SH7	2.04 (51.7)	1.39 (35.2)	0.18 (4.5)	0.63 (15.9)	0.63 (15.9)
1/4	9/16-18	SS-CM-DHL4-SH9	2.07 (52.7)	1.39 (35.2)	0.19 (4.8)	0.69 (17.5)	0.63 (15.9)
3/8	7/16-20	SS-CM-DHL6-SH7	2.09 (53.0)	1.42 (36.1)	0.18 (4.5)	0.75 (19.1)	0.75 (19.1)
3/8	9/16-18	SS-CM-DHL6-SH9	2.13 (54.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	7/16-20	SS-CM-DHL8-SH7	2.49 (63.3)	1.56 (39.6)	0.18 (4.5)	1.00 (25.4)	0.94 (23.8)
1/2	9/16-18	SS-CM-DHL8-SH9	2.49 (63.3)	1.56 (39.6)	0.30 (7.5)	1.00 (25.4)	0.94 (23.8)

Female Connectors



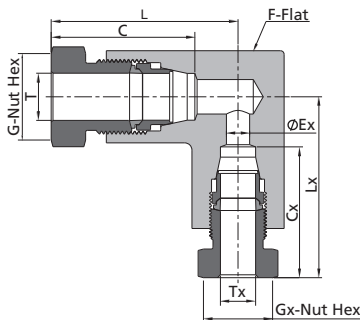
Tube			NPT Thread				
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)				
			L	C	E	F	G
1/8	1/8	SS-CF-DHL2-NS2	1.97 (50.1)	1.07 (27.2)		0.63 (15.9)	0.37 (9.5)
1/8	1/4	SS-CF-DHL2-NS4	2.01 (53.3)	1.07 (27.2)		0.94 (23.8)	0.37 (9.5)
1/4	1/4	SS-CF-DHL4-NS4	2.33 (59.1)	1.38 (35.2)		0.94 (23.8)	0.63 (15.9)
3/8	1/4	SS-CF-DHL6-NS4	2.42 (61.5)	1.42 (36.1)		0.94 (23.8)	0.75 (19.1)
1/2	1/4	SS-CF-DHL8-NS4	2.78 (70.6)	1.56 (39.6)		1.00 (25.4)	0.94 (23.8)
1/2	1/2	SS-CF-DHL8-NS8	3.03 (77.0)	1.56 (39.6)		1.38 (34.9)	0.94 (23.8)
3/4	1/2	SS-CF-DHL12-NS8	3.85 (97.8)	2.49 (63.3)		1.50 (38.1)	1.38 (34.9)

Union Elbows



Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	SS-LU-DHL2	1.29 (32.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	SS-LU-DHL4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	SS-LU-DHL6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	SS-LU-DHL8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	SS-LU-DHL9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	SS-LU-DHL12	3.11 (79.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)

Union Reducing Elbows



Tube			Dimensions, in. (mm)							
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	Lx	C	Cx	Ex	F	G	Gx
1/4	1/8	SS-LU-DHL4-DHL2	1.70 (43.1)	1.37 (34.7)	1.38 (35.2)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.63 (15.9)	0.37 (9.5)
3/8	1/8	SS-LU-DHL6-DHL2	1.67 (42.4)	1.33 (33.7)	1.42 (36.1)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.75 (19.1)	0.37 (9.5)
3/8	1/4	SS-LU-DHL6-DHL4	1.67 (42.4)	1.70 (43.1)	1.42 (36.1)	1.38 (35.2)	0.19 (4.8)	0.75 (19.1)	0.75 (19.1)	0.63 (15.9)
1/2	1/4	SS-LU-DHL8-DHL4	2.03 (51.6)	1.95 (49.5)	1.56 (39.6)	1.38 (35.2)	0.19 (4.8)	0.94 (23.8)	0.94 (23.8)	0.63 (15.9)
1/2	3/8	SS-LU-DHL8-DHL6	2.03 (51.6)	1.96 (49.8)	1.56 (39.6)	1.42 (36.1)	0.25 (6.4)	0.94 (23.8)	0.94 (23.8)	0.75 (19.1)
9/16	1/2	SS-LU-DHL9-DHL8	2.43 (61.8)	2.37 (40.3)	1.93 (49.0)	1.56 (39.6)	0.37 (9.5)	1.38 (34.9)	1.06 (27.0)	0.94 (23.8)
3/4	1/2	SS-LU-DHL12-DHL8	3.11 (79.1)	2.81 (71.3)	2.49 (63.3)	1.56 (39.6)	0.37 (9.5)	1.50 (38.1)	1.38 (34.9)	0.94 (23.8)

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

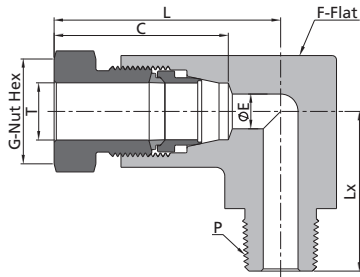
Sour Service Products

Subsea Valves

Tools and Installation Instructions

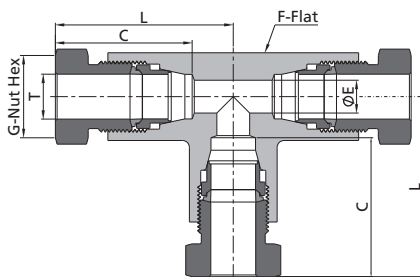
Technical Information

Male Elbows



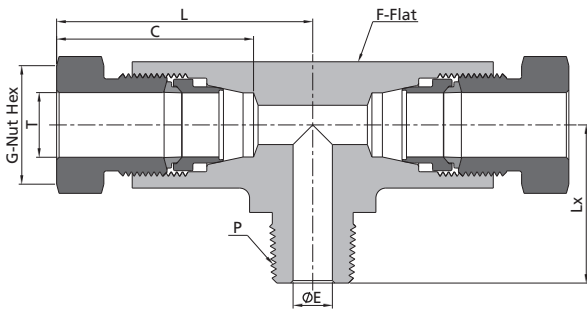
Tube			NPT Thread						
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)						
			L	Lx	C	E	F	G	
1/8	1/8	SS-LM-DHL2-NS2	1.29 (32.7)	0.79 (20.0)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/8	1/4	SS-LM-DHL2-NS4	1.39 (35.3)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/8	3/8	SS-LM-DHL2-NS6	1.47 (37.4)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.37 (9.5)	
1/4	1/4	SS-LM-DHL4-NS4	1.70 (43.1)	0.94 (23.8)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
1/4	3/8	SS-LM-DHL4-NS6	1.70 (43.1)	1.00 (25.4)	1.38 (35.2)	0.19 (4.8)	0.75 (19.1)	0.63 (15.9)	
1/4	1/2	SS-LM-DHL4-NS8	1.70 (43.1)	1.38 (34.9)	1.38 (35.2)	0.19 (4.8)	1.00 (25.4)	0.63 (15.9)	
3/8	1/4	SS-LM-DHL6-NS4	1.67 (42.4)	1.00 (25.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	3/8	SS-LM-DHL6-NS6	1.67 (42.4)	1.06 (27.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	1/2	SS-LM-DHL6-NS8	1.67 (42.4)	1.38 (34.9)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.75 (19.1)	
1/2	1/4	SS-LM-DHL8-NS4	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	
1/2	3/8	SS-LM-DHL8-NS6	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)	
1/2	1/2	SS-LM-DHL8-NS8	2.03 (51.6)	1.38 (34.9)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	
9/16	1/2	SS-LM-DHL9-NS8	2.43 (61.8)	1.56 (39.5)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)	
3/4	1/2	SS-LM-DHL12-NS8	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.41 (10.4)	1.50 (38.1)	1.38 (34.9)	
3/4	3/4	SS-LM-DHL12-NS12	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	

Union Tees



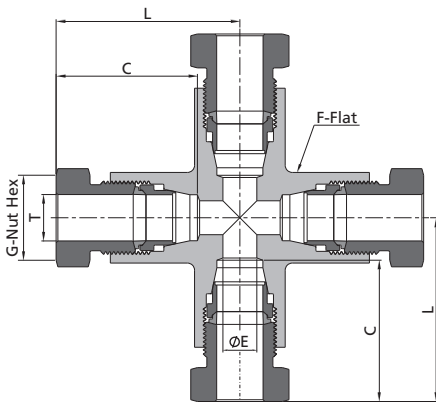
Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	SS-TTT-DHL2	1.37 (34.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	SS-TTT-DHL4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	SS-TTT-DHL6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	SS-TTT-DHL8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	SS-TTT-DHL9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	SS-TTT-DHL12	3.11 (79.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)

Male Branch Tees



Tube			NPT Thread						
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)						
			L	Lx	C	E	F	G	
1/8	1/8	SS-TTM-DHL2-NS2	1.37 (34.7)	0.79 (20.0)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/8	1/4	SS-TTM-DHL2-NS4	1.37 (34.7)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/4	1/8	SS-TTM-DHL4-NS2	1.70 (43.1)	0.81 (20.6)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
1/4	1/4	SS-TTM-DHL4-NS4	1.70 (43.1)	1.00 (25.4)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
3/8	1/4	SS-TTM-DHL6-NS4	1.67 (42.4)	1.06 (27.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
1/2	1/4	SS-TTM-DHL8-NS4	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	
1/2	3/8	SS-TTM-DHL8-NS6	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)	
3/4	3/4	SS-TTM-DHL12-NS12	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	

Union Crosses



Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	SS-C-DHL2	1.37 (34.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	SS-C-DHL4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	SS-C-DHL6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	SS-C-DHL8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	SS-C-DHL9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	SS-C-DHL12	3.11 (79.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

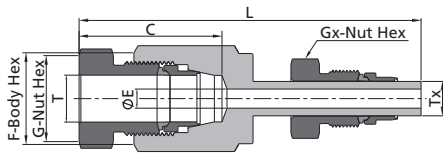
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

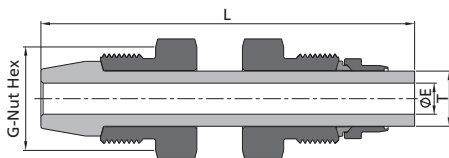
Reducers ^①



Tube									
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)						
			L	C	E	F	G	Gx	
1/4	3/8	SS-R-DHL4-DHM6	3.20 (82.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	0.75 (19.1)	
1/4	1/2	SS-R-DHL4-DHM8	3.37 (85.5)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	0.94 (23.8)	
3/8	1/2	SS-R-DHL6-DHM8	3.43 (87.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	0.94 (23.8)	
1/2	3/8	SS-R-DHL8-DHM6	3.53 (89.7)	1.56 (39.6)	0.21 (5.3)	1.00 (25.4)	0.94 (23.8)	0.75 (19.1)	
1/2	3/4	SS-R-DHL8-DHM12	5.13 (130.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	1.38 (34.9)	
9/16	3/4	SS-R-DHL9-DHM12	5.32 (135.1)	1.93 (49.0)	0.41 (10.4)	1.13 (28.6)	1.06 (27.0)	1.38 (34.9)	
3/4	9/16	SS-R-DHL12-DHM9	5.46 (138.6)	2.49 (63.3)	0.31 (7.9)	1.50 (38.1)	1.38 (34.9)	1.06 (27.0)	

^① The right ends of reducers will have been preassembled with ferrules before shipping. Please follow the Reinstallation Instructions when installing the reducers.

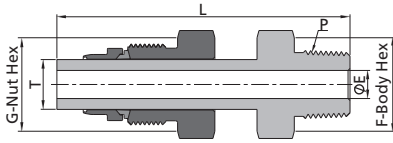
Port Connectors ^①



Tube				
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)		
		L	E	G
1/8	SS-P-DHL2	1.94 (49.2)	0.06 (1.6)	0.37 (9.5)
1/4	SS-P-DHL4	2.49 (63.2)	0.12 (3.0)	0.63 (15.9)
3/8	SS-P-DHL6	2.58 (65.5)	0.21 (5.3)	0.75 (19.1)
1/2	SS-P-DHL8	2.85 (72.3)	0.28 (7.1)	0.94 (23.8)
9/16	SS-P-DHL9	3.60 (91.4)	0.31 (7.9)	1.06 (27.0)
3/4	SS-P-DHL12	4.52 (114.9)	0.42 (10.7)	1.38 (34.9)

^① The port connectors will have been preassembled with ferrules before shipping. Please follow the Reinstallation Instructions when installing the port connectors.

Adapters ^①



Tube			NPT Thread			
T - Tube O.D. in.	P - NPT Size	Ordering Number	Dimensions, in. (mm)			
			L	E	F	G
1/4	1/4	SS-AM-DHM4-NS4	2.30 (58.5)	0.12 (3.0)	0.56 (14.3)	0.63 (15.9)
3/8	1/4	SS-AM-DHM6-NS4	2.38 (60.4)	0.21 (5.3)	0.56 (14.3)	0.75 (19.1)
3/8	1/2	SS-AM-DHM6-NS8	2.67 (67.9)	0.21 (5.3)	0.87 (22.2)	0.75 (19.1)
1/2	1/4	SS-AM-DHM8-NS4	2.55 (64.8)	0.25 (6.4)	0.56 (14.3)	0.94 (23.8)
1/2	1/2	SS-AM-DHM8-NS8	2.84 (72.2)	0.28 (7.1)	0.87 (22.2)	0.94 (23.8)
9/16	1/2	SS-AM-DHM9-NS8	3.64 (92.4)	0.31 (7.9)	0.87 (22.2)	1.06 (27.0)
3/4	3/4	SS-AM-DHM12-NS12	4.22 (107.1)	0.39 (10.0)	1.06 (27.0)	1.38 (34.9)

① The port connectors will have been preassembled with ferrules before shipping. Please follow the Reinstallation Instructions when installing the adapters.

NOTE: Dimensions are for reference only and are subject to change.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

Sour Service Products

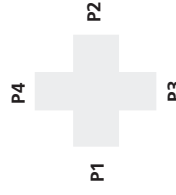
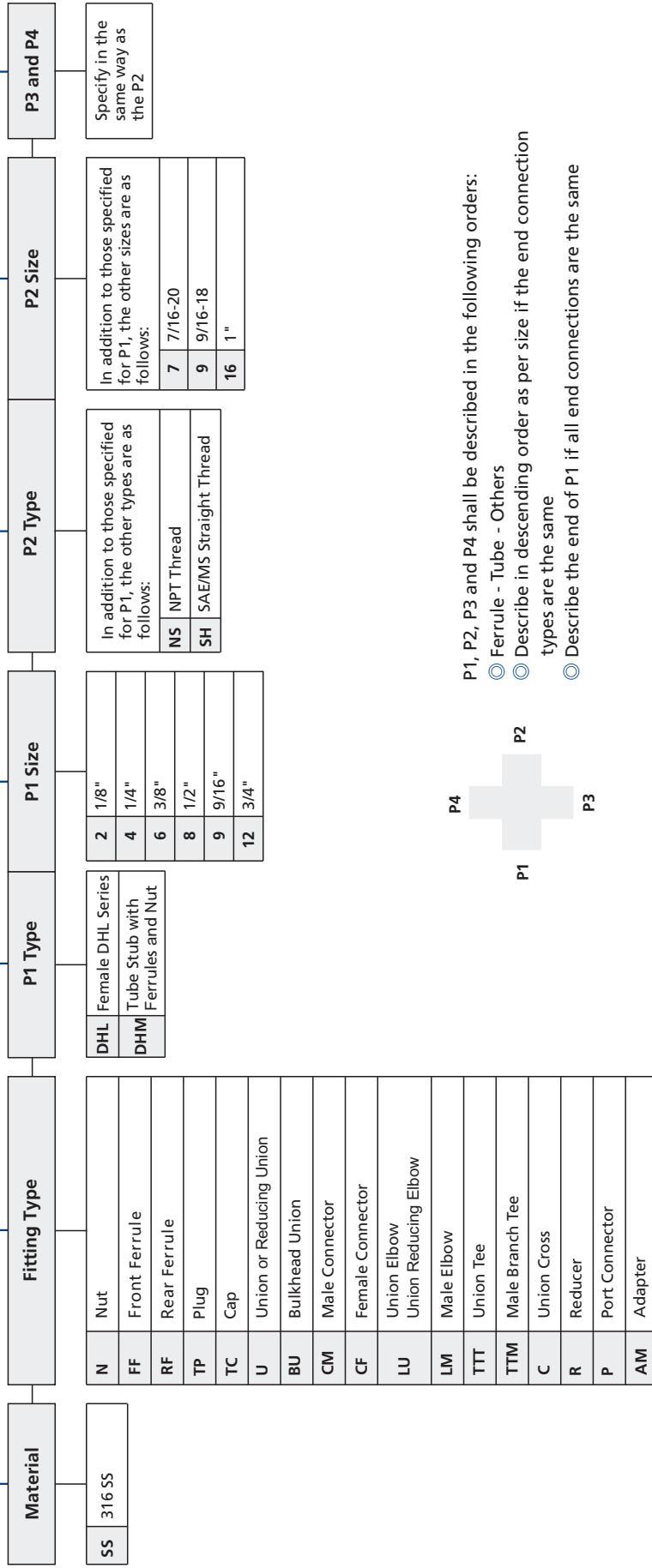
Subsea Valves

Tools and Installation Instructions

Technical Information

Ordering Number Description

SS - U - DHL8 - DHL6 - □ - □



P1, P2, P3 and P4 shall be described in the following orders:

- ⊙ Ferrule - Tube - Others
- ⊙ Describe in descending order as per size if the end connection types are the same
- ⊙ Describe the end of P1 if all end connections are the same

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Tubing

Features

- Working pressure up to 15,000 psig (1034 bar)
- Working temperature range: -325°F to 800°F (-198°C to 427°C)
- Material, size, pressure and heat number marked on the tubing surface
- Seamless, cold-drawn and work-hardened to achieve high strength and corrosion resistance
- Use with DHL Series tube fittings



Material Standards and Mechanical Properties

Cold-drawn 1/8-Hard Stainless Steel Seamless Tubing

Material Grade	UNS	Yield Strength ksi	Tensile Strength ksi	Elongation in 2 in. min. %	Hardness, Max.
316/316L	S31600/S31603	75 to 110	105 to 140	20	26 HRC

Heavy-wall Annealed Stainless Steel Seamless Tubing^①

Material Grade	UNS	Yield Strength, min, ksi	Tensile Strength, min, ksi	Elongation in 2 in. min. %	Hardness, Max.
316/316L	S31600/S31603	30	75	35	90 HRB

① Fully annealed, high-quality type 316/316L stainless steel tubing ASTM A269 or A213, or equivalent.

Working Pressure

- The allowable working pressures in the table below are based on ASME B31.3 at ambient temperature.
- To get the allowable working pressure at elevated temperature, use the allowable working pressure at ambient temperature to multiply the factors in the table of Elevated Temperature Factors on the next page.

Cold-drawn 1/8-Hard Stainless Steel Seamless Tubing

Tube O.D. in.	Wall Thickness in.	Working Pressure psig (bar)
1/4	0.065	15,000 (1034)
3/8	0.083	15,000 (1034)
1/2	0.109	15,000 (1034)
9/16	0.125	15,000 (1034)
3/4	0.165	15,000 (1034)

Heavy-wall Annealed Stainless Steel Seamless Tubing

Tube O.D. in.	Wall Thickness in.	Working Pressure psig (bar)
1/8	0.037	15,000 (1034)
1/4	0.083	15,000 (1034)
1/4	0.065	10,300 (710)
3/8	0.118	15,000 (1034)
3/8	0.095	10,000 (690)
1/2	0.156	15,000 (1034)
1/2	0.134	11,200 (772)
9/16	0.188	15,000 (1034)
3/4	0.240	15,000 (1034)
3/4	0.188	10,000 (690)

Elevated Temperature Factors

Material Grade	Temperature		Factor
	°F	°C	
316/316L	100	38	1.00
	200	93	1.00
	300	149	1.00
	400	204	0.96
	500	260	0.89
	600	316	0.85
	700	371	0.81
	800	427	0.79

Ordering Information

Cold-drawn 1/8-Hard Stainless Steel Seamless Tubing

Tube O.D. in.	Wall Thickness in.	Basic Ordering Number	Tolerance O.D. in.	Wall Thickness Tolerance in.
1/4	0.065	SS-15T4H-065-	0.255/0.245	0.0585/0.0715
3/8	0.083	SS-15T6H-083-	0.370/0.380	0.0747/0.0913
1/2	0.109	SS-15T8H-109-	0.505/0.495	0.9810/0.1199
9/16	0.125	SS-15T9H-125-	0.557/0.567	0.1125/0.1375
3/4	0.165	SS-15T12H-165-	0.745/0.755	0.1485/0.1815

Heavy-wall Annealed Stainless Steel Seamless Tubing

Tube O.D. in.	Wall Thickness in.	Basic Ordering Number	Tolerance O.D. in.	Wall Thickness Tolerance in.
1/8	0.037	SS-15T2-037-	0.128/0.122	0.0333/0.0407
1/4	0.083	SS-15T4-083-	0.255/0.245	0.0747/0.0913
1/4	0.065	SS-15T4-065-	0.255/0.245	0.0585/0.0715
3/8	0.118	SS-15T6-118-	0.370/0.380	0.1062/0.1298
3/8	0.095	SS-15T6-095-	0.370/0.380	0.0855/0.1045
1/2	0.156	SS-15T8-156-	0.505/0.495	0.1404/0.1716
1/2	0.134	SS-15T8-134-	0.505/0.495	0.1206/0.1474
9/16	0.188	SS-15T9-188-	0.557/0.567	0.1692/0.2068
3/4	0.240	SS-15T12-240-	0.745/0.755	0.2160/0.2640
3/4	0.188	SS-15T12-188-	0.745/0.755	0.1692/0.2068

Add the length designator as a suffix to the basic ordering number to get the complete ordering number. The length designator "-10" means 10 feet. The length designator "-3M" means 3 meters.

Examples:

1. If 10 feet of 1/8" O.D. annealed tubing is needed, the complete ordering number is SS-15T2-037-10.
2. If 3 meters of 1/8" O.D. annealed tubing is needed, the complete ordering number is SS-15T2-037-3M.

NOTE: The tubing is available in random lengths but no more than 20 feet (6 meters).

Installation Instructions

Please see G-05.

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Medium Pressure Tube Fittings and Tubing

20,000 psig (1379 bar)



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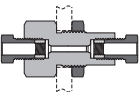
A-20

Unions (Slip Type) - SU



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Bulkhead Unions - BU



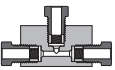
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Union Elbows - LU



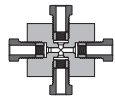
A-21

Union Tees - TTT



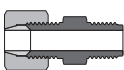
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Anti-vibration Gland Assemblies - AVGA



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Ordering Number Description

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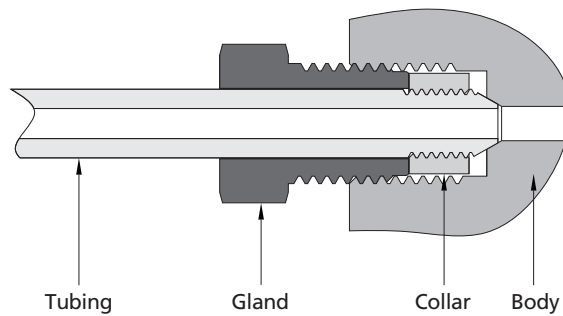
Technical Information

Tube Fittings

Features

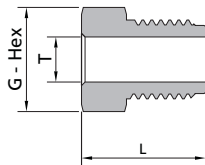
- ⦿ Maximum working pressure: 20,000 psig (1379 bar)
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Use with medium pressure tubing as standard
- ⦿ Coned-and-threaded connection
- ⦿ Tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- ⦿ High tensile 316 Stainless Steel as raw material
- ⦿ Anti-vibration connection components available
- ⦿ Easy to disconnect and retighten
- ⦿ Metal-to-metal seal to provide perfect leak-tight service for working conditions from critical vacuum to medium pressure
- ⦿ Every fitting marked with size, material and heat number

Construction



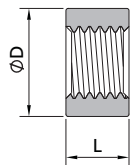
Ordering Information and Dimensions

Glands



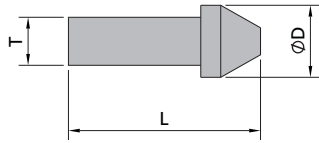
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		G	L
1/4	SS-G-2FH4	0.50 (12.7)	0.58 (14.7)
3/8	SS-G-2FH6	0.63 (15.9)	0.73 (18.5)
9/16	SS-G-2FH9	0.94 (23.8)	0.88 (22.4)
3/4	SS-G-2FH12	1.19 (30.2)	1.00 (25.4)
1	SS-G-2FH16	1.38 (34.9)	1.38 (35.1)

Collars



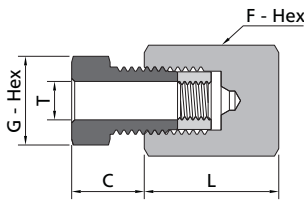
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-CO-2FH4	0.38 (9.7)	0.22 (5.6)
3/8	SS-CO-2FH6	0.47 (11.9)	0.25 (6.4)
9/16	SS-CO-2FH9	0.72 (18.3)	0.31 (7.9)
3/4	SS-CO-2FH12	0.94 (23.8)	0.37 (9.4)
1	SS-CO-2FH16	1.25 (31.8)	0.50 (12.7)

Plugs



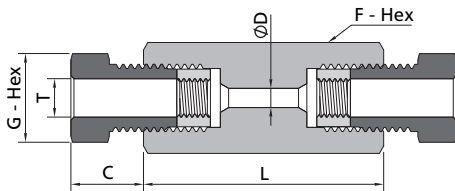
Tube		Dimensions, in. (mm)	
T - Tube O.D. in.	Ordering Number	D	L
1/4	SS-TP-2FH4	0.38 (9.7)	0.94 (23.8)
3/8	SS-TP-2FH6	0.47 (11.9)	1.18 (30.0)
9/16	SS-TP-2FH9	0.72 (18.3)	1.40 (35.6)
3/4	SS-TP-2FH12	0.94 (23.8)	1.69 (42.9)
1	SS-TP-2FH16	1.25 (31.8)	2.20 (55.9)

Caps



Tube		Dimensions, in. (mm)			
T - Tube O.D. in.	Ordering Number	L	C	G	F
1/4	SS-TC-2FH4	0.81 (20.6)	0.38 (9.7)	0.50 (12.7)	0.63 (15.9)
3/8	SS-TC-2FH6	1.13 (28.6)	0.44 (11.2)	0.63 (15.9)	0.75 (19.1)
9/16	SS-TC-2FH9	1.38 (34.9)	0.55 (14.0)	0.94 (23.8)	1.00 (25.4)
3/4	SS-TC-2FH12	1.75 (44.5)	0.60 (15.2)	1.19 (30.2)	1.38 (34.9)
1	SS-TC-2FH16	2.25 (57.2)	0.74 (18.7)	1.38 (34.9)	1.75 (44.5)

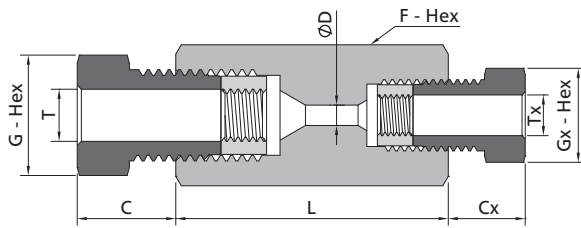
Unions



Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	D	G	F
1/4	SS-U-2FH4	1.62 (41.1)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	0.63 (15.9)
3/8	SS-U-2FH6	1.75 (44.5)	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	0.75 (19.1)
9/16	SS-U-2FH9	2.14 (54.3)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.00 (25.4)
3/4	SS-U-2FH12	2.50 (63.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.38 (34.9)
1	SS-U-2FH16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	1.75 (44.5)

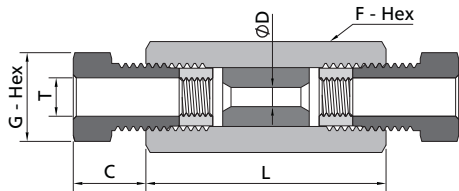
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Reducing Unions



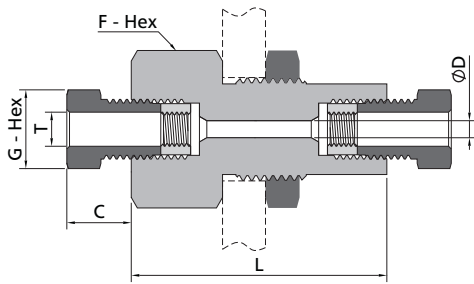
Tube			Dimensions, in. (mm)							
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	C	Cx	D	G	Gx	F	
3/8	1/4	SS-U-2FH6-2FH4	1.75 (44.5)	0.44 (11.2)	0.38 (9.7)	0.11 (2.8)	0.63 (15.9)	0.50 (12.7)	0.75 (19.1)	
9/16	1/4	SS-U-2FH9-2FH4	2.00 (50.8)	0.55 (14.0)	0.38 (9.7)	0.11 (2.8)	0.94 (23.8)	0.50 (12.7)	1.00 (25.4)	
9/16	3/8	SS-U-2FH9-2FH6	2.00 (50.8)	0.55 (14.0)	0.44 (11.2)	0.20 (5.1)	0.94 (23.8)	0.63 (15.9)	1.00 (25.4)	
3/4	1/4	SS-U-2FH12-2FH4	2.25 (57.2)	0.60 (15.2)	0.38 (9.7)	0.11 (2.8)	1.19 (30.2)	0.50 (12.7)	1.38 (34.9)	
3/4	3/8	SS-U-2FH12-2FH6	2.25 (57.2)	0.60 (15.2)	0.44 (11.2)	0.20 (5.1)	1.19 (30.2)	0.63 (15.9)	1.38 (34.9)	
3/4	9/16	SS-U-2FH12-2FH9	2.50 (63.5)	0.60 (15.2)	0.55 (14.0)	0.31 (7.9)	1.19 (30.2)	0.94 (23.8)	1.38 (34.9)	
1	1/4	SS-U-2FH16-2FH4	2.75 (69.9)	0.74 (18.7)	0.38 (9.7)	0.11 (2.8)	1.38 (34.9)	0.50 (12.7)	1.75 (44.5)	
1	3/8	SS-U-2FH16-2FH6	2.88 (73.0)	0.74 (18.7)	0.44 (11.2)	0.20 (5.1)	1.38 (34.9)	0.63 (15.9)	1.75 (44.5)	
1	9/16	SS-U-2FH16-2FH9	3.00 (76.2)	0.74 (18.7)	0.55 (14.0)	0.31 (7.9)	1.38 (34.9)	0.94 (23.8)	1.75 (44.5)	
1	3/4	SS-U-2FH16-2FH12	3.00 (76.2)	0.74 (18.7)	0.60 (15.2)	0.44 (11.1)	1.38 (34.9)	1.19 (30.2)	1.75 (44.5)	

Unions (Slip Type)



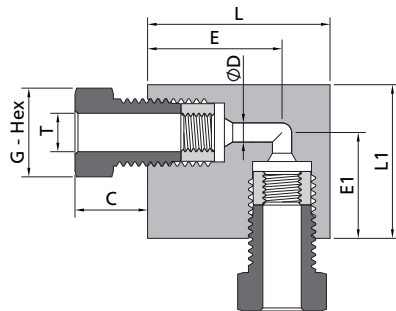
Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	D	G	F
1/4	SS-SU-2FH4	1.62 (41.1)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	0.63 (15.9)
3/8	SS-SU-2FH6	1.75 (44.5)	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	0.75 (19.1)
9/16	SS-SU-2FH9	2.14 (54.3)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.00 (25.4)
3/4	SS-SU-2FH12	2.50 (63.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.38 (34.9)
1	SS-SU-2FH16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	1.75 (44.5)

Bulkhead Unions



Tube		Dimensions, in. (mm)						
T - Tube O.D. in.	Ordering Number	L	C	D	G	F	Panel Hole Size	Max. Panel Thickness
1/4	SS-BU-2FH4	1.88 (47.8)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.00 (25.4)	0.81 (20.6)	0.38 (9.7)
3/8	SS-BU-2FH6	2.00 (50.8)	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
9/16	SS-BU-2FH9	2.38 (60.5)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
3/4	SS-BU-2FH12	2.62 (66.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.88 (47.6)	1.69 (42.9)	0.38 (9.7)
1	SS-BU-2FH16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	2.13 (54.0)	1.94 (49.3)	0.38 (9.7)

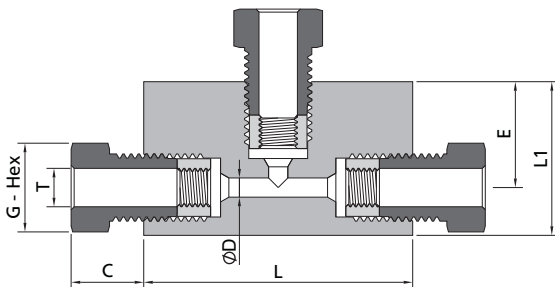
Union Elbows



Tube		Dimensions, in. (mm)							
T - Tube O.D. in.	Ordering Number	C	D	G	L	E	L1	E1	Thickness
1/4	SS-LU-2FH4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.12 (28.4)	0.75 (19.1)	1.12 (28.4)	0.75 (19.1)	0.63 (15.9)
3/8	SS-LU-2FH6	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	1.38 (34.9)	1.00 (25.4)	1.38 (34.9)	1.00 (25.4)	0.75 (19.1)
9/16	SS-LU-2FH9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.75 (44.5)	1.25 (31.8)	1.75 (44.5)	1.25 (31.8)	1.00 (25.4)
3/4	SS-LU-2FH12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	2.25 (57.2)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)	1.38 (34.9)
1	SS-LU-2FH16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	3.00 (76.2)	2.06 (52.3)	3.00 (76.2)	2.06 (52.3)	1.75 (44.5)

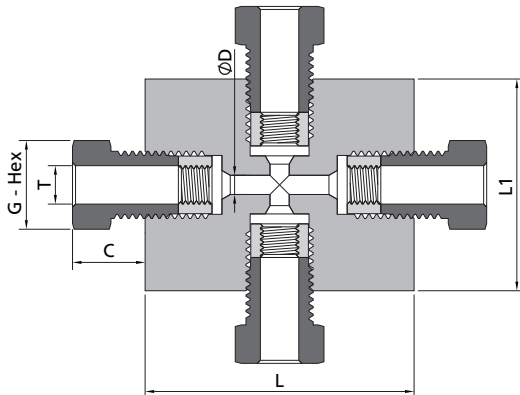
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Union Tees



Tube		Dimensions, in. (mm)						
T - Tube O.D. in.	Ordering Number	C	D	G	L	L1	E	Thickness
1/4	SS-TTT-2FH4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.50 (38.1)	1.12 (28.4)	0.75 (19.1)	0.63 (15.9)
3/8	SS-TTT-2FH6	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	2.00 (50.8)	1.38 (34.9)	1.00 (25.4)	0.75 (19.1)
9/16	SS-TTT-2FH9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	2.50 (63.5)	1.75 (44.5)	1.25 (31.8)	1.00 (25.4)
3/4	SS-TTT-2FH12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	3.00 (76.2)	2.25 (57.2)	1.50 (38.1)	1.38 (34.9)
1	SS-TTT-2FH16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	4.12 (104.6)	3.00 (76.2)	2.06 (52.3)	1.75 (44.5)

Union Crosses



Tube		Dimensions, in. (mm)					
T - Tube O.D. in.	Ordering Number	C	D	G	L	L1	Thickness
1/4	SS-C-2FH4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.50 (38.1)	1.50 (38.1)	0.63 (15.9)
3/8	SS-C-2FH6	0.44 (11.2)	0.20 (5.1)	0.63 (15.9)	2.00 (50.8)	2.00 (50.8)	0.75 (19.1)
9/16	SS-C-2FH9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	2.50 (63.5)	2.50 (63.5)	1.00 (25.4)
3/4	SS-C-2FH12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	3.00 (76.2)	3.00 (76.2)	1.38 (34.9)
1	SS-C-2FH16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	4.12 (104.6)	4.12 (104.6)	1.75 (44.5)

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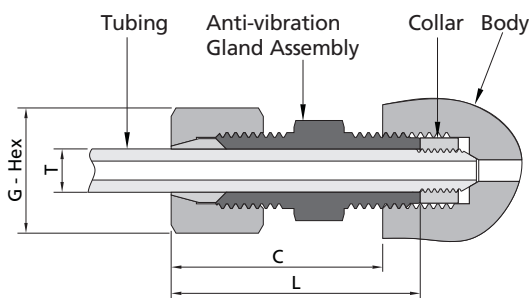
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Anti-vibration Gland Assemblies

The extreme vibration or shock in tubing systems, such as mobile pressure systems or long tubing runs culminating at a compressor are subjected to, will be prevented by using FITOK Anti-vibration Gland Assemblies. These assemblies provide the same reliable connection as standard FITOK glands to essentially prolong vibrational fatigue life.

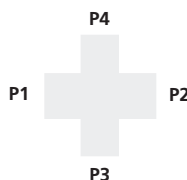
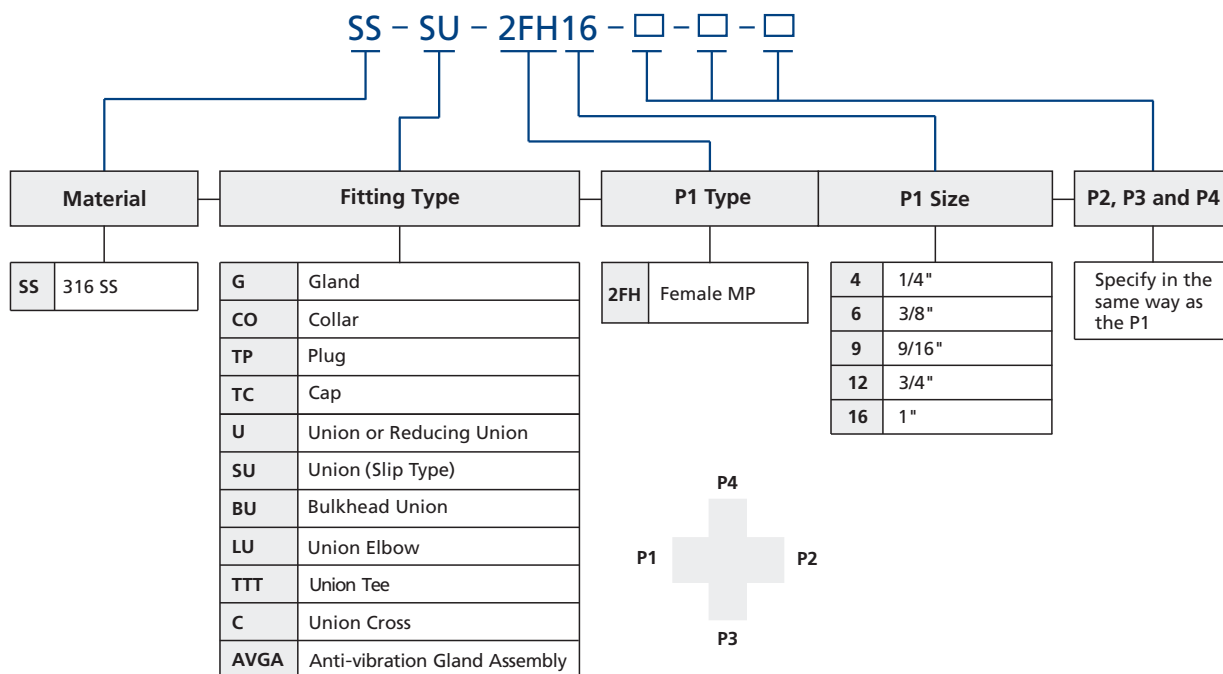
A coned and threaded tubing, when subjected to unusual or excessive vibration, may fail prematurely and break at the last thread. FITOK Anti-vibration Gland Assembly acts to move the fulcrum of vibration away from the threaded part of the tubing onto the strong, solid wall of the tubing. A wedge-like collet firmly holds the assembly in place, virtually eliminating premature tubing failure while reliably maintaining a leakage-free connection between the tubing and the connection seat.



Tube				
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)		
		L	C	G
1/4	SS-AVGA-2FH4	1.24 (31.6)	1.05 (26.7)	0.63 (15.9)
3/8	SS-AVGA-2FH6	1.50 (38.1)	1.22 (30.9)	0.81 (20.6)
9/16	SS-AVGA-2FH9	1.78 (45.2)	1.42 (36.0)	0.94 (23.8)
3/4	SS-AVGA-2FH12	2.00 (50.8)	1.61 (40.8)	1.38 (34.9)
1	SS-AVGA-2FH16	2.38 (60.5)	1.74 (44.3)	1.50 (38.1)

NOTE: Dimensions are for reference only and are subject to change.

Ordering Number Description



- P1, P2, P3 and P4 shall be described in the following orders:
- ⊙ Describe in descending order as per size if the end connection types are the same
 - ⊙ Describe the end of P1 if all end connections are the same

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Tubing

Features

- ⦿ Cold drawn 316/316L Stainless Steel seamless tubing
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Every tubing marked with material, size and heat number
- ⦿ Use with medium pressure tube fittings

Ordering Information and Dimensions

Tube O.D. in.	Tube I.D. in.	Material Grade	Basic Ordering Number	Max./Min. O.D. in. (mm)
1/4	0.109	316/316L	SS-MT-2FH4-	0.248/0.243 (6.30/6.17)
3/8	0.203	316/316L	SS-MT-2FH6-	0.370/0.365 (9.40/9.27)
9/16	0.312	316/316L	SS-MT-2FH9-	0.557/0.552 (14.15/14.02)
3/4	0.438	316/316L	SS-MT-2FH12-	0.745/0.740 (18.92/18.80)
1	0.562	316/316L	SS-MT-2FH16-	0.995/0.990 (25.27/25.14)



Add the length designator as a suffix to the basic ordering number to get the complete ordering number. The length designator "-10" means 10 feet. The length designator "-6M" means 6 meters.

Examples:

1. If 10 feet of 3/8" O.D. tubing is needed, the complete ordering number is SS-MT-2FH6-10.
2. If 6 meters of 3/4" O.D. tubing is needed, the complete ordering number is SS-MT-2FH12-6M.

The tubing is available in random lengths but no more than 20 feet (6 meters).

Working Pressure

Tube O.D. in.	Working Pressure, psig (bar)				
	-423 to 100°F (-252 to 37.8°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)
1/4	20,000 (1379)	20,000 (1379)	19,250 (1327)	18,050 (1244)	16,800 (1158)
3/8	20,000 (1379)	20,000 (1379)	19,250 (1327)	18,050 (1244)	16,800 (1158)
9/16	20,000 (1379)	20,000 (1379)	19,250 (1327)	18,050 (1244)	16,800 (1158)
3/4	20,000 (1379)	20,000 (1379)	19,250 (1327)	18,050 (1244)	16,800 (1158)
1	20,000 (1379)	20,000 (1379)	19,250 (1327)	18,050 (1244)	16,800 (1158)

Data in this table are applied only to the working temperature below 800°F (427°C). For the working temperature above 800°F (427°C), please contact FITOK Group or our authorized distributors.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

Sour Service Products

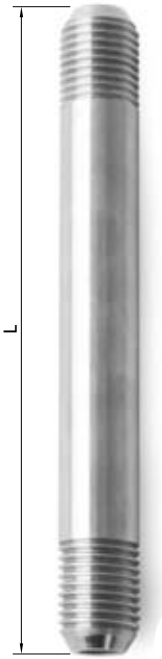
Subsea Valves

Tools and Installation Instructions

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Coned and Threaded Nipples

- ⦿ Machined from medium pressure tubing
- ⦿ For 1/4", 3/8" and 9/16" O.D. medium pressure tubing, manual coning and threading tools can be used to make nipples



Tube O.D. in.	Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.109	SS-CTN-2FH4-2.75	2.75 (69.9)
1/4	0.109	SS-CTN-2FH4-3	3 (76.2)
1/4	0.109	SS-CTN-2FH4-4	4 (101.6)
1/4	0.109	SS-CTN-2FH4-6	6 (152.4)
1/4	0.109	SS-CTN-2FH4-8	8 (203.2)
1/4	0.109	SS-CTN-2FH4-10	10 (254.0)
1/4	0.109	SS-CTN-2FH4-12	12 (304.8)
3/8	0.203	SS-CTN-2FH6-3	3 (76.2)
3/8	0.203	SS-CTN-2FH6-4	4 (101.6)
3/8	0.203	SS-CTN-2FH6-6	6 (152.4)
3/8	0.203	SS-CTN-2FH6-8	8 (203.2)
3/8	0.203	SS-CTN-2FH6-10	10 (254.0)
3/8	0.203	SS-CTN-2FH6-12	12 (304.8)
9/16	0.312	SS-CTN-2FH9-4	4 (101.6)
9/16	0.312	SS-CTN-2FH9-6	6 (152.4)
9/16	0.312	SS-CTN-2FH9-8	8 (203.2)
9/16	0.312	SS-CTN-2FH9-10	10 (254.0)
9/16	0.312	SS-CTN-2FH9-12	12 (304.8)
3/4	0.438	SS-CTN-2FH12-4	4 (101.6)
3/4	0.438	SS-CTN-2FH12-6	6 (152.4)
3/4	0.438	SS-CTN-2FH12-8	8 (203.2)
3/4	0.438	SS-CTN-2FH12-10	10 (254.0)
3/4	0.438	SS-CTN-2FH12-12	12 (304.8)
1	0.562	SS-CTN-2FH16-6	6 (152.4)
1	0.562	SS-CTN-2FH16-8	8 (203.2)
1	0.562	SS-CTN-2FH16-10	10 (254.0)
1	0.562	SS-CTN-2FH16-12	12 (304.8)

Installation Instructions

Please see G-07.

High Pressure Tube Fittings and Tubing

60,000 psig (4137 bar)



Medium & High Pressure Fittings and Tubing

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Plugs - TP



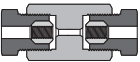
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Caps - TC



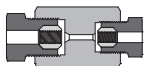
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Unions - U



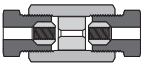
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Reducing Unions - U



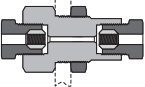
A-29

Unions (Slip Type) - SU



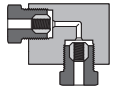
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Bulkhead Unions - BU



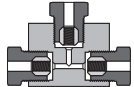
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Union Elbows - LU



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Union Tees - TTT



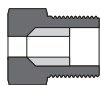
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Anti-vibration Gland Assemblies - AVGA



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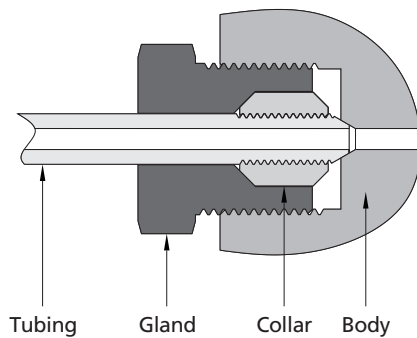
Technical Information

Tube Fittings

Features

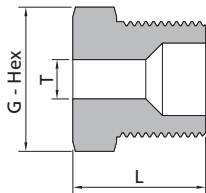
- Maximum working pressure: 60,000 psig (4137 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Use with high pressure tubing as standard
- Coned-and-threaded connection
- High tensile 316 Stainless Steel as raw material
- Anti-vibration connection components available
- Easy to disconnect and retighten
- Metal-to-metal seal to provide perfect leak-tight service from critical vacuum to high pressure
- Every fitting marked with size, material and heat number

Construction



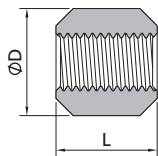
Ordering Information and Dimensions

Glands



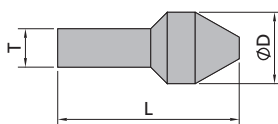
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		G	L
1/4	SS-G-6FH4	0.63 (15.9)	0.82 (20.8)
3/8	SS-G-6FH6	0.81 (20.6)	1.13 (28.7)
9/16	SS-G-6FH9	1.19 (30.2)	1.50 (38.1)

Collars



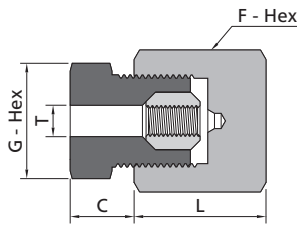
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-CO-6FH4	0.38 (9.6)	0.38 (9.6)
3/8	SS-CO-6FH6	0.50 (12.7)	0.54 (13.7)
9/16	SS-CO-6FH9	0.81 (20.6)	0.62 (15.8)

Plugs



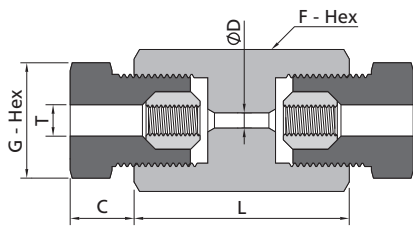
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-TP-6FH4	0.38 (9.6)	1.04 (26.4)
3/8	SS-TP-6FH6	0.50 (12.7)	1.35 (34.3)
9/16	SS-TP-6FH9	0.81 (20.6)	1.89 (48.0)

Caps



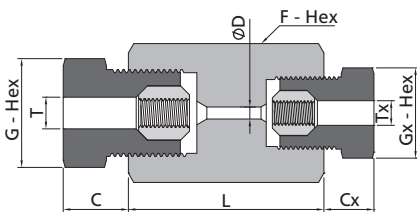
Tube		Dimensions, in. (mm)			
T - Tube O.D. in.	Ordering Number	L	C	G	F
1/4	SS-TC-6FH4	0.75 (19.1)	0.47 (11.9)	0.63 (15.9)	0.75 (19.1)
3/8	SS-TC-6FH6	1.13 (28.6)	0.61 (15.6)	0.81 (20.6)	1.00 (25.4)
9/16	SS-TC-6FH9	1.38 (34.9)	0.95 (24.1)	1.19 (30.2)	1.38 (34.9)

Unions



Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	D	G	F
1/4	SS-U-6FH4	1.38 (34.9)	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	0.75 (19.1)
3/8	SS-U-6FH6	1.75 (44.5)	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	1.00 (25.4)
9/16	SS-U-6FH9	2.19 (55.6)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.38 (34.9)

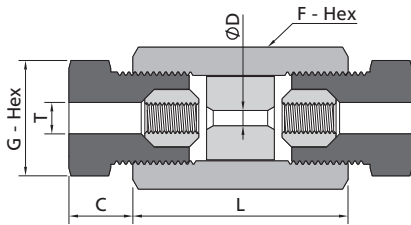
Reducing Unions



Tube			Dimensions, in. (mm)						
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	C	Cx	D	G	Gx	F
3/8	1/4	SS-U-6FH6-6FH4	1.63 (41.3)	0.61 (15.6)	0.47 (11.9)	0.09 (2.3)	0.81 (20.6)	0.63 (15.9)	1.00 (25.4)
9/16	1/4	SS-U-6FH9-6FH4	1.75 (44.5)	0.95 (24.1)	0.47 (11.9)	0.09 (2.3)	1.19 (30.2)	0.63 (15.9)	1.38 (34.9)
9/16	3/8	SS-U-6FH9-6FH6	2.00 (50.8)	0.95 (24.1)	0.61 (15.6)	0.13 (3.3)	1.19 (30.2)	0.81 (20.6)	1.38 (34.9)

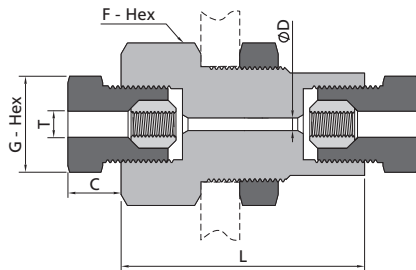
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Unions (Slip Type)



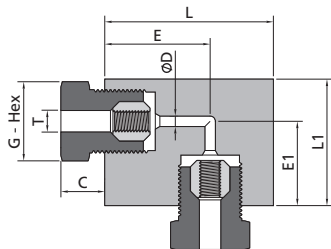
Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	D	G	F
1/4	SS-SU-6FH4	1.38 (34.9)	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	0.75 (19.1)
3/8	SS-SU-6FH6	1.75 (44.5)	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	1.00 (25.4)
9/16	SS-SU-6FH9	2.19 (55.6)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.38 (34.9)

Bulkhead Unions



Tube		Dimensions, in. (mm)						
T - Tube O.D. in.	Ordering Number	L	C	D	G	F	Panel Hole Size	Max. Panel Thickness
1/4	SS-BU-6FH4	1.88 (47.8)	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
3/8	SS-BU-6FH6	2.38 (60.5)	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
9/16	SS-BU-6FH9	2.75 (69.9)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.88 (47.6)	1.69 (42.9)	0.38 (9.7)

Union Elbows



Tube		Dimensions, in. (mm)							
T - Tube O.D. in.	Ordering Number	C	D	G	L	E	L1	E1	Thickness
1/4	SS-LU-6FH4	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	1.50 (38.1)	0.88 (22.4)	1.00 (25.4)	0.62 (15.7)	0.75 (19.1)
3/8	SS-LU-6FH6	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	2.00 (50.8)	1.25 (31.8)	1.50 (38.1)	1.00 (25.4)	1.00 (25.4)
9/16	SS-LU-6FH9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	1.88 (47.8)	1.88 (47.8)	1.12 (28.4)	1.50 (38.1)

Medium & High Pressure Fittings and Tubing

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Line Filters

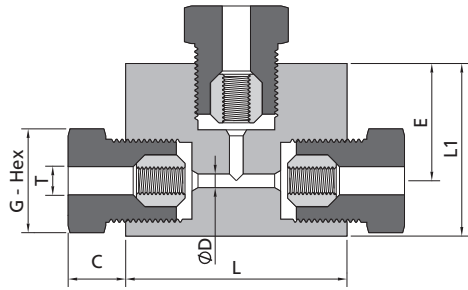
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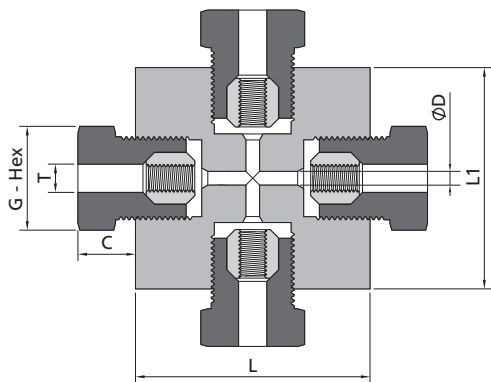
Technical Information

Union Tees



Tube								
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)						
		C	D	G	L	L1	E	Thickness
1/4	SS-TTT-6FH4	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	2.00 (50.8)	1.25 (31.8)	0.88 (22.4)	0.75 (19.1)
3/8	SS-TTT-6FH6	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	2.00 (50.8)	1.56 (39.6)	1.06 (26.9)	1.00 (25.4)
9/16	SS-TTT-6FH9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	2.12 (53.8)	1.38 (35.0)	1.50 (38.1)

Union Crosses



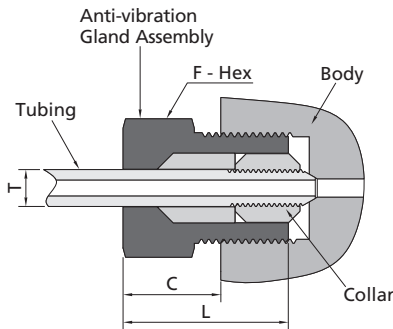
Tube							
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)					
		C	D	G	L	L1	Thickness
1/4	SS-C-6FH4	0.47 (11.9)	0.09 (2.3)	0.63 (15.9)	2.00 (50.8)	1.25 (31.8)	0.75 (19.1)
3/8	SS-C-6FH6	0.61 (15.6)	0.13 (3.3)	0.81 (20.6)	2.00 (50.8)	2.12 (53.8)	1.00 (25.4)
9/16	SS-C-6FH9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	2.75 (69.9)	1.50 (38.1)

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Anti-vibration Gland Assemblies

The extreme vibration or shock in tubing systems, such as mobile pressure systems or long tubing runs culminating at a compressor are subjected to, will be prevented by using FITOK Anti-vibration Gland Assemblies. These assemblies provide the same reliable connection as standard FITOK glands to essentially prolong vibrational fatigue life.

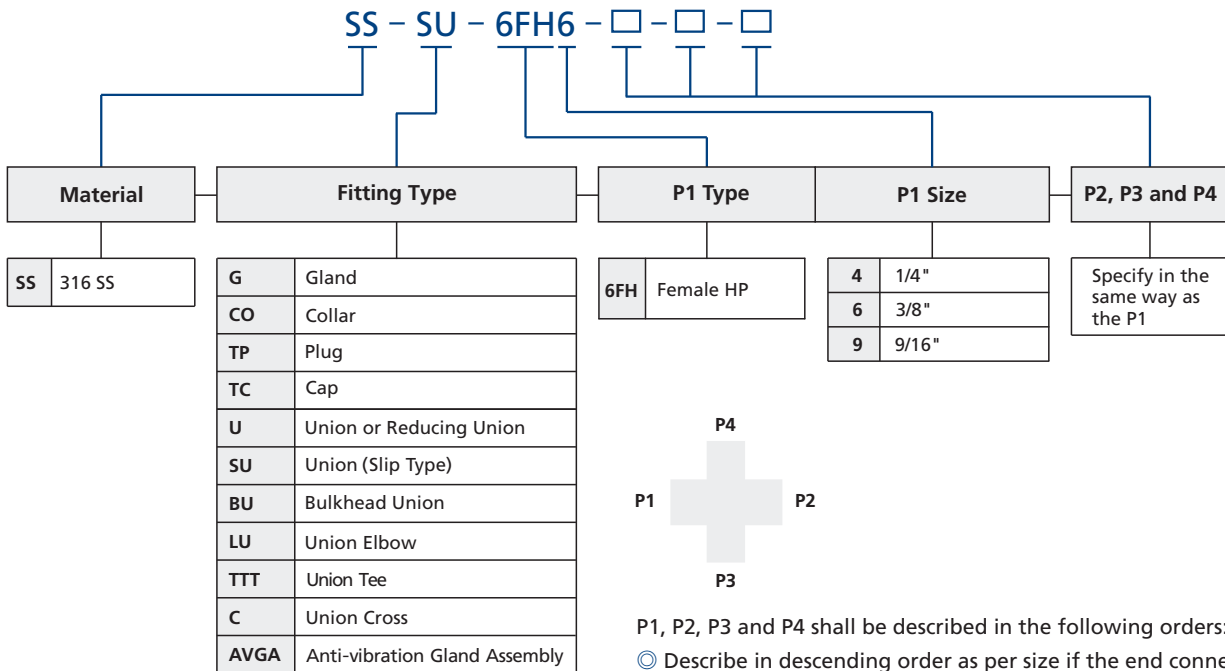
A coned and threaded tubing, when subjected to unusual or excessive vibration, may fail prematurely and break at the last thread. FITOK Anti-vibration Gland Assembly acts to move the fulcrum of vibration away from the threaded part of the tubing onto the strong, solid wall of the tubing. A wedge-like collet firmly holds the assembly in place, virtually eliminating premature tubing failure while reliably maintaining a leakage-free connection between the tubing and the connection seat.



Tube		Dimensions, in. (mm)		
T - Tube O.D. in.	Ordering Number	L	C	F
1/4	SS-AVGA-6FH4	0.81 (20.6)	0.47 (11.9)	0.63 (15.9)
3/8	SS-AVGA-6FH6	1.12 (28.4)	0.61 (15.6)	0.81 (20.6)
9/16	SS-AVGA-6FH9	1.50 (38.1)	0.95 (24.1)	1.19 (30.2)

NOTE: Dimensions are for reference only and are subject to change.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Tubing

Features

- ⦿ Cold drawn 316/316L Stainless Steel seamless tubing
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Every tubing marked with material, size and heat number
- ⦿ Use with high pressure tube fittings

Ordering Information and Dimensions

Tube O.D. in.	Tube I.D. in.	Material Grade	Basic Ordering Number	Max./Min. O.D. in. (mm)
1/4	0.083	316/316L	SS-HT-6FH4-	0.248/0.243 (6.30/6.17)
3/8	0.125	316/316L	SS-HT-6FH6-	0.370/0.365 (9.40/9.27)
9/16	0.188	316/316L	SS-HT-6FH9-	0.557/0.552 (14.15/14.02)



Add the length designator as a suffix to the basic ordering number to get the complete ordering number. The length designator "-10" means 10 feet. The length designator "-6M" means 6 meters.

Examples:

1. If 10 feet of 1/4" O.D. tubing is needed, the complete ordering number is SS-HT-6FH4-10.
2. If 6 meters of 9/16" O.D. tubing is needed, the complete ordering number is SS-HT-6FH9-6M.

The tubing is available in random lengths but no more than 20 feet (6 meters).

Working Pressure

Tube O.D. in.	Working Pressure, psig (bar)				
	-423 to 100°F (-252 to 37.8°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)
1/4	60,000 (4137)	60,000 (4137)	57,750 (3982)	54,250 (3740)	50,700 (3496)
3/8	60,000 (4137)	60,000 (4137)	57,750 (3982)	54,250 (3740)	50,700 (3496)
9/16	60,000 (4137)	60,000 (4137)	57,750 (3982)	54,250 (3740)	50,700 (3496)

Data in this table are applied only to the working temperature below 800°F (427°C). For the working temperature above 800°F (427°C), please contact FITOK Group or our authorized distributors.

Coned and Threaded Nipples

- ⦿ Machined from high pressure tubing
- ⦿ For 1/4", 3/8" and 9/16" O.D. high pressure tubing, manual coning and threading tools can be used to make nipples



Tube O.D. in.	Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.083	SS-CTN-6FH4-2.75	2.75 (69.9)
1/4	0.083	SS-CTN-6FH4-3	3 (76.2)
1/4	0.083	SS-CTN-6FH4-4	4 (101.6)
1/4	0.083	SS-CTN-6FH4-6	6 (152.4)
1/4	0.083	SS-CTN-6FH4-8	8 (203.2)
1/4	0.083	SS-CTN-6FH4-10	10 (254.0)
1/4	0.083	SS-CTN-6FH4-12	12 (304.8)
3/8	0.125	SS-CTN-6FH6-3	3 (76.2)
3/8	0.125	SS-CTN-6FH6-4	4 (101.6)
3/8	0.125	SS-CTN-6FH6-6	6 (152.4)
3/8	0.125	SS-CTN-6FH6-8	8 (203.2)
3/8	0.125	SS-CTN-6FH6-10	10 (254.0)
3/8	0.125	SS-CTN-6FH6-12	12 (304.8)
9/16	0.188	SS-CTN-6FH9-4	4 (101.6)
9/16	0.188	SS-CTN-6FH9-6	6 (152.4)
9/16	0.188	SS-CTN-6FH9-8	8 (203.2)
9/16	0.188	SS-CTN-6FH9-10	10 (254.0)
9/16	0.188	SS-CTN-6FH9-12	12 (304.8)

Installation Instructions

Please see G-07.

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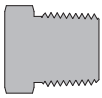
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Instructions

Technical Information



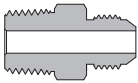
Contents

Pipe Plugs - HPP



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Hex Nipples - HPHN



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Hex Long Nipples - HPLN



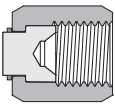
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Pipe Caps - HPC



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Pipe Cap Assemblies(Moveable Insert)-HMC



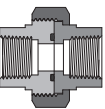
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Hex Couplings - HPCG



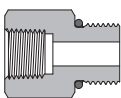
A-48

Zero-Clearance Unions - HPZC



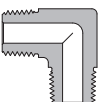
A-51

Adapters - HPA



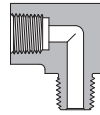
A-52

Male Elbows - HPME



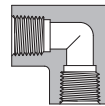
A-58

Street Elbows - HPSE



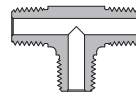
A-59

Female Elbows - HPE



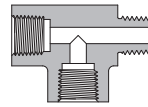
A-61

Male Tees - HPMT



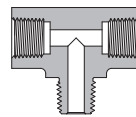
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Male Street Tees - HPST



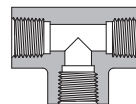
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Male Branch Tees - HPBT



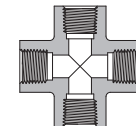
A-63

Female Tees - HPT



A-63

Female Crosses - HPCR



A-64

Ordering Number Description

A-65

Features

- ⦿ High tensile 316 Stainless Steel as standard material, other materials available upon request
- ⦿ The hardened threads with smooth surface finishing avoid galling and help to extend the fitting service life
- ⦿ Radius junction design for elbows provides smooth flow path
- ⦿ Every fitting marked with size, material and heat number

Thread Specifications

Connection Type	Code	Thread Type	Thread Specification
Male or Female NPT	NS	NPT	ASME B1.20.1, SAE AS71051
Male or Female ISO/BSP Tapered	RT	ISO/BSP Tapered	ISO 7-1, BS EN 10226-1, DIN EN 10226-1, JIS B0203
Heavy-Duty Stud Ends (SAE J1926-2, ISO 11926-2)	SH	SAE/MS	ASME B1.1
Ports with O-ring Seal in Truncated Housing (SAE J1926-1, ISO 11926-1)	US		
Male or Female JIC (37° Flare)	AN		
Female Swivel JIC (37° Flare)	AS		
Male Type "M"	HM		

Working Pressure

The working pressures of pipe fittings are shown in the "Ordering Information and Dimensions".

Working Temperature

Connection Type	Working Temperature Range
Male or Female NPT	-325°F to 400°F (-198°C to 204°C)
Male or Female ISO/BSP Tapered	-325°F to 400°F (-198°C to 204°C)
Heavy-Duty Stud Ends (SAE J1926-2, ISO 11926-2)	0°F to 400°F (-17.8°C to 204°C) ^①
Ports with O-ring Seal in Truncated Housing (SAE J1926-1, ISO 11926-1)	-50°F to 550°F (-45°C to 288°C)
Male or Female JIC (37° Flare)	-423°F to 1200°F (-252°C to 649°C)
Female Swivel JIC (37° Flare)	-423°F to 1200°F (-252°C to 649°C)
Male Type "M"	-423°F to 1200°F (-252°C to 649°C)

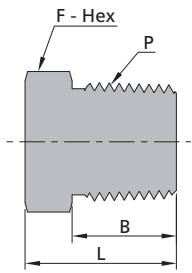
^① The ends are supplied with a Fluorocarbon FKM O-ring as standard, other materials of O-rings available.

Cautions:

- ⦿ Do not loosen or tighten fittings when the system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads.

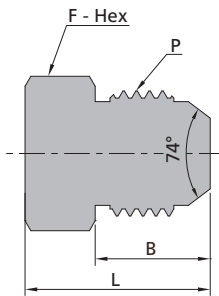
Ordering Information and Dimensions

Pipe Plugs

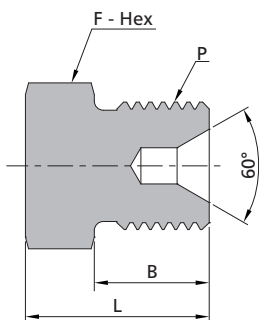


Male NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
		L	F	B		
1/8	SS-HPP-NS2	0.63 (16.0)	0.44 (11.1)	0.38 (9.7)	15000 (1034)	
1/4	SS-HPP-NS4	0.87 (22.2)	0.56 (14.3)	0.56 (14.2)	15000 (1034)	
3/8	SS-HPP-NS6	0.93 (23.6)	0.69 (17.5)	0.56 (14.2)	15000 (1034)	
1/2	SS-HPP-NS8	1.16 (29.5)	0.87 (22.2)	0.75 (19.1)	15000 (1034)	
3/4	SS-HPP-NS12	1.25 (31.8)	1.06 (27.0)	0.75 (19.1)	10000 (690)	
1	SS-HPP-NS16	1.55 (39.3)	1.37 (34.9)	0.94 (23.9)	10000 (690)	

Male ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
		L	F	B		
1/8	SS-HPP-RT2	0.63 (16.0)	0.44 (11.1)	0.38 (9.7)	15000 (1034)	
1/4	SS-HPP-RT4	0.87 (22.2)	0.56 (14.3)	0.56 (14.2)	15000 (1034)	
3/8	SS-HPP-RT6	0.93 (23.6)	0.69 (17.5)	0.56 (14.2)	15000 (1034)	
1/2	SS-HPP-RT8	1.16 (29.5)	0.87 (22.2)	0.75 (19.1)	15000 (1034)	
3/4	SS-HPP-RT12	1.25 (31.8)	1.06 (27.0)	0.75 (19.1)	10000 (690)	
1	SS-HPP-RT16	1.55 (39.3)	1.37 (34.9)	0.94 (23.9)	10000 (690)	

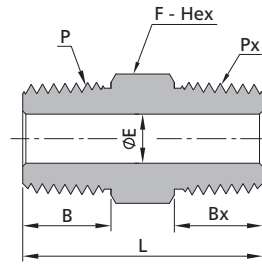


Male JIC						
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
		L	F	B		
7/16-20	SS-HPP-AN4	0.83 (21.0)	0.50 (12.7)	0.55 (14.0)	20000 (1379)	
9/16-18	SS-HPP-AN6	0.89 (22.7)	0.63 (15.9)	0.56 (14.1)	20000 (1379)	
3/4-16	SS-HPP-AN8	1.05 (26.7)	0.81 (20.6)	0.66 (16.7)	20000 (1379)	
7/8-14	SS-HPP-AN10	1.19 (30.3)	0.94 (23.8)	0.76 (19.3)	20000 (1379)	
1 1/16-12	SS-HPP-AN12	1.37 (34.9)	1.13 (28.6)	0.86 (21.9)	15000 (1034)	
1 5/16-12	SS-HPP-AN16	1.51 (38.3)	1.37 (34.9)	0.91 (23.1)	15000 (1034)	



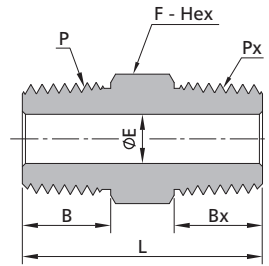
Male Type "M"						
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
		L	F	B		
9/16-18	SS-HPP-HM9	0.84 (21.3)	0.63 (15.9)	0.50 (12.7)	60000 (4137)	
3/4-16	SS-HPP-HM12	1.01 (25.6)	0.75 (19.1)	0.63 (16.0)	30000 (2068)	
7/8-14	SS-HPP-HM14	1.21 (30.8)	1.00 (25.4)	0.76 (19.2)	50000 (3447)	
1-12	SS-HPP-HM16	1.10 (27.9)	1.00 (25.4)	0.64 (16.3)	30000 (2068)	
1 5/16-12	SS-HPP-HM21	1.22 (30.9)	1.37 (34.9)	0.62 (15.7)	20000 (1379)	

Hex Nipples



Male NPT Threads									
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
1/8	1/8	SS-HPHN-NS2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/4	1/8	SS-HPHN-NS4-NS2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/4	1/4	SS-HPHN-NS4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
3/8	1/8	SS-HPHN-NS6-NS2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
3/8	1/4	SS-HPHN-NS6-NS4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
3/8	3/8	SS-HPHN-NS6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/2	1/8	SS-HPHN-NS8-NS2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/2	1/4	SS-HPHN-NS8-NS4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
1/2	3/8	SS-HPHN-NS8-NS6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/2	1/2	SS-HPHN-NS8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)	
3/4	1/8	SS-HPHN-NS12-NS2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)	
3/4	1/4	SS-HPHN-NS12-NS4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)	
3/4	3/8	SS-HPHN-NS12-NS6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)	
3/4	1/2	SS-HPHN-NS12-NS8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
3/4	3/4	SS-HPHN-NS12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1	1/8	SS-HPHN-NS16-NS2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)	
1	1/4	SS-HPHN-NS16-NS4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)	
1	3/8	SS-HPHN-NS16-NS6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)	
1	1/2	SS-HPHN-NS16-NS8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
1	3/4	SS-HPHN-NS16-NS12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1	1	SS-HPHN-NS16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)	

Hex Nipples



Male NPT Threads			Male ISO/BSP Tapered Threads					
P-NPT Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPHN-NS2-RT2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/8	SS-HPHN-NS4-RT2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPHN-NS4-RT4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	1/8	SS-HPHN-NS6-RT2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
3/8	1/4	SS-HPHN-NS6-RT4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPHN-NS6-RT6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/8	SS-HPHN-NS8-RT2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/2	1/4	SS-HPHN-NS8-RT4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPHN-NS8-RT6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPHN-NS8-RT8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	1/8	SS-HPHN-NS12-RT2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)
3/4	1/4	SS-HPHN-NS12-RT4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)
3/4	3/8	SS-HPHN-NS12-RT6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)
3/4	1/2	SS-HPHN-NS12-RT8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPHN-NS12-RT12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1/8	SS-HPHN-NS16-RT2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)
1	1/4	SS-HPHN-NS16-RT4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)
1	3/8	SS-HPHN-NS16-RT6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)
1	1/2	SS-HPHN-NS16-RT8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPHN-NS16-RT12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPHN-NS16-RT16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

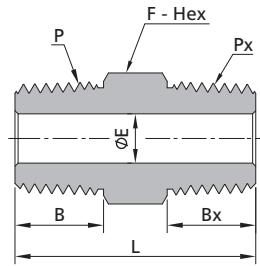
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

Hex Nipples



Male ISO/BSP Tapered Threads									
P-ISO/BSP Tapered Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
1/8	1/8	SS-HPHN-RT2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/4	1/8	SS-HPHN-RT4-RT2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/4	1/4	SS-HPHN-RT4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
3/8	1/8	SS-HPHN-RT6-RT2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
3/8	1/4	SS-HPHN-RT6-RT4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
3/8	3/8	SS-HPHN-RT6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/2	1/8	SS-HPHN-RT8-RT2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/2	1/4	SS-HPHN-RT8-RT4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
1/2	3/8	SS-HPHN-RT8-RT6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/2	1/2	SS-HPHN-RT8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)	
3/4	1/8	SS-HPHN-RT12-RT2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)	
3/4	1/4	SS-HPHN-RT12-RT4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)	
3/4	3/8	SS-HPHN-RT12-RT6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)	
3/4	1/2	SS-HPHN-RT12-RT8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
3/4	3/4	SS-HPHN-RT12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1	1/8	SS-HPHN-RT16-RT2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)	
1	1/4	SS-HPHN-RT16-RT4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)	
1	3/8	SS-HPHN-RT16-RT6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)	
1	1/2	SS-HPHN-RT16-RT8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
1	3/4	SS-HPHN-RT16-RT12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1	1	SS-HPHN-RT16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)	

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

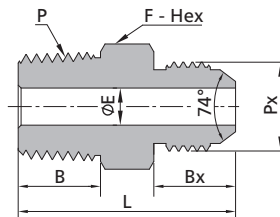
Sour Service Products

Subsea Valves

Tools and Installation Instructions

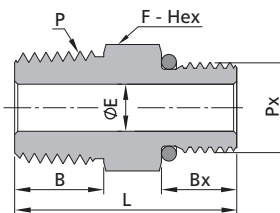
Technical Information

Hex Nipples



Male NPT Threads			Dimensions, in. (mm)					Male JIC
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/8	7/16-20	SS-HPHN-NS2-AN4	1.23 (31.3)	0.50 (12.7)	0.38 (9.7)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/8	9/16-18	SS-HPHN-NS2-AN6	1.31 (33.4)	0.63 (15.9)	0.38 (9.7)	0.56 (14.1)	0.19 (4.8)	15000 (1034)
1/4	7/16-20	SS-HPHN-NS4-AN4	1.46 (37.2)	0.56 (14.3)	0.56 (14.2)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/4	9/16-18	SS-HPHN-NS4-AN6	1.49 (37.9)	0.63 (15.9)	0.56 (14.2)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
1/4	3/4-16	SS-HPHN-NS4-AN8	1.65 (41.9)	0.81 (20.6)	0.56 (14.2)	0.66 (16.7)	0.25 (6.4)	15000 (1034)
3/8	7/16-20	SS-HPHN-NS6-AN4	1.52 (38.4)	0.69 (17.5)	0.56 (14.2)	0.55 (14.0)	0.17(4.4)	15000 (1034)
3/8	9/16-18	SS-HPHN-NS6-AN6	1.52 (38.4)	0.69 (17.5)	0.56 (14.2)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	3/4-16	SS-HPHN-NS6-AN8	1.62 (41.1)	0.81 (20.6)	0.56 (14.2)	0.66 (16.7)	0.31 (7.9)	15000 (1034)
1/2	7/16-20	SS-HPHN-NS8-AN4	1.75 (44.5)	0.87 (22.2)	0.75 (19.1)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/2	9/16-18	SS-HPHN-NS8-AN6	1.75 (44.6)	0.87 (22.2)	0.75 (19.1)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
1/2	3/4-16	SS-HPHN-NS8-AN8	1.86 (47.2)	0.87 (22.2)	0.75 (19.1)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	7/8-14	SS-HPHN-NS8-AN10	1.98 (50.4)	0.94 (23.8)	0.75 (19.1)	0.76 (19.3)	0.37 (9.4)	15000 (1034)
3/4	3/4-16	SS-HPHN-NS12-AN8	1.94 (49.4)	1.06 (27.0)	0.75 (19.1)	0.66 (16.7)	0.39 (9.9)	10000 (690)
3/4	7/8-14	SS-HPHN-NS12-AN10	2.05 (52.0)	1.06 (27.0)	0.75 (19.1)	0.76 (19.3)	0.48 (12.3)	10000 (690)
3/4	1 1/16-12	SS-HPHN-NS12-AN12	2.17 (55.0)	1.13 (28.6)	0.75 (19.1)	0.86 (21.9)	0.58 (14.8)	10000 (690)
3/4	1 5/16-12	SS-HPHN-NS12-AN16	2.30 (58.4)	1.37 (34.9)	0.75 (19.1)	0.91 (23.1)	0.58 (14.8)	10000 (690)
1	1 1/16-12	SS-HPHN-NS16-AN12	2.44 (62.0)	1.37 (34.9)	0.94 (23.9)	0.86 (21.9)	0.61 (15.5)	10000 (690)
1	1 5/16-12	SS-HPHN-NS16-AN16	2.49 (63.2)	1.37 (34.9)	0.94 (23.9)	0.91 (23.1)	0.79 (20.0)	10000 (690)

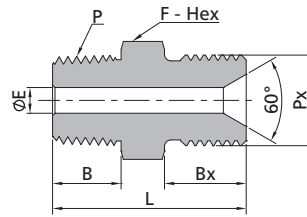
Hex Nipples^①



Male NPT Threads			Dimensions, in. (mm)					Male SAE/MS Straight Threads
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/4	7/16-20	SS-HPHN-NS4-SH7	1.35 (34.2)	0.56 (14.3)	0.56 (14.2)	0.43 (11.0)	0.18 (4.5)	10000 (690)
1/4	9/16-18	SS-HPHN-NS4-SH9	1.43 (36.4)	0.69 (17.5)	0.56 (14.2)	0.47 (12.0)	0.28 (7.1)	10000 (690)
3/8	7/16-20	SS-HPHN-NS6-SH7	1.39 (35.4)	0.69 (17.5)	0.56 (14.2)	0.43 (11.0)	0.18 (4.5)	10000 (690)
3/8	9/16-18	SS-HPHN-NS6-SH9	1.43 (36.4)	0.69 (17.5)	0.56 (14.2)	0.47 (12.0)	0.30 (7.5)	10000 (690)
3/8	3/4-16	SS-HPHN-NS6-SH12	1.56 (39.6)	0.87 (22.2)	0.56 (14.2)	0.55 (14.0)	0.38 (9.6)	10000 (690)
1/2	9/16-18	SS-HPHN-NS8-SH9	1.67 (42.5)	0.87 (22.2)	0.75 (19.1)	0.47 (12.0)	0.30 (7.5)	10000 (690)
1/2	3/4-16	SS-HPHN-NS8-SH12	1.75 (44.5)	0.87 (22.2)	0.75 (19.1)	0.55 (14.0)	0.39 (10.0)	10000 (690)
1/2	7/8-14	SS-HPHN-NS8-SH14	1.88 (47.7)	1.00 (25.4)	0.75 (19.1)	0.63 (16.0)	0.47 (11.9)	10000 (690)
3/4	9/16-18	SS-HPHN-NS12-SH9	1.76 (44.7)	1.06 (27.0)	0.75 (19.1)	0.47 (12.0)	0.30 (7.5)	10000 (690)
3/4	3/4-16	SS-HPHN-NS12-SH12	1.84 (46.7)	1.06 (27.0)	0.75 (19.1)	0.55 (14.0)	0.39 (10.0)	10000 (690)
3/4	7/8-14	SS-HPHN-NS12-SH14	1.92 (48.7)	1.06 (27.0)	0.75 (19.1)	0.63 (16.0)	0.49 (12.5)	10000 (690)
1	3/4-16	SS-HPHN-NS16-SH12	2.13 (54.1)	1.37 (34.9)	0.94 (23.9)	0.55 (14.0)	0.39 (10.0)	10000 (690)
1	7/8-14	SS-HPHN-NS16-SH14	2.21 (56.1)	1.37 (34.9)	0.94 (23.9)	0.63 (16.0)	0.49 (12.5)	10000 (690)

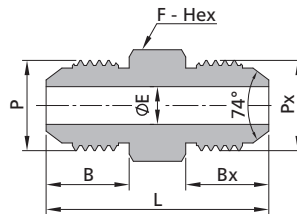
① SAE/MS Heavy-Duty Stud Ends are supplied with a Fluorocarbon FKM O-ring as standard, other materials of O-rings available.

Hex Nipples



Male NPT Threads					Male Type "M"				
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
1/8	9/16-18	SS-HPHN-NS2-HM9	1.22 (31.0)	0.63 (15.9)	0.38 (9.7)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/8	3/4-16	SS-HPHN-NS2-HM12	13.9 (35.3)	0.75 (19.1)	0.38 (9.7)	0.63 (16.0)	0.19 (4.8)	15000 (1034)	
1/4	9/16-18	SS-HPHN-NS4-HM9	1.40 (35.5)	0.63 (15.9)	0.56 (14.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/4	3/4-16	SS-HPHN-NS4-HM12	1.57 (39.8)	0.75 (19.1)	0.56 (14.2)	0.63 (16.0)	0.25 (6.4)	15000 (1034)	
1/4	7/8-14	SS-HPHN-NS4-HM14	1.77 (45.0)	1.00 (25.4)	0.56 (14.2)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
3/8	9/16-18	SS-HPHN-NS6-HM9	1.42 (36.1)	0.69 (17.5)	0.56 (14.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
3/8	3/4-16	SS-HPHN-NS6-HM12	1.57 (39.8)	0.75 (19.1)	0.56 (14.2)	0.63 (16.0)	0.29 (7.4)	15000 (1034)	
3/8	7/8-14	SS-HPHN-NS6-HM14	1.96 (49.9)	1.00 (25.4)	0.56 (14.2)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
1/2	9/16-18	SS-HPHN-NS8-HM9	1.66 (42.2)	0.87 (22.2)	0.75 (19.1)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/2	3/4-16	SS-HPHN-NS8-HM12	1.79 (45.5)	0.87 (22.2)	0.75 (19.1)	0.63 (16.0)	0.29 (7.4)	15000 (1034)	
1/2	7/8-14	SS-HPHN-NS8-HM14	1.96 (49.9)	1.00 (25.4)	0.75 (19.1)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
1/2	1-12	SS-HPHN-NS8-HM16	1.85 (47.0)	1.00 (25.4)	0.75 (19.1)	0.64 (16.3)	0.38 (9.6)	15000 (1034)	
3/4	9/16-18	SS-HPHN-NS12-HM9	1.75 (44.4)	1.06 (27.0)	0.75 (19.1)	0.50 (12.7)	0.09 (2.4)	10000 (690)	
3/4	3/4-16	SS-HPHN-NS12-HM12	1.88 (47.7)	1.06 (27.0)	0.75 (19.1)	0.63 (16.0)	0.29 (7.4)	10000 (690)	
3/4	7/8-14	SS-HPHN-NS12-HM14	2.00 (50.9)	1.06 (27.0)	0.75 (19.1)	0.76 (19.2)	0.15 (3.8)	10000 (690)	
3/4	1-12	SS-HPHN-NS12-HM16	1.89 (48.0)	1.06 (27.0)	0.75 (19.1)	0.64 (16.3)	0.39 (10.0)	10000 (690)	
1	1-12	SS-HPHN-NS16-HM16	2.18 (55.4)	1.37 (34.9)	0.94 (23.9)	0.64 (16.3)	0.39 (10.0)	10000 (690)	
1	1 5/16-12	SS-HPHN-NS16-HM21	2.16 (54.8)	1.37 (34.9)	0.94 (23.9)	0.62 (15.7)	0.69 (17.5)	10000 (690)	

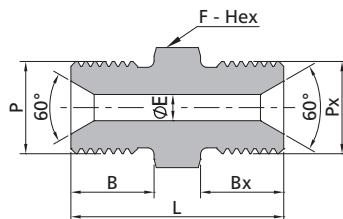
Hex Nipples



Male JIC					Working Pressure psig (bar)				
P-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
7/16-20	7/16-20	SS-HPHN-AN4	1.40 (35.6)	0.50 (12.7)	0.55 (14.0)	0.55 (14.0)	0.17 (4.4)	20000 (1379)	
9/16-18	7/16-20	SS-HPHN-AN6-AN4	1.48 (37.7)	0.63 (15.9)	0.56 (14.1)	0.55 (14.0)	0.17 (4.4)	20000 (1379)	
9/16-18	9/16-18	SS-HPHN-AN6	1.49 (37.8)	0.63 (15.9)	0.56 (14.1)	0.56 (14.1)	0.23 (5.8)	20000 (1379)	
3/4-16	9/16-18	SS-HPHN-AN8-AN6	1.65 (41.8)	0.81 (20.6)	0.66 (16.7)	0.56 (14.1)	0.23 (5.8)	20000 (1379)	
3/4-16	3/4-16	SS-HPHN-AN8	1.75 (44.4)	0.81 (20.6)	0.66 (16.7)	0.66 (16.7)	0.31 (8.0)	20000 (1379)	
7/8-14	9/16-18	SS-HPHN-AN10-AN6	1.79 (45.4)	0.94 (23.8)	0.76 (19.3)	0.56 (14.1)	0.23 (5.8)	20000 (1379)	
7/8-14	3/4-16	SS-HPHN-AN10-AN8	1.89 (48.0)	0.94 (23.8)	0.76 (19.3)	0.66 (16.7)	0.31 (8.0)	20000 (1379)	
7/8-14	7/8-14	SS-HPHN-AN10	1.99 (50.6)	0.94 (23.8)	0.76 (19.3)	0.76 (19.3)	0.37 (9.4)	20000 (1379)	
1 1/16-12	3/4-16	SS-HPHN-AN12-AN8	2.07 (52.6)	1.13 (28.6)	0.86 (21.9)	0.66 (16.7)	0.31 (8.0)	15000 (1034)	
1 1/16-12	7/8-14	SS-HPHN-AN12-AN10	2.17 (55.2)	1.13 (28.6)	0.86 (21.9)	0.76 (19.3)	0.37 (9.4)	15000 (1034)	
1 1/16-12	1 1/16-12	SS-HPHN-AN12	2.28 (57.8)	1.13 (28.6)	0.86 (21.9)	0.86 (21.9)	0.46 (11.6)	15000 (1034)	
1 5/16-12	7/8-14	SS-HPHN-AN16-AN10	2.31 (58.6)	1.37 (34.9)	0.91 (23.1)	0.76 (19.3)	0.37 (9.4)	15000 (1034)	
1 5/16-12	1 1/16-12	SS-HPHN-AN16-AN12	2.41 (61.2)	1.37 (34.9)	0.91 (23.1)	0.86 (21.9)	0.46 (11.6)	15000 (1034)	
1 5/16-12	1 5/16-12	SS-HPHN-AN16	2.46 (62.4)	1.37 (34.9)	0.91 (23.1)	0.91 (23.1)	0.57 (14.6)	15000 (1034)	

Medium & High Pressure Fittings and Tubing
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Technical Information

Hex Nipples



Male Type "M"			Dimensions, in. (mm)					Male Type "M"
Px-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
3/4-16	9/16-18	SS-HPHN-HM12-HM9	1.51 (38.3)	0.75 (19.1)	0.63 (16.0)	0.50 (12.7)	0.09 (2.4)	30000 (2068)
3/4-16	3/4-16	SS-HPHN-HM12	1.64 (41.6)	0.75 (19.1)	0.63 (16.0)	0.63 (16.0)	0.29 (7.4)	30000 (2068)
7/8-14	9/16-18	SS-HPHN-HM14-HM9	1.71 (43.5)	1.00 (25.4)	0.76 (19.2)	0.50 (12.7)	0.09 (2.4)	50000 (3447)
7/8-14	3/4-16	SS-HPHN-HM14-HM12	1.84 (46.8)	1.00 (25.4)	0.76 (19.2)	0.63 (16.0)	0.15 (3.8)	30000 (2068)
7/8-14	7/8-14	SS-HPHN-HM14	1.97 (50.0)	1.00 (25.4)	0.76 (19.2)	0.76 (19.2)	0.15 (3.8)	50000 (3447)
1-12	9/16-18	SS-HPHN-HM16-HM9	1.60 (40.6)	1.00 (25.4)	0.64 (16.3)	0.50 (12.7)	0.09 (2.4)	30000 (2068)
1-12	3/4-16	SS-HPHN-HM16-HM12	1.73 (43.9)	1.00 (25.4)	0.64 (16.3)	0.63 (16.0)	0.29 (7.4)	30000 (2068)
1-12	7/8-14	SS-HPHN-HM16-HM14	1.85 (47.1)	1.00 (25.4)	0.64 (16.3)	0.76 (19.2)	0.15 (3.8)	30000 (2068)
1-12	1-12	SS-HPHN-HM16	1.74 (44.2)	1.00 (25.4)	0.64 (16.3)	0.64 (16.3)	0.39 (10.0)	30000 (2068)
1 5/16-12	1-12	SS-HPHN-HM21-HM16	1.86 (47.2)	1.37 (34.9)	0.62 (15.7)	0.64 (16.3)	0.39 (10.0)	20000 (1379)
1 5/16-12	1 5/16-12	SS-HPHN-HM21	1.83 (46.6)	1.37 (34.9)	0.62 (15.7)	0.62 (15.7)	0.69 (17.5)	20000 (1379)

Medium & High Pressure
Fittings and Tubing

Quick Couplings

Medium & High Pressure
Valves

Line Filters

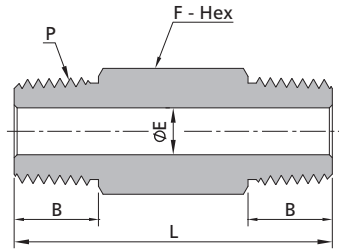
Sour Service Products

Subsea Valves

Tools and Installation
Instructions

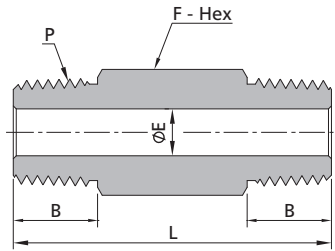
Technical Information

Hex Long Nipples



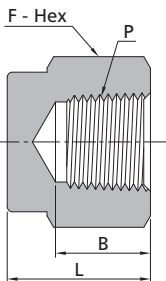
Male NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	F	B	E	
1/8	SS-HPLN-NS2-1.5	1.50 (38.1)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-NS2-2	2.00 (50.8)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-NS2-2.5	2.50 (63.5)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-NS2-3	3.00 (76.2)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	SS-HPLN-NS4-2	2.00 (50.8)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-NS4-2.5	2.50 (63.5)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-NS4-3	3.00 (76.2)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-NS4-4	4.00 (101.6)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	SS-HPLN-NS6-2	2.00 (50.8)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-NS6-2.5	2.50 (63.5)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-NS6-3	3.00 (76.2)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-NS6-4	4.00 (101.6)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	SS-HPLN-NS8-3	3.00 (76.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPLN-NS8-4	4.00 (101.6)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPLN-NS8-6	6.00 (152.4)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	SS-HPLN-NS12-3	3.00 (76.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-NS12-4	4.00 (101.6)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-NS12-6	6.00 (152.4)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-NS12-8	8.00 (203.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	SS-HPLN-NS16-3	3.00 (76.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-NS16-4	4.00 (101.6)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-NS16-6	6.00 (152.4)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-NS16-8	8.00 (203.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Hex Long Nipples



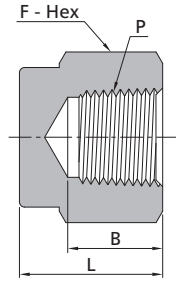
Male ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	F	B	E	
1/8	SS-HPLN-RT2-1.5	1.50 (38.1)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-RT2-2	2.00 (50.8)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-RT2-2.5	2.50 (63.5)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPLN-RT2-3	3.00 (76.2)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	SS-HPLN-RT4-2	2.00 (50.8)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-RT4-2.5	2.50 (63.5)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-RT4-3	3.00 (76.2)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPLN-RT4-4	4.00 (101.6)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	SS-HPLN-RT6-2	2.00 (50.8)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-RT6-2.5	2.50 (63.5)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-RT6-3	3.00 (76.2)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPLN-RT6-4	4.00 (101.6)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	SS-HPLN-RT8-3	3.00 (76.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPLN-RT8-4	4.00 (101.6)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPLN-RT8-6	6.00 (152.4)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	SS-HPLN-RT12-3	3.00 (76.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-RT12-4	4.00 (101.6)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-RT12-6	6.00 (152.4)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPLN-RT12-8	8.00 (203.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	SS-HPLN-RT16-3	3.00 (76.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-RT16-4	4.00 (101.6)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-RT16-6	6.00 (152.4)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPLN-RT16-8	8.00 (203.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Pipe Caps



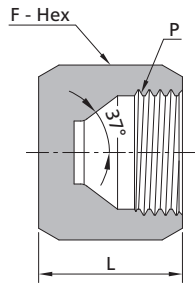
Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
		L	F	B		
1/8	SS-HPC-NS2	0.75 (19.1)	0.63 (15.9)	0.41 (10.4)	15000 (1034)	
1/4	SS-HPC-NS4	0.91 (23.1)	0.94 (23.8)	0.59 (15.0)	15000 (1034)	
3/8	SS-HPC-NS6	1.03 (26.2)	1.13 (28.6)	0.59 (15.0)	15000 (1034)	
1/2	SS-HPC-NS8	1.34 (34.0)	1.37 (34.9)	0.78 (19.8)	15000 (1034)	
3/4	SS-HPC-NS12	1.62 (36.6)	1.50 (38.1)	0.81 (20.6)	10000 (690)	
1	SS-HPC-NS16	1.62 (41.1)	44.5 (1.75)	1.00 (25.4)	10000 (690)	

Pipe Caps



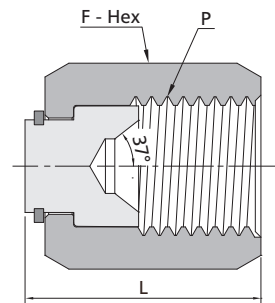
Female ISO/BSP Tapered Threads					
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/8	SS-HPC-RT2	0.75 (19.1)	0.63 (15.9)	0.41 (10.4)	15000 (1034)
1/4	SS-HPC-RT4	0.91 (23.1)	0.94 (23.8)	0.59 (15.0)	15000 (1034)
3/8	SS-HPC-RT6	1.03 (26.2)	1.13 (28.6)	0.59 (15.0)	15000 (1034)
1/2	SS-HPC-RT8	1.34 (34.0)	1.37 (34.9)	0.78 (19.8)	15000 (1034)
3/4	SS-HPC-RT12	1.62 (36.6)	1.50 (38.1)	0.81 (20.6)	10000 (690)
1	SS-HPC-RT16	1.62 (41.1)	1.75 (44.5)	1.00 (25.4)	10000 (690)

Pipe Caps



Female JIC				
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
7/16-20	SS-HPC-AN4	0.63 (16.1)	0.56 (14.3)	20000 (1379)
9/16-18	SS-HPC-AN6	0.72 (18.3)	0.69 (17.5)	20000 (1379)
3/4-16	SS-HPC-AN8	0.85 (21.6)	0.87 (22.2)	20000 (1379)
7/8-14	SS-HPC-AN10	0.98 (24.9)	1.00 (25.4)	20000 (1379)
1 1/16-12	SS-HPC-AN12	1.06 (26.8)	1.25 (31.8)	15000 (1034)
1 5/16-12	SS-HPC-AN16	1.18 (30.0)	1.50 (38.1)	15000 (1034)

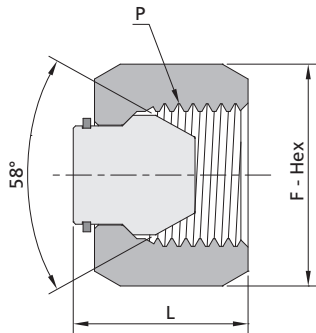
Pipe Cap Assemblies (Moveable Insert)



Moveable Insert Female JIC				
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
7/16-20	SS-HMC-AS4	0.67 (17.1)	0.56 (14.3)	20000 (1379)
9/16-18	SS-HMC-AS6	0.81 (20.5)	0.69 (17.5)	20000 (1379)
3/4-16	SS-HMC-AS8	0.94 (23.9)	0.87 (22.2)	20000 (1379)
7/8-14	SS-HMC-AS10	1.07 (27.1)	1.00 (25.4)	20000 (1379)
1 1/16-12	SS-HMC-AS12	1.24 (31.6)	1.25 (31.8)	15000 (1034)
1 5/16-12	SS-HMC-AS16	1.29 (32.8)	1.50 (38.1)	15000 (1034)

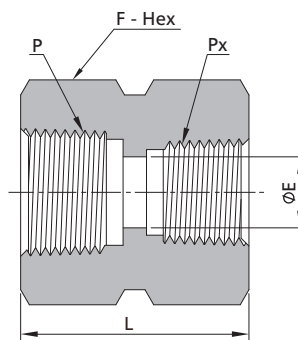
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Pipe Cap Assemblies (Moveable Insert)



Moveable Insert Female Type "M"				
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
9/16-18	SS-HMC-HM9	0.85 (21.6)	0.69 (17.5)	60000 (4137)
3/4-16	SS-HMC-HM12	0.91 (23.1)	1.00 (25.4)	30000 (2068)
7/8-14	SS-HMC-HM14	1.28 (32.5)	1.19 (30.2)	50000 (3447)
1-12	SS-HMC-HM16	1.25 (31.8)	1.25 (31.8)	30000 (2068)
1 5/16-12	SS-HMC-HM21	1.18 (30.0)	1.50 (38.1)	20000 (1379)

Hex Couplings



Female NPT Threads						
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPCG-NS2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPCG-NS4-NS2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPCG-NS4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPCG-NS6-NS2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPCG-NS6-NS4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPCG-NS6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPCG-NS8-NS2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPCG-NS8-NS4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPCG-NS8-NS6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPCG-NS8	1.72 (43.8)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	1/8	SS-HPCG-NS12-NS2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPCG-NS12-NS4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPCG-NS12-NS6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPCG-NS12-NS8	1.79 (45.4)	1.50 (38.1)	0.67 (17.0)	10000 (690)
3/4	3/4	SS-HPCG-NS12	1.84 (46.7)	1.50 (38.1)	0.88 (22.3)	10000 (690)
1	1/8	SS-HPCG-NS16-NS2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPCG-NS16-NS4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPCG-NS16-NS6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPCG-NS16-NS8	1.96 (49.7)	1.75 (44.5)	0.67 (17.0)	10000 (690)
1	3/4	SS-HPCG-NS16-NS12	2.00 (50.7)	1.75 (44.5)	0.88 (22.3)	10000 (690)
1	1	SS-HPCG-NS16	2.19 (55.5)	1.75 (44.5)	1.11 (28.1)	10000 (690)

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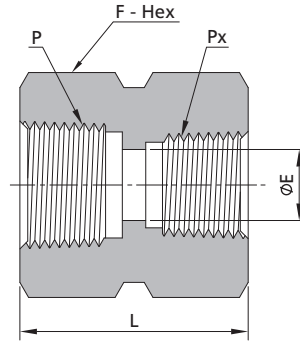
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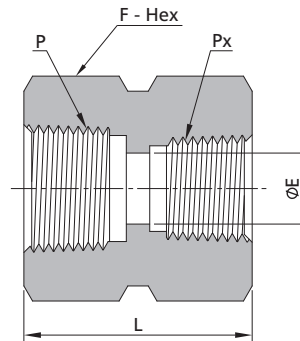
Hex Couplings



Female NPT Threads			Female ISO/BSP Tapered Threads			
P-NPT Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPCG-NS2-RT2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPCG-NS4-RT2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPCG-NS4-RT4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPCG-NS6-RT2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPCG-NS6-RT4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPCG-NS6-RT6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPCG-NS8-RT2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPCG-NS8-RT4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPCG-NS8-RT6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPCG-NS8-RT8	1.72 (43.8)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	1/8	SS-HPCG-NS12-RT2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPCG-NS12-RT4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPCG-NS12-RT6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPCG-NS12-RT8	1.79 (45.4)	1.50 (38.1)	0.69 (17.4)	10000 (690)
3/4	3/4	SS-HPCG-NS12-RT12	1.84 (46.7)	1.50 (38.1)	0.88 (22.3)	10000 (690)
1	1/8	SS-HPCG-NS16-RT2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPCG-NS16-RT4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPCG-NS16-RT6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPCG-NS16-RT8	1.96 (49.7)	1.75 (44.5)	0.69 (17.4)	10000 (690)
1	3/4	SS-HPCG-NS16-RT12	2.00 (50.7)	1.75 (44.5)	0.90 (22.8)	10000 (690)
1	1	SS-HPCG-NS16-RT16	2.19 (55.5)	1.75 (44.5)	1.11 (28.1)	10000 (690)

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Female ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPCG-RT2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPCG-RT4-RT2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPCG-RT4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPCG-RT6-RT2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPCG-RT6-RT4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPCG-RT6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPCG-RT8-RT2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPCG-RT8-RT4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPCG-RT8-RT6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPCG-RT8	1.72 (43.8)	1.37 (34.9)	0.69 (17.4)	15000 (1034)
3/4	1/8	SS-HPCG-RT12-RT2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPCG-RT12-RT4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPCG-RT12-RT6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPCG-RT12-RT8	1.79 (45.4)	1.50 (38.1)	0.90 (22.8)	10000 (690)
3/4	3/4	SS-HPCG-RT12	1.84 (46.7)	1.50 (38.1)	1.13 (28.7)	10000 (690)
1	1/8	SS-HPCG-RT16-RT2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPCG-RT16-RT4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPCG-RT16-RT6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPCG-RT16-RT8	1.96 (49.7)	1.75 (44.5)	0.69 (17.4)	10000 (690)
1	3/4	SS-HPCG-RT16-RT12	2.00 (50.7)	1.75 (44.5)	0.90 (22.8)	10000 (690)
1	1	SS-HPCG-RT16	2.19 (55.5)	1.75 (44.5)	1.13 (28.7)	10000 (690)

Medium & High Pressure
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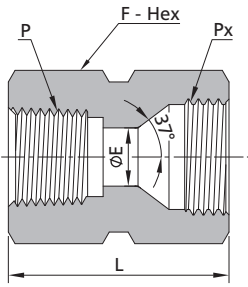
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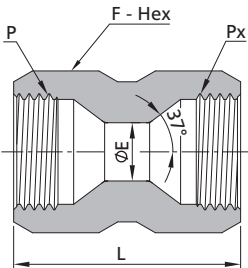
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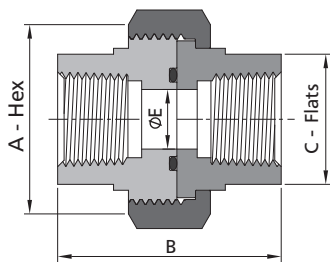
Female NPT Threads			Female JIC			
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	7/16-20	SS-HPCG-NS2-AN4	1.12 (28.4)	0.63 (15.9)	0.17 (4.3)	15000 (1034)
1/4	7/16-20	SS-HPCG-NS4-AN4	1.33 (33.7)	0.94 (23.8)	0.17 (4.3)	15000 (1034)
1/4	9/16-18	SS-HPCG-NS4-AN6	1.36 (34.5)	0.94 (23.8)	0.30 (7.5)	15000 (1034)
3/8	7/16-20	SS-HPCG-NS6-AN4	1.33 (33.7)	1.13 (28.6)	0.17 (4.3)	15000 (1034)
3/8	9/16-18	SS-HPCG-NS6-AN6	1.36 (34.5)	1.13 (28.6)	0.30 (7.5)	15000 (1034)
3/8	3/4-16	SS-HPCG-NS6-AN8	1.44 (36.5)	1.13 (28.6)	0.39 (9.9)	15000 (1034)
1/2	9/16-18	SS-HPCG-NS8-AN6	1.56 (39.7)	1.37 (34.9)	0.30 (7.5)	15000 (1034)
1/2	3/4-16	SS-HPCG-NS8-AN8	1.64 (41.7)	1.37 (34.9)	0.39 (9.9)	15000 (1034)
1/2	7/8-14	SS-HPCG-NS8-AN10	1.74 (44.1)	1.37 (34.9)	0.48 (12.3)	15000 (1034)

Hex Couplings



Female JIC						
P-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
7/16-20	7/16-20	SS-HPCG-AN4	1.24 (31.5)	0.56 (14.3)	0.17 (4.3)	20000 (1379)
9/16-18	7/16-20	SS-HPCG-AN6-AN4	1.27 (32.3)	0.69 (17.5)	0.17 (4.3)	20000 (1379)
9/16-18	9/16-18	SS-HPCG-AN6	1.33 (33.8)	0.69 (17.5)	0.30 (7.5)	20000 (1379)
3/4-16	9/16-18	SS-HPCG-AN8-AN6	1.39 (35.4)	0.87 (22.2)	0.30 (7.5)	20000 (1379)
3/4-16	3/4-16	SS-HPCG-AN8	1.48 (37.6)	0.87 (22.2)	0.39 (9.9)	20000 (1379)
7/8-14	3/4-16	SS-HPCG-AN10-AN8	1.57 (40.0)	1.00 (25.4)	0.39 (9.9)	20000 (1379)
7/8-14	7/8-14	SS-HPCG-AN10	1.68 (42.6)	1.00 (25.4)	0.48 (12.3)	20000 (1379)
1 1/16-12	7/8-14	SS-HPCG-AN12-AN10	1.74 (44.1)	1.37 (34.8)	0.48 (12.3)	15000 (1034)
1 1/16-12	1 1/16-12	SS-HPCG-AN12	1.80 (45.8)	1.25 (31.8)	0.61 (15.5)	15000 (1034)
1 5/16-12	1 1/16-12	SS-HPCG-AN16-AN12	1.89 (48.1)	1.50 (38.1)	0.61 (15.5)	15000 (1034)
1 5/16-12	1 5/16-12	SS-HPCG-AN16	1.97 (50.1)	1.50 (38.1)	0.84 (21.4)	15000 (1034)

Zero-Clearance Unions^①

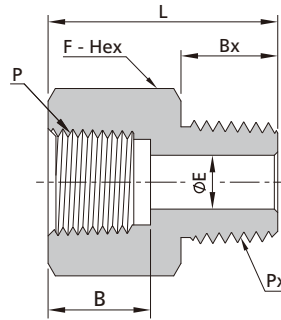


Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		A	B	C	E	
1/8	SS-HPZC-NS2	1.06 (27.0)	1.75 (44.5)	0.62 (15.8)	0.31 (8.0)	15000 (1034)
1/4	SS-HPZC-NS4	1.50 (38.1)	2.00 (50.8)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	SS-HPZC-NS6	1.75 (44.5)	2.25 (57.2)	1.12 (28.5)	0.54 (13.8)	15000 (1034)
1/2	SS-HPZC-NS8	2.00 (50.8)	2.50 (63.5)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	SS-HPZC-NS12	2.25 (57.2)	2.75 (69.9)	1.50 (38.1)	0.88 (22.3)	10000 (690)

① Working temperature range with Fluorocarbon FKM O-rings: 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available.

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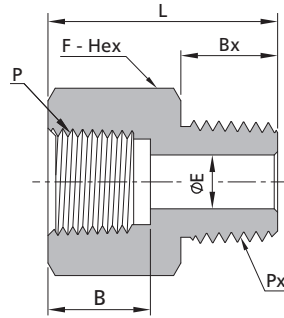
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Female NPT Threads			Dimensions, in. (mm)					Male NPT Threads
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/8	1/8	SS-HPA-NS2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-NS2-NS4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-NS2-NS6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-NS2-NS8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-NS2-NS12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-NS4-NS2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-NS4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-NS4-NS6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-NS4-NS8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-NS4-NS12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-NS4-NS16	1.62 (41.1)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-NS6-NS4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-NS6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-NS6-NS8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-NS6-NS12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-NS6-NS16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-NS8-NS4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-NS8-NS6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-NS8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-NS8-NS12	1.89 (48.0)	1.19 (30.2)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-NS8-NS16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.67 (17.0)	10000 (690)
3/4	1/2	SS-HPA-NS12-NS8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-NS12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-NS12-NS16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-NS16-NS8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-NS16-NS12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-NS16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

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P-NPT Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
1/8	1/8	SS-HPA-NS2-RT2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/8	1/4	SS-HPA-NS2-RT4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
1/8	3/8	SS-HPA-NS2-RT6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/8	1/2	SS-HPA-NS2-RT8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)	
1/8	3/4	SS-HPA-NS2-RT12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)	
1/4	1/8	SS-HPA-NS4-RT2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)	
1/4	1/4	SS-HPA-NS4-RT4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
1/4	3/8	SS-HPA-NS4-RT6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/4	1/2	SS-HPA-NS4-RT8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)	
1/4	3/4	SS-HPA-NS4-RT12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)	
1/4	1	SS-HPA-NS4-RT16	1.37 (34.8)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)	
3/8	1/4	SS-HPA-NS6-RT4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
3/8	3/8	SS-HPA-NS6-RT6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
3/8	1/2	SS-HPA-NS6-RT8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)	
3/8	3/4	SS-HPA-NS6-RT12	1.61 (41.0)	1.06(27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)	
3/8	1	SS-HPA-NS6-RT16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)	
1/2	1/4	SS-HPA-NS8-RT4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)	
1/2	3/8	SS-HPA-NS8-RT6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)	
1/2	1/2	SS-HPA-NS8-RT8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)	
1/2	3/4	SS-HPA-NS8-RT12	1.89 (48.0)	1.19 (30.2)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1/2	1	SS-HPA-NS8-RT16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.67 (17.0)	10000 (690)	
3/4	1/2	SS-HPA-NS12-RT8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
3/4	3/4	SS-HPA-NS12-RT12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
3/4	1	SS-HPA-NS12-RT16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)	
1	1/2	SS-HPA-NS16-RT8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)	
1	3/4	SS-HPA-NS16-RT12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)	
1	1	SS-HPA-NS16-RT16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)	

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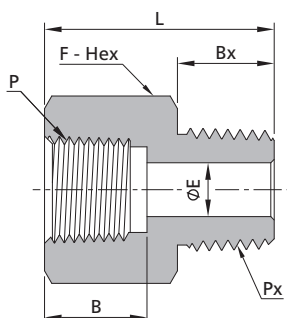
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Female ISO/BSP Tapered Threads			Male ISO/BSP Tapered Threads					
P-ISO/BSP Tapered Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-RT2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-RT2-RT4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-RT2-RT6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-RT2-RT8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-RT2-RT12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-RT4-RT2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-RT4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-RT4-RT6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-RT4-RT8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-RT4-RT12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-RT4-RT16	1.37 (34.8)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-RT6-RT4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-RT6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-RT6-RT8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-RT6-RT12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-RT6-RT16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-RT8-RT4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-RT8-RT6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-RT8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-RT8-RT12	1.89 (48.0)	1.19 (30.2)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-RT8-RT16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.69 (17.4)	10000 (690)
3/4	1/2	SS-HPA-RT12-RT8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-RT12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-RT12-RT16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-RT16-RT8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-RT16-RT12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-RT16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

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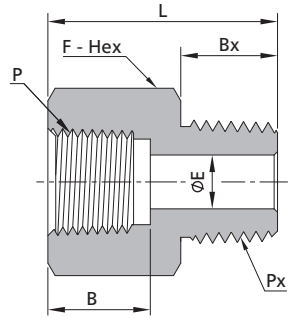
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

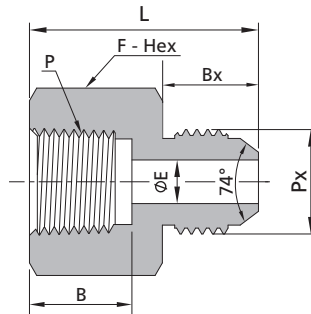
Adapters



Female ISO/BSP Tapered Threads			Dimensions, in. (mm)					Male NPT Threads
P-ISO/BSP Tapered Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-RT2-NS2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-RT2-NS4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-RT2-NS6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-RT2-NS8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-RT2-NS12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-RT4-NS2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-RT4-NS4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-RT4-NS6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-RT4-NS8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-RT4-NS12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-RT4-NS16	1.37 (34.8)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-RT6-NS4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-RT6-NS6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-RT6-NS8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-RT6-NS12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-RT6-NS16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-RT8-NS4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-RT8-NS6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-RT8-NS8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-RT8-NS12	1.89 (48.0)	1.19 (30.2)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-RT8-NS16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.69 (17.4)	10000 (690)
3/4	1/2	SS-HPA-RT12-NS8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-RT12-NS12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-RT12-NS16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-RT16-NS8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-RT16-NS12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-RT16-NS16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

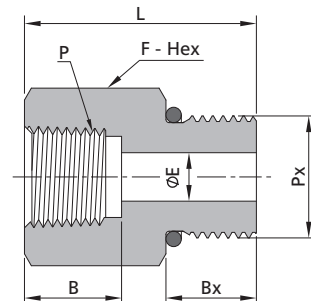
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Adapters



Female NPT Threads			Dimensions, in. (mm)					Male JIC
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
			1/8	7/16-20	SS-HPA-NS2-AN4	1.09 (27.8)	0.63 (15.9)	
1/4	7/16-20	SS-HPA-NS4-AN4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/4	9/16-18	SS-HPA-NS4-AN6	1.32 (33.5)	0.94 (23.8)	0.59 (15.0)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	9/16-18	SS-HPA-NS6-AN6	1.37 (34.8)	1.13 (28.6)	0.59 (15.0)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	3/4-16	SS-HPA-NS6-AN8	1.47 (37.4)	1.13 (28.6)	0.59 (15.0)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	3/4-16	SS-HPA-NS8-AN8	1.72 (43.6)	1.37 (34.9)	0.78 (19.8)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	7/8-14	SS-HPA-NS8-AN10	1.82 (46.2)	1.37 (34.9)	0.78 (19.8)	0.76 (19.3)	0.41 (10.4)	15000 (1034)
1/2	1 1/16-12	SS-HPA-NS8-AN12	1.92 (48.8)	1.37 (34.9)	0.78 (19.8)	0.86 (21.9)	0.46 (11.6)	15000 (1034)
3/4	1 1/16-12	SS-HPA-NS12-AN12	1.89 (47.9)	1.50 (38.1)	0.81 (20.6)	0.86 (21.9)	0.61 (15.5)	10000 (690)
1	1 5/16-12	SS-HPA-NS16-AN16	2.18 (55.3)	1.75 (44.5)	1.00 (25.4)	0.91 (23.1)	0.84 (21.4)	10000 (690)

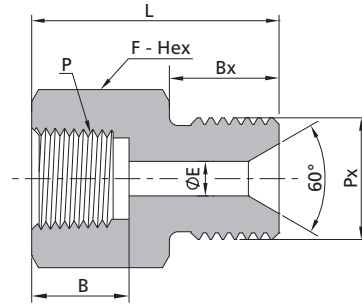
Adapters^①



Female NPT Threads			Dimensions, in. (mm)					Male SAE/MS Straight Threads
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
			1/4	7/16-20	SS-HPA-NS4-SH7	1.20 (30.5)	0.75 (19.1)	
3/8	9/16-18	SS-HPA-NS6-SH9	1.29 (32.7)	0.94 (23.8)	0.59 (15.0)	0.47 (12.0)	0.30 (7.5)	10000 (690)
1/2	3/4-16	SS-HPA-NS8-SH12	1.61 (40.9)	1.19 (30.2)	0.78 (19.8)	0.55 (14.0)	0.39 (10.0)	10000 (690)
3/4	7/8-14	SS-HPA-NS12-SH14	1.67 (42.5)	1.50 (38.1)	0.81 (20.6)	0.63 (16.0)	0.49 (12.5)	10000 (690)

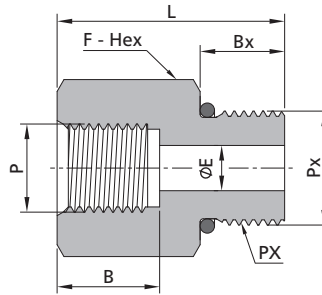
① SAE/MS Heavy-Duty Stud Ends are supplied with a Fluorocarbon FKM O-ring as standard, other materials of O-rings available.

Adapters



Female NPT Threads			Dimensions, in. (mm)					Male Type "M"
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/8	9/16-18	SS-HPA-NS2-HM9	1.13 (28.6)	0.63 (15.9)	0.41 (10.4)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/4	9/16-18	SS-HPA-NS4-HM9	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/4	3/4-16	SS-HPA-NS4-HM12	1.50 (38.1)	0.94 (23.8)	0.59 (15.0)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
3/8	9/16-18	SS-HPA-NS6-HM9	1.44 (36.5)	1.13 (28.6)	0.59 (15.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
3/8	3/4-16	SS-HPA-NS6-HM12	1.56 (39.7)	1.13 (28.6)	0.59 (15.0)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
1/2	9/16-18	SS-HPA-NS8-HM9	1.63 (41.3)	1.37 (34.9)	0.78 (19.8)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/2	3/4-16	SS-HPA-NS8-HM12	1.75 (44.4)	1.37 (34.9)	0.78 (19.8)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
1/2	7/8-14	SS-HPA-NS8-HM14	1.87 (47.6)	1.37 (34.9)	0.78 (19.8)	0.76 (19.2)	0.15 (3.8)	15000 (1034)
3/4	1-12	SS-HPA-NS12-HM16	1.87 (47.6)	1.50 (38.1)	0.81 (20.6)	0.64 (16.3)	0.39 (10.0)	10000 (690)
1	1 5/16-12	SS-HPA-NS16-HM21	2.06 (52.4)	1.75 (44.5)	1.00 (25.4)	0.62 (15.7)	0.69 (17.5)	10000 (690)

Adapters^①

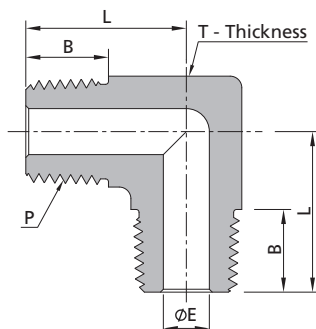


Female SAE/MS Straight Threads			Dimensions, in. (mm)					Male SAE/MS Straight Threads
P-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
7/16-20	9/16-18	SS-HPA-US7-SH9	1.25 (31.8)	0.81 (20.6)	0.55 (14.0)	0.47 (12.0)	0.18 (4.5)	10000 (690)
7/16-20	3/4-16	SS-HPA-US7-SH12	1.25 (31.8)	0.87 (22.2)	0.55 (14.0)	0.55 (14.0)	0.18 (4.5)	10000 (690)
9/16-18	3/4-16	SS-HPA-US9-SH12	1.42 (36.0)	1.00 (25.4)	0.61 (15.5)	0.55 (14.0)	0.30 (7.5)	10000 (690)
9/16-18	7/8-14	SS-HPA-US9-SH14	1.42 (36.0)	1.00 (25.4)	0.61 (15.5)	0.63 (16.0)	0.30 (7.5)	10000 (690)
3/4-16	7/8-14	SS-HPA-US12-SH14	1.65 (41.8)	30.2 (30.2)	0.69 (17.5)	0.63 (16.0)	0.39 (10.0)	10000 (690)

① SAE/MS Heavy-Duty Stud Ends are supplied with a Fluorocarbon FKM O-ring as standard, other materials of O-rings available.

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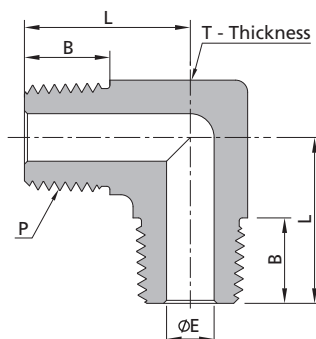
Male Elbows



Male NPT Threads

P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPME-NS2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPME-NS4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPME-NS6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPME-NS8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPME-NS12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPME-NS16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Male Elbows



Male ISO/BSP Tapered Pipe Threads

P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPME-RT2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPME-RT4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPME-RT6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPME-RT8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPME-RT12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPME-RT16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

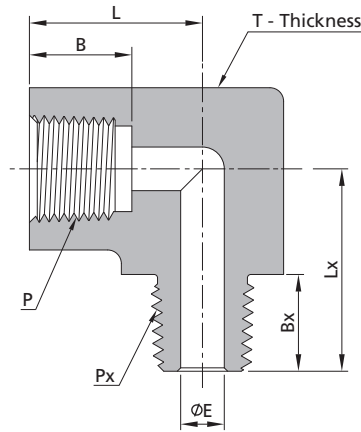
Sour Service Products

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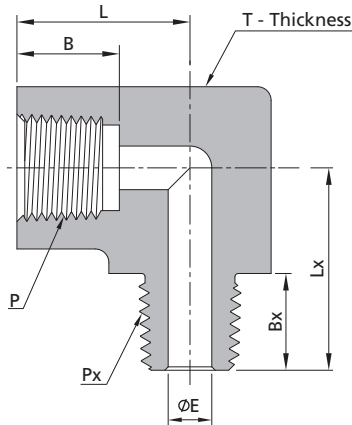
Technical Information

Street Elbows



Female NPT Threads			Male NPT Threads						
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
			L	B	E	Lx	Bx	T	
1/8	1/8	SS-HPSE-NS2	0.75 (19.1)	0.41 (10.4)	0.19 (4.8)	0.75 (19.1)	0.38 (9.7)	0.63 (15.9)	15000 (1034)
1/8	1/4	SS-HPSE-NS2-NS4	0.78 (19.8)	0.41 (10.4)	0.25 (6.4)	1.00 (25.4)	0.56 (14.2)	0.63 (15.9)	15000 (1034)
1/8	3/8	SS-HPSE-NS2-NS6	0.95 (24.2)	0.41 (10.4)	0.31 (7.9)	1.07 (27.2)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/4	SS-HPSE-NS4	1.00 (25.4)	0.59 (15.0)	0.25 (6.4)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	3/8	SS-HPSE-NS4-NS6	1.00 (25.4)	0.59 (15.0)	0.31 (7.9)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/2	SS-HPSE-NS4-NS8	1.15 (29.1)	0.59 (15.0)	0.38 (9.6)	1.40 (35.5)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/8	SS-HPSE-NS6	1.20 (30.6)	0.59 (15.0)	0.31 (7.9)	1.20 (30.6)	0.56 (14.2)	1.00 (25.4)	15000 (1034)
3/8	1/2	SS-HPSE-NS6-NS8	1.20 (30.6)	0.59 (15.0)	0.38 (9.6)	1.38 (35.0)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/4	SS-HPSE-NS6-NS12	1.23 (31.2)	0.59 (15.0)	0.54 (13.8)	1.56 (39.6)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1/2	SS-HPSE-NS8	1.50 (38.1)	0.78 (19.8)	0.38 (9.6)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	15000 (1034)
1/2	3/4	SS-HPSE-NS8-NS12	1.43 (36.2)	0.78 (19.8)	0.58 (14.8)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1	SS-HPSE-NS8-NS16	1.45 (36.9)	0.78 (19.8)	0.67 (17.0)	1.86 (47.3)	0.94 (23.9)	1.37 (34.9)	10000 (690)
3/4	3/4	SS-HPSE-NS12	1.50 (38.1)	0.81 (20.6)	0.58 (14.8)	1.77 (44.9)	0.75 (19.1)	1.50 (38.1)	10000 (690)
3/4	1	SS-HPSE-NS12-NS16	1.63 (41.4)	0.81 (20.6)	0.79 (20.0)	1.86 (47.3)	0.94 (23.9)	1.50 (38.1)	10000 (690)
1	1	SS-HPSE-NS16	1.91 (48.5)	1.00 (25.4)	0.79 (20.0)	2.07 (52.5)	0.94 (23.9)	1.75 (44.5)	10000 (690)

Street Elbows



Female ISO/BSP Tapered Pipe Threads			Male ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Px-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
			L	B	E	Lx	Bx	T	
1/8	1/8	SS-HPSE-RT2	0.75 (19.1)	0.41 (10.4)	0.19 (4.8)	0.75 (19.1)	0.38 (9.7)	0.63 (15.9)	15000 (1034)
1/8	1/4	SS-HPSE-RT2-RT4	0.78 (19.8)	0.41 (10.4)	0.25 (6.4)	1.00 (25.4)	0.56 (14.2)	0.63 (15.9)	15000 (1034)
1/8	3/8	SS-HPSE-RT2-RT6	0.95 (24.2)	0.41 (10.4)	0.31 (7.9)	1.07 (27.2)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/4	SS-HPSE-RT4	1.00 (25.4)	0.59 (15.0)	0.25 (6.4)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	3/8	SS-HPSE-RT4-RT6	1.00 (25.4)	0.59 (15.0)	0.31 (7.9)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/2	SS-HPSE-RT4-RT8	1.15 (29.1)	0.59 (15.0)	0.38 (9.6)	1.40 (35.5)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/8	SS-HPSE-RT6	1.20 (30.6)	0.59 (15.0)	0.31 (7.9)	1.20 (30.6)	0.56 (14.2)	1.00 (25.4)	15000 (1034)
3/8	1/2	SS-HPSE-RT6-RT8	1.20 (30.6)	0.59 (15.0)	0.38 (9.6)	1.38 (35.0)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/4	SS-HPSE-RT6-RT12	1.23 (31.2)	0.59 (15.0)	0.54 (13.8)	1.56 (39.6)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1/2	SS-HPSE-RT8	1.50 (38.1)	0.78 (19.8)	0.38 (9.6)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	15000 (1034)
1/2	3/4	SS-HPSE-RT8-RT12	1.43 (36.2)	0.78 (19.8)	0.58 (14.8)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1	SS-HPSE-RT8-RT16	1.45 (36.9)	0.78 (19.8)	0.67 (17.0)	1.86 (47.3)	0.94 (23.9)	1.37 (34.9)	10000 (690)
3/4	3/4	SS-HPSE-RT12	1.50 (38.1)	0.81 (20.6)	0.58 (14.8)	1.77 (44.9)	0.75 (19.1)	1.50 (38.1)	10000 (690)
3/4	1	SS-HPSE-RT12-RT16	1.63 (41.4)	0.81 (20.6)	0.79 (20.0)	1.86 (47.3)	0.94 (23.9)	1.50 (38.1)	10000 (690)
1	1	SS-HPSE-RT16	1.91 (48.5)	1.00 (25.4)	0.79 (20.0)	2.07 (52.5)	0.94 (23.9)	1.75 (44.5)	10000 (690)

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Line Filters

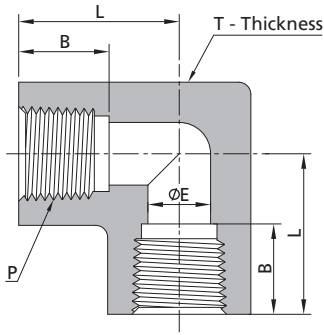
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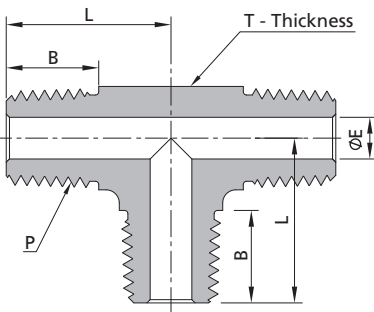
Female Elbows



Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-NS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPE-NS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPE-NS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPE-NS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPE-NS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPE-NS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

Female ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-RT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPE-RT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPE-RT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPE-RT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPE-RT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPE-RT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

Male Tees

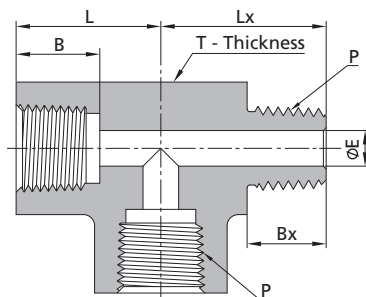


Male NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPMT-NS2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPMT-NS4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPMT-NS6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPMT-NS8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPMT-NS12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPMT-NS16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Male ISO/BSP Tapered Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPMT-RT2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPMT-RT4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPMT-RT6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPMT-RT8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPMT-RT12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPMT-RT16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

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Male Street Tees



NPT Threads								
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPST-NS2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPST-NS4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPST-NS6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPST-NS8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPST-NS12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPST-NS16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

ISO/BSP Tapered Pipe Threads								
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPST-RT2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPST-RT4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPST-RT6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPST-RT8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPST-RT12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPST-RT16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

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Line Filters

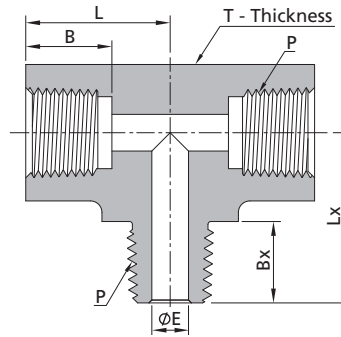
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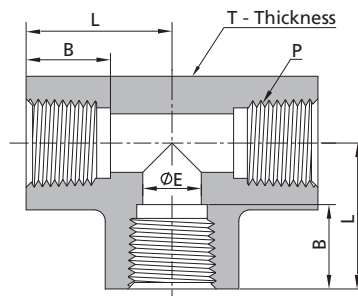
Male Branch Tees



NPT Threads								
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPBT-NS2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPBT-NS4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPBT-NS6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPBT-NS8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPBT-NS12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPBT-NS16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

ISO/BSP Tapered Pipe Threads								
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPBT-RT2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPBT-RT4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPBT-RT6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPBT-RT8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPBT-RT12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPBT-RT16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

Female Tees

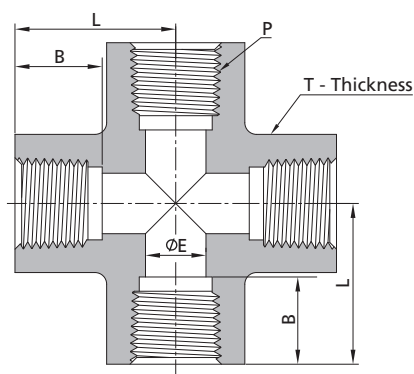


Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-NS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-NS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-NS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-NS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-NS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPT-NS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

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Female ISO/BSP Tapered Pipe Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-RT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-RT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-RT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-RT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-RT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-RT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

Female Crosses



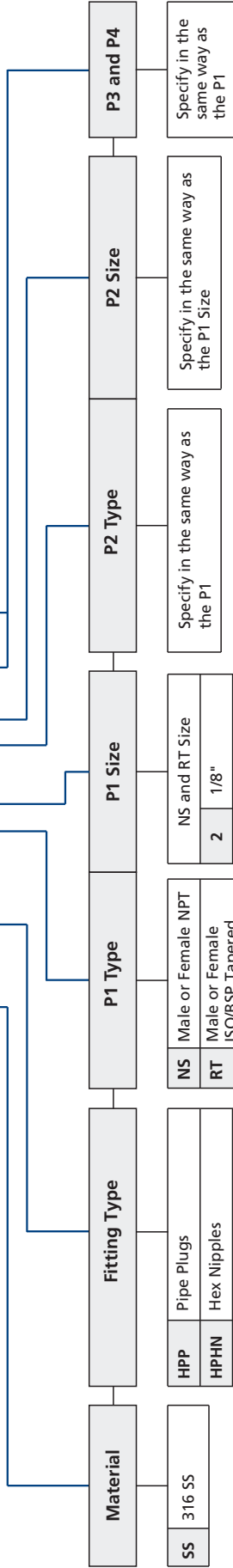
Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPCR-NS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPCR-NS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPCR-NS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPCR-NS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPCR-NS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPCR-NS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

Female ISO/BSP Tapered Pipe Threads						
P-ISO/BSP Tapered Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPCR-RT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPCR-RT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPCR-RT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPCR-RT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPCR-RT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPCR-RT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

NOTE: All dimensions are for reference only and subject to change.

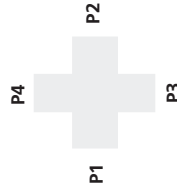
Ordering Number Description

SS – HPHN – NS6 – RT4 – □ – □



Material	Fitting Type	P1 Type	P1 Size	P2 Type	P2 Size	P3 and P4
SS	HPP Pipe Plugs	NS Male or Female NPT	2 1/8"			
316 SS	HPHN Hex Nipples	RT Male or Female ISO/BSP Tapered	4 1/4"			
	HPLN Hex Long Nipples	SH Heavy-Duty Stud Ends (SAE J1926-2, ISO 11926-2)	6 3/8"			
	HPC Pipe Caps	US Ports with O-ring seal in truncated housing (SAE J1926-1, ISO 11926-1)	8 1/2"			
	HMC Pipe Cap Assemblies (Moveable Insert)	AN Male or Female JIC (37° Flare)	12 3/4"			
	HPCG Hex Couplings	AS Female Swivel JIC (37° Flare)	16 1"			
	HPZC Zero-Clearance Unions	HM Male Type "M"	SH, US and HM Thread Size			
	HPA Adapters		7 7/16-20			
	HPME Male Elbows		9 9/16-18			
	HPSE Street Elbows		12 3/4-16			
	HPE Female Elbows		14 7/8-14			
	HPMT Male Tees		16 1-12			
	HPST Male Street Tees		21 1 5/16-12			
	HPBT Male Branch Tees		AN and AS Thread Size			
	HPT Female Tees		4 7/16-20			
	HPCR Female Crosses		6 9/16-18			
			8 3/4-16			
			10 7/8-14			
			12 1 1/16-12			
			16 1 5/16-12			

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.



P1, P2, P3 and P4 shall be described in the following orders:

- ⊙ Describe the female thread end first if there is any
- ⊙ For male connections: NPT - ISO/BSP Tapered - Heavy-Duty Stud Ends - JIC (37° Flare) - Male Type "M"
- ⊙ For female connections: NPT - ISO/BSP Tapered - Ports with O-ring seal in truncated housing - JIC (37° Flare)
- ⊙ Describe in descending order as per size if the end connection types are the same
- ⊙ Describe the end of P1 if all end connections are the same

Adapters and Couplings



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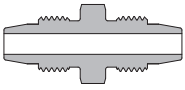
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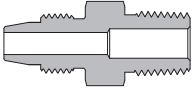
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Male DHL Series to Male DHL Series - MMA



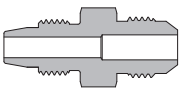
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Male DHL Series to Male NPT - MMA



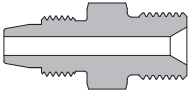
A-70

Male DHL Series to Male JIC - MMA



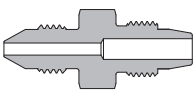
A-71

Male DHL Series to Male Type "M" - MMA



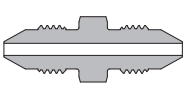
A-72

Male MP to Male DHL Series - MMA



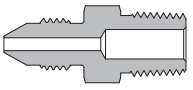
A-72

Male MP to Male MP - MMA



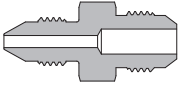
A-73

Male MP to Male NPT - MMA



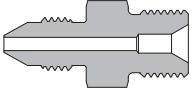
A-74

Male MP to Male JIC - MMA



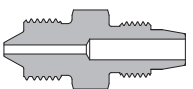
A-75

Male MP to Male Type "M" - MMA



A-76

Male HP to Male DHL Series - MMA



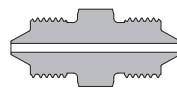
A-77

Male HP to Male MP - MMA



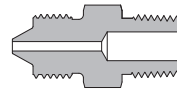
A-77

Male HP to Male HP - MMA



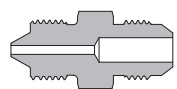
A-78

Male HP to Male NPT - MMA



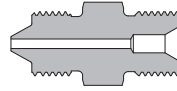
A-78

Male HP to Male JIC - MMA



A-79

Male HP to Male Type "M" - MMA



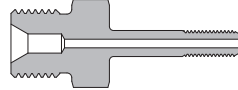
A-79

Male Type "M" to MP Nipples - MMA



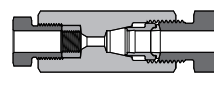
A-80

Male Type "M" to HP Nipples - MMA



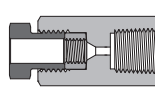
A-81

Female MP to Female DHL Series - FFC



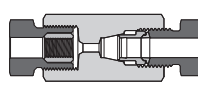
A-81

Female MP to Female NPT - FFC



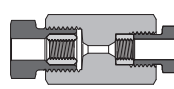
A-82

Female HP to Female DHL Series - FFC



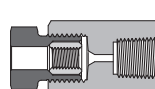
A-83

Female HP to Female MP - FFC



A-83

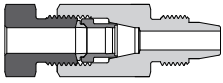
Female HP to Female NPT - FFC



A-84

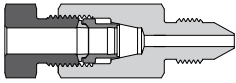
Contents

Female DHL Series to Male DHL Series - FMA



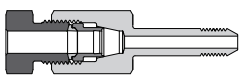
A-84

Female DHL Series to Male MP - FMA



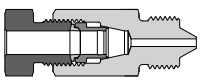
A-85

Female DHL Series to MP Nipples - FMA



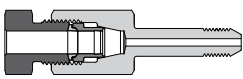
A-86

Female DHL Series to Male HP - FMA



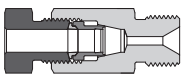
A-87

Female DHL Series to HP Nipples - FMA



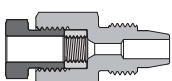
A-87

Female DHL Series to Male Type "M" - FMA



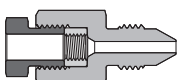
A-88

Female MP to Male DHL Series - FMA



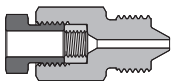
A-89

Female MP to Male MP - FMA



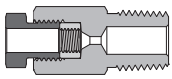
A-90

Female MP to Male HP - FMA



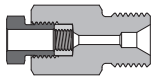
A-91

Female MP to Male NPT - FMA



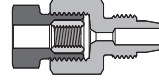
A-92

Female MP to Male Type "M" - FMA



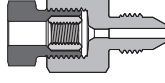
A-93

Female HP to Male DHL Series - FMA



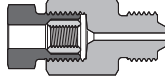
A-94

Female HP to Male MP - FMA



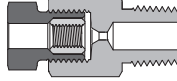
A-94

Female HP to Male HP - FMA



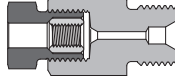
A-95

Female HP to Male NPT - FMA



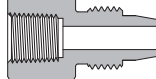
A-95

Female HP to Male Type "M" - FMA



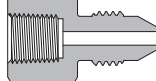
A-96

Female NPT to Male DHL Series - FMA



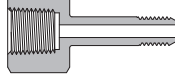
A-97

Female NPT to Male MP - FMA



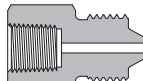
A-98

Female NPT to MP Nipples - FMA



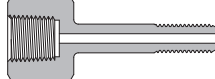
A-99

Female NPT to Male HP - FMA



A-100

Female NPT to HP Nipples - FMA



A-101

Ordering Number Description

A-102

Features

- ⦿ High tensile 316 Stainless Steel as standard material, other materials also available upon request
- ⦿ Every fitting marked with size, material and heat number

Working Pressure

The working pressures of Adapters and Couplings are shown in the "**Ordering Information and Dimensions**".

Working Temperature

Connection Type	Working Temperature Range
Male DHL Series	-423°F to 1200°F (-252°C to 649°C)
Male MP	-423°F to 1200°F (-252°C to 649°C)
Male HP	-423°F to 1200°F (-252°C to 649°C)
Female DHL Series	-325°F to 800°F (-198°C to 427°C)
Female MP	-423°F to 1200°F (-252°C to 649°C)
Female HP	-423°F to 1200°F (-252°C to 649°C)
MP Nipples	-423°F to 1200°F (-252°C to 649°C)
HP Nipples	-423°F to 1200°F (-252°C to 649°C)
NPT Pipe Thread	-325°F to 400°F (-198°C to 204°C)
JIC (37°Flare)	-423°F to 1200°F (-252°C to 649°C)
Male Type "M"	-423°F to 1200°F (-252°C to 649°C)

"Two-piece" Design

Ordering number with designator "□CP" is for "two-piece" male to male and female to male adapters. They are identical to the "one-piece" design in length. They can be ordered by using "CP" to take the place of "MP".

Example:

Ordering number of "one-piece": SS-MMA-6MP6-6MP4

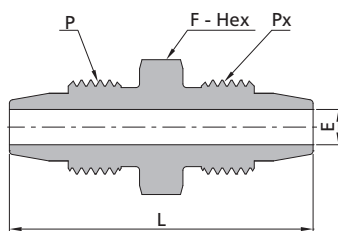
The corresponding ordering number of "two-piece": SS-MMA-6CP6-6CP4.

Cautions:

- ⦿ Do not loosen or tighten fittings when the system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads.

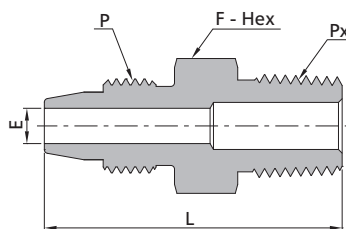
Ordering Information and Dimensions

Male DHL Series to Male DHL Series



Male DHL Series			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DMP2	DMP2	SS-MMA-DMP2	1.60 (40.6)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DMP4	DMP2	SS-MMA-DMP4-DMP2	1.79 (45.5)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DMP4	DMP4	SS-MMA-DMP4	1.94 (49.4)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DMP6	DMP2	SS-MMA-DMP6-DMP2	1.85 (46.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DMP6	DMP4	SS-MMA-DMP6-DMP4	2.00 (50.8)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DMP6	DMP6	SS-MMA-DMP6	2.02 (51.2)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DMP8	DMP2	SS-MMA-DMP8-DMP2	2.06 (52.2)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DMP8	DMP4	SS-MMA-DMP8-DMP4	2.21 (56.1)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DMP8	DMP6	SS-MMA-DMP8-DMP6	2.22 (56.5)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DMP8	DMP8	SS-MMA-DMP8	2.35 (59.8)	0.94 (23.8)	0.37 (9.5)	15000 (1034)

Male DHL Series to Male NPT

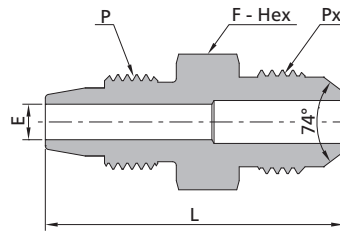


Male DHL Series			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DMP2	NS2	SS-MMA-DMP-NS2	1.32 (33.5)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DMP2	NS4	SS-MMA-DMP2-NS4	1.52 (38.5)	0.56 (14.3)	0.09 (2.4)	15000 (1034)
DMP2	NS6	SS-MMA-DMP2-NS6	1.56 (39.5)	0.69 (17.5)	0.09 (2.4)	15000 (1034)
DMP2	NS8	SS-MMA-DMP2-NS8	1.82 (46.4)	0.87 (22.2)	0.09 (2.4)	15000 (1034)
DMP2	NS12	SS-MMA-DMP2-NS12	1.90 (48.4)	1.06 (27.0)	0.09 (2.4)	10000 (690)
DMP2	NS16	SS-MMA-DMP2-NS16	2.19 (55.7)	1.37 (34.9)	0.09 (2.4)	10000 (690)
DMP4	NS2	SS-MMA-DMP4-NS2	1.51 (38.4)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DMP4	NS4	SS-MMA-DMP4-NS4	1.69 (42.9)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DMP4	NS6	SS-MMA-DMP4-NS6	1.71 (43.4)	0.69 (17.5)	0.19 (4.8)	15000 (1034)
DMP4	NS8	SS-MMA-DMP4-NS8	1.98 (50.3)	0.87 (22.2)	0.19 (4.8)	15000 (1034)
DMP4	NS12	SS-MMA-DMP4-NS12	2.06 (52.3)	1.06 (27.0)	0.19 (4.8)	10000 (690)
DMP4	NS16	SS-MMA-DMP4-NS16	2.35 (59.6)	1.37 (34.9)	0.19 (4.8)	10000 (690)

A-71 Adapters and Couplings

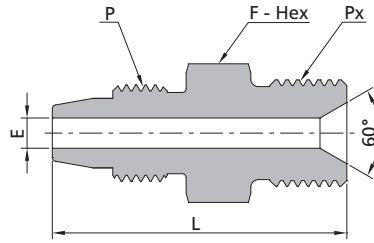
Male DHL Series				Male NPT		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DMP6	NS2	SS-MMA-DMP6-NS2	1.57(39.8)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DMP6	NS4	SS-MMA-DMP6-NS4	1.74 (44.3)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DMP6	NS6	SS-MMA-DMP6-NS6	1.74 (44.3)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DMP6	NS8	SS-MMA-DMP6-NS8	1.99 (50.7)	0.87 (22.2)	0.25 (6.4)	15000 (1034)
DMP6	NS12	SS-MMA-DMP6-NS12	2.07 (52.7)	1.06 (27.0)	0.25 (6.4)	10000 (690)
DMP6	NS16	SS-MMA-DMP6-NS16	2.36 (60.0)	1.37 (34.9)	0.25 (6.4)	10000 (690)
DMP8	NS2	SS-MMA-DMP8-NS2	1.78 (45.1)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DMP8	NS4	SS-MMA-DMP8-NS4	1.95 (49.6)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DMP8	NS6	SS-MMA-DMP8-NS6	1.95 (49.6)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
DMP8	NS8	SS-MMA-DMP8-NS8	2.14 (54.5)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
DMP8	NS12	SS-MMA-DMP8-NS12	2.20 (56.0)	1.06 (27.0)	0.37 (9.5)	10000 (690)
DMP8	NS16	SS-MMA-DMP8-NS16	2.49 (63.3)	1.37 (34.9)	0.37 (9.5)	10000 (690)

Male DHL Series to Male JIC



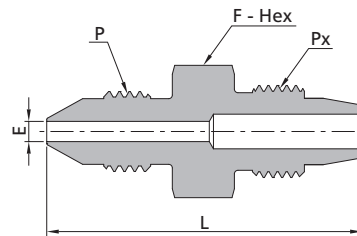
Male DHL Series				Male JIC		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DMP2	AN4	SS-MMA-DMP2-AN4	1.49 (37.8)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DMP2	AN6	SS-MMA-DMP2-AN6	1.53 (38.9)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DMP2	AN8	SS-MMA-DMP2-AN8	1.71 (43.5)	0.81 (20.6)	0.09 (2.4)	15000 (1034)
DMP2	AN10	SS-MMA-DMP2-AN10	1.85 (47.1)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DMP2	AN12	SS-MMA-DMP2-AN12	2.04 (51.7)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
DMP2	AN16	SS-MMA-DMP2-AN16	2.16 (54.9)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
DMP4	AN4	SS-MMA-DMP4-AN4	1.68 (42.7)	0.63 (15.9)	0.17 (4.4)	15000 (1034)
DMP4	AN6	SS-MMA-DMP4-AN6	1.69 (42.8)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DMP4	AN8	SS-MMA-DMP4-AN8	1.87 (47.4)	0.81 (20.6)	0.19 (4.8)	15000 (1034)
DMP4	AN10	SS-MMA-DMP4-AN10	2.01 (51.0)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DMP4	AN12	SS-MMA-DMP4-AN12	2.19 (55.6)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
DMP4	AN16	SS-MMA-DMP4-AN16	2.31 (58.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
DMP6	AN4	SS-MMA-DMP6-AN4	1.74 (44.1)	0.75 (19.1)	0.17 (4.4)	15000 (1034)
DMP6	AN6	SS-MMA-DMP6-AN6	1.74 (44.2)	0.75 (19.1)	0.23 (5.8)	15000 (1034)
DMP6	AN8	SS-MMA-DMP6-AN8	1.88 (47.8)	0.81 (20.6)	0.25 (6.4)	15000 (1034)
DMP6	AN10	SS-MMA-DMP6-AN10	2.02 (51.4)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DMP6	AN12	SS-MMA-DMP6-AN12	2.20(56.0)	1.13 (28.6)	0.25 (6.4)	15000 (1034)
DMP6	AN16	SS-MMA-DMP6-AN16	2.33(59.2)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
DMP8	AN4	SS-MMA-DMP8-AN4	1.94 (49.4)	0.94 (23.8)	0.17 (4.4)	15000 (1034)
DMP8	AN6	SS-MMA-DMP8-AN6	1.95 (49.5)	0.94 (23.8)	0.23 (5.8)	15000 (1034)
DMP8	AN8	SS-MMA-DMP8-AN8	2.05 (52.1)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
DMP8	AN10	SS-MMA-DMP8-AN10	2.15(54.7)	0.94 (23.8)	0.37 (9.4)	15000 (1034)
DMP8	AN12	SS-MMA-DMP8-AN12	2.33 (59.3)	1.13 (28.6)	0.37 (9.5)	15000 (1034)
DMP8	AN16	SS-MMA-DMP8-AN16	2.46 (62.5)	1.37 (34.9)	0.37 (9.5)	15000 (1034)

Male DHL Series to Male Type "M"



Male DHL Series			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DMP2	HM9	SS-MMA-DMP2-HM9	1.48(37.5)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DMP2	HM12	SS-MMA-DMP2-HM12	1.65(41.8)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DMP2	HM14	SS-MMA-DMP2-HM14	1.87(47.5)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
DMP2	HM16	SS-MMA-DMP2-HM16	1.76(44.6)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
DMP2	HM21	SS-MMA-DMP2-HM21	1.87(47.5)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
DMP4	HM9	SS-MMA-DMP4-HM9	1.63(41.4)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DMP4	HM12	SS-MMA-DMP4-HM12	1.80(45.7)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DMP4	HM14	SS-MMA-DMP4-HM14	2.02(51.4)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DMP4	HM16	SS-MMA-DMP4-HM16	1.91(48.5)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
DMP4	HM21	SS-MMA-DMP4-HM21	2.02(51.4)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
DMP6	HM9	SS-MMA-DMP6-HM9	1.69(42.8)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DMP6	HM12	SS-MMA-DMP6-HM12	1.81(46.1)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DMP6	HM14	SS-MMA-DMP6-HM14	2.04(51.8)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DMP6	HM16	SS-MMA-DMP6-HM16	1.93(48.9)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
DMP6	HM21	SS-MMA-DMP6-HM21	2.04(51.8)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
DMP8	HM9	SS-MMA-DMP8-HM9	1.89(48.1)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DMP8	HM12	SS-MMA-DMP8-HM12	2.02(51.4)	0.94 (23.8)	0.29 (7.4)	15000 (1034)
DMP8	HM14	SS-MMA-DMP8-HM14	2.17(55.1)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DMP8	HM16	SS-MMA-DMP8-HM16	2.06(52.2)	1.00 (25.4)	0.37 (9.5)	15000 (1034)
DMP8	HM21	SS-MMA-DMP8-HM21	2.17(55.1)	1.37 (34.9)	0.37 (9.5)	15000 (1034)

Male MP to Male DHL Series



Male MP			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP4	DMP2	SS-MMA-2MP4-DMP2	1.62(41.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
2MP4	DMP4	SS-MMA-2MP4-DMP4	1.81(46.1)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2MP4	DMP6	SS-MMA-2MP4-DMP6	1.87(47.5)	0.75 (19.1)	0.11 (2.8)	15000 (1034)
2MP4	DMP8	SS-MMA-2MP4-DMP8	2.08(52.8)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
2MP6	DMP2	SS-MMA-2MP6-DMP2	1.81(45.9)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
2MP6	DMP4	SS-MMA-2MP6-DMP4	1.96(49.8)	0.63 (15.9)	0.19 (4.8)	15000 (1034)

Medium & High Pressure
Fittings and Tubing

Quick Couplings

Medium & High Pressure
Valves

Line Filters

Sour Service Products

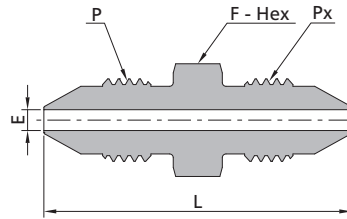
Subsea Valves

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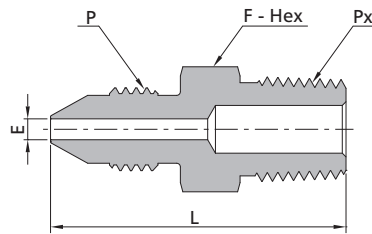
Male MP			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP6	DMP6	SS-MMA-2MP6-DMP6	2.02(51.2)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
2MP6	DMP8	SS-MMA-2MP6-DMP8	2.22(56.5)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
2MP9	DMP2	SS-MMA-2MP9-DMP2	2.11(53.7)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
2MP9	DMP4	SS-MMA-2MP9-DMP4	2.27(57.6)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
2MP9	DMP6	SS-MMA-2MP9-DMP6	2.28(58.0)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
2MP9	DMP8	SS-MMA-2MP9-DMP8	2.41(61.3)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
2MP12	DMP2	SS-MMA-2MP12-DMP2	2.38(60.5)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
2MP12	DMP4	SS-MMA-2MP12-DMP4	2.54(64.4)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
2MP12	DMP6	SS-MMA-2MP12-DMP6	2.55(64.8)	1.19 (30.2)	0.25 (6.4)	15000 (1034)
2MP12	DMP8	SS-MMA-2MP12-DMP8	2.68(68.1)	1.19 (30.2)	0.37 (9.5)	15000 (1034)
2MP16	DMP2	SS-MMA-2MP16-DMP2	2.93(74.3)	1.50 (38.1)	0.09 (2.4)	15000 (1034)
2MP16	DMP4	SS-MMA-2MP16-DMP4	3.08(78.2)	1.50 (38.1)	0.19 (4.8)	15000 (1034)
2MP16	DMP6	SS-MMA-2MP16-DMP6	3.09(78.6)	1.50 (38.1)	0.37 (9.5)	15000 (1034)
2MP16	DMP8	SS-MMA-2MP16-DMP8	3.22(81.9)	1.50 (38.1)	0.37 (9.5)	15000 (1034)

Male MP to Male MP



Male MP			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP4	2MP4	SS-MMA-2MP4	1.63 (41.3)	0.50 (12.7)	0.11 (2.8)	20000 (1379)
2MP6	2MP4	SS-MMA-2MP6-2MP4	1.87 (47.6)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
2MP6	2MP6	SS-MMA-2MP6	2.00 (50.8)	0.63 (15.9)	0.20 (5.2)	20000 (1379)
2MP9	2MP4	SS-MMA-2MP9-2MP4	2.13 (54.0)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
2MP9	2MP6	SS-MMA-2MP9-2MP6	2.31 (58.7)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
2MP9	2MP9	SS-MMA-2MP9	2.50 (63.5)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
2MP12	2MP4	SS-MMA-2MP12-2MP4	2.44 (61.9)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
2MP12	2MP6	SS-MMA-2MP12-2MP6	2.56 (65.1)	1.19 (30.2)	0.20 (5.2)	20000 (1379)
2MP12	2MP9	SS-MMA-2MP12-2MP9	2.75 (69.9)	1.19 (30.2)	0.31 (7.9)	20000 (1379)
2MP12	2MP12	SS-MMA-2MP12	2.94 (74.6)	1.19 (30.2)	0.44 (11.1)	20000 (1379)
2MP16	2MP4	SS-MMA-2MP16-2MP4	3.00 (76.2)	1.50 (38.1)	0.11 (2.8)	20000 (1379)
2MP16	2MP6	SS-MMA-2MP16-2MP6	3.13 (79.4)	1.50 (38.1)	0.20 (5.2)	20000 (1379)
2MP16	2MP9	SS-MMA-2MP16-2MP9	3.31 (84.2)	1.50 (38.1)	0.31 (7.9)	20000 (1379)
2MP16	2MP12	SS-MMA-2MP16-2MP12	3.44 (87.4)	1.50 (38.1)	0.44 (11.1)	20000 (1379)
2MP16	2MP16	SS-MMA-2MP16	3.94 (100.2)	1.50 (38.1)	0.56 (14.3)	20000 (1379)

Male MP to Male NPT



Male MP			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP4	NS2	SS-MMA-2MP4-NS2	1.37 (34.9)	0.50 (12.7)	0.11 (2.8)	15000 (1034)
2MP4	NS4	SS-MMA-2MP4-NS4	1.56 (39.7)	0.56 (14.3)	0.11 (2.8)	15000 (1034)
2MP4	NS6	SS-MMA-2MP4-NS6	1.63 (41.3)	0.69 (17.5)	0.11 (2.8)	15000 (1034)
2MP4	NS8	SS-MMA-2MP4-NS8	1.87 (47.6)	0.87 (22.2)	0.11 (2.8)	15000 (1034)
2MP4	NS12	SS-MMA-2MP4-NS12	1.94 (49.2)	1.06 (27.0)	0.11 (2.8)	10000 (690)
2MP4	NS16	SS-MMA-2MP4-NS16	2.25 (57.2)	1.37 (34.9)	0.11 (2.8)	10000 (690)
2MP6	NS2	SS-MMA-2MP6-NS2	1.56 (39.7)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
2MP6	NS4	SS-MMA-2MP6-NS4	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	15000 (1034)
2MP6	NS6	SS-MMA-2MP6-NS6	1.75 (44.5)	0.69 (17.5)	0.20 (5.2)	15000 (1034)
2MP6	NS8	SS-MMA-2MP6-NS8	2.00 (50.8)	0.87 (22.2)	0.20 (5.2)	15000 (1034)
2MP6	NS12	SS-MMA-2MP6-NS12	2.06 (52.4)	1.06 (27.0)	0.20 (5.2)	10000 (690)
2MP6	NS16	SS-MMA-2MP6-NS16	2.37 (60.3)	1.37 (34.9)	0.20 (5.2)	10000 (690)
2MP9	NS2	SS-MMA-2MP9-NS2	1.87 (47.6)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
2MP9	NS4	SS-MMA-2MP9-NS4	2.06 (52.4)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
2MP9	NS6	SS-MMA-2MP9-NS6	2.06 (52.4)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
2MP9	NS8	SS-MMA-2MP9-NS8	2.25 (57.2)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
2MP9	NS12	SS-MMA-2MP9-NS12	2.31 (58.7)	1.06 (27.0)	0.31 (7.9)	10000 (690)
2MP9	NS16	SS-MMA-2MP9-NS16	2.56 (65.1)	1.37 (34.9)	0.31 (7.9)	10000 (690)
2MP12	NS2	SS-MMA-2MP12-NS2	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
2MP12	NS4	SS-MMA-2MP12-NS4	2.31 (58.7)	1.19 (30.2)	0.25 (6.4)	15000 (1034)
2MP12	NS6	SS-MMA-2MP12-NS6	2.31 (58.7)	1.19 (30.2)	0.31 (7.9)	15000 (1034)
2MP12	NS8	SS-MMA-2MP12-NS8	2.50 (63.5)	1.19 (30.2)	0.38 (9.6)	15000 (1034)
2MP12	NS12	SS-MMA-2MP12-NS12	2.50 (63.5)	1.19 (30.2)	0.44 (11.1)	10000 (690)
2MP12	NS16	SS-MMA-2MP12-NS16	2.75 (69.9)	1.37 (34.9)	0.44 (11.1)	10000 (690)
2MP16	NS2	SS-MMA-2MP16-NS2	2.69 (68.3)	1.50 (38.1)	0.19 (4.8)	15000 (1034)
2MP16	NS4	SS-MMA-2MP16-NS4	2.81 (71.4)	1.50 (38.1)	0.25 (6.4)	15000 (1034)
2MP16	NS6	SS-MMA-2MP16-NS6	2.81 (71.4)	1.50 (38.1)	0.31 (7.9)	15000 (1034)
2MP16	NS8	SS-MMA-2MP16-NS8	3.06 (77.8)	1.50 (38.1)	0.38 (9.6)	15000 (1034)
2MP16	NS12	SS-MMA-2MP16-NS12	3.06 (82.6)	1.50 (38.1)	0.56 (14.3)	10000 (690)
2MP16	NS16	SS-MMA-2MP16-NS16	3.25 (82.6)	1.50 (38.1)	0.56 (14.3)	10000 (690)

Medium & High Pressure
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Line Filters

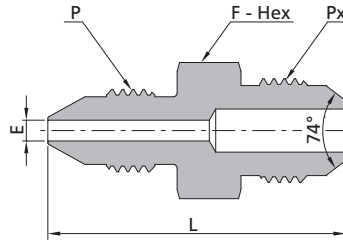
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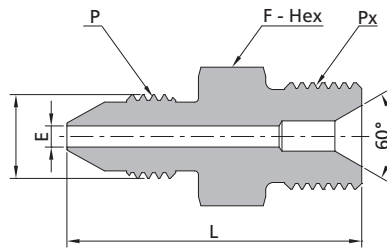
Male MP to Male JIC



Male MP			Male JIC			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP4	AN4	SS-MMA-2MP4-AN4	1.50 (38.1)	0.50 (12.7)	0.11 (2.8)	20000 (1379)
2MP4	AN6	SS-MMA-2MP4-AN6	1.63 (41.3)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
2MP4	AN8	SS-MMA-2MP4-AN8	1.75 (44.5)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
2MP4	AN10	SS-MMA-2MP4-AN10	1.87 (47.6)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
2MP4	AN12	SS-MMA-2MP4-AN12	2.06 (52.4)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
2MP4	AN16	SS-MMA-2MP4-AN16	2.19 (55.6)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
2MP6	AN4	SS-MMA-2MP6-AN4	1.75 (44.5)	0.63 (15.9)	0.17 (4.4)	20000 (1379)
2MP6	AN6	SS-MMA-2MP6-AN6	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	20000 (1379)
2MP6	AN8	SS-MMA-2MP6-AN8	1.87 (47.6)	0.81 (20.6)	0.20 (5.2)	20000 (1379)
2MP6	AN10	SS-MMA-2MP6-AN10	2.06 (52.4)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
2MP6	AN12	SS-MMA-2MP6-AN12	2.25 (57.2)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
2MP6	AN16	SS-MMA-2MP6-AN16	2.37 (60.3)	1.37 (34.9)	0.20 (5.2)	15000 (1034)
2MP9	AN4	SS-MMA-2MP9-AN4	2.00 (50.8)	0.94 (23.8)	0.17 (4.4)	20000 (1379)
2MP9	AN6	SS-MMA-2MP9-AN6	2.06 (52.4)	0.94 (23.8)	0.23 (5.8)	20000 (1379)
2MP9	AN8	SS-MMA-2MP9-AN8	2.13 (54.0)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
2MP9	AN10	SS-MMA-2MP9-AN10	2.25 (57.2)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
2MP9	AN12	SS-MMA-2MP9-AN12	2.44 (61.9)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
2MP9	AN16	SS-MMA-2MP9-AN16	2.56 (65.1)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
2MP12	AN4	SS-MMA-2MP12-AN4	2.31 (58.7)	1.19 (30.2)	0.17 (4.4)	20000 (1379)
2MP12	AN6	SS-MMA-2MP12-AN6	2.31 (58.7)	1.19 (30.2)	0.23 (5.8)	20000 (1379)
2MP12	AN8	SS-MMA-2MP12-AN8	2.37 (60.3)	1.19 (30.2)	0.31 (7.9)	20000 (1379)
2MP12	AN10	SS-MMA-2MP12-AN10	2.50 (63.5)	1.19 (30.2)	0.37 (9.4)	20000 (1379)
2MP12	AN12	SS-MMA-2MP12-AN12	2.63 (66.7)	1.19 (30.2)	0.44 (11.1)	15000 (1034)
2MP12	AN16	SS-MMA-2MP12-AN16	2.69 (68.3)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
2MP16	AN4	SS-MMA-2MP16-AN4	2.81 (71.4)	1.50 (38.1)	0.17 (4.4)	20000 (1379)
2MP16	AN6	SS-MMA-2MP16-AN6	2.81 (71.4)	1.50 (38.1)	0.23 (5.8)	20000 (1379)
2MP16	AN8	SS-MMA-2MP16-AN8	2.94 (74.6)	1.50 (38.1)	0.31 (7.9)	20000 (1379)
2MP16	AN10	SS-MMA-2MP16-AN10	3.06 (77.8)	1.50 (38.1)	0.37 (9.4)	20000 (1379)
2MP16	AN12	SS-MMA-2MP16-AN12	3.13 (79.4)	1.50 (38.1)	0.46 (11.6)	15000 (1034)
2MP16	AN16	SS-MMA-2MP16-AN16	3.19 (81.0)	1.50 (38.1)	0.56 (14.3)	15000 (1034)

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Male MP to Male Type "M"



Male MP			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2MP4	HM9	SS-MMA-2MP4-HM9	1.52 (38.7)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
2MP4	HM12	SS-MMA-2MP4-HM12	1.69 (43.0)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
2MP4	HM14	SS-MMA-2MP4-HM14	1.90 (48.2)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
2MP4	HM16	SS-MMA-2MP4-HM16	1.78 (45.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
2MP4	HM21	SS-MMA-2MP4-HM21	1.90 (48.3)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
2MP6	HM9	SS-MMA-2MP6-HM9	1.67 (42.4)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
2MP6	HM12	SS-MMA-2MP6-HM12	1.84 (46.7)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
2MP6	HM14	SS-MMA-2MP6-HM14	2.04 (51.9)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
2MP6	HM16	SS-MMA-2MP6-HM16	1.93 (49.0)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
2MP6	HM21	SS-MMA-2MP6-HM21	2.05 (52.0)	1.37 (34.9)	0.20 (5.2)	20000 (1379)
2MP9	HM9	SS-MMA-2MP9-HM9	1.95 (49.6)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
2MP9	HM12	SS-MMA-2MP9-HM12	2.08 (52.9)	0.94 (23.8)	0.29 (7.4)	20000 (1379)
2MP9	HM14	SS-MMA-2MP9-HM14	2.23 (56.7)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
2MP9	HM16	SS-MMA-2MP9-HM16	2.12 (53.8)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
2MP9	HM21	SS-MMA-2MP9-HM21	2.24 (56.8)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
2MP12	HM9	SS-MMA-2MP12-HM9	2.22 (56.3)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
2MP12	HM12	SS-MMA-2MP12-HM12	2.35 (59.6)	1.19 (30.2)	0.29 (7.4)	20000 (1379)
2MP12	HM14	SS-MMA-2MP12-HM14	2.47 (62.8)	1.19 (30.2)	0.15 (3.8)	20000 (1379)
2MP12	HM16	SS-MMA-2MP12-HM16	2.36 (59.9)	1.19 (30.2)	0.39 (10.0)	20000 (1379)
2MP12	HM21	SS-MMA-2MP12-HM21	2.41 (61.1)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
2MP16	HM9	SS-MMA-2MP16-HM9	2.77 (70.3)	1.50 (38.1)	0.09 (2.4)	20000 (1379)
2MP16	HM12	SS-MMA-2MP16-HM12	2.90 (73.6)	1.50 (38.1)	0.29 (7.4)	20000 (1379)
2MP16	HM14	SS-MMA-2MP16-HM14	3.02 (76.8)	1.50 (38.1)	0.15 (3.8)	20000 (1379)
2MP16	HM16	SS-MMA-2MP16-HM16	2.91 (73.9)	1.50 (38.1)	0.39 (10.0)	20000 (1379)
2MP16	HM21	SS-MMA-2MP16-HM21	2.89 (73.3)	1.50 (38.1)	0.56 (14.3)	20000 (1379)

Medium & High Pressure
Fittings and Tubing

Quick Couplings

Medium & High Pressure
Valves

Line Filters

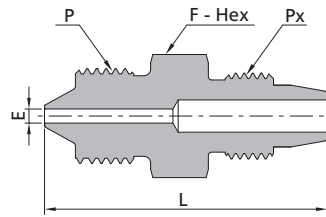
Sour Service Products

Subsea Valves

Tools and Installation
Instructions

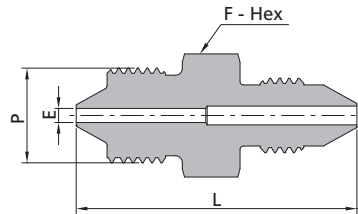
Technical Information

Male HP to Male DHL Series



Male HP			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	DMP2	SS-MMA-6MP4-DMP2	1.60(40.6)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
6MP4	DMP4	SS-MMA-6MP4-DMP4	1.75(44.5)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
6MP4	DMP6	SS-MMA-6MP4-DMP6	1.81(45.9)	0.75 (19.1)	0.08 (2.1)	15000 (1034)
6MP4	DMP8	SS-MMA-6MP4-DMP8	2.02(51.2)	0.94 (23.8)	0.08 (2.1)	15000 (1034)
6MP6	DMP2	SS-MMA-6MP6-DMP2	1.93(49.0)	0.81 (20.6)	0.09 (2.4)	15000 (1034)
6MP6	DMP4	SS-MMA-6MP6-DMP4	2.08(52.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
6MP6	DMP6	SS-MMA-6MP6-DMP6	2.10(53.3)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
6MP6	DMP8	SS-MMA-6MP6-DMP8	2.37(60.1)	0.94 (23.8)	0.13 (3.2)	15000 (1034)
6MP9	DMP2	SS-MMA-6MP9-DMP2	2.24(56.8)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
6MP9	DMP4	SS-MMA-6MP9-DMP4	2.39(60.7)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	DMP6	SS-MMA-6MP9-DMP6	2.41(61.1)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	DMP8	SS-MMA-6MP9-DMP8	2.54(64.4)	1.19 (30.2)	0.19 (4.8)	15000 (1034)

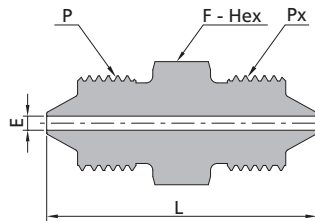
Male HP to Male MP



Male HP			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	2MP4	SS-MMA-6MP4-2MP4	1.69 (42.9)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
6MP4	2MP6	SS-MMA-6MP4-2MP6	1.81 (46.0)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
6MP4	2MP9	SS-MMA-6MP4-2MP9	2.06 (52.4)	0.94 (23.8)	0.08 (2.1)	20000 (1379)
6MP4	2MP12	SS-MMA-6MP4-2MP12	2.37 (60.3)	1.19 (30.2)	0.08 (2.1)	20000 (1379)
6MP4	2MP16	SS-MMA-6MP4-2MP16	2.94 (74.6)	1.50 (38.1)	0.08 (2.1)	20000 (1379)
6MP6	2MP4	SS-MMA-6MP6-2MP4	2.00 (50.8)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
6MP6	2MP6	SS-MMA-6MP6-2MP6	2.13 (54.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
6MP6	2MP9	SS-MMA-6MP6-2MP9	2.37 (60.3)	0.94 (23.8)	0.13 (3.2)	20000 (1379)
6MP6	2MP12	SS-MMA-6MP6-2MP12	2.63 (66.7)	1.19 (30.2)	0.13 (3.2)	20000 (1379)
6MP6	2MP16	SS-MMA-6MP6-2MP16	3.13 (79.4)	1.50 (38.1)	0.13 (3.2)	20000 (1379)
6MP9	2MP4	SS-MMA-6MP9-2MP4	2.25 (57.2)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
6MP9	2MP6	SS-MMA-6MP9-2MP6	2.44 (61.9)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	2MP9	SS-MMA-6MP9-2MP9	2.63 (66.7)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	2MP12	SS-MMA-6MP9-2MP12	2.80 (71.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	2MP16	SS-MMA-6MP9-2MP16	3.31 (84.2)	1.50 (38.1)	0.19 (4.8)	20000 (1379)

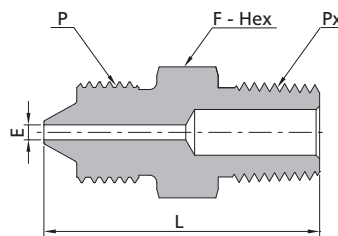
Medium & High Pressure Fittings and Tubing
 Quick Couplings
 Medium & High Pressure Valves
 Line Filters
 Sour Service Products
 Subsea Valves
 Tools and Installation Instructions
 Technical Information

Male HP to Male HP



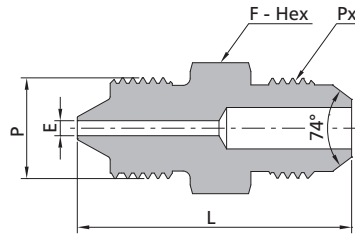
Male HP			Male HP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	6MP4	SS-MMA-6MP4	1.63 (41.3)	0.63 (15.9)	0.08 (2.1)	60000 (4137)
6MP6	6MP4	SS-MMA-6MP6-6MP4	1.94 (49.2)	0.81 (20.6)	0.08 (2.1)	60000 (4137)
6MP6	6MP6	SS-MMA-6MP6	2.19 (55.6)	0.81 (20.6)	0.13 (3.2)	60000 (4137)
6MP9	6MP4	SS-MMA-6MP9-6MP4	2.19 (55.6)	1.19 (30.2)	0.08 (2.1)	60000 (4137)
6MP9	6MP6	SS-MMA-6MP9-6MP6	2.50 (63.5)	1.19 (30.2)	0.13 (3.2)	60000 (4137)
6MP9	6MP9	SS-MMA-6MP9	2.63 (66.7)	1.19 (30.2)	0.19 (4.8)	60000 (4137)

Male HP to Male NPT



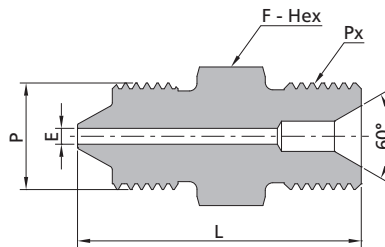
Male HP			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	NS2	SS-MMA-6MP4-NS2	1.37 (34.9)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
6MP4	NS4	SS-MMA-6MP4-NS4	1.56 (39.7)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
6MP4	NS6	SS-MMA-6MP4-NS6	1.56 (39.7)	0.69 (17.5)	0.08 (2.1)	15000 (1034)
6MP4	NS8	SS-MMA-6MP4-NS8	1.81 (46.0)	0.87 (22.2)	0.08 (2.1)	15000 (1034)
6MP4	NS12	SS-MMA-6MP4-NS12	1.87 (47.6)	1.06 (27.0)	0.08 (2.1)	10000 (690)
6MP4	NS16	SS-MMA-6MP4-NS16	2.19 (55.6)	1.37 (34.9)	0.08 (2.1)	10000 (690)
6MP6	NS2	SS-MMA-6MP6-NS2	1.69 (42.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
6MP6	NS4	SS-MMA-6MP6-NS4	1.87 (47.6)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
6MP6	NS6	SS-MMA-6MP6-NS6	1.87 (47.6)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
6MP6	NS8	SS-MMA-6MP6-NS8	2.06 (52.4)	0.87 (22.2)	0.13 (3.2)	15000 (1034)
6MP6	NS12	SS-MMA-6MP6-NS12	2.13 (54.0)	1.06 (27.0)	0.13 (3.2)	10000 (690)
6MP6	NS16	SS-MMA-6MP6-NS16	2.44 (61.9)	1.37 (34.9)	0.13 (3.2)	10000 (690)
6MP9	NS2	SS-MMA-6MP9-NS2	2.00 (50.8)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	NS4	SS-MMA-6MP9-NS4	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	NS6	SS-MMA-6MP9-NS6	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	NS8	SS-MMA-6MP9-NS8	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	NS12	SS-MMA-6MP9-NS12	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	10000 (690)
6MP9	NS16	SS-MMA-6MP9-NS16	2.63 (66.7)	1.37 (34.9)	0.19 (4.8)	10000 (690)

Male HP to Male JIC



Male HP			Male JIC			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	AN4	SS-MMA-6MP4-AN4	1.56 (39.7)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
6MP4	AN6	SS-MMA-6MP4-AN6	1.56 (39.7)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
6MP4	AN8	SS-MMA-6MP4-AN8	1.69 (42.9)	0.81 (20.6)	0.08 (2.1)	20000 (1379)
6MP4	AN10	SS-MMA-6MP4-AN10	1.81 (46.0)	0.94 (23.8)	0.08 (2.1)	20000 (1379)
6MP4	AN12	SS-MMA-6MP4-AN12	2.00 (50.8)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
6MP4	AN16	SS-MMA-6MP4-AN16	2.13 (54.0)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
6MP6	AN4	SS-MMA-6MP6-AN4	1.81 (46.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
6MP6	AN6	SS-MMA-6MP6-AN6	1.81 (46.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
6MP6	AN8	SS-MMA-6MP6-AN8	1.94 (49.2)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
6MP6	AN10	SS-MMA-6MP6-AN10	2.06 (52.4)	0.94 (23.8)	0.13 (3.2)	20000 (1379)
6MP6	AN12	SS-MMA-6MP6-AN12	2.25 (57.2)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
6MP6	AN16	SS-MMA-6MP6-AN16	2.37 (60.3)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
6MP9	AN4	SS-MMA-6MP9-AN4	2.13 (54.0)	1.19 (30.2)	0.17 (4.4)	20000 (1379)
6MP9	AN6	SS-MMA-6MP9-AN6	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	AN8	SS-MMA-6MP9-AN8	2.25 (57.2)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	AN10	SS-MMA-6MP9-AN10	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
6MP9	AN12	SS-MMA-6MP9-AN12	2.44 (61.9)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
6MP9	AN16	SS-MMA-6MP9-AN16	2.56 (65.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)

Male HP to Male Type "M"

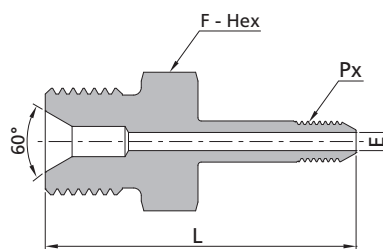


Male HP			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP4	HM9	SS-MMA-6MP4-HM9	1.46 (37.1)	0.63 (15.9)	0.08 (2.1)	60000 (4137)
6MP4	HM12	SS-MMA-6MP4-HM12	1.63 (41.4)	0.75 (19.1)	0.08 (2.1)	30000 (2068)
6MP4	HM14	SS-MMA-6MP4-HM14	1.83 (46.6)	1.00 (25.4)	0.08 (2.1)	50000 (3447)
6MP4	HM16	SS-MMA-6MP4-HM16	1.72 (43.7)	1.00 (25.4)	0.08 (2.1)	30000 (2068)
6MP4	HM21	SS-MMA-6MP4-HM21	1.84 (46.7)	1.37 (34.9)	0.08 (2.1)	20000 (1379)
6MP6	HM9	SS-MMA-6MP6-HM9	1.77 (44.9)	0.81 (20.6)	0.09 (2.4)	60000 (4137)
6MP6	HM12	SS-MMA-6MP6-HM12	1.90 (48.2)	0.81 (20.6)	0.13 (3.2)	30000 (2068)

Medium & High Pressure Fittings and Tubing
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Tools and Installation
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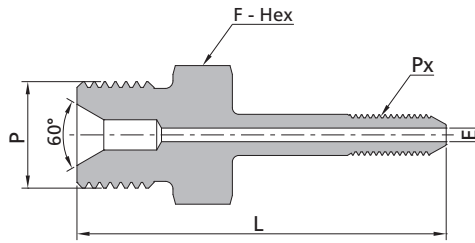
Male HP			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6MP6	HM14	SS-MMA-6MP6-HM14	2.09 (53.0)	1.00 (25.4)	0.13 (3.2)	50000 (3447)
6MP6	HM16	SS-MMA-6MP6-HM16	1.97 (50.1)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
6MP6	HM21	SS-MMA-6MP6-HM21	2.09 (53.1)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
6MP9	HM9	SS-MMA-6MP9-HM9	2.07 (52.6)	1.19 (30.2)	0.09 (2.4)	60000 (4137)
6MP9	HM12	SS-MMA-6MP9-HM12	2.20 (55.9)	1.19 (30.2)	0.19 (4.8)	30000 (2068)
6MP9	HM14	SS-MMA-6MP9-HM14	2.33 (59.1)	1.19 (30.2)	0.15 (3.8)	50000 (3447)
6MP9	HM16	SS-MMA-6MP9-HM16	2.21 (56.2)	1.19 (30.2)	0.19 (4.8)	30000 (2068)
6MP9	HM21	SS-MMA-6MP9-HM21	2.26 (57.4)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

Male Type "M" to MP Nipples



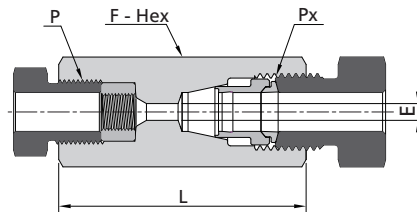
Male Type "M"			MP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM9	2CT4	SS-MMA-HM9-2CT4	1.80 (45.7)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
HM9	2CT6	SS-MMA-HM9-2CT6	2.05 (52.1)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
HM9	2CT9	SS-MMA-HM9-2CT9	2.28 (58.0)	0.69 (17.5)	0.09 (2.4)	20000 (1379)
HM9	2CT12	SS-MMA-HM9-2CT12	2.58 (65.5)	0.87 (22.2)	0.09 (2.4)	20000 (1379)
HM9	2CT16	SS-MMA-HM9-2CT16	3.22 (81.7)	1.13 (28.6)	0.09 (2.4)	20000 (1379)
HM12	2CT4	SS-MMA-HM12-2CT4	1.97 (50.0)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
HM12	2CT6	SS-MMA-HM12-2CT6	2.22 (56.4)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
HM12	2CT9	SS-MMA-HM12-2CT9	2.43 (61.7)	0.75 (19.1)	0.29 (7.4)	20000 (1379)
HM12	2CT12	SS-MMA-HM12-2CT12	2.71 (68.8)	0.87 (22.2)	0.29 (7.4)	20000 (1379)
HM12	2CT16	SS-MMA-HM12-2CT16	3.35 (85.0)	1.13 (28.6)	0.29 (7.4)	20000 (1379)
HM14	2CT4	SS-MMA-HM14-2CT4	2.17 (55.2)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
HM14	2CT6	SS-MMA-HM14-2CT6	2.43 (61.6)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
HM14	2CT9	SS-MMA-HM14-2CT9	2.63 (66.9)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
HM14	2CT12	SS-MMA-HM14-2CT12	2.88 (73.2)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
HM14	2CT16	SS-MMA-HM14-2CT16	3.47 (88.2)	1.13 (28.6)	0.15 (3.8)	20000 (1379)
HM16	2CT4	SS-MMA-HM16-2CT4	2.06 (52.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
HM16	2CT6	SS-MMA-HM16-2CT6	2.31 (58.7)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
HM16	2CT9	SS-MMA-HM16-2CT9	2.52 (64.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
HM16	2CT12	SS-MMA-HM16-2CT12	2.77 (70.3)	1.00 (25.4)	0.39 (10.0)	20000 (1379)
HM16	2CT16	SS-MMA-HM16-2CT16	3.36 (85.3)	1.13 (28.6)	0.39 (10.0)	20000 (1379)
HM21	2CT4	SS-MMA-HM21-2CT4	2.18 (55.3)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
HM21	2CT6	SS-MMA-HM21-2CT6	2.43 (61.7)	1.37 (34.9)	0.20 (5.2)	20000 (1379)
HM21	2CT9	SS-MMA-HM21-2CT9	2.64 (67.0)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
HM21	2CT12	SS-MMA-HM21-2CT12	2.89 (73.3)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
HM21	2CT16	SS-MMA-HM21-2CT16	3.42 (86.9)	1.37 (34.9)	0.56 (14.3)	20000 (1379)

Male Type "M" to HP Nipples



Male Type "M"			HP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM9	6CT4	SS-MMA-HM9-6CT4	2.15 (54.6)	0.63 (15.9)	0.08 (2.1)	60000 (4137)
HM9	6CT6	SS-MMA-HM9-6CT6	2.53 (64.3)	0.63 (15.9)	0.09 (2.4)	60000 (4137)
HM9	6CT9	SS-MMA-HM9-6CT9	3.12 (79.3)	0.63 (15.9)	0.09 (2.4)	60000 (4137)
HM12	6CT4	SS-MMA-HM12-6CT4	2.31 (58.6)	0.75 (19.1)	0.08 (2.1)	30000 (2068)
HM12	6CT6	SS-MMA-HM12-6CT6	2.70 (68.6)	0.75 (19.1)	0.13 (3.2)	30000 (2068)
HM12	6CT9	SS-MMA-HM12-6CT9	3.29 (83.6)	0.75 (19.1)	0.19 (4.8)	30000 (2068)
HM14	6CT4	SS-MMA-HM14-6CT4	2.51 (63.8)	1.00 (25.4)	0.08 (2.1)	50000 (3447)
HM14	6CT6	SS-MMA-HM14-6CT6	2.91 (73.8)	1.00 (25.4)	0.13 (3.2)	50000 (3447)
HM14	6CT9	SS-MMA-HM14-6CT9	3.50 (88.8)	1.00 (25.4)	0.15 (3.8)	50000 (3447)
HM16	6CT4	SS-MMA-HM16-6CT4	2.40 (60.9)	1.00 (25.4)	0.08 (2.1)	30000 (2068)
HM16	6CT6	SS-MMA-HM16-6CT6	2.79 (70.9)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
HM16	6CT9	SS-MMA-HM16-6CT9	3.38 (85.9)	1.00 (25.4)	0.19 (4.8)	30000 (2068)
HM21	6CT4	SS-MMA-HM21-6CT4	2.52 (63.9)	1.37 (34.9)	0.08 (2.1)	20000 (1379)
HM21	6CT6	SS-MMA-HM21-6CT6	2.91 (73.9)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
HM21	6CT9	SS-MMA-HM21-6CT9	3.50 (88.9)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

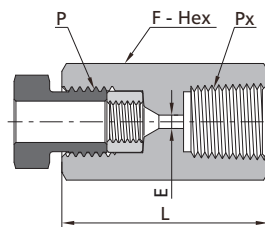
Female MP to Female DHL Series



Female MP			Female DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	DHL2	SS-FFC-2FH4-DHL2	1.41 (35.8)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
2FH4	DHL4	SS-FFC-2FH4-DHL4	1.67 (42.3)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2FH4	DHL6	SS-FFC-2FH4-DHL6	1.76 (44.7)	0.75 (19.1)	0.11 (2.8)	15000 (1034)
2FH4	DHL8	SS-FFC-2FH4-DHL8	1.93 (49.1)	1.00 (25.4)	0.11 (2.8)	15000 (1034)
2FH6	DHL2	SS-FFC-2FH6-DHL2	1.59 (40.5)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
2FH6	DHL4	SS-FFC-2FH6-DHL4	1.85 (47.1)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
2FH6	DHL6	SS-FFC-2FH6-DHL6	1.89 (47.9)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
2FH6	DHL8	SS-FFC-2FH6-DHL8	2.06 (52.2)	1.00 (25.4)	0.20 (5.2)	15000 (1034)

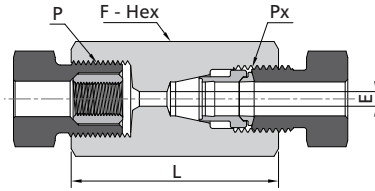
Female MP			Female DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH9	DHL2	SS-FFC-2FH9-DHL2	1.85(46.9)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
2FH9	DHL4	SS-FFC-2FH9-DHL4	2.04(51.8)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
2FH9	DHL6	SS-FFC-2FH9-DHL6	2.07(52.6)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
2FH9	DHL8	SS-FFC-2FH9-DHL8	2.24(57.0)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH12	DHL6	SS-FFC-2FH12-DHL6	2.39(60.6)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
2FH12	DHL8	SS-FFC-2FH12-DHL8	2.43(61.8)	1.37 (34.9)	0.37 (9.5)	15000 (1034)
2FH16	DHL8	SS-FFC-2FH16-DHL8	2.99(76.0)	1.75 (44.5)	0.37 (9.5)	15000 (1034)

Female MP to Female NPT



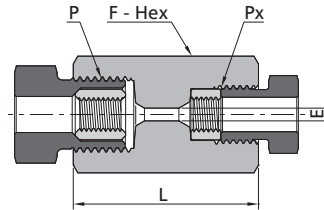
Female MP			Female NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	NS2	SS-FFC-2FH4-NS2	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2FH4	NS4	SS-FFC-2FH4-NS4	1.63 (41.3)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
2FH4	NS6	SS-FFC-2FH4-NS6	1.63 (41.3)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
2FH4	NS8	SS-FFC-2FH4-NS8	2.00 (50.8)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
2FH6	NS2	SS-FFC-2FH6-NS2	1.50 (38.1)	0.75 (19.1)	0.20 (5.1)	15000 (1034)
2FH6	NS4	SS-FFC-2FH6-NS4	1.75 (44.5)	0.94 (23.8)	0.20 (5.1)	15000 (1034)
2FH6	NS6	SS-FFC-2FH6-NS6	1.81 (46.0)	1.13 (28.6)	0.20 (5.1)	15000 (1034)
2FH6	NS8	SS-FFC-2FH6-NS8	2.13 (54.0)	1.37 (34.9)	0.20 (5.1)	15000 (1034)
2FH6	NS12	SS-FFC-2FH6-NS12	2.25 (57.2)	1.50 (38.1)	0.20 (5.1)	10000 (690)
2FH9	NS2	SS-FFC-2FH9-NS2	1.63 (41.3)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH9	NS4	SS-FFC-2FH9-NS4	2.00 (50.8)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH9	NS6	SS-FFC-2FH9-NS6	2.00 (50.8)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
2FH9	NS8	SS-FFC-2FH9-NS8	2.25 (57.2)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
2FH9	NS12	SS-FFC-2FH9-NS12	2.25 (57.2)	1.50 (38.1)	0.31 (7.9)	10000 (690)
2FH9	NS16	SS-FFC-2FH9-NS16	2.63 (66.7)	1.75 (44.5)	0.31 (7.9)	10000 (690)
2FH12	NS2	SS-FFC-2FH12-NS2	1.75 (44.5)	1.37 (34.9)	0.32 (8.1)	15000 (1034)
2FH12	NS4	SS-FFC-2FH12-NS4	2.00 (50.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
2FH12	NS6	SS-FFC-2FH12-NS6	2.37 (60.3)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
2FH12	NS8	SS-FFC-2FH12-NS8	2.63 (66.7)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
2FH12	NS12	SS-FFC-2FH12-NS12	2.63 (66.7)	1.50 (38.1)	0.44 (11.1)	10000 (690)
2FH12	NS16	SS-FFC-2FH12-NS16	2.63 (66.7)	1.75 (44.5)	0.44 (11.1)	10000 (690)
2FH16	NS4	SS-FFC-2FH16-NS4	2.37 (60.3)	1.75 (44.5)	0.41 (10.4)	15000 (1034)
2FH16	NS6	SS-FFC-2FH16-NS6	2.50 (63.5)	1.75 (44.5)	0.55 (13.9)	15000 (1034)
2FH16	NS8	SS-FFC-2FH16-NS8	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	15000 (1034)
2FH16	NS12	SS-FFC-2FH16-NS12	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)
2FH16	NS16	SS-FFC-2FH16-NS16	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)

Female HP to Female DHL Series



Female HP			Female DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	DHL2	SS-FFC-6FH4-DHL2	1.35(34.2)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DHL4	SS-FFC-6FH4-DHL4	1.67(42.3)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DHL6	SS-FFC-6FH4-DHL6	1.76(44.7)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DHL8	SS-FFC-6FH4-DHL8	1.93(49.1)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
6FH6	DHL2	SS-FFC-6FH6-DHL2	1.66(42.1)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
6FH6	DHL4	SS-FFC-6FH6-DHL4	1.92(48.7)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	DHL6	SS-FFC-6FH6-DHL6	1.94(49.4)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	DHL8	SS-FFC-6FH6-DHL8	2.18(55.4)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH9	DHL2	SS-FFC-6FH9-DHL2	1.85(46.9)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
6FH9	DHL4	SS-FFC-6FH9-DHL4	2.04(51.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	DHL6	SS-FFC-6FH9-DHL6	2.13(54.2)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	DHL8	SS-FFC-6FH9-DHL8	2.31(58.6)	1.37 (34.9)	0.19 (4.8)	15000 (1034)

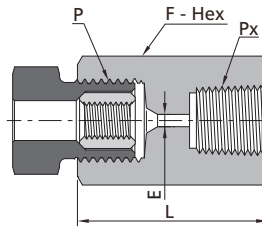
Female HP to Female MP



Female HP			Female MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	2FH4	SS-FFC-6FH4-2FH4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
6FH4	2FH6	SS-FFC-6FH4-2FH6	1.56 (39.7)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
6FH4	2FH9	SS-FFC-6FH4-2FH9	1.81 (46.0)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
6FH4	2FH12	SS-FFC-6FH4-2FH12	2.06 (52.4)	1.37 (34.9)	0.09 (2.4)	20000 (1379)
6FH4	2FH16	SS-FFC-6FH4-2FH16	2.56 (65.1)	1.75 (44.5)	0.09 (2.4)	20000 (1379)
6FH6	2FH4	SS-FFC-6FH6-2FH4	1.63 (41.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
6FH6	2FH6	SS-FFC-6FH6-2FH6	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
6FH6	2FH9	SS-FFC-6FH6-2FH9	2.06 (52.4)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
6FH6	2FH12	SS-FFC-6FH6-2FH12	2.31 (58.7)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
6FH6	2FH16	SS-FFC-6FH6-2FH16	2.81 (71.4)	1.75 (44.5)	0.13 (3.2)	20000 (1379)
6FH9	2FH4	SS-FFC-6FH9-2FH4	1.81 (46.0)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
6FH9	2FH6	SS-FFC-6FH9-2FH6	1.94 (49.2)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2FH9	SS-FFC-6FH9-2FH9	2.25 (57.2)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2FH12	SS-FFC-6FH9-2FH12	2.44 (61.9)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2FH16	SS-FFC-6FH9-2FH16	3.00 (76.2)	1.75 (44.5)	0.19 (4.8)	20000 (1379)

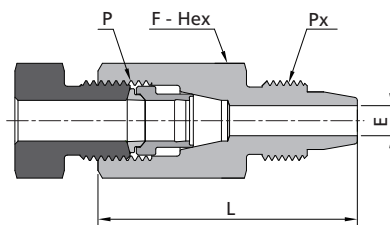
Medium & High Pressure Fittings and Tubing
Quick Couplings
Medium & High Pressure Valves
Line Filters
Sour Service Products
Subsea Valves
Tools and Installation Instructions
Technical Information

Female HP to Female NPT



Female HP			Female NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	NS2	SS-FFC-6FH4-NS2	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	NS4	SS-FFC-6FH4-NS4	1.63 (41.3)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
6FH4	NS6	SS-FFC-6FH4-NS6	1.63 (41.3)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
6FH4	NS8	SS-FFC-6FH4-NS8	2.00 (50.8)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
6FH4	NS12	SS-FFC-6FH4-NS12	2.00 (50.8)	1.50 (38.1)	0.09 (2.4)	10000 (690)
6FH4	NS16	SS-FFC-6FH4-NS16	2.37 (60.3)	1.75 (44.5)	0.09 (2.4)	10000 (690)
6FH6	NS2	SS-FFC-6FH6-NS2	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS4	SS-FFC-6FH6-NS4	1.87 (47.6)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS6	SS-FFC-6FH6-NS6	1.87 (47.6)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
6FH6	NS8	SS-FFC-6FH6-NS8	2.13 (54.0)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
6FH6	NS12	SS-FFC-6FH6-NS12	2.13 (54.0)	1.50 (38.1)	0.13 (3.2)	10000 (690)
6FH6	NS16	SS-FFC-6FH6-NS16	2.25 (57.2)	1.75 (44.5)	0.13 (3.2)	10000 (690)
6FH9	NS2	SS-FFC-6FH9-NS2	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS4	SS-FFC-6FH9-NS4	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS6	SS-FFC-6FH9-NS6	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS8	SS-FFC-6FH9-NS8	2.37 (60.3)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS12	SS-FFC-6FH9-NS12	2.37 (60.3)	1.50 (38.1)	0.19 (4.8)	10000 (690)
6FH9	NS16	SS-FFC-6FH9-NS16	2.50 (63.5)	1.75 (44.5)	0.19 (4.8)	10000 (690)

Female DHL Series to Male DHL Series



Female DHL Series			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	DMP2	SS-FMA-DHL2-DMP2	1.34(34.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DHL2	DMP4	SS-FMA-DHL2-DMP4	1.40(35.6)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DHL2	DMP6	SS-FMA-DHL2-DMP6	1.37(34.7)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DHL2	DMP8	SS-FMA-DHL2-DMP8	1.63(41.4)	0.94 (23.8)	0.09 (2.4)	15000 (1034)

Medium & High Pressure
Fittings and Tubing

Quick Couplings

Medium & High Pressure
Valves

Line Filters

Sour Service Products

Subsea Valves

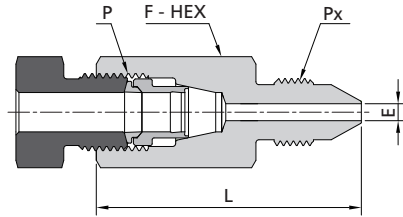
Tools and Installation
Instructions

Technical Information

A-85 Adapters and Couplings

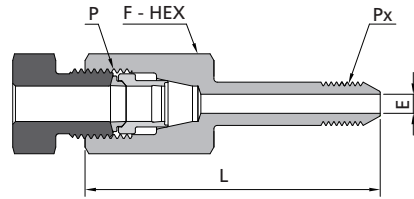
Female DHL Series			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL4	DMP2	SS-FMA-DHL4-DMP2	1.72(43.7)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DHL4	DMP4	SS-FMA-DHL4-DMP4	1.78(45.3)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DHL4	DMP6	SS-FMA-DHL4-DMP6	1.75(44.4)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DHL4	DMP8	SS-FMA-DHL4-DMP8	1.83(46.4)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DHL6	DMP2	SS-FMA-DHL6-DMP2	1.81(46.1)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DHL6	DMP4	SS-FMA-DHL6-DMP4	1.94(49.3)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DHL6	DMP6	SS-FMA-DHL6-DMP6	1.91(48.4)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DHL6	DMP8	SS-FMA-DHL6-DMP8	1.92(48.8)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DHL8	DMP2	SS-FMA-DHL8-DMP2	1.93(48.9)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
DHL8	DMP4	SS-FMA-DHL8-DMP4	2.05(52.1)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
DHL8	DMP6	SS-FMA-DHL8-DMP6	2.07(52.7)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
DHL8	DMP8	SS-FMA-DHL8-DMP8	2.15(54.7)	1.00 (25.4)	0.37 (9.5)	15000 (1034)

Female DHL Series to Male MP



Female DHL Series			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	2MP4	SS-FMA-DHL2-2MP4	1.35(34.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DHL2	2MP6	SS-FMA-DHL2-2MP6	1.41(35.8)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DHL2	2MP9	SS-FMA-DHL2-2MP9	1.66(42.1)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DHL2	2MP12	SS-FMA-DHL2-2MP12	1.91(48.5)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
DHL2	2MP16	SS-FMA-DHL2-2MP16	2.53(64.3)	1.50 (38.1)	0.09 (2.4)	15000 (1034)
DHL4	2MP4	SS-FMA-DHL4-2MP4	1.67(42.3)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
DHL4	2MP6	SS-FMA-DHL4-2MP6	1.79(45.5)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DHL4	2MP9	SS-FMA-DHL4-2MP9	1.73(43.9)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DHL4	2MP12	SS-FMA-DHL4-2MP12	1.92(48.7)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
DHL4	2MP16	SS-FMA-DHL4-2MP16	2.54(64.5)	1.50 (38.1)	0.19 (4.8)	15000 (1034)
DHL6	2MP4	SS-FMA-DHL6-2MP4	1.82(46.3)	0.75 (19.1)	0.11 (2.8)	15000 (1034)
DHL6	2MP6	SS-FMA-DHL6-2MP6	1.89(47.9)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
DHL6	2MP9	SS-FMA-DHL6-2MP9	1.94(49.4)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DHL6	2MP12	SS-FMA-DHL6-2MP12	2.01(51.0)	1.19 (30.2)	0.25 (6.4)	15000 (1034)
DHL6	2MP16	SS-FMA-DHL6-2MP16	2.51(63.7)	1.50 (38.1)	0.25 (6.4)	15000 (1034)
DHL8	2MP4	SS-FMA-DHL8-2MP4	1.93(49.1)	1.00 (25.4)	0.11 (2.8)	15000 (1034)
DHL8	2MP6	SS-FMA-DHL8-2MP6	2.12(53.8)	1.00 (25.4)	0.20 (5.2)	15000 (1034)
DHL8	2MP9	SS-FMA-DHL8-2MP9	2.24(57.0)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
DHL8	2MP12	SS-FMA-DHL8-2MP12	2.24(57.0)	1.19 (30.2)	0.37 (9.5)	15000 (1034)
DHL8	2MP16	SS-FMA-DHL8-2MP16	2.68(68.1)	1.50 (38.1)	0.37 (9.5)	15000 (1034)

Female DHL Series to MP Nipples



Female DHL Series			MP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	2CT4	SS-FMA-DHL2-2CT4	1.66(42.1)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DHL2	2CT6	SS-FMA-DHL2-2CT6	1.91(48.5)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DHL2	2CT9	SS-FMA-DHL2-2CT9	2.09(53.2)	0.69 (17.5)	0.09 (2.4)	15000 (1034)
DHL2	2CT12	SS-FMA-DHL2-2CT12	2.28(58.0)	0.87 (22.2)	0.09 (2.4)	15000 (1034)
DHL4	2CT4	SS-FMA-DHL4-2CT4	1.98(50.2)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
DHL4	2CT6	SS-FMA-DHL4-2CT6	2.17(55.0)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DHL4	2CT9	SS-FMA-DHL4-2CT9	2.35(59.8)	0.69 (17.5)	0.19 (4.8)	15000 (1034)
DHL4	2CT12	SS-FMA-DHL4-2CT12	2.54(64.5)	0.87 (22.2)	0.19 (4.8)	15000 (1034)
DHL6	2CT4	SS-FMA-DHL6-2CT4	2.13(54.2)	0.75 (19.1)	0.11 (2.8)	15000 (1034)
DHL6	2CT6	SS-FMA-DHL6-2CT6	2.44(62.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
DHL6	2CT9	SS-FMA-DHL6-2CT9	2.51(63.7)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DHL6	2CT12	SS-FMA-DHL6-2CT12	2.63(66.9)	0.87 (22.2)	0.25 (6.4)	15000 (1034)
DHL6	2CT16	SS-FMA-DHL6-2CT16	3.13(79.6)	1.13 (28.6)	0.25 (6.4)	15000 (1034)
DHL8	2CT4	SS-FMA-DHL8-2CT4	2.24(57.0)	1.00 (25.4)	0.11 (2.8)	15000 (1034)
DHL8	2CT6	SS-FMA-DHL8-2CT6	2.49(63.3)	1.00 (25.4)	0.20 (5.2)	15000 (1034)
DHL8	2CT9	SS-FMA-DHL8-2CT9	2.74(69.7)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
DHL8	2CT12	SS-FMA-DHL8-2CT12	2.81(71.3)	1.00 (25.4)	0.37 (9.5)	15000 (1034)
DHL8	2CT16	SS-FMA-DHL8-2CT16	3.37(85.6)	1.13 (28.6)	0.37 (9.5)	15000 (1034)

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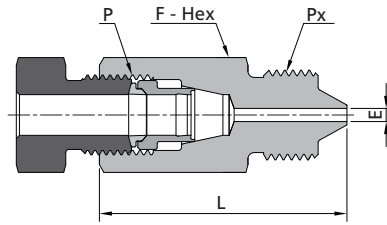
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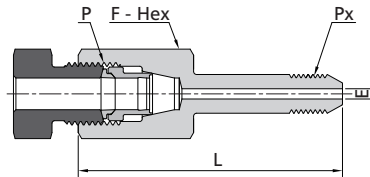
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Female DHL Series to Male HP



Female DHL Series			Male HP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	6MP4	SS-FMA-DHL2-6MP4	1.22(31.0)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
DHL2	6MP6	SS-FMA-DHL2-6MP6	1.47(37.3)	0.81 (20.6)	0.09 (2.4)	15000 (1034)
DHL2	6MP9	SS-FMA-DHL2-6MP9	1.78(45.3)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
DHL4	6MP4	SS-FMA-DHL4-6MP4	1.54(39.1)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
DHL4	6MP6	SS-FMA-DHL4-6MP6	1.73(43.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
DHL4	6MP9	SS-FMA-DHL4-6MP9	1.79(45.5)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
DHL6	6MP4	SS-FMA-DHL6-6MP4	1.70(43.1)	0.75 (19.1)	0.08 (2.1)	15000 (1034)
DHL6	6MP6	SS-FMA-DHL6-6MP6	1.89(47.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
DHL6	6MP9	SS-FMA-DHL6-6MP9	1.76(44.7)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
DHL8	6MP4	SS-FMA-DHL8-6MP4	1.87(47.5)	1.00 (25.4)	0.08 (2.1)	15000 (1034)
DHL8	6MP6	SS-FMA-DHL8-6MP6	2.06(52.2)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
DHL8	6MP9	SS-FMA-DHL8-6MP9	2.06(52.2)	1.19 (30.2)	0.19 (4.8)	15000 (1034)

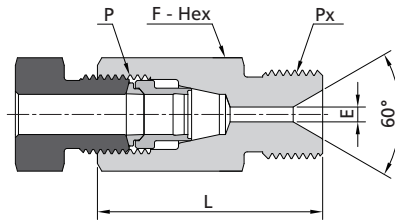
Female DHL Series to HP Nipples



Female DHL Series			HP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	6CT4	SS-FMA-DHL2-6CT4	3.16(80.2)	0.50 (12.7)	0.08 (2.1)	15000 (1034)
DHL2	6CT6	SS-FMA-DHL2-6CT6	2.85(72.3)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DHL4	6CT4	SS-FMA-DHL4-6CT4	2.60(66.1)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
DHL4	6CT6	SS-FMA-DHL4-6CT6	2.92(74.1)	0.63 (15.9)	0.13 (3.2)	15000 (1034)
DHL4	6CT9	SS-FMA-DHL4-6CT9	3.54(90.0)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DHL6	6CT4	SS-FMA-DHL6-6CT4	2.06(52.2)	0.75 (19.1)	0.08 (2.1)	15000 (1034)
DHL6	6CT6	SS-FMA-DHL6-6CT6	2.39(60.6)	0.75 (19.1)	0.13 (3.2)	15000 (1034)
DHL6	6CT9	SS-FMA-DHL6-6CT9	2.26(57.4)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DHL8	6CT4	SS-FMA-DHL8-6CT4	2.68(68.1)	1.00 (25.4)	0.08 (2.1)	15000 (1034)
DHL8	6CT6	SS-FMA-DHL8-6CT6	2.56(64.9)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
DHL8	6CT9	SS-FMA-DHL8-6CT9	3.37(85.6)	1.00 (25.4)	0.19 (4.8)	15000 (1034)

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Female DHL Series to Male Type "M"



Female DHL Series			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DHL2	HM9	SS-FMA-DHL2-HM9	1.22(31.0)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DHL2	HM12	SS-FMA-DHL2-HM12	1.28(32.6)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DHL4	HM9	SS-FMA-DHL4-HM9	1.54(39.1)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DHL4	HM12	SS-FMA-DHL4-HM12	1.60(40.7)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DHL4	HM14	SS-FMA-DHL4-HM14	1.79(45.5)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DHL6	HM9	SS-FMA-DHL6-HM9	1.63(41.5)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DHL6	HM12	SS-FMA-DHL6-HM12	1.76(44.7)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DHL6	HM14	SS-FMA-DHL6-HM14	1.89(47.9)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DHL6	HM16	SS-FMA-DHL6-HM16	1.76(44.7)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
DHL8	HM9	SS-FMA-DHL8-HM9	1.81(45.9)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
DHL8	HM12	SS-FMA-DHL8-HM12	1.81(45.9)	1.00 (25.4)	0.29 (7.4)	15000 (1034)
DHL8	HM14	SS-FMA-DHL8-HM14	2.00(50.7)	1.00 (25.4)	0.15 (3.8)	15000 (1034)
DHL8	HM16	SS-FMA-DHL8-HM16	1.93(49.1)	1.00 (25.4)	0.37 (9.5)	15000 (1034)
DHL8	HM21	SS-FMA-DHL8-HM21	1.93(49.1)	1.37 (34.9)	0.37 (9.5)	15000 (1034)

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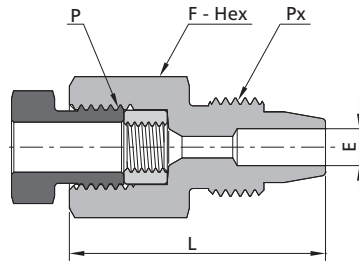
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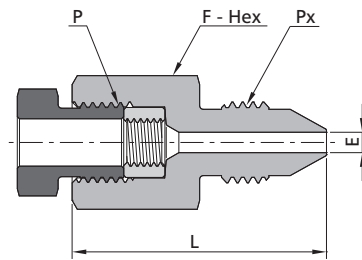
Female MP to Male DHL Series



Female MP			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	DMP2	SS-FMA-2FH4-DMP2	1.73(44.0)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
2FH4	DMP4	SS-FMA-2FH4-DMP4	2.01(51.0)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2FH4	DMP6	SS-FMA-2FH4-DMP6	2.12(53.9)	0.75 (19.1)	0.11 (2.8)	15000 (1034)
2FH4	DMP8	SS-FMA-2FH4-DMP8	2.11(53.6)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
2FH6	DMP2	SS-FMA-2FH6-DMP2	2.04(51.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
2FH6	DMP4	SS-FMA-2FH6-DMP4	2.20(55.8)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
2FH6	DMP6	SS-FMA-2FH6-DMP6	2.31(58.7)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
2FH6	DMP8	SS-FMA-2FH6-DMP8	2.36(60.0)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
2FH9	DMP2	SS-FMA-2FH9-DMP2	2.30(58.3)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
2FH9	DMP4	SS-FMA-2FH9-DMP4	2.57(65.3)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
2FH9	DMP6	SS-FMA-2FH9-DMP6	2.69(68.2)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
2FH9	DMP8	SS-FMA-2FH9-DMP8	2.67(67.9)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH12	DMP2	SS-FMA-2FH12-DMP2	2.61(66.2)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
2FH12	DMP4	SS-FMA-2FH12-DMP4	2.89(73.3)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
2FH12	DMP6	SS-FMA-2FH12-DMP6	2.94(74.6)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
2FH12	DMP8	SS-FMA-2FH12-DMP8	3.05(77.5)	1.37 (34.9)	0.37 (7.9)	15000 (1034)
2FH16	DMP2	SS-FMA-2FH16-DMP2	3.17(80.5)	1.75 (44.5)	0.09 (2.4)	15000 (1034)
2FH16	DMP4	SS-FMA-2FH16-DMP4	3.45(87.6)	1.75 (44.5)	0.19 (4.8)	15000 (1034)
2FH16	DMP6	SS-FMA-2FH16-DMP6	3.56(90.4)	1.75 (44.5)	0.25 (6.4)	15000 (1034)
2FH16	DMP8	SS-FMA-2FH16-DMP8	3.61(91.7)	1.75 (44.5)	0.37 (9.5)	15000 (1034)

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Female MP			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	2MP4	SS-FMA-2FH4-2MP4	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
2FH4	2MP6	SS-FMA-2FH4-2MP6	1.50 (38.1)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
2FH4	2MP9	SS-FMA-2FH4-2MP9	1.63 (41.3)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
2FH4	2MP12	SS-FMA-2FH4-2MP12	1.75 (44.5)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
2FH4	2MP16	SS-FMA-2FH4-2MP16	2.37 (60.3)	1.50 (38.1)	0.11 (2.8)	20000 (1379)
2FH6	2MP4	SS-FMA-2FH6-2MP4	1.69 (42.9)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
2FH6	2MP6	SS-FMA-2FH6-2MP6	1.69 (42.9)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
2FH6	2MP9	SS-FMA-2FH6-2MP9	1.87 (47.6)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
2FH6	2MP12	SS-FMA-2FH6-2MP12	1.94 (49.2)	1.19 (30.2)	0.20 (5.2)	20000 (1379)
2FH6	2MP16	SS-FMA-2FH6-2MP16	2.37 (60.3)	1.50 (38.1)	0.20 (5.2)	20000 (1379)
2FH9	2MP4	SS-FMA-2FH9-2MP4	1.94 (49.2)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
2FH9	2MP6	SS-FMA-2FH9-2MP6	2.06 (52.4)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
2FH9	2MP9	SS-FMA-2FH9-2MP9	2.13 (54.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
2FH9	2MP12	SS-FMA-2FH9-2MP12	2.25 (57.2)	1.19 (30.2)	0.31 (7.9)	20000 (1379)
2FH9	2MP16	SS-FMA-2FH9-2MP16	2.50 (63.5)	1.50 (38.1)	0.31 (7.9)	20000 (1379)
2FH12	2MP4	SS-FMA-2FH12-2MP4	2.19 (55.6)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
2FH12	2MP6	SS-FMA-2FH12-2MP6	2.31 (58.7)	1.37 (34.9)	0.20 (5.2)	20000 (1379)
2FH12	2MP9	SS-FMA-2FH12-2MP9	2.44 (61.9)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
2FH12	2MP12	SS-FMA-2FH12-2MP12	2.56 (65.1)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
2FH12	2MP16	SS-FMA-2FH12-2MP16	2.94 (74.6)	1.50 (38.1)	0.44 (11.1)	20000 (1379)
2FH16	2MP9	SS-FMA-2FH16-2MP9	3.06 (77.8)	1.75 (44.5)	0.31 (7.9)	20000 (1379)
2FH16	2MP12	SS-FMA-2FH16-2MP12	3.19 (81.0)	1.75 (44.5)	0.44 (11.1)	20000 (1379)
2FH16	2MP16	SS-FMA-2FH16-2MP16	3.50 (88.9)	1.75 (44.5)	0.56 (14.3)	20000 (1379)

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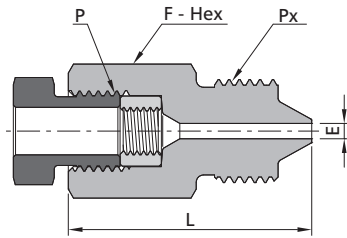
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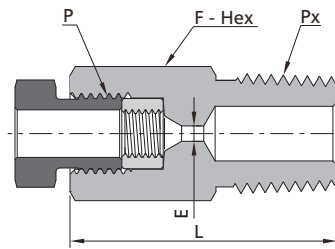
Female MP to Male HP



Female MP			Male HP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	6MP4	SS-FMA-2FH4-6MP4	1.31 (33.3)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
2FH4	6MP6	SS-FMA-2FH4-6MP6	1.50 (38.1)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
2FH4	6MP9	SS-FMA-2FH4-6MP9	1.63 (41.3)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
2FH6	6MP4	SS-FMA-2FH6-6MP4	1.50 (38.1)	0.75 (19.1)	0.08 (2.1)	20000 (1379)
2FH6	6MP6	SS-FMA-2FH6-6MP6	1.69 (42.9)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
2FH6	6MP9	SS-FMA-2FH6-6MP9	1.75 (44.5)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
2FH9	6MP4	SS-FMA-2FH9-6MP4	1.81 (46.0)	1.00 (25.4)	0.08 (2.1)	20000 (1379)
2FH9	6MP6	SS-FMA-2FH9-6MP6	2.13 (54.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
2FH9	6MP9	SS-FMA-2FH9-6MP9	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
2FH12	6MP4	SS-FMA-2FH12-6MP4	2.25 (57.2)	1.37 (34.9)	0.08 (2.1)	20000 (1379)
2FH12	6MP6	SS-FMA-2FH12-6MP6	2.50 (63.5)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
2FH12	6MP9	SS-FMA-2FH12-6MP9	2.50 (63.5)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
2FH16	6MP4	SS-FMA-2FH16-6MP4	2.94 (74.6)	1.75 (44.5)	0.08 (2.1)	20000 (1379)
2FH16	6MP6	SS-FMA-2FH16-6MP6	3.13 (79.4)	1.75 (44.5)	0.13 (3.2)	20000 (1379)
2FH16	6MP9	SS-FMA-2FH16-6MP9	3.19 (81.0)	1.75 (44.5)	0.19 (4.8)	20000 (1379)

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Female MP			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	NS2	SS-FMA-2FH4-NS2	1.19 (30.2)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2FH4	NS4	SS-FMA-2FH4-NS4	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
2FH4	NS6	SS-FMA-2FH4-NS6	1.37 (34.9)	0.69 (17.5)	0.11 (2.8)	15000 (1034)
2FH4	NS8	SS-FMA-2FH4-NS8	1.37 (34.9)	0.87 (22.2)	0.11 (2.8)	15000 (1034)
2FH4	NS12	SS-FMA-2FH4-NS12	1.75 (44.5)	1.06 (27.0)	0.11 (2.8)	10000 (690)
2FH6	NS2	SS-FMA-2FH6-NS2	1.37 (34.9)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
2FH6	NS4	SS-FMA-2FH6-NS4	1.50 (38.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
2FH6	NS6	SS-FMA-2FH6-NS6	1.50 (38.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
2FH6	NS8	SS-FMA-2FH6-NS8	1.63 (41.3)	0.87 (22.2)	0.20 (5.2)	15000 (1034)
2FH6	NS12	SS-FMA-2FH6-NS12	1.75 (44.5)	1.06 (27.0)	0.20 (5.2)	10000 (690)
2FH6	NS16	SS-FMA-2FH6-NS16	2.00 (50.8)	1.37 (34.9)	0.20 (5.2)	10000 (690)
2FH9	NS2	SS-FMA-2FH9-NS2	1.75 (44.5)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
2FH9	NS4	SS-FMA-2FH9-NS4	1.75 (44.5)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
2FH9	NS6	SS-FMA-2FH9-NS6	1.75 (44.5)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH9	NS8	SS-FMA-2FH9-NS8	1.94 (49.2)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
2FH9	NS12	SS-FMA-2FH9-NS12	2.00 (50.8)	1.06 (27.0)	0.31 (7.9)	10000 (690)
2FH9	NS16	SS-FMA-2FH9-NS16	2.25 (57.2)	1.37 (34.9)	0.31 (7.9)	10000 (690)
2FH12	NS4	SS-FMA-2FH12-NS4	2.00 (50.8)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
2FH12	NS6	SS-FMA-2FH12-NS6	2.00 (50.8)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
2FH12	NS8	SS-FMA-2FH12-NS8	2.19 (55.6)	1.37 (34.9)	0.38 (9.6)	15000 (1034)
2FH12	NS12	SS-FMA-2FH12-NS12	2.25 (57.2)	1.37 (34.9)	0.44 (11.1)	10000 (690)
2FH12	NS16	SS-FMA-2FH12-NS16	2.63 (66.7)	1.37 (34.9)	0.44 (11.1)	10000 (690)
2FH16	NS4	SS-FMA-2FH16-NS4	2.87 (73.0)	1.75 (44.5)	0.25 (6.4)	15000 (1034)
2FH16	NS6	SS-FMA-2FH16-NS6	2.87 (73.0)	1.75 (44.5)	0.31 (7.9)	15000 (1034)
2FH16	NS8	SS-FMA-2FH16-NS8	2.87 (73.0)	1.75 (44.5)	0.38 (9.6)	15000 (1034)
2FH16	NS12	SS-FMA-2FH16-NS12	2.87 (73.0)	1.75 (44.5)	0.56 (14.3)	10000 (690)
2FH16	NS16	SS-FMA-2FH16-NS16	3.06 (77.8)	1.75 (44.5)	0.56 (14.3)	10000 (690)

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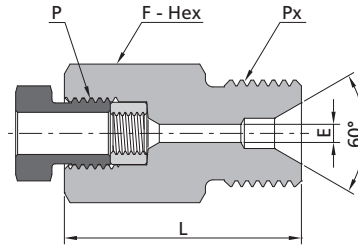
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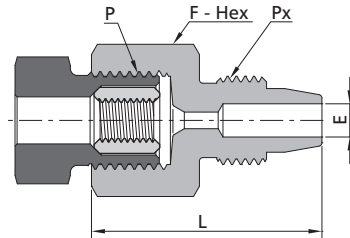
Female MP to Male Type "M"



Female MP			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
2FH4	HM9	SS-FMA-2FH4-HM9	1.19 (30.2)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
2FH4	HM12	SS-FMA-2FH4-HM12	1.31 (33.3)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
2FH4	HM14	SS-FMA-2FH4-HM14	1.50 (38.1)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
2FH6	HM9	SS-FMA-2FH6-HM9	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
2FH6	HM12	SS-FMA-2FH6-HM12	1.50 (38.1)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
2FH6	HM14	SS-FMA-2FH6-HM14	1.63 (41.3)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
2FH6	HM16	SS-FMA-2FH6-HM16	1.63 (41.3)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
2FH9	HM9	SS-FMA-2FH9-HM9	1.69 (42.9)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
2FH9	HM12	SS-FMA-2FH9-HM12	1.81 (46.0)	1.00 (25.4)	0.29 (7.4)	20000 (1379)
2FH9	HM14	SS-FMA-2FH9-HM14	1.94 (49.2)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
2FH9	HM16	SS-FMA-2FH9-HM16	1.81 (46.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
2FH9	HM21	SS-FMA-2FH9-HM21	1.81 (46.0)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
2FH12	HM14	SS-FMA-2FH12-HM14	2.19 (55.6)	1.37 (34.9)	0.15 (3.8)	20000 (1379)
2FH12	HM16	SS-FMA-2FH12-HM16	2.13 (54.0)	1.37 (34.9)	0.39 (10.0)	20000 (1379)
2FH12	HM21	SS-FMA-2FH12-HM21	2.00 (50.8)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
2FH16	HM21	SS-FMA-2FH16-HM21	2.56 (65.1)	1.75 (44.5)	0.56 (14.3)	20000 (1379)

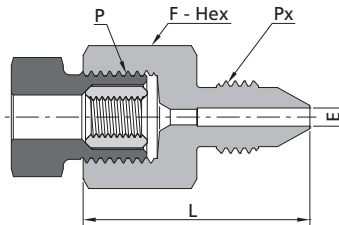
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Female HP to Male DHL Series



Female HP			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	DMP2	SS-FMA-6FH4-DMP2	1.73(44.0)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DMP4	SS-FMA-6FH4-DMP4	2.01(51.0)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DMP6	SS-FMA-6FH4-DMP6	2.12(53.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	DMP8	SS-FMA-6FH4-DMP8	2.17(55.2)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
6FH6	DMP2	SS-FMA-6FH6-DMP2	1.98(50.3)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
6FH6	DMP4	SS-FMA-6FH6-DMP4	2.26(57.4)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	DMP6	SS-FMA-6FH6-DMP6	2.37(60.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	DMP8	SS-FMA-6FH6-DMP8	2.49(63.2)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH9	DMP2	SS-FMA-6FH9-DMP2	2.30(58.3)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
6FH9	DMP4	SS-FMA-6FH9-DMP4	2.45(62.2)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	DMP6	SS-FMA-6FH9-DMP6	2.56(65.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	DMP8	SS-FMA-6FH9-DMP8	2.67(67.9)	1.37 (34.9)	0.19 (4.8)	15000 (1034)

Female HP to Male MP



Female HP			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	2MP4	SS-FMA-6FH4-2MP4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
6FH4	2MP6	SS-FMA-6FH4-2MP6	1.50 (38.1)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
6FH4	2MP9	SS-FMA-6FH4-2MP9	1.69 (42.9)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
6FH4	2MP12	SS-FMA-6FH4-2MP12	1.75 (44.5)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
6FH4	2MP16	SS-FMA-6FH4-2MP16	2.37 (60.3)	1.50 (38.1)	0.09 (2.4)	20000 (1379)
6FH6	2MP4	SS-FMA-6FH6-2MP4	1.67 (42.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
6FH6	2MP6	SS-FMA-6FH6-2MP6	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
6FH6	2MP9	SS-FMA-6FH6-2MP9	1.94 (49.2)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
6FH6	2MP12	SS-FMA-6FH6-2MP12	2.13 (54.0)	1.19 (30.2)	0.13 (3.2)	20000 (1379)
6FH6	2MP16	SS-FMA-6FH6-2MP16	2.50 (63.5)	1.50 (38.1)	0.13 (3.2)	20000 (1379)
6FH9	2MP4	SS-FMA-6FH9-2MP4	1.87 (47.6)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
6FH9	2MP6	SS-FMA-6FH9-2MP6	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2MP9	SS-FMA-6FH9-2MP9	2.19 (55.6)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2MP12	SS-FMA-6FH9-2MP12	2.37 (60.3)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
6FH9	2MP16	SS-FMA-6FH9-2MP16	2.81 (71.4)	1.50 (38.1)	0.19 (4.8)	20000 (1379)

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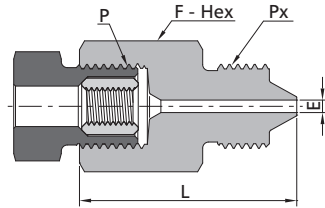
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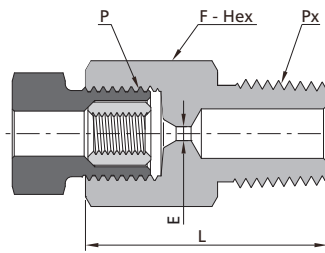
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Female HP to Male HP



Female HP			Male HP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	6MP4	SS-FMA-6FH4-6MP4	1.44 (36.5)	0.75 (19.1)	0.08 (2.1)	60000 (4137)
6FH4	6MP6	SS-FMA-6FH4-6MP6	1.69 (42.9)	0.81 (20.6)	0.09 (2.4)	60000 (4137)
6FH4	6MP9	SS-FMA-6FH4-6MP9	1.75 (44.5)	1.19 (30.2)	0.09 (2.4)	60000 (4137)
6FH6	6MP4	SS-FMA-6FH6-6MP4	1.75 (44.5)	1.00 (25.4)	0.08 (2.1)	60000 (4137)
6FH6	6MP6	SS-FMA-6FH6-6MP6	2.00 (50.8)	1.00 (25.4)	0.13 (3.2)	60000 (4137)
6FH6	6MP9	SS-FMA-6FH6-6MP9	2.13 (54.0)	1.19 (30.2)	0.13 (3.2)	60000 (4137)
6FH9	6MP4	SS-FMA-6FH9-6MP4	2.06 (52.4)	1.37 (34.9)	0.08 (2.1)	60000 (4137)
6FH9	6MP6	SS-FMA-6FH9-6MP6	2.37 (60.3)	1.37 (34.9)	0.13 (3.2)	60000 (4137)
6FH9	6MP9	SS-FMA-6FH9-6MP9	2.50 (63.5)	1.37 (34.9)	0.19 (4.8)	60000 (4137)

Female HP to Male NPT



Female HP			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	NS2	SS-FMA-6FH4-NS2	1.25 (31.8)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	NS4	SS-FMA-6FH4-NS4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	NS6	SS-FMA-6FH4-NS6	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
6FH4	NS8	SS-FMA-6FH4-NS8	1.50 (38.1)	0.87 (22.2)	0.09 (2.4)	15000 (1034)
6FH4	NS12	SS-FMA-6FH4-NS12	1.75 (44.5)	1.06 (27.0)	0.09 (2.4)	10000 (690)
6FH6	NS2	SS-FMA-6FH6-NS2	1.50 (38.1)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS4	SS-FMA-6FH6-NS4	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS6	SS-FMA-6FH6-NS6	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS8	SS-FMA-6FH6-NS8	1.75 (44.5)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
6FH6	NS12	SS-FMA-6FH6-NS12	2.00 (50.8)	1.06 (27.0)	0.13 (3.2)	10000 (690)
6FH6	NS16	SS-FMA-6FH6-NS16	2.00 (50.8)	1.37 (34.9)	0.13 (3.2)	10000 (690)
6FH9	NS2	SS-FMA-6FH9-NS2	1.63 (41.3)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS4	SS-FMA-6FH9-NS4	1.75 (44.5)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS6	SS-FMA-6FH9-NS6	1.75 (44.5)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS8	SS-FMA-6FH9-NS8	1.87 (47.6)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
6FH9	NS12	SS-FMA-6FH9-NS12	2.13 (54.0)	1.37 (34.9)	0.19 (4.8)	10000 (690)
6FH9	NS16	SS-FMA-6FH9-NS16	2.25 (57.2)	1.37 (34.9)	0.19 (4.8)	10000 (690)

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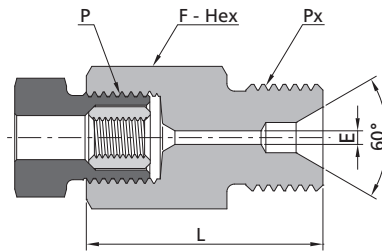
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Female HP			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
6FH4	HM9	SS-FMA-6FH4-HM9	1.25 (31.8)	0.75 (19.1)	0.09 (2.4)	60000 (4137)
6FH4	HM12	SS-FMA-6FH4-HM12	1.38 (35.0)	0.75 (19.1)	0.09 (2.4)	30000 (2068)
6FH4	HM14	SS-FMA-6FH4-HM14	1.56 (39.7)	1.00 (25.4)	0.09 (2.4)	50000 (3447)
6FH4	HM16	SS-FMA-6FH4-HM16	1.37 (34.9)	1.00 (25.4)	0.09 (2.4)	30000 (2068)
6FH6	HM9	SS-FMA-6FH6-HM9	1.50 (38.1)	1.00 (25.4)	0.09 (2.4)	60000 (4137)
6FH6	HM12	SS-FMA-6FH6-HM12	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
6FH6	HM14	SS-FMA-6FH6-HM14	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	50000 (3447)
6FH6	HM16	SS-FMA-6FH6-HM16	1.64 (41.6)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
6FH6	HM21	SS-FMA-6FH6-HM21	1.56 (39.7)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
6FH9	HM14	SS-FMA-6FH9-HM14	2.00 (50.8)	1.37 (34.9)	0.15 (3.8)	50000 (3447)
6FH9	HM16	SS-FMA-6FH9-HM16	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	30000 (2068)
6FH9	HM21	SS-FMA-6FH9-HM21	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

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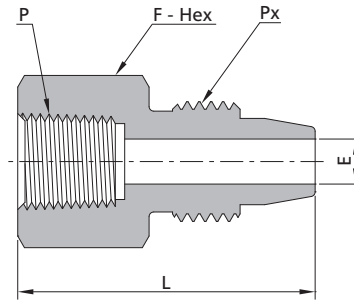
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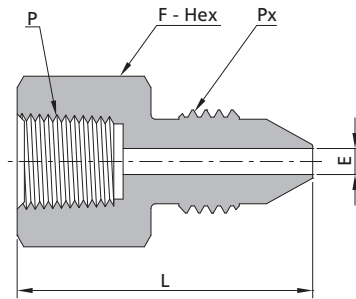
Female NPT to Male DHL Series



Female NPT			Male DHL Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
NS2	DMP2	SS-FMA-NS2-DMP2	1.67(42.4)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
NS2	DMP4	SS-FMA-NS2-DMP4	1.94(49.4)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
NS2	DMP6	SS-FMA-NS2-DMP6	2.06(52.3)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
NS2	DMP8	SS-FMA-NS2-DMP8	2.11(53.6)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
NS4	DMP2	SS-FMA-NS4-DMP2	1.85(47.1)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
NS4	DMP4	SS-FMA-NS4-DMP4	2.20(55.8)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
NS4	DMP6	SS-FMA-NS4-DMP6	2.31(58.7)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
NS4	DMP8	SS-FMA-NS4-DMP8	2.36(60.0)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
NS6	DMP2	SS-FMA-NS6-DMP2	1.98(50.3)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
NS6	DMP4	SS-FMA-NS6-DMP4	2.26(57.4)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
NS6	DMP6	SS-FMA-NS6-DMP6	2.37(60.3)	1.13 (28.6)	0.25 (6.4)	15000 (1034)
NS6	DMP8	SS-FMA-NS6-DMP8	2.49(63.2)	1.13 (28.6)	0.37 (9.5)	15000 (1034)
NS8	DMP2	SS-FMA-NS8-DMP2	2.17(55.1)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
NS8	DMP4	SS-FMA-NS8-DMP4	2.45(62.2)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
NS8	DMP6	SS-FMA-NS8-DMP6	2.62(66.6)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
NS8	DMP8	SS-FMA-NS8-DMP8	2.67(67.9)	1.37 (34.9)	0.37 (9.5)	15000 (1034)
NS12	DMP2	SS-FMA-NS12-DMP2	2.23(56.7)	1.50 (38.1)	0.09 (2.4)	10000 (690)
NS12	DMP4	SS-FMA-NS12-DMP4	2.57(65.3)	1.50 (38.1)	0.19 (4.8)	10000 (690)
NS12	DMP6	SS-FMA-NS12-DMP6	2.69(68.2)	1.50 (38.1)	0.25 (6.4)	10000 (690)
NS12	DMP8	SS-FMA-NS12-DMP8	2.74(69.5)	1.50 (38.1)	0.37 (9.5)	10000 (690)
NS16	DMP2	SS-FMA-NS16-DMP2	2.54(64.6)	1.75 (44.5)	0.09 (2.4)	10000 (690)
NS16	DMP4	SS-FMA-NS16-DMP4	2.82(71.7)	1.75 (44.5)	0.19 (4.8)	10000 (690)
NS16	DMP6	SS-FMA-NS16-DMP6	2.94(74.6)	1.75 (44.5)	0.25 (6.4)	10000 (690)
NS16	DMP8	SS-FMA-NS16-DMP8	2.99(75.9)	1.75 (44.5)	0.37 (9.5)	10000 (690)

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Female NPT to Male MP



Female NPT			Male MP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
NS2	2MP4	SS-FMA-NS2-2MP4	1.25 (31.8)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
NS2	2MP6	SS-FMA-NS2-2MP6	1.37 (34.9)	0.63 (15.9)	0.20 (5.2)	15000 (1034)
NS2	2MP9	SS-FMA-NS2-2MP9	1.50 (38.1)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
NS2	2MP12	SS-FMA-NS2-2MP12	1.75 (44.5)	1.19 (30.2)	0.31 (7.9)	15000 (1034)
NS2	2MP16	SS-FMA-NS2-2MP16	2.37 (60.3)	1.50 (38.1)	0.31 (7.9)	15000 (1034)
NS4	2MP4	SS-FMA-NS4-2MP4	1.44 (36.5)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
NS4	2MP6	SS-FMA-NS4-2MP6	1.63 (41.3)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
NS4	2MP9	SS-FMA-NS4-2MP9	1.75 (44.5)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
NS4	2MP12	SS-FMA-NS4-2MP12	1.87 (47.6)	1.19 (30.2)	0.41 (10.4)	15000 (1034)
NS4	2MP16	SS-FMA-NS4-2MP16	2.37 (60.3)	1.50 (38.1)	0.41 (10.4)	15000 (1034)
NS6	2MP4	SS-FMA-NS6-2MP4	1.50 (38.1)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
NS6	2MP6	SS-FMA-NS6-2MP6	1.69 (42.9)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
NS6	2MP9	SS-FMA-NS6-2MP9	1.81 (46.0)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
NS6	2MP12	SS-FMA-NS6-2MP12	2.00 (50.8)	1.19 (30.2)	0.44 (11.1)	15000 (1034)
NS6	2MP16	SS-FMA-NS6-2MP16	2.37 (60.3)	1.50 (38.1)	0.56 (14.3)	15000 (1034)
NS8	2MP4	SS-FMA-NS8-2MP4	1.75 (44.5)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
NS8	2MP6	SS-FMA-NS8-2MP6	1.87 (47.6)	1.37 (34.9)	0.20 (5.2)	15000 (1034)
NS8	2MP9	SS-FMA-NS8-2MP9	2.06 (52.4)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
NS8	2MP12	SS-FMA-NS8-2MP12	2.19 (55.6)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
NS8	2MP16	SS-FMA-NS8-2MP16	2.56 (65.1)	1.50 (38.1)	0.56 (14.3)	15000 (1034)
NS12	2MP4	SS-FMA-NS12-2MP4	1.81 (46.0)	1.50 (38.1)	0.11 (2.8)	10000 (690)
NS12	2MP6	SS-FMA-NS12-2MP6	1.94 (49.2)	1.50 (38.1)	0.20 (5.2)	10000 (690)
NS12	2MP9	SS-FMA-NS12-2MP9	2.13 (54.0)	1.50 (38.1)	0.31 (7.9)	10000 (690)
NS12	2MP12	SS-FMA-NS12-2MP12	2.31 (58.7)	1.50 (38.1)	0.44 (11.1)	10000 (690)
NS12	2MP16	SS-FMA-NS12-2MP16	2.75 (69.9)	1.50 (38.1)	0.56 (14.3)	10000 (690)
NS16	2MP4	SS-FMA-NS16-2MP4	2.06 (52.4)	1.75 (44.5)	0.11 (2.8)	10000 (690)
NS16	2MP6	SS-FMA-NS16-2MP6	2.19 (55.6)	1.75 (44.5)	0.20 (5.2)	10000 (690)
NS16	2MP9	SS-FMA-NS16-2MP9	2.44 (61.9)	1.75 (44.5)	0.31 (7.9)	10000 (690)
NS16	2MP12	SS-FMA-NS16-2MP12	2.56 (63.5)	1.75 (44.5)	0.44 (11.1)	10000 (690)
NS16	2MP16	SS-FMA-NS16-2MP16	3.06 (77.8)	1.75 (44.5)	0.56 (14.3)	10000 (690)

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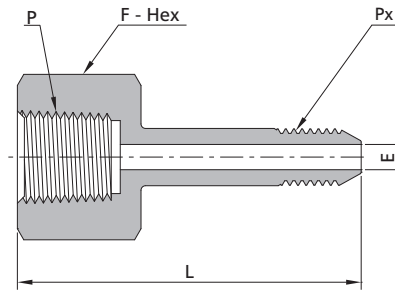
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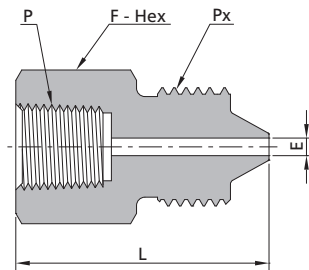
Female NPT to MP Nipples



Female NPT			MP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
NS2	2CT4	SS-FMA-NS2-2CT4	1.50 (38.1)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
NS2	2CT6	SS-FMA-NS2-2CT6	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	15000 (1034)
NS2	2CT9	SS-FMA-NS2-2CT9	1.94 (49.2)	0.63 (15.9)	0.31 (7.9)	15000 (1034)
NS2	2CT12	SS-FMA-NS2-2CT12	2.13 (54.0)	0.87 (22.2)	0.31 (7.9)	15000 (1034)
NS2	2CT16	SS-FMA-NS2-2CT16	2.81 (71.4)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
NS4	2CT4	SS-FMA-NS4-2CT4	1.75 (44.5)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
NS4	2CT6	SS-FMA-NS4-2CT6	2.00 (50.8)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
NS4	2CT9	SS-FMA-NS4-2CT9	2.19 (55.6)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
NS4	2CT12	SS-FMA-NS4-2CT12	2.44 (61.9)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
NS4	2CT16	SS-FMA-NS4-2CT16	2.94 (74.6)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
NS6	2CT6	SS-FMA-NS6-2CT6	2.06 (52.4)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
NS6	2CT9	SS-FMA-NS6-2CT9	2.25 (57.2)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
NS6	2CT12	SS-FMA-NS6-2CT12	2.50 (63.5)	1.13 (28.6)	0.44 (11.1)	15000 (1034)
NS6	2CT16	SS-FMA-NS6-2CT16	3.00 (76.2)	1.13 (28.6)	0.56 (14.3)	15000 (1034)
NS8	2CT9	SS-FMA-NS8-2CT9	2.50 (63.5)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
NS8	2CT12	SS-FMA-NS8-2CT12	2.75 (69.9)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
NS8	2CT16	SS-FMA-NS8-2CT16	3.25 (82.6)	1.37 (34.9)	0.56 (14.3)	15000 (1034)
NS12	2CT9	SS-FMA-NS12-2CT9	2.56 (65.1)	1.50 (38.1)	0.31 (7.9)	10000 (690)
NS12	2CT12	SS-FMA-NS12-2CT12	2.81 (71.4)	1.50 (38.1)	0.44 (11.1)	10000 (690)
NS12	2CT16	SS-FMA-NS12-2CT16	3.39 (86.0)	1.50 (38.1)	0.56 (14.3)	10000 (690)
NS16	2CT12	SS-FMA-NS16-2CT12	3.13 (79.4)	1.75 (44.5)	0.44 (11.1)	10000 (690)
NS16	2CT16	SS-FMA-NS16-2CT16	3.63 (92.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)

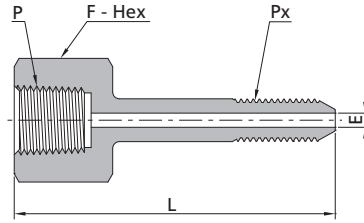
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Female NPT to Male HP



Female NPT			Male HP			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
NS2	6MP4	SS-FMA-NS2-6MP4	1.19 (30.2)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
NS2	6MP6	SS-FMA-NS2-6MP6	1.37 (34.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
NS2	6MP9	SS-FMA-NS2-6MP9	1.63 (41.3)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
NS4	6MP4	SS-FMA-NS4-6MP4	1.37 (34.9)	0.94 (23.8)	0.08 (2.1)	15000 (1034)
NS4	6MP6	SS-FMA-NS4-6MP6	1.63 (41.3)	0.94 (23.8)	0.13 (3.2)	15000 (1034)
NS4	6MP9	SS-FMA-NS4-6MP9	1.75 (44.5)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
NS6	6MP4	SS-FMA-NS6-6MP4	1.44 (36.5)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
NS6	6MP6	SS-FMA-NS6-6MP6	1.69 (42.9)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
NS6	6MP9	SS-FMA-NS6-6MP9	1.81 (46.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
NS8	6MP4	SS-FMA-NS8-6MP4	1.69 (42.9)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
NS8	6MP6	SS-FMA-NS8-6MP6	1.94 (49.2)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
NS8	6MP9	SS-FMA-NS8-6MP9	2.13 (54.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
NS12	6MP4	SS-FMA-NS12-6MP4	1.75 (44.5)	1.50 (38.1)	0.08 (2.1)	10000 (690)
NS12	6MP6	SS-FMA-NS12-6MP6	2.00 (50.8)	1.50 (38.1)	0.13 (3.2)	10000 (690)
NS12	6MP9	SS-FMA-NS12-6MP9	2.19 (55.6)	1.50 (38.1)	0.19 (4.8)	10000 (690)
NS16	6MP4	SS-FMA-NS16-6MP4	2.00 (50.8)	1.75 (44.5)	0.08 (2.1)	10000 (690)
NS16	6MP6	SS-FMA-NS16-6MP6	2.25 (57.2)	1.75 (44.5)	0.13 (3.2)	10000 (690)
NS16	6MP9	SS-FMA-NS16-6MP9	2.44 (61.9)	1.75 (44.5)	0.19 (4.8)	10000 (690)

Female NPT to HP Nipples



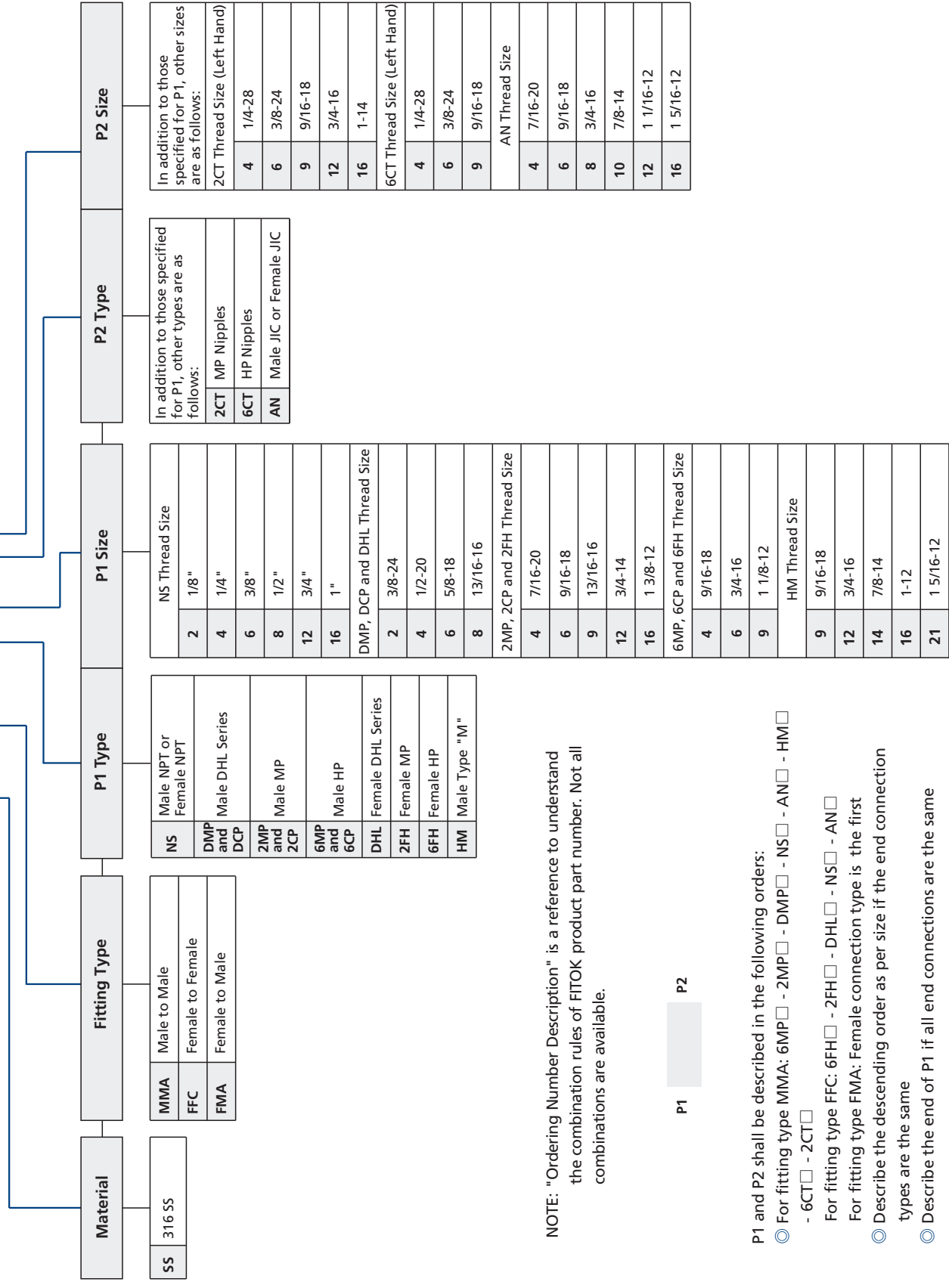
Female NPT			HP Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
NS2	6CT4	SS-FMA-NS2-6CT4	1.87 (47.6)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
NS2	6CT6	SS-FMA-NS2-6CT6	2.19 (55.6)	0.63 (15.9)	0.13 (3.2)	15000 (1034)
NS4	6CT4	SS-FMA-NS4-6CT4	2.13 (54.0)	0.94 (23.8)	0.08 (2.1)	15000 (1034)
NS4	6CT6	SS-FMA-NS4-6CT6	2.50 (63.5)	0.94 (23.8)	0.13 (3.2)	15000 (1034)
NS4	6CT9	SS-FMA-NS4-6CT9	3.06 (77.8)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
NS6	6CT4	SS-FMA-NS6-6CT4	2.13 (54.0)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
NS6	6CT6	SS-FMA-NS6-6CT6	2.50 (63.5)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
NS6	6CT9	SS-FMA-NS6-6CT9	3.13 (79.4)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
NS8	6CT4	SS-FMA-NS8-6CT4	2.37 (60.3)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
NS8	6CT6	SS-FMA-NS8-6CT6	2.75 (69.9)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
NS8	6CT9	SS-FMA-NS8-6CT9	3.31 (84.2)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
NS12	6CT4	SS-FMA-NS12-6CT4	2.44 (61.9)	1.50 (38.1)	0.08 (2.1)	10000 (690)
NS12	6CT6	SS-FMA-NS12-6CT6	2.81 (71.4)	1.50 (38.1)	0.13 (3.2)	10000 (690)
NS12	6CT9	SS-FMA-NS12-6CT9	3.38 (85.8)	1.50 (38.1)	0.19 (4.8)	10000 (690)
NS16	6CT4	SS-FMA-NS16-6CT4	2.69 (68.3)	1.75 (44.5)	0.08 (2.1)	10000 (690)
NS16	6CT6	SS-FMA-NS16-6CT6	3.10 (78.8)	1.75 (44.5)	0.13 (3.2)	10000 (690)
NS16	6CT9	SS-FMA-NS16-6CT9	3.69 (93.8)	1.75 (44.5)	0.19 (4.8)	10000 (690)

NOTE: Dimensions are for reference only and are subject to change.

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Ordering Number Description

SS – MMA – 2MP6 – NS4



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

P1 P2

P1 and P2 shall be described in the following orders:

- ⦿ For fitting type MMA: 6MP - 2MP - DMP - NS - AN - HM - 6CT - 2CT
- For fitting type FFC: 6FH - 2FH - DHL - NS - AN
- For fitting type FMA: Female connection type is the first
- ⦿ Describe the descending order as per size if the end connection types are the same
- ⦿ Describe the end of P1 if all end connections are the same

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Quick Couplings

Quick Couplings



B-02

Quick Couplings

HQP Series, 10,000 psig (690 bar)

HQB Series, 10,000 psig (690 bar)

HQS Series, 20,000 psig (1379 bar)

HQC Series, 30,000 psig (2068 bar)



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HQP Series	B-04
HQB Series	B-06
HQS Series	B-08
HQC Series	B-10
Ordering Number Description	B-16

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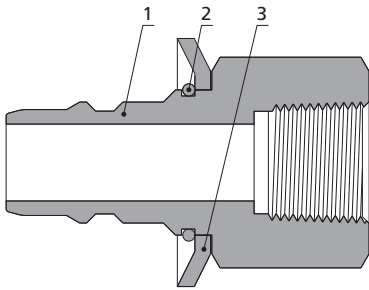
Technical Information

HQP Series

Features

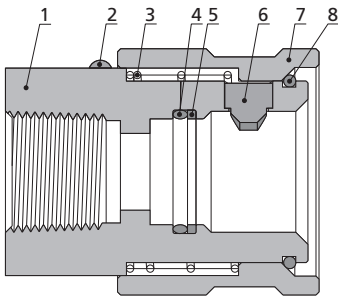
- ⦿ Working Pressure: 10,000 psig (690 bar)
- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- ⦿ Push-and-pull type quick coupling without check valve
- ⦿ Stem and body material: high tensile 316 Stainless Steel
- ⦿ Flow coefficient (Cv) up to 8.2
- ⦿ Sturdy locking mechanism with large contact area to ensure reliable stem retainment
- ⦿ Easy and quick connection to hoses and fixed ports

Standard Materials of Construction



Nipple

Item	Component	Material Grade/ASTM Specification
1	<i>Stem</i>	<i>316 SS/A479</i>
2	Wire Ring	Stainless Steel
3	Pull Piece	316 SS/A479

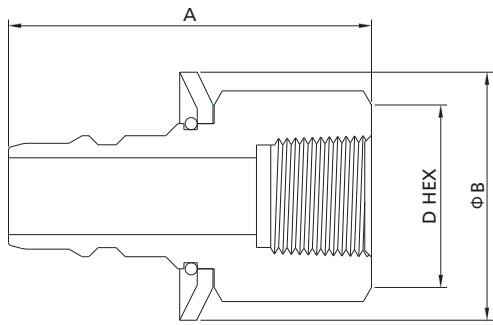


Coupler

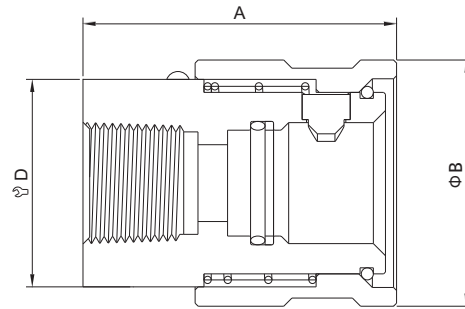
Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	<i>316 SS/A479</i>
2	Pin	Stainless Steel
3	Spring	300 Series SS
4	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
5	Retaining Ring	PTFE
6	Locking Block	Stainless Steel
7	Slip Sleeve	316 SS/A479
8	Wire Ring	Stainless Steel

Wetted component listed in italics.

Ordering Information and Dimensions



Nipple



Coupler

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQPSS-FNS6-NP	FNS6	2.17 (55.0)	1.59 (40.4)	1.19 (30.2)	10,000 (690)
	HQPSS-FNS8-NP	FNS8	2.36 (60.0)	1.59 (40.4)	1.19 (30.2)	
Coupler	HQPSS-FNS6-CP	FNS6	2.05 (52.0)	1.59 (40.4)	1.19 (30.2)	
	HQPSS-FNS8-CP	FNS8	2.05 (52.0)	1.59 (40.4)	1.19 (30.2)	

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

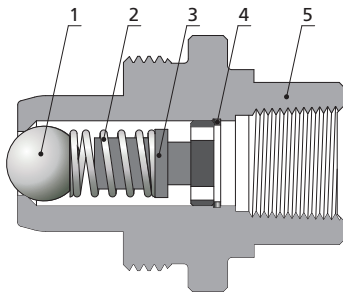
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HQB Series

Features

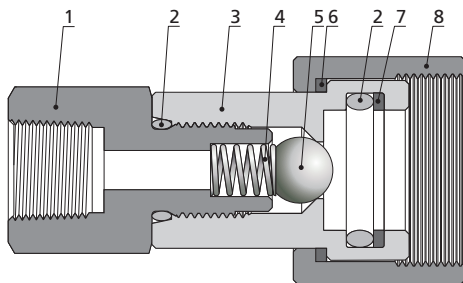
- ⦿ Working Pressure: 10,000 psig (690 bar)
- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- ⦿ Screw type quick coupling with check valve
- ⦿ 17-4PH Stainless Steel stem and high tensile 316 Stainless Steel body
- ⦿ Flow coefficient (Cv) up to 0.53
- ⦿ Withstand full working pressure when disconnected
- ⦿ Check valve with metal ball sealing, without guarantee of full gas impermeability
- ⦿ Easy and quick connection to hoses and fixed ports

Standard Materials of Construction



Nipple

Item	Component	Material Grade/ASTM Specification
1	Ball	Stainless Steel
2	Spring	300 Series SS
3	Seat	316 SS/A479
4	Retaining Ring	Stainless Steel
5	Stem	17-4PH SS/A564

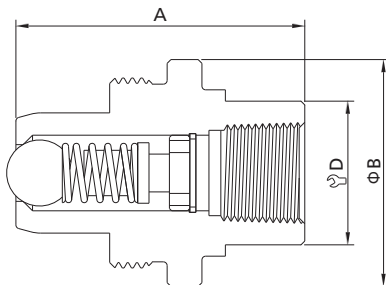


Coupler

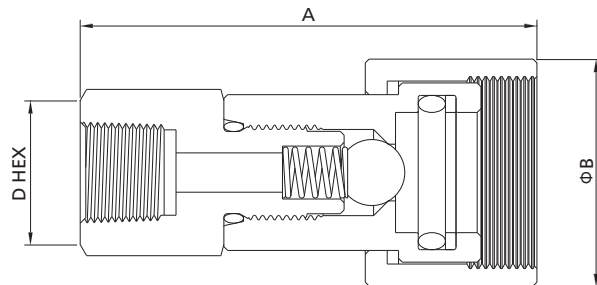
Item	Component	Material Grade/ASTM Specification
1	Body	316 SS/A479
2	O-ring	Fluorocarbon FKM
3	Housing	17-4PH SS/A564
4	Spring	300 Series SS
5	Ball	Stainless Steel
6	Ring	C63000/B150
7	Retaining Ring	PTFE
8	Nut	17-4PH SS/A564
<i>Sealant adhesive</i>		<i>Anaerobic adhesive</i>

Wetted component listed in italics.

Ordering Information and Dimensions



Nipple



Coupler

B-07 Quick Couplings

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQB4P-FNS4-NP	FNS4	1.54 (39.2)	1.18 (30.0)	0.75 (19.0)	10,000 (690)
	HQB4P-FNS6-NP	FNS6	1.54 (39.2)	1.18 (30.0)	0.94 (23.8)	
Coupler	HQB4P-FNS4-CP	FNS4	2.46 (62.4)	1.18 (30.0)	0.87 (22.2)	
	HQB4P-FNS6-CP	FNS6	2.46 (62.4)	1.18 (30.0)	0.94 (23.8)	

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

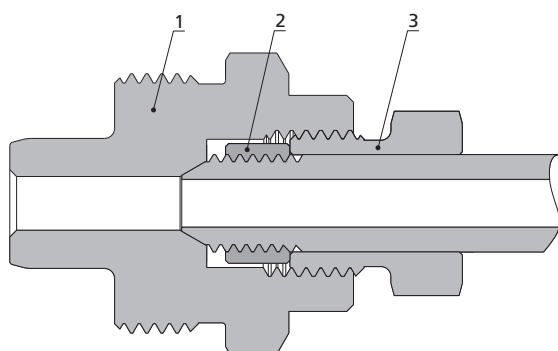
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HQS Series

Features

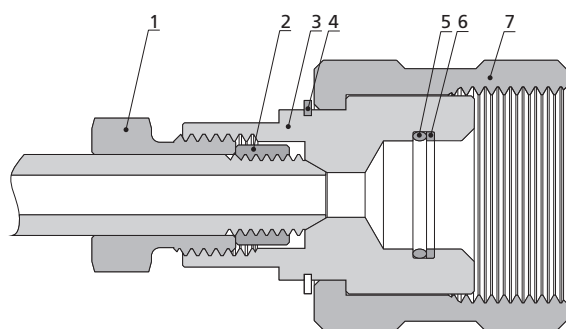
- Working pressure up to 20,000 psig (1379 bar)
- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- Screw type quick coupling without check valve
- High tensile 316 Stainless Steel stem and 17-4PH Stainless Steel body
- Flow coefficient (Cv) up to 3.6
- Easy and quick connection to hoses and fixed ports

Standard Materials of Construction



Nipple

Item	Component	Material Grade/ASTM Specification
1	Stem	316 SS/A479
2	Collar	316 SS/A479 (For tubing connections)
3	Gland	316 SS/A479 (For tubing connections)



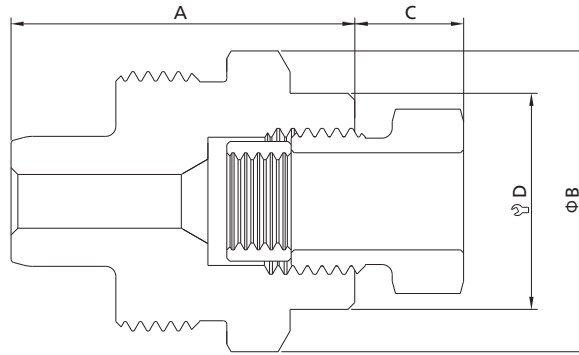
Coupler

Item	Component	Material Grade/ASTM Specification
1	Collar	316 SS/A479 (For tubing connections)
2	Gland	316 SS/A479 (For tubing connections)
3	Body	17-4PH SS/A564
4	Circlip	Stainless Steel
5	O-ring	Fluorocarbon FKM
6	Retaining Ring	PTFE
7	Nut	316 SS/A479

Wetted component listed in italics

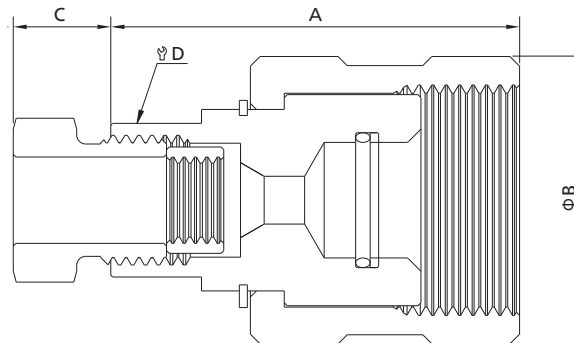
Ordering Information and Dimensions

Nipple



Type	Ordering Number	Connection	Dimensions, in. (mm)				Working Pressure psig (bar)
			A	B	C	D	
Nipple	HQSSS-2FH9-NP	2FH9	2.40 (61.0)	1.74 (44.2)	0.55 (14.0)	1.25 (31.8)	20,000 (1379)
	HQSSS-FNS8-NP	FNS8	2.40 (61.0)	1.74 (44.2)		1.25 (31.8)	15,000 (1034)
	HQSSS-HBP8-NP	HBP8	2.76 (70.0)	1.74 (44.2)		1.00 (25.4)	20,000 (1379)

Coupler



Type	Ordering Number	Connection	Dimensions, in. (mm)				Working Pressure psig (bar)
			A	B	C	D	
Coupler	HQSSS-2FH9-CP	2FH9	2.61 (66.3)	1.91 (48.4)	0.55 (14.0)	1.00 (25.4)	20,000 (1379)
	HQSSS-FNS8-CP	FNS8	2.61 (66.3)	1.91 (48.4)		1.00 (25.4)	15,000 (1034)
	HQSSS-HBP8-CP	HBP8	3.16 (80.3)	1.91 (48.4)		1.00 (25.4)	20,000 (1379)

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

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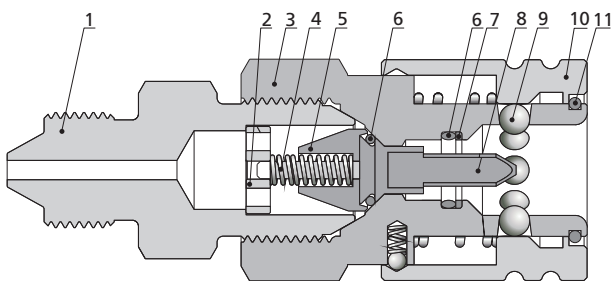
HQC Series

HQC Series Couplers

Features

- Working pressure up to 30,000 psig (2068 bar)
- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- Push-and-pull type coupler with check valve
- Body material: 17-4PH Stainless Steel
- Flow coefficient (Cv) up to 0.66
- Withstand full working pressure when disconnected
- Easy and quick connection to hoses and fixed ports

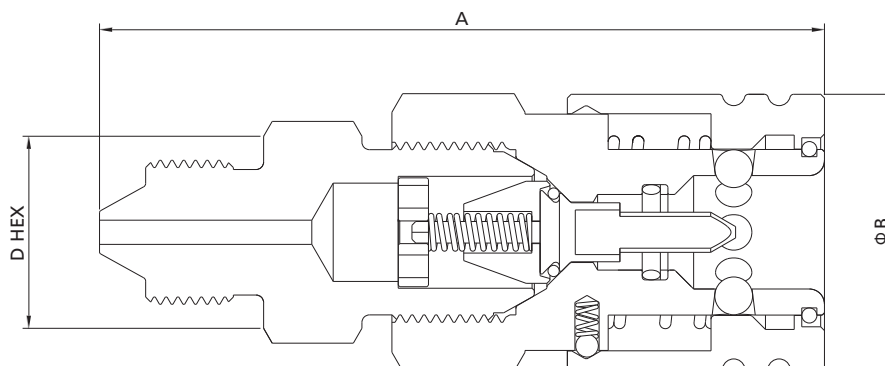
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	<i>17-4PH SS/A564</i>
2	<i>Seat</i>	<i>316 SS/A479</i>
3	<i>Housing</i>	<i>17-4PH SS/A564</i>
4	<i>Spring</i>	<i>300 Series SS</i>
5	<i>Valve Head</i>	<i>316 SS/A479</i>
6	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
7	Retaining Ring	PTFE
8	<i>Valve Stem</i>	<i>316 SS/A479</i>
9	Ball	Stainless Steel
10	Nut	316 SS/A479
11	Wire Ring	Stainless Steel

Wetted component listed in italics.

Ordering Information and Dimensions



B-11 Quick Couplings

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Coupler	HQC4P-NS4-CP	NS4	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-CP	NS6	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-CP	NS8	3.68 (93.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-CP	FNS4	3.17 (80.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-CP	FNS6	3.27 (83.0)	1.39 (35.4)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-CP	FNS8	3.56 (90.5)	1.39 (35.4)	1.38 (34.9)	15,000 (1034)
	HQC4P-AN4-CP	AN4	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN6-CP	AN6	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN8-CP	AN8	3.58 (91.0)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP4-CP	HBP4	3.37 (85.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP6-CP	HBP6	3.41 (86.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP8-CP	HBP8	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP4-CP	2MP4	3.62 (92.0)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP6-CP	2MP6	3.76 (95.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP9-CP	2MP9	3.95 (100.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-6MP4-CP	6MP4	3.54 (90.0)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP6-CP	6MP6	3.80 (96.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP9-CP	6MP9	3.98 (101.0)	1.39 (35.4)	1.19 (30.2)	30,000 (2068)
	HQC4P-HM9-CP	HM9	3.43 (87.0)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM12-CP	HM12	3.56 (90.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
HQC4P-HM16-CP	HM16	3.56 (90.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)	

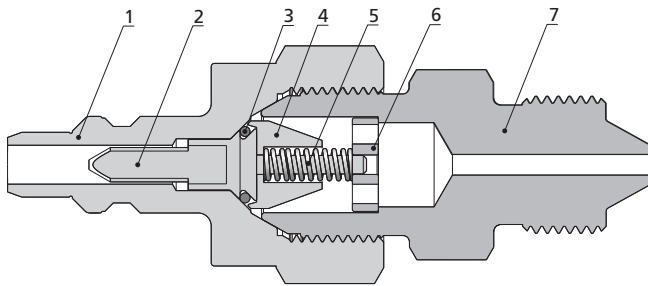
NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

HQC Series Nipples With Check Valve

Features

- Working pressure up to 30,000 psig (2068 bar)
- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- Push-and-pull type nipple with check valve
- Stem material: 17-4PH Stainless Steel
- Flow coefficient (Cv) up to 0.66
- Withstand full working pressure when disconnected
- Easy and quick connection to hoses and fixed ports

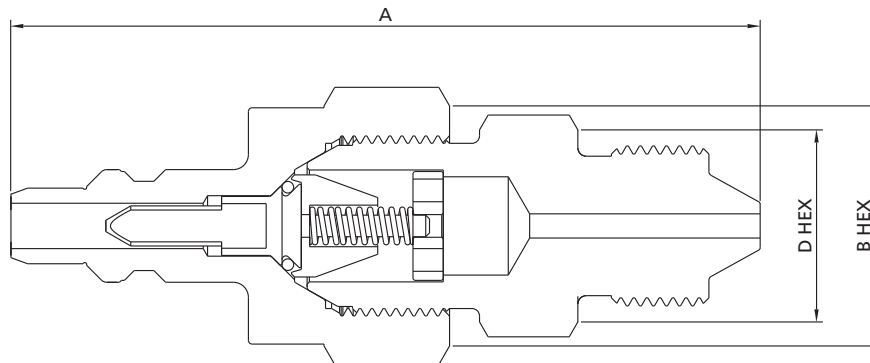
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Stem</i>	<i>17-4PH SS/A564</i>
2	<i>Valve Stem</i>	<i>316 SS/A479</i>
3	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
4	<i>Valve Head</i>	<i>316 SS/A479</i>
5	<i>Spring</i>	<i>300 Series SS</i>
6	<i>Seat</i>	<i>316 SS/A479</i>
7	<i>Body</i>	<i>17-4PH/A564</i>

Wetted component listed in italics.

Ordering Information and Dimensions



B-13 Quick Couplings

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQC4P-NS4-NP	NS4	3.52 (89.5)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-NP	NS6	3.52 (89.5)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-NP	NS8	3.70 (94.0)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-NP	FNS4	3.19 (81.0)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-NP	FNS6	3.31 (84.0)	1.25 (31.8)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-NP	FNS8	3.58 (91.0)	1.25 (31.8)	1.38 (34.9)	15,000 (1034)
	HQC4P-AN4-NP	AN4	3.50 (89.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN6-NP	AN6	3.50 (89.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN8-NP	AN8	3.43 (92.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP4-NP	HBP4	3.39 (86.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP6-NP	HBP6	3.43 (87.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP8-NP	HBP8	3.50 (89.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP4-NP	2MP4	3.64 (92.5)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP6-NP	2MP6	3.78 (96.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP9-NP	2MP9	3.98 (101.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-6MP4-NP	6MP4	3.58 (91.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP6-NP	6MP6	3.84 (97.5)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP9-NP	6MP9	4.00 (101.5)	1.25 (31.8)	1.19 (30.2)	30,000 (2068)
	HQC4P-HM9-NP	HM9	3.46 (88.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM12-NP	HM12	3.58 (91.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
HQC4P-HM16-NP	HM16	3.60 (91.5)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)	

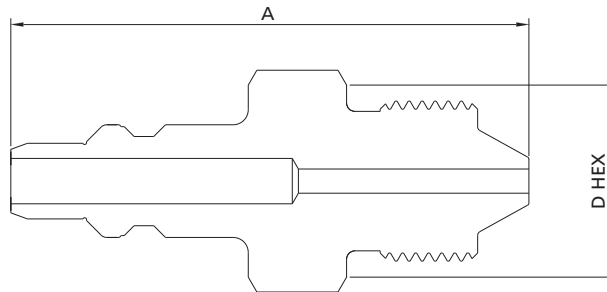
NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

HQC Series Nipples without Check Valve

Features

- ⦿ Working pressure up to 30,000 psig (2068 bar)
- ⦿ Push-and-pull type nipple without check valve
- ⦿ Stem material: 17-4PH Stainless Steel
- ⦿ Flow coefficient (Cv) up to 0.66
- ⦿ Easy and quick connection to hoses and fixed ports

Ordering Information and Dimensions

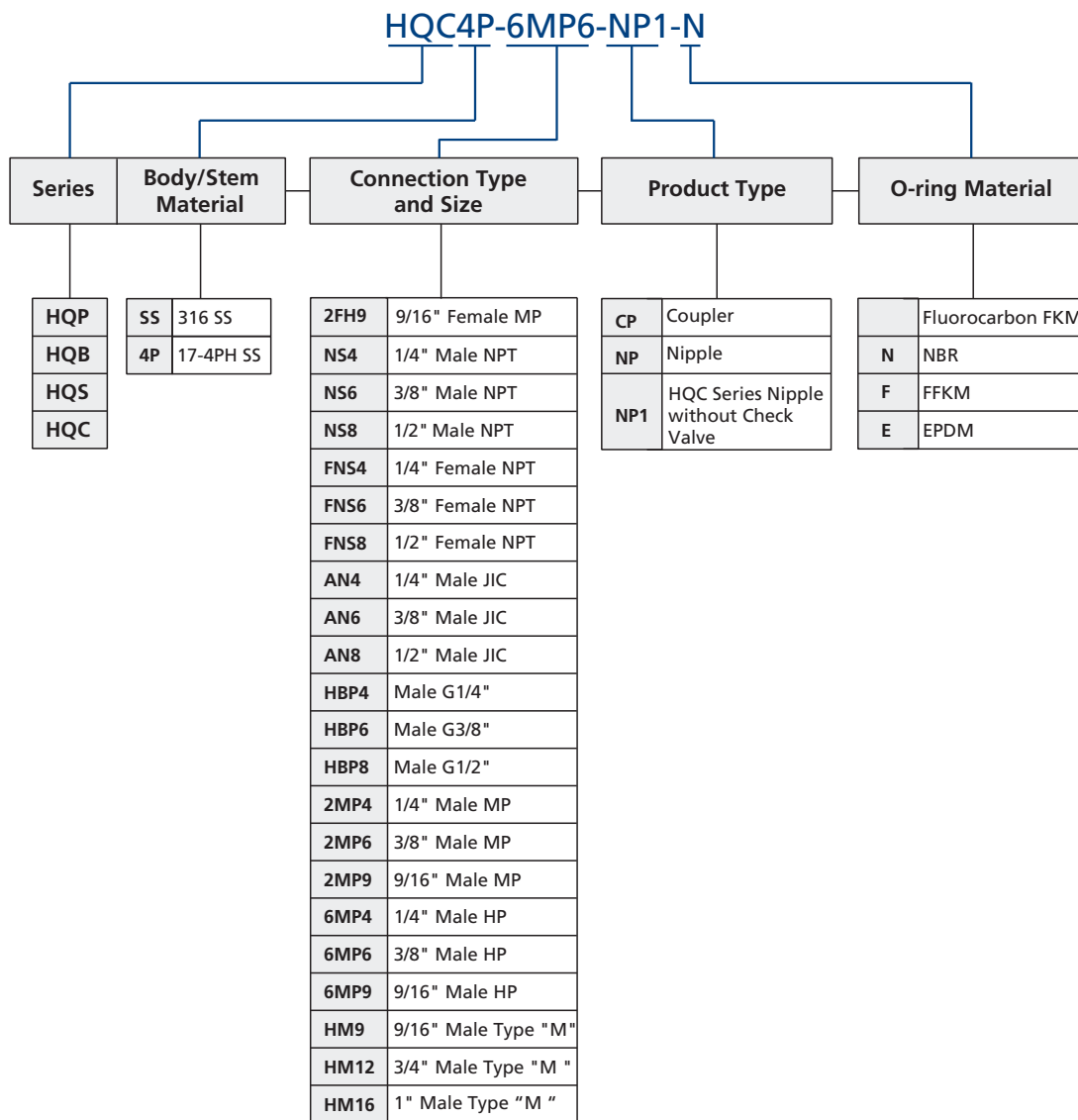


B-15 Quick Couplings

Type	Ordering Number	Connection	Dimensions, in. (mm)		Working Pressure psig (bar)
			A	D	
Nipple	HQC4P-NS4-NP1	NS4	2.25 (57.1)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-NP1	NS6	2.25 (57.1)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-NP1	NS8	2.44 (62.0)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-NP1	FNS4	2.05 (52.0)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-NP1	FNS6	2.09 (53.0)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-NP1	FNS8	2.36 (60.0)	1.38 (34.9)	15,000 (1034)
	HQC4P-AN4-NP1	AN4	2.24 (56.9)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN6-NP1	AN6	2.24 (57.0)	1.00 (25.4)	20,000 (1379)
	HQC4P-AN8-NP1	AN8	2.35 (59.6)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP4-NP1	HBP4	2.12 (53.9)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP6-NP1	HBP6	2.16 (54.9)	1.00 (25.4)	20,000 (1379)
	HQC4P-HBP8-NP1	HBP8	2.24 (56.9)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP4-NP1	2MP4	2.37 (60.3)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP6-NP1	2MP6	2.52 (64.0)	1.00 (25.4)	20,000 (1379)
	HQC4P-2MP9-NP1	2MP9	2.69 (68.3)	1.00 (25.4)	20,000 (1379)
	HQC4P-6MP4-NP1	6MP4	2.31 (58.7)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP6-NP1	6MP6	2.56 (65.1)	1.00 (25.4)	30,000 (2068)
	HQC4P-6MP9-NP1	6MP9	2.81 (71.4)	1.19 (30.2)	30,000 (2068)
	HQC4P-HM9-NP1	HM9	2.19 (55.6)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM12-NP1	HM12	2.32 (58.9)	1.00 (25.4)	30,000 (2068)
HQC4P-HM16-NP1	HM16	2.33 (59.2)	1.00 (25.4)	30,000 (2068)	

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK Product Part Number. Not all combinations are available.

Code	O-ring Material	Working Temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 550 (-29 to 288)
E	EPDM	-50 to 300 (-45 to 148)

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Ball Valves and Pneumatic Ball Valves



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Needle Valves and Pneumatic Needle Valves



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Check Valves



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C-67

Relief Valves



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Bleed Valves and Block & Bleed Valves



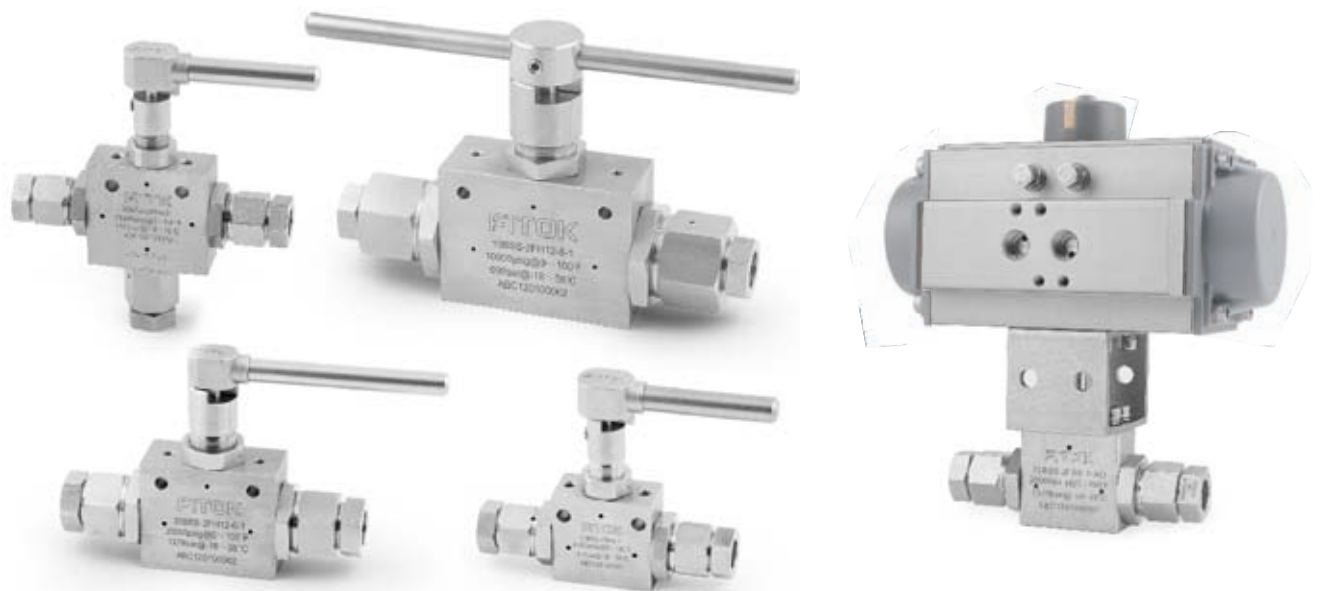
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Ball Valves and Pneumatic Ball Valves

10B Series, 10,000 psig (690 bar)

15B Series, 15,000 psig (1034 bar)

20B Series, 20,000 psig (1379 bar)



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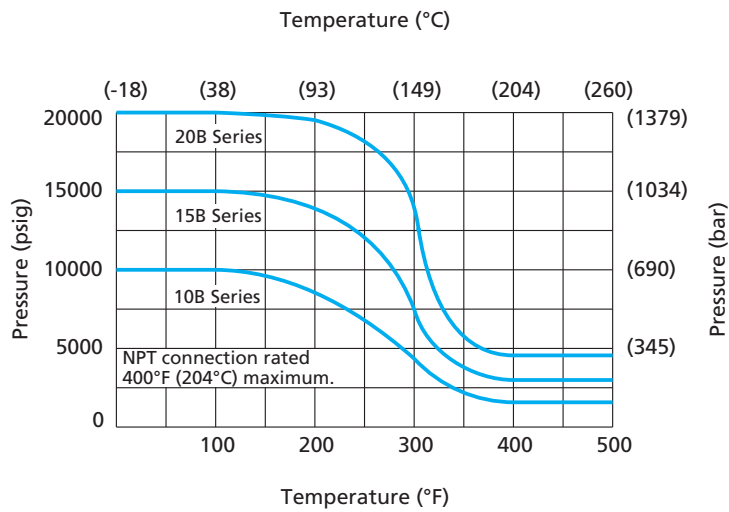
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Features

- ⦿ Working pressure up to 20,000 psig (1379 bar)
- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- ⦿ High tensile 316 Stainless Steel as body material
- ⦿ PEEK seats to offer excellent resistance to chemicals, heat and abrasion
- ⦿ One-piece, trunnion mounted stem design
- ⦿ Full-port flow path to minimize pressure drop
- ⦿ 2-way and 3-way valve configurations
- ⦿ Wide selection of tube and pipe end fittings available
- ⦿ Pneumatic actuator optional with air pressure from 80 psig to 116 psig (5.5 bar to 8 bar)

Pressure vs. Temperature Curve

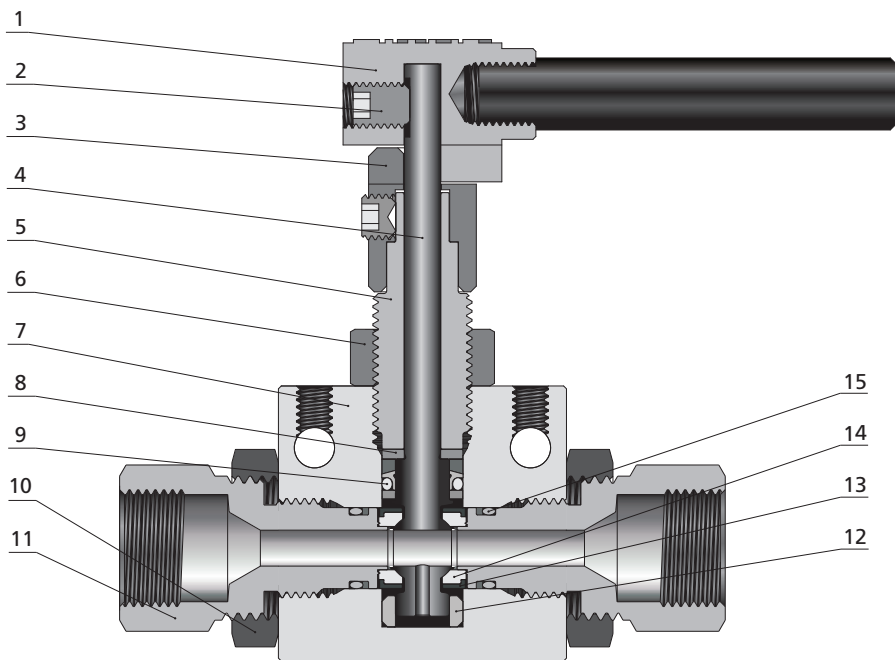


- NOTES: 1. Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.
 2. The side port can not be used as inlet port for 3-way valves.

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Standard Materials of Construction

2-way Straight Valves



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	Stopping Device	316 SS/A479
4	Stem	316 SS/A479
5	Packing Gland	316 SS/A479
6	Locking Piece	316 SS/A479
7	Valve Body	316 SS/A479
8	Thrust Washer	Copper Alloy
9	Combination Seal	Fluorocarbon FKM
10	Lock Nut	316 SS/A479
11	Seat Gland	316 SS/A479
12	Bearing	PEEK
13	Seat Retainer	316 SS/A479
14	Seat	PEEK
15	O-ring	Fluorocarbon FKM
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

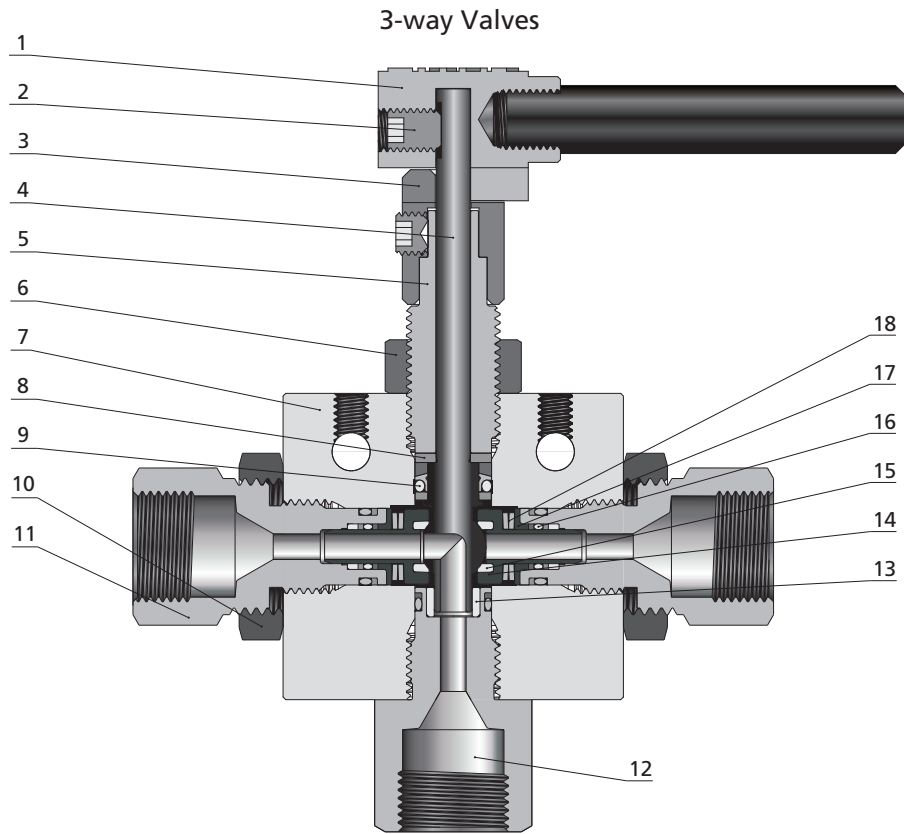
Line Filters

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Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	Stopping Device	316 SS/A479
4	Stem	316 SS/A479
5	Packing Gland	316 SS/A479
6	Locking Piece	316 SS/A479
7	Valve Body	316 SS/A479
8	Thrust Washer	Copper Alloy
9	Combination Seal	Fluorocarbon FKM
10	Lock Nut	316 SS/A479
11	Seat Gland	316 SS/A479
12	Bottom Gland	316 SS/A479
13	Bearing	Copper Alloy
14	Seat Retainer	S17400/A564
15	Seat	Carbon Filled PEEK
16	O-ring	Fluorocarbon FKM
17	Belleville Backup	S17400/A564
18	Belleville Washers	S17700/A693
Lubricant		Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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Line Filters

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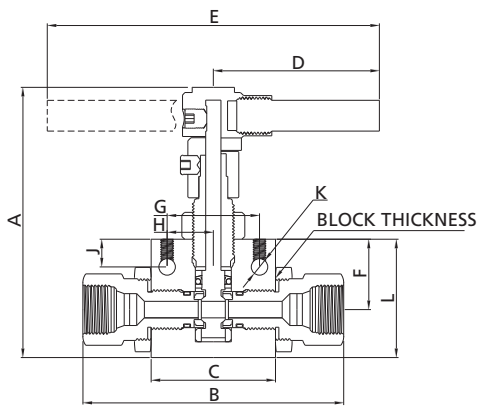
Subsea Valves

Tools and Installation Instructions

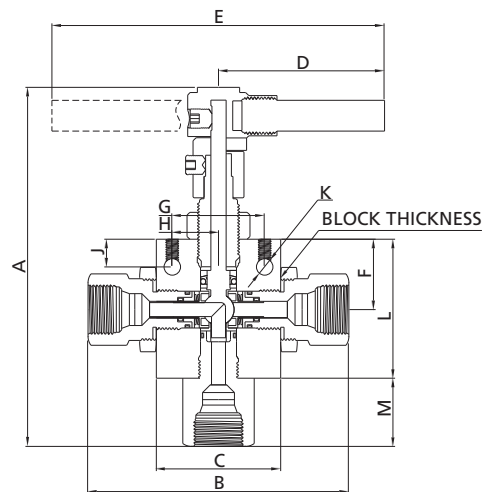
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Dimensions

2-way Straight Valves



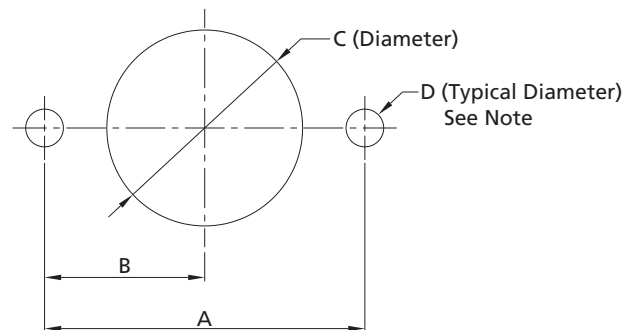
3-way Valves



Flow Pattern	Orifice No.	Dimensions, in. (mm)												
		A	B	C	D	E	F	G	H	J	K	L	M	Block Thickness
2-way		4.33 (110)	4.19 (106.5)	2 (50.8)	3.37 (85.6)	/	1.13 (28.6)	1.5 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	1.91 (48.4)	/	1 (25.4)
	6	4.97 (126.3)	5.53 (140.4)	3 (76.2)	4.99 (126.8)	/	1.38 (34.9)	2 (50.8)	1 (25.4)	0.41 (10.3)	0.28 (7.1)	2.5 (63.5)	/	1.38 (34.9)
	8	5.95 (151.1)	7.73 (196.5)	4.13 (104.8)	/	10.25 (260.4)	1.76 (44.7)	3 (76.2)	1.5 (38.1)	0.5 (12.7)	0.28 (7.1)	3.09 (78.6)	/	1.75 (44.5)
3-way		5.64 (143.4)	4.72 (119.9)	2.5 (63.5)	3.37 (85.6)	/	1.13 (28.6)	1.5 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	2.25 (57.2)	0.97 (24.6)	1 (25.4)
	6	6.55 (166.4)	5.54 (140.8)	3 (76.2)	4.99 (126.8)	/	1.38 (34.9)	2 (50.8)	1 (25.4)	0.41 (10.3)	0.28 (7.1)	2.88 (73)	1.19 (30.2)	1.38 (34.9)
	8	7.83 (198.8)	7.77 (197.4)	4.13 (104.8)	/	10.25 (260.4)	1.66 (42.2)	3 (76.2)	1.5 (38.1)	0.5 (12.7)	0.28 (7.1)	3.34 (84.9)	1.7 (43.2)	1.75 (44.5)

Panel Mounting Dimensions

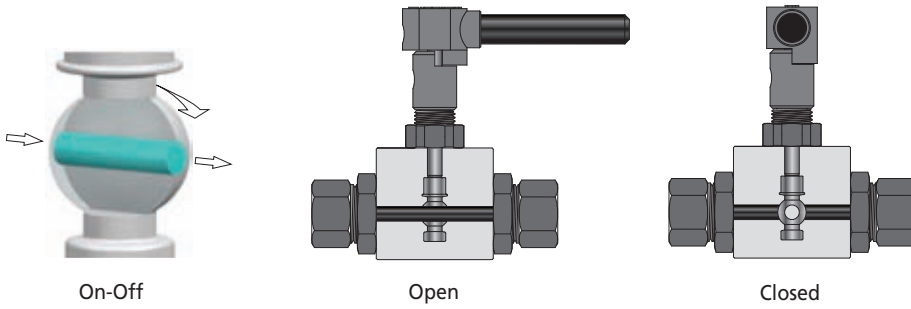
Flow Pattern	Orifice No.	Dimensions, in. (mm)			
		A	B	C	D
2-way		1.5 (38.1)	0.75 (19.1)	1.06 (26.9)	0.28 (7.1)
	6	2 (50.8)	1 (25.4)	1.5 (38.1)	0.28 (7.1)
	8	3 (76.2)	1.5 (38.1)	1.88 (47.6)	0.28 (7.1)
3-way		1.5 (38.1)	0.75 (19.1)	1.06 (26.9)	0.28 (7.1)
	6	2 (50.8)	1 (25.4)	1.5 (38.1)	0.28 (7.1)
	8	3 (76.2)	1.5 (38.1)	1.88 (47.6)	0.28 (7.1)



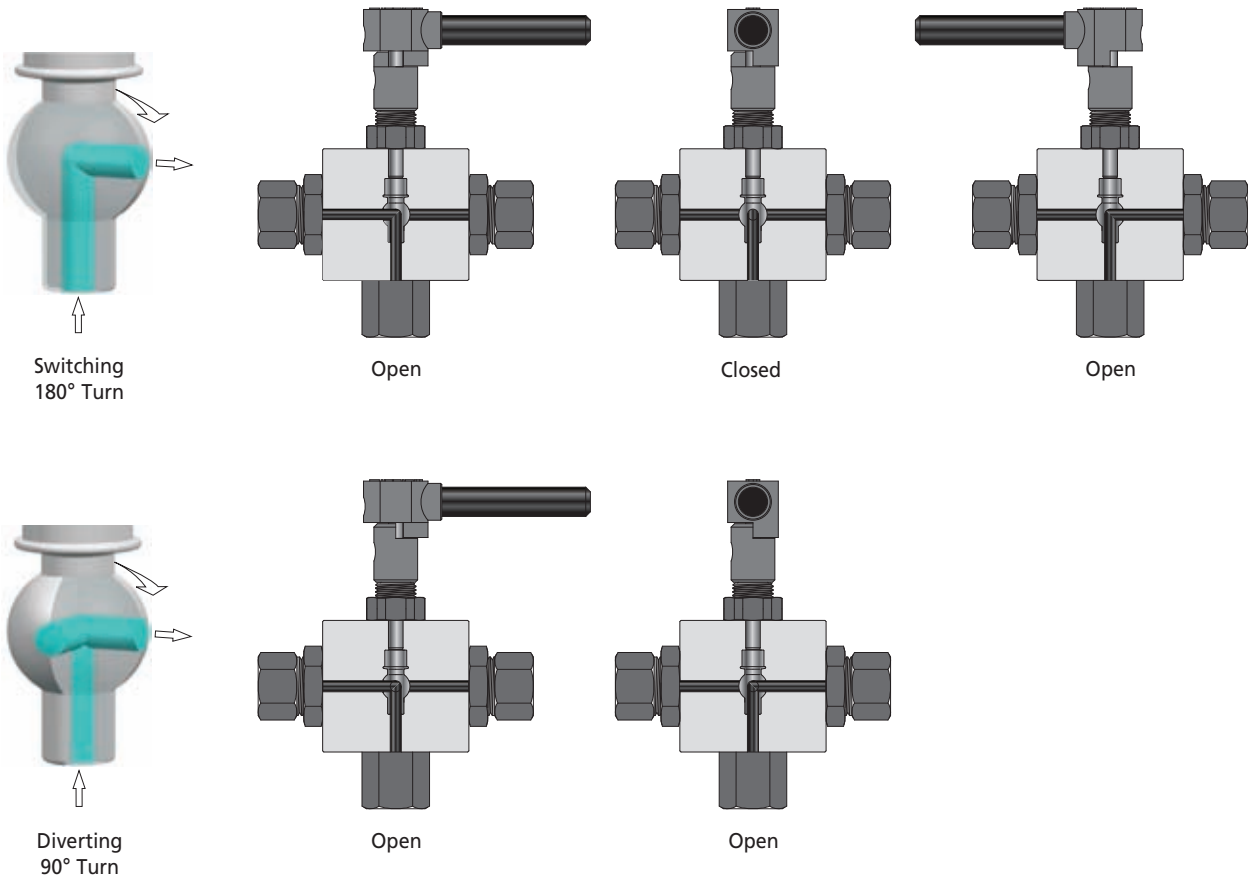
- NOTES: 1. Body mounting 1/4-20 thread.
2. All dimensions are for reference only and are subject to change.

Flow Configuration

2-way Straight Valves



3-way Valves



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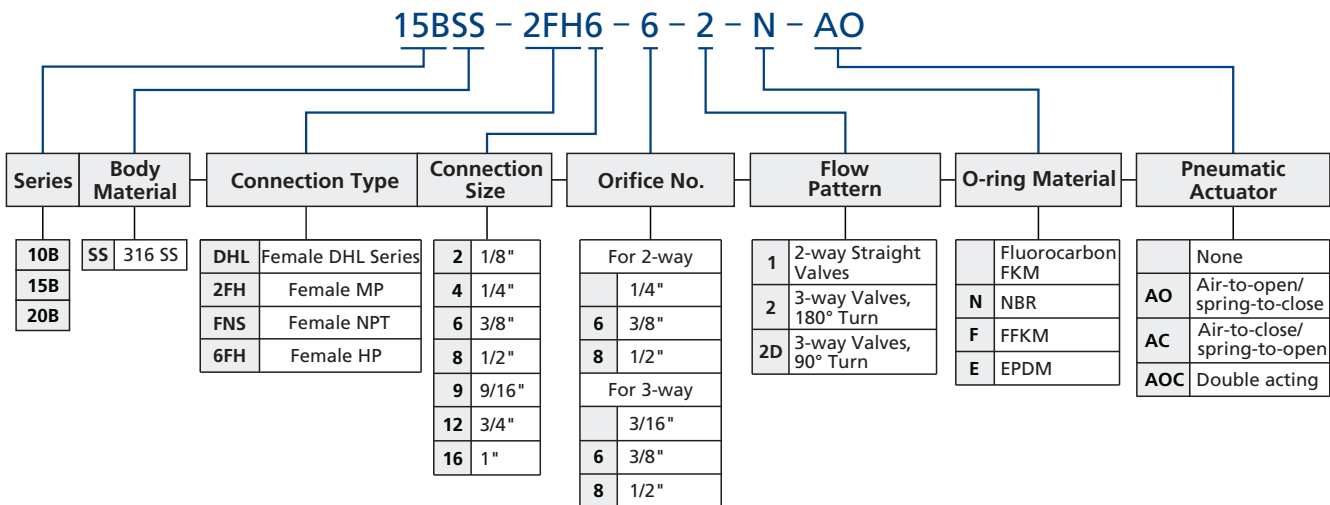
Ordering Information and Dimensions

Series	Flow Pattern	Connection	Orifice No.	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)				
10B	2-way	2FH12	8	0.5 (12.7)	10.2	10BSS-2FH12-8-1	10,000 (690)				
		2FH16		0.5 (12.7)	10.2	10BSS-2FH16-8-1					
		FNS12		0.5 (12.7)	10.2	10BSS-FNS12-8-1					
		FNS16		0.5 (12.7)	10.2	10BSS-FNS16-8-1					
	3-way	2FH12	8	0.5 (12.7)	4.4	10BSS-2FH12-8-2 10BSS-2FH12-8-2D					
		2FH16		0.5 (12.7)	4.4	10BSS-2FH16-8-2 10BSS-2FH16-8-2D					
		FNS12		0.5 (12.7)	4.4	10BSS-FNS12-8-2 10BSS-FNS12-8-2D					
		FNS16		0.5 (12.7)	4.4	10BSS-FNS16-8-2 10BSS-FNS16-8-2D					
		15B		2-way	DHL2	6		0.094 (2.4)	0.26	15BSS-DHL2-1	15,000 (1034)
					DHL4			0.13 (3.25)	0.26	15BSS-DHL4-1	
					DHL6			0.25 (6.35)	1.51	15BSS-DHL6-1	
					DHL8			0.25 (6.35)	1.51	15BSS-DHL8-1	
FNS2	0.25 (6.35)		1.51		15BSS-FNS2-1						
FNS4	0.25 (6.35)		1.51		15BSS-FNS4-1						
FNS6	0.25 (6.35)		1.51		15BSS-FNS6-1						
FNS8	0.25 (6.35)		1.51		15BSS-FNS8-1						
DHL8	0.375 (9.5)		3.51		15BSS-DHL8-6-1						
FNS4	0.375 (9.5)		3.51		15BSS-FNS4-6-1						
FNS6	0.375 (9.5)		3.51	15BSS-FNS6-6-1							
FNS8	0.375 (9.5)		3.51	15BSS-FNS8-6-1							
3-way	DHL2	6	0.094 (2.4)	0.13	15BSS-DHL2-2 15BSS-DHL2-2D						
	DHL4		0.13 (3.25)	0.23	15BSS-DHL4-2 15BSS-DHL4-2D						
	DHL6		0.19 (4.78)	0.5	15BSS-DHL6-2 15BSS-DHL6-2D						
	DHL8		0.19 (4.8)	0.5	15BSS-DHL8-2 15BSS-DHL8-2D						
	FNS2		0.19 (4.8)	0.5	15BSS-FNS2-2 15BSS-FNS2-2D						
	FNS4		0.19 (4.8)	0.5	15BSS-FNS4-2 15BSS-FNS4-2D						
	FNS6		0.19 (4.8)	0.5	15BSS-FNS6-2 15BSS-FNS6-2D						
	FNS8		0.19 (4.8)	0.5	15BSS-FNS8-2 15BSS-FNS8-2D						
	DHL8		0.33 (8.3)	2.1	15BSS-DHL8-6-2 15BSS-DHL8-6-2D						
	2FH6		0.2 (5.2)	0.81	15BSS-2FH6-6-2 15BSS-2FH6-6-2D						
	2FH9		0.31 (7.9)	1.9	15BSS-2FH9-6-2 15BSS-2FH9-6-2D						
	2FH12		0.33 (8.3)	2.1	15BSS-2FH12-6-2 15BSS-2FH12-6-2D						
	FNS4		0.33 (8.3)	2.1	15BSS-FNS4-6-2 15BSS-FNS4-6-2D						

Ordering Information and Dimensions (continue)

Series	Flow Pattern	Connection	Orifice No.	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)
15B	3-way	FNS6	6	0.33 (8.3)	2.1	15BSS-FNS6-6-2	15,000 (1034)
				0.33 (8.3)	2.1	15BSS-FNS6-6-2D	
		FNS8		0.33 (8.3)	2.1	15BSS-FNS8-6-2	
				0.33 (8.3)	2.1	15BSS-FNS8-6-2D	
20B	2-way	2FH4	6	0.11 (2.8)	0.36	20BSS-2FH4-1	20,000 (1379)
		2FH6		0.2 (5.2)	1.23	20BSS-2FH6-1	
		2FH9		0.25 (6.35)	1.51	20BSS-2FH9-1	
		6FH4		0.094 (2.4)	0.26	20BSS-6FH4-1	
		6FH6		0.125 (3.2)	0.47	20BSS-6FH6-1	
		6FH9		0.19 (4.8)	1.05	20BSS-6FH9-1	
		2FH6		0.2 (5.2)	1.23	20BSS-2FH6-6-1	
		2FH9		0.31 (7.9)	2.93	20BSS-2FH9-6-1	
		2FH12		0.375 (9.5)	3.51	20BSS-2FH12-6-1	
	3-way	2FH4	6	0.11 (2.8)	0.17	20BSS-2FH4-2	
		2FH6		0.19 (4.8)	0.5	20BSS-2FH6-2	
		2FH9		0.19 (4.8)	0.5	20BSS-2FH9-2	
		6FH4		0.094 (2.4)	0.13	20BSS-6FH4-2	
		6FH6		0.125 (3.2)	0.22	20BSS-6FH6-2	
		6FH9		0.19 (4.8)	0.5	20BSS-6FH9-2	
		2FH4		0.11 (2.8)	0.17	20BSS-2FH4-2D	
		2FH6		0.19 (4.8)	0.5	20BSS-2FH6-2D	
		2FH9		0.19 (4.8)	0.5	20BSS-2FH9-2D	

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Code	O-ring Material	Working Temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

Needle Valves and Pneumatic Needle Valves

- 10N Series, 10,000 psig (690 bar)
- 15N Series, 15,000 psig (1034 bar)
- 20N Series, 20,000 psig (1379 bar)
- 30N Series, 30,000 psig (2068 bar)
- 60N Series, 60,000 psig (4137 bar)



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15,000 psig (1034 bar) C-19

20N Series

20,000 psig (1379 bar) C-26

30N Series

30,000 psig (2068 bar) C-31

60N Series

60,000 psig (4137 bar) C-35

Pneumatic Needle Valves

Piston Style Pneumatic Needle Valves

Air to Open (Normally Closed) C-39

Piston Style Pneumatic Needle Valves

Air to Close (Normally Open) C-45

Ordering Number Description

C-49

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10N Series

10,000 psig (690 bar)

Features

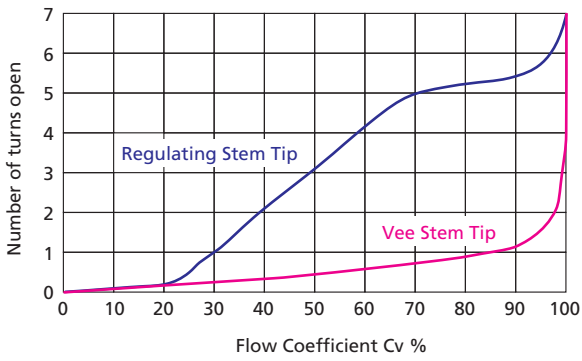
- ⦿ High tensile 316 Stainless Steel for the valve body and 17-4PH Stainless Steel for lower stem
- ⦿ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⦿ Metal-to-metal seating to achieve ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

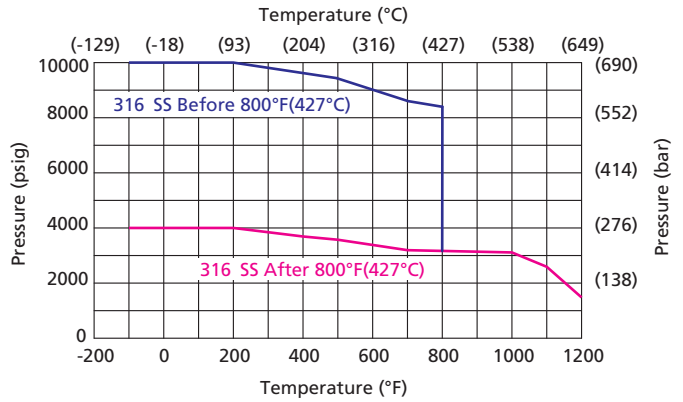
Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
9/16" O.D. Tubing	2FH9	0.359 (9.12)	1.75	10,000 (690)	-100°F~1200°F (-73°C~649°C)
3/4" O.D. Tubing	2FH12	0.516 (13.10)	2.80	10,000 (690)	
1" O.D. Tubing	2FH16	0.688 (17.48)	5.20	10,000 (690)	
3/4" Female NPT	FNS12	0.437 (11.10)	2.50	10,000 (690)	-100°F~400°F (-73°C~204°C)
3/4" Female ISO/BSP Tapered	FRT12				
1" Female NPT	FNS16	0.562 (14.27)	4.40	10,000 (690)	
1" Female ISO/BSP Tapered	FRT16				

- NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.
 2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).
 3. Packing Options
 PTFE is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available. Graphite packing not recommended for Hydrogen or Helium service.
 PTFE: -100°F~450°F (-73°C~232°C)
 RPTFE glass: -100°F~600°F (-73°C~316°C)
 Graphite: 0°F~800°F (-17.8°C~427°C)
 Extended stuffing box with Graphite: -100°F~1000°F (-73°C~649°C)

Flow Data at 100°F (38°C)

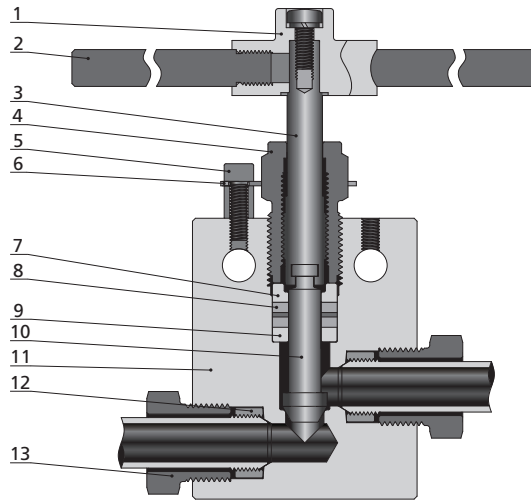


Pressure vs. Temperature Curve



NOTE: When temperature exceeds 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

Standard Materials of Construction

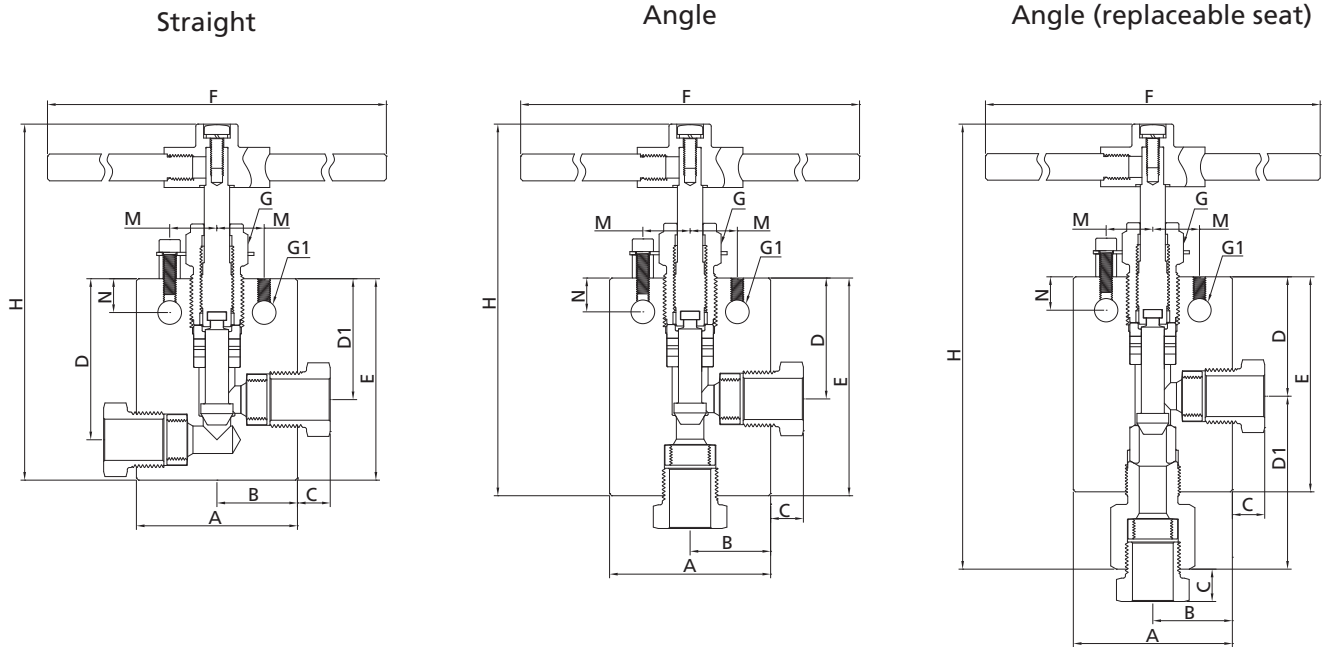


Item	Component	Material Grade/ASTM Specification
1	Handle Head	Stainless steel
2	Handle	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	<i>Packing</i>	<i>PTFE/RPTFE glass/Graphite/Extended stuffing box with Graphite</i>
9	<i>Packing Washer</i>	<i>17-4PH SS/A564</i>
10	<i>Lower Stem</i>	<i>17-4PH SS/A564</i>
11	Body	316 SS/A479
12	Collar	316 SS/A479 (For tubing connections)
13	Gland	316 SS/A479 (For tubing connections)
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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Ordering Information and Dimensions (Tubing Connection, 2-Way)



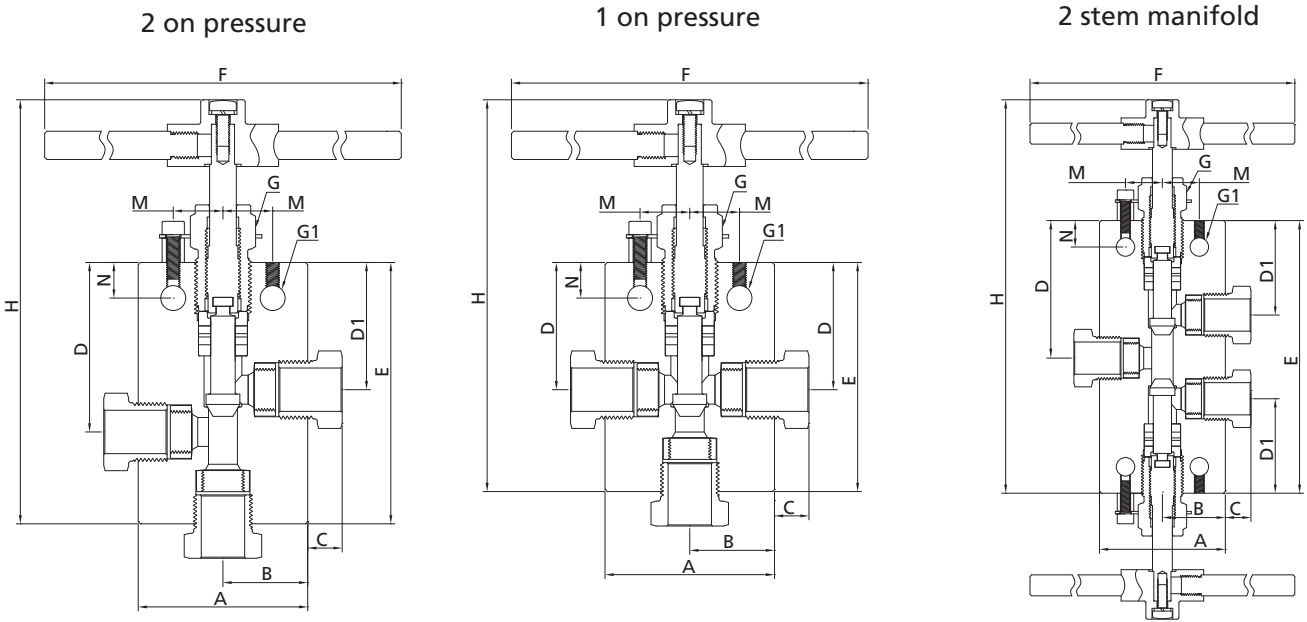
Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-1	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.20 (157.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-1	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.24 (183.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-1	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.33 (237.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-2	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-2	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.19 (81.1)	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-2	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.11 (104.5)	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.83 (249.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle (replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-3	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.57 (192.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-3	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.19 (81.1)	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.92 (226.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-3	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.11 (104.5)	5.25 (133.3)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.62 (295.4)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

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2 on pressure

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-4	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.95 (176.5)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-4	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.11 (206.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-4	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.58 (268.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

1 on pressure

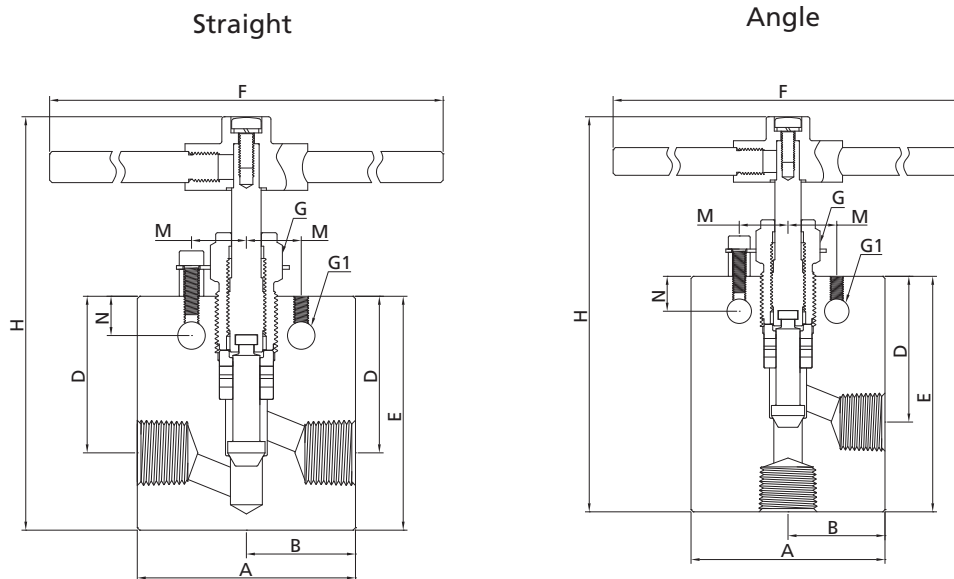
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-5	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-5	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-5	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.83 (249.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

2 stem manifold

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-2FH9-6	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.6)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-6	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.98 (253.5)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-6	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.20 (310.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

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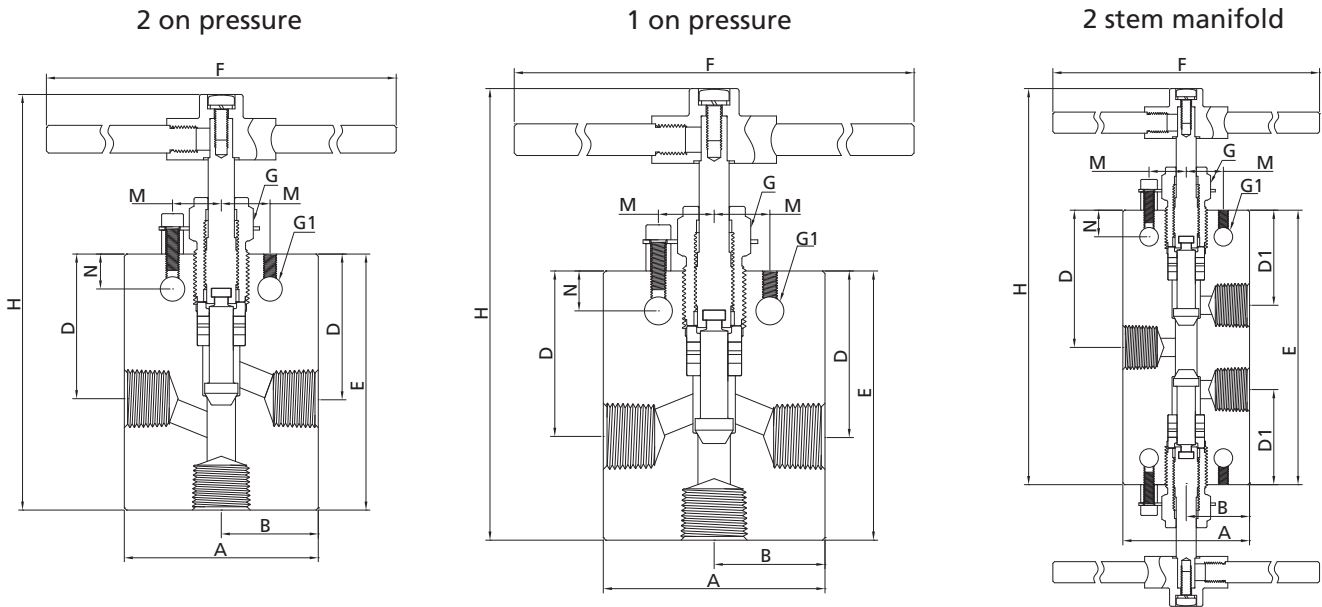
Ordering Information and Dimensions (Pipe Connection, 2-Way)



Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-FNS12-1	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.63 (66.8)	/	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.42 (188.6)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-1	FRT12		4.12 (104.7)	2.06 (52.3)		3.31 (84.1)		4.62 (117.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FNS16-1	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	4.62 (117.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-1	FRT16		4.12 (104.7)	2.06 (52.3)		3.31 (84.1)		4.62 (117.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-FNS12-2	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.63 (66.8)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-2	FRT12		4.12 (104.7)	2.06 (52.3)		3.31 (84.1)		5.12 (130.1)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FNS16-2	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.12 (130.1)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-2	FRT16		4.12 (104.7)	2.06 (52.3)		3.31 (84.1)		5.12 (130.1)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Ordering Information and Dimensions (Pipe Connection, 3-Way)



2 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-FNS12-4	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.65 (67.3)	/	4.62 (117.4)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.40 (213.4)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-4	FRT12														
10NSS-FNS16-4	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.88 (149.4)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	10.70 (271.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-4	FRT16														

1 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-FNS12-5	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.65 (67.3)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-5	FRT12														
10NSS-FNS16-5	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-5	FRT16														

2 stem manifold															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
10NSS-FNS12-6	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.28 (261.2)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-6	FRT12														
10NSS-FNS16-6	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.75 (95.3)	2.81 (71.42)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-6	FRT16														

- NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact the FITOK group or our authorized distributors.

Medium & High Pressure Fittings and Tubing
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15N Series

15,000 psig (1034 bar)

Features

- ⊙ High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- ⊙ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⊙ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⊙ Non-rotating stem and bar stock body design
- ⊙ Easy to assemble and replace packing
- ⊙ Packing located under stem threads
- ⊙ Reliable locking for packing gland
- ⊙ Options for Vee or Regulating stem tips
- ⊙ Five flow patterns available

Technical Data

Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/8" O.D. Tubing	DHL2	0.094 (2.39)	0.12	15, 000 (1034)	-100°F~800°F (-73°C~427°C)
1/4" O.D. Tubing	DHL4	0.188 (4.77)	0.65	15, 000 (1034)	
3/8" O.D. Tubing	DHL6	0.250 (6.35)	0.95	15, 000 (1034)	
1/2" O.D. Tubing	DHL8	0.375 (9.53)	1.90	15, 000 (1034)	
1/8" Female NPT	FNS2	0.078 (1.98)	0.11	15, 000 (1034)	-100°F~400°F (-73°C~204°C)
1/8" Female ISO/BSP Tapered	FRT2				
1/4" Female NPT	FNS4	0.203 (5.16)	0.63	15, 000 (1034)	
1/4" Female ISO/BSP Tapered	FRT4				
3/8" Female NPT	FNS6	0.219 (5.56)	0.75	15, 000 (1034)	
3/8" Female ISO/BSP Tapered	FRT6				
1/2" Female NPT	FNS8	0.312 (7.92)	1.30	15, 000 (1034)	
1/2" Female ISO/BSP Tapered	FRT8				

NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.

2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).

3. Packing Options

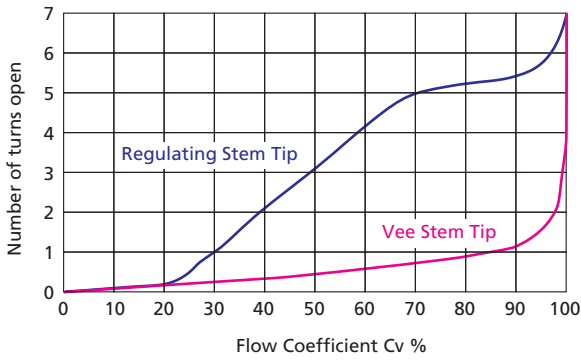
PTFE is the standard packing material, RPTFE glass and Graphite also available. Graphite packing not recommended for Hydrogen or Helium service.

PTFE: -100°F~450°F (-73°C~232°C)

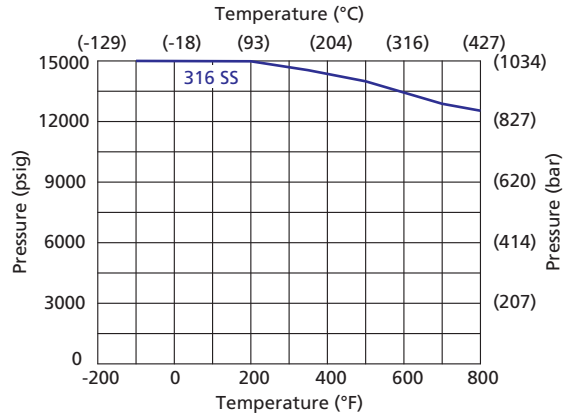
RPTFE glass: -100°F~600°F (-73°C~316°C)

Graphite: 0°F~800°F (-17.8°C~427°C)

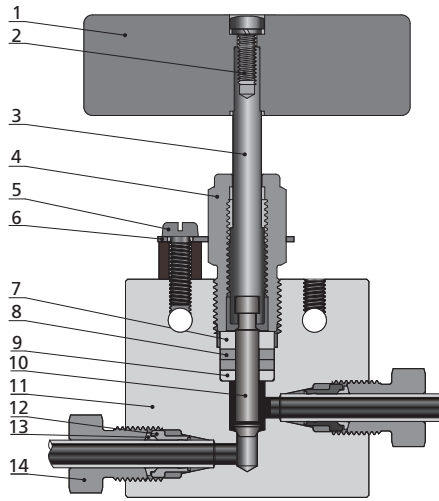
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	<i>Packing</i>	<i>PTFE/RPTFE/Graphite</i>
9	<i>Packing Washer</i>	<i>17-4PH SS/A564</i>
10	<i>Lower Stem</i>	<i>17-4PH SS/A564</i>
11	Body	316 SS/A479
12	Front Ferrule	316 SS/A479(For tubing connections)
13	Rear Ferrule	316 SS/A479(For tubing connections)
14	Nut	316 SS/A479(For tubing connections)
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

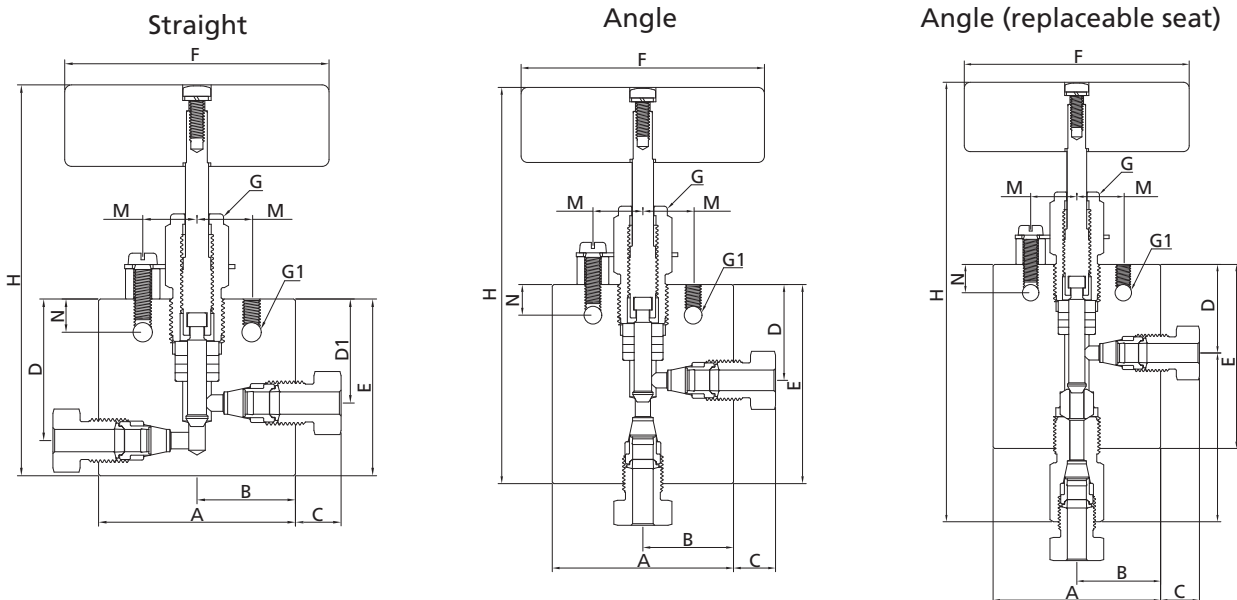
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

Ordering Information and Dimensions (Tubing Connection, 2-Way)

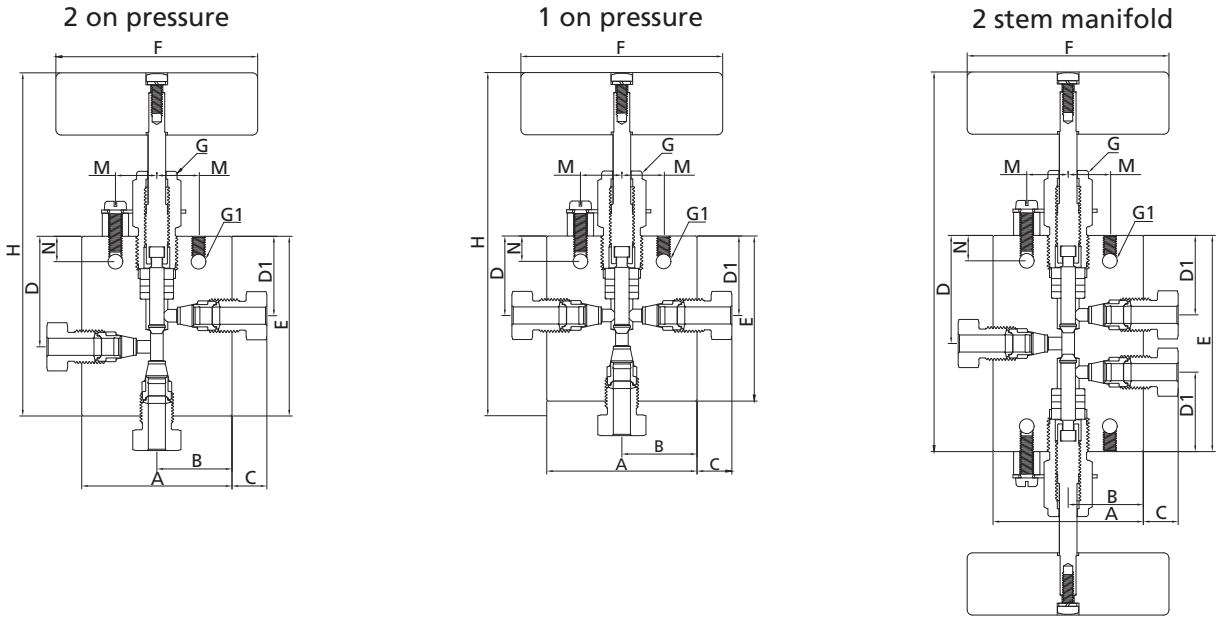


Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-1	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.06 (26.9)	0.81 (20.6)	1.38 (35.1)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-1	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.90 (124.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-1	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.97 (126.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-1	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.21 (157.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-2	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)	/	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.32 (84.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-2	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-2	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.40 (137.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-2	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.71 (170.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Angle (replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-3	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)	1.44 (36.5)	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.84 (97.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-3	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)	2.05 (52.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.97 (151.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-3	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)	2.32 (59.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.35 (161.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-3	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)	2.68 (68.1)	3.25 (82.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.54 (191.5)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Ordering Information and Dimensions (Tubing Connection, 3-Way)



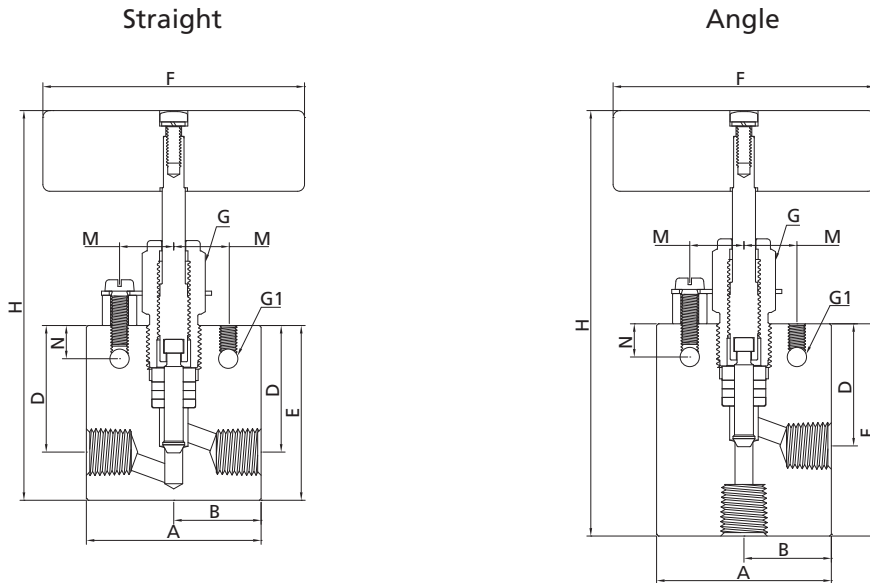
2 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-4	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.06 (26.9)	0.81 (20.6)	1.85 (46.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.45 (87.5)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-4	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.79 (70.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-4	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.76 (70.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.59 (142.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-4	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.38 (60.5)	1.75 (44.5)	3.80 (96.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.96 (176.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

1 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-5	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)	/	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.32 (84.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-5	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-5	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.40 (137.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-5	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.71 (170.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

2 stem manifold															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-DHL2-6	DHL2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.12 (28.5)	0.81 (20.6)	2.25 (57.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.00 (101.8)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-DHL4-6	DHL4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.28 (159.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL6-6	DHL6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.35 (161.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-DHL8-6	DHL8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.56 (65.0)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

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Ordering Information and Dimensions (Pipe Connection, 2-Way)



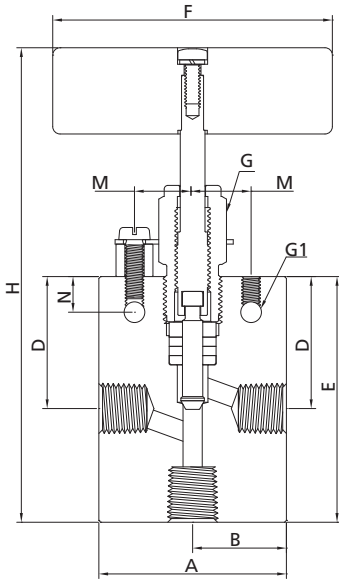
Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-1	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.82 (20.6)	/	1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.4)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-1	FRT2														
15NSS-FNS4-1	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-1	FRT4														
15NSS-FNS6-1	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-1	FRT6														
15NSS-FNS8-1	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-1	FRT8														

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-2	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.81 (20.6)	/	1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-2	FRT2														
15NSS-FNS4-2	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-2	FRT4														
15NSS-FNS6-2	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-2	FRT6														
15NSS-FNS8-2	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-2	FRT8														

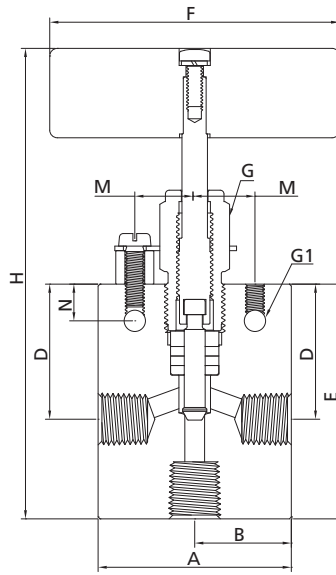
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Ordering Information and Dimensions (Pipe Connection, 3-Way)

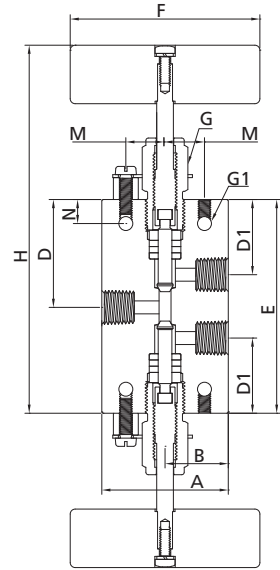
2 on pressure



1 on pressure



2 stem manifold



2 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-4	FNS2	0.078 (1.98)	1.50	0.75	/	0.82	/	1.57	1.75	0.62	0.17	3.33	0.56	0.31	0.63
15NSS-FRT2-4	FRT2		(38.1)	(19.1)		(20.6)		(40.0)	(44.5)	(15.8)	(4.3)	(84.6)	(14.2)	(7.9)	(15.9)
15NSS-FNS4-4	FNS4	0.203 (5.2)	2.00	1.00	/	1.41	/	2.62	3.00	0.75	0.22	5.51	0.62	0.38	0.75
15NSS-FRT4-4	FRT4		(50.8)	(25.4)		(35.8)		(66.6)	(76.2)	(19.1)	(5.6)	(140.0)	(15.8)	(9.7)	(19.1)
15NSS-FNS6-4	FNS6	0.219 (5.56)	2.50	1.25	/	1.41	/	2.62	3.00	0.75	0.22	5.47	0.62	0.38	1.00
15NSS-FRT6-4	FRT6		(63.5)	(31.8)		(35.8)		(66.6)	(76.2)	(19.1)	(5.6)	(138.9)	(15.8)	(9.7)	(25.4)
15NSS-FNS8-4	FNS8	0.312 (7.92)	3.00	1.50	/	2.06	/	3.62	4.00	1.00	0.34	6.94	0.69	0.50	1.38
15NSS-FRT8-4	FRT8		(76.2)	(38.1)		(52.3)		(92.0)	(101.6)	(25.4)	(8.6)	(176.26)	(17.5)	(12.7)	(35.1)

1 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-5	FNS2	0.078 (1.98)	1.50	0.75	/	0.82	/	1.38	1.75	0.62	0.17	3.13	0.56	0.31	0.63
15NSS-FRT2-5	FRT2		(38.1)	(19.1)		(20.6)		(35.0)	(44.5)	(15.8)	(4.3)	(79.5)	(14.2)	(7.9)	(15.9)
15NSS-FNS4-5	FNS4	0.203 (5.2)	2.00	1.00	/	1.41	/	2.44	3.00	0.75	0.22	5.33	0.62	0.38	0.75
15NSS-FRT4-5	FRT4		(50.8)	(25.4)		(35.8)		(62.0)	(76.2)	(19.1)	(5.6)	(135.4)	(15.8)	(9.7)	(19.1)
15NSS-FNS6-5	FNS6	0.219 (5.56)	2.50	1.25	/	1.41	/	2.44	3.00	0.75	0.22	5.34	0.62	0.38	1.00
15NSS-FRT6-5	FRT6		(63.5)	(31.8)		(35.8)		(62.0)	(76.2)	(19.1)	(5.6)	(135.7)	(15.8)	(9.7)	(25.4)
15NSS-FNS8-5	FNS8	0.312 (7.92)	3.00	1.50	/	2.06	/	3.38	4.00	1.00	0.34	6.69	0.69	0.50	1.38
15NSS-FRT8-5	FRT8		(76.2)	(38.1)		(52.3)		(85.9)	(101.6)	(25.4)	(8.6)	(169.9)	(17.5)	(12.7)	(35.1)

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C-25 Needle Valves and Pneumatic Needle Valves

2 stem manifold															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-6	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	1.00 (25.6)	0.68 (17.2)	2.02 (51.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.77 (95.8)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-6	FRT2														
15NSS-FNS4-6	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.27 (159.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-6	FRT4														
15NSS-FNS6-6	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.22 (158.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-6	FRT6														
15NSS-FNS8-6	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.56 (65.1)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.43 (214.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-6	FRT8														

NOTES: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized distributors.

20N Series

20,000 psig (1379 bar)

Features

- ⦿ Tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- ⦿ High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- ⦿ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Packing located under stem threads
- ⦿ Reliable locking for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	2FH4	0.125 (3.18)	0.31	20,000 (1379)	-100°F~1200°F (-73°C~649°C)
3/8	2FH6	0.204 (5.18)	0.68	20,000 (1379)	
9/16	2FH9	0.312 (7.92)	1.30	20,000 (1379)	
3/4	2FH12	0.438 (11.13)	2.50	20,000 (1379)	
1	2FH16	0.562 (14.27)	4.40	20,000 (1379)	

- NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.
 2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).
 3. Packing Options
 PTFE is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available. Graphite packing not recommended for Hydrogen or Helium service.
 PTFE: -100°F~450°F (-73°C~232°C)
 RPTFE glass: -100°F~600°F (-73°C~316°C)
 Graphite: 0°F~800°F (-17.8°C~427°C)
 Extended stuffing box with Graphite: -100°F~1000°F (-73°C~649°C)

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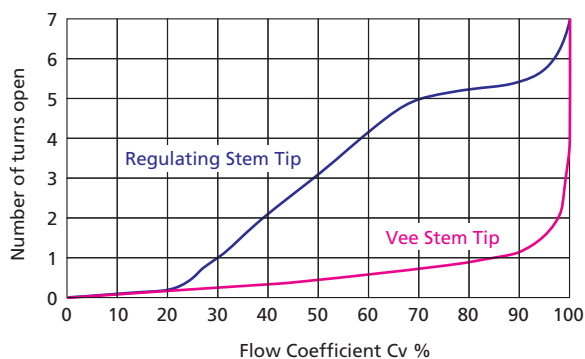
Sour Service Products

Subsea Valves

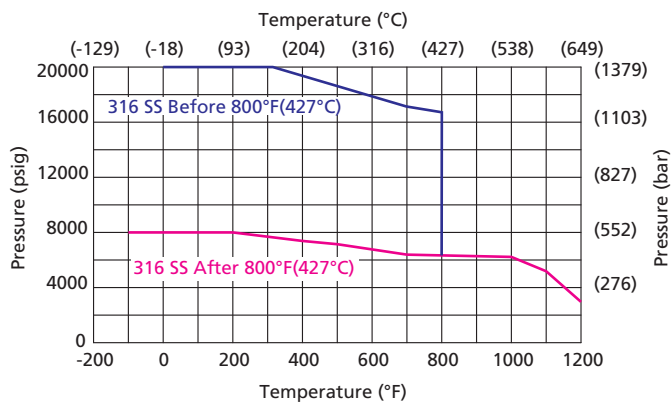
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Flow Data at 100°F (38°C)

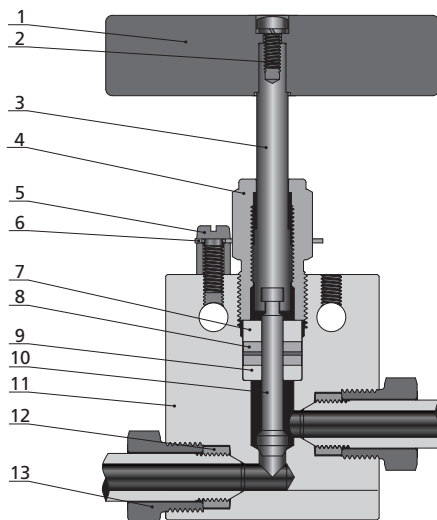


Pressure vs. Temperature Curve



NOTE: When temperature exceeds 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

Standard Materials of Construction

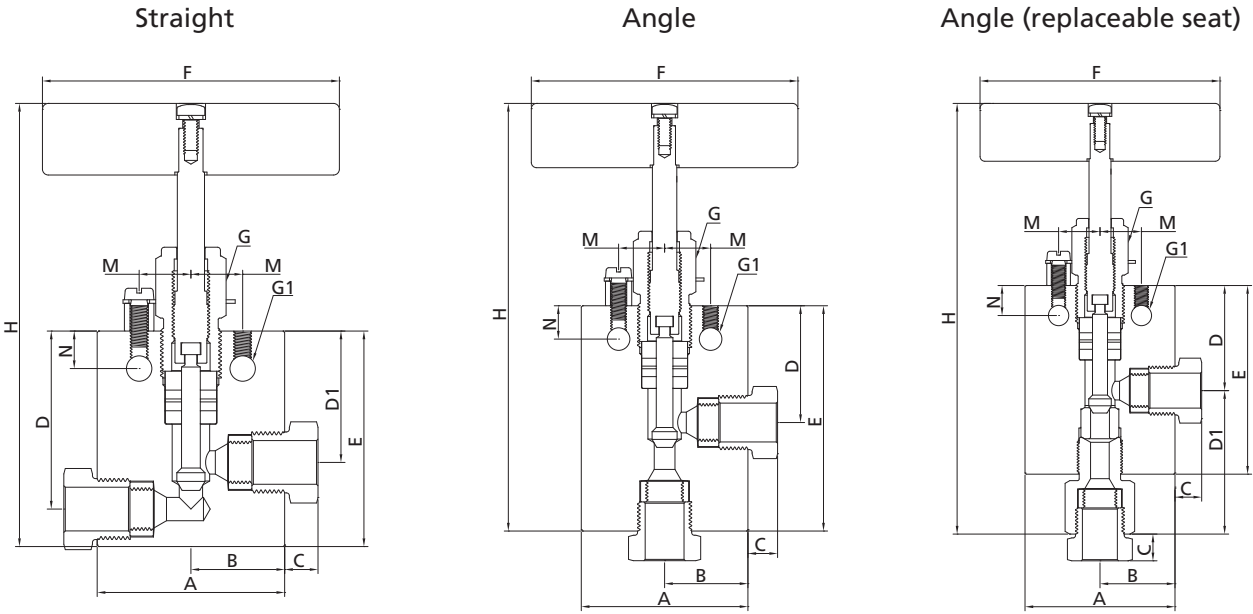


Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	<i>Packing</i>	<i>PTFE/RPTFE glass/Graphite/Extended stuffing box with Graphite</i>
9	<i>Packing Washer</i>	<i>17-4PH SS/A564</i>
10	<i>Lower Stem</i>	<i>17-4PH SS/A564</i>
11	Body	316 SS/A479
12	Collar	316 SS/A479(For tubing connections)
13	Gland	316 SS/A479(For tubing connections)
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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Ordering Information and Dimensions (Tubing Connection, 2-Way)



Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-1	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-1	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-1	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-1	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.37 (187.2)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-1	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-2	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-2	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-2	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-2	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-2	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Medium & High Pressure Fittings and Tubing

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Line Filters

Sour Service Products

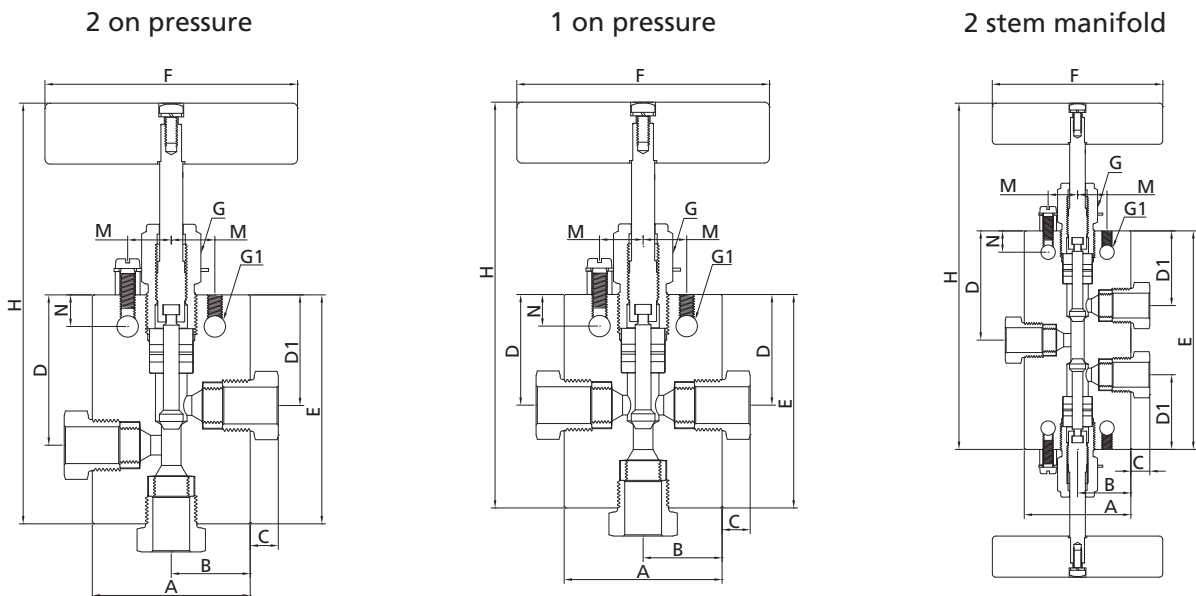
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Angle (replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-3	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.10 (154.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-3	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.16 (156.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-3	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.13 (79.4)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.58 (192.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-3	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.30 (236.3)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-3	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107.4)	5.25 (133.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.86 (301.3)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-4	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-4	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-4	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-4	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.24 (209.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-4	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.70 (271.9)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

1 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-5	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-5	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-5	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-5	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-5	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

2 stem manifold															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-6	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.23 (158.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-6	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.24 (158.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-6	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.44 (214.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-6	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.11 (257.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-6	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

NOTES: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized distributors.

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30N Series

30,000 psig (2068 bar)

Features

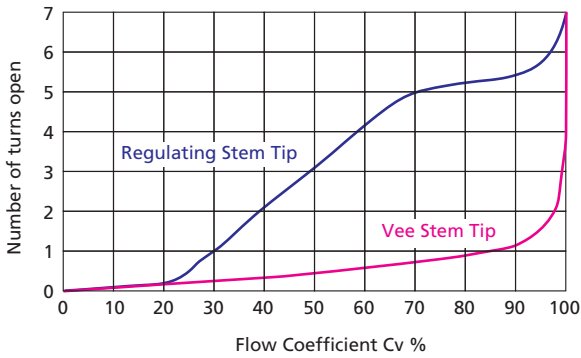
- ⦿ Tubing sizes available in 1/4", 3/8" and 9/16"
- ⦿ High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- ⦿ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

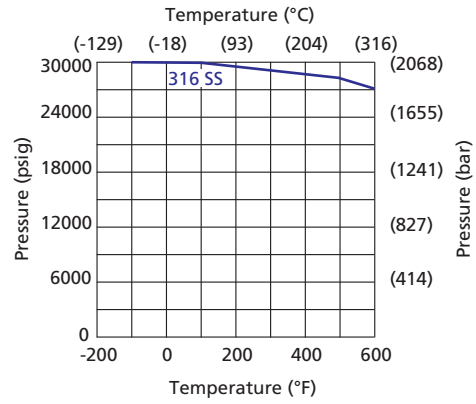
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	6FH4	0.094 (2.39)	0.12	30,000 (2068)	-100°F~600°F (-73°C~316°C)
3/8	6FH6	0.125 (3.18)	0.23	30,000 (2068)	
9/16	6FH9	0.125 (3.18)	0.33	30,000 (2068)	

- NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.
 2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).
 3. Packing Options
 PTFE is the standard packing material, RPTFE glass also available
 PTFE: -100°F~450°F (-73°C~232°C)
 RPTFE glass: -100°F~600°F(-73°C~316°C)

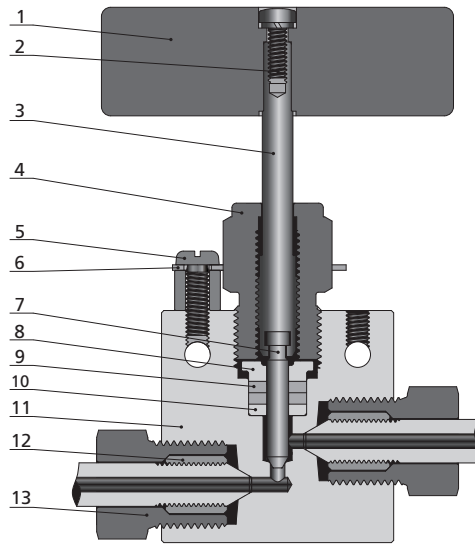
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Standard Materials of Construction

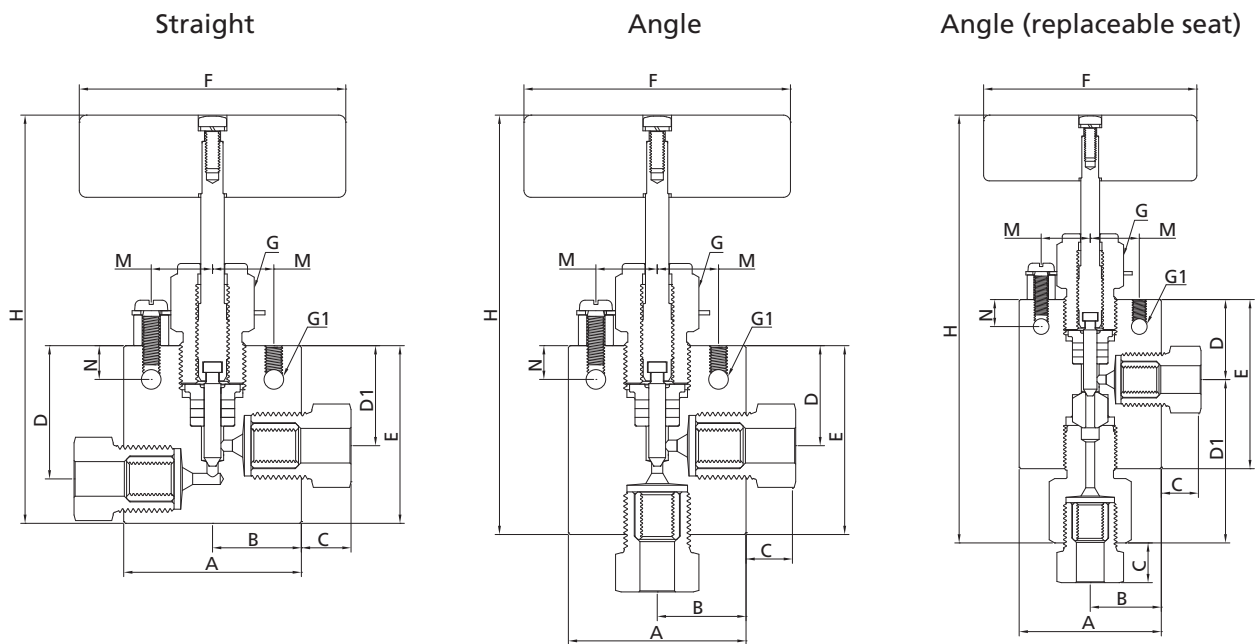


Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	<i>Lower Stem</i>	<i>17-4PH/A564</i>
8	Packing Ring	C63000/B150
9	<i>Packing</i>	<i>PTFE / RPTFE</i>
10	<i>Packing Washer</i>	<i>17-4PH SS/A564</i>
11	Body	316 SS/A479
12	Collar	316 SS/A479
13	Gland	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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Ordering Information and Dimensions (Tubing Connection, 2-Way)



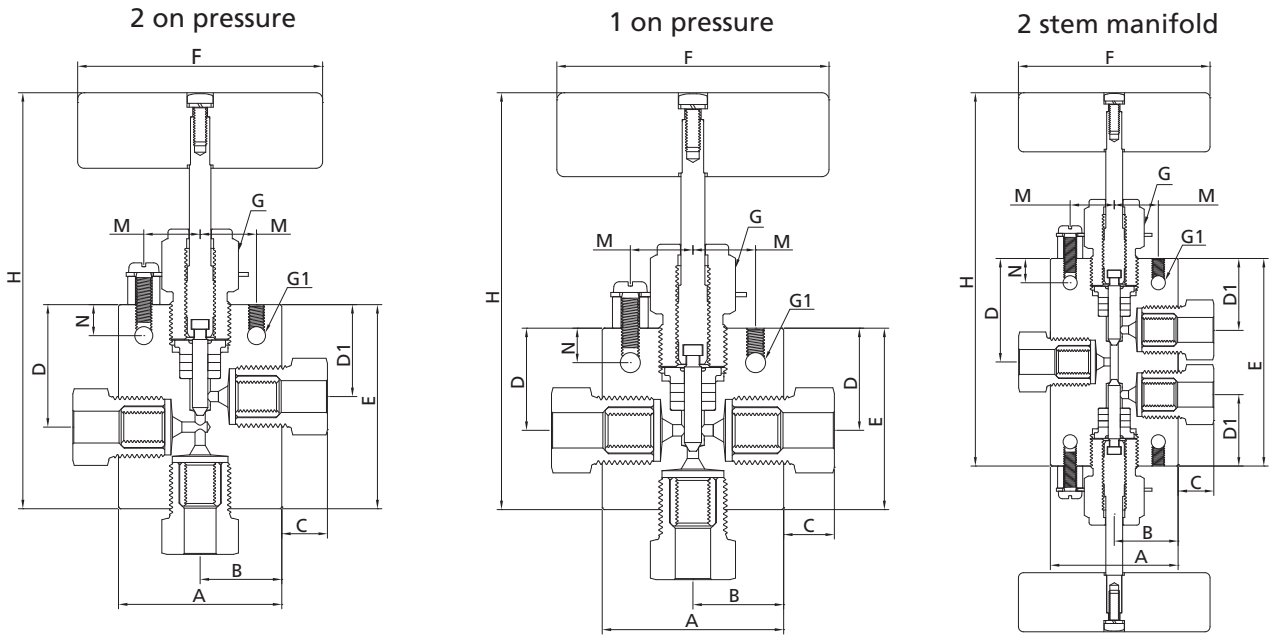
Straight															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-1	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-1	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-1	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-2	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	/	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-2	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	/	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-2	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	/	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle (replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-3	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.06 (52.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.88 (149.2)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-3	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.67)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155.4)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-3	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.6)	2.55 (65.0)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162.4)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

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Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-4	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.12 (53.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.81 (122.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-4	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.19 (131.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-4	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.88 (73.2)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.57 (141.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

1 on pressure

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-5	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	/	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-5	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	/	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-5	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	/	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

2 stem manifold

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-6	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.53 (38.9)	1.12 (28.5)	3.06 (77.7)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.75 (146.0)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-6	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.62 (41.2)	1.12 (28.5)	3.25 (82.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.94 (150.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-6	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.88 (47.8)	1.12 (28.5)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.44 (163.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized representatives.

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60N Series

60,000 psig (4137 bar)

Features

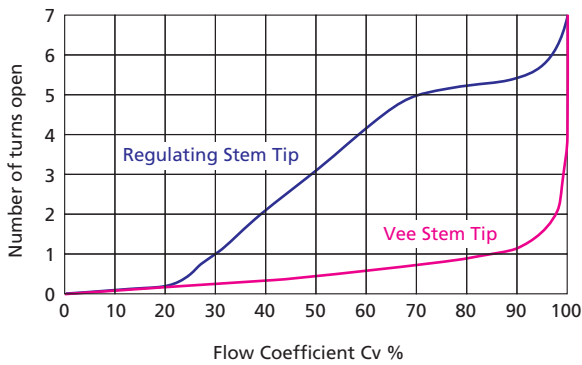
- ⦿ Tubing sizes available in 1/4", 3/8" and 9/16"
- ⦿ High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- ⦿ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

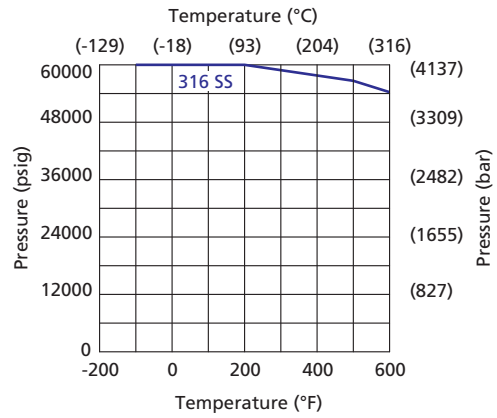
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	6FH4	0.063 (1.59)	0.08	60,000 (4137)	-100°F~600°F (-73°C~316°C)
3/8	6FH6	0.063 (1.59)	0.09	60,000 (4137)	
9/16	6FH9	0.078 (1.98)	0.14	60,000 (4137)	

- NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.
 2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).
 3. Packing Options
 Nylon is the standard packing material, RPTFE glass also available
 Nylon: 40°F~230°F (4.4°C~110°C)
 RPTFE glass: -100°F~600°F (-73°C~316°C)

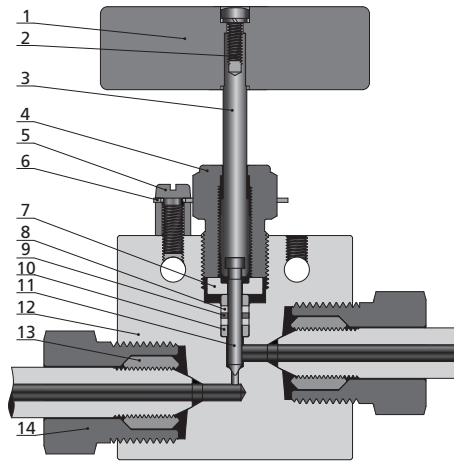
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Standard Materials of Construction

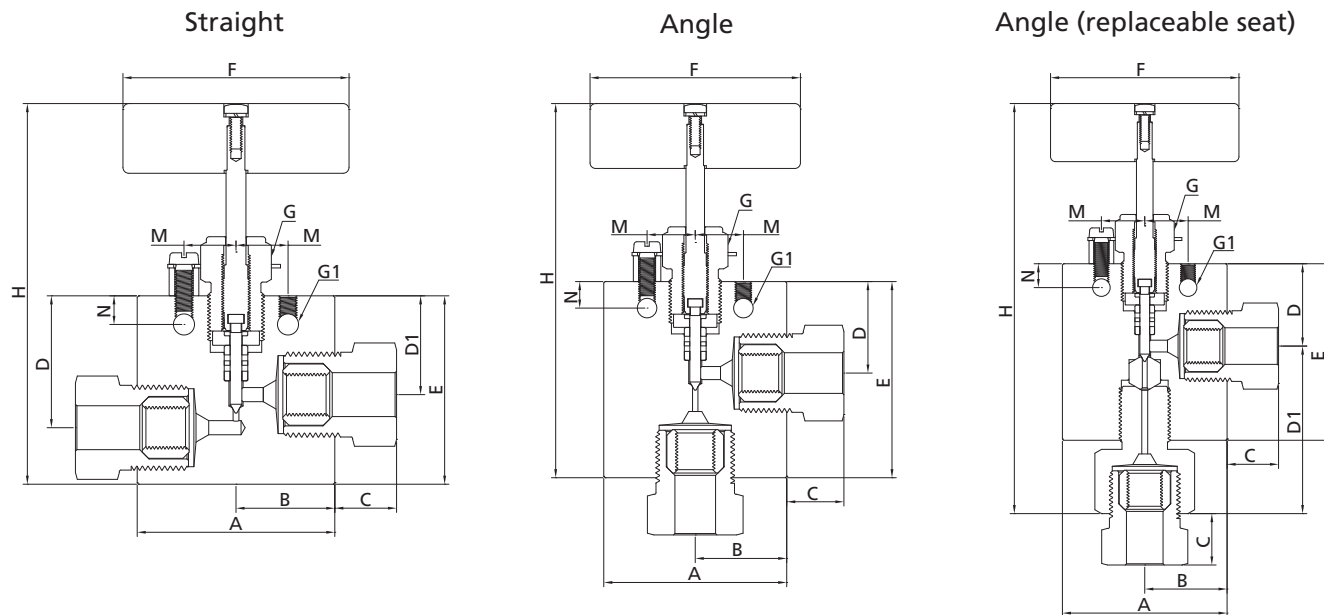


Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	17-4PH SS/A564
8	<i>Packing</i>	<i>Nylon/IRPTFE</i>
9	<i>Retaining Ring</i>	<i>PEEK</i>
10	<i>Packing Washer</i>	<i>17-4PH SS/A564</i>
11	<i>Lower Stem</i>	<i>17-4PH SS/A564</i>
12	Body	316 SS/A479
13	Collar	316 SS/A479
14	Gland	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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Ordering Information and Dimensions (Tubing Connection, 2-Way)



Straight

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-1	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-1	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.89 (124.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-1	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.14 (130.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle

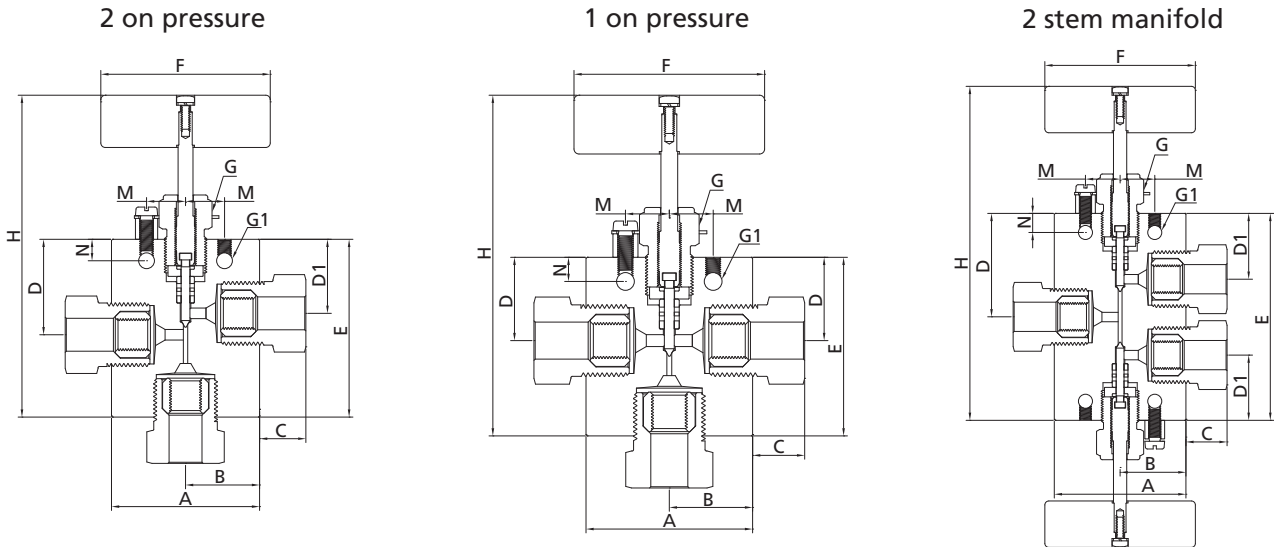
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-2	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	/	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-2	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	/	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-2	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	/	2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle (replaceable seat)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-3	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.12 (53.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.07 (154.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-3	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.36 (59.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.30 (160.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-3	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	2.68 (68.8)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.65 (168.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

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Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-4	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.6)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-4	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.75 (68.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.34 (135.8)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-4	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	3.03 (77.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.67 (143.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

1 on pressure															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-5	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	/	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-5	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	/	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-5	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	/	2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

2 stem manifold															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-6	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.69)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (154.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-6	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-6	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (104.7)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (171.8)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized representatives.

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Pneumatic Needle Valves

Piston Style Pneumatic Needle Valves Air to Open (Normally Closed)

Features

- ⦿ Small and compact piston actuator
- ⦿ Air-to-open with spring return
- ⦿ Positive shut-off with metal-to-metal seating
- ⦿ Yoke design for separation of process and air pressure
- ⦿ Easy stem replacement
- ⦿ Standard stem position indicator
- ⦿ High actuator cycle life
- ⦿ Anodized aluminum actuator to provide good corrosion and wear resistance
- ⦿ Tested to 100,000 cycles at 100 psig (6.9 bar) with no leakage, no signs of wear or fatigue

Technical Data

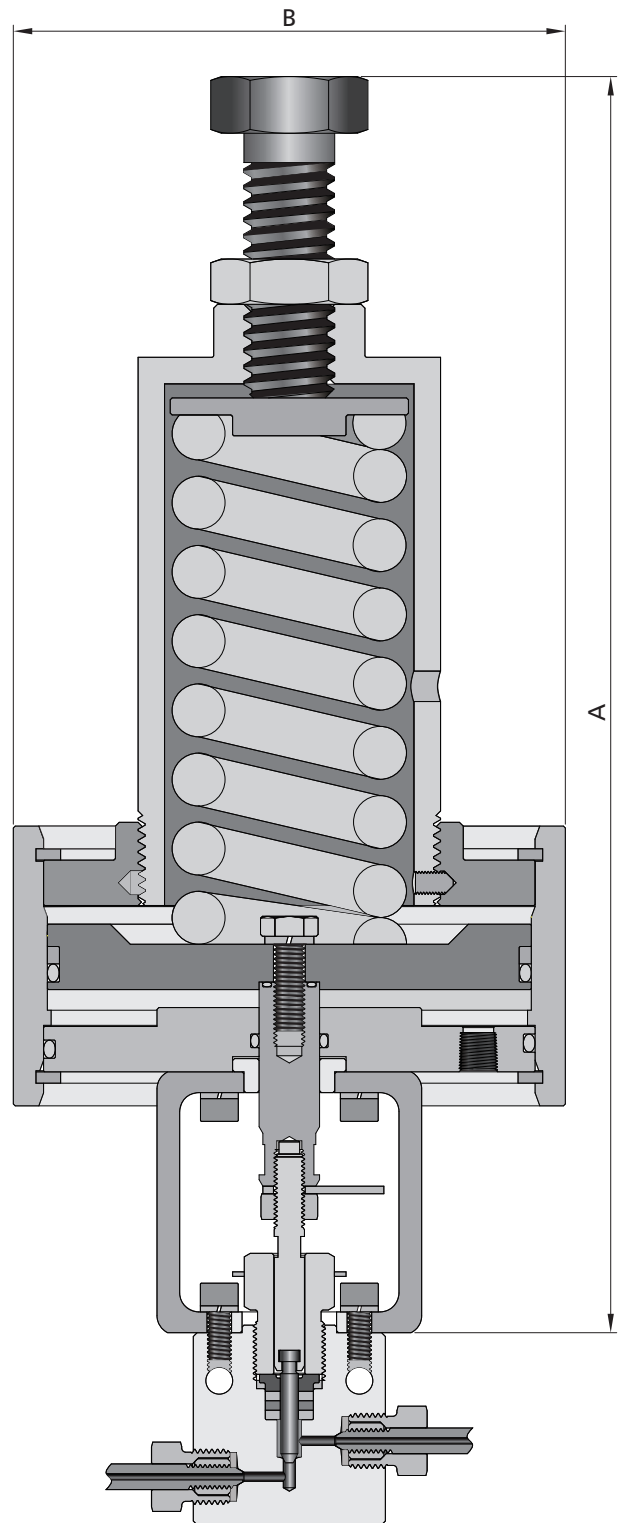
Maximum working pressure for air operator		100 psig (6.9 bar)
Air operator temperature range		-10°F~200°F (-23°C~93°C)
Air operator material	Cylinder, piston, cover plates, spring housing	Anodized Aluminum
	Yoke	Stainless Steel
	O-ring	NBR
Air inlet connection		1/8" or 3/8" Female NPT

Dimensions

Basic Ordering Number	Air Inlet Connection	Area of Piston sq.in. (sq. cm)	A in. (mm)	B in. (mm)	
10NSS-2FH9-X	1/8" NPT	51.20 (330.3)	16.24 (412.5)	6.54 (166.0)	
10NSS-2FH12-X		92.58 (597.3)	20.72 (526.3)	8.58 (218.0)	
10NSS-2FH16-X	3/8" NPT	112.55 (726.1)	24.12 (612.7)	9.57 (243.0)	
10NSS-FNS12-X	1/8" NPT	92.58 (597.3)	20.72 (526.3)	8.58 (218.0)	
10NSS-FRT12-X		92.58 (597.3)	20.72 (526.3)	8.58 (218.0)	
10NSS-FNS16-X	3/8" NPT	112.55 (726.1)	24.12 (612.7)	9.57 (243.0)	
10NSS-FRT16-X		112.55 (726.1)	24.12 (612.7)	9.57 (243.0)	
15NSS-DHL2-X	1/8" NPT	7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-DHL4-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-DHL6-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-DHL8-X		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)	
15NSS-FNS2-X		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-FRT2-X		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-FNS4-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-FRT4-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-FNS6-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-FRT6-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
15NSS-FNS8-X		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)	
15NSS-FRT8-X		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)	
20NSS-2FH4-X		3/8" NPT	19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
20NSS-2FH6-X			19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
20NSS-2FH9-X			51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
20NSS-2FH12-X			92.58 (597.3)	20.72 (526.3)	8.58 (218.0)
20NSS-2FH16-X	112.55 (726.1)		24.12 (612.7)	9.57 (243.0)	
30NSS-6FH4-X	1/8" NPT		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
30NSS-6FH6-X			19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
30NSS-6FH9-X			19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
60NSS-6FH4-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
60NSS-6FH6-X		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)	
60NSS-6FH9-X	19.95 (128.7)	13.08 (332.3)	5.75 (146.0)		

NOTES: 1. A is the dimension of stem in closed position.

2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.



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10N Series

10,000 psig (690 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)							
10NSS-2FH9-X	Air Pressure psig (bar)	40 (2.8)	50 (3.5)	60 (4.1)	65 (4.5)							1.75
	Spring Pre-Compression in. (mm)	0.17 (4.2)	0.25 (6.3)	0.33 (8.4)	0.41 (10.5)							
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)							
10NSS-2FH12-X	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	70 (4.8)							2.80
	Spring Pre-Compression in. (mm)	0.23 (5.8)	0.34 (8.7)	0.46 (11.6)	0.57 (14.5)							
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)							
10NSS-2FH16-X	Air Pressure psig (bar)	50 (3.5)	60 (4.1)	70 (4.8)	80 (5.5)							5.20
	Spring Pre-Compression in. (mm)	0.29 (7.4)	0.44 (11.1)	0.58 (14.8)	0.73 (18.5)							
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)							
10NSS-FNS12-X	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)							2.09
	Spring Pre-Compression in. (mm)	0.17 (4.4)	0.26 (6.5)	0.34 (8.7)	0.43 (10.9)							
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)							
10NSS-FNS16-X	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)							4.40
	Spring Pre-Compression in. (mm)	0.20 (5.1)	0.30 (7.7)	0.41 (10.3)	0.51 (12.9)							
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)							

- NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.
2. The values of Cv shown are for 2-way straight pattern valves.
3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).
4. All dimensions are for reference only and are subject to change.

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15N Series
15,000 psig (1034 bar)

Basic Ordering Number		System Pressure KSI (MPa)								Flow Coefficient (Cv)
		1-6 (6.9-41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	15 (103.4)			
15NSS-DHL2-X	Air Pressure psig (bar)	60 (4.1)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)			0.10
	Spring Pre-Compression in. (mm)	0.10 (2.5)	0.13 (3.3)	0.16 (4.1)	0.19 (4.9)	0.22 (5.7)	0.24 (6.1)			
	Stem Travel in. (mm)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)			
15NSS-DHL4-X	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)			0.54
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)			
15NSS-DHL6-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)			0.95
15NSS-DHL8-X	Air Pressure psig (bar)	50 (3.5)	60 (4.1)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)			1.90
	Spring Pre-Compression in. (mm)	0.27 (6.8)	0.36 (9.1)	0.45 (11.4)	0.54 (13.6)	0.63 (15.9)	0.67 (17.0)			
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)			
15NSS-FNS2-X	Air Pressure psig (bar)	60 (4.1)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)			0.07
	Spring Pre-Compression in. (mm)	0.10 (2.5)	0.13 (3.3)	0.16 (4.1)	0.19 (4.9)	0.22 (5.7)	0.24 (6.1)			
15NSS-FRT2-X	Stem Travel in. (mm)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)			
15NSS-FNS4-X	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)			0.47
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)			
15NSS-FRT4-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)			
15NSS-FNS6-X	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)			0.59
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)			
15NSS-FRT6-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)			
15NSS-FNS8-X	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)			1.04
	Spring Pre-Compression in. (mm)	0.20 (5.0)	0.26 (6.6)	0.33 (8.3)	0.39 (9.9)	0.46 (11.6)	0.49 (12.4)			
15NSS-FRT8-X	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)			

- NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.
 2. The values of Cv shown are for 2-way straight pattern valves.
 3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).
 4. All dimensions are for reference only and are subject to change.

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C-43 Needle Valves and Pneumatic Needle Valves

20N Series

20,000 psig (1379 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Flow Coefficient (Cv)	
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)			
20NSS-2FH4-X	Air Pressure psig (bar)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	90 (6.2)			0.29
	Spring Pre-Compression in. (mm)	0.07 (1.9)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.30 (7.7)	0.34 (8.6)	0.38 (9.6)			
20NSS-2FH6-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)			0.62
20NSS-2FH9-X	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	90 (6.2)			1.30
	Spring Pre-Compression in. (mm)	0.13 (3.3)	0.20 (5.0)	0.26 (6.6)	0.33 (8.3)	0.39 (9.9)	0.46 (11.6)	0.52 (13.2)	0.59 (14.9)	0.65 (16.5)			
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)			
20NSS-2FH12-X	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)			2.41
	Spring Pre-Compression in. (mm)	0.17 (4.4)	0.26 (6.5)	0.34 (8.7)	0.43 (10.9)	0.52 (13.1)	0.60 (15.3)	0.69 (17.4)	0.77 (19.6)	0.86 (21.8)			
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)			
20NSS-2FH16-X	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	80 (5.5)	85 (5.9)	95 (6.6)	100 (6.9)			4.40
	Spring Pre-Compression in. (mm)	0.20 (5.1)	0.30 (7.7)	0.41 (10.3)	0.51 (12.9)	0.61 (15.4)	0.71 (18.0)	0.81 (20.6)	0.91 (23.1)	1.01 (25.7)			
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)			

NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.

2. The values of Cv shown are for 2-way straight pattern valves.

3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).

4. All dimensions are for reference only and are subject to change.

30N Series

30,000 psig (2068 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Flow Coefficient (Cv)	
		1-10 (6.9-69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)	22 (151.7)	24 (165.5)	26 (179.3)	28 (193.1)		30 (206.8)
30NSS-6FH4-X	Air Pressure psig (bar)	55 (3.8)	60 (4.1)	65 (4.5)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	85 (5.9)	90 (6.2)	95 (6.6)	100 (6.9)	0.12
30NSS-6FH6-X	Spring Pre-Compression in. (mm)	0.14 (3.8)	0.18 (4.6)	0.21 (5.4)	0.24 (6.1)	0.27 (6.9)	0.30 (7.7)	0.33 (8.4)	0.36 (9.2)	0.39 (10)	0.42 (10.7)	0.45 (11.5)	0.22
30NSS-6FH9-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.31

NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.

2. The values of Cv shown are for 2-way straight pattern valves.

3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).

4. All dimensions are for reference only and are subject to change.

60N Series
60,000 psig (4137 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Flow Coefficient (Cv)	
		1-15 (6.9-103.4)	20 (137.9)	25 (172.4)	30 (206.8)	35 (241.3)	40 (275.8)	45 (310.3)	50 (344.7)	55 (379.2)	60 (413.7)		
60NSS-6FH4-X	Air Pressure psig (bar)	55 (3.8)	65 (4.5)	65 (4.5)	75 (5.2)	75 (5.2)	85 (5.9)	95 (6.6)	95 (6.6)	95 (6.6)	95 (6.6)		0.08
60NSS-6FH6-X	Spring Pre-Compression in. (mm)	0.12 (3.2)	0.19 (4.8)	0.19 (4.8)	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.38 (9.7)	0.38 (9.7)	0.44 (11.2)	0.50 (12.7)		0.09
60NSS-6FH9-X	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.13 (3.2)		0.14

- NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.
 2. The values of Cv shown are for 2-way straight pattern valves.
 3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).
 4. All dimensions are for reference only and are subject to change.

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Piston Style Pneumatic Needle Valves

Air to Close (Normally Open)

Features

- ⦿ Small and compact piston actuator
- ⦿ Air-to-close with spring return
- ⦿ Positive shut-off with metal-to-metal seating
- ⦿ Yoke design for separation of process and air pressure
- ⦿ Easy stem replacement
- ⦿ Standard stem position indicator
- ⦿ High actuator cycle life
- ⦿ Anodized aluminum actuator to provide good corrosion and wear resistance
- ⦿ Tested to 100,000 cycles at 100 psig (6.9 bar) with no leakage, no signs of wear or fatigue

Technical Data

Maximum working pressure for air operator		100 psig (6.9 bar)
Air operator temperature range		-10°F~200°F (-23°C~93°C)
Air operator material	Cylinder, piston, cover plates, spring housing	Anodized Aluminum
	Yoke	Stainless Steel
	O-ring	NBR
Air inlet connection		1/8" or 3/8" Female NPT

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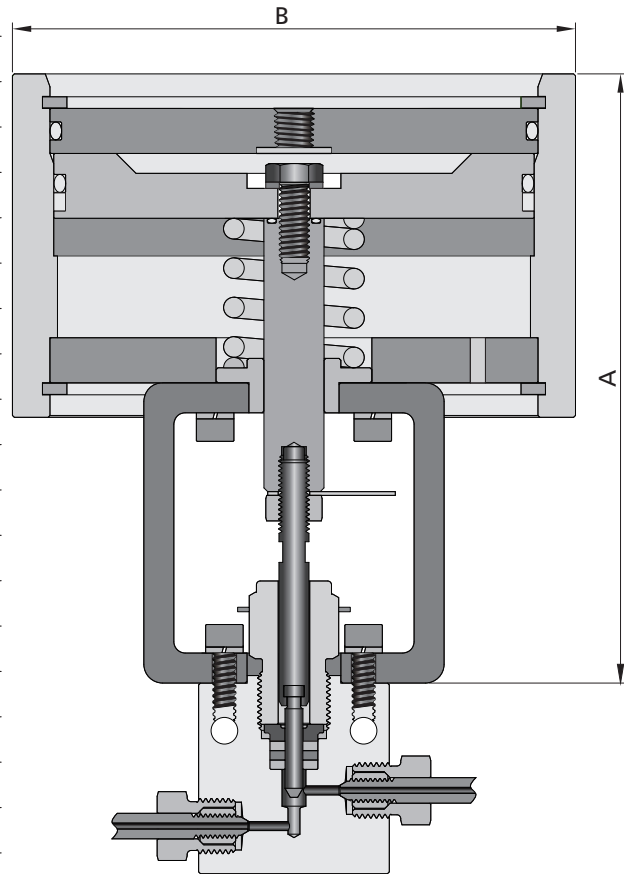
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Basic Ordering Number	Air Inlet Connection	Area of Piston sq.in. (sq. cm)	A in. (mm)	B in. (mm)	
10NSS-2FH9-X	1/8" NPT	51.20 (330.3)	8.27 (210.0)	6.54 (166.0)	
10NSS-2FH12-X		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)	
10NSS-2FH16-X	3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)	
10NSS-FNS12-X	1/8" NPT	92.58 (597.3)	10.55 (268.0)	8.58 (218.0)	
10NSS-FRT12-X		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)	
10NSS-FNS16-X	3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)	
10NSS-FRT16-X		112.55 (726.1)	12.77 (324.4)	9.57 (243.0)	
15NSS-DHL2-X	1/8" NPT	7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-DHL4-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-DHL6-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-DHL8-X		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)	
15NSS-FNS2-X		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-FRT2-X		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)	
15NSS-FNS4-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-FRT4-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-FNS6-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-FRT6-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
15NSS-FNS8-X		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)	
15NSS-FRT8-X		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)	
20NSS-2FH4-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
20NSS-2FH6-X		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)	
20NSS-2FH9-X		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)	
20NSS-2FH12-X		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)	
20NSS-2FH16-X		3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)
30NSS-6FH4-X		1/8" NPT	19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
30NSS-6FH6-X			19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
30NSS-6FH9-X			19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
60NSS-6FH4-X	19.95 (128.7)		5.94 (151.0)	5.75 (146.0)	
60NSS-6FH6-X	19.95 (128.7)		5.94 (151.0)	5.75 (146.0)	
60NSS-6FH9-X	19.95 (128.7)		5.94 (151.0)	5.75 (146.0)	



NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

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10N Series
10,000 psig (690 bar)

Basic Ordering Number		System Pressure KSI (MPa)								Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)						
10NSS-2FH9-X	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	40 (2.8)	50 (3.5)					0.24 (6.0)	1.75
10NSS-2FH12-X	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	45 (3.1)	50 (3.5)					0.35 (9.0)	2.80
10NSS-2FH16-X	Air Pressure psig (bar)	30 (2.1)	40 (2.8)	50 (3.5)	60 (4.2)					0.39 (10.0)	5.20
10NSS-FNS12-X 10NSS-FRT12-X	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	35 (2.4)	40 (2.8)					0.35 (9.0)	2.09
10NSS-FNS16-X 10NSS-FRT16-X	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	40 (2.8)	45 (3.1)					0.39 (10.0)	3.40

- NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.
 2. The values of Cv shown are for 2-way straight pattern valves.
 3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).
 4. All dimensions are for reference only and are subject to change.

15N Series
15,000 psig (1034 bar)

Basic Ordering Number		System Pressure KSI (MPa)								Stem Travel in. (mm)	Flow Coefficient (Cv)	
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	15 (103.4)				
15NSS-DHL2-X	Air Pressure psig (bar)	45 (3.1)	55 (3.8)	60 (4.2)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)			0.12 (3.0)	0.10
15NSS-DHL4-X 15NSS-DHL6-X	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)			0.19 (4.9)	0.54 0.95
15NSS-DHL8-X	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	45 (3.1)	50 (3.5)	60 (4.2)	70 (4.8)	75 (5.2)			0.24 (6.0)	1.90
15NSS-FNS2-X 15NSS-FRT2-X	Air Pressure psig (bar)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)	100 (6.9)	100 (6.9)			0.12 (3.0)	0.07
15NSS-FNS4-X 15NSS-FRT4-X	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)			0.19 (4.9)	0.47
15NSS-FNS6-X 15NSS-FRT6-X	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)			0.19 (4.9)	0.59
15NSS-FNS8-X 15NSS-FRT8-X	Air Pressure psig (bar)	20 (1.4)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	55 (3.8)			0.24 (6.0)	1.04

- NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.
 2. The values of Cv shown are for 2-way straight pattern valves.
 3. The values of Cv for 2-way angle patterns will increase by about 50% (with water).
 4. All dimensions are for reference only and are subject to change.

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20N Series

20,000 psig (1379 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)			
20NSS-2FH4-X	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)	75 (5.2)		0.19 (4.9)	0.29
20NSS-2FH6-X													0.62
20NSS-2FH9-X	Air Pressure psig (bar)	20 (1.4)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)		0.24 (6.0)	1.30
20NSS-2FH12-X	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)		0.35 (9.0)	2.41
20NSS-2FH16-X	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	75 (5.2)	80 (5.5)		0.39 (10.0)	3.40

NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.

- The values of Cv shown are for 2-way straight pattern valves.
- The values of Cv for 2-way angle patterns will increase by about 50% (with water).
- All dimensions are for reference only and are subject to change.

30N Series

30,000 psig (2068 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-12 (6.9-82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)	22 (151.7)	24 (165.7)	26 (179.3)	28 (193.1)	30 (206.8)		
30NSS-6FH4-X	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	85 (5.9)	85 (5.9)	0.19 (4.9)	0.12
30NSS-6FH6-X													0.22
30NSS-6FH9-X													

NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.

- The values of Cv shown are for 2-way straight pattern valves.
- The values of Cv for 2-way angle patterns will increase by about 50% (with water).
- All dimensions are for reference only and are subject to change.

60N Series

60,000 psig (4137 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-20 (6.9-137.9)	25 (172.4)	30 (206.8)	35 (241.3)	40 (275.8)	45 (310.3)	50 (344.7)	55 (379.2)	60 (413.7)			
60NSS-6FH4-X	Air Pressure psig (bar)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	65 (4.5)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)		0.19 (4.9)	0.08
60NSS-6FH6-X													0.09
60NSS-6FH9-X													

NOTES: 1. -X: Designator of valve flow patterns. Valves are available in 6 different flow patterns (-1 to -6). For details, please refer to the FITOK Catalog for Medium & High Pressure Needle Valves.

- The values of Cv shown are for 2-way straight pattern valves.
- The values of Cv for 2-way angle patterns will increase by about 50% (with water).
- All dimensions are for reference only and are subject to change.

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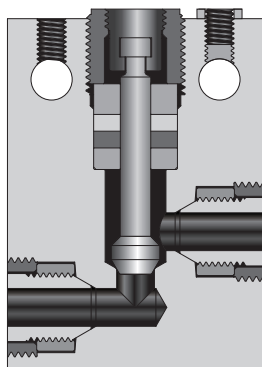
15NSS - DHL4 - RG2 - ATO

Series	Body Material	Connection Type	Connection Size	Stem Tip	Packing	Flow Pattern	Pneumatic Actuator Type
10N 15N 20N 30N 60N	SS 316 SS	For 10N Series 2FH Female MP FNS Female NPT FRT Female ISO/BSP Tapered For 15N Series DHL Female DHL Series FNS Female NPT FRT Female ISO/BSP Tapered For 20N Series 2FH Female MP For 30N/60N Series 6FH Female HP	2 1/8" 4 1/4" 6 3/8" 8 1/2" 9 9/16" 12 3/4" 16 1"	Vee R Regulating	PTFE Nylon (60N Only) TG RPTFE Glass G Graphite (10N, 15N and 20N Series Only) HT Extended stuffing box with Graphite (10N and 20N Only)	1 Straight 2 Angle 3 Angle / Replaceable Seat 4 3-way / 2 on Pressure 5 3-way / 1 on Pressure 6 3-way / 2-Stem Manifold	None ATO Air to Open (Normally Closed) ATC Air to Close (Normally Open)

- NOTES: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
 2. Pneumatic needle valves are open/closed valves, and will not regulate flow. Ordering pneumatic valve models with regulating stems is not recommended.

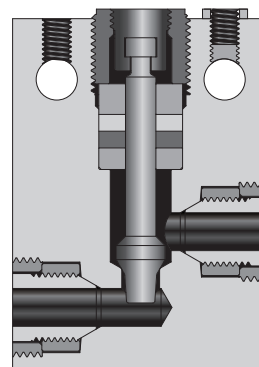
Stem Types

Two types of stems are offered by FITOK: Vee and Regulating. Both Vee and Regulating stems are interchangeable on most valves and provide bubble-tight shut-off against liquids and gases.



Vee Stem

The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.



Regulating Stem

In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, FITOK offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off.

Check Valves

10C, 10CO Series, 10,000 psig (690 bar)

15C, 15CO Series, 15,000 psig (1034 bar)

20C, 20CO Series, 20,000 psig (1379 bar)

60C, 60CO Series, 60,000 psig (4137 bar)



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Pipe O-ring Check Valves	C-55
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15CO Series

Ball Check Valves	C-56
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Pipe Ball Check Valves	C-57
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20C Series

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20CO Series

Ball Check Valves	C-59
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60C Series

O-ring Check Valves	C-60
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60CO Series

Ball Check Valves	C-61
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10C Series

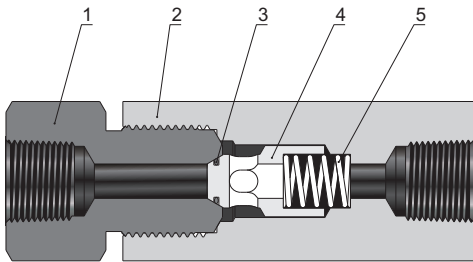
10,000 psig (690 bar)

Pipe O-ring Check Valves

Features

- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available
- Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage

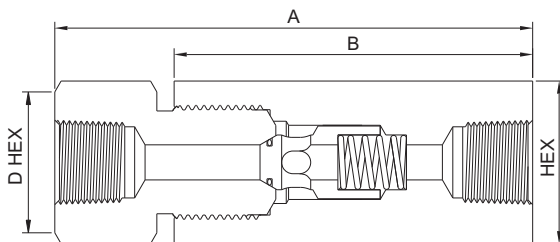
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cover Gland</i>	<i>316 SS/A479</i>
2	<i>Valve Body</i>	<i>316 SS/A479</i>
3	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
4	<i>Poppet</i>	<i>316 SS/A479</i>
5	<i>Spring</i>	<i>300 Series Stainless Steel</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - HEX	HEX	
10CSS-FNS12	FNS12	0.52 (13.21)	4.70	6.11 (155.3)	4.75 (120.7)	1.5 (38.1)	1.75 (44.5)	10,000 (690)
10CSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.2)	5.75 (146.1)	1.75 (44.5)	1.88 (47.8)	10,000 (690)

NOTE: For other pipe connections, please refer to 15C Series Pipe O-ring Check Valves for details.

10CO Series

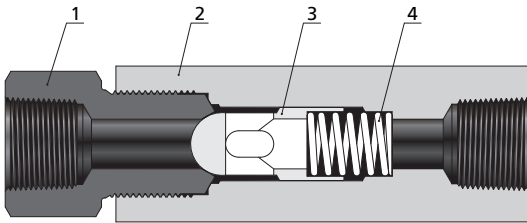
10,000 psig (690 bar)

Pipe Ball Check Valves

Features

- ⦿ Working temperature range: -110°F to 400°F (-79°C to 204°C)
- ⦿ Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
 Poppet designed essentially for axial flow with minimum pressure drop
- ⦿ Optional materials of cover gland and ball poppet for longer life

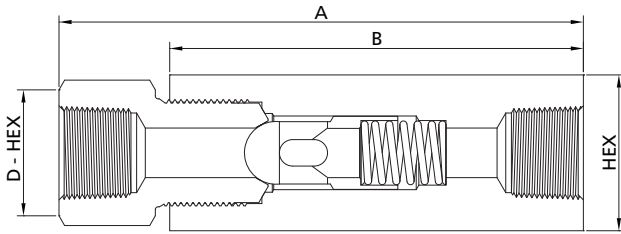
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cover Gland</i>	<i>316 SS/A479</i>
2	<i>Valve Body</i>	<i>316 SS/A479</i>
3	<i>Ball Poppet</i>	<i>316 SS/A479</i>
4	<i>Spring</i>	<i>300 Series Stainless Steel</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - HEX	HEX	
10COSS-FNS12	FNS12	0.52 (13.21)	4.70	6.11 (155.3)	4.75 (120.7)	1.5 (38.1)	1.75 (44.5)	10,000 (690)
10COSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.2)	5.75 (146.1)	1.75 (44.5)	1.88 (47.8)	10,000 (690)

NOTE: For other pipe connections, please refer to 15CO Series Pipe Ball Check Valves for details.

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15C Series

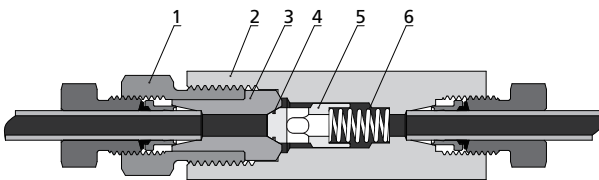
15,000 psig (1034 bar)

O-ring Check Valves

Features

- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available
- ⦿ Tubing sizes available in 1/4", 3/8" and 1/2"
- ⦿ Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- ⦿ Provides unidirectional flow and tight shut-off for liquids and gases with high reliability.
When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- ⦿ Resilient O-ring seat design for noise-free closing and zero leakage

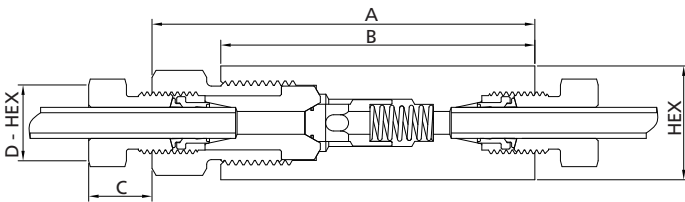
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316SS/A479
4	O-ring	Fluorocarbon FKM
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



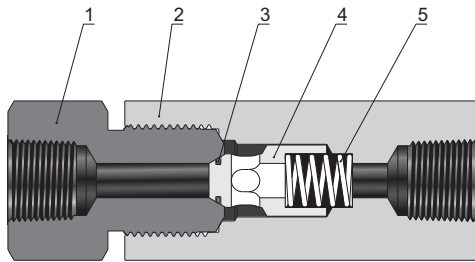
Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
15CSS-DHL4	DHL4	0.188 (4.78)	0.63	3.35 (85)	2.72 (69.2)	0.52 (13.3)	0.63 (16.0)	0.81 (20.6)	15,000 (1034)
15CSS-DHL6	DHL6	0.250 (6.35)	1.70	3.72 (94.6)	3.13 (79.6)	0.53 (13.5)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15CSS-DHL8	DHL8	0.375 (9.53)	3.40	4.41 (112.0)	3.68 (93.5)	0.60 (15.3)	0.93 (23.6)	1.38 (35.1)	15,000 (1034)

Pipe O-ring Check Valves

Features

- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available
- ⦿ Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- ⦿ Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- ⦿ Resilient O-ring seat design for noise-free closing and zero leakage

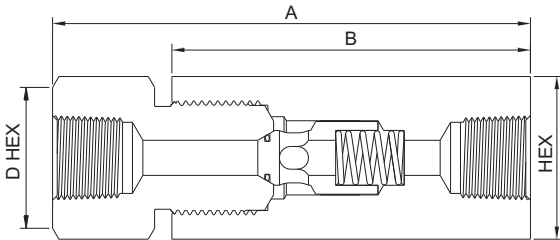
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cover Gland</i>	<i>316 SS/A479</i>
2	<i>Valve Body</i>	<i>316 SS/A479</i>
3	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
4	<i>Poppet</i>	<i>316 SS/A479</i>
5	<i>Spring</i>	<i>300 Series Stainless Steel</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - HEX	HEX	
15CSS-FNS4	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	15,000 (1034)
15CSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.3)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15CSS-FNS8	FNS8	0.36 (9.12)	2.30	5.07 (128.9)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)	15,000 (1034)

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15CO Series

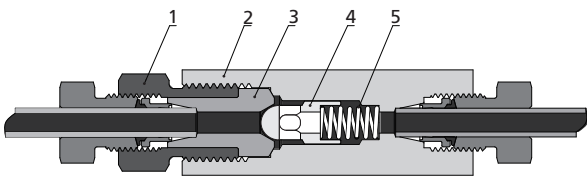
15,000 psig (1034 bar)

Ball Check Valves

Features

- Working temperature range: -110°F to 800°F (-79°C to 427°C)
- Tubing sizes available in 1/4", 3/8" and 1/2"
- Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet designed essentially for axial flow with minimum pressure drop
- Optional materials of cover and ball poppet for longer life

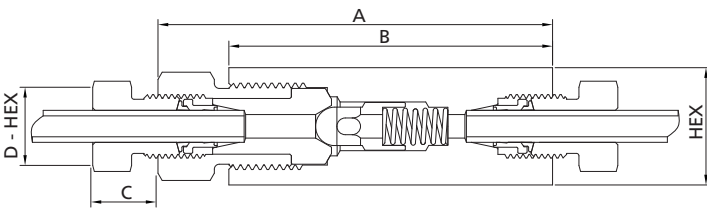
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



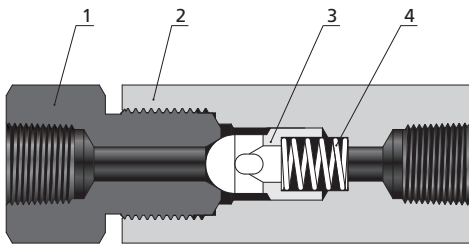
Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
15COSS-DHL4	DHL4	0.188 (4.78)	0.63	3.35 (85)	2.72 (69.2)	0.52 (13.3)	0.63 (16.0)	0.81 (20.6)	15,000 (1034)
15COSS-DHL6	DHL6	0.250 (6.35)	1.70	3.72 (94.6)	3.13 (79.6)	0.53 (13.5)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15COSS-DHL8	DHL8	0.375 (9.53)	3.40	4.41 (112.0)	3.68 (93.5)	0.60 (15.3)	0.93 (23.6)	1.38 (35.1)	15,000 (1034)

Pipe Ball Check Valves

Features

- ⦿ Working temperature range: -110°F to 400°F (-79°C to 204°C)
- ⦿ Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- ⦿ Optional materials of cover gland and ball poppet for longer life

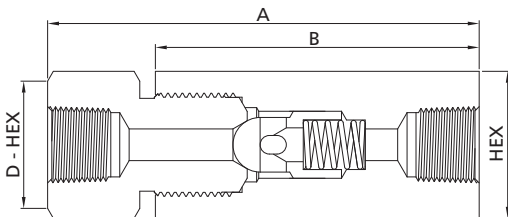
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cover Gland</i>	<i>316 SS/A479</i>
2	<i>Valve Body</i>	<i>316 SS/A479</i>
3	<i>Ball Poppet</i>	<i>316 SS/A479</i>
4	<i>Spring</i>	<i>300 Series Stainless Steel</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - HEX	HEX	
15COSS-FNS4	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	15,000 (1034)
15COSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.3)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15COSS-FNS8	FNS8	0.36 (9.12)	2.30	5.07 (128.9)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)	15,000 (1034)

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20C Series

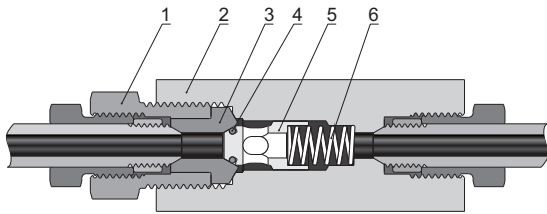
20,000 psig (1379 bar)

O-ring Check Valves

Features

- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available
- Tubing sizes available from 1/4" to 1"
- Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage

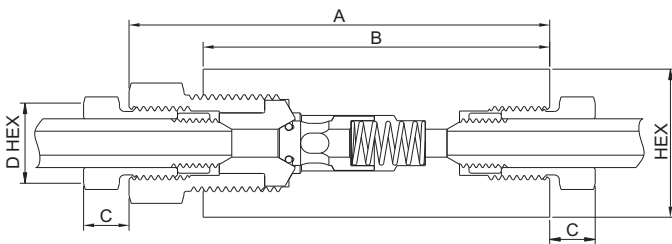
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	O-ring	Fluorocarbon FKM
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
20CSS-2FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20CSS-2FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)	20,000 (1379)
20CSS-2FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)	20,000 (1379)
20CSS-2FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)	20,000 (1379)
20CSS-2FH16	2FH16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)	20,000 (1379)

20CO Series

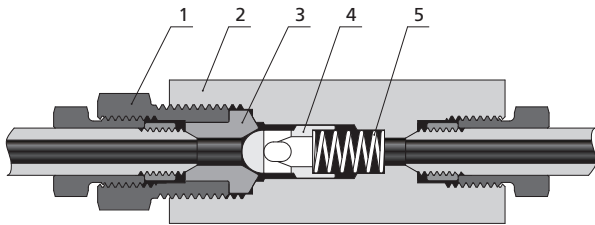
20,000 psig (1379 bar)

Ball Check Valves

Features

- ⦿ Working temperature range: -110°F to 1200°F (-79°C to 649°C)
- ⦿ Tubing sizes available from 1/4" to 1"
- ⦿ Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- ⦿ Optional materials of cover and ball poppet for longer life

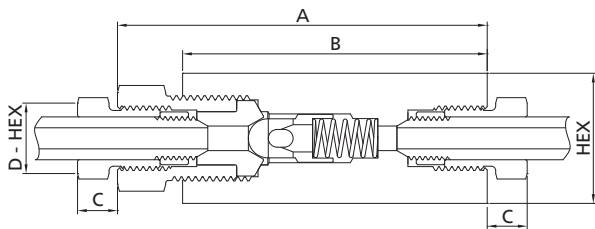
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
20COSS-2FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20COSS-2FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)	20,000 (1379)
20COSS-2FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)	20,000 (1379)
20COSS-2FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)	20,000 (1379)
20COSS-2FH16	2FH16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)	20,000 (1379)

60C Series

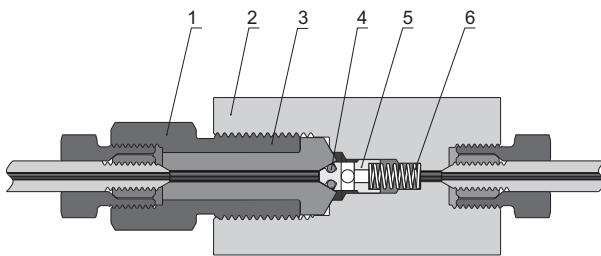
60,000 psig (4137 bar)

O-ring Check Valves

Features

- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available
- Tubing sizes available from 1/4" to 9/16"
- Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage

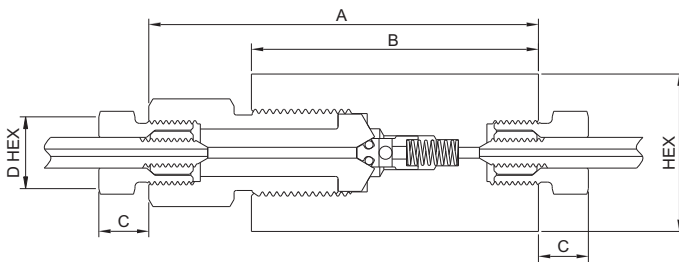
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	O-ring	Fluorocarbon FKM
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
60CSS-6FH4	6FH4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	60,000 (4137)
60CSS-6FH6	6FH6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.1)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)	60,000 (4137)
60CSS-6FH9	6FH9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.9)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)	60,000 (4137)

60CO Series

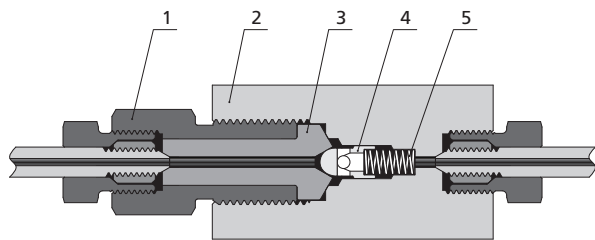
60,000 psig (4137 bar)

Ball Check Valves

Features

- ⦿ Working temperature range: -110°F to 1200°F (-79°C to 649°C)
- ⦿ Tubing sizes available from 1/4" to 9/16"
- ⦿ Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- ⦿ Optional materials of cover and ball poppet for longer life

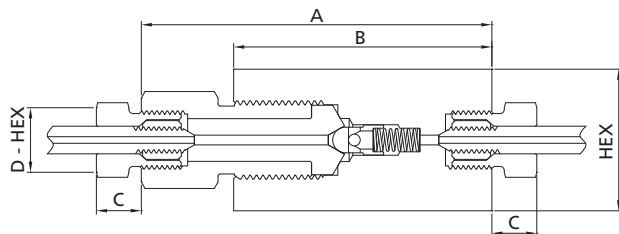
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions

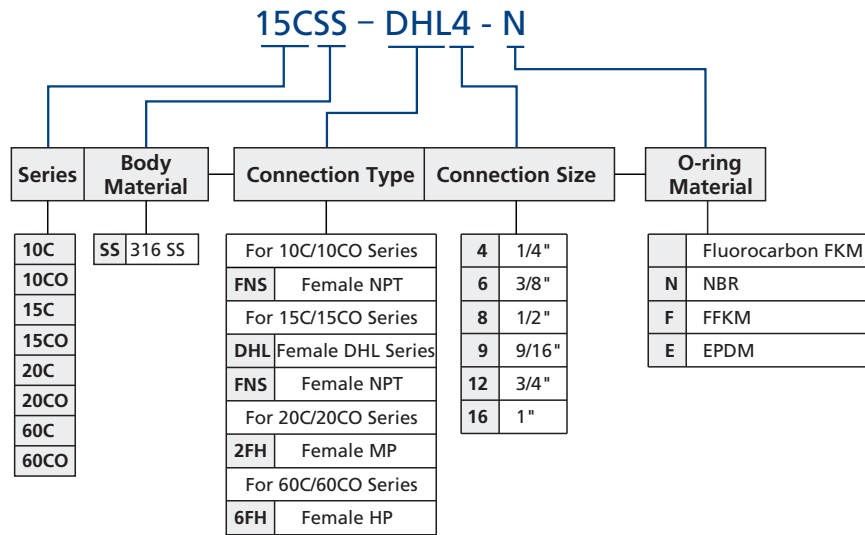


Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - HEX	HEX	
60COSS-6FH4	6FH4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	60,000 (4137)
60COSS-6FH6	6FH6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.1)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)	60,000 (4137)
60COSS-6FH9	6FH9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.9)	0.95 (24.1)	1.19 (30.16)	1.50 (38.1)	60,000 (4137)

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

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Ordering Number Description



- NOTES: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For products applied under lower temperature, please contact FITOK Group or our authorized distributors.

Code	O-ring Material	Working Temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 550 (-29 to 288)
E	EPDM	-50 to 300 (-45 to 148)

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Excess Flow Valves

15EF Series, 15,000 psig (1034 bar)

20EF Series, 20,000 psig (1379 bar)

60EF Series, 60,000 psig (4137 bar)



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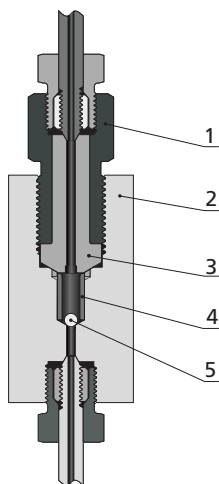
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Features

- ⦿ Working temperature range:
 - 15EF Series (NPT ends): -110°F to 400°F (-79°C to 204°C)
 - 15EF Series (DHL ends): -110°F to 800°F (-79°C to 427°C)
 - 20EF and 60EF Series: -110°F to 1200°F (-79°C to 649°C)
- ⦿ Protect pressure gauges and pressure instrumentation from sudden surges in flow or venting in the event of line failure
- ⦿ Equalize the pressure across the ball, and the ball will drop and reset automatically
- ⦿ The valve must be installed in vertical position with arrow on valve body pointing up
- ⦿ Valve body made of high tensile 316 stainless steel for maximum wear and corrosion resistance
- ⦿ Optional materials of cover and ball for longer life

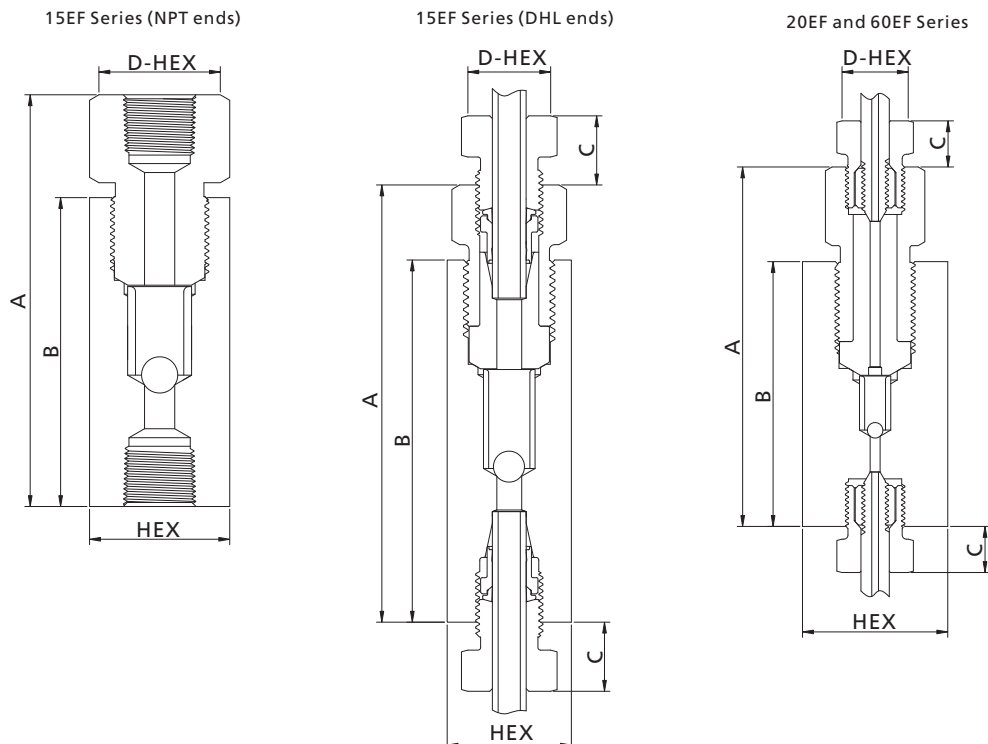
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Cover Gland	316 SS/A479
2	<i>Valve Body</i>	<i>316 SS/A479</i>
3	Cover	316 SS/A479
4	<i>Sleeve</i>	<i>316 SS/A479</i>
5	<i>Ball</i>	<i>Stainless Steel</i>
Lubricant		Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Ordering Information and Dimensions

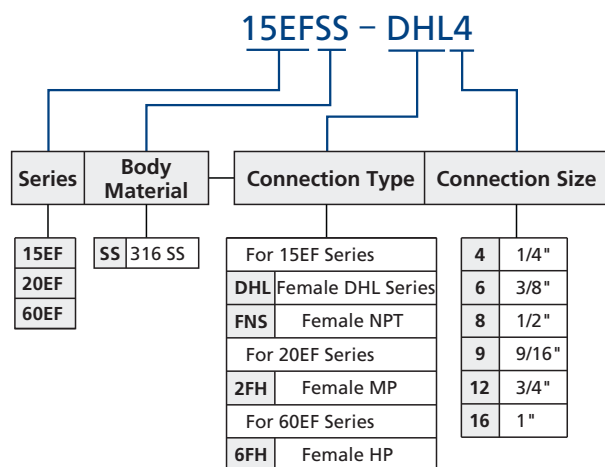


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Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)					Working Pressure psig (bar)
			A	B	C	D - HEX	HEX	
15EFSS-DHL4	DHL4	0.188 (4.78)	3.35 (85)	2.72 (69.2)	0.52 (13.3)	0.63 (16.0)	0.81 (20.6)	15,000 (1034)
15EFSS-DHL6	DHL6	0.250 (6.35)	3.72 (94.6)	3.13 (79.6)	0.53 (13.5)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15EFSS-DHL8	DHL8	0.375 (9.53)	4.41 (112.0)	3.68 (93.5)	0.60 (15.3)	0.93 (23.6)	1.38 (35.1)	15,000 (1034)
15EFSS-FNS4	FNS4	0.12 (3.05)	3.30 (83.8)	2.38 (60.3)		0.94 (23.8)	0.94 (23.8)	15,000 (1034)
15EFSS-FNS6	FNS6	0.22 (5.59)	3.95 (100.3)	2.88 (73.2)		1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15EFSS-FNS8	FNS8	0.36 (9.12)	5.07 (128.9)	3.88 (98.6)		1.38 (34.9)	1.38 (34.9)	15,000 (1034)
20EFSS-2FH4	2FH4	0.125 (3.18)	2.94 (74.7)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20EFSS-2FH6	2FH6	0.218 (5.54)	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)	20,000 (1379)
20EFSS-2FH9	2FH9	0.359 (9.12)	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)	20,000 (1379)
20EFSS-2FH12	2FH12	0.516 (13.11)	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)	20,000 (1379)
20EFSS-2FH16	2FH16	0.688 (17.48)	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)	20,000 (1379)
60EFSS-6FH4	6FH4	0.094 (2.39)	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	60,000 (4137)
60EFSS-6FH6	6FH6	0.125 (3.18)	3.86 (98.1)	2.80 (71.1)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)	60,000 (4137)
60EFSS-6FH9	6FH9	0.187 (4.75)	4.62 (117.4)	3.38 (85.9)	0.95 (24.1)	1.19 (30.16)	1.50 (38.1)	60,000 (4137)

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Metering Valves

15M Series, 15,000 psig (1034 bar)

30M Series, 30,000 psig (2068 bar)

60M Series, 60,000 psig (4137 bar)



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Features

- Precisely tapered valve stem accurately controls flow for gases and liquids
- The design of Barrel and Thimble micrometer permits repeatable settings
 - Each division of barrel equals to 0.025"
 - Thimble is divided into 25 divisions, each division of thimble equals to 0.001" stem travel
 - One revolution equals to valve stem 0.025" travel
- Valve body made of high tensile 316 stainless steel for maximum wear and corrosion resistance
- Packing located under stem threads
- Reliable locking device for packing gland
- Not intended as shut-off valves. Install a correlated shutoff valve when shut-off is required
- Minimum flow rate set at "0" position, and operation below "0" position not allowed

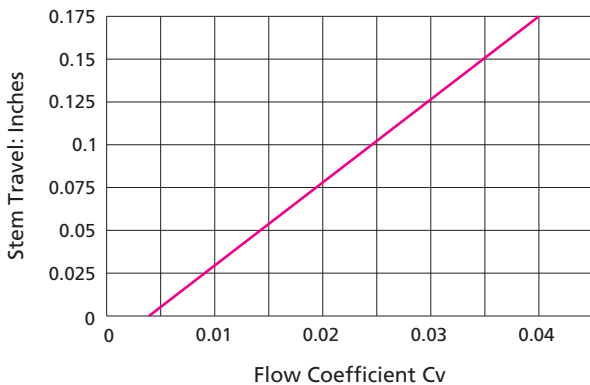
Technical Data

Series	Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
15M	1/8	DHL2	0.062 (1.57)	0.04	15,000 (1034)
15M	1/4	DHL4	0.062 (1.57)	0.04	15,000 (1034)
30M	1/4	6FH4	0.062 (1.57)	0.04	30,000 (2068)
60M	1/4	6FH4	0.062 (1.57)	0.04	60,000 (4137)
60M	3/8	6FH6	0.062 (1.57)	0.04	60,000 (4137)

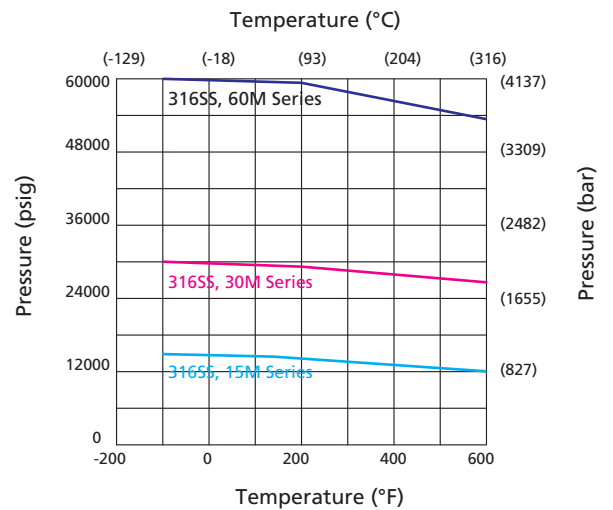
Packing Options:

Nylon is the standard packing material for 60M series, PTFE for other series. RPTFE is available for all series.
 Nylon: 40°F~230°F (4.4°C~110°C).
 PTFE: -100°F~450°F (-73°C~232°C).
 RPTFE glass: -100°F~600°F (-73°C~316°C).
 Graphite: 0°F~800°F (-17.8°C~427°C).

Flow Data at 100°F (38°C)

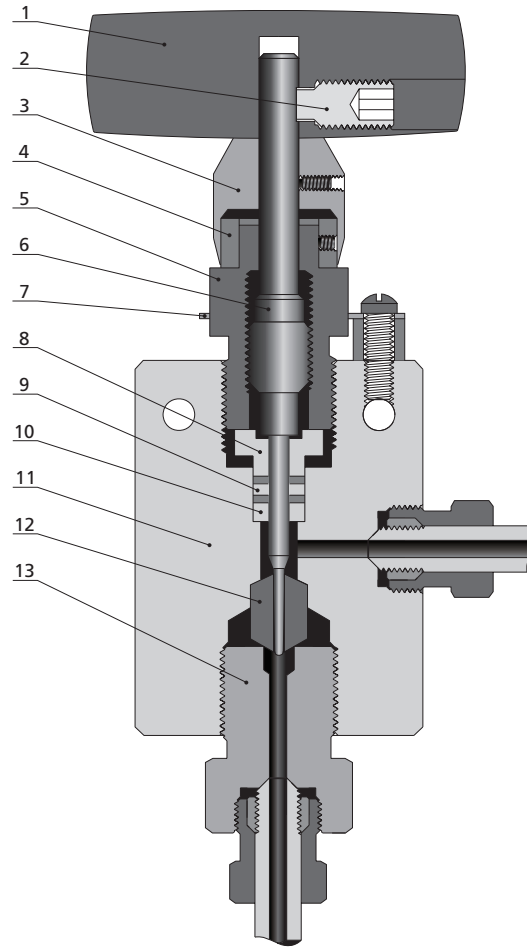


Pressure vs. Temperature Curve



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Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Thimble	304 SS/A479
4	Barrel	304 SS/A479
5	Packing Bolt	C63000/B150
6	<i>Stem</i>	<i>17-4PH/A564</i>
7	Locking Plate	304 SS/A240
8	Packing Gland	C63000/B150
9	<i>Packing</i>	<i>PTFE/RPTFE/Nylon</i>
10	<i>Packing Washer</i>	<i>17-4PH/A564</i>
11	<i>Body</i>	<i>316 SS/A479</i>
12	<i>Seat</i>	<i>17-4PH/A564</i>
13	<i>Seat Gland</i>	<i>316 SS/A479</i>
Lubricant		Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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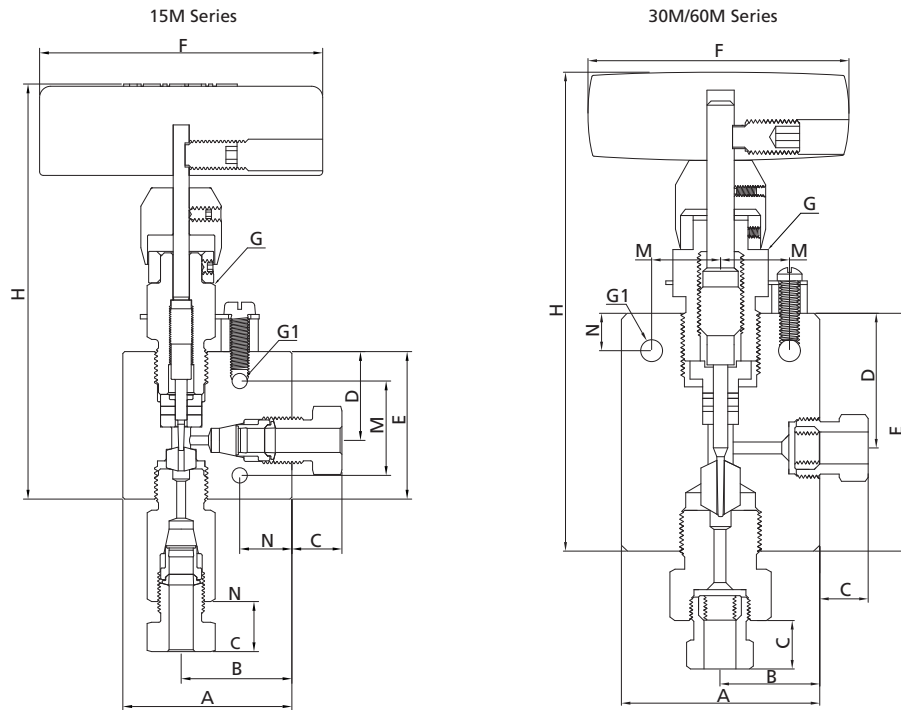
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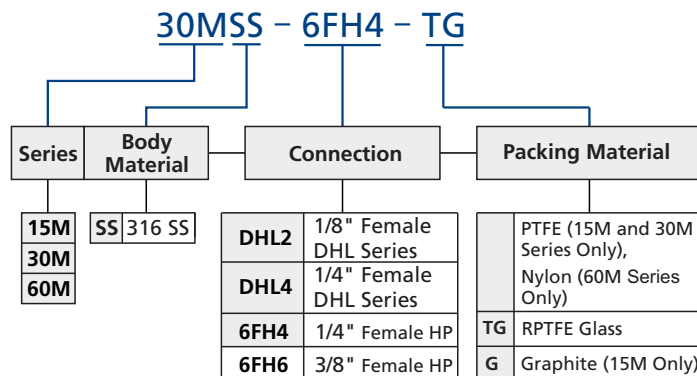
Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)											
			A	B	C	D	E	F	G	G1	H	M	N	Thickness
15MSS-DHL2	DHL2	0.062 (1.57)	1.79 (45.5)	1.17 (29.8)	0.44 (11.2)	0.94 (23.8)	1.56 (39.6)	3.00 (76.2)	0.87 (22.1)	0.16 (4.1)	5.06 (128.5)	1.00 (25.4)	0.55 (14.1)	0.75 (19.1)
15MSS-DHL4	DHL4	0.062 (1.57)	1.79 (45.5)	1.17 (29.8)	0.53 (13.5)	0.94 (23.8)	1.56 (39.6)	3.00 (76.2)	0.87 (22.1)	0.16 (4.1)	5.06 (128.5)	1.00 (25.4)	0.55 (14.1)	0.75 (19.1)
30MSS-6FH4	6FH4	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.50 (12.7)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	5.06 (128.5)	0.69 (17.3)	0.50 (12.7)	1.00 (25.4)
60MSS-6FH4	6FH4	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.50 (12.7)	1.31 (33.3)	2.63 (66.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	6.00 (152.4)	0.69 (17.3)	0.38 (9.7)	1.00 (25.4)
60MSS-6FH6	6FH6	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.31 (33.3)	2.63 (66.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	6.06 (153.9)	0.69 (17.3)	0.38 (9.7)	1.00 (25.4)

- NOTES: 1. G is the drill dimension of packing bolt mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension when stem is in "0" position.
 5. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Relief Valves

HSR Series, 20,000 psig (1379 bar)

HMR Series, 60,000 psig (4137 bar)

HAR Series, 20,000 psig (1379 bar)



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HSR Series

20,000 psig (1379 bar) C-74

HMR Series

60,000 psig (4137 bar) C-77

HAR Series

20,000 psig (1379 bar) C-80

Ordering Number Description

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HSR Series

20,000 psig (1379 bar)

Features

- ⦿ Set pressure: 1,500 to 20,000 psig (103 to 1379 bar)
- ⦿ Working temperature range: 32°F to 400°F (0°C to 204°C)
- ⦿ Liquid or gas service
- ⦿ Soft seat design to provide bubble tight shut-off of gas
- ⦿ Factory-set, test, locked, and tagged with the set pressure
- ⦿ Lock wire the cap and body together to maintain relief setting
- ⦿ Free assembly positions

Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HSRSS-2FH9-FNS12-1	9/16	2FH9	FNS12	0.312 (7.92)	1.2	1,500 (103)	5,000 (345)	500 (34.5)
HSRSS-2FH9-FNS12-2	9/16	2FH9	FNS12	0.25 (6.35)	0.8	5,000 (345)	10,000 (690)	500 (34.5)
HSRSS-2FH9-FNS12-3	9/16	2FH9	FNS12	0.156 (3.96)	0.3	10,000 (690)	20,000 (1379)	500 (34.5)

NOTES: 1. Please specify the required set pressure when ordering.

2. Maximum system operating pressure should not exceed 90% of the set pressure.

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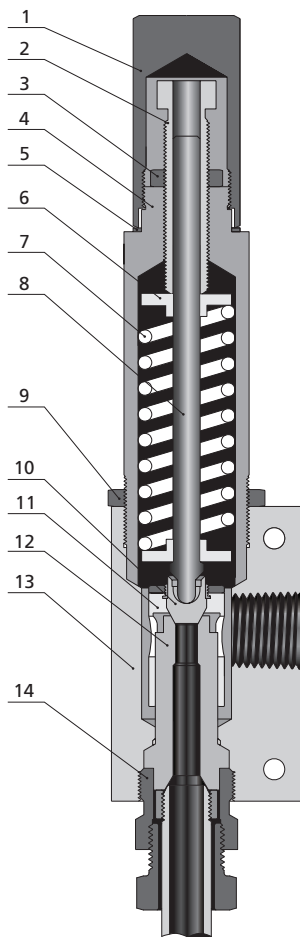
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Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cap</i>	316 SS/A479
2	<i>Adjusting Bolt</i>	316 SS/A479
3	<i>Lock Nut</i>	316 SS/A479
4	<i>Spring Cylinder</i>	316 SS/A479
5	<i>Gasket</i>	316L SS/A479
6	<i>Spring Washer</i>	316 SS/A479
7	<i>Spring</i>	17-7PH/AMS5678
8	<i>Spindle</i>	316 SS/A479
9	<i>Lock Nut</i>	316 SS/A479
10	<i>Plug</i>	PEEK
11	<i>Plug Guide</i>	316 SS/A479
12	<i>Seat</i>	316 SS/A479
13	<i>Valve Body</i>	316 SS/A479
14	<i>Seat Gland</i>	316 SS/A479
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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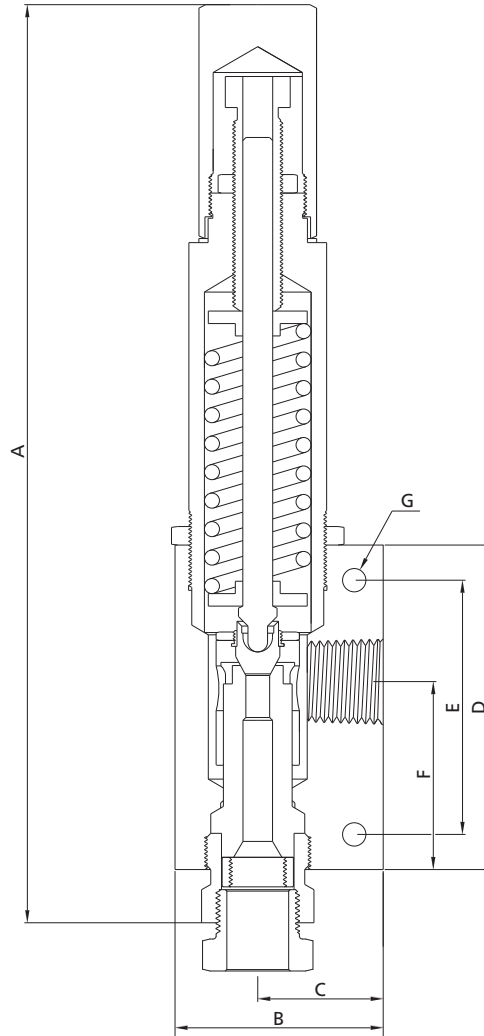
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Dimensions



Dimensions, in.(mm)						
A	B	C	D	E	F	G
9.46 (240.4)	2.00 (50.8)	1.19 (30.2)	3.25 (82.6)	2.25 (57.1)	1.94 (49.3)	0.28 (7.1)

- NOTES: 1. G is the dimension of Mounting Holes.
 2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

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HMR Series

60,000 psig (4137 bar)

Features

- ⦿ Set pressure: 3,000 to 60,000 psig (207 to 4137 bar)
- ⦿ Working temperature range: -110°F to 400°F (-79°C to 204°C)
- ⦿ Liquid or gas service
- ⦿ Metal-to-metal seating to provide shut-off of liquids and gases under pressure to commercial tightness standards
- ⦿ Factory-set, test, locked, and tagged with the set pressure
- ⦿ Lock wire the cap and body together to maintain relief setting
- ⦿ Free assembly positions

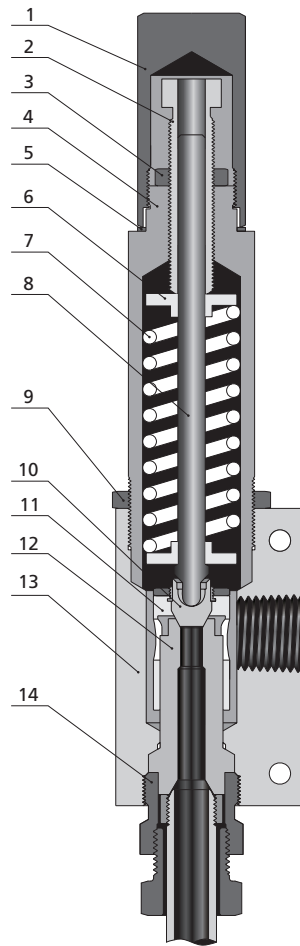
Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice Size in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HMRSS-2FH9-FNS12-1	9/16	2FH9	FNS12	0.312 (7.92)	1.2	3,000 (207)	5,000 (345)	500 (34.5)
HMRSS-2FH9-FNS12-2	9/16	2FH9	FNS12	0.250 (6.35)	0.8	5,000 (345)	10,000 (690)	500 (34.5)
HMRSS-2FH9-FNS12-3	9/16	2FH9	FNS12	0.188 (4.78)	0.45	10,000 (690)	15,000 (1034)	500 (34.5)
HMRSS-2FH9-FNS12-4	9/16	2FH9	FNS12	0.156 (3.96)	0.3	15,000 (1034)	20,000 (1379)	500 (34.5)
HMRSS-6FH6-FNS12-5	3/8	6FH6	FNS12	0.125 (3.18)	0.2	20,000 (1379)	30,000 (2068)	500 (34.5)
HMRSS-6FH6-FNS12-6	3/8	6FH6	FNS12	0.093 (2.36)	0.1	25,000 (1724)	45,000 (3103)	500 (34.5)
HMRSS-6FH6-FNS12-7	3/8	6FH6	FNS12	0.078 (1.98)	0.07	30,000 (2068)	60,000 (4137)	500 (34.5)

NOTES: 1. Please specify the required set pressure when ordering.

2. Maximum system operating pressure should not exceed 90% of the relief valve set pressure.

Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Cap</i>	316 SS/A479
2	<i>Adjusting Bolt</i>	316 SS/A479
3	<i>Lock Nut</i>	316 SS/A479
4	<i>Spring Cylinder</i>	316 SS/A479
5	<i>Gasket</i>	316L SS/A479
6	<i>Spring Washer</i>	316 SS/A479
7	<i>Spring</i>	17-7PH/AMS5678
8	<i>Spindle</i>	316 SS/A479
9	Lock Nut	316 SS/A479
10	<i>Plug</i>	S17400/A564
11	<i>Plug Guide</i>	316 SS/A479
12	<i>Seat</i>	17-4PH/A564
13	<i>Valve Body</i>	316 SS/A479
14	<i>Seat Gland</i>	316 SS/A479
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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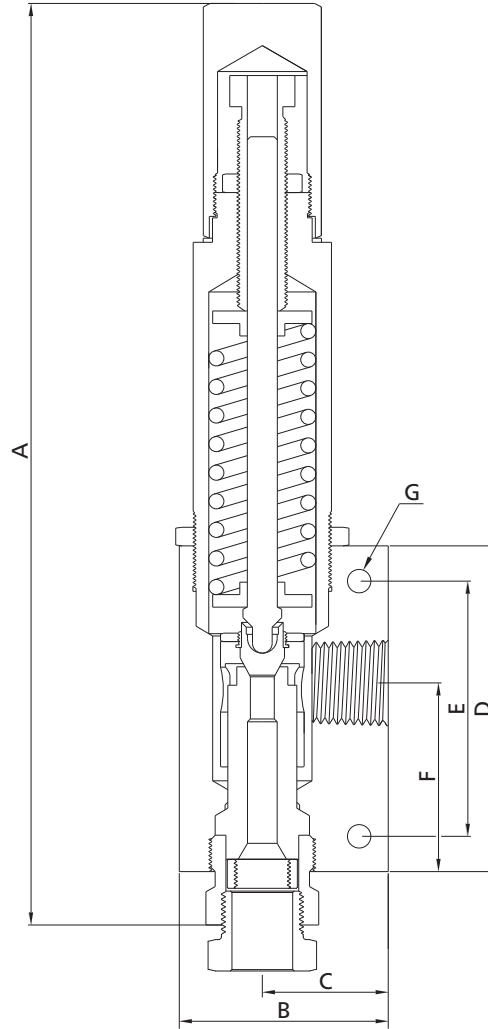
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Dimensions



Dimensions, in.(mm)						
A	B	C	D	E	F	G
9.46 (240.4)	2.00 (50.8)	1.19 (30.2)	3.25 (82.6)	2.25 (57.1)	1.94 (49.3)	0.28 (7.1)

NOTES: 1. G is the dimension of Mounting Holes.

2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

HAR Series

20,000 psig (1379 bar)

Features

- ⦿ Set pressure: 3,000 to 20,000 psig (207 to 1379 bar)
- ⦿ Working temperature range: 32°F to 400°F (0°C to 204°C)
- ⦿ Field adjustable
- ⦿ Liquid or gas service
- ⦿ Soft seat design to provide bubble tight shut-off of gas
- ⦿ Easily exchangeable seat
- ⦿ Free assembly positions

Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice Size in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HARSS-2FH9-FNS12-1	9/16	2FH9	FNS12	0.197 (5.0)	0.5	3,000 (207)	10,000 (690)	500 (34.5)
HARSS-2FH9-FNS12-2	9/16	2FH9	FNS12	0.093 (2.36)	0.1	10,000 (690)	20,000 (1379)	500 (34.5)

NOTE: Maximum system operating pressure should not exceed 90% of the relief valve set pressure.

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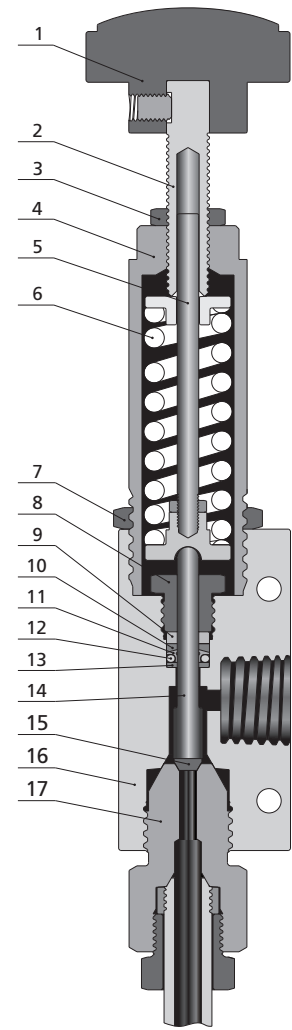
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Standard Materials of Construction

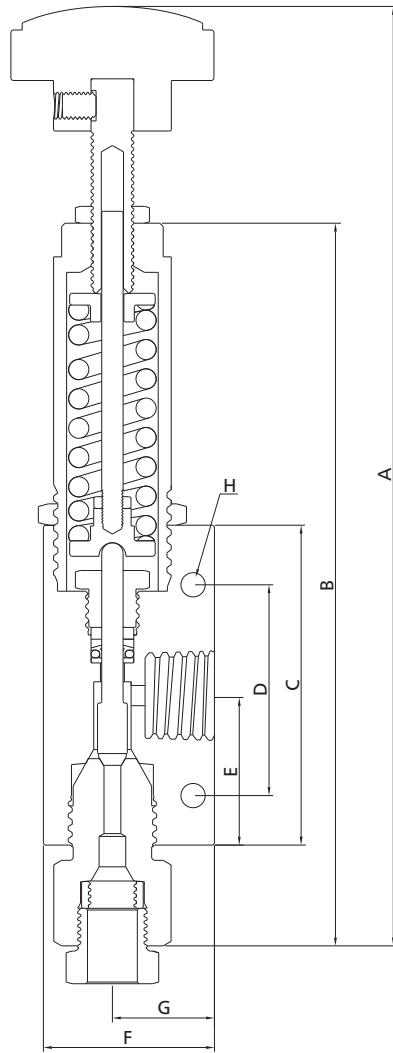
Item	Component	Material Grade/ASTM Specification
1	Handle	6061/B211
2	Set Screw	316 SS/A479
3	Lock Nut	316 SS/A476
4	Bonnet	316 SS/A479
5	Upper Stem	316 SS/A479
6	Spring	17-7PH/AMS5678
7	Lock Nut	316 SS/A479
8	Packing Gland	C63000/B150
9	Washer	C63000/B150
10	<i>Backing Ring</i>	<i>PEEK</i>
11	<i>Backing Ring</i>	<i>PTFE</i>
12	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
13	<i>Ring</i>	<i>PEEK</i>
14	<i>Lower Stem</i>	<i>316 SS/A479</i>
15	<i>Plug</i>	<i>PEEK</i>
16	<i>Body</i>	<i>316 SS/A479</i>
17	<i>Seat</i>	<i>316 SS/A479</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.



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Dimensions



Dimensions, in.(mm)							
A	B	C	D	E	F	G	H
10.98 (278.8)	8.45 (214.6)	3.74 (95.0)	2.46 (62.6)	1.75 (44.4)	2.00 (50.8)	1.19 (30.3)	0.28 (7.1)

NOTES: 1. H is the dimension of mounting Holes.

2. All dimensions are reference only and are subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized distributors.

Medium & High Pressure Fittings and Tubing

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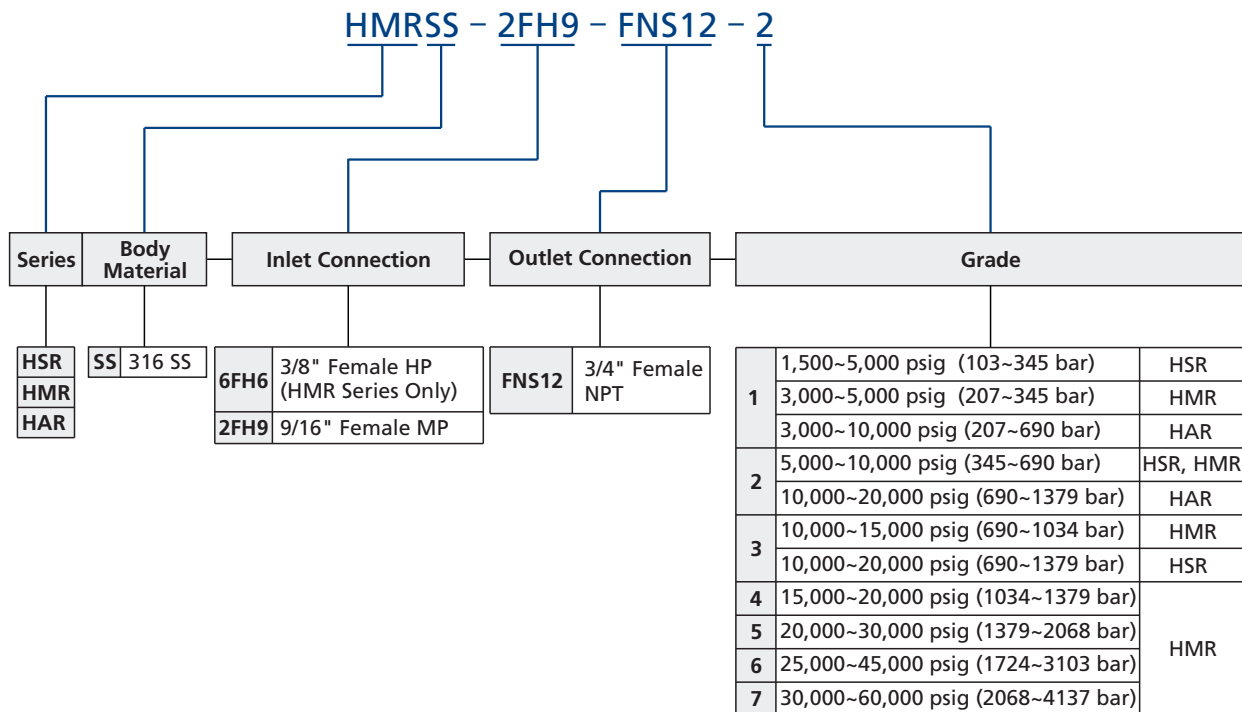
Sour Service Products

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Ordering Number Description



- NOTES: 1. Valves are factory-set, test, locked, and tagged with the set pressure. Please specify the required set pressure when ordering.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Bleed Valves and Block & Bleed Valves



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Contents

Bleed Valves

Pressures to 30,000 psig (2068 bar) C-86

Block & Bleed Needle Valves

Pressures to 20,000 psig (1379 bar) C-89

Double Block & Bleed Needle Valves

Pressures to 20,000 psig (1379 bar) C-93

Double Block & Bleed Ball Valves

Pressures to 15,000 psig (1034 bar) C-97

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Bleed Valves

Pressures to 30,000 psig (2068 bar)

Features

- ⦿ One piece hex construction compact design allows easy installation
- ⦿ Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- ⦿ 1/8" Female NPT outlet connection
- ⦿ High tensile 316 Stainless Steel body material
- ⦿ Easy to assemble and replace O-ring
- ⦿ Positive locking screw design prevents accidental removal of the stem
- ⦿ Tee handle for easy operation

Technical Data

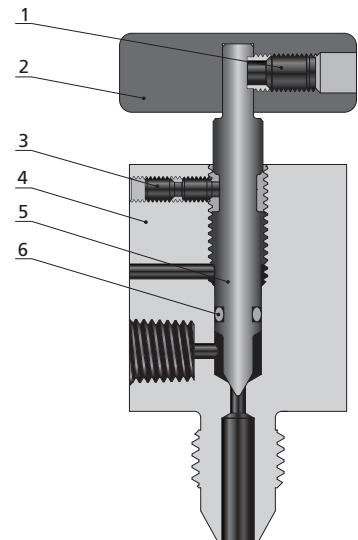
Series	Inlet Connection	Orifice in. (mm)	Working Pressure psig (bar)
15BV	DHM6	0.094 (2.4)	15,000 (1034)
	DHM8	0.094 (2.4)	15,000 (1034)
	DHM9	0.094 (2.4)	15,000 (1034)
20BV	2MP6	0.094 (2.4)	20,000 (1379)
	2MP9	0.094 (2.4)	20,000 (1379)
	2CT6	0.094 (2.4)	20,000 (1379)
	2CT9	0.094 (2.4)	20,000 (1379)
30BV	6MP6	0.094 (2.4)	30,000 (2068)
	6MP9	0.094 (2.4)	30,000 (2068)
	6CT6	0.094 (2.4)	30,000 (2068)
	6CT9	0.094 (2.4)	30,000 (2068)

- NOTES: 1. Working pressure shown is in closed position.
 2. Working pressure is 15,000 psig (1034 bar) in open position.
 3. A variety of end connections available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

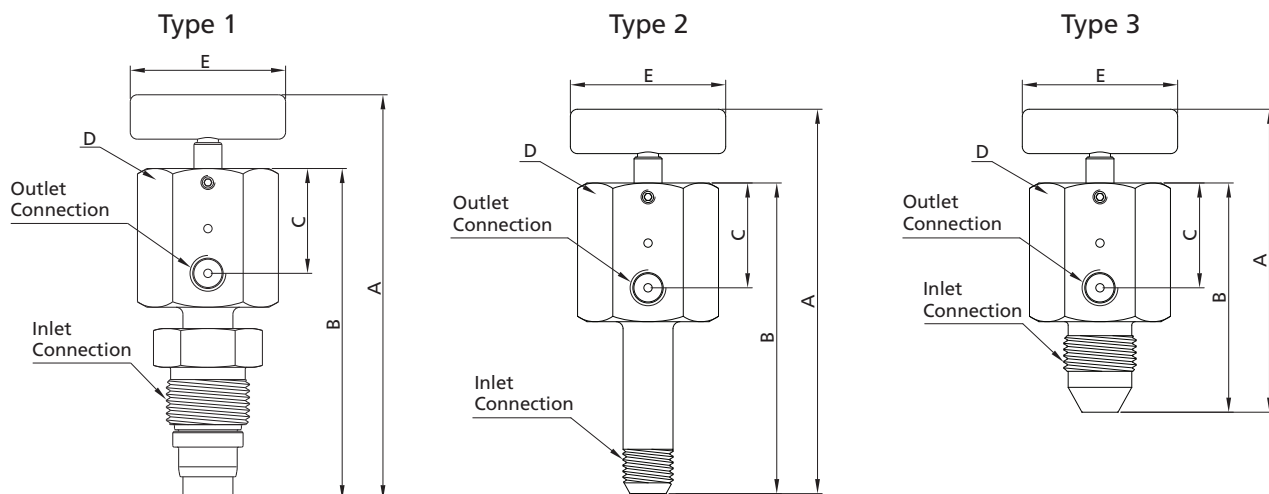
Standard Materials of Construction

Item	Component	Material Grade/ASTM Specification
1	Handle screw	Stainless steel
2	Handle	Stainless steel
3	Locking screw	Stainless steel
4	<i>Body</i>	<i>316 SS/A479</i>
5	<i>Stem</i>	<i>S17400/A564</i>
6	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
	Lubricant	Molybdenum disulfide/Fluorinated-based

Wetted components listed in italics.



Ordering Information and Dimensions



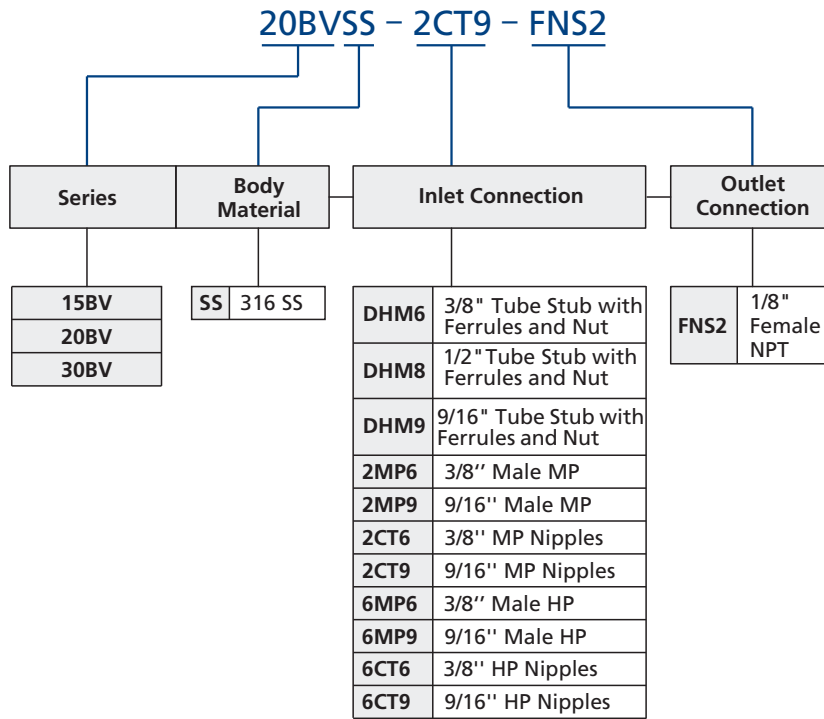
Type 1								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
15BVSS-DHM6-FNS2	DHM6	FNS2	0.094 (2.4)	3.83 (97.2)	3.04 (77.1)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
15BVSS-DHM8-FNS2	DHM8	FNS2	0.094 (2.4)	3.99 (101.3)	3.11 (78.1)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
15BVSS-DHM9-FNS2	DHM9	FNS2	0.094 (2.4)	4.56 (115.9)	3.73 (94.8)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Type 2								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-2CT6-FNS2	2CT6	FNS2	0.094 (2.4)	3.65 (92.6)	2.81 (71.5)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-2CT9-FNS2	2CT9	FNS2	0.094 (2.4)	3.93 (99.8)	3.10 (78.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6CT6-FNS2	6CT6	FNS2	0.094 (2.4)	3.93 (99.8)	3.10 (78.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6CT9-FNS2	6CT9	FNS2	0.094 (2.4)	4.38 (111.3)	3.55 (90.2)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Type 3								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-2MP6-FNS2	2MP6	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-2MP9-FNS2	2MP9	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6MP6-FNS2	6MP6	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6MP9-FNS2	6MP9	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

- NOTES: 1. D is the dimension of hex.
 2. A is the dimension of stem in closed position.
 3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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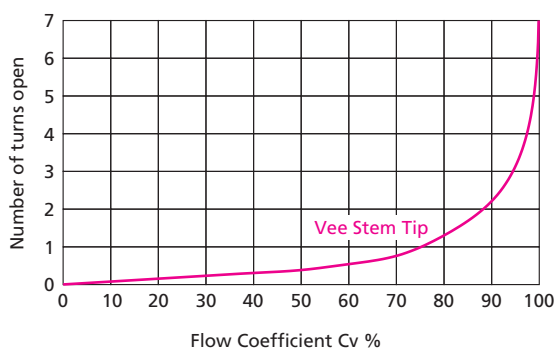
Block & Bleed Needle Valves

Pressures to 20,000 psig (1379 bar)

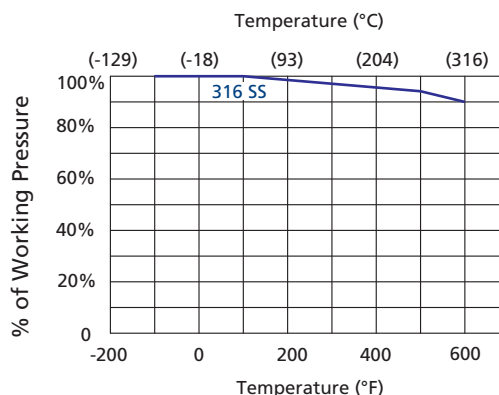
Features

- ⦿ Compact design offers advantages over configurations with multiple valves and fittings
- ⦿ Minimal space needed for installation and operation
- ⦿ Cost savings from fewer components required
- ⦿ Reduced potential for leakage
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Selected materials of packing gland and upper stem for reduced handle torque and extended thread cycle life
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Technical Data

Series	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
15BN	FNS4	0.094 (2.4)	0.20	15,000 (1034)
	FNS6	0.094 (2.4)	0.20	15,000 (1034)
20BN	2FH4	0.094 (2.4)	0.20	20,000 (1379)
	2FH6	0.094 (2.4)	0.20	20,000 (1379)

NOTES: 1. Packing Options

PTFE is the standard packing material, RPTFE glass also available.
 PTFE: -100°F~450°F (-73°C~232°C).
 RPTFE glass:-100°F~600°F (-73°C~316°C).

2. A variety of end connections are available on request . For connections not shown above, please contact FITOK Group or our authorized distributors.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

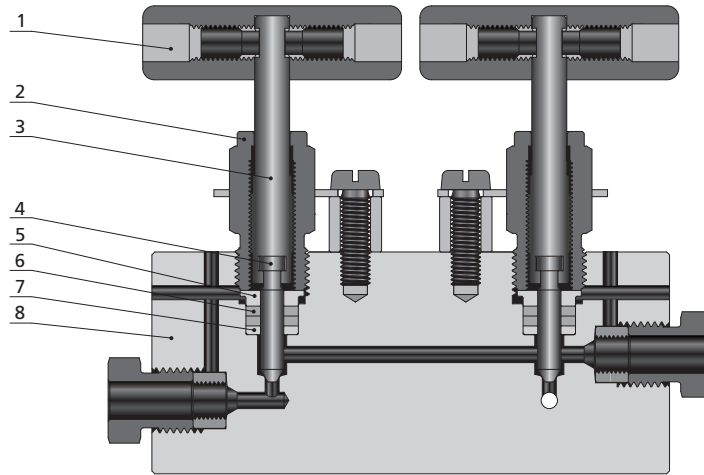
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Packing Gland	C63000/B150
3	Upper stem	316 SS/A479
4	<i>Lower Stem</i>	<i>S17400/A564</i>
5	Packing Ring	C63000/B150
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing washer</i>	<i>S17400/A564</i>
8	<i>Body</i>	<i>316 SS/A479</i>
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

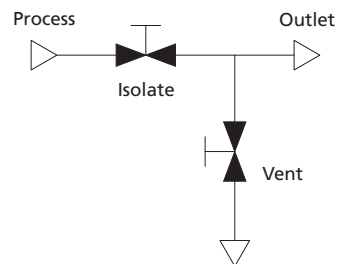
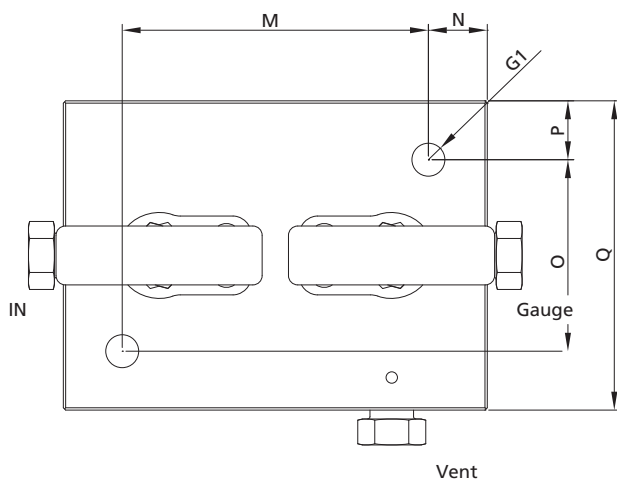
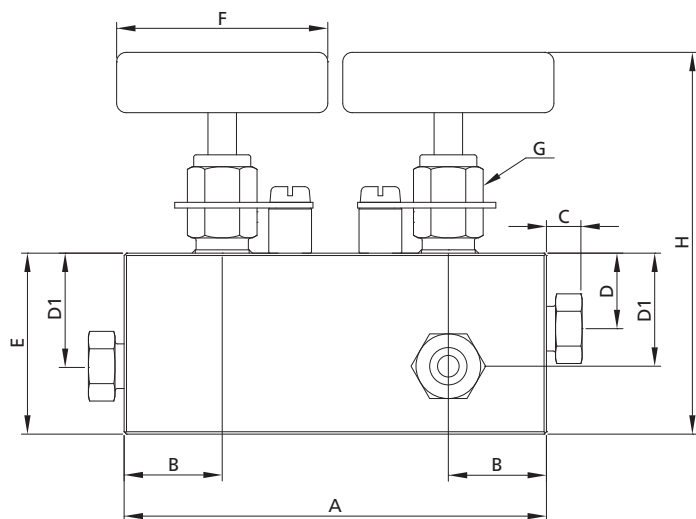
Sour Service Products

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Ordering Information and Dimensions

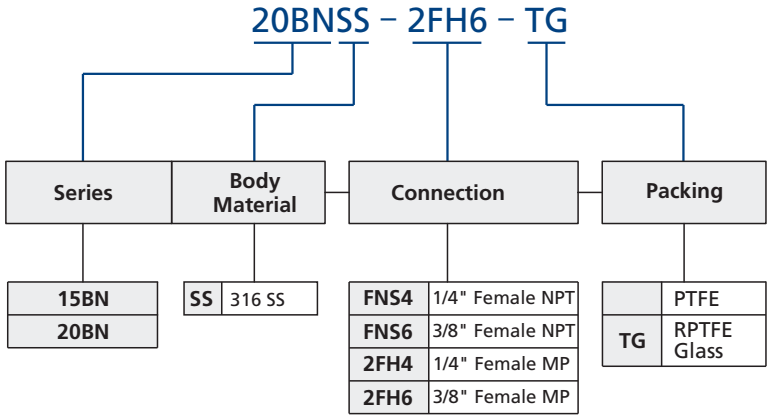


Dimensions																	
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)														
			A	B	C	D	D1	E	F	G	G1	H	M	N	O	P	Q
15BNSS-FNS4	FNS4	0.094 (2.4)	3.78 (96.0)	1.00 (25.4)	/	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.50 (12.7)	0.28 (7.1)	3.26 (82.7)	2.74 (69.5)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
15BNSS-FNS6	FNS6	0.094 (2.4)	3.78 (96.0)	1.00 (25.4)	/	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.50 (12.7)	0.28 (7.1)	3.26 (82.7)	3.50 (89.1)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
20BNSS-2FH4	2FH4	0.094 (2.4)	3.5 (88.9)	0.81 (20.6)	0.38 (9.7)	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.50 (12.7)	0.28 (7.1)	3.26 (82.7)	2.74 (69.5)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
20BNSS-2FH6	2FH6	0.094 (2.4)	3.88 (98.5)	1.00 (25.4)	0.44 (11.1)	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.50 (12.7)	0.28 (7.1)	3.26 (82.7)	3.50 (89.1)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)

- NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the panel mounting drill size.
 3. H is the dimension of stem in closed position.
 4. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

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Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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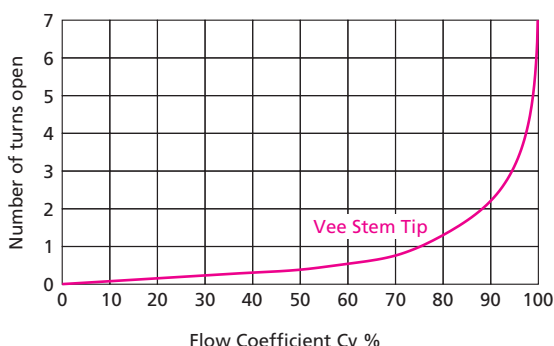
Double Block & Bleed Needle Valves

Pressures to 20,000 psig (1379 bar)

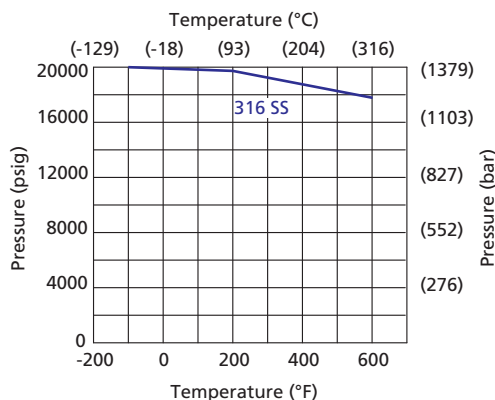
Features

- ⦿ Compact design provides large valve performance in a small package
- ⦿ Reduced potential for leakage
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Selected materials of packing gland and upper stem for reduced handle torque and extended thread cycle life
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland
- ⦿ Wide selection of tube and pipe end fittings available

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Technical Data

Series	Connection Type (Inlet and Outlet)	Vent Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
20DBN	2FH4	2FH4	0.094 (2.4)	0.10	20,000 (1379)
	2FH6	2FH4	0.094 (2.4)	0.27	20,000 (1379)
	2FH9	2FH4	0.094 (2.4)	0.27	20,000 (1379)
	6FH9	2FH4	0.094 (2.4)	0.27	20,000 (1379)

Notes: 1. Packing Options

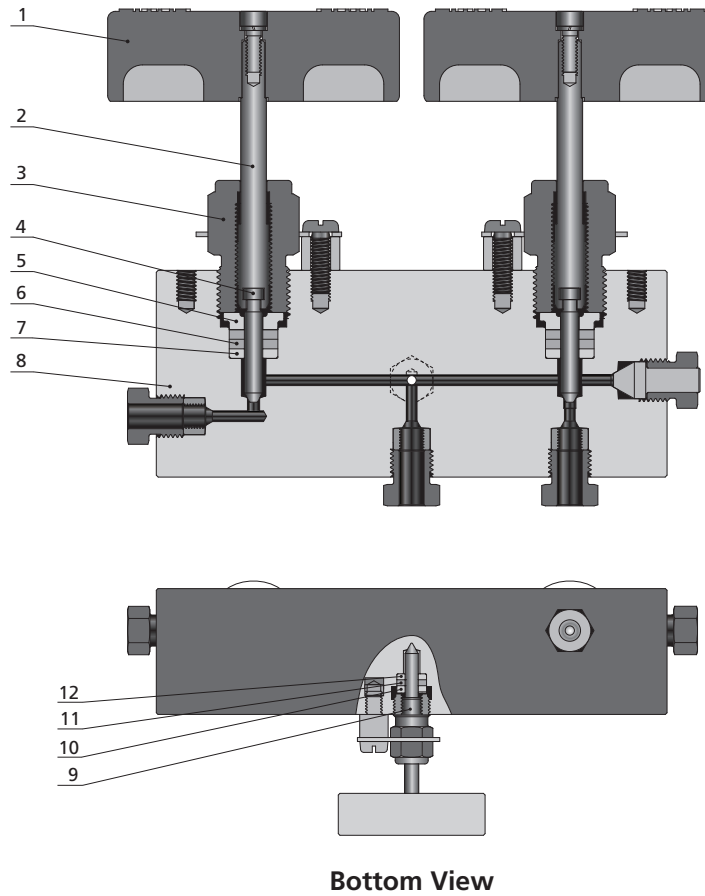
PTFE is the standard packing material, RPTFE glass also available.

PTFE: -100°F~450°F (-73°C~232°C).

RPTFE glass: -100°F~600°F (-73°C~316°C).

2. A variety of end connections are available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

Standard Materials of Construction



Bottom View

Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Upper stem	316 SS/A479
3	Packing Gland	C63000/B150
4	<i>Lower Stem</i>	<i>S17400/A564</i>
5	<i>Packing Ring</i>	<i>C63000/B150</i>
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing washer</i>	<i>S17400/A564</i>
8	<i>Body</i>	<i>316 SS/A479</i>
9	<i>Vent valve stem</i>	<i>S17400/A564</i>
10	Vent valve Ring	C63000/B150
11	<i>Vent valve Packing</i>	<i>PTFE/RPTFE</i>
12	<i>Vent valve Packing washer</i>	<i>S17400/A564</i>
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.

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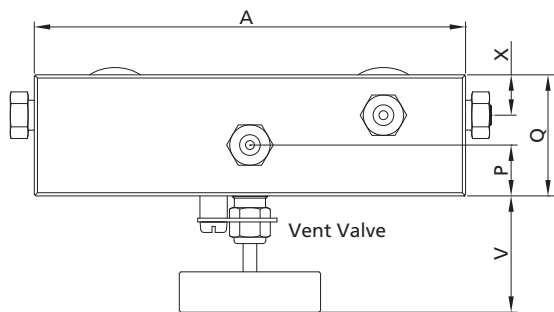
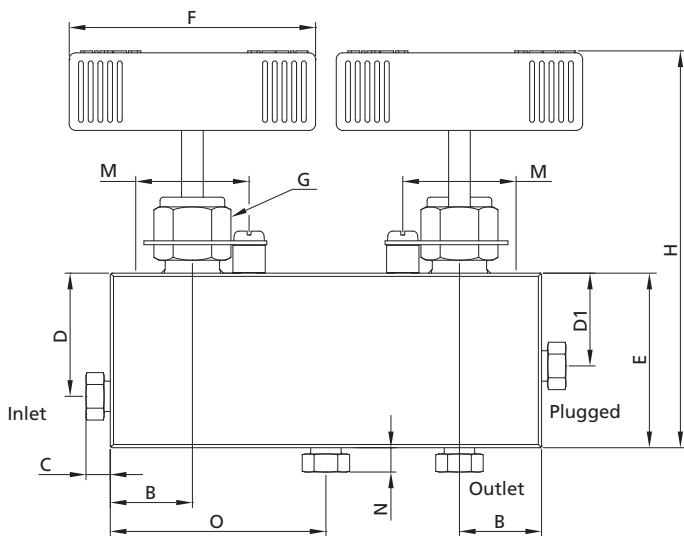
Sour Service Products

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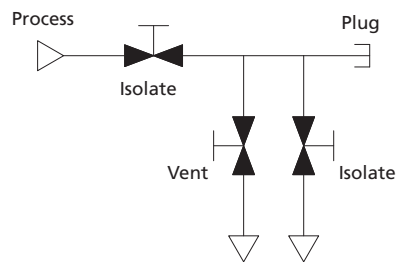
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Ordering Information and Dimensions



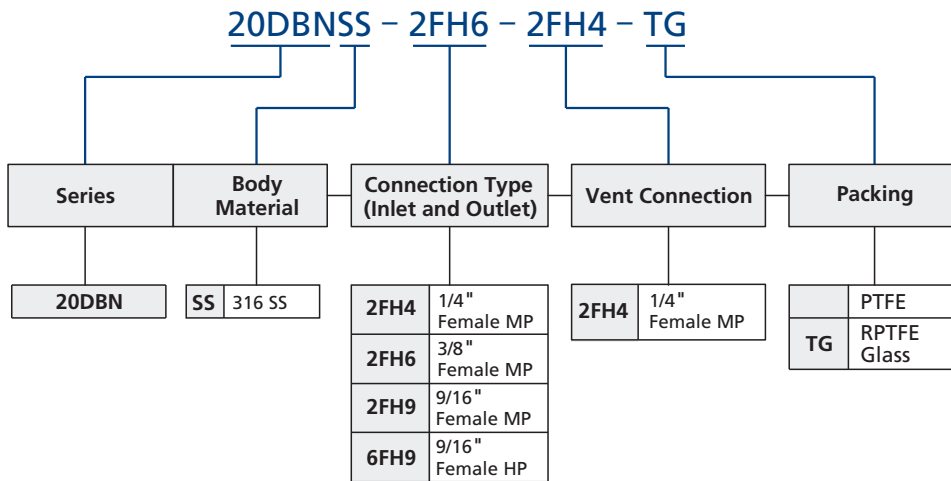
Bottom View



Dimensions																		
Ordering Number	Connection Type (Inlet and Outlet)	Orifice in. (mm)	Dimensions, in. (mm)															
			A	B	C	D	D1	E	F	G	H	M	N	O	P	Q	V	X
20DBNSS-2FH4-2FH4	2FH4	0.094 (2.4)	5.25 (133.4)	1.00 (25.4)	0.38 (9.65)	1.50 (38.1)	1.13 (28.7)	2.13 (54.1)	3.00 (76.2)	0.81 (20.6)	4.65 (118.1)	0.69 (17.5)	0.50 (12.7)	2.62 (66.7)	0.63 (16.0)	1.50 (38.1)	1.43 (36.3)	0.50 (12.7)
20DBNSS-2FH6-2FH4	2FH6	0.094 (2.4)	5.25 (133.4)	1.00 (25.4)	0.44 (11.2)	1.50 (38.1)	1.13 (28.7)	2.13 (54.1)	3.00 (76.2)	0.81 (20.6)	4.65 (118.1)	0.69 (17.5)	0.50 (12.7)	2.62 (66.7)	0.63 (16.0)	1.50 (38.1)	1.43 (36.3)	0.50 (12.7)
20DBNSS-2FH9-2FH4	2FH9	0.094 (2.4)	5.88 (149.4)	1.31 (33.3)	0.55 (14.0)	1.50 (38.1)	1.13 (28.7)	3.00 (76.2)	3.00 (76.2)	0.81 (20.6)	5.53 (140.5)	0.69 (17.5)	0.50 (12.7)	2.94 (74.7)	0.63 (16.0)	1.75 (44.5)	1.43 (36.3)	0.75 (19.1)
20DBNSS-6FH9-2FH4	6FH9	0.094 (2.4)	5.88 (149.4)	1.31 (33.3)	0.95 (24.1)	1.50 (38.1)	1.13 (28.7)	3.00 (76.2)	3.00 (76.2)	0.81 (20.6)	5.53 (140.5)	0.69 (17.5)	0.50 (12.7)	2.94 (74.7)	0.63 (16.0)	1.75 (44.5)	1.43 (36.3)	0.75 (19.1)

- NOTES: 1. Vent Connection: 1/4" Female MP.
 2. G is the drill dimension of packing gland mounting hole.
 3. G1 is the panel mounting drill size.
 4. H is the dimension of stem in closed position.
 5. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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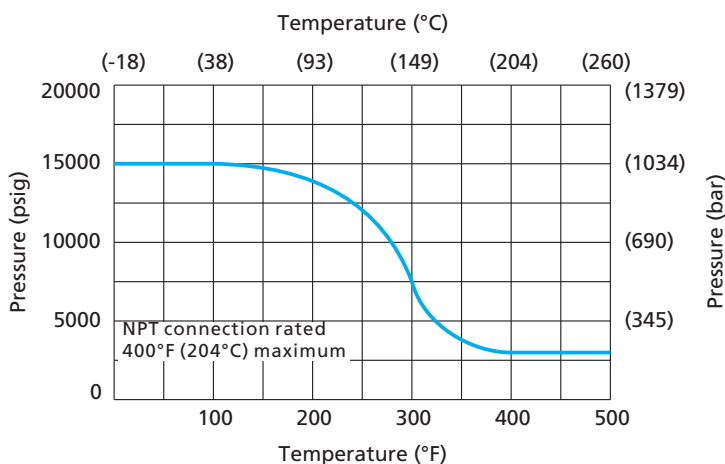
Double Block & Bleed Ball Valves

Pressures to 15,000 psig (1034 bar)

Features

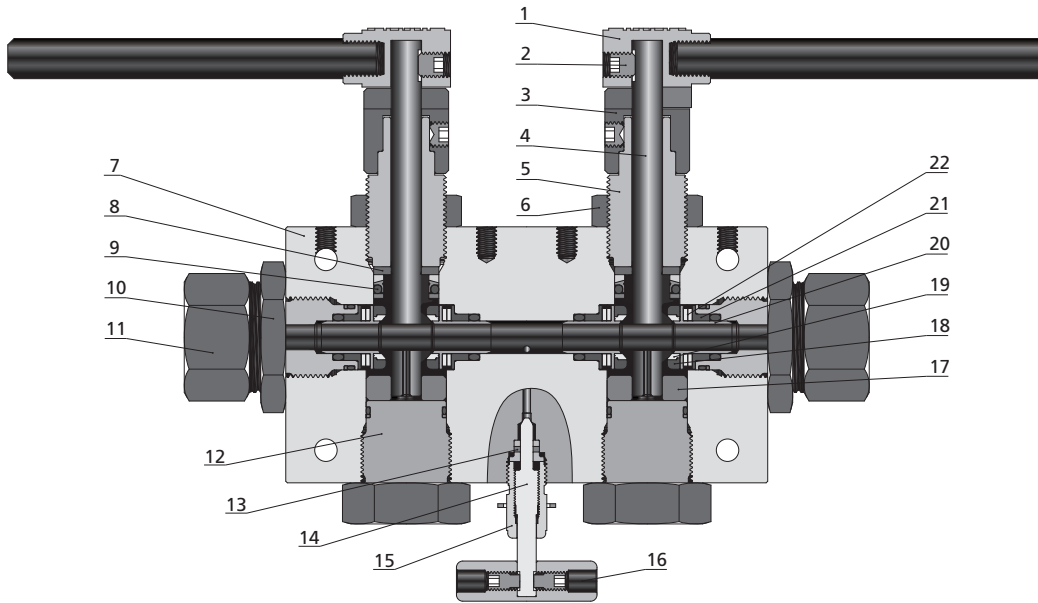
- ⦿ Working temperature range from 0°F to 400°F (-17.8°C to 204°C) with Fluorocarbon FKM O-rings, other O-ring materials available
- ⦿ High tensile 316 Stainless Steel body material
- ⦿ Carbon filled PEEK seats to offer excellent resistance to chemicals, heat and abrasion
- ⦿ One piece, trunnion mounted stem design
- ⦿ Full-port flow path to minimize pressure drop
- ⦿ Vee-stem vent valve
- ⦿ Wide selection of tube and pipe end fittings available
- ⦿ Quarter turn from open to close with positive stop

Pressure vs. Temperature Curve



NOTE: Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.

Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	Stopping Device	316 SS/A479
4	<i>Stem</i>	<i>316 SS/A479</i>
5	Packing Gland	316 SS/A479
6	Locking Piece	316 SS/A479
7	<i>Valve Body</i>	<i>316 SS/A479</i>
8	Thrust Washer	C63000/B150
9	<i>Combination Seal</i>	<i>Fluorocarbon FKM</i>
10	Lock Nut	316 SS/A479
11	<i>Seat Gland</i>	<i>316 SS/A479</i>
12	<i>Bottom Gland</i>	<i>316 SS/A479</i>
13	<i>Vent Valve Packing</i>	<i>PTFE</i>
14	<i>Vent Valve Stem</i>	<i>S17400/A564</i>
15	Vent Valve Packing Gland	C63000/B150
16	Vent Valve Handle	Stainless Steel
17	<i>Bearing</i>	<i>PEEK</i>
18	<i>Seat Retainer</i>	<i>S17400/A564</i>
19	<i>Seat</i>	<i>Carbon Filled PEEK</i>
20	<i>Support</i>	<i>316 SS/A479</i>
21	<i>Belleville Backup</i>	<i>S17400/A564</i>
22	<i>Belleville Washers</i>	<i>S17700/A693</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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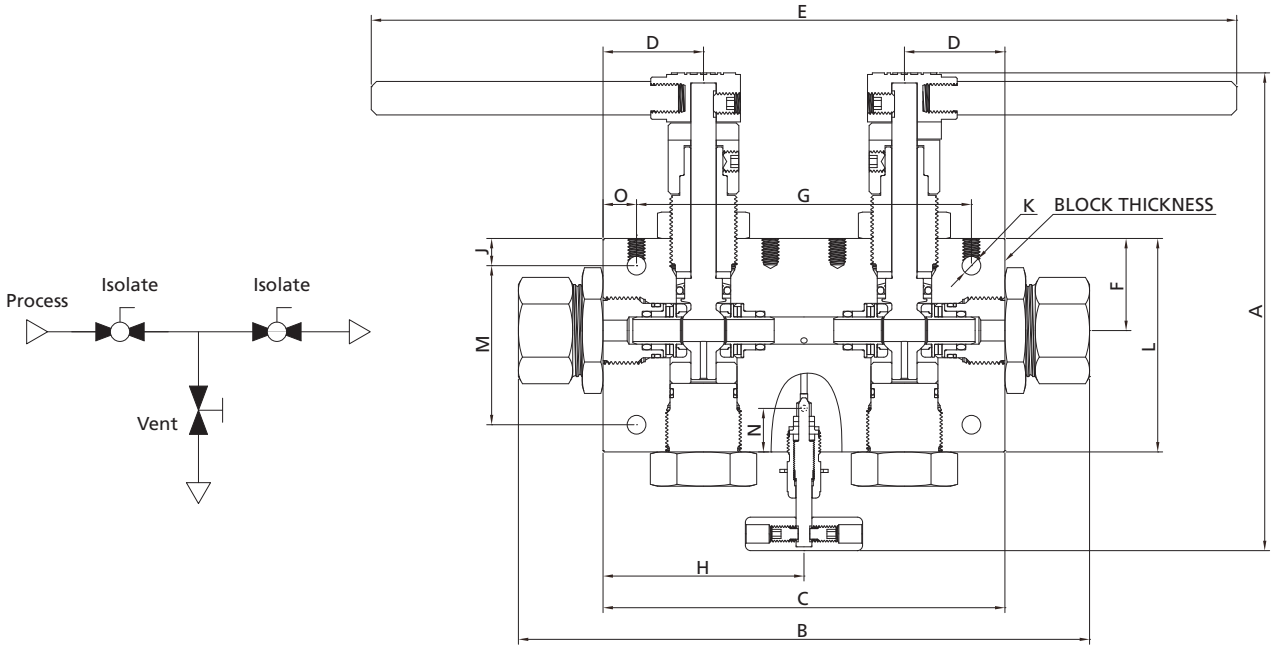
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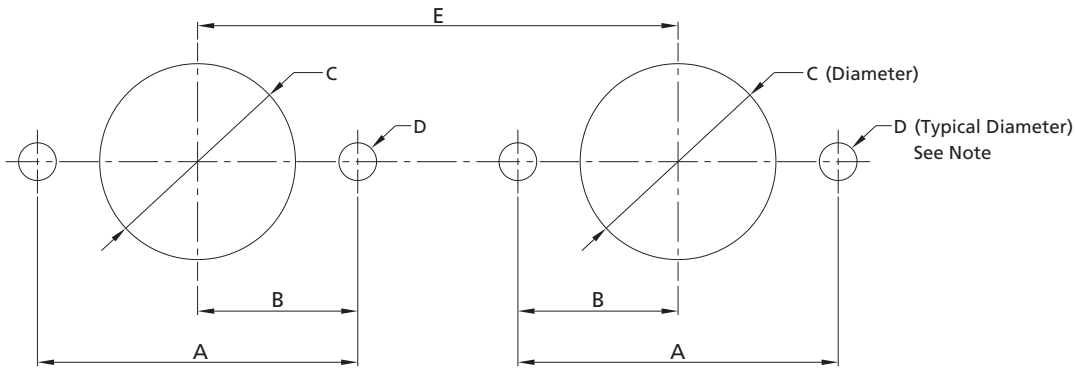


Dimensions, in. (mm)

A	B	C	D	E	F	G	H	J	K	L	M	N ^①	O	Block Thickness
7.14 (181.4)	8.81 (223.8)	6 (152.4)	1.5 (38.1)	12.94 (328.7)	1.38 (34.9)	5 (127)	3 (76.2)	0.41 (10.3)	0.28 (7.1)	3.19 (81)	2.38 (60.4)	0.65 (16.5)	0.5 (12.7)	1.75 (44.45)

① N: Vent connection on back side.

Panel Mounting Dimensions



Dimensions, in. (mm)

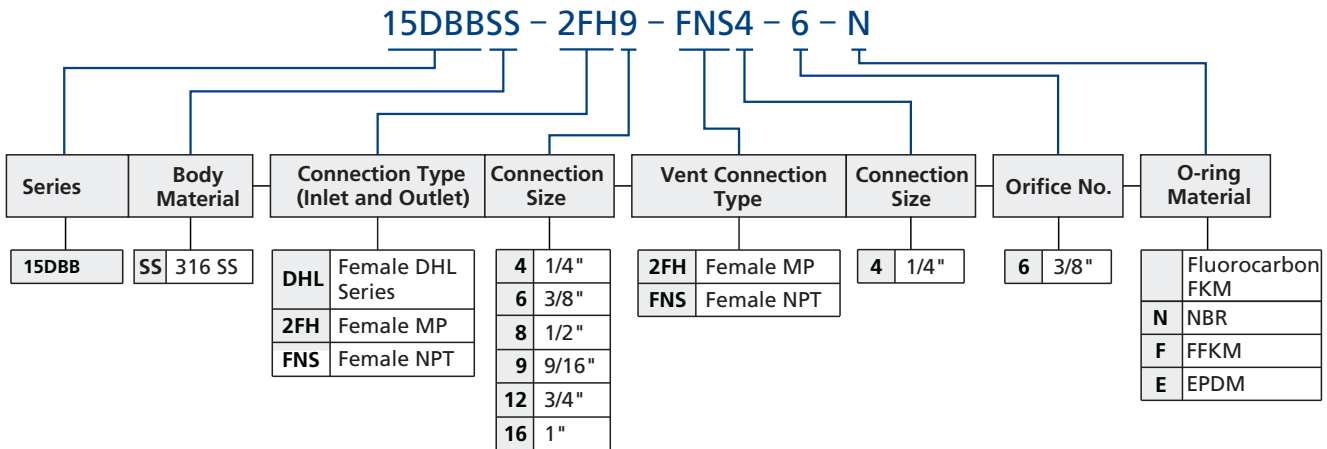
A	B	C	D	E
2 (50.8)	1 (25.4)	1.5 (38.1)	0.28 (7.1)	3 (76.2)

NOTE: 1. Body mounting 1/4-20 thread.
2. All dimensions are for reference only and are subject to change.

Ordering Information and Dimensions

Series	Ordering Number	Connection Type (Inlet and Outlet)	Vent Connection	Orifice No.	Orifice Size in. (mm)	Cv	Working Pressure psig (bar)
15DBB	15DBBSS-DHL8-FNS4-6	DHL8	FNS4	6	0.33 (8.3)	2.3	15,000 (1034)
	15DBBSS-2FH4-2FH4-6	2FH4	2FH4		0.20 (5.2)	0.9	
	15DBBSS-2FH6-2FH4-6	2FH6	2FH4		0.30 (7.9)	2.1	
	15DBBSS-2FH9-2FH4-6	2FH9	2FH4		0.33 (8.3)	2.3	
	15DBBSS-2FH9-FNS4-6	2FH9	FNS4		0.33 (8.3)	2.3	
	15DBBSS-2FH12-2FH4-6	2FH12	2FH4		0.33 (8.3)	2.3	
	15DBBSS-2FH16-FNS4-6	2FH16	FNS4		0.33 (8.3)	2.3	
	15DBBSS-FNS4-FNS4-6	FNS4	FNS4		0.33 (8.3)	2.3	
	15DBBSS-FNS6-FNS4-6	FNS6	FNS4		0.33 (8.3)	2.3	
15DBBSS-FNS8-FNS4-6	FNS8	FNS4	0.33 (8.3)	2.3			

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Code	O-ring Material	Working temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

Line Filters

Line Filters



D-02

Line Filters

- 10FD, 10FC Series Line Filters, 10,000 psig (690 bar)
- 15FD, 15FC Series Line Filters, 15,000 psig (1034 bar)
- 20FD, 20FC Series Line Filters, 20,000 psig (1379 bar)
- 60FD, 60FC Series Line Filters, 60,000 psig (4137 bar)

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Dual-Disc Line Filters D-04

10FC Series

Cup-Type Line Filters D-05

15FD Series

Dual-Disc Line Filters D-06

15FC Series

Dual-Disc Line Filters D-08

20FD Series

Dual-Disc Line Filters D-10

20FC Series

Cup-Type Line Filters D-11

60FD Series

Dual-Disc Line Filters D-12

60FC Series

Cup-Type Line Filters D-13

Ordering Number Description

D-14

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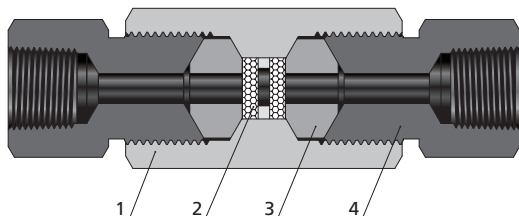
10,000 psig (690 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 400°F (-50°C to 204°C)
- 3/4" and 1" female NPT available
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 μm . Other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

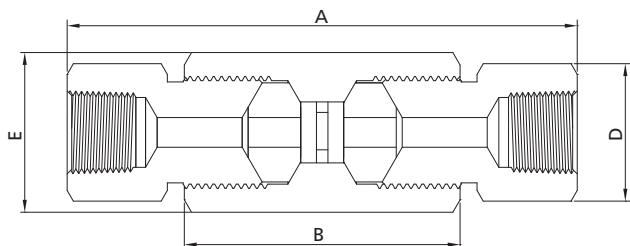
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (μm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)				Working Pressure psig (bar)
					A	B	D (Hex)	E (Hex)	
10FDSS-FNS12-0510	FNS12	0.36 (9.1)	5/10	0.44 (286.5)	5.59 (142.0)	3.06 (77.8)	1.50 (38.1)	1.75 (44.5)	10,000 (690)
10FDSS-FNS12-1035			10/35						
10FDSS-FNS12-3565			35/65						
10FDSS-FNS16-0510	FNS16	0.56 (14.3)	5/10	0.89 (572.6)	6.66 (169.1)	3.63 (92.1)	1.75 (44.5)	1.88 (47.7)	10,000 (690)
10FDSS-FNS16-1035			10/35						
10FDSS-FNS16-3565			35/65						

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

10FC Series

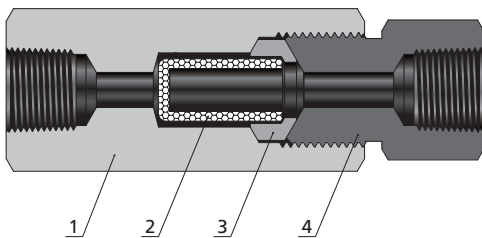
10,000 psig (690 bar)

Cup-Type Line Filters

Features

- ⦿ Working temperature range: -60°F to 400°F (-50°C to 204°C)
- ⦿ 3/4" and 1" female NPT available
- ⦿ Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- ⦿ Nominal pore sizes for filter elements: 5, 35 and 65 μm
- ⦿ Easy to replace filter elements
- ⦿ Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

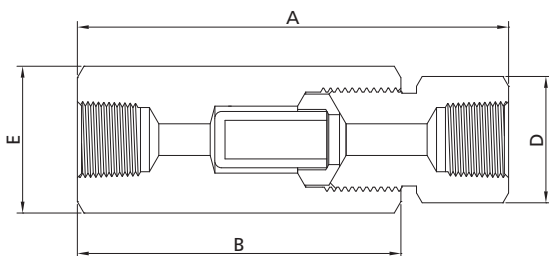
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (μm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)				Working Pressure psig (bar)
					A	B	D (Hex)	E (Hex)	
10FCSS-FNS12-5	FNS12	0.52 (13.1)	5	2.65 (1709.7)	5.14 (130.6)	3.87 (98.4)	1.50 (38.1)	1.75 (44.5)	10,000 (690)
10FCSS-FNS12-35			35						
10FCSS-FNS12-65			65						
10FCSS-FNS16-5	FNS16	0.69 (17.5)	5	5.00 (3225.8)	6.39 (162.3)	4.87 (123.8)	1.75 (44.5)	1.88 (47.7)	10,000 (690)
10FCSS-FNS16-35			35						
10FCSS-FNS16-65			65						

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

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15FD Series

15,000 psig (1034 bar)

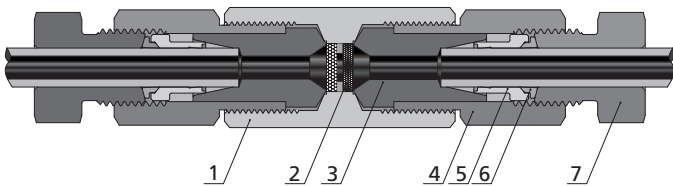
Dual-Disc Line Filters

Features

- ⦿ Working temperature range:
Tubing connection: -60°F to 660°F (-50°C to 350°C)
Pipe connection: -60°F to 400°F (-50°C to 204°C)
- ⦿ Connection types and sizes:
1/8", 1/4", 3/8" and 1/2" O.D. tubing
1/8", 1/4", 3/8" and 1/2" Female NPT
- ⦿ Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- ⦿ Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 µm. Other element combinations available on request
- ⦿ Easy to replace filter elements
- ⦿ Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

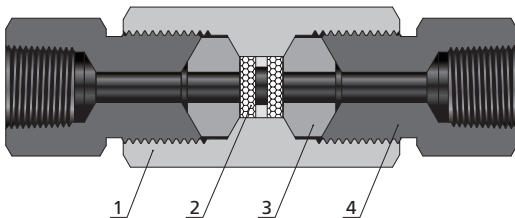
Standard Materials of Construction

Tubing Connection



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
5	<i>Front Ferrule</i>	316 SS/A479
6	<i>Rear Ferrule</i>	316 SS/A479
7	<i>Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Pipe Connection



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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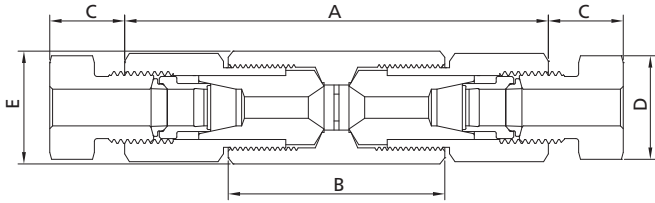
Subsea Valves

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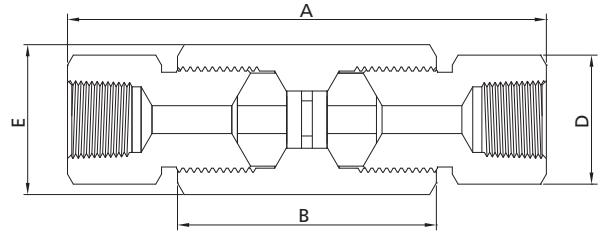
Technical Information

Ordering Information and Dimensions

Tubing Connection



Pipe Connection



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
15FDSS-DHL2-0510	DHL2	0.09 (2.4)	5/10	0.06 (38.7)	2.70 (68.5)	1.50 (38.1)	0.44 (11.2)	0.37 (9.5)	0.63 (15.9)	15,000 (1034)
15FDSS-DHL2-1035			10/35							
15FDSS-DHL2-3565			35/65							
15FDSS-DHL4-0510	DHL4	0.13 (3.2)	5/10	0.15 (96.8)	3.50 (88.8)	2.00 (50.8)	0.52 (13.3)	0.63 (15.9)	0.81 (20.6)	15,000 (1034)
15FDSS-DHL4-1035			10/35							
15FDSS-DHL4-3565			35/65							
15FDSS-DHL6-0510	DHL6	0.13 (3.2)	5/10	0.15 (96.8)	3.63 (92.1)	2.19 (55.6)	0.54 (13.6)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15FDSS-DHL6-1035			10/35							
15FDSS-DHL6-3565			35/65							
15FDSS-DHL8-0510	DHL8	0.19 (4.8)	5/10	0.25 (161.3)	4.66 (118.3)	2.94 (74.6)	0.60 (15.3)	0.94 (23.8)	1.19 (30.2)	15,000 (1034)
15FDSS-DHL8-1035			10/35							
15FDSS-DHL8-3565			35/65							
15FDSS-FNS2-0510	FNS2	0.13 (3.2)	5/10	0.06 (38.7)	2.79 (70.8)	1.50 (38.1)	—	0.63 (15.9)	0.63 (15.9)	15,000 (1034)
15FDSS-FNS2-1035			10/35							
15FDSS-FNS2-3565			35/65							
15FDSS-FNS4-0510	FNS4	0.19 (4.8)	5/10	0.15 (96.8)	4.15 (105.5)	2.19 (55.6)	—	0.94 (23.8)	1.00 (25.4)	15,000 (1034)
15FDSS-FNS4-1035			10/35							
15FDSS-FNS4-3565			35/65							
15FDSS-FNS6-0510	FNS6	0.19 (4.8)	5/10	0.15 (96.8)	4.15 (105.5)	2.19 (55.6)	—	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15FDSS-FNS6-1035			10/35							
15FDSS-FNS6-3565			35/65							
15FDSS-FNS8-0510	FNS8	0.31 (7.9)	5/10	0.25 (161.3)	5.27 (133.8)	2.94 (74.6)	—	1.38 (35.0)	1.38 (35.0)	15,000 (1034)
15FDSS-FNS8-1035			10/35							
15FDSS-FNS8-3565			35/65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

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15FC Series

15,000 psig (1034 bar)

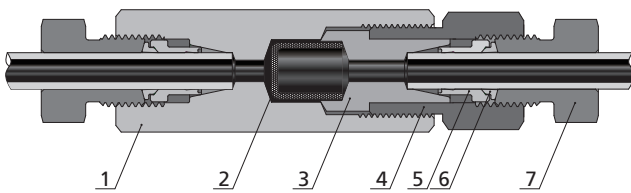
Cup-Type Line Filters

Features

- ⦿ Working temperature range:
Tubing connection: -60°F to 660°F (-50°C to 350°C)
Pipe connection: -60°F to 400°F (-50°C to 204°C)
- ⦿ Connection types and sizes:
1/8", 1/4", 3/8" and 1/2" O.D. tubing
1/8", 1/4", 3/8" and 1/2" Female NPT
- ⦿ Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- ⦿ Nominal pore sizes for filter elements: 5, 35 and 65 µm
- ⦿ Easy to replace filter elements
- ⦿ Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

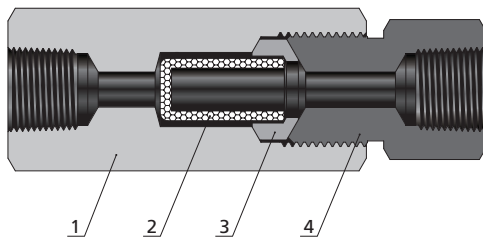
Standard Materials of Construction

Tubing Connection



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
5	<i>Front Ferrule</i>	316 SS/A479
6	<i>Rear Ferrule</i>	316 SS/A479
7	<i>Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Pipe Connection



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

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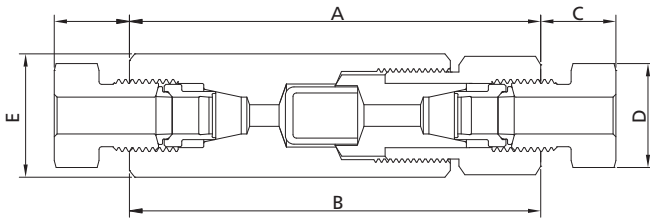
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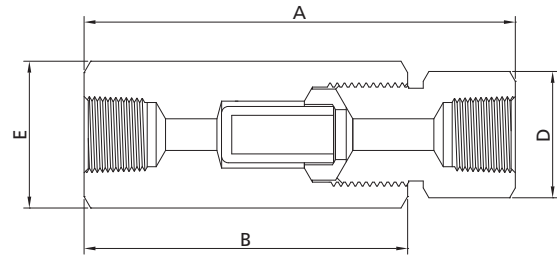
Technical Information

Ordering Information and Dimensions

Tubing Connection



Pipe Connection



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
15FCSS-DHL4-5	DHL4	0.19 (4.8)	5	0.81 (522.6)	3.50 (88.8)	2.72 (69.0)	0.52 (13.3)	0.63 (15.9)	0.81 (20.6)	15,000 (1034)
15FCSS-DHL4-35			35							
15FCSS-DHL4-65			65							
15FCSS-DHL6-5	DHL6	0.31 (7.9)	5	0.81 (522.6)	3.89 (98.8)	3.17 (80.4)	0.54 (13.6)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15FCSS-DHL6-35			35							
15FCSS-DHL6-65			65							
15FCSS-DHL8-5	DHL8	0.44 (11.1)	5	1.53 (987.1)	4.45 (113.0)	3.63 (92.3)	0.60 (15.3)	0.94 (23.8)	1.38 (35.0)	15,000 (1034)
15FCSS-DHL8-35			35							
15FCSS-DHL8-65			65							
15FCSS-FNS2-5	FNS2	0.13 (3.2)	5	0.38 (245.0)	2.58 (65.6)	1.94 (49.2)	—	0.63 (15.9)	0.63 (15.9)	15,000 (1034)
15FCSS-FNS2-35			35							
15FCSS-FNS2-65			65							
15FCSS-FNS4-5	FNS4	0.31 (7.9)	5	0.81 (522.6)	3.66 (93.0)	2.69 (68.3)	—	0.94 (23.8)	1.00 (25.4)	15,000 (1034)
15FCSS-FNS4-35			35							
15FCSS-FNS4-65			65							
15FCSS-FNS6-5	FNS6	0.31 (7.9)	5	0.81 (522.6)	3.66 (93.0)	2.69 (68.3)	—	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15FCSS-FNS6-35			35							
15FCSS-FNS6-65			65							
15FCSS-FNS8-5	FNS8	0.44 (11.1)	5	1.53 (987.1)	4.55 (115.6)	3.37 (85.7)	—	1.38 (35.0)	1.38 (35.0)	15,000 (1034)
15FCSS-FNS8-35			35							
15FCSS-FNS8-65			65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

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20FD Series

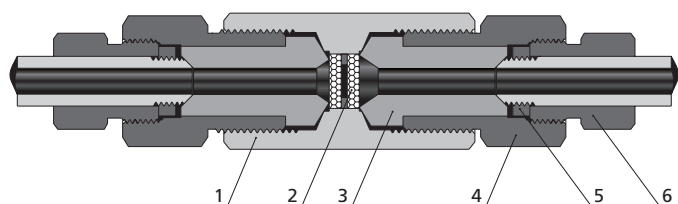
20,000 psig (1379 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing size available in 9/16"
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 μm . Other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

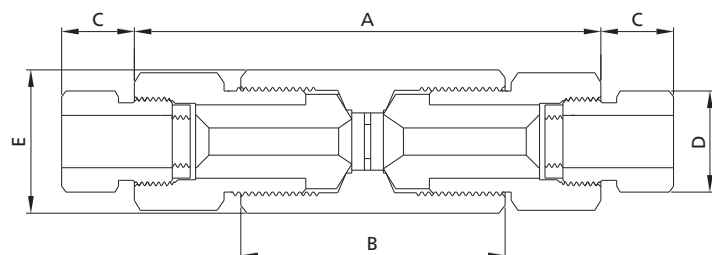
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
5	<i>Collar</i>	316 SS/A479
6	<i>Gland</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (μm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
20FDSS-2FH9-0510	2FH9	0.31 (7.9)	5/10	0.25 (161.3)	4.30 (109.2)	2.94 (74.6)	0.55 (14.0)	0.94 (23.8)	1.38 (35.0)	20,000 (1379)
20FDSS-2FH9-1035			10/35							
20FDSS-2FH9-3565			35/65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

20FC Series

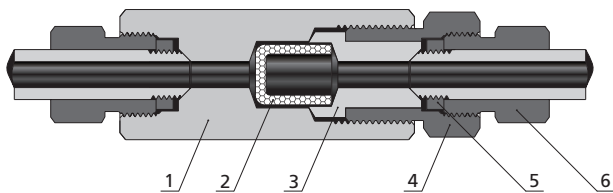
20,000 psig (1379 bar)

Cup-Type Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 µm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

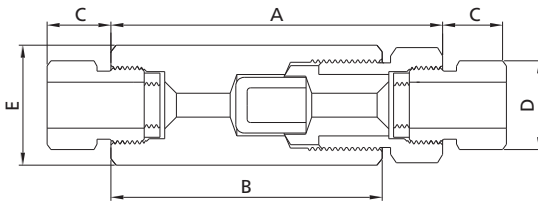
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
5	<i>Collar</i>	316 SS/A479
6	<i>Gland</i>	316 SS/A479
	Lubricant	Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
20FCSS-2FH4-5	2FH4	0.13 (3.2)	5	0.81 (522.6)	2.94 (74.1)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20FCSS-2FH4-35			35							
20FCSS-2FH4-65			65							
20FCSS-2FH6-5	2FH6	0.22 (5.5)	5	0.81 (522.6)	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.63 (15.9)	1.00 (25.4)	20,000 (1379)
20FCSS-2FH6-35			35							
20FCSS-2FH6-65			65							
20FCSS-2FH9-5	2FH9	0.36 (9.1)	5	1.53 (987.1)	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.8)	1.38 (35.0)	20,000 (1379)
20FCSS-2FH9-35			35							
20FCSS-2FH9-65			65							
20FCSS-2FH12-5	2FH12	0.52 (13.1)	5	2.65 (1709.7)	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)	20,000 (1379)
20FCSS-2FH12-35			35							
20FCSS-2FH12-65			65							
20FCSS-2FH16-5	2FH16	0.69 (17.5)	5	5.00 (3225.8)	6.62 (168.2)	5.75 (146.1)	0.74 (18.7)	1.38 (35.0)	2.12 (54.0)	20,000 (1379)
20FCSS-2FH16-35			35							
20FCSS-2FH16-65			65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

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60FD Series

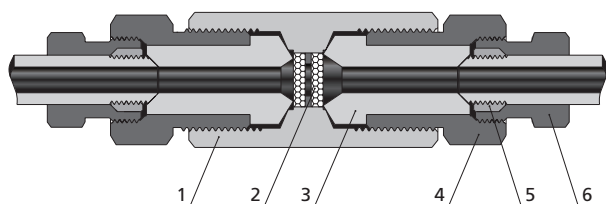
60,000 psig (4137 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8" and 9/16"
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 μm . Other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

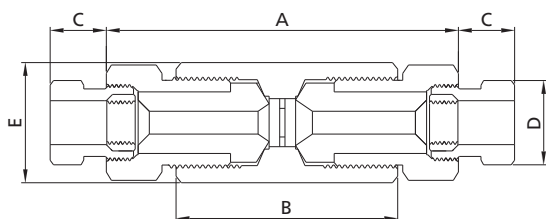
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	Gland Nut	316 SS/A479
5	Collar	316 SS/A479
6	Gland	316 SS/A479
Lubricant		Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (μm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
60FDSS-6FH4-0510	6FH4	0.09 (2.4)	5/10	0.07 (45.2)	4.73 (120.1)	3.00 (76.2)	0.47 (11.9)	0.63 (15.9)	1.19 (30.2)	60,000 (4137)
60FDSS-6FH4-1035			10/35							
60FDSS-6FH4-3565			35/65							
60FDSS-6FH6-0510	6FH6	0.13 (3.2)	5/10	0.07 (45.2)	5.12 (130.2)	3.00 (76.2)	0.61 (15.8)	0.75 (19.1)	1.19 (30.2)	60,000 (4137)
60FDSS-6FH6-1035			10/35							
60FDSS-6FH6-3565			35/65							
60FDSS-6FH9-0510	6FH9	0.19 (4.8)	5/10	0.15 (96.8)	5.81 (147.6)	3.38 (85.9)	0.95 (24.1)	1.19 (30.2)	1.50 (38.1)	60,000 (4137)
60FDSS-6FH9-1035			10/35							
60FDSS-6FH9-3565			35/65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

60FC Series

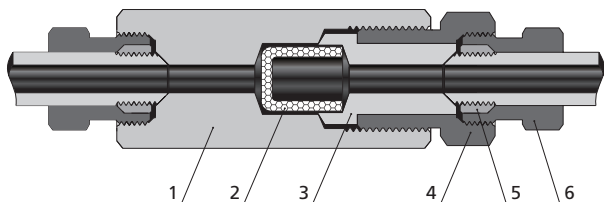
60,000 psig (4137 bar)

Cup-Type Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8" and 9/16"
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 μm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

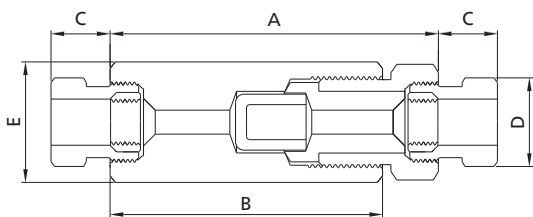
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Body</i>	316 SS/A479
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS/A479
4	<i>Gland Nut</i>	316 SS/A479
5	<i>Collar</i>	316 SS/A479
6	<i>Gland</i>	316 SS/A479
Lubricant		Molybdenum disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (μm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
60FCSS-6FH4-5	6FH4	0.09 (2.4)	5	1.29 (832.3)	4.19 (106.4)	3.38 (85.9)	0.47 (11.9)	0.63 (15.9)	1.38 (35.0)	60,000 (4137)
60FCSS-6FH4-35			35							
60FCSS-6FH4-65			65							
60FCSS-6FH6-5	6FH6	0.13 (3.2)	5	1.29 (832.3)	4.62 (117.4)	3.62 (91.9)	0.61 (15.6)	0.75 (19.1)	1.38 (35.0)	60,000 (4137)
60FCSS-6FH6-35			35							
60FCSS-6FH6-65			65							
60FCSS-6FH9-5	6FH9	0.19 (4.8)	5	1.29 (832.3)	5.25 (133.4)	4.06 (103.1)	0.95 (24.1)	1.19 (30.2)	1.50 (38.1)	60,000 (4137)
60FCSS-6FH9-35			35							
60FCSS-6FH9-65			65							

NOTE: The element nominal pore size is calculated from measured minimum pressure required to force the first bubble of gas through the test filter element (under the standardized conditions) impregnated with a liquid.

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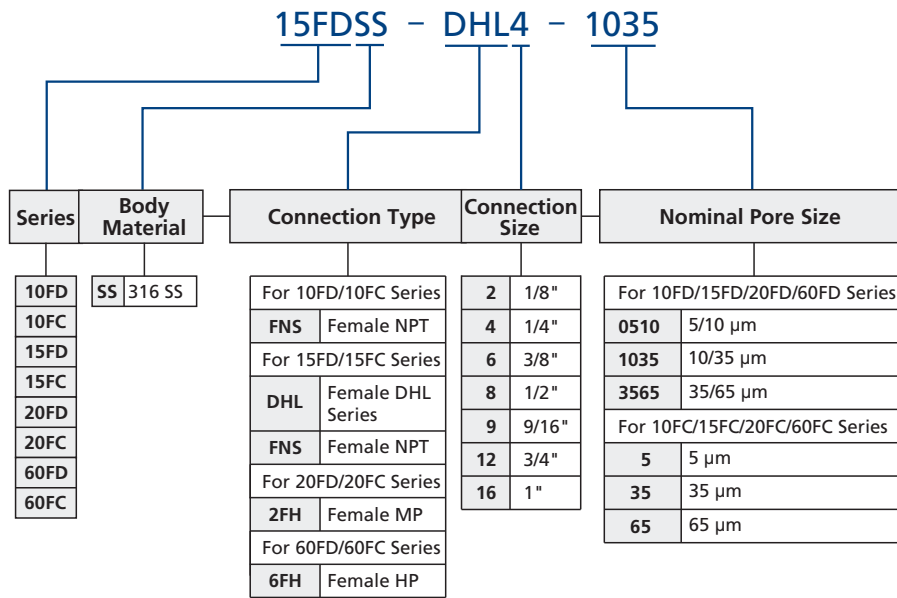
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Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Medium Pressure Tube Fittings and Tubing



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High Pressure Tube Fittings and Tubing



E-08

Pipe Fittings



E-11

Adapters and Couplings



E-13

Needle Valves

Pressures to 30,000 psig (2068 bar)



E-15

Bleed Valves

Pressures to 20,000 psig (1379 bar)



E-28

Gauge Valves

Pressures to 20,000 psig (1379 bar)



E-31

Check Valves

Pressures to 30,000 psig (2068 bar)



E-35

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- Bleed Valves, 20,000 psig (1379 bar)
- Gauge Valves, 20,000 psig (1379 bar)
- Check Valves, 30,000 psig (2068 bar)



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FITOK designs and manufactures medium & high pressure valves, fittings and tubing for use with sour oil and gas (H₂S). These components, are also referred to as FITOK type "S" components.

Sour Oil and Gas Service (H₂S) or Standard Service

FITOK's oil field components are offered for standard oil field service where H₂S is not present and type "S" for service where H₂S is present. FITOK's S components are manufactured with materials and procedures specified for optimum resistance to H₂S. These material specifications and manufacturing procedures are continually updated to incorporate the latest advances and customer requirements.

Working Pressure/Temperature

Valves and fittings for standard service are rated for working pressure up to 60,000 psig (4137 bar) at 100°F (38°C). Type S components are rated up to 30,000 psig (2068 bar) at 100°F (38°C).

Sizes:

FITOK's type S valves and fittings are supplied with standard API test and gauge connections. Conned-and-threaded tubing connections in other sizes are available to meet individual requirement. FITOK stocks a wide selection of sizes for immediate shipment.

NACE MR0175 Compliant Materials:

FITOK standard series valves and fittings are type 316 stainless steel, cold worked material. Type S valves and fittings are 316 stainless steel annealed material. If required, complete material specifications are provided. All pressure-containing materials used are in accordance with NACE MR0175.

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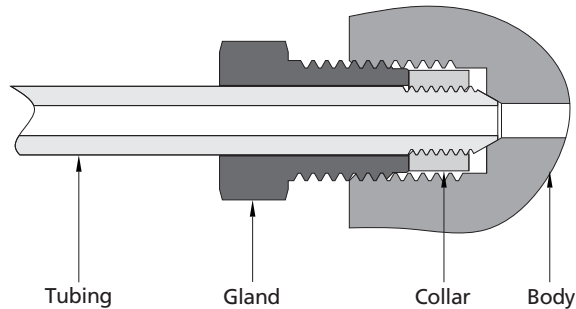
Medium Pressure Tube Fittings and Tubing

Tube Fittings

Features

- ⦿ Maximum working pressure: 10,000 psig (690 bar)
- ⦿ Coned-and-threaded connection
- ⦿ Tube sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- ⦿ Annealed 316 Stainless Steel as standard material, other materials available upon request
- ⦿ Anti-vibration connection components available
- ⦿ Easy to disconnect and retighten
- ⦿ Metal-to-metal seal to provide perfect leak-tight service for working conditions from critical vacuum to medium pressure
- ⦿ Every fitting marked with size, material and heat number

Construction



Ordering Information

The structure of FITOK's type S tube fittings are the same as standard medium pressure tube fittings. To get the complete ordering number of type S medium pressure tube fittings, add "-S" as a suffix to the ordering number of standard medium pressure tube fittings. If glands and collars are not needed, add "-SWO" as a suffix.

Examples:

1. 9/16" Union, the ordering number is SS-U-2FH9-S.
2. 3/8" Tee, glands and collars are not needed, the ordering number is SS-TTT-2FH6-SWO.

The sizes of type S tube fittings are the same as standard medium pressure tube fittings, please refer to the FITOK catalog *Medium Pressure Tube Fittings and Tubing* on A-16.

Tubing

Features

- ⦿ Maximum working pressure: 10,000 psig (690 bar)
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Annealed 316/316L Stainless Steel as standard material, other materials available upon request
- ⦿ Every tubing marked with material, size and heat number

Ordering Information

T - Tube O.D. in.	Tx - Tube I.D. in.	Material	Basic Ordering Number	Tolerance O.D. in. (mm)
1/4	0.109	Annealed 316/316L SS	SS-MT-2FH4-	0.248/0.243 (6.30/6.17)
3/8	0.203	Annealed 316/316L SS	SS-MT-2FH6-	0.370/0.365 (9.40/9.27)
9/16	0.312	Annealed 316/316L SS	SS-MT-2FH9-	0.557/0.552 (14.15/14.02)
3/4	0.438	Annealed 316/316L SS	SS-MT-2FH12-	0.745/0.740 (18.92/18.80)
1	0.562	Annealed 316/316L SS	SS-MT-2FH16-	0.995/0.990 (25.27/25.14)



To get the complete ordering number of type S tubing, add the length designator and "-S" as a suffix to the basic ordering number.

Examples:

1. If 10 feet of 3/8" O.D. tubing is needed, the complete ordering number is SS-MT-2FH6-**10-S**.
2. If 6 meters of 3/4" O.D. tubing is needed, the complete ordering number is SS-MT-2FH12-**6M-S**.

The tubing is available in random lengths but no more than 20 feet (6 meters).

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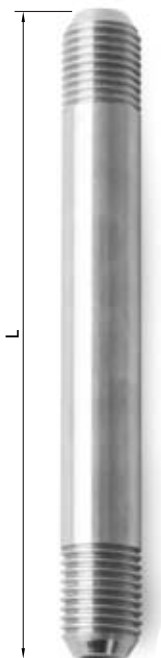
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Coned and Threaded Nipples



T - Tube O.D. in.	Tx - Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.109	SS-CTN-2FH4-2.75-S	2.75 (69.9)
1/4	0.109	SS-CTN-2FH4-3-S	3 (76.2)
1/4	0.109	SS-CTN-2FH4-4-S	4 (101.6)
1/4	0.109	SS-CTN-2FH4-6-S	6 (152.4)
1/4	0.109	SS-CTN-2FH4-8-S	8 (203.2)
1/4	0.109	SS-CTN-2FH4-10-S	10 (254.0)
1/4	0.109	SS-CTN-2FH4-12-S	12 (304.8)
3/8	0.203	SS-CTN-2FH6-3-S	3 (76.2)
3/8	0.203	SS-CTN-2FH6-4-S	4 (101.6)
3/8	0.203	SS-CTN-2FH6-6-S	6 (152.4)
3/8	0.203	SS-CTN-2FH6-8-S	8 (203.2)
3/8	0.203	SS-CTN-2FH6-10-S	10 (254.0)
3/8	0.203	SS-CTN-2FH6-12-S	12 (304.8)
9/16	0.312	SS-CTN-2FH9-4-S	4 (101.6)
9/16	0.312	SS-CTN-2FH9-6-S	6 (152.4)
9/16	0.312	SS-CTN-2FH9-8-S	8 (203.2)
9/16	0.312	SS-CTN-2FH9-10-S	10 (254.0)
9/16	0.312	SS-CTN-2FH9-12-S	12 (304.8)
3/4	0.438	SS-CTN-2FH12-4-S	4 (101.6)
3/4	0.438	SS-CTN-2FH12-6-S	6 (152.4)
3/4	0.438	SS-CTN-2FH12-8-S	8 (203.2)
3/4	0.438	SS-CTN-2FH12-10-S	10 (254.0)
3/4	0.438	SS-CTN-2FH12-12-S	12 (304.8)
1	0.562	SS-CTN-2FH16-6-S	6 (152.4)
1	0.562	SS-CTN-2FH16-8-S	8 (203.2)
1	0.562	SS-CTN-2FH16-10-S	10 (254.0)
1	0.562	SS-CTN-2FH16-12-S	12 (304.8)

NOTE: Do not recommend bending of tubing.

Installation Instructions

Please see G-07.

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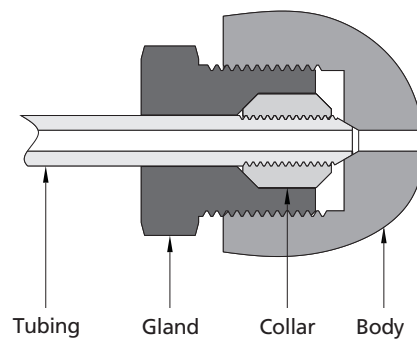
High Pressure Tube Fittings and Tubing

Tube Fittings

Features

- ⦿ Maximum working pressure: 30,000 psig (2068 bar)
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Coned-and-threaded connection
- ⦿ Annealed 316 Stainless Steel as standard material, other materials available upon request
- ⦿ Anti-vibration connection components available
- ⦿ Easy to disconnect and retighten
- ⦿ Metal-to-metal seal to provide perfect leak-tight service from critical vacuum to high pressure
- ⦿ Every fitting marked with size, material and heat number

Construction



Ordering Information

The structure of FITOK's type S tube fittings are the same as standard high pressure tube fittings. To get the complete ordering number of type S high pressure tube fittings, add "-S" as a suffix to the ordering number of standard high pressure tube fittings. If glands and collars are not needed, add "-SWO" as a suffix.

Examples:

1. 9/16" Union, the ordering number is SS-U-6FH9-S.
2. 3/8" Tee, glands and collars are not needed, the ordering number is SS-TTT-6FH6-SWO.

The sizes of type S tube fittings are the same as standard high pressure tube fittings, please refer to the FITOK catalog *High Pressure Tube Fittings and Tubing* on A-26.

Tubing

Features

- ⦿ Maximum working pressure: 30,000 psig (2068 bar)
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Annealed 316/316L Stainless Steel as standard material, other materials available upon request
- ⦿ Every tubing marked with material, size and heat number

Ordering Information

T - Tube O.D. in.	Tx - Tube I.D. in.	Material	Basic Ordering Number	Tolerance O.D. in. (mm)
1/4	0.083	Annealed 316/316L SS	SS-HT-6FH4-	0.248/0.243 (6.30/6.17)
3/8	0.125	Annealed 316/316L SS	SS-HT-6FH6-	0.370/0.365 (9.40/9.27)
9/16	0.188	Annealed 316/316L SS	SS-HT-6FH9-	0.557/0.552 (14.15/14.02)



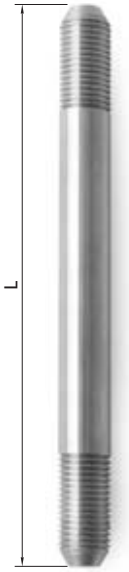
To get the complete ordering number of type S tubing, add the length designator and "-S" as a suffix to the basic ordering number.

Examples:

1. If 10 feet of 1/4" O.D. tubing is needed, the complete ordering number is SS-HT-6FH4-**10-S**.
2. If 6 meters of 9/16" O.D. tubing is needed, the complete ordering number is SS-HT-6FH9-**6M-S**.

The tubing is available in random lengths but no more than 20 feet (6 meters).

Coned and Threaded Nipples



T - Tube O.D. in.	Tx - Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.083	SS-CTN-6FH4-2.75-S	2.75 (69.9)
1/4	0.083	SS-CTN-6FH4-3-S	3 (76.2)
1/4	0.083	SS-CTN-6FH4-4-S	4 (101.6)
1/4	0.083	SS-CTN-6FH4-6-S	6 (152.4)
1/4	0.083	SS-CTN-6FH4-8-S	8 (203.2)
1/4	0.083	SS-CTN-6FH4-10-S	10 (254.0)
1/4	0.083	SS-CTN-6FH4-12-S	12 (304.8)
3/8	0.125	SS-CTN-6FH6-3-S	3 (76.2)
3/8	0.125	SS-CTN-6FH6-4-S	4 (101.6)
3/8	0.125	SS-CTN-6FH6-6-S	6 (152.4)
3/8	0.125	SS-CTN-6FH6-8-S	8 (203.2)
3/8	0.125	SS-CTN-6FH6-10-S	10 (254.0)
3/8	0.125	SS-CTN-6FH6-12-S	12 (304.8)
9/16	0.188	SS-CTN-6FH9-4-S	4 (101.6)
9/16	0.188	SS-CTN-6FH9-6-S	6 (152.4)
9/16	0.188	SS-CTN-6FH9-8-S	8 (203.2)
9/16	0.188	SS-CTN-6FH9-10-S	10 (254.0)
9/16	0.188	SS-CTN-6FH9-12-S	12 (304.8)

NOTE: Do not recommend bending of tubing.

Installation Instructions

Please see G-07.

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Pipe Fittings

Features

- ⦿ Annealed 316 Stainless Steel as standard material, other materials available upon request
- ⦿ The hardened threads with smooth surface finishing avoid galling and help to extend the fitting service life
- ⦿ Radius junction design with elbows provides smooth flow path
- ⦿ Every fitting marked with size, material and heat number

Thread Specifications

Connection Type	Code	Thread Type	Thread Specification
Male or Female NPT	NS	NPT	ASME B1.20.1, SAE AS71051
Male or Female ISO/BSP Tapered	RT	ISO/BSP Tapered	ISO 7-1, BS EN 10226-1, DIN EN10226-1, JIS B0203
Male or Female JIC (37° Flare)	AN		ASME B1.1
Female Swivel JIC (37° Flare)	AS	SAE/MS	
Male Type "M"	HM		

Working Pressure

- ⦿ The pressures of pipe fittings are dependent on the end connection with the lowest working pressure.
- ⦿ The pressures of the end connections are shown in the table below.

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
NS2	10,000 (690)	RT2	10,000 (690)	AN4/AS4	10,000 (690)
NS4	10,000 (690)	RT4	10,000 (690)	AN6/AS6	10,000 (690)
NS6	10,000 (690)	RT6	10,000 (690)	AN8/AS8	10,000 (690)
NS8	10,000 (690)	RT8	10,000 (690)	AN10/AS10	10,000 (690)
NS12	10,000 (690)	RT12	10,000 (690)	AN12/AS12	10,000 (690)
NS16	10,000 (690)	RT16	10,000 (690)	AN16/AS16	10,000 (690)

End Connection	Working Pressure psig (bar)
HM9	30,000 (2068)
HM12	20,000 (1379)
HM14	30,000 (2068)
HM16	20,000 (1379)
HM21	10,000 (690)

Working Temperature

Connection Type	Temperature Range
Male or Female NPT	-325°F to 400°F (-198°C to 204°C)
Male or Female ISO/BSP Tapered	-325°F to 400°F (-198°C to 204°C)
Male or Female JIC (37° Flare)	-423°F to 1200°F (-252°C to 649°C)
Female Swivel JIC (37° Flare)	-423°F to 1200°F (-252°C to 649°C)
Male Type "M"	-423°F to 1200°F (-252°C to 649°C)

Cautions:

- ⦿ Do not loosen or tighten fittings when the system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads.

Ordering Information

The structure of FITOK's type S pipe fittings are the same as standard pipe fittings. To get the complete ordering number of type S pipe fittings, add "-S" as a suffix to the ordering number of standard pipe fittings.

Examples: 3/8" NPT Hex Nipple, the ordering number is : SS-HPHN-NS6-S.

The sizes of type S pipe fittings are the same as standard pipe fittings, please refer to the FITOK catalog *Pipe Fittings* on A-35.

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Adapters and Couplings

Features

- ⦿ Annealed 316 Stainless Steel as standard material, other materials available upon request
- ⦿ Every fitting marked with size, material and heat number

Working Temperature

Connection Type	Working Temperature Range
Male MP	-325°F to 1200°F (-198°C to 649°C)
Male HP	-325°F to 1200°F (-198°C to 649°C)
Female MP	-325°F to 1200°F (-198°C to 649°C)
Female HP	-325°F to 1200°F (-198°C to 649°C)
MP Nipples	-325°F to 1200°F (-198°C to 649°C)
Nipples	-325°F to 1200°F (-198°C to 649°C)
NPT Pipe Thread	-325°F to 400°F (-198°C to 204°C)
JIC (37°Flare)	-325°F to 1200°F (-198°C to 649°C)
Male Type "M"	-325°F to 1200°F (-198°C to 649°C)

Working Pressure

- ⦿ The working pressures of Adapters and Couplings are dependent on the end connection with the lowest working pressure.
- ⦿ The working pressures of the end connections are shown in the table below .

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
2MP4/2CP4/2FH4	10,000 (690)	2CT4	10,000 (690)	6MP4/6CP4/6FH4	30,000 (2068)
2MP6/2CP6/2FH6	10,000 (690)	2CT6	10,000 (690)	6MP6/6CP6/6FH6	30,000 (2068)
2MP9/2CP9/2FH9	10,000 (690)	2CT9	10,000 (690)	6MP9/6CP9/6FH9	30,000 (2068)
2MP12/2CP12/2FH12	10,000 (690)	2CT12	10,000 (690)	—	—
2MP16/2CP16/2FH16	10,000 (690)	2CT16	10,000 (690)	—	—

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
6CT4	30,000 (2068)	NS2	10,000 (690)	AN4	10,000 (690)	HM9	30,000 (2068)
6CT6	30,000 (2068)	NS4	10,000 (690)	AN6	10,000 (690)	HM12	20,000 (1379)
6CT9	30,000 (2068)	NS6	10,000 (690)	AN8	10,000 (690)	HM14	30,000 (2068)
—	—	NS8	10,000 (690)	AN10	10,000 (690)	HM16	20,000 (1379)
—	—	NS12	10,000 (690)	AN12	10,000 (690)	HM21	10,000 (690)
—	—	NS16	10,000 (690)	AN16	10,000 (690)	—	—

Cautions:

- ⦿ Do not loosen or tighten fittings when the system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads.

Ordering Information

FITOK's type S adapters and couplings don't contain "DMP", "DCP" and "DHL" connection, the structure of which are the same as other types of standard adapters and couplings. Add "-S" as a suffix to the ordering number of standard adapters and couplings to get the complete ordering number of type S adapters and couplings. For adapters and couplings with "2FH" or "6FH" connection, if glands and collars are not needed, add "-SWO" as a suffix.

Examples:

1. Adapter, one connection is 2MP9, the other connection is NS8, the ordering number is SS-MMA-2MP9-NS8-S.
2. Coupling, one connection is 6FH6, the other connection is 2FH4, glands and collars are not needed, the ordering number is SS-FFC-6FH6-2FH4-SWO.

The sizes of type S adapters and couplings are the same as standard adapters and couplings, please refer to the FITOK catalog *Adapters and Couplings* on A-66.

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Needle Valves

Pressures to 30,000 psig (2068 bar)

Features

- ⦿ Annealed 316 Stainless Steel for valve body and Alloy 725 for lower stem
- ⦿ Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Packing located under stem threads
- ⦿ Reliable locking for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

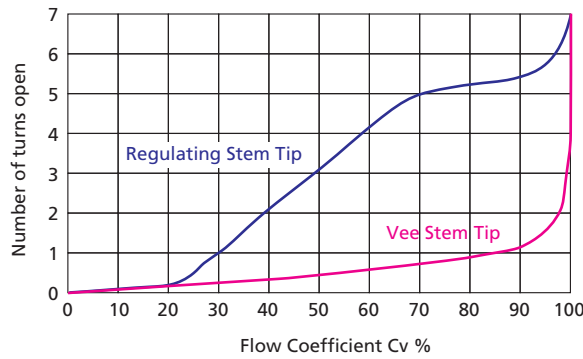
Technical Data

15N Series					
Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/8" Female NPT	FNS2	0.078 (1.98)	0.11	10,000 (690)	-100°F~400°F (-73°C~204°C)
1/8" Female ISO/BSP Tapered	FRT2				
1/4" Female NPT	FNS4	0.203 (5.16)	0.63	10,000 (690)	
1/4" Female ISO/BSP Tapered	FRT4				
3/8" Female NPT	FNS6	0.219 (5.56)	0.75	10,000 (690)	
3/8" Female ISO/BSP Tapered	FRT6				
1/2" Female NPT	FNS8	0.312 (7.92)	1.30	10,000 (690)	
1/2" Female ISO/BSP Tapered	FRT8				
20N Series					
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	2FH4	0.125 (3.18)	0.31	10,000 (690)	-100°F~600°F (-73°C~316°C)
3/8	2FH6	0.204 (5.18)	0.68	10,000 (690)	
9/16	2FH9	0.312 (7.92)	1.30	10,000 (690)	
3/4	2FH12	0.438 (11.13)	2.50	10,000 (690)	
1	2FH16	0.562 (14.27)	4.40	10,000 (690)	

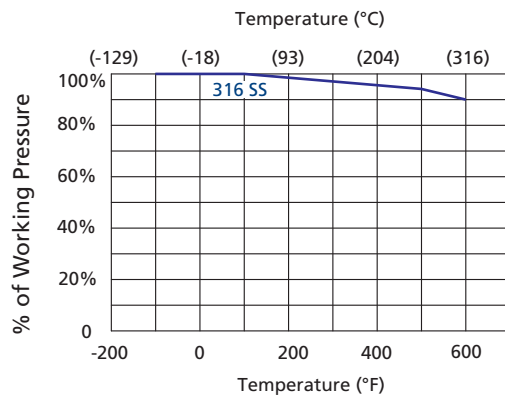
30N Series					
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	6FH4	0.094 (2.39)	0.12	20,000 (1379)	-100°F~600°F (-73°C~316°C)
3/8	6FH6	0.125 (3.18)	0.23	20,000 (1379)	
9/16	6FH9	0.125 (3.18)	0.33	20,000 (1379)	
60N Series					
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	6FH4	0.063 (1.59)	0.08	30,000 (2068)	-100°F~600°F (-73°C~316°C)
3/8	6FH6	0.063 (1.59)	0.09	30,000 (2068)	
9/16	6FH9	0.078 (1.98)	0.14	30,000 (2068)	

- NOTES: 1. The values of Cv shown are for 2-way straight valve pattern.
 2. The values of Cv for 2-way angle pattern will increase by about 50% (Based on water).
 3. Packing Options
 PTFE is the standard packing material for 15N, 20N and 30N series, RPTFE glass also available.
 Packing material for 60N Series is RPTFE only.
 PTFE: -100°F~450°F (-73°C~232°C)
 RPTFE glass: -100°F~600°F (-73°C~316°C)

Flow Data at 100°F (38°C)

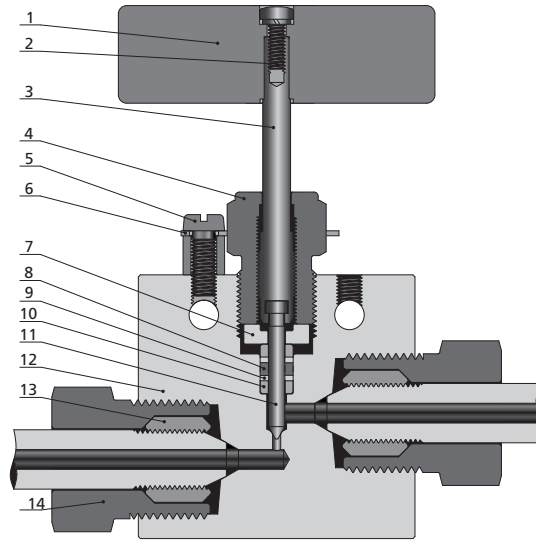


Pressure vs. Temperature Curve



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Standard Materials of Construction



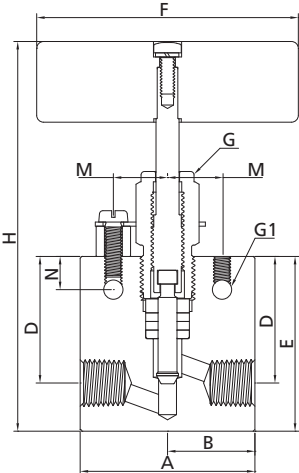
Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	316 SS/A479
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	316 SS/A479 (For 15N, 20N and 30N Series), S17400/A564 (For 60N Series)
8	<i>Packing</i>	<i>PTFE/RPTFE</i>
9	<i>Retaining Ring</i>	<i>PEEK (For 60N Series Only)</i>
10	<i>Packing Washer</i>	<i>316 SS/A479 (For 15N, 20N and 30N Series), Alloy 725 (For 60N Series)</i>
11	<i>Lower Stem</i>	<i>Alloy 725</i>
12	<i>Body</i>	<i>Annealed 316 SS</i>
13	Collar	Annealed 316 SS/A479 (For tube connections)
14	Gland	Annealed 316 SS/A479 (For tube connections)
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.

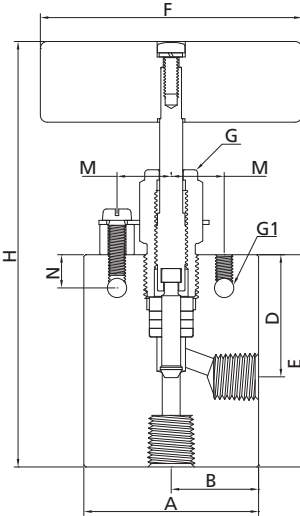
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Ordering Information and Dimensions (Pipe Connection)

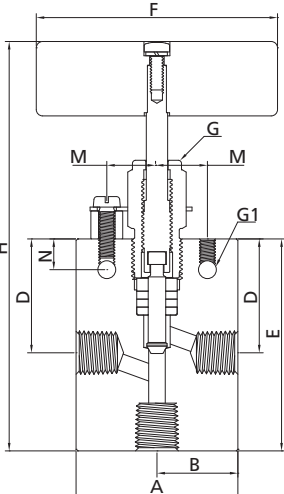
Straight



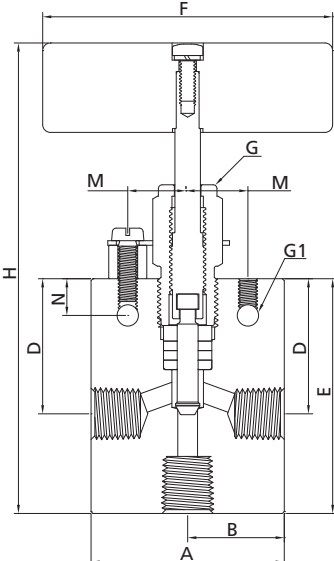
Angle



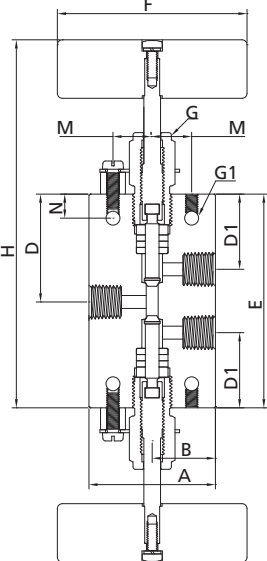
3-way/2 on pressure



3-way/1 on pressure



3-way/2 stem manifold



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15N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-1-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.81 (20.6)	/	1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.4)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-1-S	FRT2														
15NSS-FNS4-1-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-1-S	FRT4														
15NSS-FNS6-1-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-1-S	FRT6														
15NSS-FNS8-1-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-1-S	FRT8														

15N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-2-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.81 (20.6)	/	1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-2-S	FRT2														
15NSS-FNS4-2-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-2-S	FRT4														
15NSS-FNS6-2-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-2-S	FRT6														
15NSS-FNS8-2-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-2-S	FRT8														

15N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-4-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.81 (20.6)	/	1.57 (40.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.33 (84.6)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-4-S	FRT2														
15NSS-FNS4-4-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.51 (140.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-4-S	FRT4														
15NSS-FNS6-4-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (138.9)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-4-S	FRT6														
15NSS-FNS8-4-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-4-S	FRT8														

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15N Series (3-way/1 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-5-S	FNS2	0.078 (1.98)	1.50	0.75	/	0.81	/	1.38	1.75	0.62	0.17	3.13	0.56	0.31	0.63
15NSS-FRT2-5-S	FRT2		(38.1)	(19.1)		(20.6)		(35.0)	(44.5)	(15.8)	(4.3)	(79.5)	(14.2)	(7.9)	(15.9)
15NSS-FNS4-5-S	FNS4	0.203 (5.2)	2.00	1.00	/	1.41	/	2.44	3.00	0.75	0.22	5.33	0.62	0.38	0.75
15NSS-FRT4-5-S	FRT4		(50.8)	(25.4)		(35.8)		(62.0)	(76.2)	(19.1)	(5.6)	(135.4)	(15.8)	(9.7)	(19.1)
15NSS-FNS6-5-S	FNS6	0.219 (5.56)	2.50	1.25	/	1.41	/	2.44	3.00	0.75	0.22	5.34	0.62	0.38	1.00
15NSS-FRT6-5-S	FRT6		(63.5)	(31.8)		(35.8)		(62.0)	(76.2)	(19.1)	(5.6)	(135.7)	(15.8)	(9.7)	(25.4)
15NSS-FNS8-5-S	FNS8	0.312 (7.92)	3.00	1.50	/	2.06	/	3.38	4.00	1.00	0.34	6.69	0.69	0.50	1.38
15NSS-FRT8-5-S	FRT8		(76.2)	(38.1)		(52.3)		(85.9)	(101.6)	(25.4)	(8.6)	(169.9)	(17.5)	(12.7)	(35.1)

15N Series (3-way/2 stem manifold)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-6-S	FNS2	0.078 (1.98)	1.50	0.75	/	1.00	0.68	2.02	1.75	0.62	0.17	3.77	0.56	0.31	0.63
15NSS-FRT2-6-S	FRT2		(38.1)	(19.1)		(25.6)	(17.2)	(51.2)	(44.5)	(15.8)	(4.3)	(95.8)	(14.2)	(7.9)	(15.9)
15NSS-FNS4-6-S	FNS4	0.203 (5.2)	2.00	1.00	/	1.69	1.19	3.38	3.00	0.75	0.22	6.27	0.62	0.38	0.75
15NSS-FRT4-6-S	FRT4		(50.8)	(25.4)		(42.9)	(30.2)	(85.9)	(76.2)	(19.1)	(5.6)	(159.2)	(15.8)	(9.7)	(19.1)
15NSS-FNS6-6-S	FNS6	0.219 (5.56)	2.50	1.25	/	1.69	1.19	3.38	3.00	0.75	0.22	6.22	0.62	0.38	1.00
15NSS-FRT6-6-S	FRT6		(63.5)	(31.8)		(42.9)	(30.2)	(85.9)	(76.2)	(19.1)	(5.6)	(158.1)	(15.8)	(9.7)	(25.4)
15NSS-FNS8-6-S	FNS8	0.312 (7.92)	3.00	1.50	/	2.56	1.75	5.12	4.00	1.00	0.34	8.43	0.69	0.50	1.38
15NSS-FRT8-6-S	FRT8		(76.2)	(38.1)		(65.1)	(44.5)	(130.1)	(101.6)	(25.4)	(8.6)	(214.2)	(17.5)	(12.7)	(35.1)

- NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact FITOK group or our authorized distributors.

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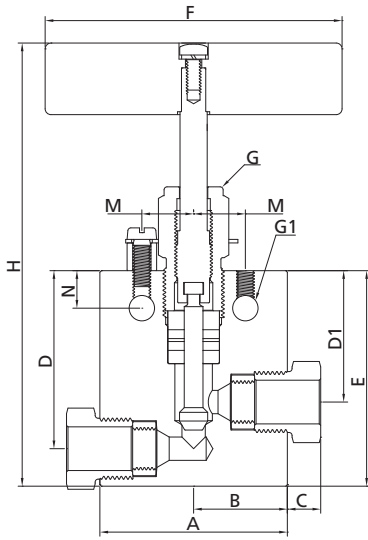
Tools and Installation Instructions

Technical Information

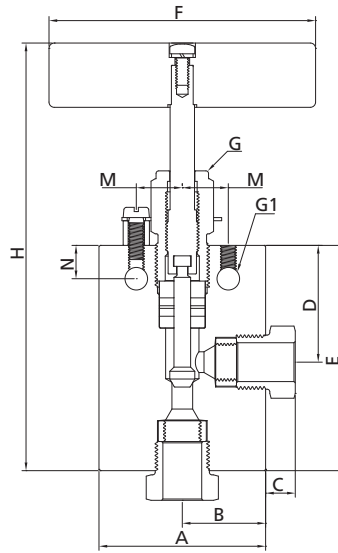
Ordering Information and Dimensions (Tubing Connection)

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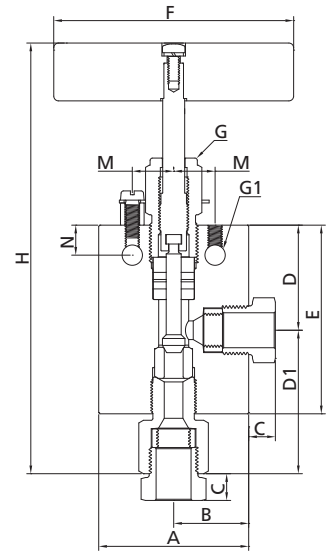
Straight



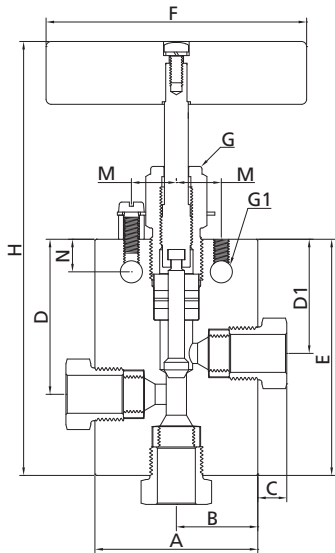
Angle



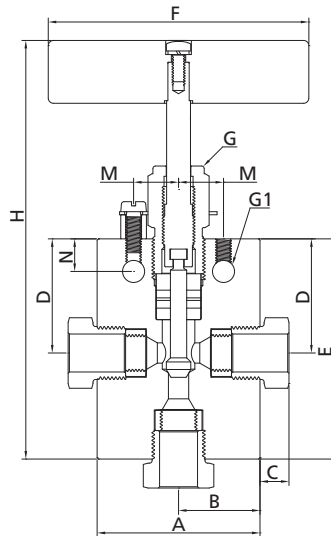
Angle (replaceable seat)



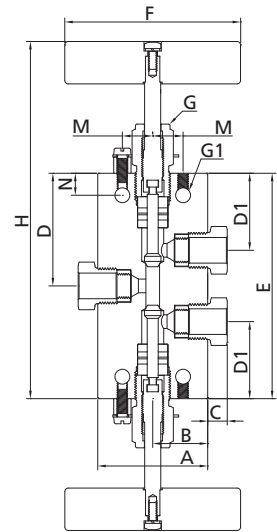
3-way/2 on pressure



3-way/1 on pressure



3-way/2 stem manifold



Ordering Information and Dimensions (Tubing Connection)

20N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-1-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-1-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-1-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-1-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.37 (187.2)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-1-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-2-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-2-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-2-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-2-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-2-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (Angle/replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-3-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.10 (154.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-3-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.16 (156.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-3-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.13 (79.4)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.58 (192.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-3-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.30 (236.3)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-3-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107.4)	5.25 (133.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.86 (301.3)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

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20N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-4-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-4-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-4-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-4-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.24 (209.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-4-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.70 (271.9)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (3-way/1 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-5-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-5-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-5-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-5-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-5-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (3-way/2 stem manifold)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-2FH4-6-S	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.23 (158.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-6-S	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.24 (158.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-6-S	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.44 (214.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-6-S	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.11 (257.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-6-S	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

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30N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-1-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-1-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-1-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-2-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	/	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-2-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	/	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-2-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	/	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (Angle/replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-3-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.06 (52.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.88 (149.2)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-3-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.67)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155.4)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-3-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.6)	2.55 (65.0)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162.4)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-4-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.12 (53.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.81 (122.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-4-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.19 (131.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-4-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.88 (73.2)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.57 (141.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

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30N Series (3-way/1 on pressure)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-5-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)		2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-5-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)		2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-5-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)		2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (3-way/2 stem manifold)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-6FH4-6-S	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.53 (38.9)	1.12 (28.5)	3.06 (77.7)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.75 (146.0)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-6-S	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.62 (41.2)	1.12 (28.5)	3.25 (82.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.94 (150.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-6-S	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.88 (47.8)	1.12 (28.5)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.44 (163.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (Straight)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG1-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG1-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.89 (124.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG1-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.14 (130.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (Angle)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG2-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)		2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG2-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG2-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Ordering Information and Dimensions (Tubing Connection)

60N Series (Angle/replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG3-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.12 (53.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.07 (154.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG3-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.36 (59.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.30 (160.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG3-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	2.68 (68.8)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.65 (168.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG4-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.6)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG4-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.75 (68.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.34 (135.8)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG4-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	3.03 (77.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.67 (143.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

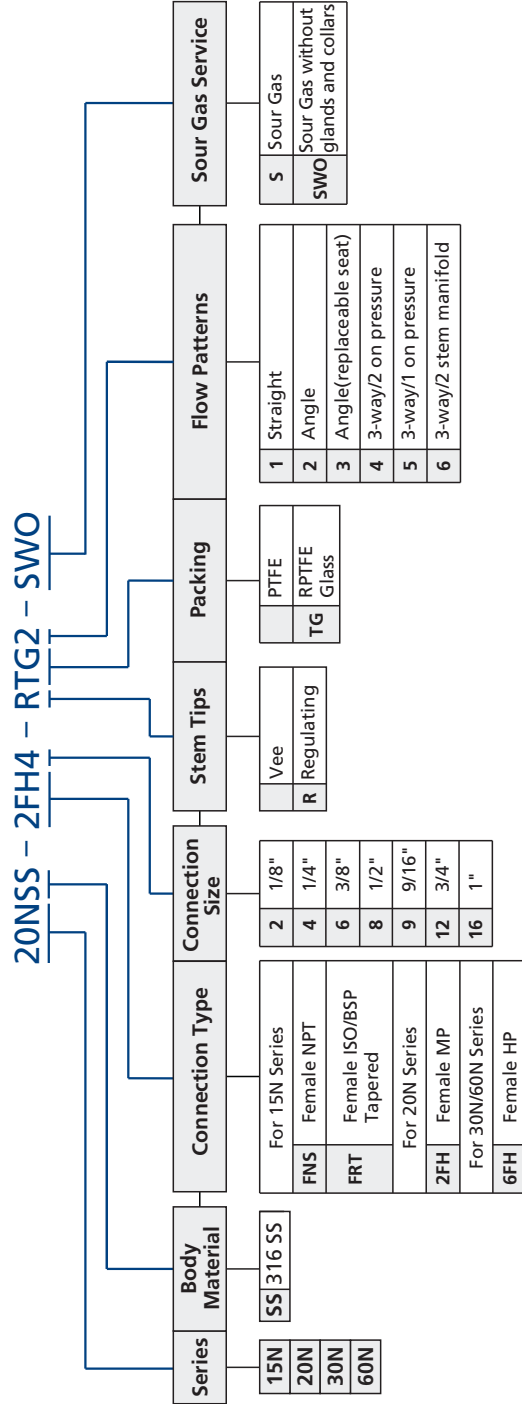
60N Series (3-way/1 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG5-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)		2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG5-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG5-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (3-way/2 stem manifold)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-6FH4-TG6-S	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.69)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (154.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-TG6-S	6FH6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-TG6-S	6FH9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (104.7)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (171.8)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- NOTES: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change. For dimensions not shown above, please contact FITOK group or our authorized distributors.

Medium & High Pressure Fittings and Tubing	Quick Couplings	Medium & High Pressure Valves	Line Filters	Sour Service Products	Subsea Valves	Tools and Installation Instructions	Technical Information
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Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Bleed Valves

Pressures to 20,000 psig (1379 bar)

Features

- ⦿ One piece hex construction compact design allows easy installation
- ⦿ Working temperature range: -20°F to 400°F (-29°C to 204°C)
- ⦿ 1/8" Female NPT outlet connection
- ⦿ Easy to assemble and replace O-ring
- ⦿ Positive locking screw design prevents accidental removal of the stem
- ⦿ Tee handle for easy operation

Technical Data

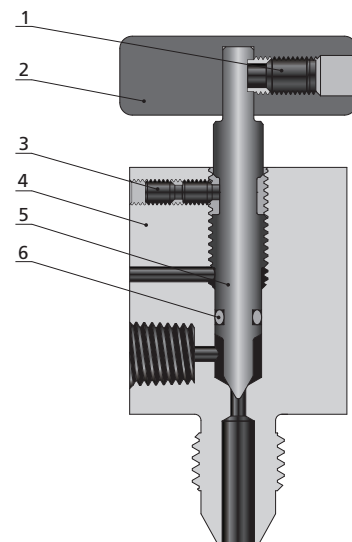
Series	Inlet Connection	Orifice in. (mm)	Working Pressure psig (bar)
20BV	2MP6	0.094 (2.4)	10,000 (690)
	2MP9	0.094 (2.4)	10,000 (690)
	2CT6	0.094 (2.4)	10,000 (690)
	2CT9	0.094 (2.4)	10,000 (690)
30BV	6MP6	0.094 (2.4)	20,000 (1379)
	6MP9	0.094 (2.4)	20,000 (1379)
	6CT6	0.094 (2.4)	20,000 (1379)
	6CT9	0.094 (2.4)	20,000 (1379)

- NOTES: 1. Working pressure shown is in closed position.
 2. Working pressure is 10,000 psig (690 bar) in open position.
 3. A variety of end connections available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

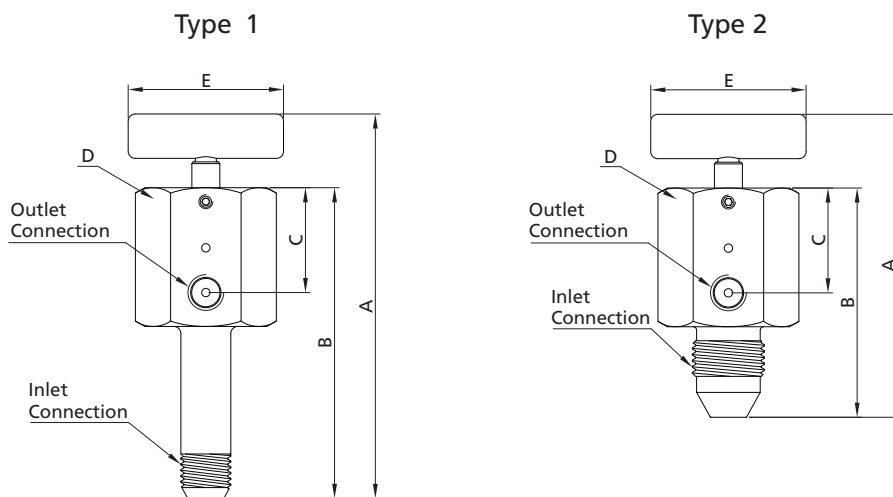
Standard Materials of Construction

Item	Component	Material Grade/ASTM Specification
1	Handle Screw	Stainless steel
2	Handle	Stainless steel
3	Locking screw	Stainless steel
4	<i>Body</i>	<i>Annealed 316 SS</i>
5	<i>Stem</i>	<i>Alloys 725</i>
6	<i>O-Ring</i>	<i>FFKM</i>
	Lubricant	Molybdenum disulfide/Fluorinated-based

Wetted components listed in italics.



Ordering Information and Dimensions

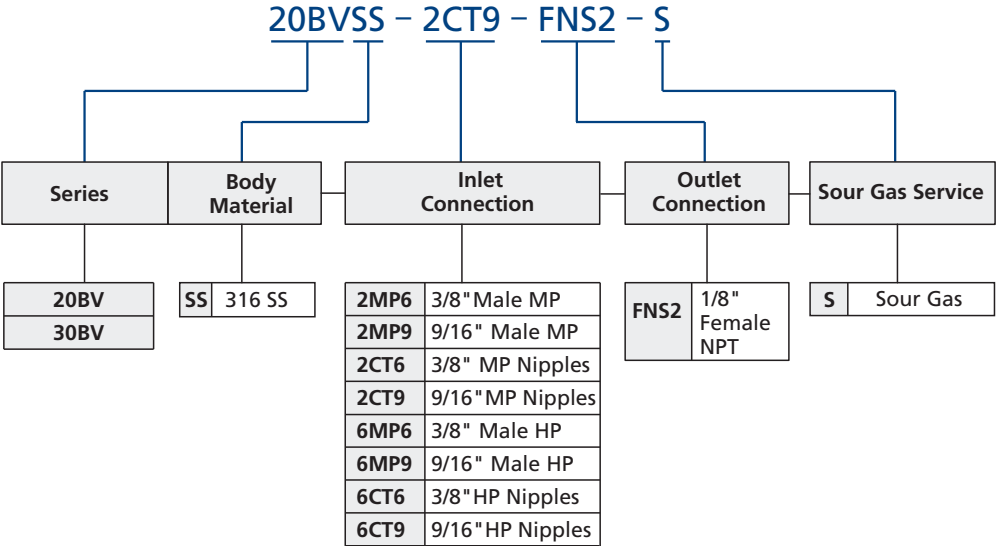


Type 1								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-2CT6-FNS2-S	2CT6	FNS2	0.094 (2.4)	3.65 (92.6)	2.81 (71.5)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-2CT9-FNS2-S	2CT9	FNS2	0.094 (2.4)	3.93 (99.8)	3.10 (78.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6CT6-FNS2-S	6CT6	FNS2	0.094 (2.4)	3.93 (99.8)	3.10 (78.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6CT9-FNS2-S	6CT9	FNS2	0.094 (2.4)	4.38 (111.3)	3.55 (90.2)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Type 2								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-2MP6-FNS2-S	2MP6	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-2MP9-FNS2-S	2MP9	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6MP6-FNS2-S	6MP6	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-6MP9-FNS2-S	6MP9	FNS2	0.094 (2.4)	3.41 (86.7)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

- NOTES: 1. D is the dimension of hex.
 2. A is the dimension of stem in closed position.
 3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Medium & High Pressure Fittings and Tubing
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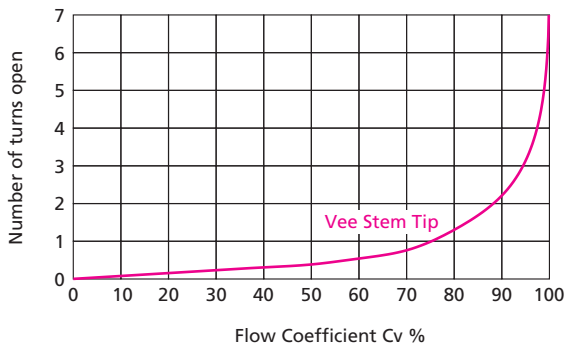
Gauge Valves

Pressures to 20,000 psig (1379 bar)

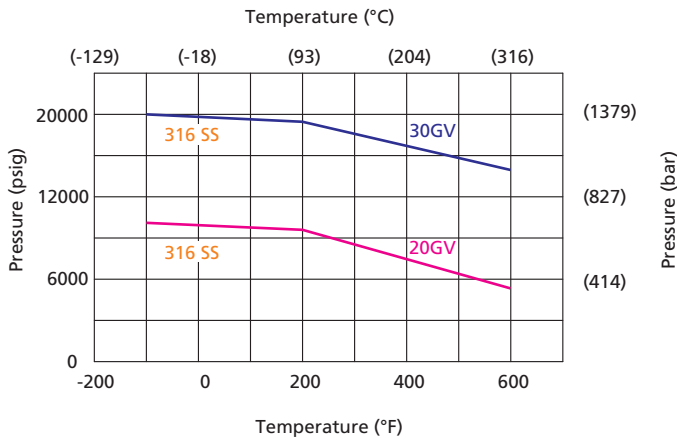
Features

- ⦿ One inlet, three outlet ports.
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Selected materials of packing gland and upper stem for reduced handle torque and extended thread cycle life
- ⦿ Packing located under stem threads
- ⦿ Reliable locking device for packing gland

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



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Technical Data

Series	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
20GV	2FH6	0.125 (3.18)	0.23	10,000 (690)
	2FH9	0.125 (3.18)	0.23	10,000 (690)
30GV	6FH6	0.125 (3.18)	0.33	20,000 (1379)
	6FH9	0.125 (3.18)	0.33	20,000 (1379)

NOTES: 1. Packing Options

PTFE is the standard packing material, RPTFE glass also available

PTFE: -100°F~450°F (-73°C~232°C).

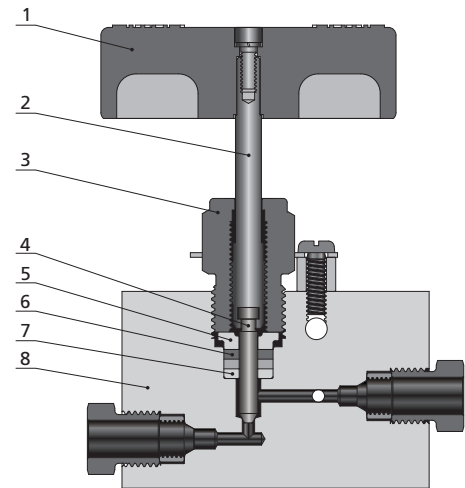
RPTFE glass: -100°F~600°F (-73°C~316°C).

2. A variety of end connections are available upon request. For connections not shown above, please contact FITOK Group or our authorized distributors.

Standard Materials of Construction

Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Upper stem	316 SS/A479
3	Packing Gland	316 SS/A479
4	<i>Lower Stem</i>	<i>Alloy 725</i>
5	Packing Ring	316 SS/A479
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing washer</i>	<i>316 SS/A479</i>
8	<i>Body</i>	<i>Annealed 316 SS</i>
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.



Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

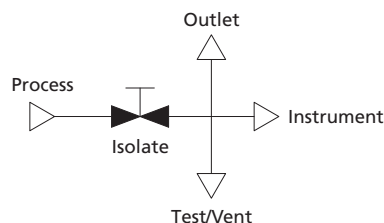
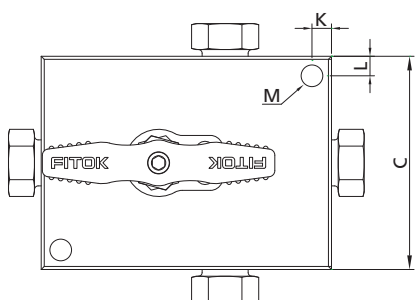
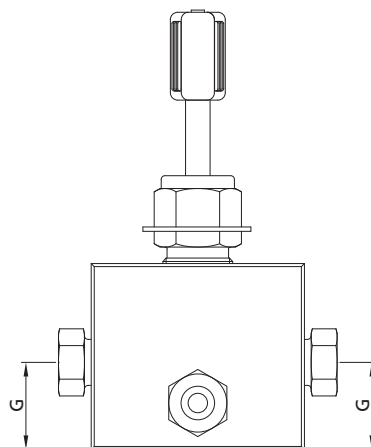
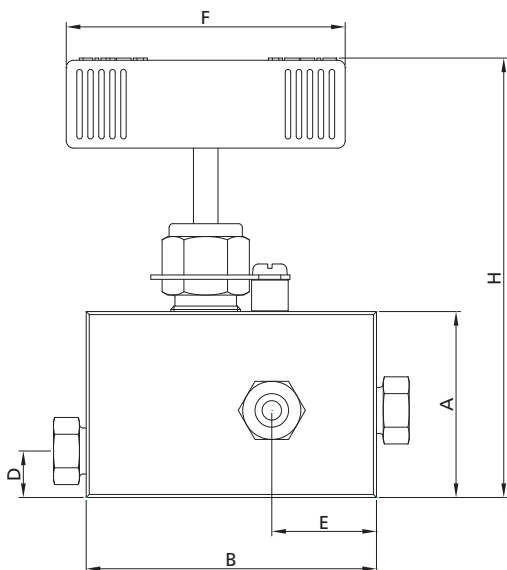
Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

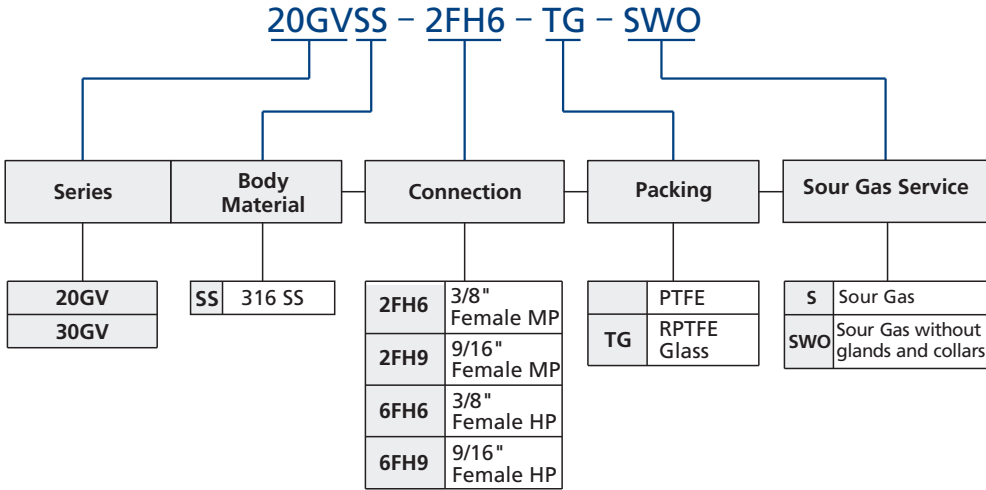
Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)										
			A	B	C	D	E	F	G	H	K	L	M
20GVSS-2FH6-S	2FH6	0.125 (3.18)	2.00 (50.8)	3.12 (79.3)	2.00 (50.8)	0.50 (12.7)	1.13 (28.6)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.25 (6.4)	0.28 (7.1)
20GVSS-2FH9-S	2FH9	0.125 (3.18)	2.00 (50.8)	3.88 (98.6)	2.75 (69.9)	0.66 (16.8)	1.38 (34.9)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)
30GVSS-6FH6-S	6FH6	0.125 (3.18)	2.00 (50.8)	3.12 (79.3)	2.00 (50.8)	0.50 (12.7)	1.13 (28.6)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)
30GVSS-6FH9-S	6FH9	0.125 (3.18)	2.00 (50.8)	3.88 (98.6)	2.75 (69.9)	0.66 (16.8)	1.38 (34.9)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)

NOTES: 1. M is the panel mounting drill size.
 2. H is the dimension of stem in closed position.
 3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Check Valves

Pressures to 30,000 psig (2068 bar)

Features

(Pipe) O-ring Check Valves

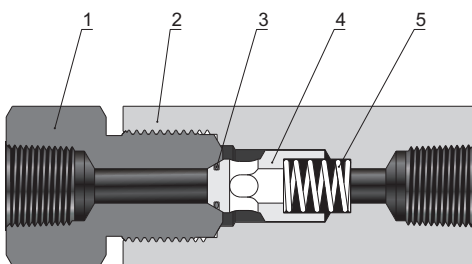
- ⦿ Provides unidirectional flow and tight shut-off for liquids and gases with high reliability (Not for use as relief valve)
- ⦿ Resilient O-ring seat design for noise-free closing and zero leakage
- ⦿ Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)

(Pipe) Ball Check Valves

- ⦿ Prevents reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
 Poppet designed essentially for axial flow with minimum pressure drop

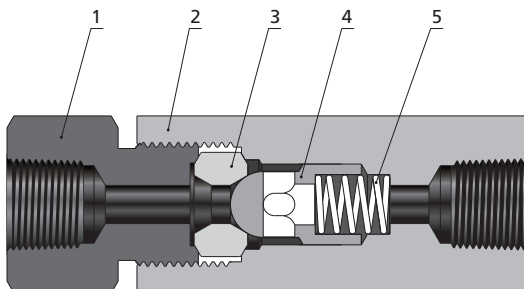
Standard Materials of Construction

15C Series Pipe O-ring Check Valves



Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	Annealed 316 SS
3	O-ring	FFKM
4	Poppet	Annealed 316 SS
5	Spring	High nickel alloy
	Lubricant	Molybdenum disulfide

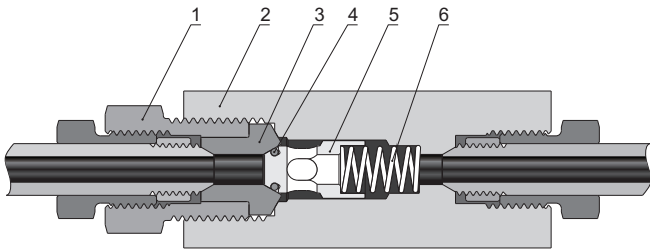
15CO Series Pipe Ball Check Valves



Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	Annealed 316 SS
3	Cover	Alloy 725
4	Ball Poppet	Alloy 725
5	Spring	High nickel alloy
	Lubricant	Molybdenum disulfide

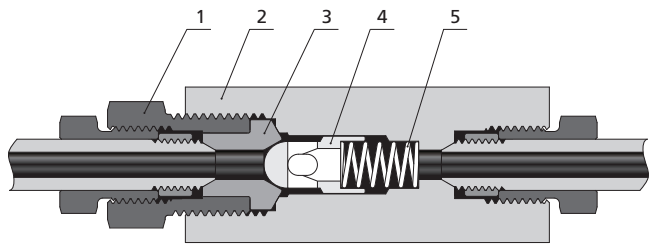
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 Technical Information

20C Series O-ring Check Valves



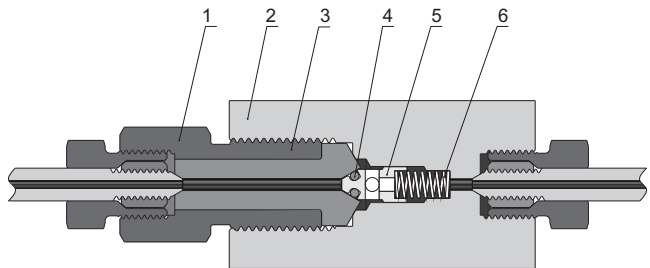
Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Annealed 316 SS</i>
4	O-ring	<i>FFKM</i>
5	Poppet	<i>Annealed 316 SS</i>
6	Spring	<i>High nickel alloy</i>
	Lubricant	Molybdenum disulfide

20CO Series Ball Check Valves



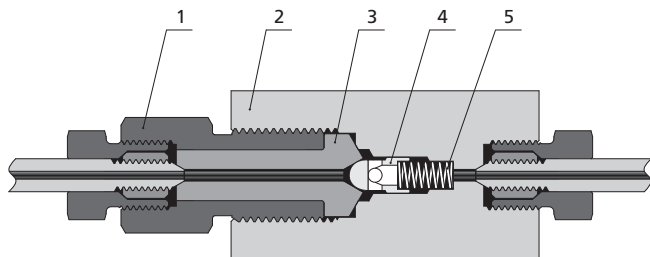
Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Alloy 725</i>
4	Ball Poppet	<i>Alloy 725</i>
5	Spring	<i>High nickel alloy</i>
	Lubricant	Molybdenum disulfide

60C Series O-ring Check Valves



Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Annealed 316 SS</i>
4	O-ring	<i>FFKM</i>
5	Poppet	<i>Annealed 316 SS</i>
6	Spring	<i>High nickel alloy</i>
	Lubricant	Molybdenum disulfide

60CO Series Ball Check Valves



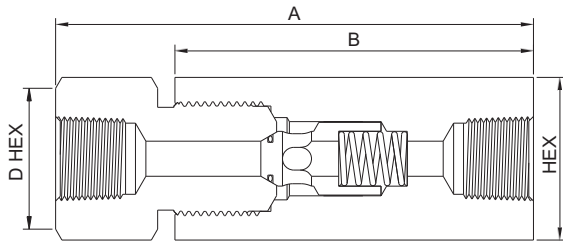
Item	Component	Material
1	Cover Gland	Annealed stainless steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Alloy 725</i>
4	Ball Poppet	<i>Alloy 725</i>
5	Spring	<i>High nickel alloy</i>
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.

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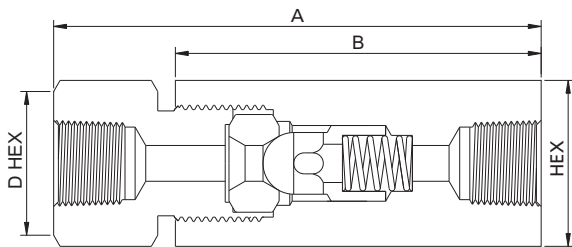
Ordering Information and Dimensions

15C Series Pipe O-ring Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	D - HEX	HEX		
15CSS-FNS4-S	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	10,000 (690)	-20°F to 400°F (-29°C to 204°C)
15CSS-FNS6-S	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)		
15CSS-FNS8-S	FNS8	0.36 (9.12)	2.30	5.07 (128.8)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)		

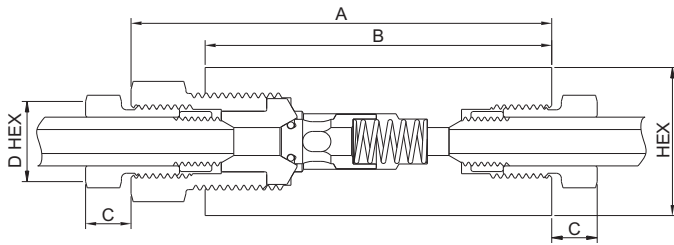
15CO Series Pipe Ball Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	D - HEX	HEX		
15COSS-FNS4-S	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	10,000 (690)	-20°F to 400°F (-29°C to 204°C)
15COSS-FNS6-S	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)		
15COSS-FNS8-S	FNS8	0.36 (9.12)	2.30	5.07 (128.8)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)		

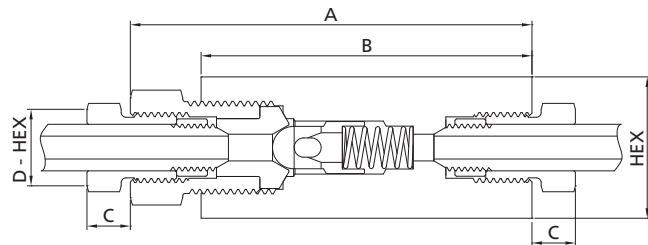
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Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - HEX	HEX		
20CSS-2FH4-S	2FH4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.65)	0.50 (12.7)	0.81 (20.6)	10,000 (690)	-20°F to 550°F (-29°C to 288°C)
20CSS-2FH6-S	2FH6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)		
20CSS-2FH9-S	2FH9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)		
20CSS-2FH12-S	2FH12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)		
20CSS-2FH16-S	2FH16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)		

20CO Series Ball Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - HEX	HEX		
20COSS-2FH4-S	2FH4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.65)	0.50 (12.7)	0.81 (20.6)	10,000 (690)	-110°F to 1200°F (-79°C to 649°C)
20COSS-2FH6-S	2FH6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)		
20COSS-2FH9-S	2FH9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)		
20COSS-2FH12-S	2FH12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)		
20COSS-2FH16-S	2FH16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)		

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Medium & High Pressure Valves

Line Filters

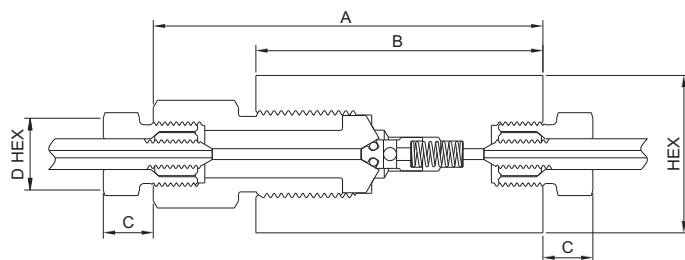
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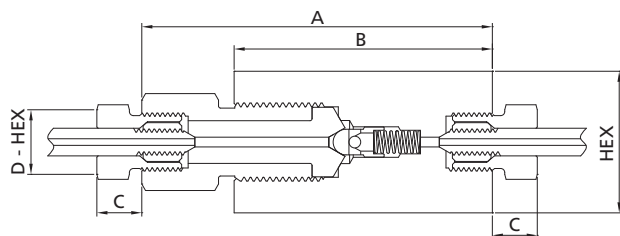
Technical Information

60C Series O-ring Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - HEX	HEX		
60CSS-6FH4-S	6FH4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	30,000 (2068)	-20°F to 550°F (-29°C to 288°C)
60CSS-6FH6-S	6FH6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.0)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)		
60CSS-6FH9-S	6FH9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.85)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)		

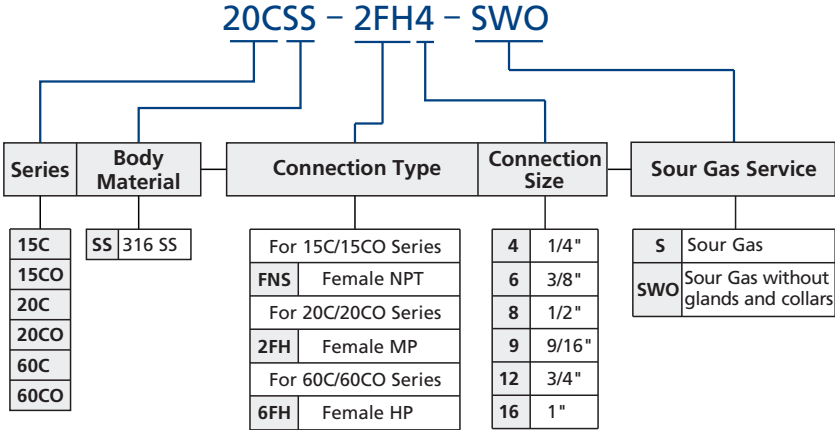
60CO Series Ball Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - HEX	HEX		
60COSS-6FH4-S	6FH4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	30,000 (2068)	-110°F to 1200°F (-79°C to 649°C)
60COSS-6FH6-S	6FH6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.0)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)		
60COSS-6FH9-S	6FH9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.85)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)		

NOTE: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Subsea Ball Valves

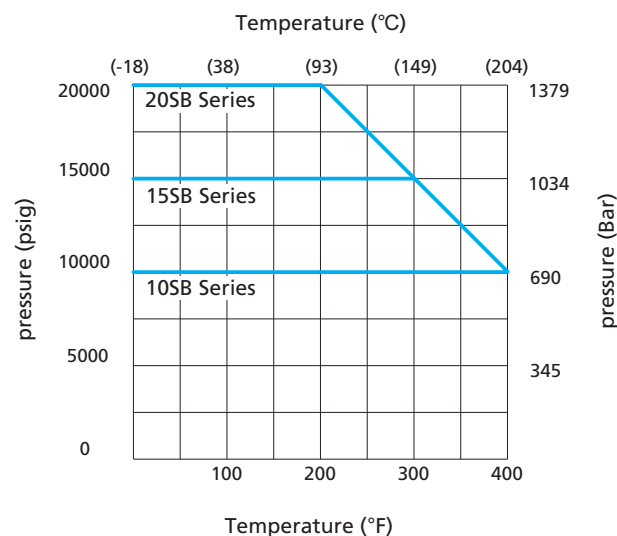
2-way Valves, 3-way Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- NBR O-ring for operation from 0°F to 250°F (-17.8°C to 121°C), other O-ring materials available
- High tensile 316 stainless steel as standard material for valve body
- Available to NACE MR0175
- Rapid quarter turn action to provide quick open/close action for easy ROV or diver operation
- PEEK seats to offer excellent resistance against chemicals, heat and abrasion
- Full-port flow path to minimize pressure drop
- Wide selection of tube and pipe end fittings available
- A variety of wetted materials optional
- Maximum water depth: 13,800 ft. (4200 m)

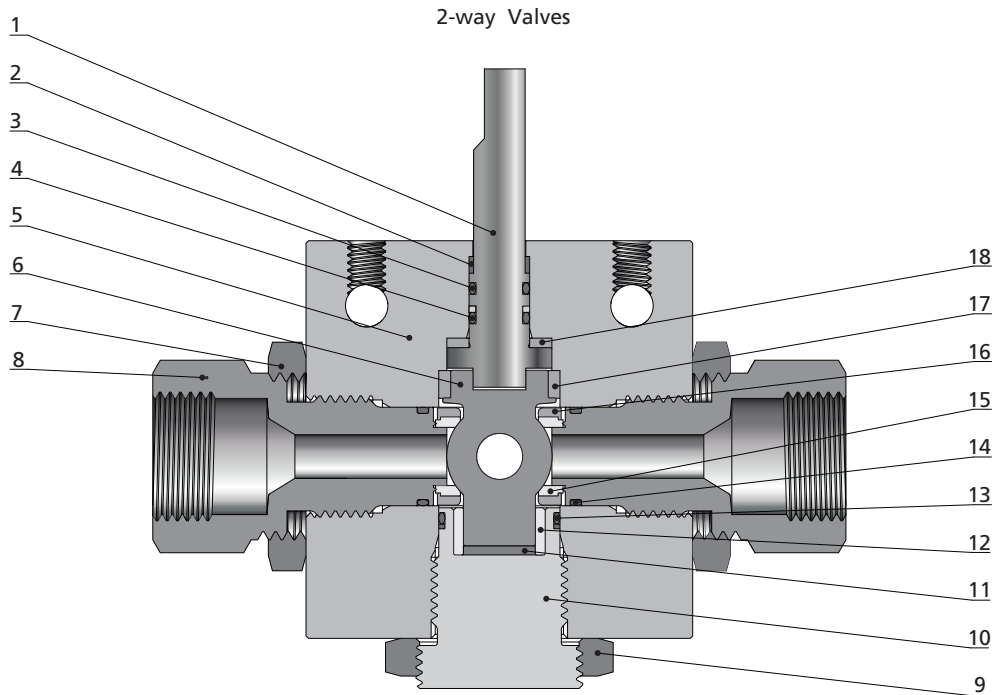


Pressure vs. Temperature Curve



NOTES: 1. Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.
2. The side port can not be used as inlet port for 3-way valves.

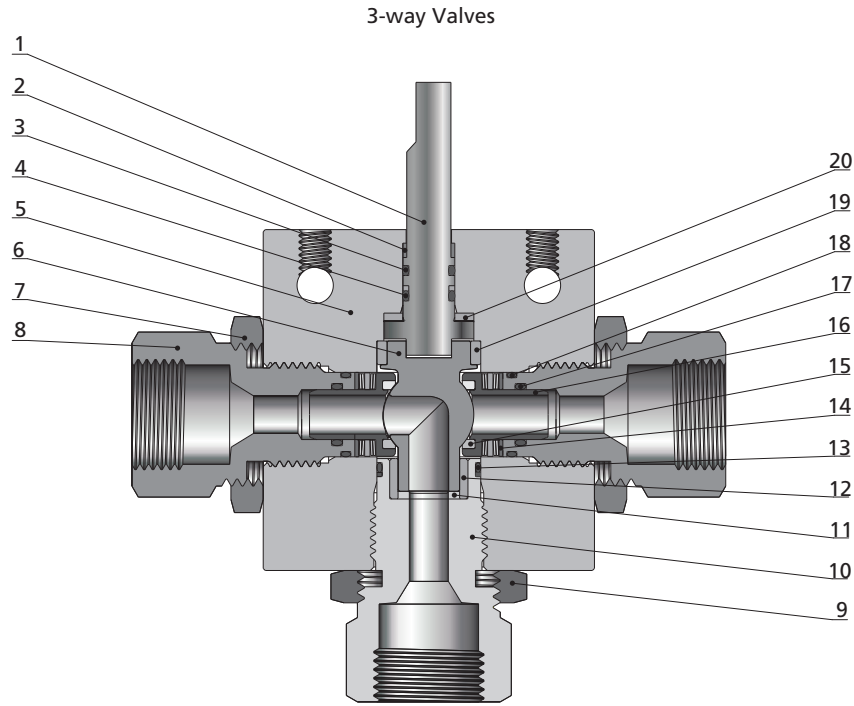
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	<i>Ball Stem</i>	<i>316 SS/A479</i>
2	Stem Backup	PEEK
3	O-Ring	NBR
4	<i>O-Ring</i>	<i>NBR</i>
5	<i>Body</i>	<i>316 SS/A479</i>
6	<i>Ball</i>	<i>316 SS/A479</i>
7	Lock Nut	316 SS/A479
8	<i>Seat Gland</i>	<i>316 SS/A479</i>
9	Locking Piece	316 SS/A479
10	<i>Bottom Gland</i>	<i>316 SS/A479</i>
11	<i>Bottom Thrust washer</i>	<i>PEEK</i>
12	<i>Bearing</i>	<i>PEEK</i>
13	<i>O-Ring</i>	<i>NBR</i>
14	<i>O-Ring</i>	<i>NBR</i>
15	<i>Seat</i>	<i>PEEK</i>
16	<i>Seat Retainer</i>	<i>316 SS/A479</i>
17	<i>Bearing</i>	<i>PEEK</i>
18	<i>Thrust Washer</i>	<i>PEEK</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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Item	Component	Material Grade/ASTM Specification
1	<i>Ball Stem</i>	316 SS/A479
2	Stem Backup	PEEK
3	O-Ring	NBR
4	<i>O-Ring</i>	<i>NBR</i>
5	<i>Body</i>	<i>316 SS/A479</i>
6	<i>Ball</i>	<i>316 SS/A479</i>
7	Lock Nut	316 SS/A479
8	<i>Seat Gland</i>	<i>316 SS/A479</i>
9	Locking Piece	316 SS/A479
10	<i>Bottom Gland</i>	<i>316 SS/A479</i>
11	<i>Bottom Thrust washer</i>	<i>PEEK</i>
12	<i>Bearing</i>	<i>PEEK</i>
13	O-Ring	NBR
14	<i>Belleville Washer</i>	<i>17-7PH/A693</i>
15	<i>Seat</i>	<i>PEEK</i>
16	<i>Seat Retainer</i>	<i>17-7PH/A693</i>
17	O-Ring	NBR
18	O-Ring	NBR
19	<i>Bearing</i>	<i>PEEK</i>
20	<i>Thrust Washer</i>	<i>PEEK</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

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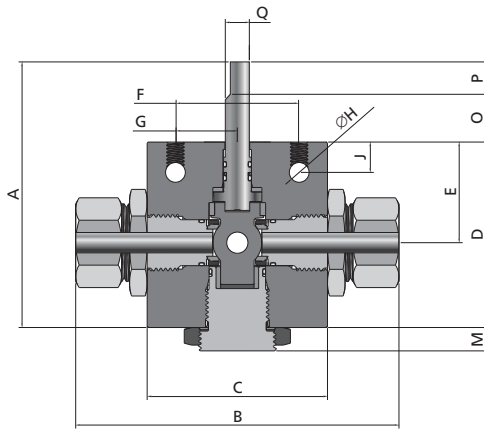
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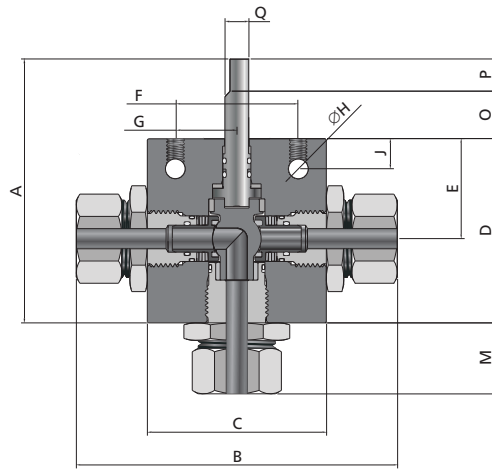
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Dimensions



2-way Valves

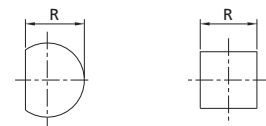


3-way Valves

Flow Pattern	Orifice No.	Dimensions, in. (mm)											Block Thickness
		A	B	C	D	E	F	G	H	J	M		
2-way	4	4.31 (109.3)	4.20 (106.8)	2 (50.8)	2.53 (64.2)	1.28 (32.5)	1.5 (38.1)	0.75 (19.05)	0.28 (7.1)	0.43 (10.9)	0.35 (8.8)	1 (25.4)	
	6	5.94 (150.8)	5.53 (140.4)	3 (76.2)	3.43 (87.3)	1.78 (45.2)	2.5 (63.5)	1.25 (31.75)	0.31 (7.9)	0.41 (10.3)	0.35 (8.8)	1.38 (34.9)	
	8	6.67 (169.5)	7.72 (196.2)	4.12 (104.6)	4.23 (107.5)	2.07 (52.4)	3 (76.2)	1.5 (38.1)	0.31 (7.9)	0.5 (12.7)	0.61 (15.5)	1.75 (44.5)	
3-way	4	4.34 (110.2)	4.70 (119.5)	2.5 (63.5)	2.56 (65)	1.34 (34)	2 (50.8)	1 (25.4)	0.28 (7.1)	0.41 (10.3)	1.1 (28)	1 (25.4)	

Flow Pattern	Orifice No.	Dimensions, in. (mm)			
		O	P	Q	R
2-way	4	1.278 (32.5)	0.5 (12.7)	0.25 (6.35)	0.22 (5.48)
	6	1.24 (31.7)	1.25 (31.8)	0.44 (11.1)	0.38 (9.35)
	8	1.56 (39.7)	0.88 (22.2)	0.62 (15.9)	0.44 (11.13)
3-way	4	1.28 (32.5)	0.5 (12.7)	0.25 (6.35)	0.22 (5.49)

Ball stem connection

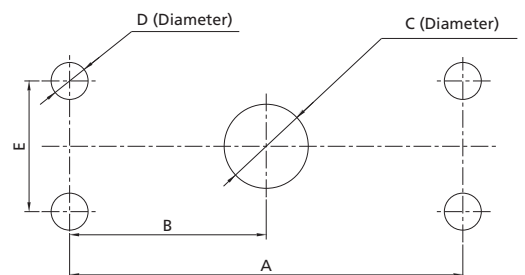
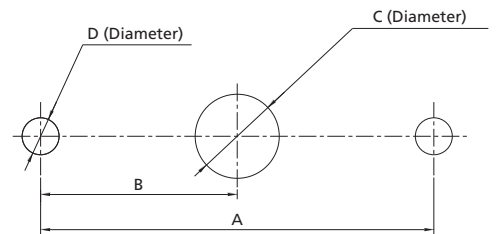


Orifice 4

Orifice 6/8

Ball Valve Panel Mounting Dimensions

Flow Pattern	Orifice No.	Dimensions, in. (mm)			
		A	B	C	D
2-way	4	1.5 (38.1)	0.75 (19.05)	0.31 (7.9)	0.28 (7.1)
3-way	4	2 (50.8)	1 (25.4)	0.31 (7.9)	0.28 (7.1)



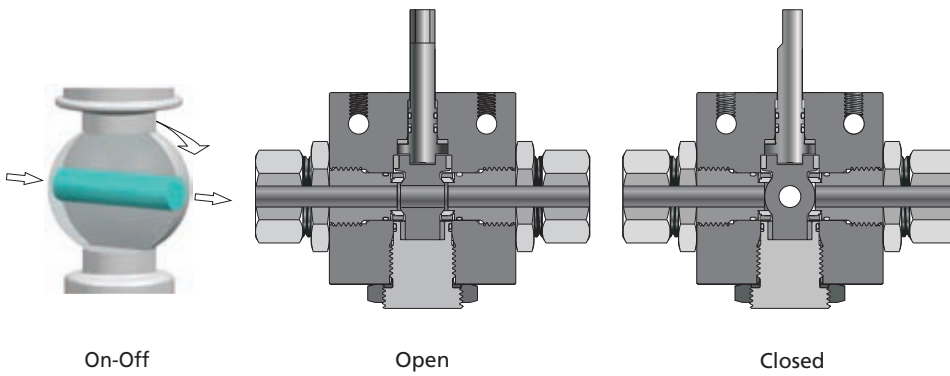
All dimensions are for reference only and are subject to change.

Flow Pattern	Orifice No.	Dimensions, in. (mm)				
		A	B	C	D	E
2-way	6	2.5 (63.5)	1.25 (31.75)	0.5 (12.7)	0.33 (8.5)	0.88 (22.3)
	8	3 (76.2)	1.5 (38.1)	0.69 (17.5)	0.33 (8.5)	1 (25.4)

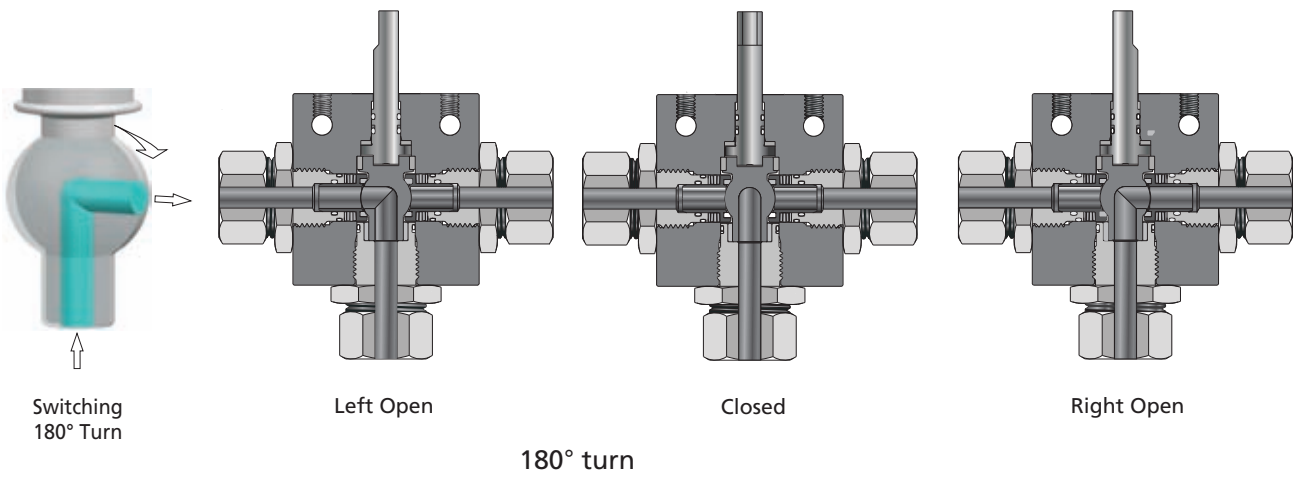
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Flow Configuration

2-way Valves



3-way Valves



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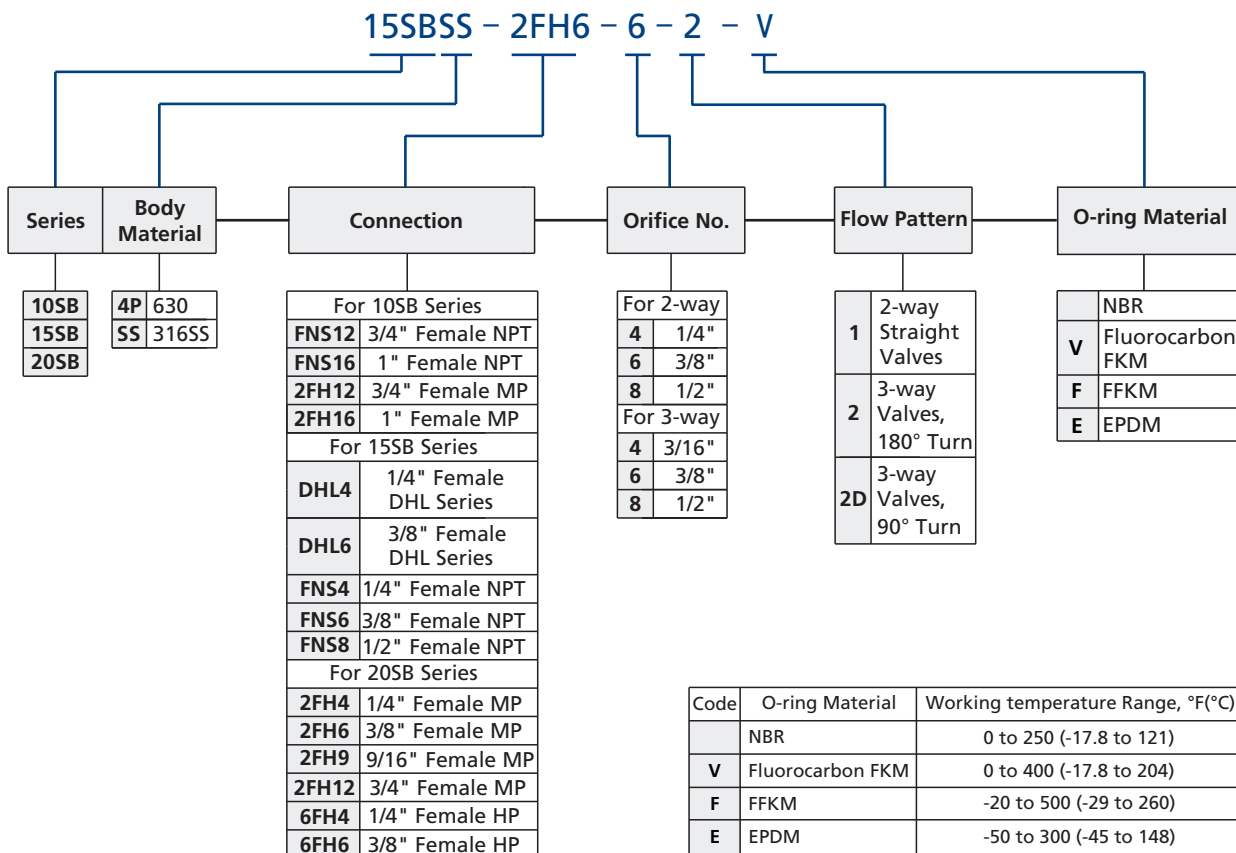
Ordering Information and Dimensions

Ordering Number	Flow Pattern	Connection	Orifice No.	Orifice size in. (mm)	Cv	Working Pressure psig (bar)
10SBSS-2FH12-8-1	2-way	2FH12	8	0.5 (12.7)	10.2	10,000 (690)
10SBSS-2FH16-8-1		2FH16		0.5 (12.7)	10.2	
10SBSS-FNS12-8-1		FNS12		0.5 (12.7)	10.2	
10SBSS-FNS16-8-1		FNS16		0.5 (12.7)	10.2	
15SBSS-DHL4-4-1	2-way	DHL4	4	0.128 (3.25)	0.26	15,000 (1034)
15SBSS-DHL6-4-1		DHL6		0.25 (6.35)	1.51	
15SBSS-FNS4-4-1		FNS4		0.25 (6.35)	1.51	
15SBSS-FNS6-4-1		FNS6		0.25 (6.35)	1.51	
15SBSS-FNS8-4-1		FNS8	0.25 (6.35)	1.51		
15SBSS-FNS4-6-1		FNS4	6	0.375 (9.52)	3.51	
15SBSS-FNS6-6-1		FNS6		0.375 (9.52)	3.51	
15SBSS-FNS8-6-1		FNS8		0.375 (9.52)	3.51	
15SBSS-FNS4-4-2	3-way	FNS4	4	0.188 (4.77)	0.5	
15SBSS-FNS4-4-2D						
15SBSS-FNS6-4-2		FNS6		0.188 (4.77)	0.5	
15SBSS-FNS6-4-2D						
20SBSS-2FH4-4-1	2-way	2FH4	4	0.109 (2.77)	0.36	20,000 (1379)
20SBSS-2FH6-4-1		2FH6		0.203 (5.16)	1.23	
20SBSS-2FH9-4-1		2FH9		0.25 (6.35)	1.51	
20SBSS-6FH4-4-1		6FH4		0.094 (2.39)	0.26	
20SBSS-6FH6-4-1		6FH6	0.125 (3.17)	0.47		
20SBSS-2FH6-6-1		2FH6	6	0.203 (5.16)	1.23	
20SBSS-2FH9-6-1		2FH9		0.312 (7.92)	2.93	
20SBSS-2FH12-6-1		2FH12		0.375 (9.52)	3.51	
20SBSS-2FH4-4-2	3-way	2FH4	4	0.109 (2.39)	0.17	
20SBSS-2FH4-4-2D						

Ordering Information and Dimensions (continue)

Ordering Number	Flow Pattern	Connection	Orifice No.	Orifice size in. (mm)	Cv	Working Pressure psig (bar)
20SBSS-2FH6-4-2	3-way	2FH6	4	0.188 (4.77)	0.5	20,000 (1379)
20SBSS-2FH6-4-2D						
20SBSS-2FH9-4-2		2FH9		0.188 (4.77)	0.5	
20SBSS-2FH9-4-2D						
20SBSS-6FH4-4-2		6FH4		0.094 (2.39)	0.13	
20SBSS-6FH4-4-2D						
20SBSS-6FH6-4-2		6FH6		0.125 (3.17)	0.22	
20SBSS-6FH6-4-2D						

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Ball Valves

Features

- ⦿ Working pressure up to 20,000 psig (1379 bar)
- ⦿ Maximum external pressure: 6,000 psig (414 bar)
- ⦿ Maximum drive pressure: 3,000 psig (207 bar)
- ⦿ Hydraulic actuated working temperature: 0°F to 200°F(-18°C to 93°C)
- ⦿ High tensile 316 stainless steel for valve body and 17-4 PH for hydraulic actuator
- ⦿ Gear shaft and rack in the transmission mechanism with special heat treatment and surface hardening to ensure excellent abrasive resistance and long cycle life
- ⦿ Fluorocarbon FKM O-ring and PEEK seal to provide excellent resistance against chemicals, heat and abrasion
- ⦿ Three types of hydraulic actuators (HTO, HTC, DH) available
- ⦿ Maximum water depth: 13,800 ft. (4200 m)

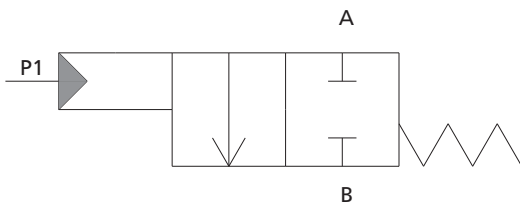


Subsea Hydraulic Ball Valves (2-way)

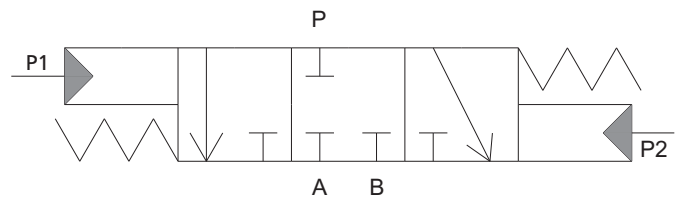


Subsea Hydraulic Ball Valves (3-way)

Schematic Diagram:



2-way (HTO)

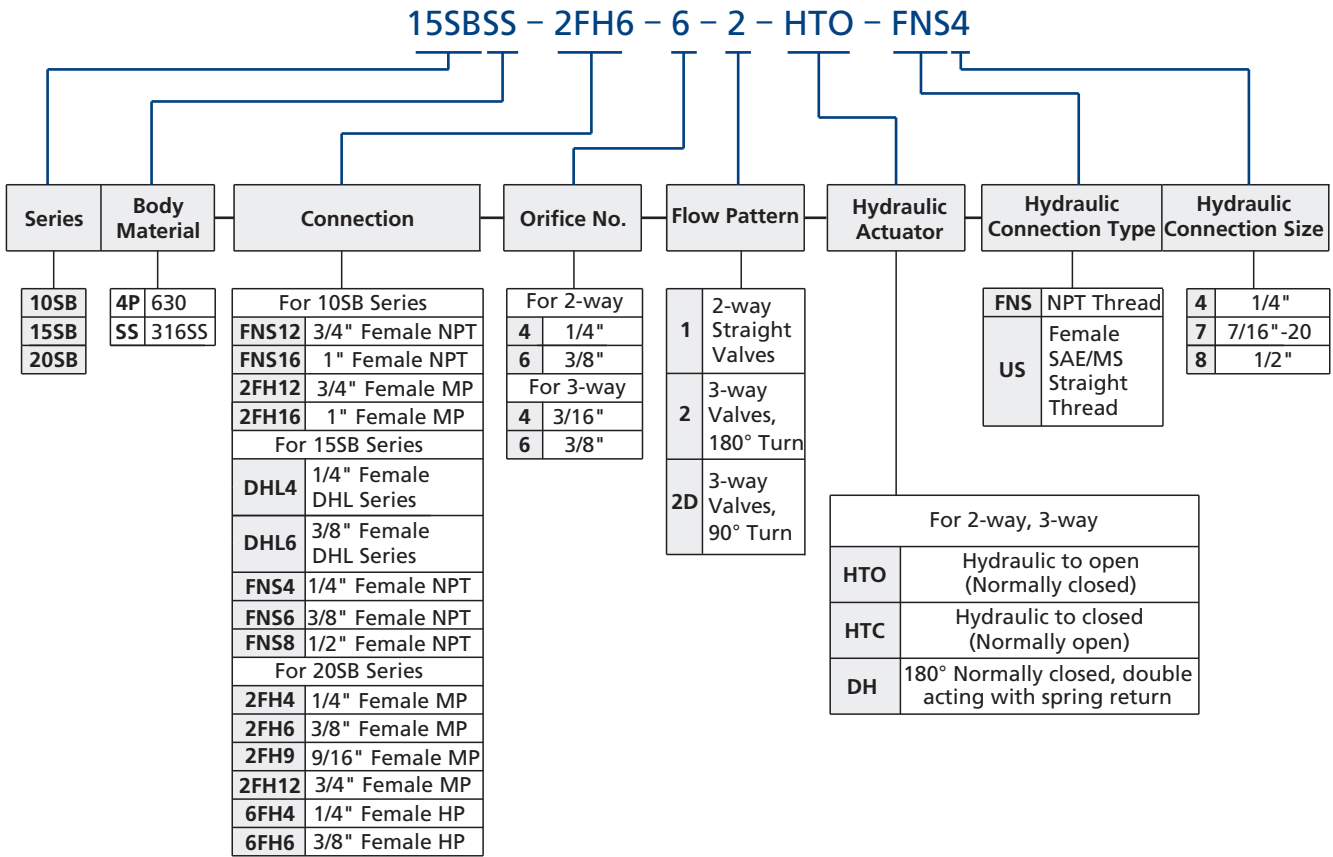


3-way (DH)

- ⦿ HTO: Hydraulic to open, single acting with spring return (Normally Closed)
- ⦿ HTC: Hydraulic to close, single acting with spring return (Normally Open)
- ⦿ DH: Double acting with spring return

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NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Features

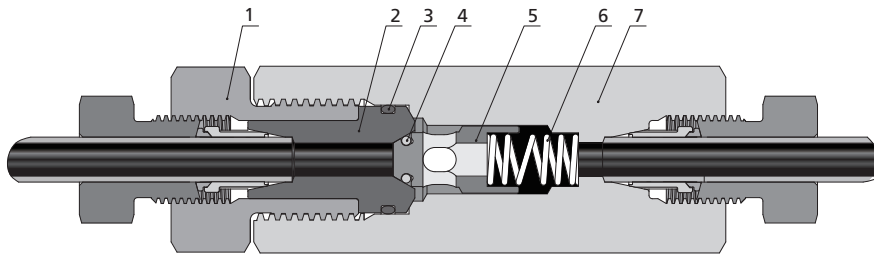
- ⦿ Working pressure up to 20,000 psig (1379 bar)
- ⦿ Maximum external pressure: 6,000 psig (414 bar)
- ⦿ Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
- ⦿ NBR O-ring for operation from 0°F to 250°F (-17.8°C to 121°C), other O-ring materials available
- ⦿ High tensile 316 stainless steel for valve body
- ⦿ Available to NACE MR0175
- ⦿ Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- ⦿ Soft seat seal ring style or metal to metal seat poppet style available
- ⦿ Maximum water depth: 13,800 ft. (4200 m)



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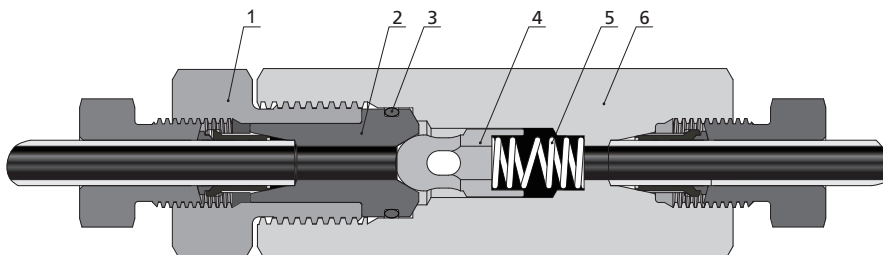
Standard Materials of Construction

SC Series



Item	Component	Material Grade/ASTM specification
1	Cover Gland	316SS/A479
2	Cover	316SS/A479
3	Seal Ring	NBR
4	Seal Ring	NBR
5	Ball Poppet	316SS/A479
6	Spring	304SS/A313
7	Valve Body	316SS/A479

SCO Series



Item	Component	Material Grade/ASTM specification
1	Cover Gland	316SS/A479
2	Cover	316SS/A479
3	Seal Ring	NBR
4	Ball Poppet	316SS/A479
5	Spring	304SS/A313
6	Valve Body	316SS/A479

Wetted components listed in italics.

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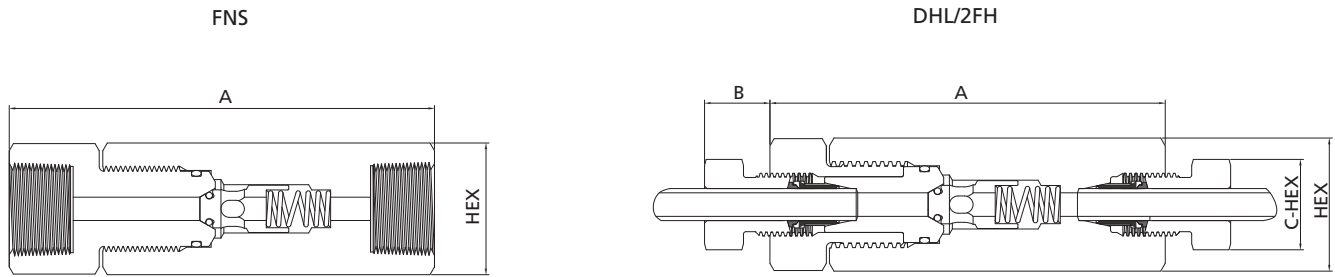
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Ordering Information and Dimensions

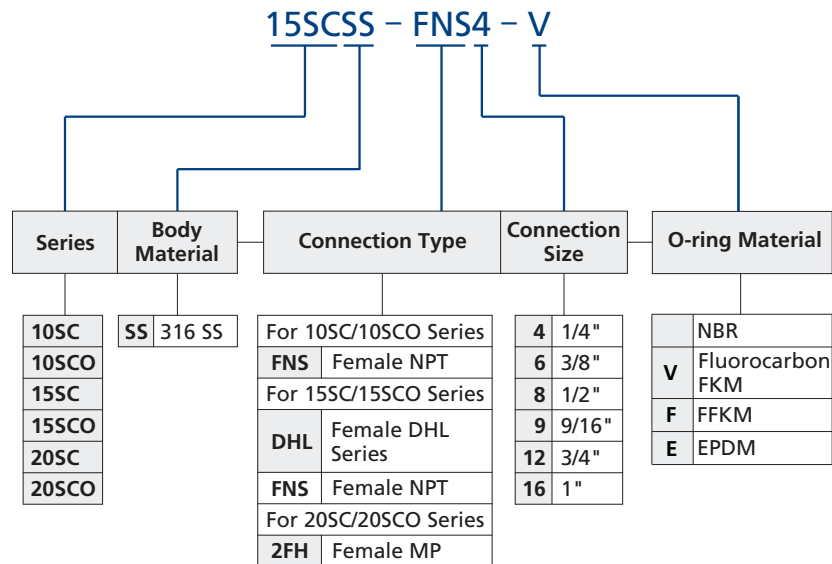


Ordering Number	Connection	Orifice Size in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	C-HEX	HEX	
10SCSS-FNS12	FNS12	0.52 (13.21)	4.70	6.29 (159.77)	—	—	1.75 (44.45)	10,000 (690)
10SCSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.18)	—	—	1.88 (47.75)	
10SCOSS-FNS12	FNS12	0.52 (13.21)	4.70	6.29 (159.77)	—	—	1.75 (44.45)	
10SCOSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.18)	—	—	1.88 (47.75)	
15SCSS-DHL4	DHL4	0.188 (4.78)	0.63	3.18 (80.77)	0.53 (13.56)	0.63 (16.00)	0.81 (20.57)	15,000 (1034)
15SCSS-DHL6	DHL6	0.250 (6.35)	1.70	3.56 (90.42)	0.53 (13.56)	0.75 (19.05)	1.00 (25.40)	
15SCSS-DHL8	DHL8	0.375 (9.53)	3.40	4.18 (106.17)	0.6 (15.19)	0.93 (23.62)	1.38 (35.05)	
15SCOSS-DHL4	DHL4	0.188 (4.78)	0.63	3.18 (80.77)	0.53 (13.56)	0.63 (16.00)	0.81 (20.57)	
15SCOSS-DHL6	DHL6	0.250 (6.35)	1.70	3.56 (90.42)	0.53 (13.56)	0.75 (19.05)	1.00 (25.40)	
15SCOSS-DHL8	DHL8	0.375 (9.53)	3.40	4.18 (106.17)	0.6 (15.19)	0.93 (23.62)	1.38 (35.05)	
15SCSS-FNS4	FNS4	0.12 (3.05)	0.28	3.37 (85.60)	—	—	0.94 (23.81)	
15SCSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	—	—	1.13 (28.58)	
15SCSS-FNS8	FNS8	0.36 (9.12)	2.30	5.36 (136.14)	—	—	1.38 (35.05)	
15SCOSS-FNS4	FNS4	0.12 (3.05)	0.28	3.37 (85.60)	—	—	0.94 (23.81)	20,000 (1379)
15SCOSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	—	—	1.13 (28.58)	
15SCOSS-FNS8	FNS8	0.36 (9.12)	2.30	5.36 (136.14)	—	—	1.38 (35.05)	
20SCSS-2FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.68)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	
20SCSS-2FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.25)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)	
20SCSS-2FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.17)	0.53 (13.46)	0.94 (23.81)	1.38 (35.05)	
20SCSS-2FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	
20SCSS-2FH16	2FH16	0.688 (17.48)	7.40	6.63 (168.40)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)	

Ordering Information and Dimensions (continue)

Ordering Number	Connection	Orifice Size in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	C-HEX	HEX	
20SCOSS-2FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.68)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	20,000 (1379)
20SCOSS-2FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.25)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)	
20SCOSS-2FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.17)	0.53 (13.46)	0.94 (23.81)	1.38 (35.05)	
20SCOSS-2FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	
20SCOSS-2FH16	2FH16	0.688 (17.48)	7.40	6.63 (168.40)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)	

Ordering Number Description



Code	O-ring Material	Working temperature Range, °F(°C)
	NBR	0 to 250 (-17.8 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

- NOTES: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Please contact FITOK Group or our authorized distributors for more information on wetted materials (Eg: 2507 SD), seal materials and operational designs to fulfill your application requirements.

Subsea Needle Valves

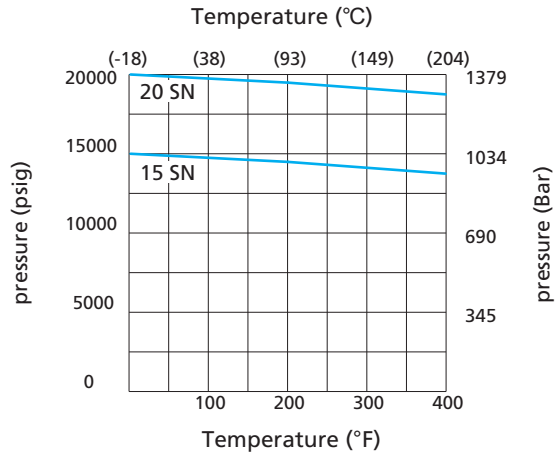
Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- NBR O-ring for operation from 0°F to 250°F (-17.8°C to 121°C), other O-ring materials available
- High tensile 316 stainless steel for valve body
- Standard stem seal material: PTFE
- Available to NACE MR0175
- Using a two-part spindle assembly with a non-rising upper stem, it is of great advantage when being used with ROVs
- Non-rotating lower stem to ensure positive non-galling operation during shut-off
- Packing located under stem threads
- Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Reliable locking device of packing gland
- Wide selection of tube and pipe end fittings available
- 2-way straight and 2-way angle available for flow pattern
- Orifice size: 0.203"
- Rated Cv: 0.75
- Maximum water depth: 13,800 ft. (4200 m)

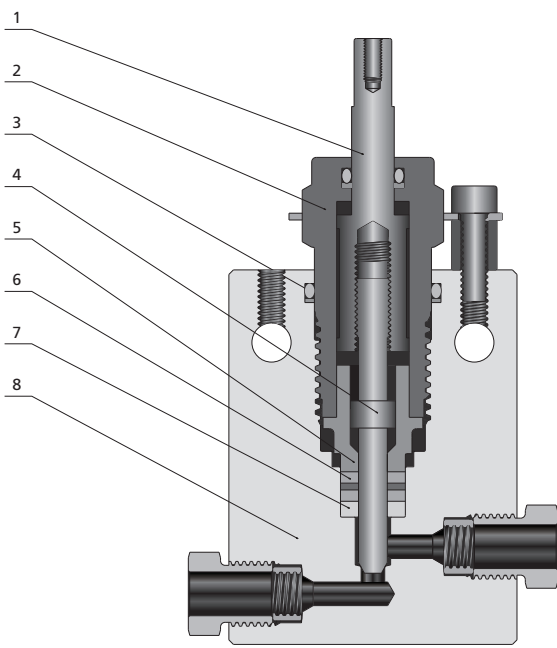


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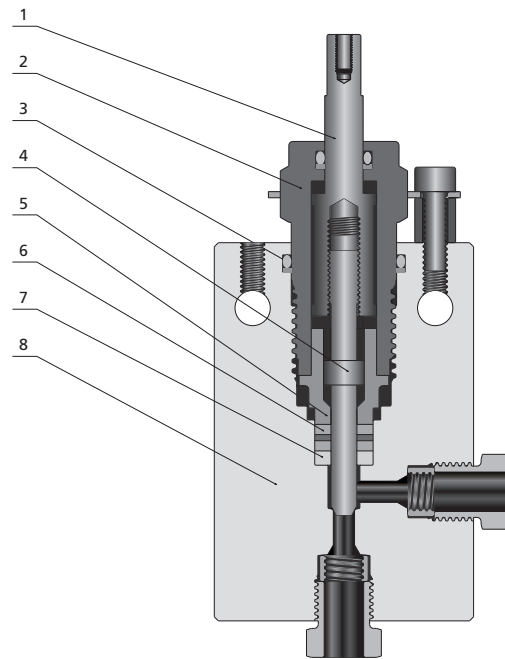
Pressure vs. Temperature Curve



Standard Materials of Construction



2-way straight

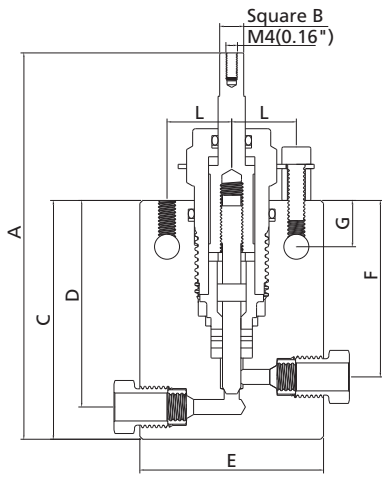


2-way angle

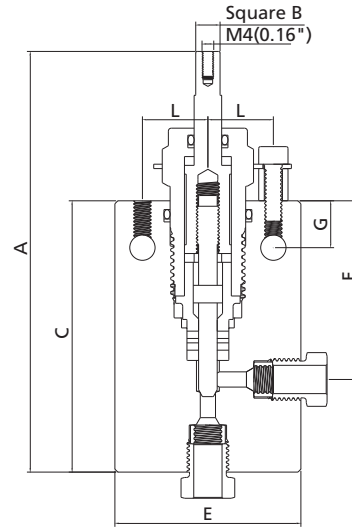
Item	Component	Material Grade/ASTM specification
1	Upper Stem	316SS/A479
2	Packing Gland	316SS/A479
3	O-Ring	NBR
4	<i>Lower Stem</i>	<i>S17400/A564</i>
5	Packing Ring	C63000/B150
6	<i>Packing</i>	<i>PTFE</i>
7	<i>Packing washer</i>	<i>S17400/A564</i>
8	<i>Body</i>	<i>316 SS/A479</i>
	Lubricant	Molybdenum disulfide

Wetted components listed in italics.

Ordering Information and Dimensions



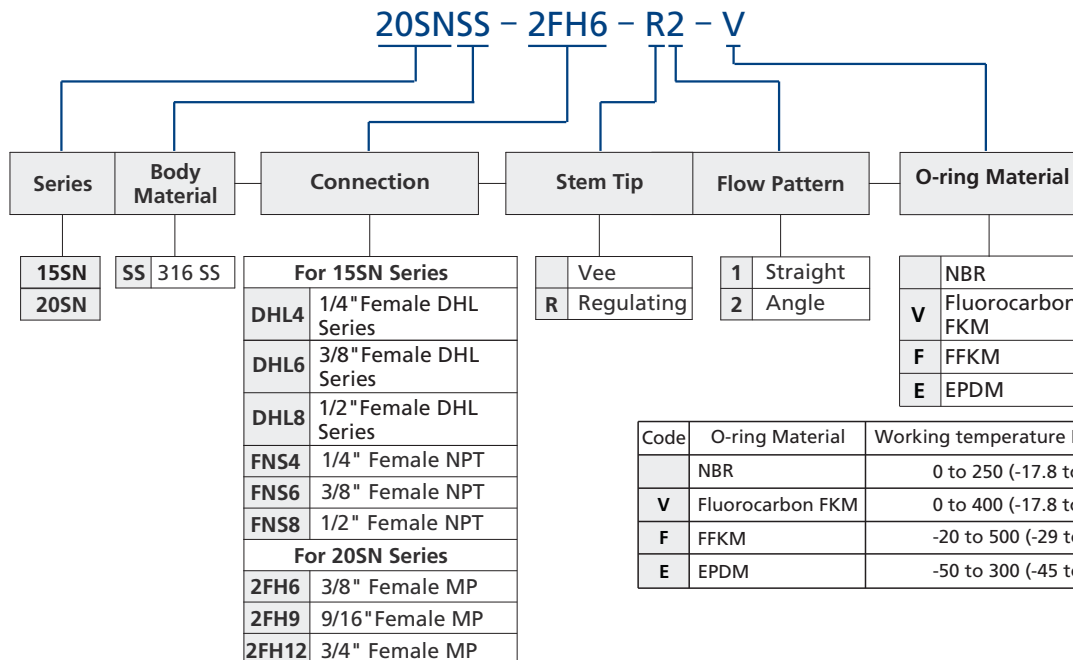
2-way straight



2-way angle

Ordering Number	Connection	Dimensions, in. (mm)								
		A	B	C	D	E	F	G	L	Block Thickness
20SNSS-2FH6-1	2FH6	5.35 (135.9)	0.24 (6.0)	2.60 (66.00)	2.22 (56.4)	2.00 (50.8)	1.79 (45.40)	0.38 (9.65)	0.77 (19.5)	1.00 (25.4)
20SNSS-2FH9-1	2FH9	5.83 (148.1)	0.24 (6.0)	3.25 (82.55)	2.75 (69.9)	2.50 (63.5)	2.44 (61.98)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-2FH12-1	2FH12	6.90 (175.3)	0.24 (6.0)	4.12 (104.7)	3.44 (87.38)	3.00 (76.2)	2.94 (74.68)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-2FH6-2	2FH6	5.78 (146.9)	0.24 (6.0)	3.03 (77.00)	—	2.00 (50.8)	1.78 (45.40)	0.38 (9.65)	0.77 (19.5)	1.00 (25.4)
20SNSS-2FH9-2	2FH9	6.33 (160.8)	0.24 (6.0)	3.75 (95.25)	—	2.50 (63.5)	2.44 (61.98)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-2FH12-2	2FH12	7.40 (188.0)	0.24 (6.0)	4.62 (117.3)	—	3.00 (76.2)	2.94 (74.68)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)

Ordering Number Description



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Needle Valves

Features

- ⦿ Working pressure up to 20,000 psig (1379 bar)
- ⦿ Maximum external pressure: 6,000 psig (414 bar)
- ⦿ Maximum drive pressure: 3,000 psig (207 bar)
- ⦿ Hydraulic actuated working temperature: 0°F to 175°F (-18°C to 80°C)
- ⦿ High tensile 316 stainless steel for valve body
- ⦿ Standard stem seal material: PTFE
- ⦿ Available to NACE MR0175
- ⦿ Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Reliable locking device of packing gland
- ⦿ Wide selection of tube and pipe end fittings available
- ⦿ 2-way straight and 2-way angle available for flow pattern
- ⦿ Orifice: 0.203"
- ⦿ Rated Cv: 0.75
- ⦿ Maximum water depth: 13,800 ft. (4200 m)



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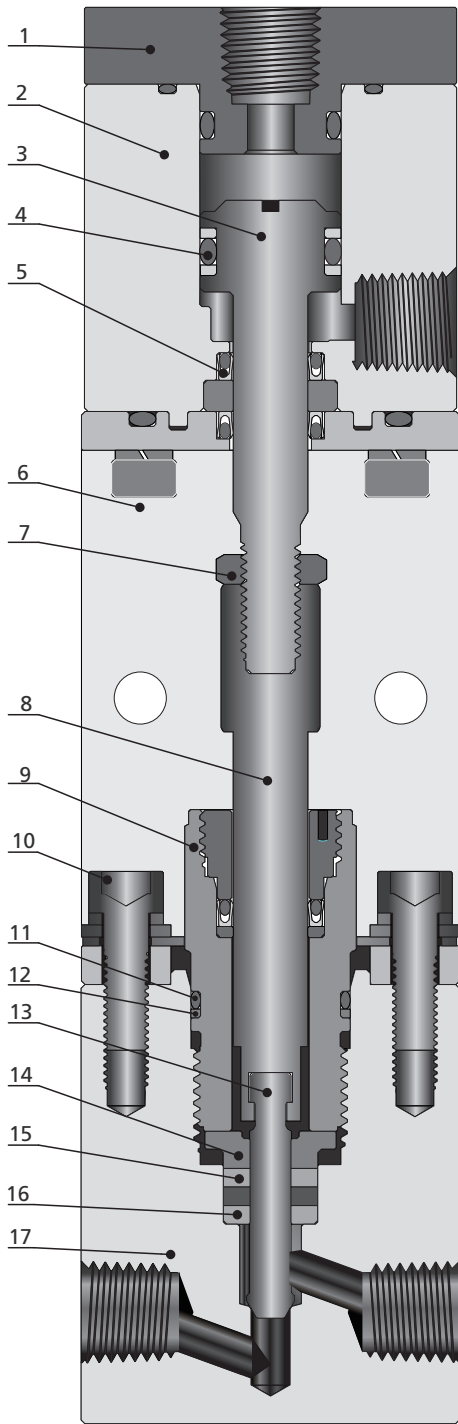
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Standard Materials of Construction

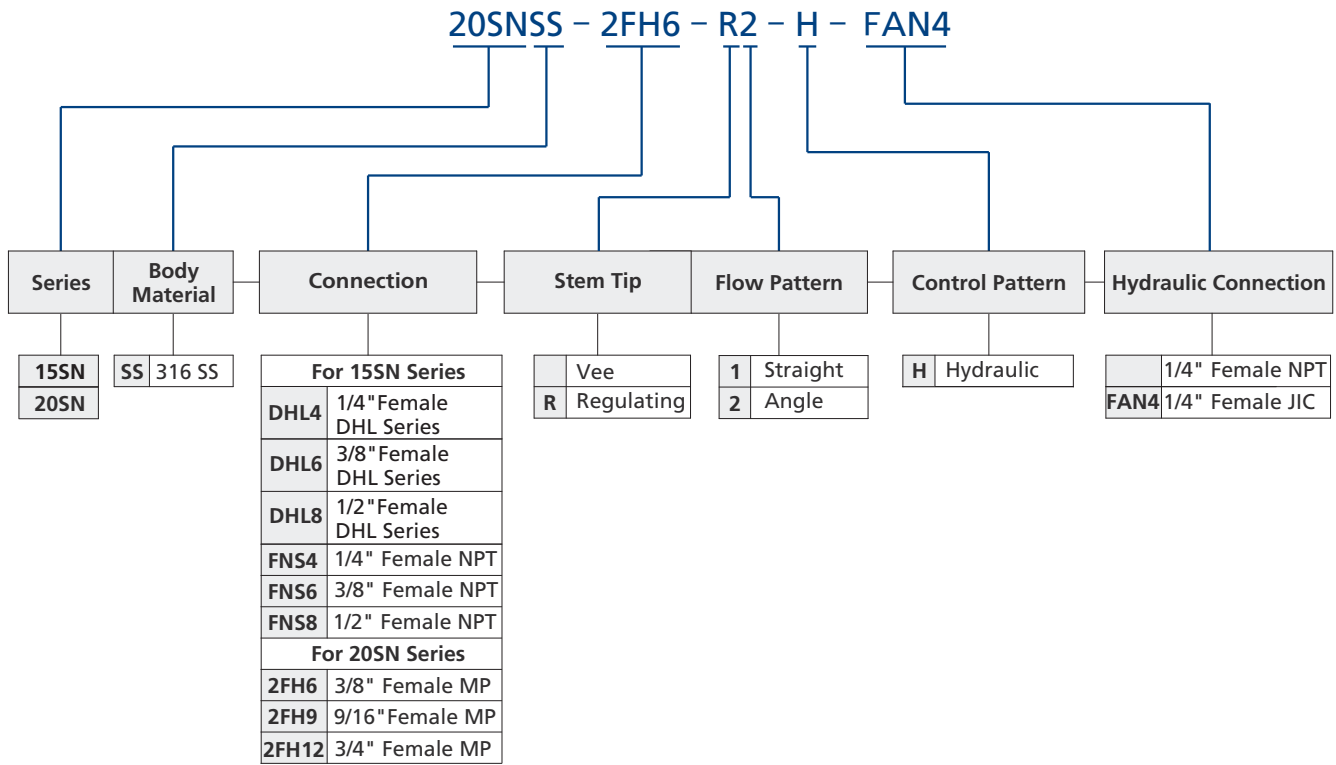


Item	Component	Material Grade/ASTM specification
1	Gland	316 SS/A479
2	Actuator Body	316 SS/A479
3	Piston Rod	316 SS/A479
4	O-Ring	Fluorocarbon FKM
5	Piston Seal	UHMWPE
6	Support Block	316 SS/A479
7	Nut	Stainless Steel
8	Upper Stem	316 SS/A479
9	Packing Gland	316 SS/A479
10	Locking Screw	SS
11	O-Ring	NBR
12	O-Ring Retainer	PTFE
13	<i>Lower Stem</i>	<i>S17400/A564</i>
14	Packing Ring	C63000/B150
15	<i>Packing</i>	<i>PTFE</i>
16	<i>Packing Washer</i>	<i>S17400/A564</i>
17	<i>Body</i>	<i>316 SS/A479</i>

Wetted components listed in italics.

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NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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Subsea Hydraulic Directional Control Valves

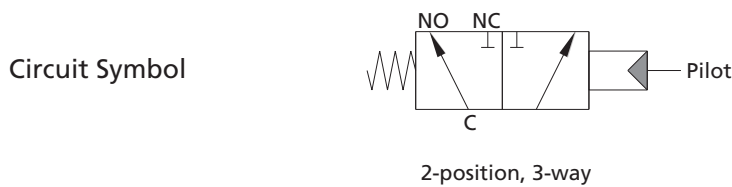
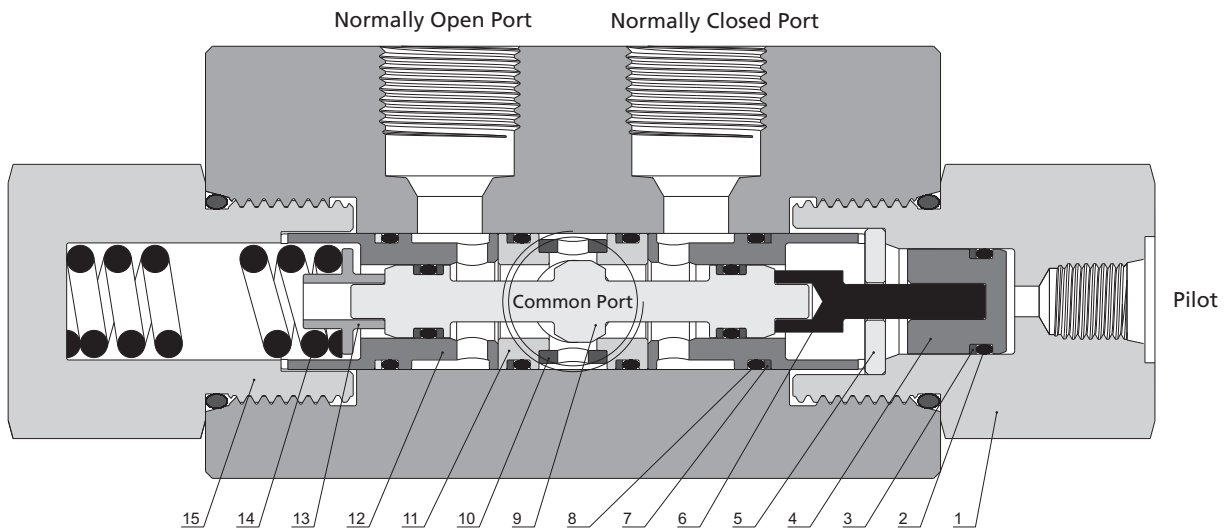
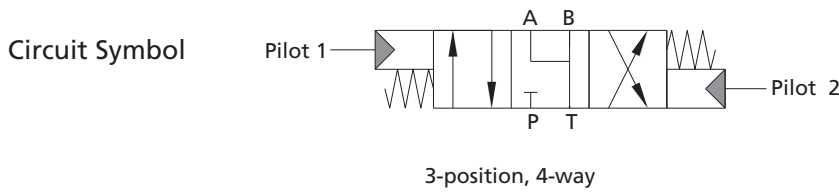
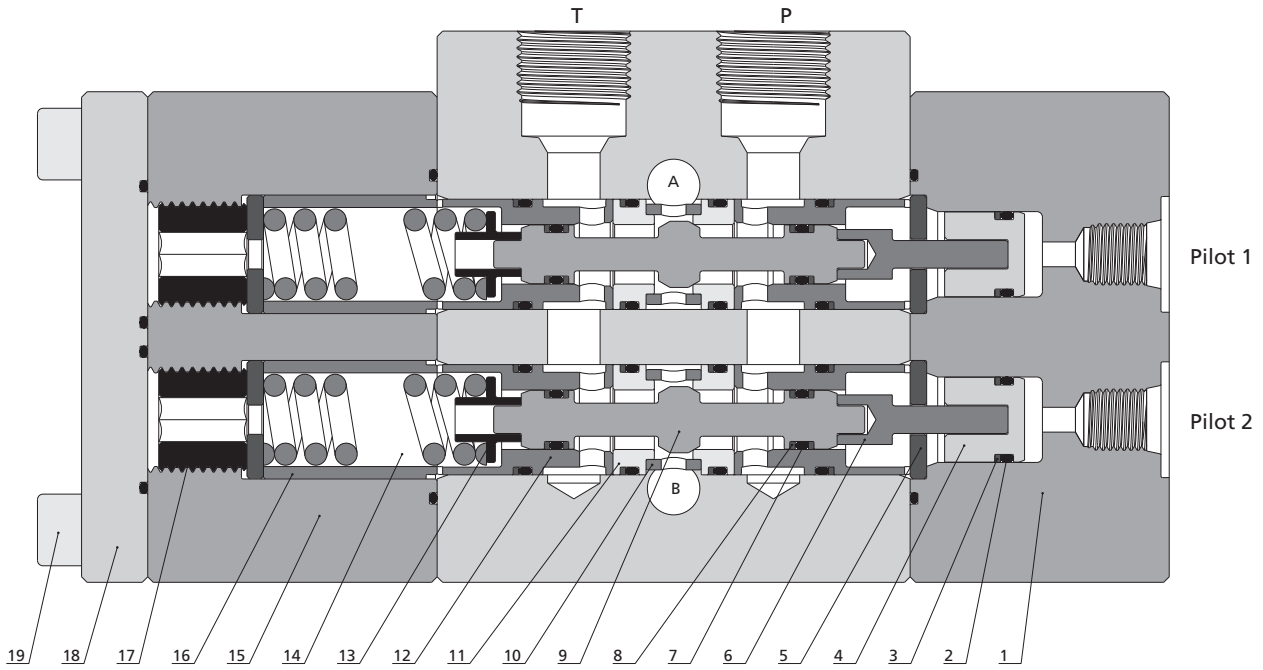
Features

- ⦿ Working pressure up to 20,000 psig (1379 bar)
- ⦿ Pilot working pressure: 3,000 psig (207 bar)
- ⦿ Maximum external pressure: 6,000 psig (414 bar)
- ⦿ NBR O-ring for operation from 0°F to 250°F (-17.8°C to 121°C), other O-ring materials available
- ⦿ High tensile 316 stainless steel for valve body
- ⦿ NBR O-rings seal to provide excellent oil resistance
- ⦿ Easy to connect, switch off and reverse between different flow channels
- ⦿ Hydraulic remote control for easy operation
- ⦿ Bolt connection for easy disassembly and maintenance
- ⦿ Low impact performance to maximize cycle life
- ⦿ Suitable for application with oil or water
- ⦿ Orifice size: 0.25", 0.375"
- ⦿ Maximum water depth: 13,800 ft. (4200 m)



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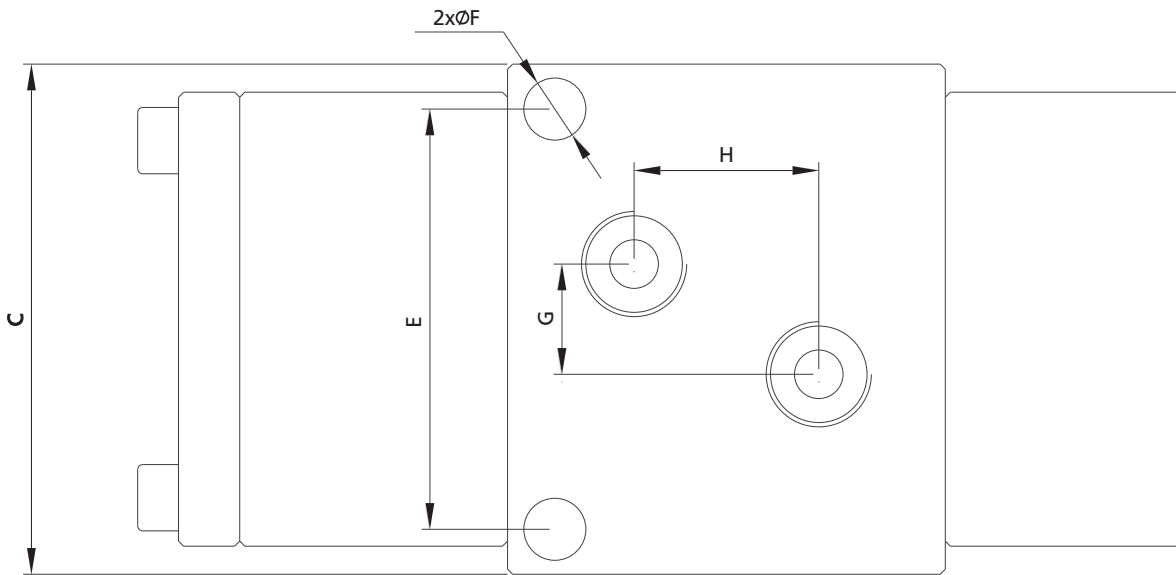
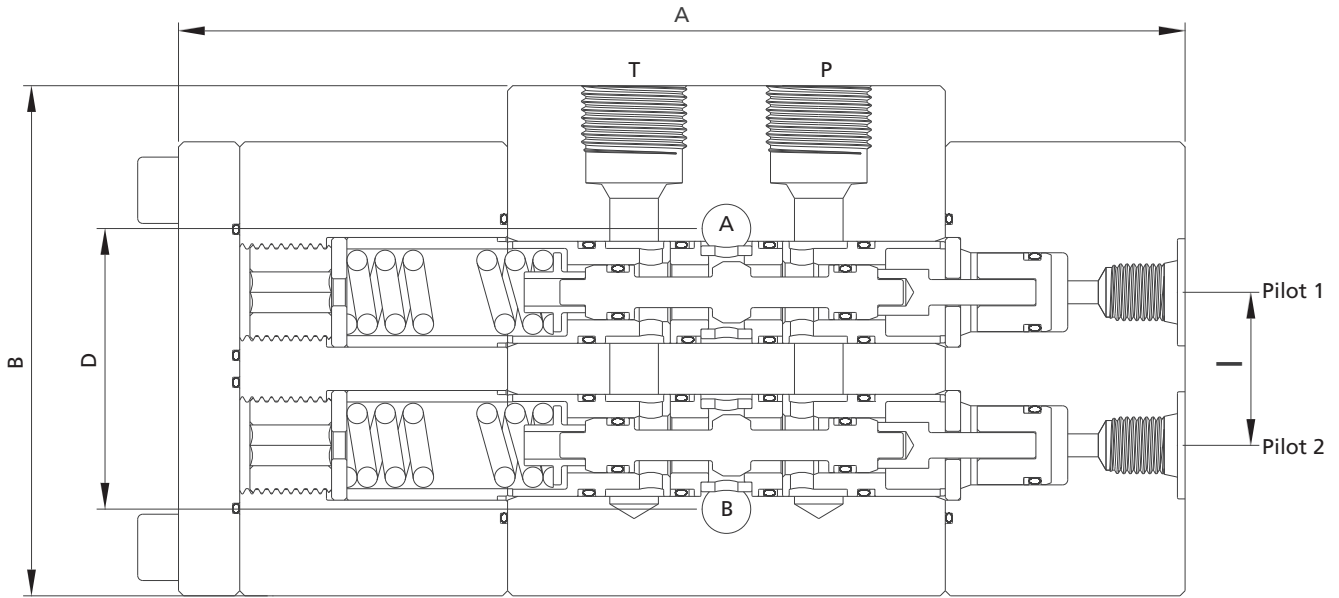
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Item	Component	Material Grade/ASTM specification
1	Gland	F316/A182
2	O-Ring	NBR
3	Retaining Ring	PTFE/ASTM D1710
4	Piston	316 SS/A479
5	Gasket	316 SS/ASTM A479
6	Connection Block	316 SS/ASTM A479
7	<i>O-Ring</i>	<i>NBR</i>
8	<i>Retaining Ring</i>	<i>PEEK</i>
9	<i>Stem</i>	<i>S17400/A564</i>
10	<i>Pad</i>	<i>S17400/A564</i>
11	<i>Seat</i>	<i>316 SS/ASTM A479</i>
12	<i>Bush</i>	<i>S17400/A564</i>
13	Connection Block	316 SS/ASTM A479
14	Spring	S17700/A313
15	Gland	F316/A182
16	Bush	S17400/A564
17	Screw	316 SS/ASTM A479
18	Gland	F316/A182
19	Locking Screw	316 SS

Wetted components listed in italics.

Ordering Information and Dimensions



3-position, 4-way

Ordering Number	Dimensions, in. (mm)										Working Pressure psig (bar)
	A	B	C	D	E	F	G	H	I	Orifice	
15SDCSS-3P4W-2FH9-US7	6.70 (170.3)	3.50 (88.9)	3.50 (88.9)	1.74 (44.2)	2.82 (71.1)	0.41 (10.5)	0.76 (19.4)	1.13 (28.6)	1.00 (25.4)	0.25 (6.35)	15,000 (1034)
15SDCSS-3P4W-2FH9-6-US7	7.20 (183)	3.54 (90)	3.74 (95)	1.26 (32)	3.19 (81)	0.33 (8.5)	1.02 (26)	1.10 (28)	1.10 (28)	0.375 (9.53)	
20SDCSS-3P4W-2FH9-6-US7	7.26 (184.5)	3.78 (96)	4.13 (105)	1.34 (34)	3.50 (89)	0.33 (8.5)	1.02 (26)	1.50 (38)	1.10 (28)	0.375 (9.53)	20,000 (1379)

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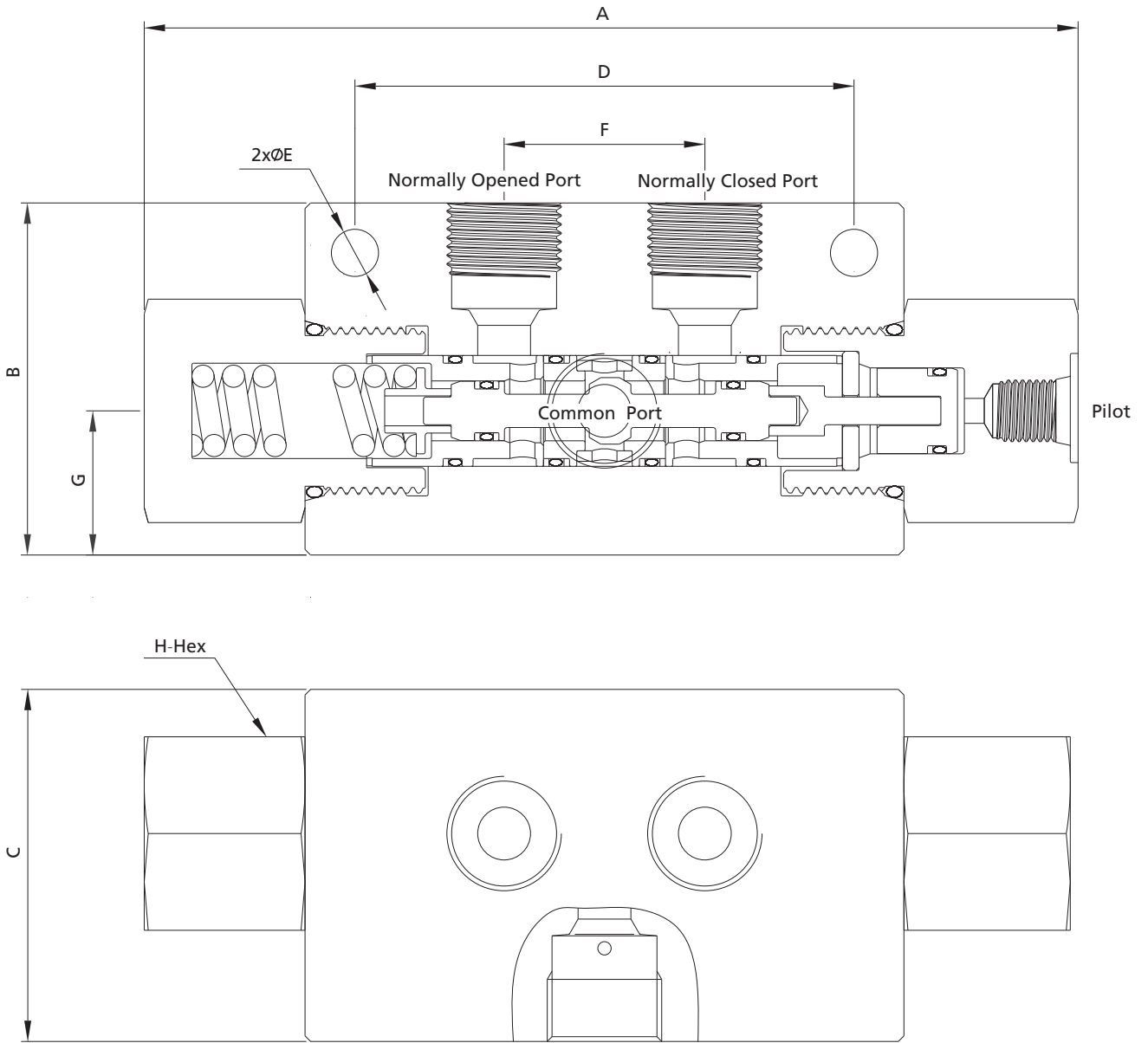
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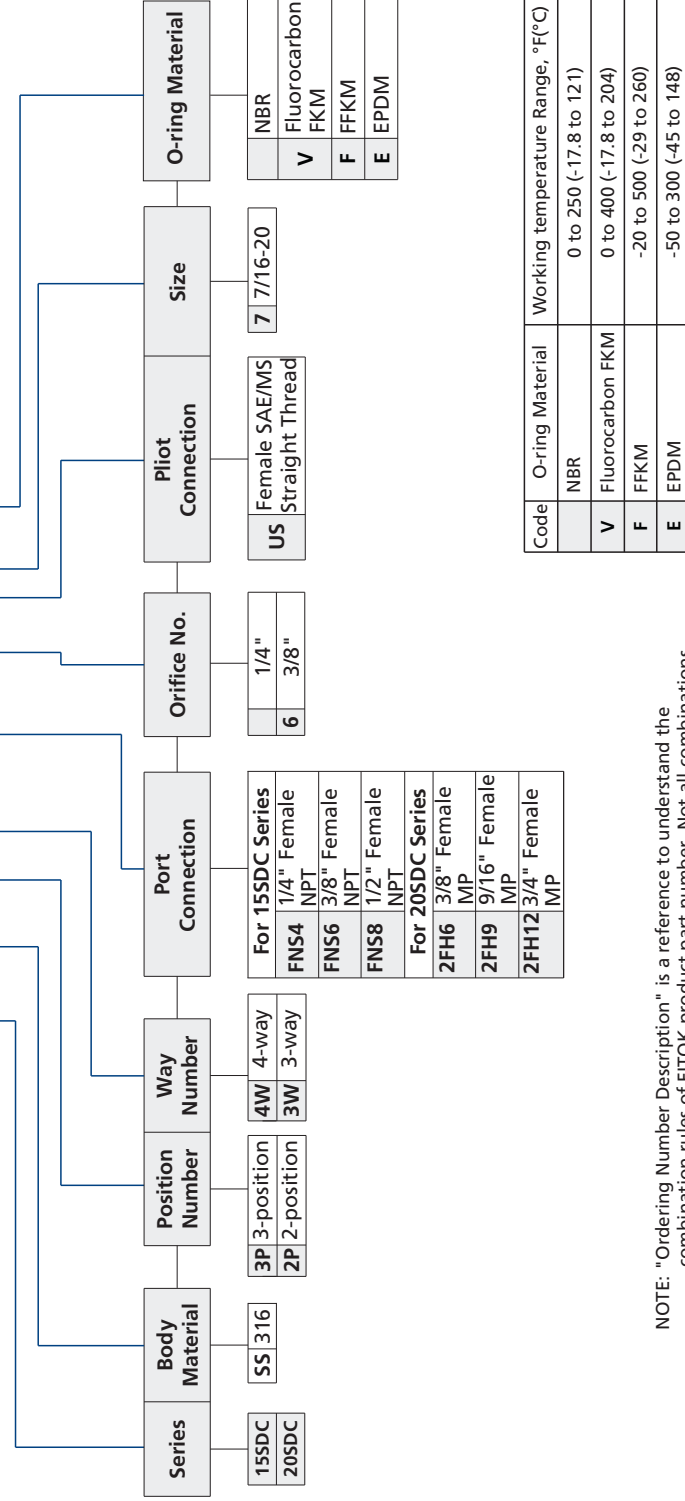
2-position, 3-way

Ordering Number	Dimensions, in. (mm)									Working Pressure psig (bar)
	A	B	C	D	E	F	G	H	Orifice	
15SDCSS-2P3W-2FH9-US7	5.81 (147.5)	2.28 (58)	2.28 (58)	3.15 (80)	0.33 (8.5)	1.30 (33)	0.87 (22)	1.38 (34.9)	0.25 (6.35)	15,000 (1034)
15SDCSS-2P3W-2FH9-6-US7	6.93 (176)	2.56 (65)	2.56 (65)	3.70 (94)	0.33 (8.5)	1.42 (36)	1.02 (26)	1.63 (41.28)	0.375 (9.53)	
20SDCSS-2P3W-2FH9-6-US7	6.93 (176)	2.56 (65)	2.56 (65)	3.70 (94)	0.33 (8.5)	1.42 (36)	1.02 (26)	1.63 (41.28)	0.375 (9.53)	20,000 (1379)

Medium & High Pressure Fittings and Tubing
Quick Couplings
Medium & High Pressure Valves
Line Filters
Sour Service Products
Subsea Valves
Tools and Installation Instructions
Technical Information

Ordering Number Description

20SDCSS - 3P4W - 2FH9 - 6 - US7 - V



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Medium & High Pressure Fittings and Tubing	Quick Couplings	Medium & High Pressure Valves	Line Filters	Sour Service Products	Subsea Valves	Tools and Installation Instructions	Technical Information
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Tools and Installation Instructions

Tools



G-03

Installation Instructions

G-05

Tools and Installation Instructions



Medium & High Pressure
Fittings and Tubing

Quick Couplings

Medium & High Pressure
Valves

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Tools

Manual Presetting Tools

To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/8", 1/4", 3/8" and 1/2" O.D.

Ordering Number	Tube O.D., in.
PST-2D	1/8
PST-4D	1/4
PST-6D	3/8
PST-8D	1/2



Hydraulic Presetting Tools

To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/2", 9/16" and 3/4" O.D.

Ordering Number	Description
HPT-DHF	With full set of die heads
HPT-H	Without die heads The die heads can be ordered individually.



Die Heads

Ordering Number	Tube O.D., in.
HPT-H-DHL8	1/2
HPT-H-DHL9	9/16
HPT-H-DHL12	3/4



Die Heads

Manual Coning Tools

Applied in medium and high pressure tubing for concentric cone processing. All the manual coning tools use the same basic tools on which the cutter heads and the collets of different sizes can be replaced. A complete ordering number shall include that of the basic tool, collet and cutter head. The collet and the cutter head can be ordered separately. For detailed information, please refer to the instruction manual or contact FITOK Group.



Connection	Tube O.D. x I.D. in.	Complete Ordering Number	Ordering Number of Collet	Ordering Number of Cutter Head
2FH4	1/4 x 0.109	HCT-M4	HCT-4-CO	HCT-M4-DT
2FH6	3/8 x 0.203	HCT-M6	HCT-6-CO	HCT-M6-DT
2FH9	9/16 x 0.312	HCT-M9	HCT-9-CO	HCT-M9-DT
6FH4	1/4 x 0.083	HCT-H4	HCT-4-CO	HCT-H4-DT
6FH6	3/8 x 0.125	HCT-H6	HCT-6-CO	HCT-H6-DT
6FH9	9/16 x 0.188	HCT-H9	HCT-9-CO	HCT-H9-DT



Cutter Head



Collet

Manual Threading Tools

Applied in medium and high pressure tubing for thread processing. All the manual threading tools use the same basic tools to process threads by replacing threading dies and guide bushings of different sizes. A complete ordering number shall include that of the basic tool, threading die and guide bushing. The threading die and the guide bushing can be ordered separately. For detailed information please refer to the instruction manual or contact FITOK Group.



Threading Die Bushing

Connection	Tube O.D. x I.D. in.	Thread Size (Left Hand)	Complete Ordering Number	Ordering Number of Threading Die	Ordering Number of Bushing
2FH4	1/4 x 0.109	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
2FH6	3/8 x 0.203	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
2FH9	9/16 x 0.312	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS
6FH4	1/4 x 0.083	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
6FH6	3/8 x 0.125	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
6FH9	9/16 x 0.188	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS

Manual Reseating Tools

The tool is used for repairing the wearing cone seat of medium and high pressure fitting or valve. A complete ordering number shall include that of the cutter, antifriction gasket, orientation nut and handle. The cutter, antifriction gasket, orientation nut and handle can be ordered separately. For detailed information, please refer to the instruction manual or contact FITOK Group.



Connection	Complete Ordering Number	Ordering Number of Cutter	Ordering Number of Antifriction Gasket	Ordering Number of Orientation Nut	Ordering Number of Handle
2FH4	HRT-M4	HRT-4-C	HRT-4-G	HRT-M4-G	HRT-H-1
2FH6	HRT-M6	HRT-6-C	HRT-6-G	HRT-M6-G	HRT-H-2
2FH9	HRT-M9	HRT-9-C	HRT-9-G	HRT-M9-G	HRT-H-3
2FH12	HRT-M12	HRT-12-C	HRT-12-G	HRT-M12-G	HRT-H-4
2FH16	HRT-M16	HRT-16-C	HRT-16-G	HRT-M16-G	HRT-H-4
6FH4	HRT-H4	HRT-4-C	HRT-4-G	HRT-H4-G	HRT-H-1
6FH6	HRT-H6	HRT-4-C	HRT-4-G	HRT-H6-G	HRT-H-1
6FH9	HRT-H9	HRT-9-C	HRT-9-G	HRT-H9-G	HRT-H-3

Cutting Oil

Metal cutting oil is required for the operation of manual coning tools, manual threading tools and manual reseating tools. Quality cutting oil serves to reduce the heat and friction between the cutter and the metal, optimize the surface finish, and extend the life of the cutter.

FUCHS RENOFORM MZAN 51 is offered by FITOK as cutting oil.

Ordering Number: HT-CO

Medium & High Pressure Fittings and Tubing

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Installation Instructions

Installation of DHL Series Tubing Connections

For Tube O.D. 1/8", 1/4", 3/8" and 1/2"

Without Manual Presetting Tool

1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
2. Insert the tubing into the fitting body or the valve. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the fitting body or the valve (Fig. 2).
3. Mark the nut and the fitting body or the valve (Fig. 3).
4. Hold the fitting body or the valve steady. For tube O.D. 1/8", tighten the nut 1 1/4 turns with a wrench. For tube O.D. 1/4", 3/8" and 1/2", tighten the nut 1 1/2 turns with a wrench (Fig. 4).

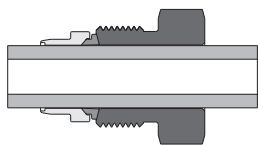


Fig.1

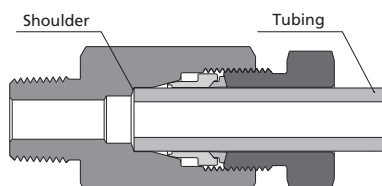


Fig.2

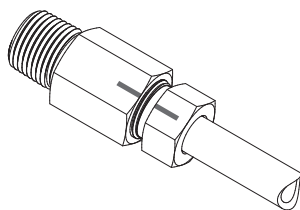


Fig.3

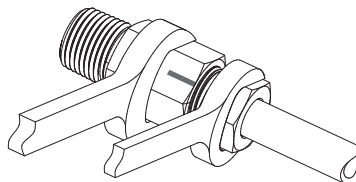


Fig.4

With Manual Presetting Tool

1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
2. Insert the tubing into the manual presetting tool. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the presetting tool (Fig. 5).
3. Mark the nut and the manual presetting tool (Fig. 6).
4. Hold the manual presetting tool steady. For tube O.D. 1/8", tighten the nut 1 1/4 turns with a wrench. For tube O.D. 1/4", 3/8" and 1/2", tighten the nut 1 1/2 turns with a wrench.
5. Loosen the nut and remove the tubing with preassembled ferrules from the manual presetting tool (Fig. 7).

NOTE: If the tubing sticks into the manual presetting tool, remove the tubing by gently rocking it back and forth. Do not rotate the tubing.

6. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut (Fig. 8).
7. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

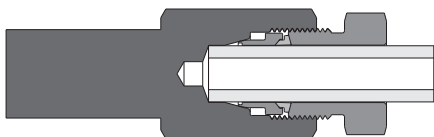


Fig.5

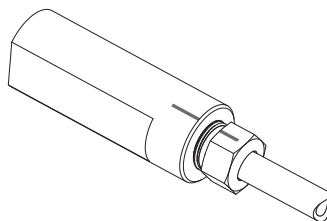


Fig.6

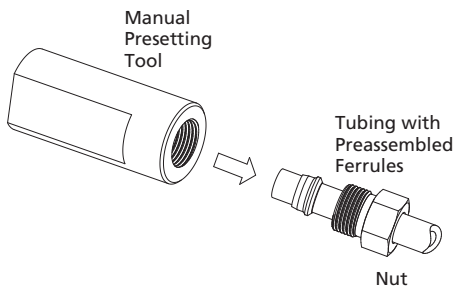


Fig.7

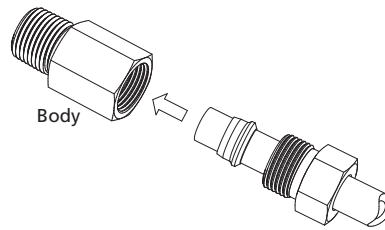


Fig.8

For Tube O.D. 1/2", 9/16" and 3/4"

1. Preassemble the ferrules onto tubing using the hydraulic presetting tool. For details, please contact FITOK for instruction manual **Hydraulic Presetting Tools**.
2. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut.
3. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

For Plugs

1. Insert the plug into the fitting body or the valve. Finger tight the nut.
2. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

Reinstallation Instructions

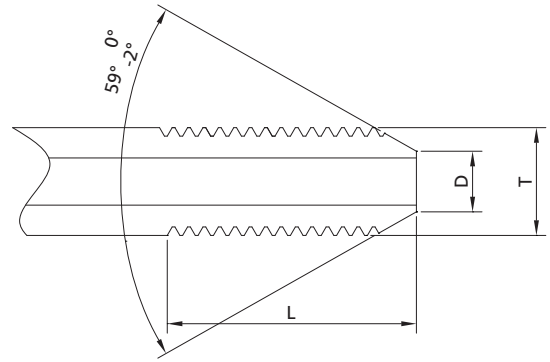
1. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut.
2. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady. After frequent reassemblies, 1/8 turn might be sufficient.

Cautions

1. Do not loosen or tighten fittings when the system is pressurized.
2. When assembling a tube fitting, screw the nut while holding the body steady.

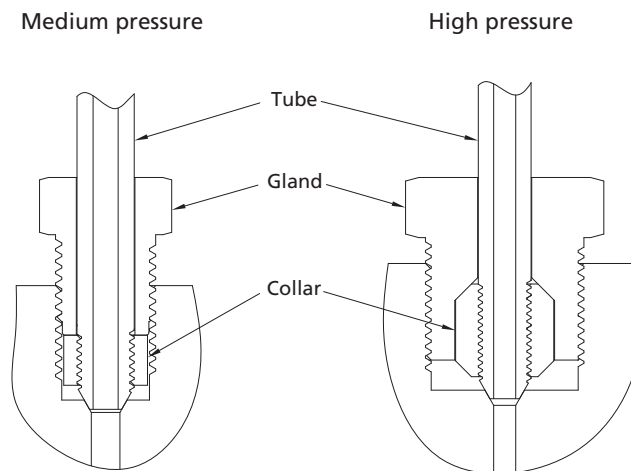
Installation of Medium & High Pressure Coned and Threaded Connections

1. Process the tube end into the structure as shown on the right. For dimensions please see the table below.



Tube O.D. x I.D. in.	Connection	T - Thread Size (Left Hand)	D in. (mm)	L in. (mm)
1/4 x 0.109	2FH4	1/4-28 UNF	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	2FH6	3/8-24 UNF	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	2FH9	9/16-18 UNF	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	2FH12	3/4-16 UNF	0.56 (14.3)	0.63 (15.9)
1 x 0.562	2FH16	1-14 UNS	0.72 (18.3)	0.78 (19.8)
1/4 x 0.083	6FH4	1/4-28 UNF	0.13 (3.2)	0.56 (14.3)
3/8 x 0.125	6FH6	3/8-24 UNF	0.22 (5.6)	0.75 (19.1)
9/16 x 0.188	6FH9	9/16-18 UNF	0.28 (7.1)	0.94 (23.8)

2. First, insert the tube through the gland, and then screw in the collar until the conical end of the tube showing 1-2 threads.
3. If possible, coat the cone tip with a small amount of lubricant which is compatible with the system media.



4. Insert the tubing into the connecting port and finger tighten the gland.
5. Use a torque wrench to tighten the gland with the required torque shown in the table below while holding fitting body or valve steady.

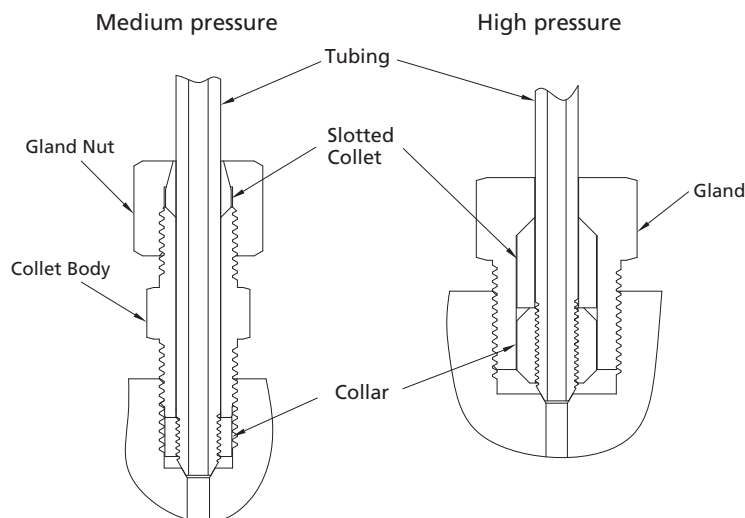
Tube O.D. x I.D. in.	Connection	Required Torque for Standard Service Products ft.-lbs. (N.m)	Required Torque for Sour Service Products ft.-lbs. (N.m)
1/4 x 0.109	2FH4	20 (27.1)	10 (13.6)
3/8 x 0.203	2FH6	30 (40.6)	15 (20.3)
9/16 x 0.312	2FH9	55 (74.5)	30 (40.7)
3/4 x 0.438	2FH12	90 (122)	45 (61.0)
1 x 0.562	2FH16	125 (170)	100 (135.6)
1/4 x 0.083	6FH4	25 (33.9)	15 (20.3)
3/8 x 0.125	6FH6	50 (67.8)	25 (33.9)
9/16 x 0.188	6FH9	110 (149.1)	55 (74.6)

Installation of Medium & High Pressure Anti-vibration Gland Assembly

Anti-vibration Gland Assembly replaces the standard gland.

1. Insert coned and threaded tubing through the Anti-vibration Gland Assembly in the correct order as shown in the following figure, and then screw in the collar until the conical end of the tube showing 1-2 threads.
2. For medium pressure Anti-vibration Gland Assembly, tighten collet body to required torque for standard tube fittings while holding fitting body or valve steady. Then finger tighten the gland nut, and tighten the gland nut 1-1/4 turns for initial installation with a wrench while holding the collet body steady. For reinstallation, tighten the gland nut with a wrench from finger tight to 3/4 turn.
3. For high pressure Anti-vibration Gland Assembly, use a torque wrench to tighten the gland with the required torque shown in the table below while holding fitting body or valve steady.

Tube O.D. x I.D. in.	Connection	Required Torque ft.-lbs. (N.m)
1/4 x 0.083	6FH4	10 (13.6)
3/8 x 0.125	6FH6	28 (38.0)
9/16 x 0.188	6FH9	75 (101.7)



NOTE: When installing, please follow the given method and required torque; otherwise it will affect the performance of the product.

Technical Information

Technical Information

H-02

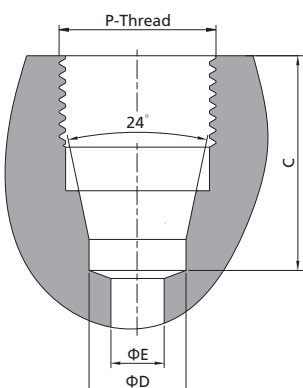
Technical Information

Connection Information

DHL Series Connections

Dimensions of Female DHL Series Connections (DHL) - Double Ferrule Type

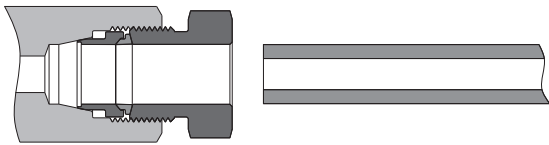
Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)			
		P	C	D	E
1/8 (3.18)	DHL2	3/8-24	0.63 (15.9)	0.13 (3.2)	0.09 (2.4)
1/4 (6.35)	DHL4	1/2-20	0.85 (21.7)	0.25 (6.4)	0.19 (4.8)
3/8 (9.53)	DHL6	5/8-18	0.89 (22.5)	0.38 (9.5)	0.25 (6.4)
1/2 (12.7)	DHL8	13/16-16	0.96 (24.4)	0.50 (12.7)	0.37 (9.5)
9/16 (14.3)	DHL9	15/16-14	1.20 (30.6)	0.56 (14.3)	0.41 (10.4)
3/4 (19.1)	DHL12	1 1/4-12	1.54 (39.2)	0.75 (19.1)	0.56 (14.2)



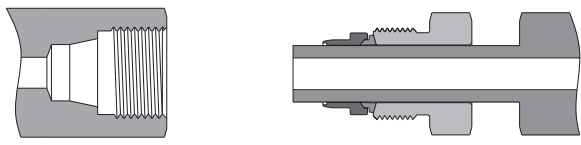
NOTES: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.

Types of DHL Series Connections

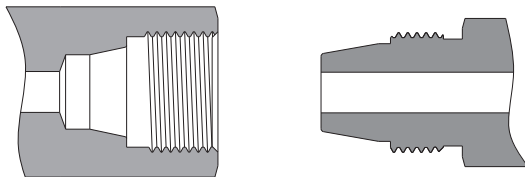
a. Female DHL Series (DHL) DHL Series Tubing



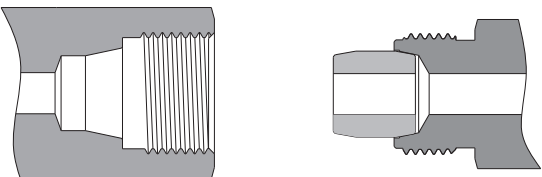
b. Female DHL Series (DHL) (Without Ferrules and Nut) DHL Series Tube Stub with Ferrules and Nut (DHM)



c. Female DHL Series (DHL) (Without Ferrules and Nut) Male DHL Series (One-Piece) (DMP)



d. Female DHL Series (DHL) (Without Ferrules and Nut) Male DHL Series (Two-Piece) (DCP)



Medium Pressure Connections

Dimensions of Female Medium Pressure Connections (2FH)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4 (6.35)	2FH4	7/16-20	0.29 (7.3)	0.50 (12.7)	0.19 (4.8)	0.11 (2.8)
3/8 (9.53)	2FH6	9/16-18	0.39 (10.0)	0.63 (16.0)	0.31 (7.9)	0.20 (5.2)
9/16 (14.3)	2FH9	13/16-16	0.44 (11.2)	0.75 (19.1)	0.50 (12.7)	0.31 (7.9)
3/4 (19.1)	2FH12	3/4-14	0.31 (13.0)	0.94 (23.9)	0.63 (15.9)	0.44 (11.1)
1 (25.4)	2FH16	1 3/8-12	0.83 (21.0)	1.31 (33.3)	0.88 (22.4)	0.56 (14.3)

Dimensions of Medium Pressure Coned-and-Threaded Tubing Connections

Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)		
		T (Left Hand)	D	L
1/4 x 0.109	2FH4	1/4-28	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	2FH6	3/8-24	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	2FH9	9/16-18	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	2FH12	3/4-16	0.56 (14.3)	0.63 (15.9)
1 x 0.562	2FH16	1-14	0.72 (18.3)	0.78 (19.8)

NOTES: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.

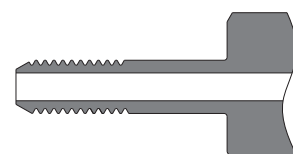
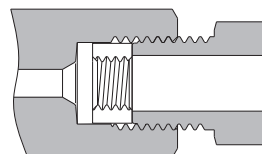
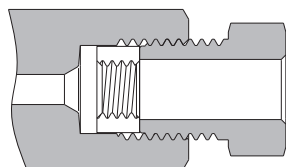
Types of Medium Pressure Connections

a. Female MP (2FH)

Medium Pressure Coned and Threaded Tubing

b. Female MP (2FH)

MP Nipple (2CT)

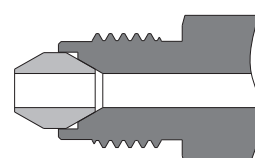
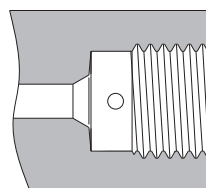
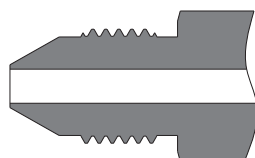
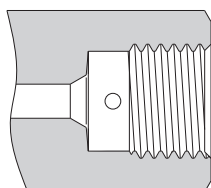


c. Female MP (2FH) (Without Collar and Gland)

Male MP (One-Piece) (2MP)

d. Female MP (2FH) (Without Collar and Gland)

Male MP (Two-Piece) (2CP)



High Pressure Connections

Dimensions of Female High Pressure Connections (6FH)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4 (6.35)	6FH4	9/16-18	0.39 (9.8)	0.45 (11.4)	0.17 (4.3)	0.09 (2.4)
3/8 (9.53)	6FH6	3/4-16	0.54 (13.6)	0.64 (16.3)	0.26 (6.6)	0.13 (3.2)
9/16 (14.3)	6FH9	1 1/8-12	0.63 (16.0)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)

Dimensions of High Pressure Coned-and-Threaded Tubing Connections

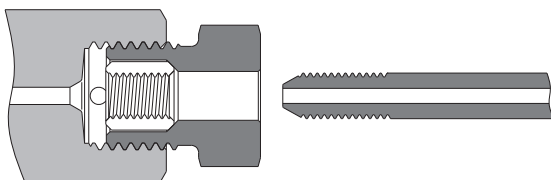
Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)		
		T (Left Hand)	D	L
1/4 x 0.083	6FH4	1/4-28	0.13 (3.2)	0.56 (14.3)
3/8 x 0.125	6FH6	3/8-24	0.22 (5.6)	0.75 (19.1)
9/16 x 0.188	6FH9	9/16-18	0.28 (7.1)	0.94 (23.8)

NOTES: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.

Types of High Pressure Connections

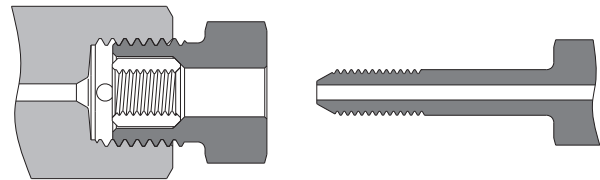
a. Female HP (6FH)

High Pressure Coned and Threaded Tubing



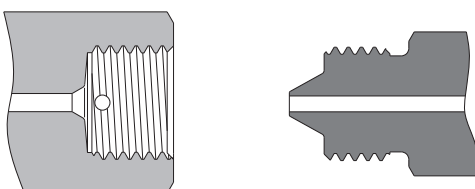
b. Female HP (6FH)

HP Nipple (6CT)



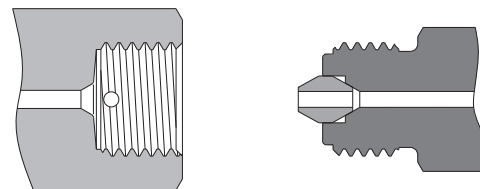
c. Female HP (6FH) (Without Collar and Gland)

Male HP (One-Piece) (6MP)



d. Female HP (6FH) (Without Collar and Gland)

Male HP (Two-Piece) (6CP)

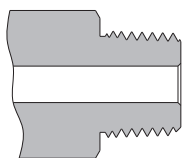


Thread Ends

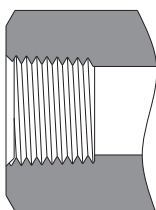
Thread Specifications

Connection Type	Code	Thread Type	Thread Specification
Male or Female NPT	NS or FNS	NPT	ASME B1.20.1, SAE AS71051
Male or Female ISO/BSP Tapered	RT or FRT	ISO/BSP Tapered	ISO 7-1, BS EN 10226-1, DIN EN 10226-1, JIS B0203
Heavy-Duty Stud Ends (SAE J1926-2, ISO 11926-2)	SH	SAE/MS	ASME B1.1
Ports with O-ring Seal in Truncated Housing (SAE J1926-1, ISO 11926-1)	US		
Male or Female JIC (37° Flare)	AN		
Male Type "M"	HM		

Male NPT (NS)

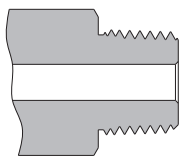


Female NPT (NS or FNS)

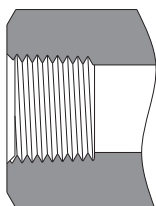


- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests are flat
- Taper 1:16
- Type of sealing: thread sealant

Male ISO/BSP Tapered (RT)

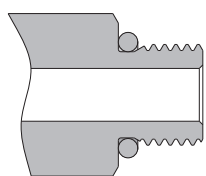


Female ISO/BSP Tapered (RT or FRT)

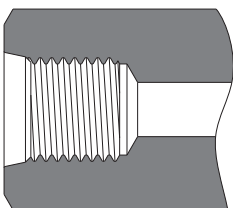


- 55° thread angle
- Pitch measured in inch
- Truncation of roots and crests are flat
- Taper 1:16
- Type of sealing: thread sealant

Heavy-Duty Stud Ends (SH)

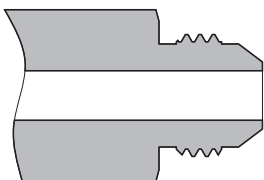


Ports with O-ring Seal in Truncated Housing (US)

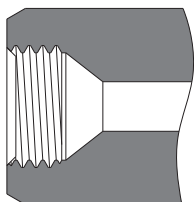


- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests are rounded
- SH Stud End complies with SAE J1926-2, ISO 11926-2
- US Port complies with SAE J1926-1, ISO 11926-1

Male JIC (37° Flare) (AN)



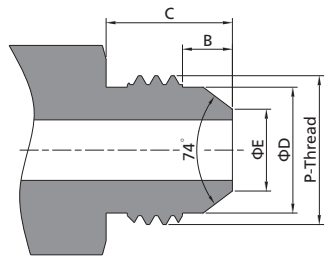
Female JIC (37° Flare) (AN)



- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests are rounded
- 74° coned connections

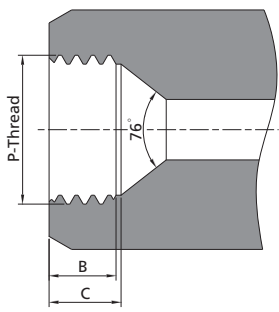
Dimensions of AN Stud End (Male)

Connection	Dimensions, in. (mm)				
	P	B	C	D	E
AN4	7/16-20	0.20 (5.1)	0.55 (14.0)	0.36 (9.2)	0.19 (4.9)
AN6	9/16-18	0.20 (5.2)	0.56 (14.1)	0.48 (12.1)	0.32 (8.1)
AN8	3/4-16	0.26 (6.6)	0.66 (16.7)	0.65 (16.6)	0.43 (10.8)
AN10	7/8-14	0.28 (7.0)	0.76 (19.3)	0.77 (19.5)	0.54 (13.7)
AN12	1 1/16-12	0.32 (8.2)	0.86 (21.9)	0.94 (23.9)	0.67 (16.9)
AN16	1 5/16-12	0.32 (8.2)	0.91 (23.1)	0.19 (30.2)	0.91 (23.2)



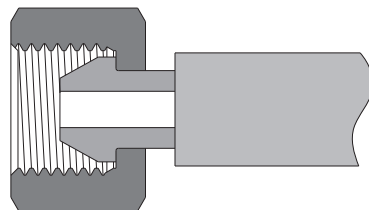
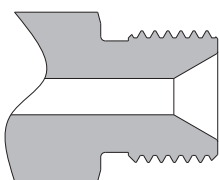
Dimensions of AN Port (Female)

Connection	Dimensions, in. (mm)		
	P	B	C
AN4	7/16-20	0.28 (7.1)	0.33 (8.3)
AN6	9/16-18	0.29 (7.4)	0.34 (8.7)
AN8	3/4-16	0.31 (7.9)	0.37 (9.5)
AN10	7/8-14	0.40 (10.2)	0.47 (11.9)
AN12	1 1/16-12	0.42 (10.7)	0.50 (12.7)
AN16	1 5/16-12	0.48 (12.3)	0.56 (14.3)



Male Type "M" (HM)

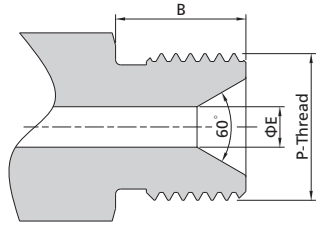
Female Swivel Type "M" Hose Fitting



- 60° thread angle
- Pitch measured in inch
- Truncation of root and crest are rounded
- 60° coned connections

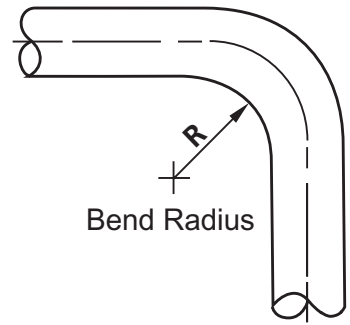
Dimensions of HM Stud End

Connection	Dimensions, in. (mm)		
	P	B	E
HM9	9/16-18	0.50 (12.7)	0.09 (2.4)
HM12	3/4-16	0.63 (16.0)	0.29 (7.4)
HM14	7/8-14	0.76 (19.2)	0.15 (3.8)
HM16	1-12	0.64 (16.3)	0.39 (10.0)
HM21	1 5/16-12	0.62 (15.7)	0.69 (17.5)

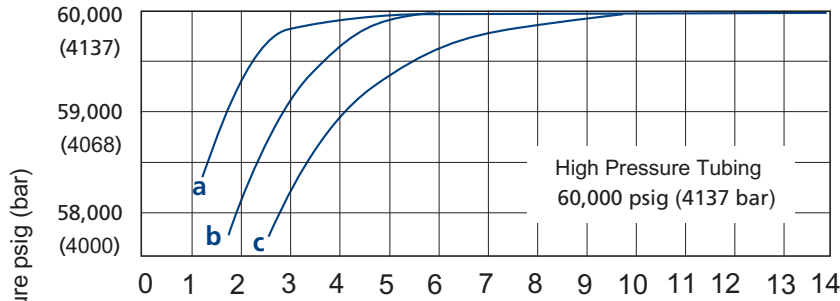


Working Pressure vs. Bend Radius Curve

Medium & High Pressure Tubing (316/316L SS)

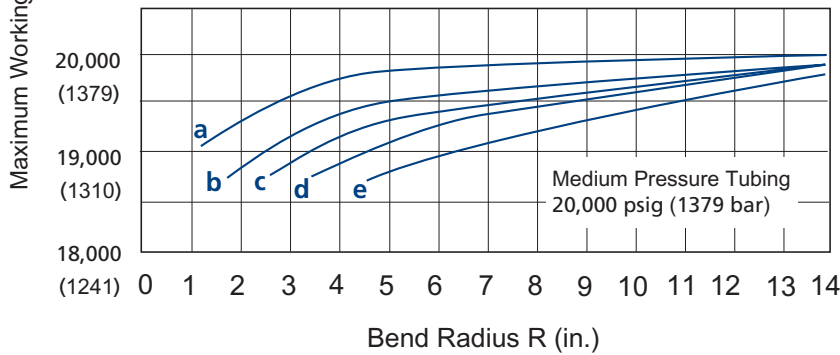


Bend Radius



High Pressure Tubing 60,000 psig (4137 bar)

Tube O.D. x I.D. in.	R (min.) in. (mm)
a 1/4 x 0.083	1.25 (31.8)
b 3/8 x 0.125	1.75 (44.5)
c 9/16 x 0.188	2.63 (66.7)



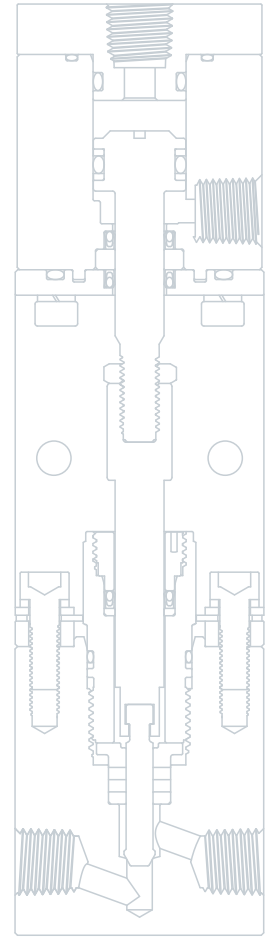
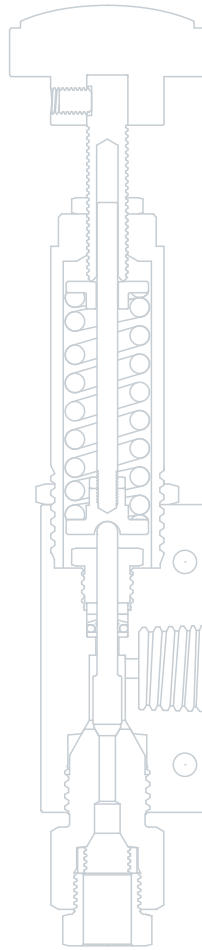
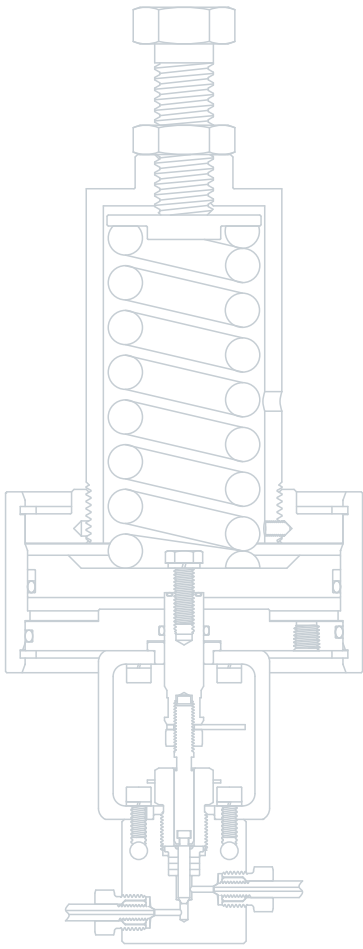
Medium Pressure Tubing 20,000 psig (1379 bar)

Tube O.D. x I.D. in.	R (min.) in. (mm)
a 1/4 x 0.109	1.25 (31.8)
b 3/8 x 0.203	1.75 (44.5)
c 9/16 x 0.312	2.63 (66.7)
d 3/4 x 0.438	3.50 (89.9)
e 1 x 0.562	4.63 (117.5)

Medium & High Pressure Fittings and Tubing
Quick Couplings
Medium & High Pressure Valves
Line Filters
Sour Service Products
Subsea Valves
Tools and Installation Instructions
Technical Information

Warranty Information

FITOK products are backed by The FITOK Limited Lifetime Warranty. For a copy, contact FITOK Group or our authorized distributors.



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