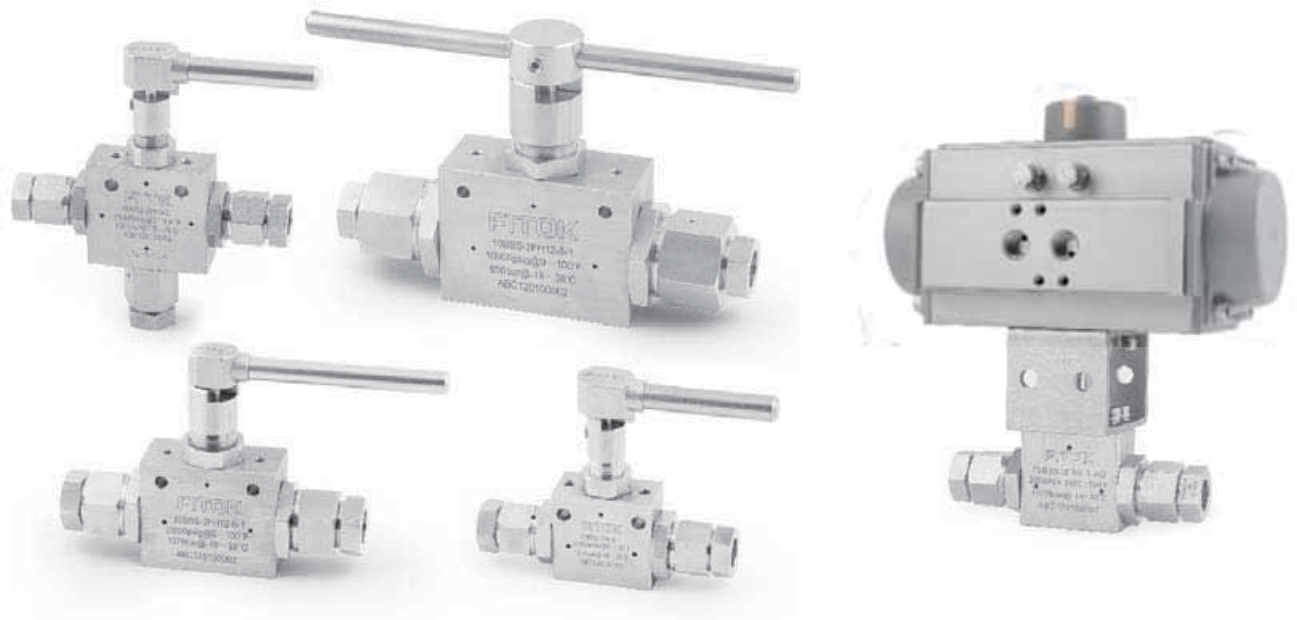


# Ball Valves and Pneumatic Ball Valves

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

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

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



Medium & High Pressure  
Fittings and Tubing

Quick Couplings

Medium & High Pressure  
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Line Filters

Sour Service Products

Subsea Valves

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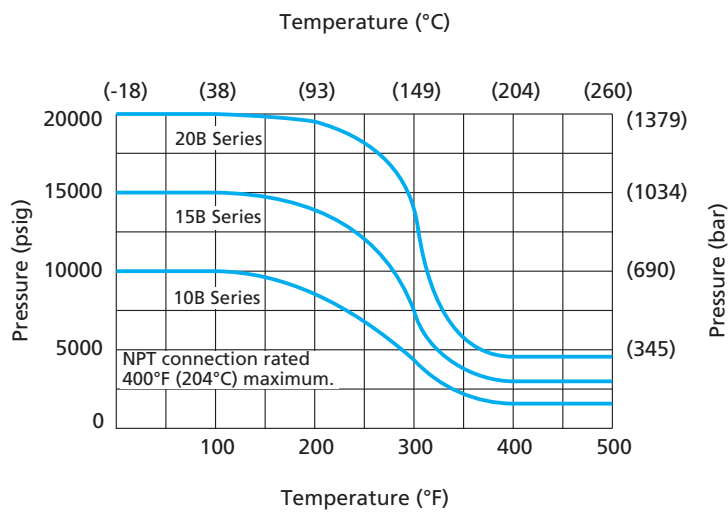
Medium & High Pressure Fittings and Tubing	<b>Features</b>	<b>C-04</b>
Quick Couplings	<b>Pressure vs. Temperature Curve</b>	<b>C-04</b>
Medium & High Pressure Valves	<b>Standard Materials of Construction</b>	<b>C-05</b>
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## Features

- ⦿ 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)

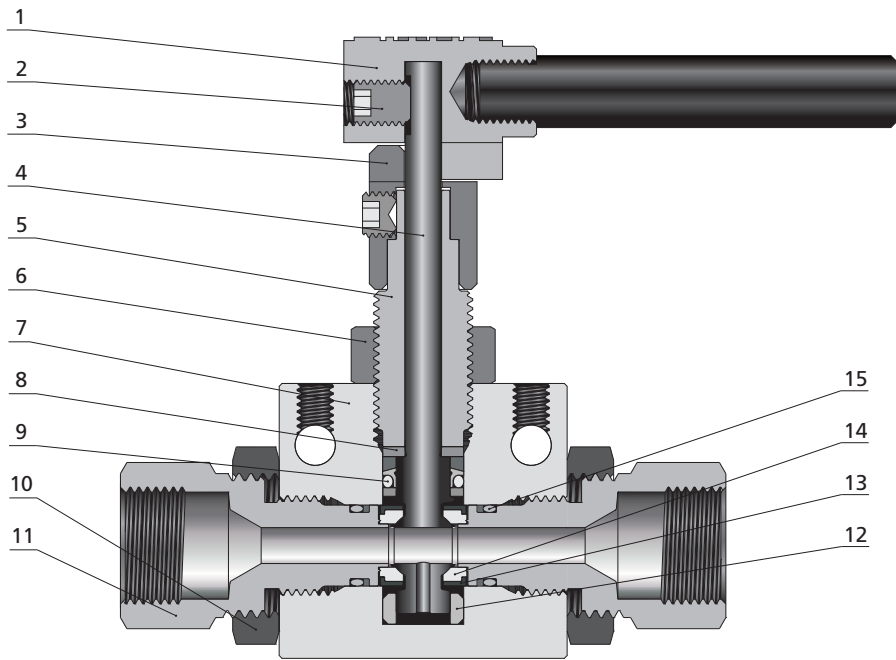
## Pressure vs. Temperature Curve



- 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.

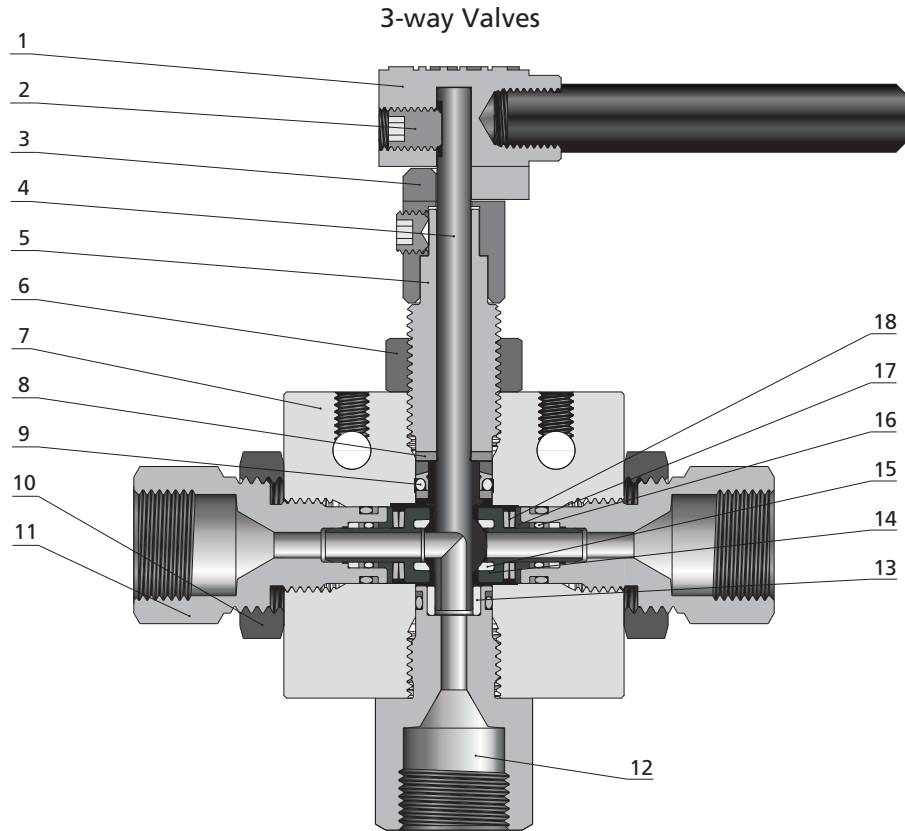
## Standard Materials of Construction

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	<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	Copper Alloy
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>Bearing</i>	<i>PEEK</i>
13	<i>Seat Retainer</i>	<i>316 SS/A479</i>
14	<i>Seat</i>	<i>PEEK</i>
15	<i>O-ring</i>	<i>Fluorocarbon FKM</i>
	Lubricant	Molybdenum Disulfide/Fluorinated-based

*Wetted components listed in italics.*



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	<i>Fluorocarbon FKM</i>
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	<i>Carbon Filled PEEK</i>
16	O-ring	<i>Fluorocarbon FKM</i>
17	Belleville Backup	S17400/A564
18	Belleville Washers	S17700/A693
	Lubricant	Molybdenum Disulfide/Fluorinated-based

Wetted components listed in italics.

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

Sour Service Products

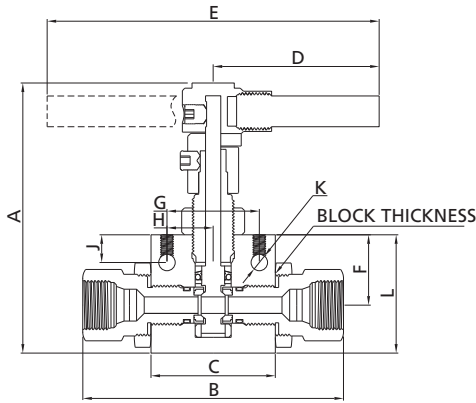
Subsea Valves

Tools and Installation Instructions

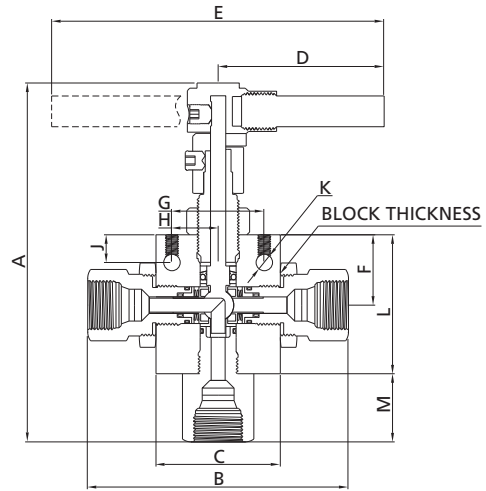
Technical Information

## Dimensions

2-way Straight Valves



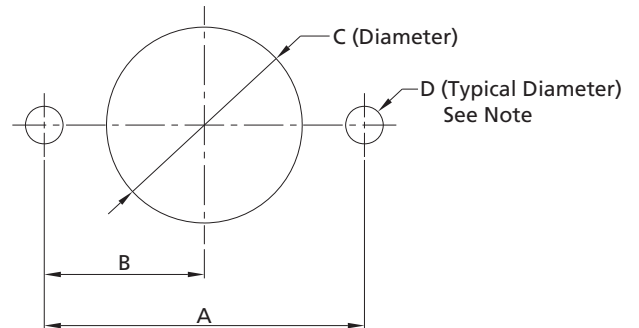
3-way Valves



Flow Pattern	Orifice No.	Dimensions, in. (mm)												Block Thickness
		A	B	C	D	E	F	G	H	J	K	L	M	
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

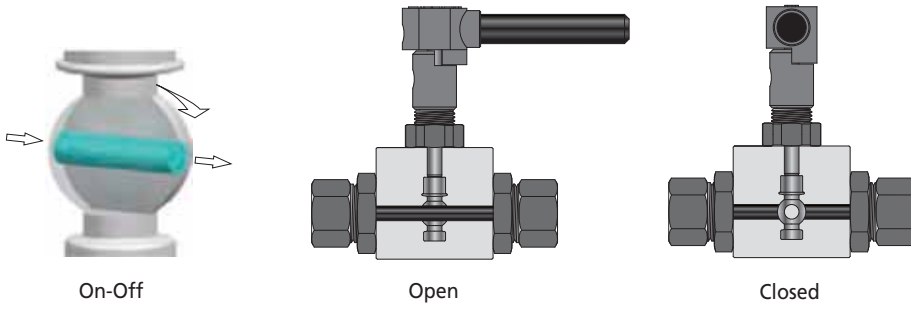
Flow Pattern	Orifice No.	Dimensions, in. (mm)			
		A	B	C	D
2-way		1.5 (38.1)	0.75 (19.1)	1.06 (26.9)	0.28 (7.1)
	6	2 (50.8)	1 (25.4)	1.5 (38.1)	0.28 (7.1)
	8	3 (76.2)	1.5 (38.1)	1.88 (47.6)	0.28 (7.1)
3-way		1.5 (38.1)	0.75 (19.1)	1.06 (26.9)	0.28 (7.1)
	6	2 (50.8)	1 (25.4)	1.5 (38.1)	0.28 (7.1)
	8	3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



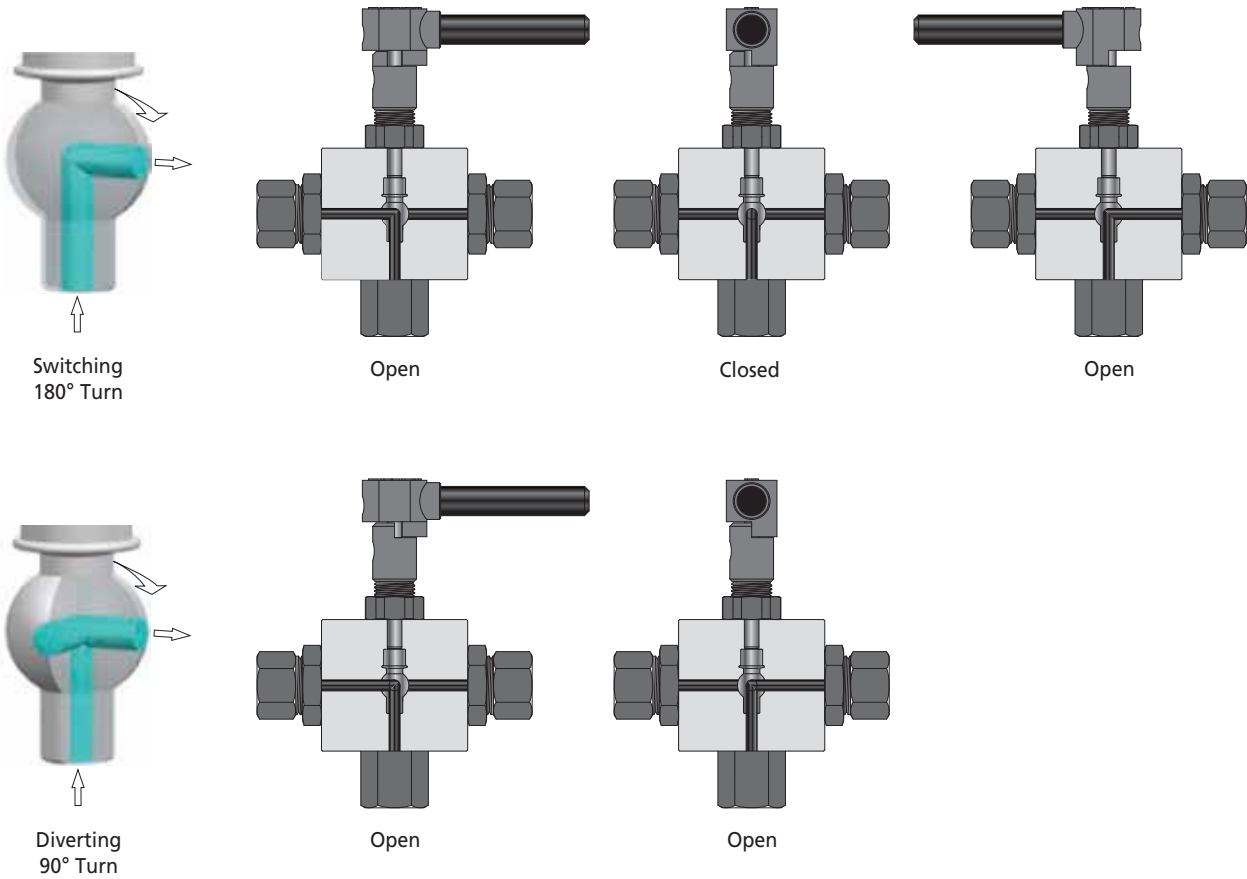
- NOTES: 1. Body mounting 1/4-20 thread.  
2. All dimensions are for reference only and are subject to change.

## Flow Configuration

### 2-way Straight Valves



### 3-way Valves



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## Ordering Information and Dimensions

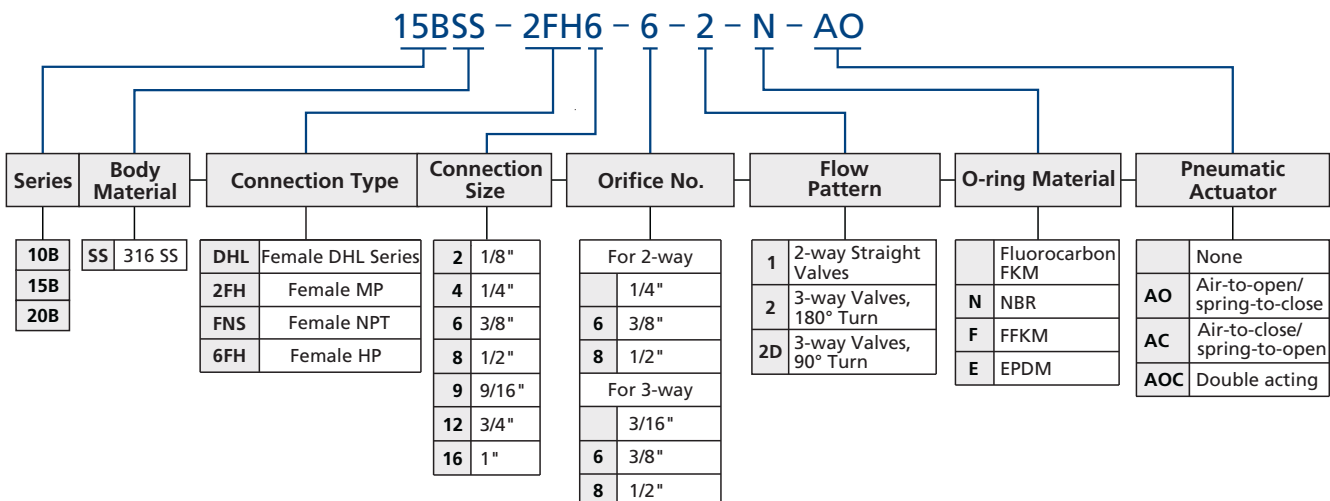
Series	Flow Pattern	Connection	Orifice No.	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)					
10B	2-way	2FH12	8	0.5 (12.7)	10.2	10BSS-2FH12-8-1	10,000 (690)					
		2FH16		0.5 (12.7)	10.2	10BSS-2FH16-8-1						
		FNS12		0.5 (12.7)	10.2	10BSS-FNS12-8-1						
		FNS16		0.5 (12.7)	10.2	10BSS-FNS16-8-1						
	3-way	2FH12	8	0.5 (12.7)	4.4	10BSS-2FH12-8-2		10BSS-2FH12-8-2D				
		2FH16			4.4	10BSS-2FH16-8-2		10BSS-2FH16-8-2D				
		FNS12		4.4	10BSS-FNS12-8-2	10BSS-FNS12-8-2D						
				FNS16	4.4	10BSS-FNS16-8-2		10BSS-FNS16-8-2D				
		15B			2-way	8		DHL2	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								
6	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	DHL	DHL2	8	0.094 (2.4)	0.13	15BSS-DHL2-2	15BSS-DHL2-2D					
				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				
	FNS	FNS2	8		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				
	6	DHL8	6		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)	
						15BSS-FNS6-6-2D		
		FNS8		0.33 (8.3)	2.1	15BSS-FNS8-6-2		
						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		20,000 (1379)
		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		
		2FH4-2D				20BSS-2FH4-2D		
2FH6-2D					20BSS-2FH6-2D			
2FH9-2D			20BSS-2FH9-2D					
6FH4-2D			20BSS-6FH4-2D					
6FH6-2D			20BSS-6FH6-2D					
6FH9-2D			20BSS-6FH9-2D					

## 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)

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