

Ball Valves

BF, BFH, BG, BH, BO, BP,
BR and BV Series



FITOK Group

FITOK GmbH (Headquarter)

Sprendlinger Landstr. 115, 63069 Offenbach, Germany
Tel.: +49 69 8900 4498
Fax: +49 69 8900 4495

FITOK INC.

13000 Murphy Road, Suite 116, Stafford, TX 77477, USA
Tel.: +1 281 888 0077
Fax: +1 281 888 0033

FITOK INCORPORATED

Yingtailong Industrial Park, Shenzhen, 518109, China
Tel.: +86 755 2803 2500
Fax: +86 755 2803 2619

info@fitokgroup.com
www.fitokgroup.com

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Valves and Fittings

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Trunnion Ball Valves

BF and BFH Series High Pressure Service

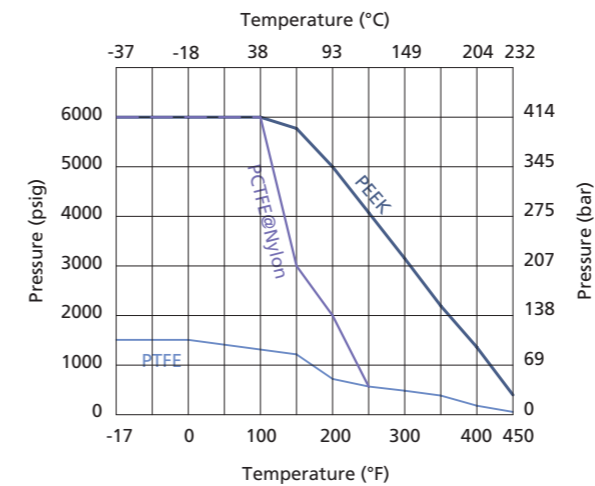
Features

- ⦿ Maximum working pressure: 10000 psig (689 bar)
- ⦿ Working temperature: 0°F to 450°F (-18°C to 232°C)
- ⦿ Fixed ball with double sealing
- ⦿ Automatic compensation of seat sealing
- ⦿ Low operating torque
- ⦿ Handle as indicator of flow direction
- ⦿ Positive handle stop
- ⦿ Handle color options are available
- ⦿ Pneumatic or electric actuator available
- ⦿ Blowout proof stem
- ⦿ Panel mountable
- ⦿ Leak-tight performance testing with nitrogen for every valve at the maximum working pressure, but not higher than 6000 psig
- ⦿ Compact maximum-flow design
- ⦿ 2-or 3-way flow patterns
- ⦿ Spring-load seats: Provide leak tight integrity in both low and high-pressure systems, reduce seat wear from pressure surges.
- ⦿ Trunnion-style ball: Prevents ball blowout.

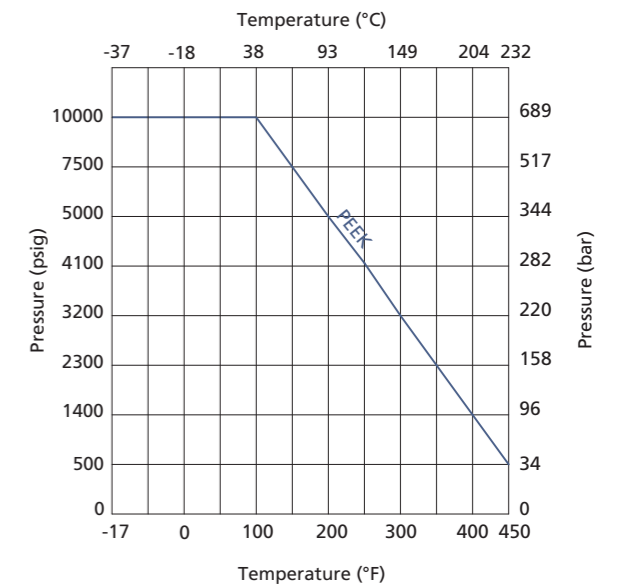


Pressure vs. Temperature

BF Series



BFH Series



Important information about ball valves

- ⦿ FITOK ball valves are designed to be used in a fully open or fully closed position.
- ⦿ Valves that have not been cycled for a period of time may have a higher initial actuation torque.

Technical Data

Seat Material	Temperature Rating °F (°C)	Pressure Rating at 100°F (37°C) psig (bar)		Flow Coefficient (Cv)
		Stainless Steel	Alloy 400	
BF Series				
PCTFE, reinforced nylon	0 to 250 (-17 to 121)	6000 (413)	5000 (344)	2-way valves-1.0 to 1.6 depending on end connection; 3-way valves-0.75
PEEK	0 to 450 (-17 to 232)	6000 (413)	5000 (344)	
PTFE		1500 (103)		
BFH Series				
PEEK	0 to 450 (-17 to 232)	6000 to 10000 (413 to 689), depending on end connection	—	2-way valves-1.0 to 1.6 depending on end connection; 3-way valves-0.75

Flow Data at 70°F (20°C)

BF Series 2-way

0.19" (4.8 mm) orifice, 1.2 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std L/min (std ft ³ /min)	Water Flow L/min (U.S. gal/min)
1000 (69)	10 (0.69)	14 (334)	3.5 (13)
3000 (207)	50 (3.45)	30 (834)	7.5 (28)
6000 (414)	100 (6.89)	60 (1670)	11.0 (41)

BF Series 3-way

0.19" (4.8 mm) orifice, 0.75 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std L/min (std ft ³ /min)	Water Flow L/min (U.S. gal/min)
1000 (69)	10 (0.69)	10 (275)	3.0 (11)
3000 (207)	50 (3.45)	23 (630)	7.0 (26)
6000 (414)	100 (6.89)	42 (1150)	9.5 (35)

BFH Series 2-way

0.19" (4.8 mm) orifice, 1.2 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std L/min (std ft ³ /min)	Water Flow L/min (U.S. gal/min)
1000 (69)	150 (10.3)	90 (2550)	15 (56)
6000 (414)	600 (41.4)	345 (9660)	30 (111)
10000 (689)	1000 (68.9)	560 (15680)	40 (148)

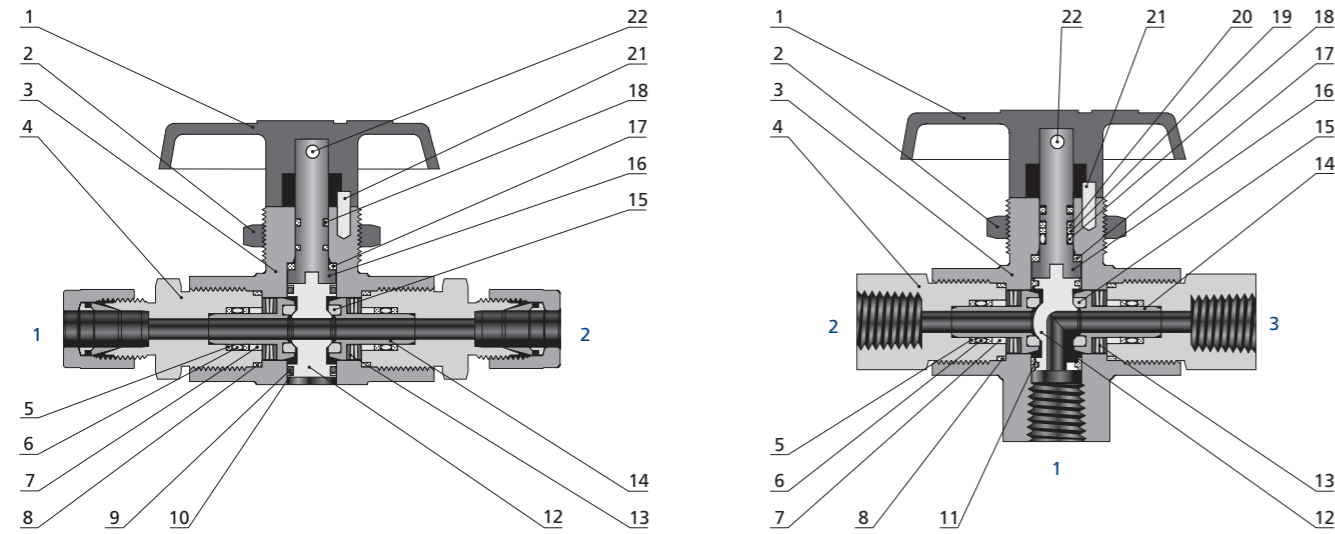
BFH Series 3-way

0.19" (4.8 mm) orifice, 0.75 Cv

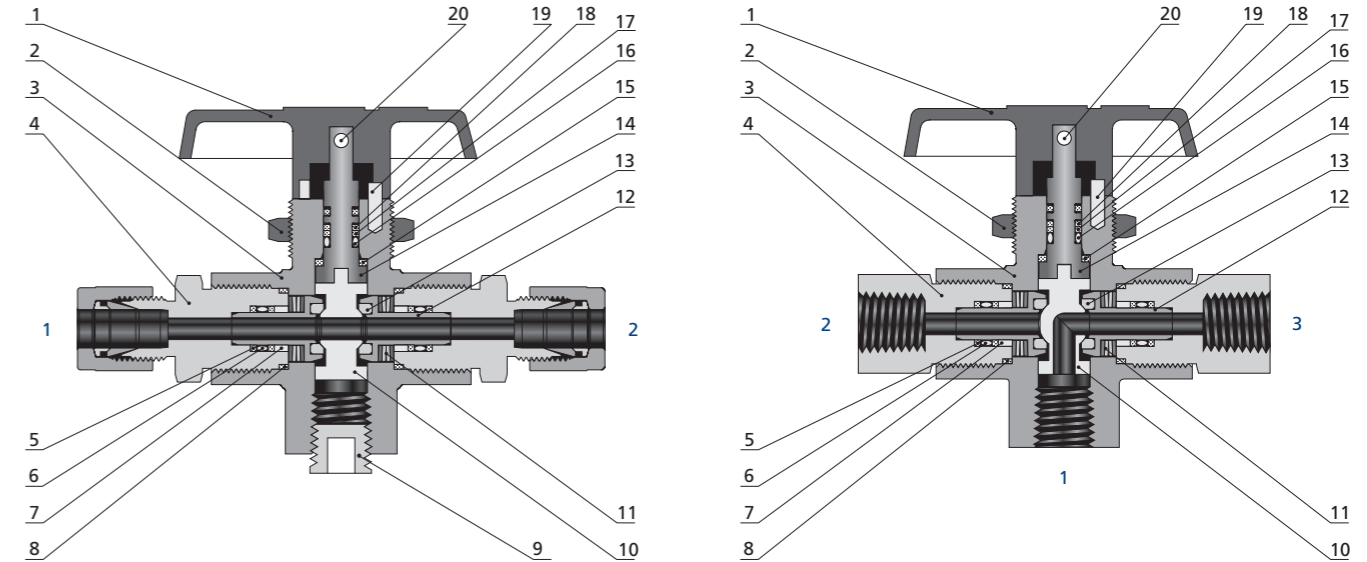
Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std L/min (std ft ³ /min)	Water Flow L/min (U.S. gal/min)
1000 (69)	150 (10.3)	55 (1540)	10 (37.0)
6000 (414)	600 (41.4)	200 (5600)	20 (74.0)
10000 (689)	1000 (68.9)	330 (9240)	25 (92.5)

Standard Materials of Construction

BF Series



BFH Series



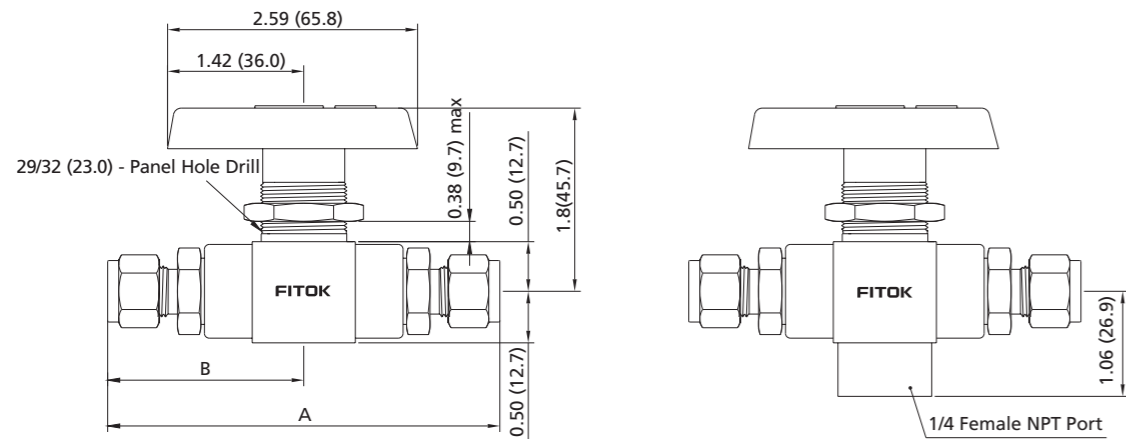
Item	Component	Valve Body Material			
		316 Stainless Steel		Alloy 400	
		2-way	3-way	2-way	3-way
Material Grade/ASTM Specification					
1	Handle	Nylon or Aluminium			
2	Panel Nut	316 SS/B783			
3	Body	316 SS/A479	316 SS/A182	Alloy 400/B164	
4	End Connector	316 SS/A479		Alloy R-405/B164	
5	Seat Retainer Backup Ring	Reinforced PTFE			
6	Seat Retainer O-ring	Fluorocarbon FKM			
7	Seat Retainer Guide	316 SS/A276		Alloy R-405/B164	
8	End Connector Seal	PTFE/D1710			
9	Trunnion O-ring	Fluorocarbon FKM	—	Fluorocarbon FKM	—
10	Trunnion Backup Ring	Reinforced PTFE	—	Reinforced PTFE	—
11	Trunnion Bearing	—	PEEK	—	PEEK
12	Ball	316 SS/A276	S21800/A276	Alloy R-405/B164	
13	Seat Spring	Alloy X-750/AMS 5542			
14	Seat Retainer	316 SS/A276		Alloy R-405/B164	
15	Seat	PTFE or PEEK or PCTFE			
16	Stem	316 SS/A276		Alloy R-405/B164	
17	Stem Washer	Reinforced PTFE	PEEK	Reinforced PTFE	PEEK
18	Stem O-ring	Fluorocarbon FKM		Fluorocarbon FKM	
19	Secondary Stem Backup Ring	—	PTFE/D710	—	PTFE/D710
20	Primary Stem Backup Ring	—	PEEK	—	PEEK
21	Pin	Stainless Steel			
22	Set Screw	Stainless Steel			
Lubricants		Fluorinated-based (all valves) tungsten disulfide additive (valves with peek seats)			

Item	Component	2-way	3-way
		Material Grade/ASTM Specification	
1	Handle	Nylon or Aluminium	
2	Panel Nut	316 SS/B783	
3	Body	316 SS/A479	316 SS/A182
4	End Connector	316 SS/A479	
5	Seat Retainer Guide	Reinforced PTFE	
6	Seat Retainer O-ring	Fluorocarbon FKM	
7	Seat Carrier Guide	316 SS/A276	
8	End Connector Seal	PTFE/D1710	
9	Plug	316 SS/A276	
10	Ball	S21800/A276	
11	Seat Spring	Alloy X-750/AMS 5542	
12	Seat Retainer	316 SS/A276	
13	Seat	PEEK	
14	Stem	316 SS/A276	
15	Stem Washer	PEEK	
16	Stem O-ring	Fluorocarbon FKM	
17	Secondary Stem Backup Ring	PTFE/D710	
18	Primary Stem Backup Ring	PEEK	
19	Pin	Stainless Steel	
20	Set Screw	Stainless Steel	
Lubricants		Molybdenum and Tungsten disulfide and Fluorinated-based	

1. Ball trunnions are Xylan® coated in BFH series 2-way valve.
2. Other materials are available upon request, refer to the ordering information.

1. Ball trunnions are PTFE coated in BF series 2-way valve.
2. Other materials are available upon request, refer to the ordering information.

Dimensions and order information



2-way Valve

Basic Ordering Number		Connection Size		Cv	Dimension, in. (mm)	
BF Series	BFH Series	Connection 1	Connection 2		A	B
BF□□-FNS2	BFH□□-FNS2	1/8 Female NPT	1/8 Female NPT	1.2	2.94 (74.7)	1.47 (37.3)
BF□□-FNS4	BFH□□-FNS4	1/4 Female NPT	1/4 Female NPT		3.93 (99.8)	1.97 (50.0)
BF□□-FNS8	BFH□□-FNS8	1/2 Female NPT	1/2 Female NPT		4.25 (108.0)	2.13 (54.1)
BF□□-FL4	BFH□□-FL4	1/4" FITOK	1/4" FITOK		4.14 (105.2)	2.07 (52.6)
BF□□-FL6	BFH□□-FL6	3/8" FITOK	3/8" FITOK		4.39 (111.5)	2.19 (55.6)
BF□□-FL8	BFH□□-FL8	1/2" FITOK	1/2" FITOK		4.60 (116.8)	2.30 (58.4)
BF□□-ML6	BFH□□-ML6	6 mm FITOK	6 mm FITOK		4.14 (105.2)	2.07 (52.6)
BF□□-ML8	BFH□□-ML8	8 mm FITOK	8 mm FITOK		4.15 (105.4)	
BF□□-ML10	BFH□□-ML10	10 mm FITOK	10 mm FITOK		4.41 (112.0)	2.20 (55.9)
BF□□-ML12	BFH□□-ML12	12 mm FITOK	12 mm FITOK		4.60 (116.8)	2.30 (58.4)

3-way Valve

Basic Ordering Number		Connection Size			Cv	Dimension, in. (mm)	
BF Series	BFH Series	Connection 1	Connection 2	Connection 3		A	B
BF□□-FNS2-3	BFH□□-FNS2-3	1/4 Female NPT	1/8 Female NPT	1/8 Female NPT	0.75	2.94 (74.7)	1.47 (37.3)
BF□□-FNS4-3	BFH□□-FNS4-3		1/4 Female NPT	1/4 Female NPT			
BF□□-FL4-3	BFH□□-FL4-3		1/4" FITOK	1/4" FITOK		4.14 (105.2)	2.07 (52.6)
BF□□-FL6-3	BFH□□-FL6-3		3/8" FITOK	3/8" FITOK		4.39 (111.5)	2.19 (55.6)
BF□□-FL8-3	BFH□□-FL8-3		1/2" FITOK	1/2" FITOK		4.60 (116.8)	2.30 (58.4)
BF□□-ML6-3	BFH□□-ML6-3		6 mm FITOK	6 mm FITOK		4.14 (105.2)	2.07 (52.6)
BF□□-ML8-3	BFH□□-ML8-3		8 mm FITOK	8 mm FITOK		4.15 (105.4)	
BF□□-ML10-3	BFH□□-ML10-3		10 mm FITOK	10 mm FITOK		4.41 (112.0)	2.20 (55.9)
BF□□-ML12-3	BFH□□-ML12-3		12 mm FITOK	12 mm FITOK		4.60 (116.8)	2.30 (58.4)

1. FITOK means FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.
4. Bottom port of all 3-way valves is 1/4 in. female NPT.

Service Option

Low-temperature Service

Trunnion ball valves for low-temperature service, with a temperature rating of -40°F to 200°F (-40°C to 93°C) are available. Low-temperature valves have low-temperature Buna C O-rings. All other materials and ratings are the same as those of standard valves.

Example: BFSS-FL4-P-L (2-way)

BF Series Low-temperature service Pressure - temperature Ratings

Material	316 SS		Alloy 400	
Seat Material	PCTFE PEEK	PTFE	PCTFE PEEK	PTFE
Temperature, °F (°C)	Working Pressure, psig (bar)			
-40 to 100 (-40 to 37)	6000 (414)	1500 (103)	5000 (344)	1500 (103)
100 to 200 (37 to 93)	See Pressure vs. Temperature			

BFH Series Low-temperature service Pressure - temperature Ratings

Material	316 SS				
End Connection	FNS2, FNS4 FL4, ML6	ML10	FL6 ML8	FL8	ML12
Temperature, °F (°C)	Working Pressure, psig (bar)				
-40 to 100 (-40 to 37)	10000 (689)	8400 (578)	7500 (516)	6700 (461)	6600 (454)
100 to 200 (37 to 93)	See Pressure vs. Temperature				

BF&BFH Series special cleaning and packaging F2 (FC-02)

TO: Order optional cleaning and packaging in accordance with FITOK special cleaning and packaging F2 (FC-02), to ensure compliance with product cleanliness requirements stated in ASTM G93 level for BF series with PCTFE, PTFE, PEEK or reinforced nylon seats, add "F2" to valves ordering number.

Example: BFSS-ML8-P-3-F2 (3-way)

Oxygen service hazards

For more information about hazards and risks of oxygen-enriched system, please contact the authorized representative or FITOK Group.

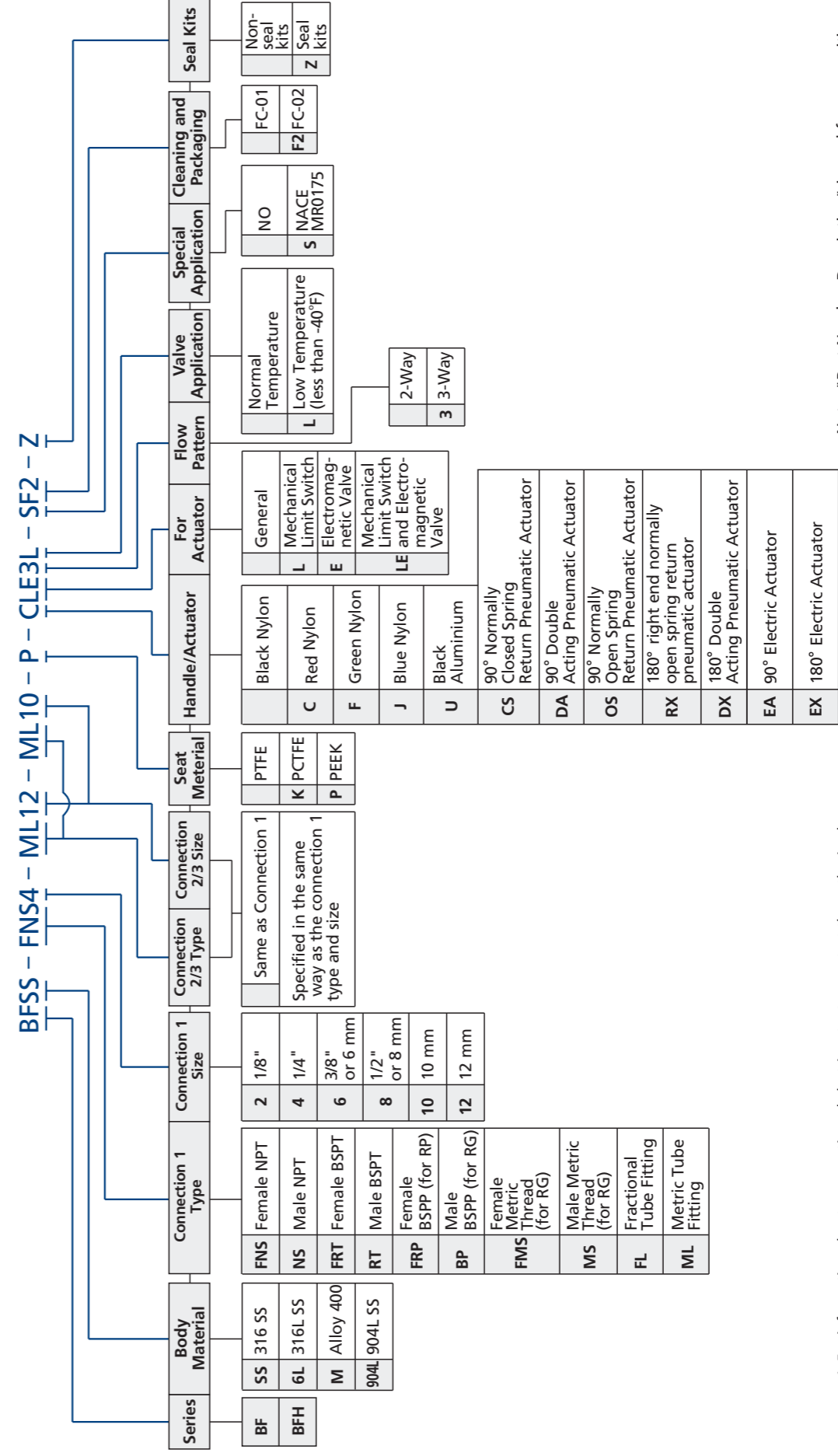
BF&BFH Series seal kits

1. Seal kits contain components of the same material as original valve. See standard material of construction
2. To complete the ordering number, please add Z for seal kits. Examples as follows:

Valve Series	Basic Seal Kit Ordering Number	Kit Contents
BF 2-way seal kits	BFSS-ML12-ML10-P-CLF2-Z	Instructions, O-rings, stem bearing, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant
BFH 2-way seal kits	BFHSS-ML12-ML10-P-CLF2-Z	Instructions, stem, O-rings, backup rings, stem bearing, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant
BFH 3-way seal kits	BFHSS-FNS4-ML12-ML10-P-C3LF4-Z	Instructions, O-rings, stem bearing, stem, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant

Seal kit ordering numbers specify stainless steel material. For alloy 400 material, replace SS with M in the basic ordering number.

Part Number Description



1. For information about pneumatic and electric actuator, contact the authorized representative or FITOK Group.
2. Cleaning and Packaging:
 FC-01: Standard cleaning and packaging for general industrial procedures.
 FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

3-piece Ball Valves

BG Series

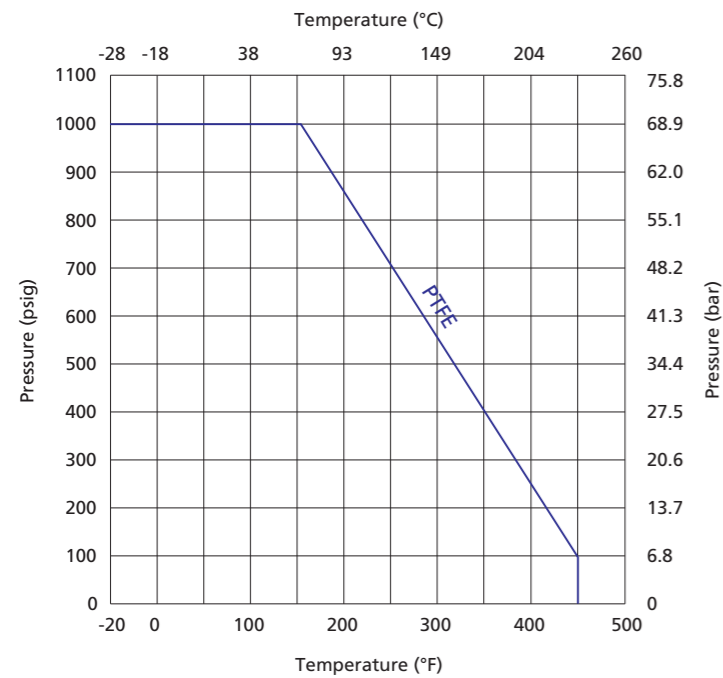
General Application

Features

- ⦿ Maximum working pressure: 1000 psig (68.9 bar)
- ⦿ Working temperature: -20°F to 450°F (-28°C to 232°C)
- ⦿ End connections:
 - 1/8" to 3" thread
 - 1/8" to 3" pipe butt or socket weld
 - 1/4" to 2" and 6 mm to 50 mm tube butt or socket weld
 - 1/4" to 2" and 6 mm to 50 mm tube fitting
 - 1/2 to 4 flange
- ⦿ Orifice sizes: 0.19" (4.8 mm) to 3" (76 mm)
- ⦿ Blowout proof stem
- ⦿ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen

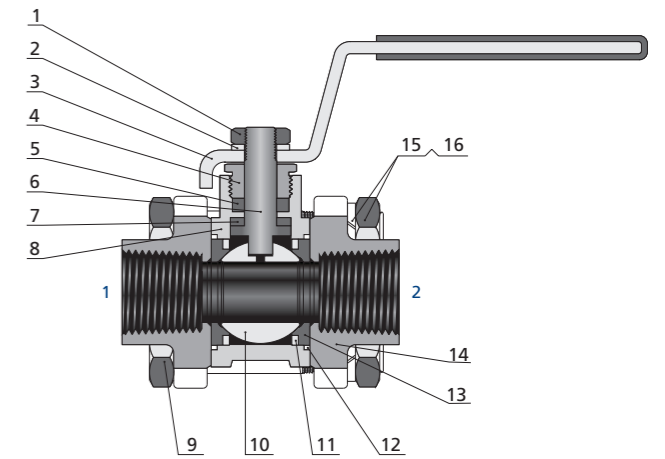


Pressure vs. Temperature

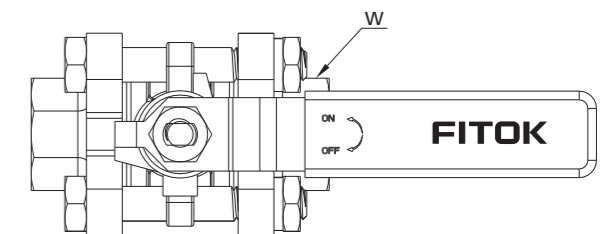
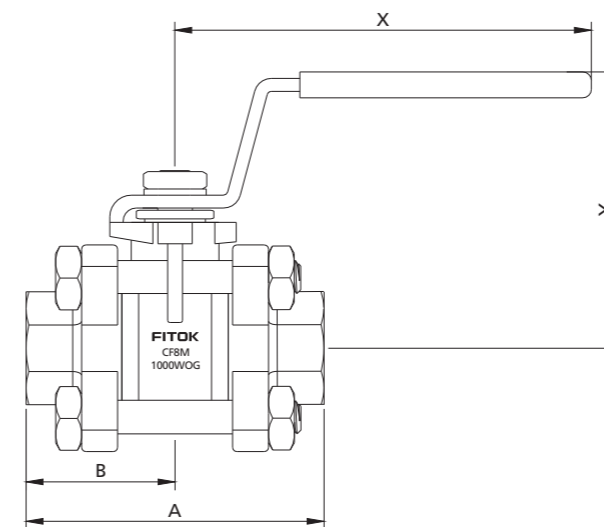


Standard Materials of Construction

Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Stem Nut	Gr. 8M/A194			
2	Gasket	304 SS			
3	Handle	304 SS/A240 (with vinyl sleeve)			
4	Gland	316 SS/A276 or 304 SS/A276			
5	Stem Packing	PTFE/D1710			
6	Stem	316 SS/A276 or 304 SS/A276			
7	Stem Bearing	PTFE/D1710			
8	Body	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
9	Body Bolt	Gr. 8M/A193			
10	Ball	316 SS/A276 or 304 SS/A276			
11	Support Ring	316 SS/A240 or 304 SS/A240			
12	Flange Seal	PTFE/D1710			
13	Seat	PTFE/D1710			
14	Flange	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
15	Gasket	304 SS			
16	Nut	Gr. 8M/A194			
Lubricants		Silicone-based and PTFE-based			



Dimensions

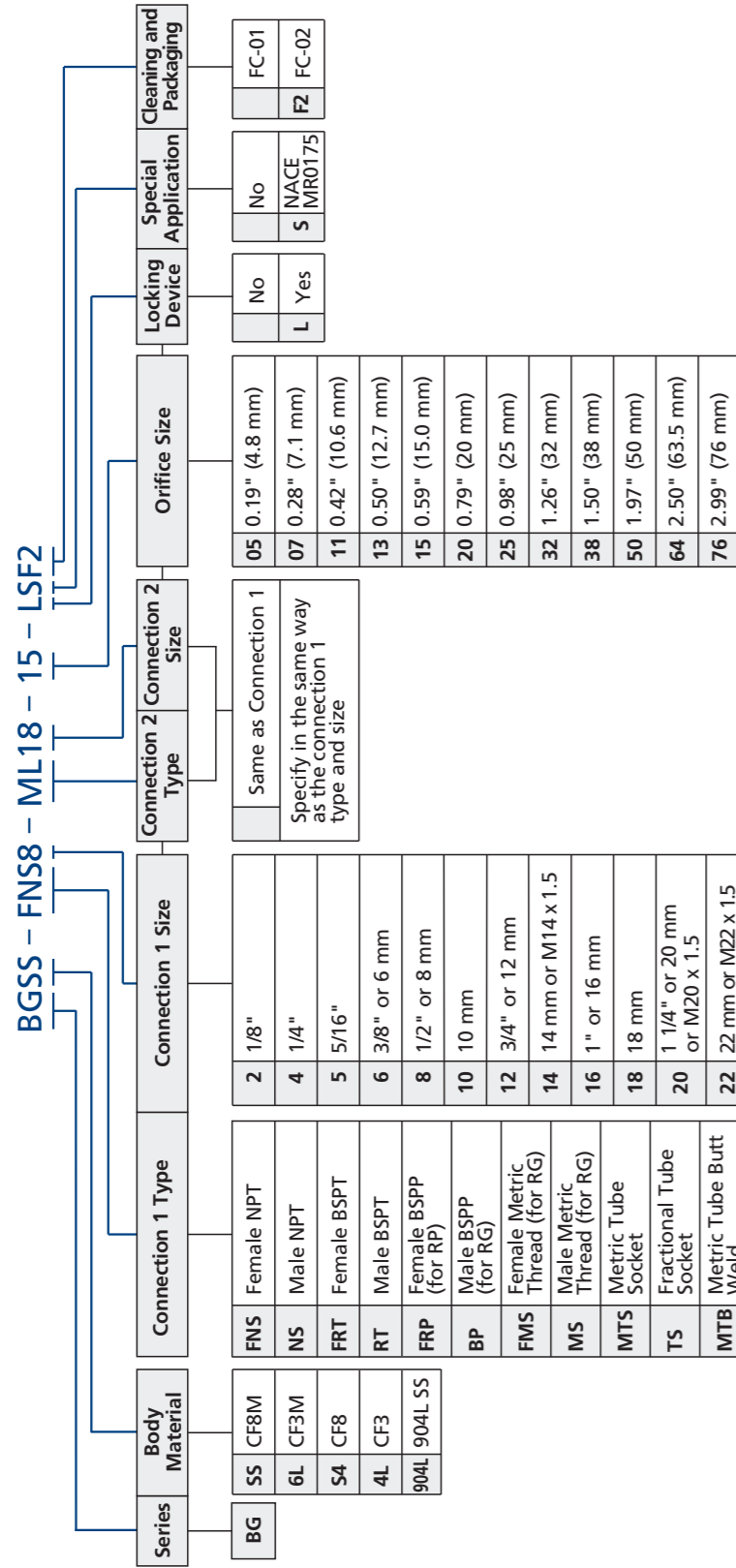


Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
BG□□-FNS2-05	1/8 Female NPT	1/8 Female NPT	0.19 (4.8)	1.2	2.05 (52.1)	1.03 (26.0)	0.63 (16.0)	2.69 (68.3)	1.46 (37.0)
BG□□-FRP2-05	1/8 Female BSPP	1/8 Female BSPP							
BG□□-PB4-05	1/4 PB	1/4 PB							
BG□□-FL4-05	1/4" FITOK	1/4" FITOK							
BG□□-ML6-05	6 mm FITOK	6 mm FITOK							
BG□□-ML8-05	8 mm FITOK	8 mm FITOK							
BG□□-FNS4-07	1/4 Female NPT	1/4 Female NPT	0.28 (7.1)	3.8	2.05 (52.1)	1.03 (26.0)	0.63 (16.0)	2.69 (68.3)	1.46 (37.0)
BG□□-FRP4-07	1/4 Female BSPP	1/4 Female BSPP							
BG□□-PS4-07	1/4 PS	1/4 PS							
BG□□-PB6-07	3/8 PB	3/8 PB							
BG□□-FL6-07	3/8" FITOK	3/8" FITOK							
BG□□-ML10-07	10 mm FITOK	10 mm FITOK							
BG□□-FL8-11	1/2" FITOK	1/2" FITOK	0.42 (10.6)	7.5	4.04 (103.0)	2.02 (51.3)	0.93 (23.5)	3.94 (100.0)	2.19 (55.7)
BG□□-ML12-11	12 mm FITOK	12 mm FITOK					0.93 (23.5)		
BG□□-ML14-11	14 mm FITOK	14 mm FITOK					0.93 (23.5)		
BG□□-FNS6-13	3/8 Female NPT	3/8 Female NPT	0.50 (12.7)	11.3	2.57 (65.2)	1.28 (32.6)	0.93 (23.5)	3.94 (100.0)	2.19 (55.7)
BG□□-FRP6-13	3/8 Female BSPP	3/8 Female BSPP					0.93 (23.5)		
BG□□-PS6-13	3/8 PS	3/8 PS					0.93 (23.5)		
BG□□-PB8-13	1/2 PB	1/2 PB					0.93 (23.5)		
BG□□-FL10-13	5/8" FITOK	5/8" FITOK					0.93 (23.5)		
BG□□-ML16-13	16 mm FITOK	16 mm FITOK					0.93 (23.5)		
BG□□-FNS8-15	1/2 Female NPT	1/2 Female NPT	0.59 (15.0)	13.0	2.74 (69.5)	1.37 (34.8)	1.06 (27.0)	3.94 (100.0)	2.26 (57.5)
BG□□-FRP8-15	1/2 Female BSPP	1/2 Female BSPP							
BG□□-PS8-15	1/2 PS	1/2 PS							
BG□□-MTB22-15	22 mm MTB	22 mm MTB							
BG□□-TS12-15	3/4" TS	3/4" TS							
BG□□-MTS18-15	18 mm MTS	18 mm MTS							
BG□□-FL12-15	3/4" FITOK	3/4" FITOK	0.79 (20.0)	50.0	3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.18 (131.5)	2.66 (67.5)
BG□□-ML18-15	18 mm FITOK	18 mm FITOK							
BG□□-ML20-15	20 mm FITOK	20 mm FITOK							
BG□□-FNS12-20	3/4 Female NPT	3/4 Female NPT							
BG□□-FRP12-20	3/4 Female BSPP	3/4 Female BSPP							

Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
BG□□-PB12-20	3/4 PB	3/4 PB	0.79 (20.0)	50.0	3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.18 (131.5)	2.66 (67.5)
BG□□-PS12-20	3/4 PS	3/4 PS							
BG□□-TS16-20	1" TS	1" TS							
BG□□-MTB25-20	25 mm MTB	25 mm MTB							
BG□□-MTS25-20	25 mm MTS	25 mm MTS							
BG□□-FL16-20	1" FITOK	1" FITOK							
BG□□-ML22-20	22 mm FITOK	22 mm FITOK							
BG□□-ML25-20	25 mm FITOK	25 mm FITOK							
BG□□-ML28-20	28 mm FITOK	28 mm FITOK							
BG□□-FNS16-25	1 Female NPT	1 Female NPT							
BG□□-FRP16-25	1 Female BSPP	1 Female BSPP							
BG□□-PS16-25	1 PS	1 PS							
BG□□-PB16-25	1 PB	1 PB							
BG□□-FL20-25	1 1/4" FITOK	1 1/4" FITOK							
BG□□-FNS20-32	1 1/4 Female NPT	1 1/4 Female NPT							
BG□□-FRP20-32	1 1/4 Female BSPP	1 1/4 Female BSPP	1.26 (32.0)	110.0	4.33 (110.0)	2.17 (55.0)	1.94 (49.2)	6.14 (156.0)	3.19 (81.0)
BG□□-PB20-32	1 1/4 PB	1 1/4 PB							
BG□□-FNS24-38	1 1/2 Female NPT	1 1/2 Female NPT	1.50 (38.0)	130.0	4.72 (120.0)	2.36 (60.0)	2.24 (57.0)	7.19 (182.5)	3.70 (94.0)
BG□□-FRP24-38	1 1/2 Female BSPP	1 1/2 Female BSPP							
BG□□-PB24-38	1 1/2 PB	1 1/2 PB							
BG□□-FNS32-50	2 Female NPT	2 Female NPT	1.97 (50.0)	270.0	5.51 (140.0)	2.75 (70.0)	2.76 (70.0)	7.19 (182.5)	4.11 (104.5)
BG□□-FRP32-50	2 Female BSPP	2 Female BSPP							
BG□□-PB32-50	2 PB	2 PB							
BG□□-FNS40-64	2 1/2 Female NPT	2 1/2 Female NPT	2.50 (63.5)	350.0	7.28 (185.0)	3.64 (92.5)	3.39 (86.0)	9.92 (252.0)	5.16 (131.0)
BG□□-FRP40-64	2 1/2 Female BSPP	2 1/2 Female BSPP							
BG□□-PB40-64	2 1/2 PB	2 1/2 PB							
BG□□-FNS48-76	3 Female NPT	3 Female NPT	2.99 (76.0)	500.0	8.07 (205.0)	4.04 (102.5)	3.98 (101.0)	9.92 (252.0)	5.47 (139.0)
BG□□-FRP48-76	3 Female BSPP	3 Female BSPP							
BG□□-PB48-76	3 PB	3 PB							

1. FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld, MTS means metric tube socket weld, TB means fractional tube butt weld, MTB means metric tube butt weld, PS means pipe socket weld, PB means pipe butt weld.
2. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

1. Standard thread pitch for metric threads are as follows:

- M10 and below: 1 mm
- M12 to M24: 1.5 mm
- M27 and above: 2 mm

2. Standard thread pitch should be ignored in the ordering number, others should be specified. For oxygen or virulent medium service, contact the authorized representative or FITOK Group.

3. Cleaning and Packaging:

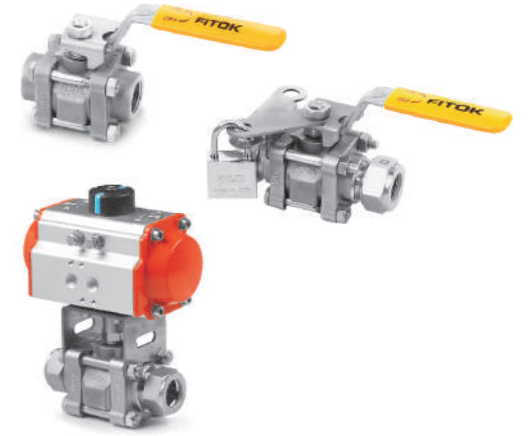
- FC-01: Standard cleaning and packaging for general industrial procedures.
- FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleaning requirement as stated in ASTM G93 Level C.

3-piece Ball Valves

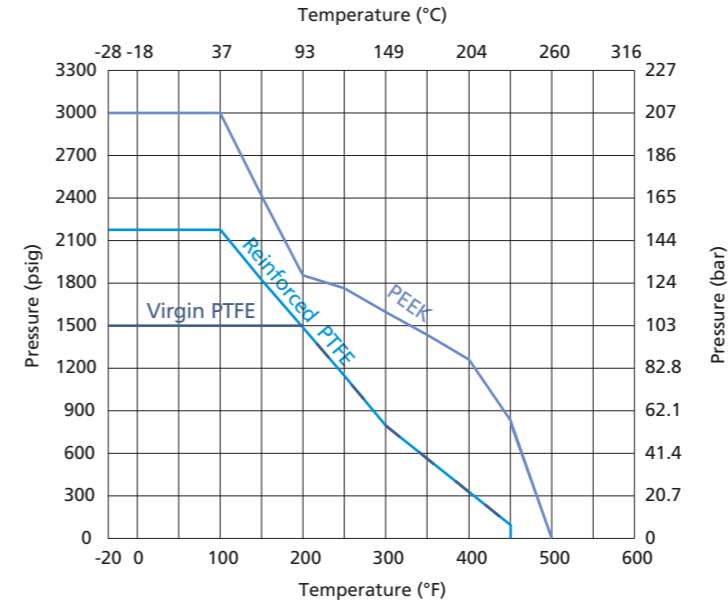
BH Series 2-way Valves

Features

- Maximum working pressure: 3000 psig (207 bar)
- Working temperatures: -20°F to 450°F (-28°C to 232°C)
- End connections:
 - 1/8 to 2 thread
 - 1/8 to 2 pipe butt or socket weld
 - 1/2" to 2" and 12 mm to 50 mm tube butt or socket weld
 - 1/2" to 2" and 12 mm to 38 mm tube fitting
- 3-piece precision cast body construction
- Body materials: CF8M (316), CF3M (316L), CF8 (304) and CF3 (304L)
- Seat materials: PTFE, RPTFE and PEEK
- Packing materials: RPTFE, Graphite and O-ring
- Orifice sizes: 0.19" (4.8 mm) to 1.5" (38.1 mm)
- Pneumatic and electric actuator available
- Fire-safe design available



Pressure vs. Temperature

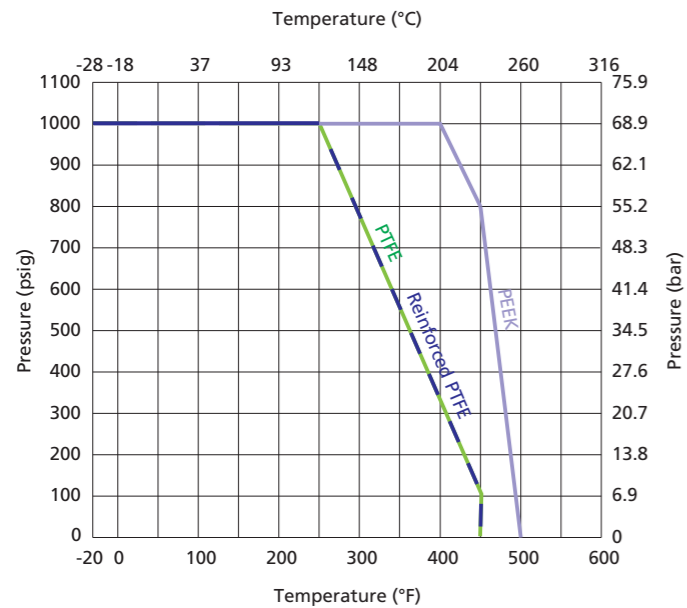


3-way Valves

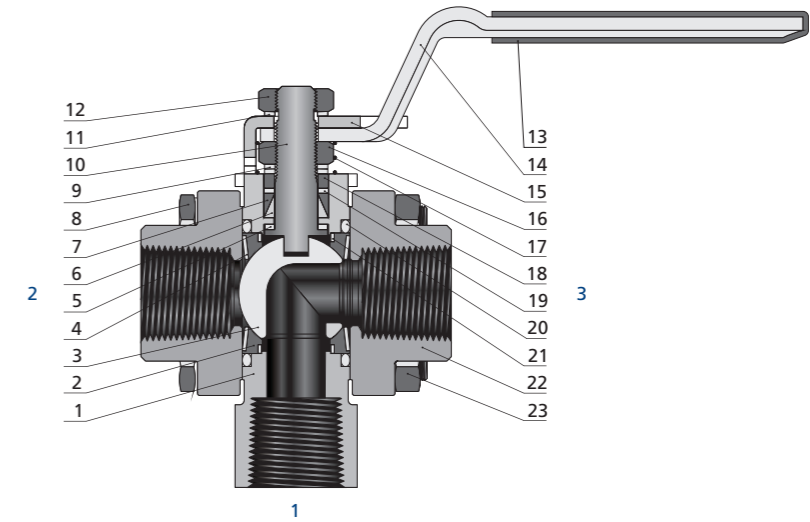
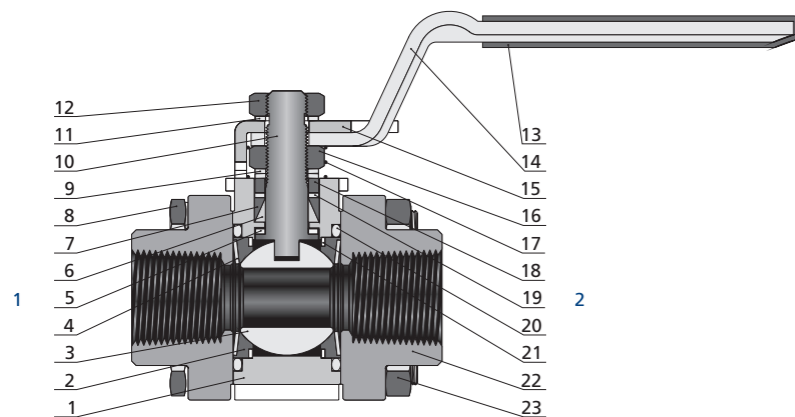
Features

- ⦿ Maximum working pressure: 1000 psig (68.9 bar)
- ⦿ Working temperature: -20°F to 450°F (-28°C to 232°C)
- ⦿ End connections:
 - 1/4 to 2 thread
 - 1/4" to 2" and 12 mm to 38 mm tube fitting
- ⦿ One-piece center body without welding
- ⦿ 180° actuation
- ⦿ Inlet and outlet for 3-way valve: connection 1 as inlet, connection 2 and connection 3 as outlet
- ⦿ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen

Pressure vs. Temperature



Standard Materials of Construction



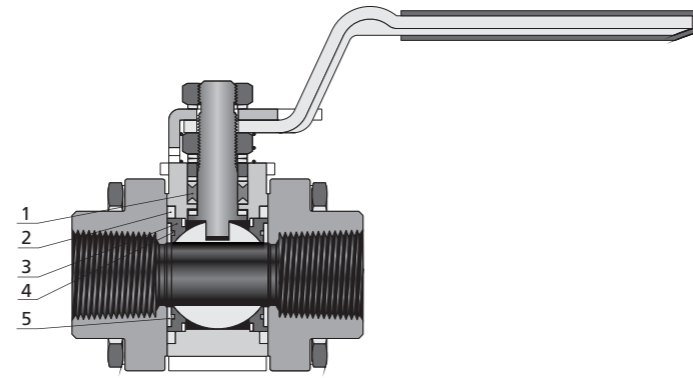
Item	Component	Valve Body Material			
		Material Grade/ASME Specification			
1	Body	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
2	Seat	PTFE/D1710			
3	Ball	316 SS/A276			
4	Coned-disc Spring	Strain-hardened 316 SS/A240			
5	Stem Bearing	PEEK (Polyetheretherketone)			
6	Lower Packing	Reinforced PTFE			
7	Upper Packing	Reinforced PTFE			
8	Body Bolt	Gr. B8M/A193			
9	Stem Spring	Strain-hardened 316 SS/A240			
10	Stem	316 SS/A479			
11	Stem Spring	Strain-hardened 316 SS/A240			
12	Stem Nut	Gr. 8M/A194			
13	Handle Sleeve	Vinyl			
14	Handle	304 SS/A240			
15	Stop Plate	304 SS/A240			
16	Stem Nut	Gr. 8M/A194			
17	Grounding Spring	302 SS/A313			
18	Gland	PTFE-coated 316 SS/B783			
19	Packing Support	PEEK (Polyetheretherketone)			
20	Flange Seal	Fluorocarbon FKM			
21	Support Ring	316 SS/A240			
22	Flange	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
23	Body Nut	Gr.8M/A194			
	Lubricants	Silicone-based and PTFE-based			

Other materials available upon request

Fire-safe Application

Features

- Maximum working pressure: 2200 psig (152 bar)
- Working temperature: -20°F to 400°F (-28°C to 204°C)
- Live-loaded Graphite stem packing
- High strength metal stem bearing
- Encased 8-bolt construction
- Graphite flange seals and seat seals
- Fire-safe valves are designed, tested to meet the requirement of API 607 4th edition

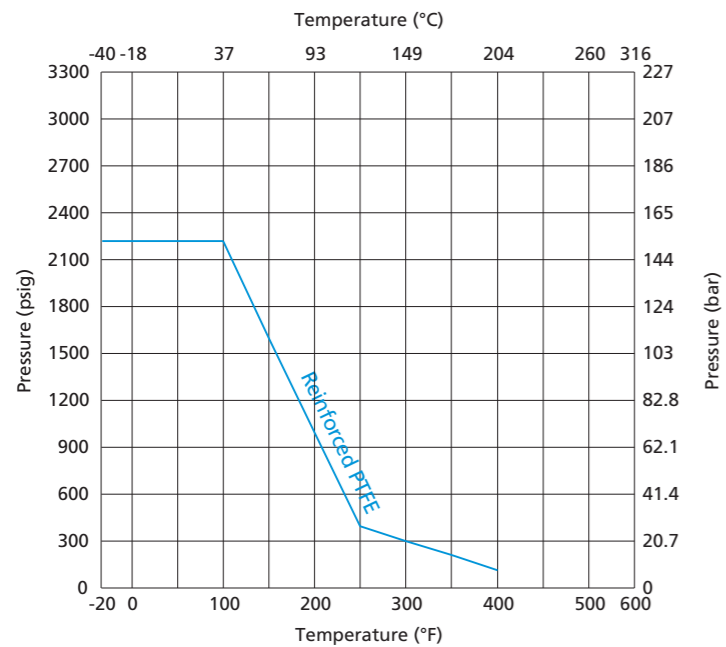


Standard Materials of Construction

Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing	Graphite			
2	Flange Seal	Graphite with 316 SS wire			
3	Seat	Reinforced PTFE			
4	Seat Ring	Graphite with 316 SS wire			
5	Coned-disc spring	Grafoil-lined 316 SS/A167			

All other components are same as general application.

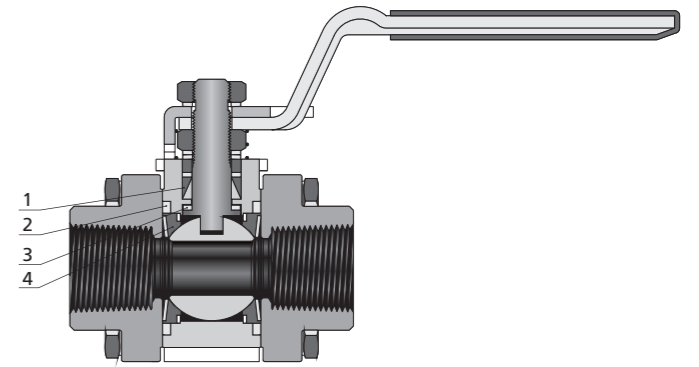
Pressure vs. Temperature



Steam Service

Features

- Maximum working pressure: 2500 psig (172 bar)
- Working temperature: -20°F to 600°F (-28°C to 316°C)
- Encased 8-bolt construction
- Graphite flange seals
- PEEK seats and stem seals

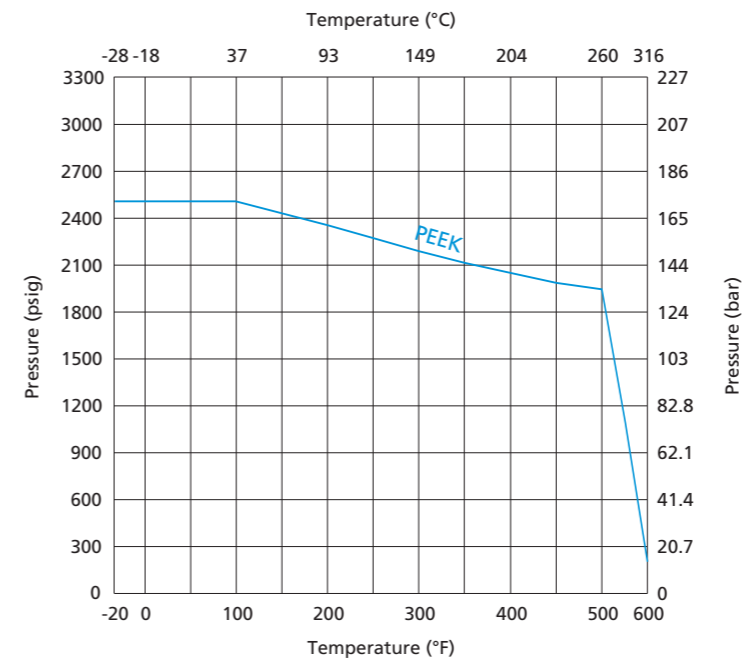


Materials of Construction

Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing	Molybdenum disulfide-coated PEEK			
2	Flange seal	Graphite with 316 SS			
3	Stem bearing	Molybdenum disulfide-coated PEEK			
4	Seat	Molybdenum disulfide-coated PEEK			
	Lubricant	PTFE-based			

All other components are same as general application.

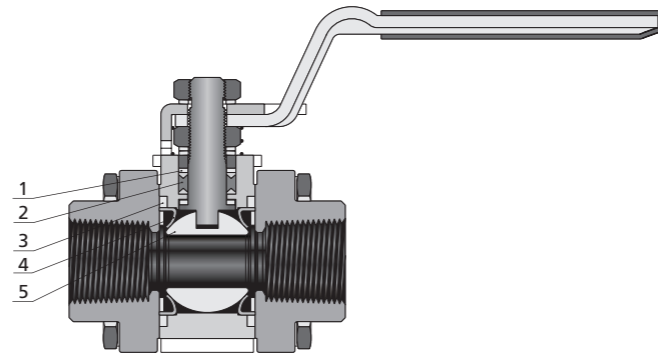
Pressure vs. Temperature



Thermal Service

Features

- Maximum working pressure: 1000 psig (68.9 bar)
- Working temperature: -65°F to 850°F (-54°C to 454°C)
- Spring-loaded metal seats
- Encased 8-bolt Construction

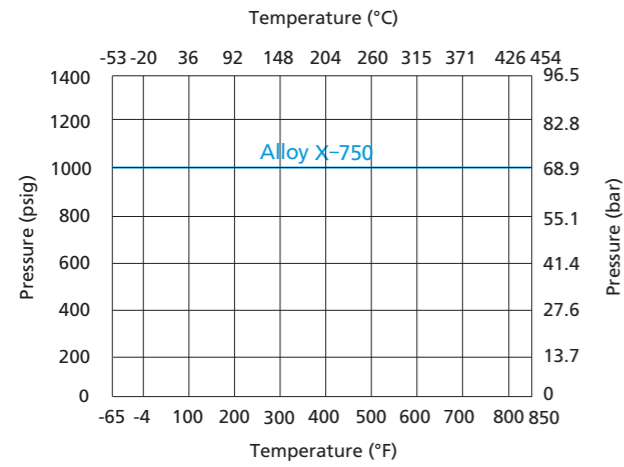


Materials of Construction

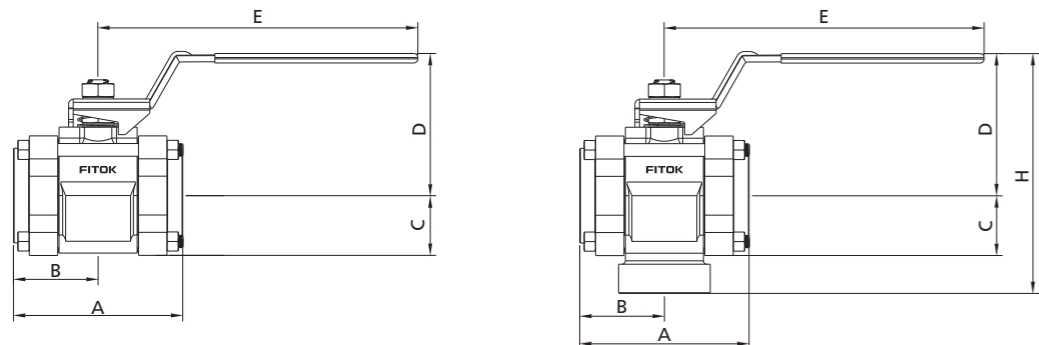
Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing bearing	Alloy X-750 /AMS 5542			
2	Packing	Graphite with 316 SS			
3	Flange seal	Graphite with 316 SS			
4	Seat	Alloy X-750 /AMS 5542			
5	Ball	S17400 SS/A564			
Lubricant		Fluorinated tungsten disulfide			

All other components same as general application.

Pressure vs. Temperature



Dimensions

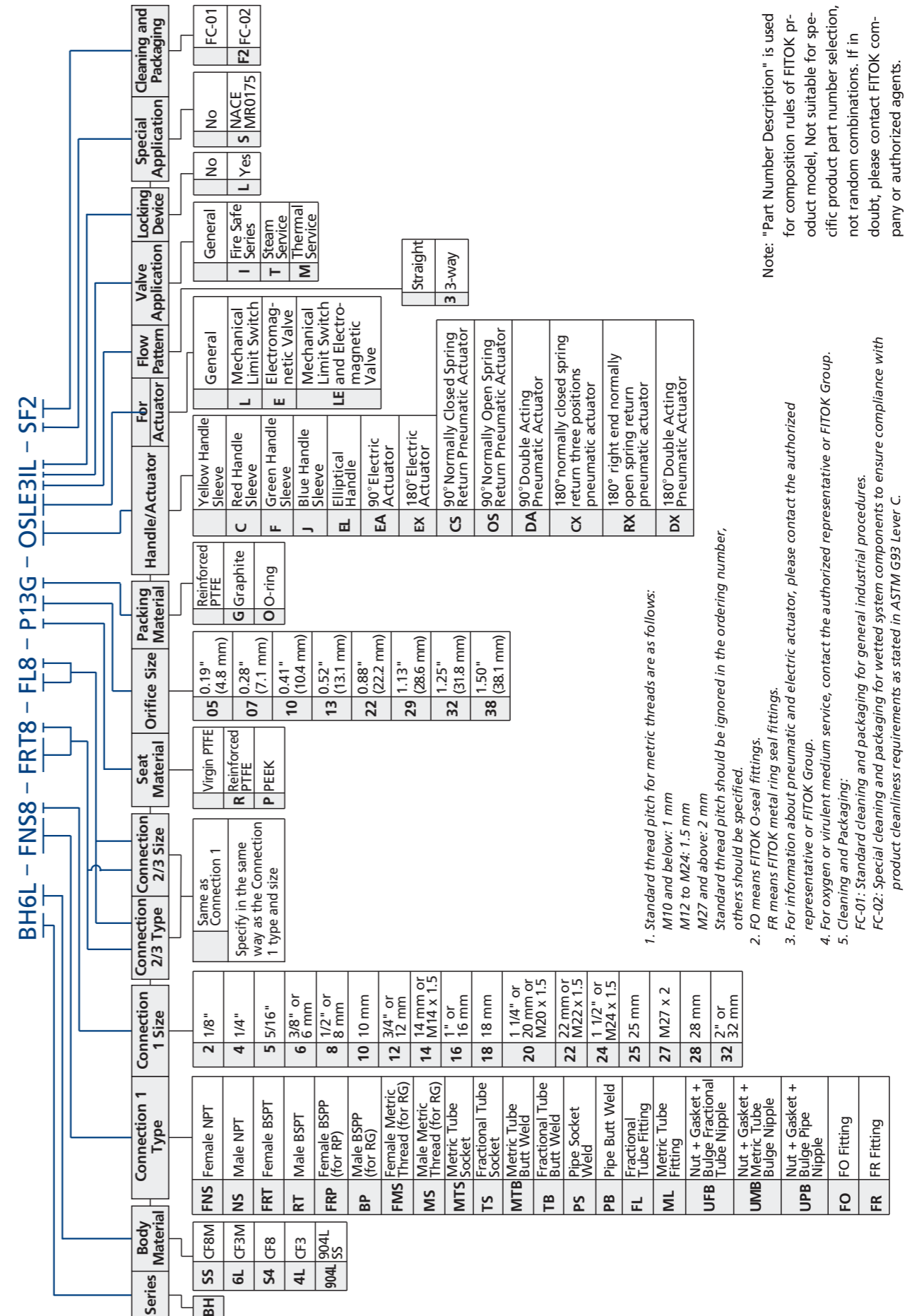


Basic Ordering Number		Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)					
Straight	3-way	Connection 1	Connection 2/3			A	B	C	D	E	H
BH□□-FL4-05	BH□□-FL4-05-3	1/4" FITOK	1/4" FITOK	0.19 (4.8)	1.2	3.17 (80.5)	1.59 (40.4)	0.68 (17.3)	1.66 (42.2)	2.37 (60.2)	3.35 (85.1)
BH□□-ML6-05	BH□□-ML6-05-3	6 mm FITOK	6 mm FITOK								
BH□□-ML8-05	BH□□-ML8-05-3	8 mm FITOK	8 mm FITOK								
BH□□-TS4-05	BH□□-TS4-05-3	1/4" TS	1/4" TS								
BH□□-MTS6-05	BH□□-MTS6-05-3	6 mm MTS	6 mm MTS								
BH□□-PB4-05	BH□□-PB4-05-3	1/4 PB	1/4 PB								
BH□□-FNS2-07	BH□□-FNS2-07-3	1/8 Female NPT	1/8 Female NPT	0.28 (7.1)	3.8	2.16 (54.9)	1.08 (27.4)	0.68 (17.3)	1.66 (42.2)	2.37 (60.2)	3.12 (79.2)
BH□□-FRT2-07	BH□□-FRT2-07-3	1/8 Female BSPT	1/8 Female BSPT								
BH□□-FRP2-07	BH□□-FRP2-07-3	1/8 Female BSPP	1/8 Female BSPP								
BH□□-FNS4-07	BH□□-FNS4-07-3	1/4 Female NPT	1/4 Female NPT								
BH□□-FRT4-07	BH□□-FRT4-07-3	1/4 Female BSPT	1/4 Female BSPT								
BH□□-FRP4-07	BH□□-FRP4-07-3	1/4 Female BSPP	1/4 Female BSPP								
BH□□-FL5-07	BH□□-FL5-07-3	5/16" FITOK	5/16" FITOK								
BH□□-FL6-07	BH□□-FL6-07-3	3/8" FITOK	3/8" FITOK								
BH□□-ML10-07	BH□□-ML10-07-3	10 mm FITOK	10 mm FITOK								
BH□□-TS6-07	BH□□-TS6-07-3	3/8" TS	3/8" TS								
BH□□-PB6-07	BH□□-PB6-07-3	3/8 PB	3/8 PB								
BH□□-FL8-10	BH□□-FL8-10-3	1/2" FITOK	1/2" FITOK								
BH□□-ML12-10	BH□□-ML12-10-3	12 mm FITOK	12 mm FITOK								
BH□□-TS8-10	BH□□-TS8-10-3	1/2" TS	1/2" TS	0.41 (10.4)	7.5	2.70 (68.6)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.19 (106)
BH□□-FNS6-13	BH□□-FNS6-13-3	3/8 Female NPT	3/8 Female NPT								
BH□□-FRT6-13	BH□□-FRT6-13-3	3/8 Female BSPT	3/8 Female BSPT	0.52 (13.1)	12	2.70 (68.6)	1.35 (34.3)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.19 (106)
BH□□-FRP6-13	BH□□-FRP6-13-3	3/8 Female BSPP	3/8 Female BSPP								
BH□□-FNS8-13	BH□□-FNS8-13-3	1/2 Female NPT	1/2 Female NPT								
BH□□-FRT8-13	BH□□-FRT8-13-3	1/2 Female BSPT	1/2 Female BSPT								
BH□□-FRP8-13	BH□□-FRP8-13-3	1/2 Female BSPP	1/2 Female BSPP								
BH□□-FL12-13	BH□□-FL12-13-3	3/4" FITOK	3/4" FITOK								
BH□□-ML16-13	BH□□-ML16-13-3	16 mm FITOK	16 mm FITOK								
BH□□-ML18-13	BH□□-ML18-13-3	18 mm FITOK	18 mm FITOK								
BH□□-TS12-13	BH□□-TS12-13-3	3/4" TS	3/4" TS								
BH□□-PS8-13	BH□□-PS8-13-3	1/2 PS	1/2 PS								
BH□□-PB8-13	BH□□-PB8-13-3	1/2 PB	1/2 PB								
BH□□-FL12-13	BH□□-FL12-13-3	3/4" FITOK	3/4" FITOK								
BH□□-ML16-13	BH□□-ML16-13-3	16 mm FITOK	16 mm FITOK								
BH□□-ML18-13	BH□□-ML18-13-3	18 mm FITOK	18 mm FITOK	0.41 (10.4)	15	2.70 (68.6)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.19 (106)
BH□□-TS12-13	BH□□-TS12-13-3	3/4" TS	3/4" TS								
BH□□-PS8-13	BH□□-PS8-13-3	1/2 PS	1/2 PS	0.41 (10.4)	15	2.69 (68.3)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	4.19 (106)
BH□□-PB8-13	BH□□-PB8-13-3	1/2 PB	1/2 PB								

Basic Ordering Number		Connection Type and Size		Orifice in.(mm)	Cv	Dimension, in. (mm)										
Straight	3-way	Connection 1	Connection 2/3			A	B	C	D	E	H					
BH□□-PB12-13	BH□□-PB12-13-3	3/4 PB	3/4 PB	0.52 (13.1)	13.6	2.69 (68.3)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.50 (114)	—					
BH□□-FNS12-22	BH□□-FNS12-22-3	3/4 Female NPT	3/4 Female NPT	0.88 (22.2)	31	3.59 (91.2)	1.8 (45.7)	1.25 (31.8)	2.94 (74.7)	6.00 (152)	5.91 (150)					
BH□□-FRT12-22	BH□□-FRT12-22-3	3/4 Female BSPT	3/4 Female BSPT													
BH□□-FRP12-22	BH□□-FRP12-22-3	3/4 Female BSPP	3/4 Female BSPP													
BH□□-FNS16-22	BH□□-FNS16-22-3	1 Female NPT	1 Female NPT													
BH□□-FRT16-22	BH□□-FRT16-22-3	1 Female BSPT	1 Female BSPT													
BH□□-FRP16-22	BH□□-FRP16-22-3	1 Female BSPP	1 Female BSPP													
BH□□-FL16-22	BH□□-FL16-22-3	1" FITOK	1" FITOK													
BH□□-FL20-22	BH□□-FL20-22-3	1 1/4" FITOK	1 1/4" FITOK													
BH□□-ML25-22	BH□□-ML25-22-3	25 mm FITOK	25 mm FITOK													
BH□□-ML28-22	BH□□-ML28-22-3	28 mm FITOK	28 mm FITOK													
BH□□-TS16-22	BH□□-TS16-22-3	1" TS	1" TS	1.13 (28.6)	80	3.59 (91.2)	1.80 (45.7)	1.25 (31.8)	2.94 (74.7)	6.00 (152)	5.91 (150)					
BH□□-MTS25-22	BH□□-MTS25-22-3	25 mm MTS	25 mm MTS													
BH□□-PS12-22	BH□□-PS12-22-3	3/4 PS	3/4 PS													
BH□□-PS16-22	BH□□-PS16-22-3	1 PS	1 PS													
BH□□-PB12-22	BH□□-PB12-22-3	3/4 PB	3/4 PB													
BH□□-PB16-22	BH□□-PB16-22-3	1 PB	1 PB													
BH□□-TS20-29	BH□□-TS20-29-3	1 1/4" TS	1 1/4" TS													
BH□□-PB20-29	BH□□-PB20-29-3	1 1/4 PB	1 1/4 PB													
BH□□-FNS20-32	BH□□-FNS20-32-3	1 1/4 Female NPT	1 1/4 Female NPT		1.25 (31.8)	100	4.39 (112)					2.19 (55.6)	1.53 (38.9)	4.03 (102)	9.14 (232)	6.86 (174)
BH□□-FNS24-32	BH□□-FNS24-32-3	1 1/2 Female NPT	1 1/2 Female NPT													
BH□□-TS24-32	BH□□-TS24-32-3	1 1/2" TS	1 1/2" TS													
BH□□-PS20-32	BH□□-PS20-32-3	1 1/4 PS	1 1/4 PS													
BH□□-PS24-32	BH□□-PS24-32-3	1 1/2 PS	1 1/2 PS													
BH□□-PB24-32	BH□□-PB24-32-3	1 1/2 PB	1 1/2 PB													
BH□□-FNS32-38	BH□□-FNS32-38-3	2 Female NPT	2 Female NPT	1.50 (38.1)		130	4.94 (125)	2.47 (62.7)	1.74 (44.2)	4.16 (106)	9.14 (232)	7.21 (183)				
BH□□-FRT32-38	BH□□-FRT32-38-3	2 Female BSPT	2 Female BSPT													
BH□□-TS32-38	BH□□-TS32-38-3	2" TS	2" TS													
BH□□-PS32-38	BH□□-PS32-38-3	2 PS	2 PS													
BH□□-PB32-38	BH□□-PB32-38-3	2 PB	2 PB													

- FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld, MTS means metric tube socket weld, TB means fractional tube butt weld, MTB means metric tube butt weld, PS means pipe socket weld, PB means pipe butt weld.
- Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
- Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Part Number Description



- Standard thread pitch for metric threads are as follows:
 M10 and below: 1 mm
 M12 to M24: 1.5 mm
 M27 and above: 2 mm
 Standard thread pitch should be ignored in the ordering number, others should be specified.
- FO means FITOK O-seal fittings.
 FR means FITOK metal ring seal fittings.
- For information about pneumatic and electric actuator, please contact the authorized representative or FITOK Group.
- For oxygen or vitulent medium service, contact the authorized representative or FITOK Group.
- Cleaning and Packaging:
 FC-01: Standard cleaning and packaging for general industrial procedures.
 FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirements as stated in ASTM G93 Level C.

Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

One-piece Instrument Ball Valves

BO Series

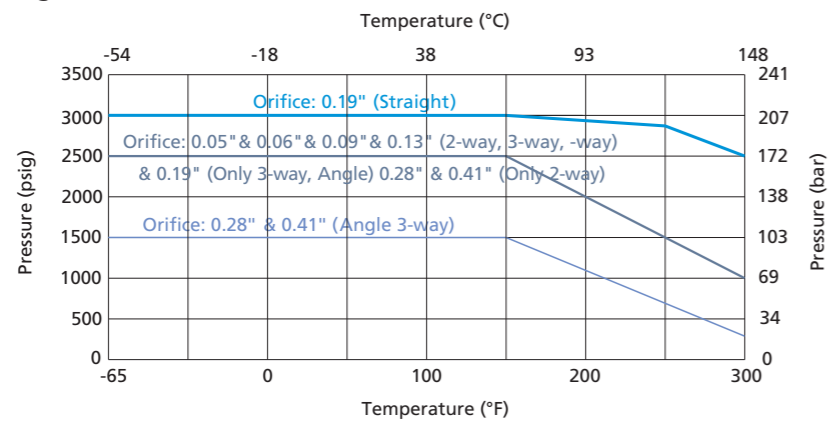
Features

- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -65°F to 300°F (-54°C to 148°C)
- Size from 1/16" to 3/4" or 3 mm to 18 mm
- 2-, 3-, 4-, 5-, 6- and 7-way models for on-off, switching and crossover service available
- One-piece body and one-piece ball stem
- No dead zone, such as area between the ball and valve chamber
- In-line inspection and repair after system relieved by top entry design
- Thermal cycle performance improved and wear compensated by live-loaded design
- Any reasonable connections available
- Pneumatic and electric actuator available
- Options for handle color
- Full operating pressure at any port
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen

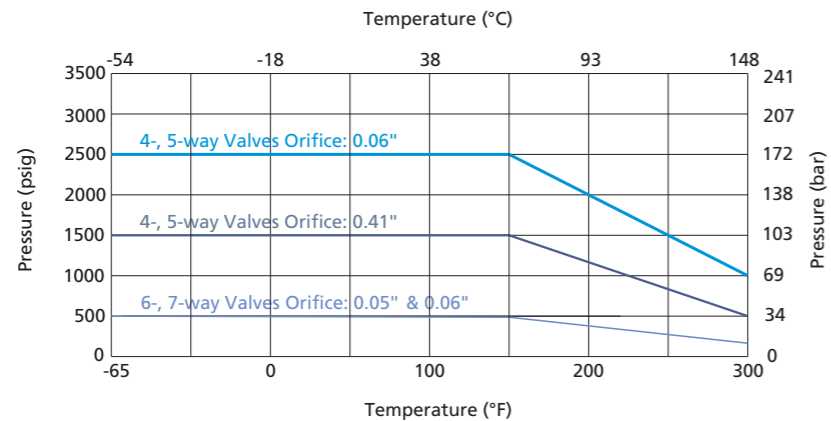


Pressure vs. Temperature

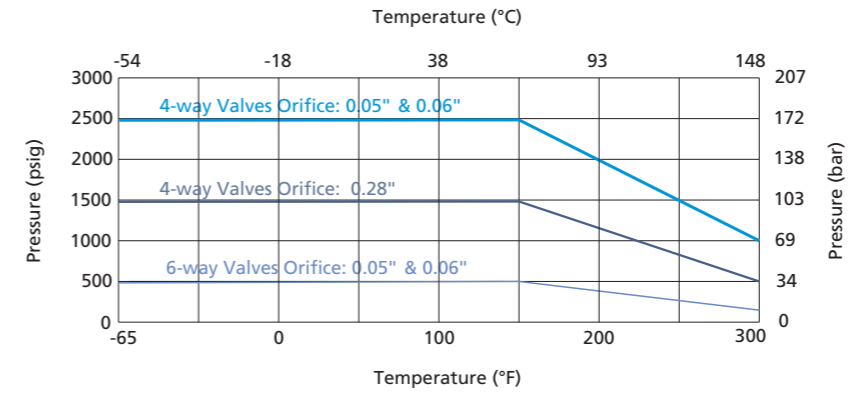
2-, 3-way, Angle Valves



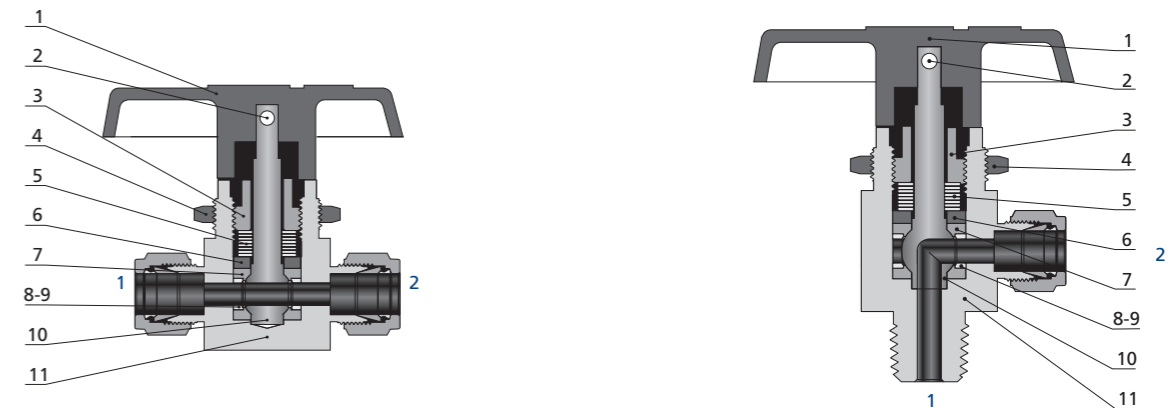
4-, 5-, 6-, 7-way Valves



Crossover (4-, 6-way) Valves



Standard Materials of Construction

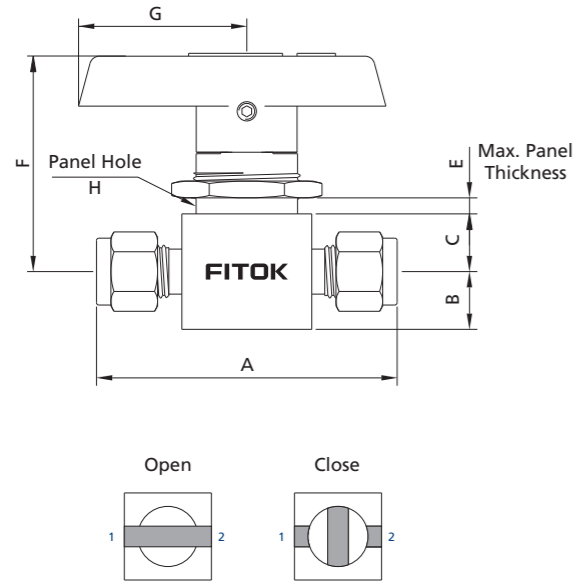


Item	Component	Valve Body Material		
		Stainless Steel	Brass	Alloy 400
		Material Grade/ASTM Specification		
1	Handle	Nylon or Aluminium		
2	Set Screw	S17400 SS/A564		
3	Packing Bolt	Powdered metal 300 series SS or 316 SS/A276, A479	Brass CDA 36000/B16	Alloy R-405/B164
4	Panel Nut	Powdered metal 300 series SS /B783 or 316 SS/A276, A479	Brass CDA 36000/B16	Powdered metal 300 series SS /B783 or 316 SS/A276, A479
5	Dishing Spring	S17700/A693		
6	Gland	Powdered metal 300 series SS/B783 or 316 SS/A276	Brass CDA 36000/B16	Alloy 400/B164
7	Packing Seat	PTFE/D1710 or UHMWPE/D4020		
8	Support Ring	Fluorocarbon-coated powdered metal 300 series SS/B783	Fluorocarbon-coated brass powdered metal	Fluorocarbon-coated alloy 400 powdered metal
9	Support Disc			
10	Ball Stem	316 SS/A276	Brass CDA 36000/B16	Alloy 400/B164
11	Body	316 SS/A182	Brass CDA 37700/B16	Alloy 400/B164
Wetted Lubricant		Fluorinated-based and silicone-based		
Non-wetted Lubricant		Molybdenum disulfide with hydrocarbon binder coat		

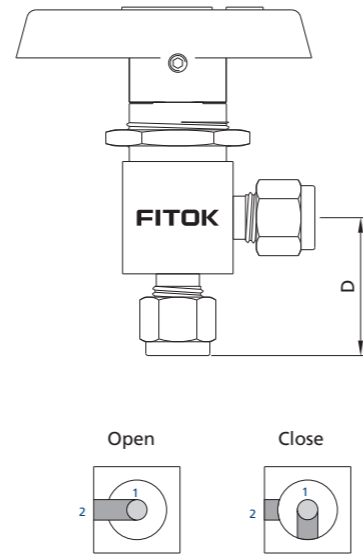
Contact the authorized representative or FITOK Group for valves of other materials.

Dimensions

2-way Valves



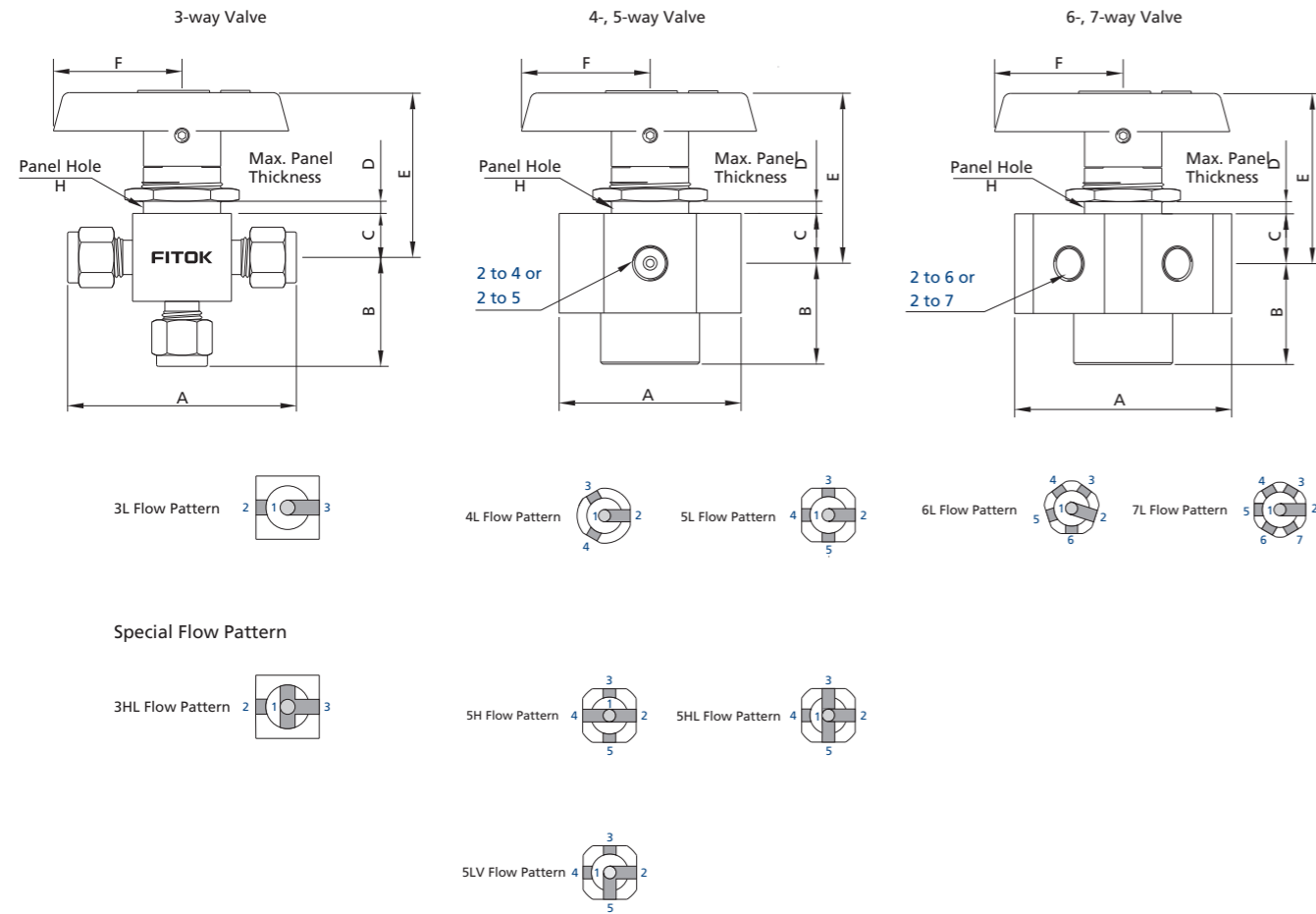
Angle Pattern Valves



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)								
			Straight	Angle	A	B	C	D	E	F	G	H	
BO□□-FL1-00	1/16" FITOK	0.05 (1.3)	0.10	—	1.68 (42.7)								
BO□□-FL2-02	1/8" FITOK	0.09 (2.4)	0.20	0.15	2.01 (51.1)	0.28 (7.1)	0.34 (8.6)	0.97 (24.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)	
BO□□-FL4-03	1/4" FITOK	0.13 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)					
BO□□-FL4-05		0.19 (4.8)	1.40	0.90	2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-FL6-05	3/8" FITOK		1.50		2.58 (65.5)			1.29 (32.8)					
BO□□-FL6-07		0.28 (7.1)	6.00	2.00	3.05 (77.5)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)	
BO□□-FL8-10	1/2" FITOK	0.41 (10.3)	6.40	3.80	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)	0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)	
BO□□-FL12-10	3/4" FITOK		12.00	4.60									
BO□□-ML3-02	3 mm FITOK	0.09 (2.4)	0.20	0.15	2.01 (51.1)	0.28 (7.1)	0.34 (8.6)	0.97 (24.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)	
BO□□-ML6-03	6 mm FITOK	0.13 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)					
BO□□-ML6-05		0.19 (4.8)	1.40	0.90	2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-ML8-05	8 mm FITOK		1.50		2.46 (62.5)			1.20 (30.5)					
BO□□-ML10-07	10 mm FITOK	0.28 (7.1)	6.00	2.00	3.07 (78.0)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)	
BO□□-ML12-10	12 mm FITOK	0.41 (10.3)	12.00	4.60	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)	0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)	

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)								
			Straight	Angle	A	B	C	D	E	F	G	H	
BO□□-FNS2-03	1/8 Female NPT	0.13 (3.2)	0.50	0.30	1.63 (41.4)	0.28 (7.1)	0.34 (8.6)	0.81 (20.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)	
BO□□-FNS2-05		0.19 (4.8)	1.20	0.70	2.00 (50.8)	0.38 (9.7)	0.44 (11.2)	1.00 (25.4)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-FNS4-05	1/4 Female NPT		0.90	0.75	2.06 (52.3)			1.03 (26.2)					
BO□□-FNS4-07		0.28 (7.1)	3.00	1.70	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	1.25 (31.8)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)	
BO□□-FNS6-07	3/8 Female NPT		2.60	1.50									
BO□□-FNS8-10	1/2 Female NPT	0.41 (10.3)	6.30	3.50	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	1.56 (39.6)	3/8 (9.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)	
BO□□-NS4-05	1/4 Male NPT	0.19 (4.8)	1.20	0.75	2.00 (50.8)	0.38 (9.7)	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-FRT4-05	1/4 Female BSPT		0.90		2.06 (52.3)								
BO□□-FRT6-07	3/8 Female BSPT	0.28 (7.1)	2.60	—	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	—	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)	
BO□□-FRT8-10	1/2 Female BSPT	0.41 (10.3)	6.30		3.12 (79.2)	0.69 (17.5)	0.69 (17.5)		0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)	
BO□□-NS4-FL4-05	1/4 Male NPT	0.19 (4.8)	1.60	0.75	2.20 (55.9)	0.38 (9.7)	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-FO4-03	1/4 Male FO	0.13 (3.2)	0.60	0.35	1.75 (44.4)			0.34 (8.6)	0.94 (23.9)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)
BO□□-FO4-05		0.19 (4.8)	2.40	0.90	1.88 (47.8)			0.44 (11.2)			3/16 (4.8)	1.64 (41.7)	1.57 (39.9)
BO□□-FR4-03	1/4 Male FR	0.13 (3.2)	0.60	0.35	2.13 (54.1)			0.34 (8.6)	1.09 (27.7)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)
BO□□-FR4-05		0.19 (4.8)	2.40	0.90				0.44 (11.2)			3/16 (4.8)	1.64 (41.7)	1.57 (39.9)
BO□□-FR8-07	1/2 Male FR	0.28 (7.1)	6.00	—	2.88 (73.2)			0.56 (14.2)		0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)
BO□□-FR8-10		0.41 (10.3)	12.00		3.12 (79.2)	0.69 (17.5)				0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)

Switching (3-, 4-, 5-, 6- and 7-way) Valves



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				A	B	C	D	E	F	H	
3-way Valve											
BO□□-FL1-00-3L	1/16" FITOK	0.05 (1.3)	0.08	1.68 (42.7)	0.81 (20.6)						
BO□□-FL2-02-3L	1/8" FITOK	0.09 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)	
BO□□-FL4-03-3L	1/4" FITOK	0.13 (3.2)	0.35	2.21 (56.1)	1.07 (27.2)						
BO□□-FL4-05-3L		0.19 (4.8)	0.90	2.39 (60.7)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
BO□□-FL6-07-3L	3/8" FITOK	0.28 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)	0.35 (9)	2.19 (55.5)	2.05 (52)	11/8 (28.6)	
BO□□-FL8-10-3L	1/2" FITOK	0.41 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)	0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	11/2 (38.1)	
BO□□-FL12-10-3L	3/4" FITOK		4.90								

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)						
				A	B	C	D	E	F	H
BO□□-ML3-02-3L	3 mm FITOK	0.09 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)
BO□□-ML6-03-3L	6 mm FITOK	0.13 (3.2)	0.35	2.21 (56.1)	1.07 (27.2)					
BO□□-ML6-05-3L		0.19 (4.8)	0.90	2.39 (60.7)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-ML8-05-3L	8 mm FITOK		0.80	2.46 (62.5)	1.20 (30.5)					
BO□□-ML10-07-3L	10 mm FITOK	0.28 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)
BO□□-ML12-10-3L	12 mm FITOK	0.41 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)	0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)
BO□□-FNS2-03-3L	1/8 Female NPT	0.13 (3.2)	0.30	1.63 (41.4)	0.81 (20.6)	0.34 (8.6)	1/4 (6.4)	1.43 (36.2)	1.10 (28)	19/32 (15.1)
BO□□-FNS4-05-3L	1/4 Female NPT	0.19 (4.8)	0.75	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-FNS4-07-3L		0.28 (7.1)	1.70	2.46 (62.5)	1.18 (30)	0.56 (14.2)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)
BO□□-FNS6-07-3L	3/8 Female NPT		1.50							
BO□□-FNS8-10-3L	1/2 Female NPT	0.41 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	3/8 (9.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)
BO□□-FRT4-05-3L	1/4 Female BSPT	0.19 (4.8)	0.75	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-FRT6-07-3L	3/8 Female BSPT	0.28 (7.1)	1.50	2.46 (62.5)	1.18 (30)	0.56 (14.2)	0.35 (9)	2.19 (55.5)	2.05 (52)	1 1/8 (28.6)
BO□□-FRT8-10-3L	1/2 Female BSPT	0.41 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	0.49 (12.5)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)

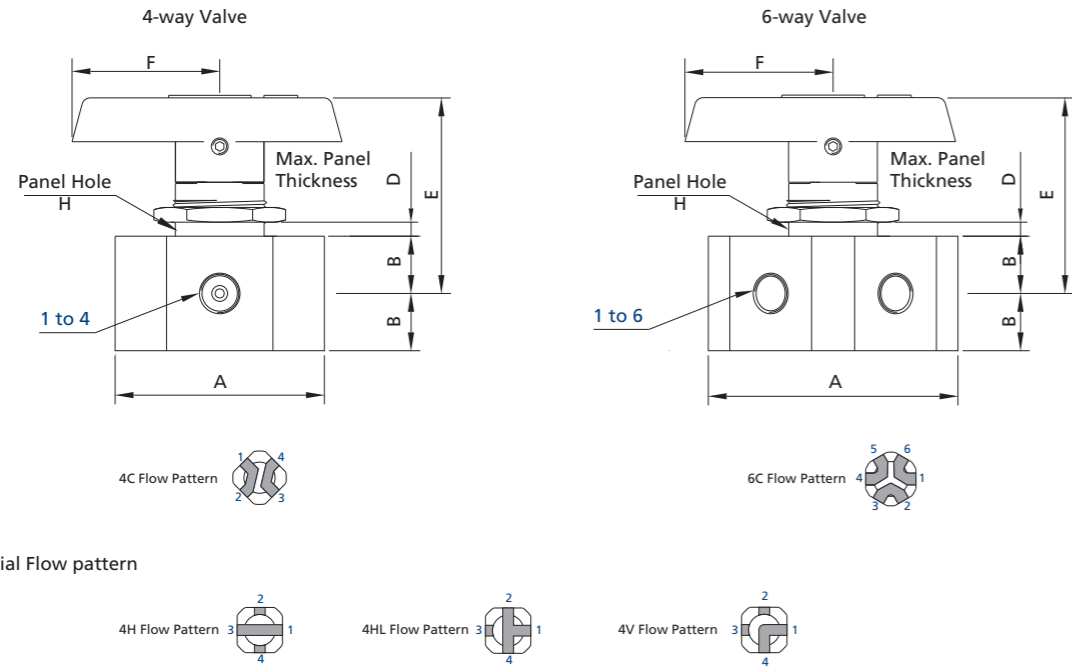
4 - & 5-way Valve

BO□□-FL2-01-4L	1/8" FITOK	0.06 (1.6)	0.07	2.64 (67)	1.32 (33.5)					
BO□□-FL2-01-5L						0.44 (11.2)	5/32 (4.1)	1.76 (44.6)	1.57 (39.9)	29/32 (23.1)
BO□□-FNS2-01-4L	1/8 Female NPT	0.06 (1.6)	0.07	1.85 (47)	0.88 (22.4)					
BO□□-FNS2-01-5L										
BO□□-FNS8-10-4L	1/2 Female NPT	0.41 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	0.41 (10.5)	2.63 (66.7)	3.00 (76.0)	1 1/2 (38.1)
BO□□-FNS8-10-5L										

6 - & 7-way Valve

BO□□-FL1-00-6L	1/16" FITOK	0.05 (1.3)	0.05							
BO□□-FL1-00-7L				2.64 (67)	1.32 (33.5)	0.44 (11.2)	0.28 (7)	1.76 (44.6)	1.57 (39.9)	29/32 (23.1)
BO□□-FL2-01-6L	1/8" FITOK	0.06 (1.6)	0.07							
BO□□-FL2-01-7L										

Crossover (4-, 6-way) Valves



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)					
				A	B	D	E	F	H
4-way Valve									
BO□□-FL1-00-4C	1/16" FITOK	0.05 (1.3)	0.06	1.95 (49.6)					
BO□□-FL2-01-4C	1/8" FITOK	0.06 (1.6)	0.08	2.61 (66.3)	0.44 (11.2)	3/16 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-FNS2-01-4C	1/8 Female NPT			1.55 (39.4)					
BO□□-FNS8-07-4C	1/2 Female NPT	0.28 (7.1)	1.60	3.13 (79.5)	0.69 (17.5)	0.48 (12.2)	2.67 (67.7)	3.13 (79.6)	1 1/2 (38.1)
6-way Valve									
BO□□-FL1-00-6C	1/16" FITOK	0.05 (1.3)	0.06	1.95 (49.5)	0.44 (11.2)	3/16 (4.8)	1.68 (42.7)	1.53 (38.9)	29/32 (23.1)
BO□□-FL2-01-6C	1/8" FITOK	0.06 (1.6)	0.08						

1. FITOK means FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Vent Port Options

Vented Valves

The maximum working pressure for vented valves is 500 psig (34.4 bar).

Straight-pattern Valves

A vent hole in the side of the valve body makes the downstream port vent to atmosphere when the valve is closed.

Angle-pattern and 3-way Valves

A vent hole in the side of the valve body makes the bottom port vent to atmosphere when the valve is closed.

Welded Vent Port Connections

A FITOK tube fitting or a tube stub welded to the vent port is available for stainless steel vented valves.

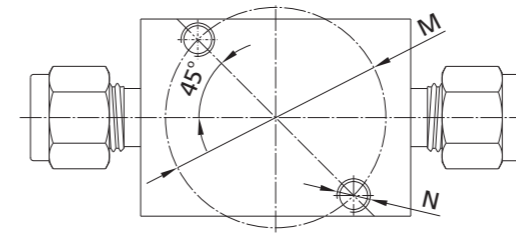
Bottom Screw Panel Mounting Options

Remark

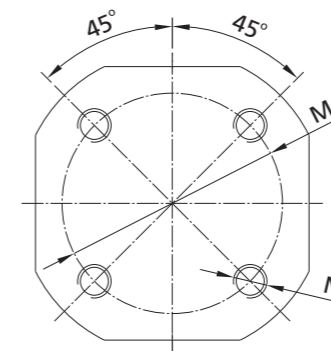
The bottom screw panel mounting options are not available on angle-pattern valves, 3-way valves, 6-way valves and 7-way valves.

Mounting Dimension

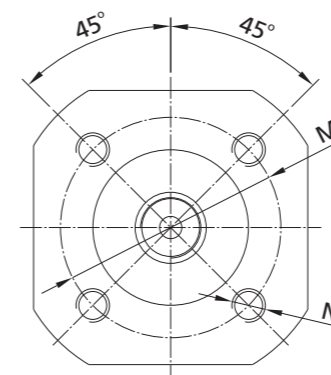
2-way



4-way

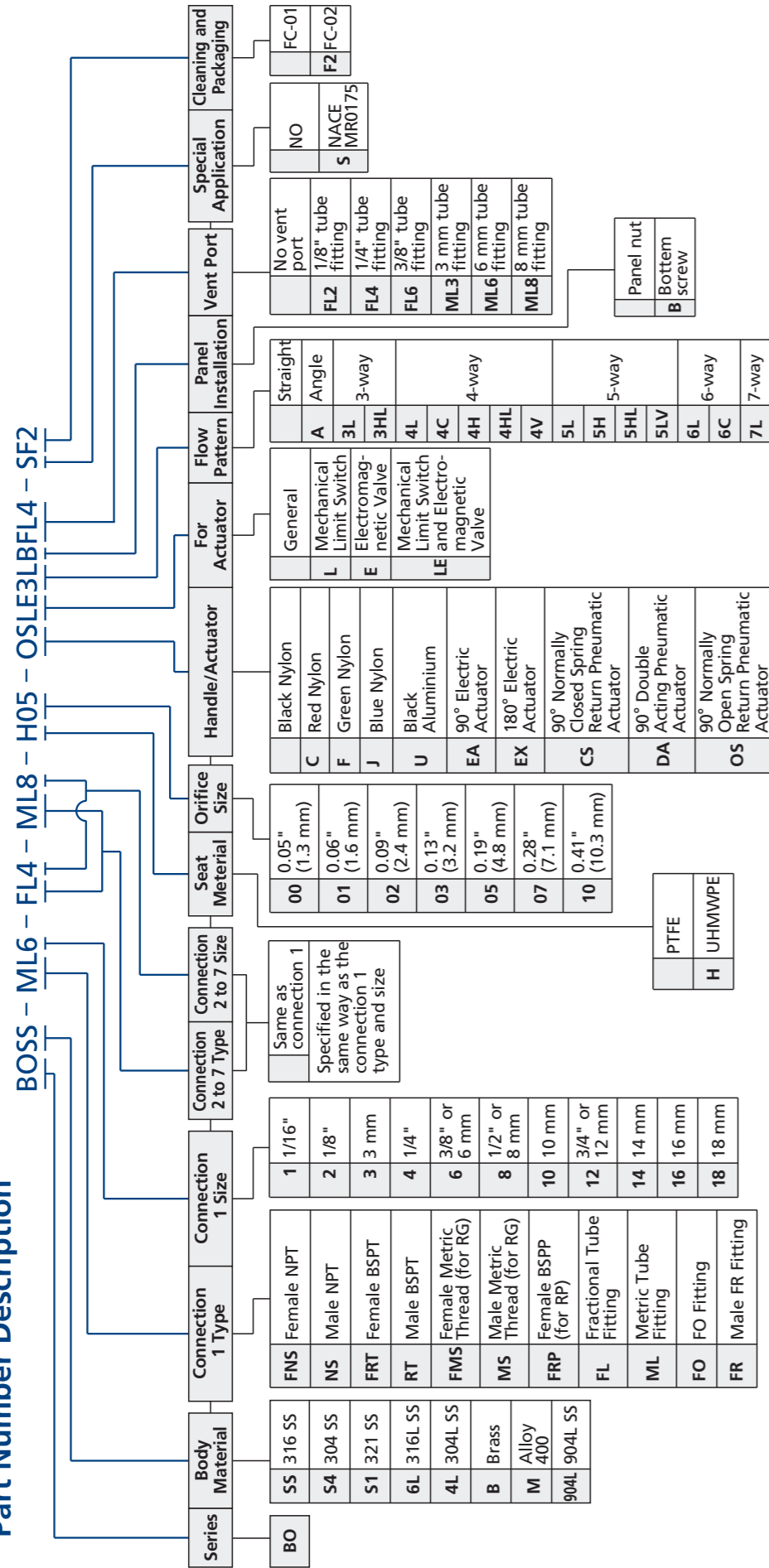


5-way



	Orifice in. (mm)	Dimensions, in. (mm)	
		M	N
2-way	0.05-0.13 (1.3-3.2)	0.63 (15.88)	M2.5 x 0.45 deep 0.24" (6)
	0.19 (4.8)	0.88 (22.23)	M3 x 0.5 deep 0.24" (6)
	0.28 (7.1)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
4-way	0.41 (10.3)	1.63 (41.28)	M5 x 0.8 deep 0.24" (6)
	0.05-0.06 (1.3-1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
5-way	0.28 (7.1)	2.00 (50.8)	M5 x 0.8 deep 0.24" (6)
	0.05-0.06 (1.3-1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
5-way	0.41 (10.3)	2.00 (50.8)	M5 x 0.8 deep 0.24" (6)

Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model. Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

- To prevent seat leakage, it may be required to check and adjust the stem packing periodically during the service life of the valve.
- A higher initial actuation torque may happen to the valves that have not been cycled for a period of time.
- Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change.
- Sizes and types listed are standard. Other sizes and types are available upon request.
- For information about pneumatic and electric actuator, please contact the authorized representative or FITOK Group.
- For oxygen or virulent medium service, contact the authorized representative or FITOK Group.
- Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C

Bar Stock Ball Valves

BP Series

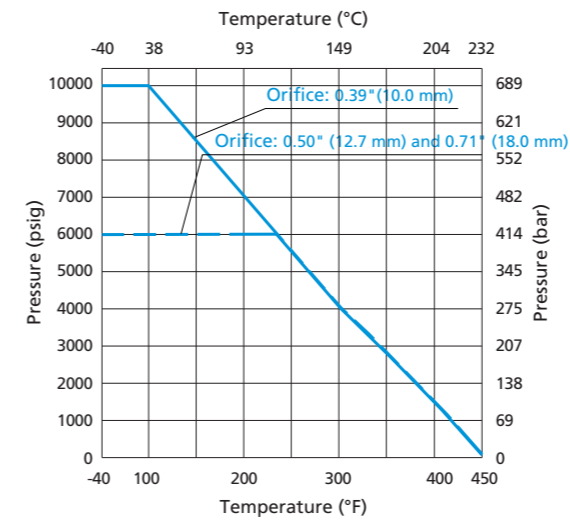
Features

- Maximum working pressure: 10000 psig (689 bar)
- Working temperature: -40°F to 450°F (-40°C to 232°C)
- Bi-directional flow for 2-way valves
- Seat wear compensation by free floating ball
- Variety of end connections
- Blowout proof stem with self-sealing function
- Options for handle color
- Optional pneumatic and electric actuator
- Leak-tight performance testing with nitrogen for every valve at the maximum working pressure, but not higher than 6000 psig

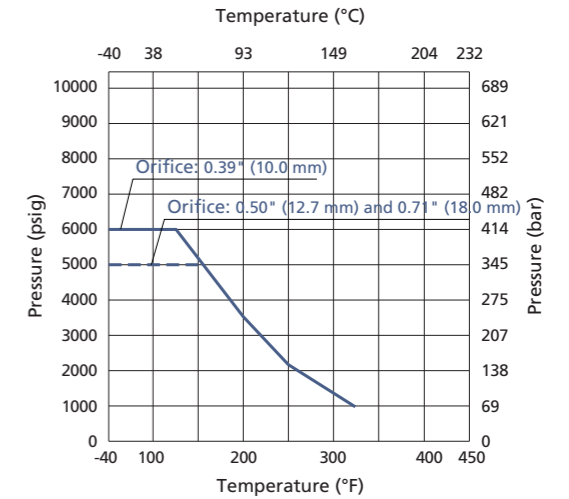


Pressure vs. Temperature

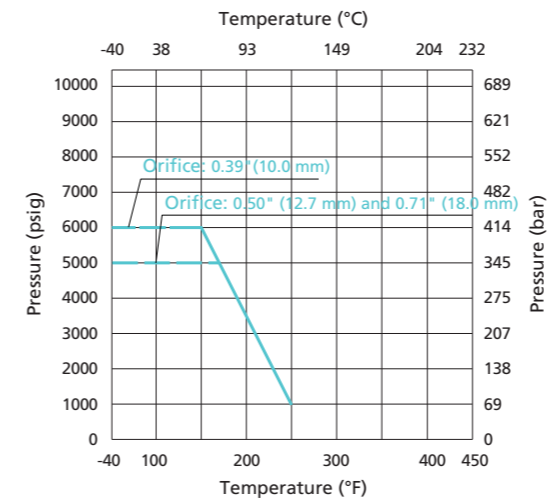
PEEK



PVDF



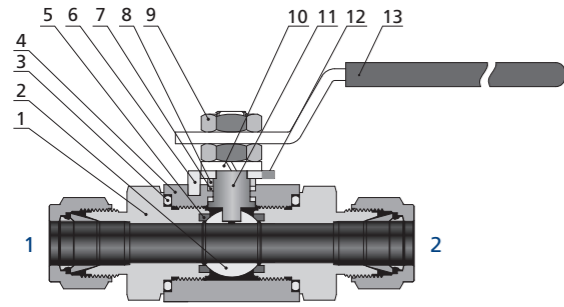
PCTFE



- Graphs are for 2-way valves only.
- Maximum working pressure for 3-way valves:
6000 psig: connection 1 as inlet, connection 2 and connection 3 as outlet
3000 psig: connection 2 and connection 3 as inlet, connection 1 as outlet

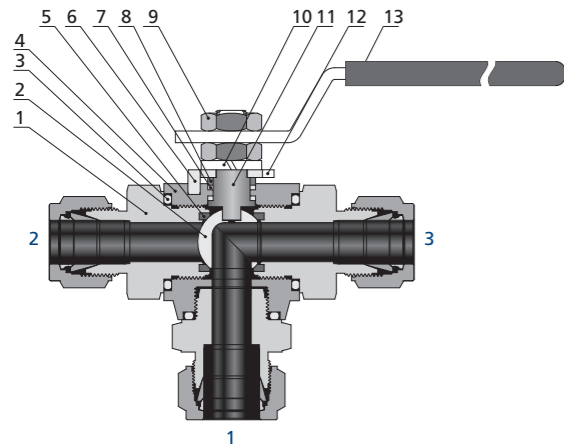
Standard Materials of Construction

2-way Valves



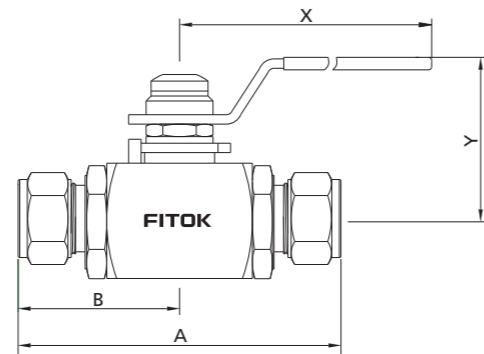
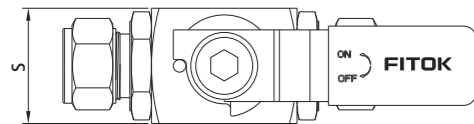
Item	Component	Body Material	
		316 SS	Alloy 400
1	End Connector	316 SS/A276	Alloy 400/B164
2	Ball	316 SS/A479	Alloy R-405/B164
3	O-ring	Fluorocarbon FKM	
4	Body	316 SS/A479	Alloy 400/B164
5	Seat	PVDF or PCTFE or PEEK	
6	Stop Pin	Stainless Steel	
7	Stem Packing	PTFE/D1710	
8	Stem Washer	316 SS/A276	
9	Stem Nut	Stainless Steel	
10	Spring Washer	316 SS/A276	
11	Stem	316 SS/A276	
12	Stop Block	304 SS/A240	
13	Handle	Stainless steel with vinyl cover	

3-way Valves



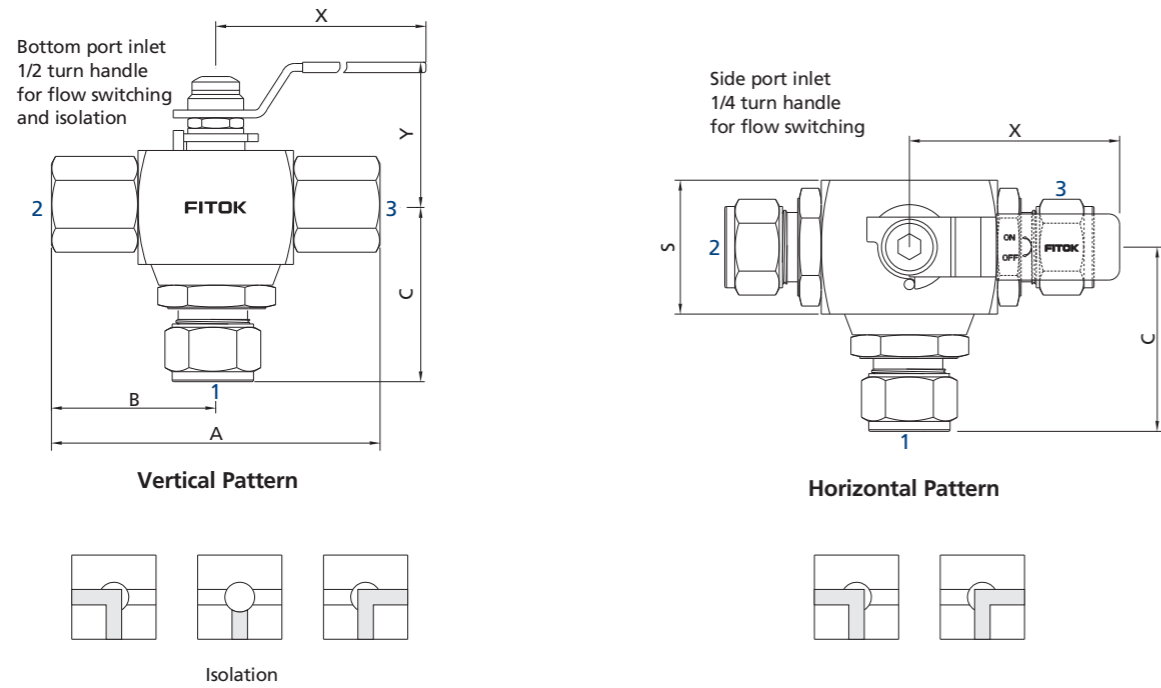
Dimensions

2-way Valves



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)								
	Connection 1	Connection 2			A	B	X	Y	S				
BP□□-ML6-10	6 mm FITOK	6 mm FITOK	0.39 (10.0)	1.2	3.54 (90.0)	1.77 (45.0)	5.12 (130.0)	1.73 (44.0)	1.30 (32.0)				
BP□□-ML8-10	8 mm FITOK	8 mm FITOK			3.60 (91.6)	1.80 (45.8)							
BP□□-ML10-10	10 mm FITOK	10 mm FITOK			3.70 (94.0)	1.85 (47.0)							
BP□□-ML12-10	12 mm FITOK	12 mm FITOK		7.5	3.94 (100.0)	1.97 (50.0)							
BP□□-ML14-10	14 mm FITOK	14 mm FITOK			1.2	3.60 (91.6)				1.80 (45.8)			
BP□□-FL4-10	1/4" FITOK	1/4" FITOK				3.72 (94.6)				1.86 (47.3)			
BP□□-FL6-10	3/8" FITOK	3/8" FITOK		7.5		3.92 (99.6)				1.96 (49.8)			
BP□□-FL8-10	1/2" FITOK	1/2" FITOK			3.03 (77.0)	1.52 (38.5)							
BP□□-FNS4-10	1/4 Female NPT	1/4 Female NPT			3.7	2.80 (71.0)				1.40 (35.5)			
BP□□-FNS6-10	3/8 Female NPT	3/8 Female NPT		3.11 (79.0)		1.56 (39.5)							
BP□□-FNS8-10	1/2 Female NPT	1/2 Female NPT		7.5		3.36 (85.4)				1.68 (42.7)			
BP□□-NS4-10	1/4 Male NPT	1/4 Male NPT			3.75 (95.2)	1.88 (47.6)							
BP□□-NS6-10	3/8 Male NPT	3/8 Male NPT	0.50 (12.7)		10.0	4.42 (112.2)	2.21 (56.1)	5.71 (145.0)	1.89 (48.0)	1.50 (38.0)			
BP□□-ML16-13	16 mm FITOK	16 mm FITOK		4.12 (104.6)		2.06 (52.3)							
BP□□-ML18-13	18 mm FITOK	18 mm FITOK		4.43 (112.6)		2.22 (56.3)							
BP□□-ML20-13	20 mm FITOK	20 mm FITOK					0.71 (18.0)				19.0	4.87 (123.8)	2.43 (61.9)
BP□□-ML22-13	22 mm FITOK	22 mm FITOK										30.0	5.11 (129.8)
BP□□-ML25-13	25 mm FITOK	25 mm FITOK		19.0		4.59 (116.6)						2.29 (58.3)	
BP□□-FL10-13	5/8" FITOK	5/8" FITOK		30.0	5.11 (129.8)	2.66 (64.9)	6.30 (160.0)				2.08 (53.0)	1.96 (50.0)	
BP□□-FL12-13	3/4" FITOK	3/4" FITOK			3.81 (96.8)	1.91 (48.4)							
BP□□-FNS8-13	1/2 Female NPT	1/2 Female NPT			4.26 (108.2)	2.13 (54.1)							
BP□□-FNS12-13	3/4 Female NPT	3/4 Female NPT		19.0	4.54 (115.2)	2.27 (57.6)							
BP□□-NS12-13	3/4 Male NPT	3/4 Male NPT			30.0	4.91 (124.8)	2.45 (62.4)						
BP□□-NS16-19	1 Male NPT	1 Male NPT											

3-way Valves



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)					
	Connection 1	Connection 2/3			A	B	C	X	Y	S
BP□□-ML6-10-3□	6 mm FITOK	6 mm FITOK	0.39 (10.0)	1.2	3.54 (90.0)	1.77 (45.0)	2.00 (51.0)	5.12 (130.0)	1.73 (44.0)	1.30 (32.0)
BP□□-ML8-10-3□	8 mm FITOK	8 mm FITOK			3.60 (91.6)	1.80 (45.8)	2.02 (51.3)			
BP□□-ML10-10-3□	10 mm FITOK	10 mm FITOK		3.70 (94.0)	1.85 (47.0)	2.07 (52.5)				
BP□□-ML12-10-3□	12 mm FITOK	12 mm FITOK		7.5	3.94 (100.0)	1.97 (50.0)	2.18 (55.5)			
BP□□-ML14-10-3□	14 mm FITOK	14 mm FITOK		1.2	3.60 (91.6)	1.80 (45.8)	2.01 (53.3)			
BP□□-FL4-10-3□	1/4" FITOK	1/4" FITOK		3.7	3.72 (94.6)	1.86 (47.3)	2.16 (54.8)			
BP□□-FL6-10-3□	3/8" FITOK	3/8" FITOK		7.5	3.92 (99.6)	1.96 (49.8)	2.13 (54.0)			
BP□□-FL8-10-3□	1/2" FITOK	1/2" FITOK		3.03 (77.0)	1.52 (38.5)	1.44 (36.5)				
BP□□-FNS4-10-3□	1/4 Female NPT	1/4 Female NPT		2.80 (71.0)	1.40 (35.5)	1.57 (40.0)				
BP□□-FNS6-10-3□	3/8 Female NPT	3/8 Female NPT		3.27 (83.0)	1.63 (41.5)	1.83 (46.4)				
BP□□-FNS8-10-3□	1/2 Female NPT	1/2 Female NPT		3.7	3.36 (85.4)	1.68 (42.7)	1.90 (48.2)			
BP□□-NS4-10-3□	1/4 Male NPT	1/4 Male NPT		7.5	3.75 (95.2)	1.88 (47.6)	2.09 (53.1)			
BP□□-NS6-10-3□	3/8 Male NPT	3/8 Male NPT								
BP□□-NS8-10-3□	1/2 Male NPT	1/2 Male NPT								

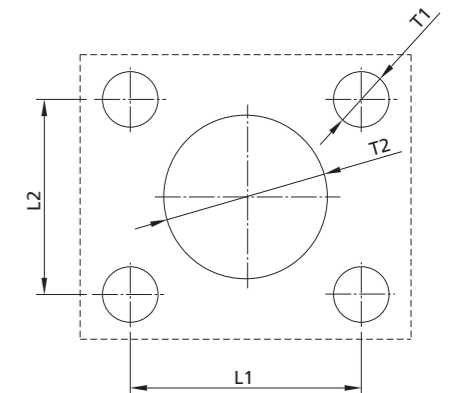
Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)											
	Connection 1	Connection 2/3			A	B	C	X	Y	S						
BP□□-ML16-13-3□	16 mm FITOK	16 mm FITOK	0.50 (12.7)	10.0	4.04 (102.6)	2.02 (51.3)	2.41 (61.3)	5.71 (145.0)	1.89 (48.0)	1.50 (38.0)						
BP□□-ML18-13-3□	18 mm FITOK	18 mm FITOK			4.12 (104.6)	2.06 (52.3)	2.45 (62.3)									
BP□□-ML20-13-3□	20 mm FITOK	20 mm FITOK			4.43 (112.6)	2.22 (56.3)	2.61 (66.3)									
BP□□-ML22-13-3□	22 mm FITOK	22 mm FITOK			4.36 (110.6)	2.18 (55.3)	2.57 (65.3)									
BP□□-FL10-13-3□	5/8" FITOK	5/8" FITOK			3.82 (97.0)	1.91 (48.5)	1.95 (49.5)									
BP□□-FL12-13-3□	3/4" FITOK	3/4" FITOK			4.14 (105.2)	2.07 (52.6)	2.46 (62.6)									
BP□□-FNS8-10-3□	1/2 Female NPT	1/2 Female NPT			0.71 (18.0)	19.0	4.87 (123.8)				2.43 (61.9)	2.89 (73.4)	6.30 (160.0)	2.08 (53.0)	1.96 (50.0)	
BP□□-FNS12-13-3□	3/4 Female NPT	3/4 Female NPT					30.0				5.11 (129.8)	2.66 (64.9)				3.00 (76.2)
BP□□-NS12-13-3□	3/4 Male NPT	3/4 Male NPT					19.0				4.86 (123.4)	2.43 (61.7)				3.02 (76.7)
BP□□-ML20-19-3□	20 mm FITOK	20 mm FITOK					30.0				5.11 (129.8)	2.66 (64.9)				2.85 (72.4)
BP□□-ML22-19-3□	22 mm FITOK	22 mm FITOK					19.0				4.86 (123.4)	2.43 (61.7)				3.02 (76.7)
BP□□-ML25-19-3□	25 mm FITOK	25 mm FITOK					30.0				3.82 (97.0)	1.91 (48.5)				2.22 (56.5)
BP□□-FL12-19-3□	3/4" FITOK	3/4" FITOK					19.0				4.26 (108.2)	2.13 (54.1)				2.40 (60.8)
BP□□-FL16-19-3□	1" FITOK	1" FITOK					30.0				4.26 (108.2)	2.13 (54.1)				2.40 (60.8)
BP□□-FNS12-19-3□	3/4 Female NPT	3/4 Female NPT					19.0				4.54 (115.2)	2.27 (57.6)				2.72 (69.1)
BP□□-FNS16-19-3□	1 Female NPT	1 Female NPT					30.0				4.54 (115.2)	2.27 (57.6)				2.72 (69.1)
BP□□-NS12-19-3□	3/4 Male NPT	3/4 Male NPT	19.0	4.54 (115.2)			2.27 (57.6)	2.72 (69.1)								
BP□□-NS16-19-3□	1 Male NPT	1 Male NPT	30.0	4.91 (124.8)			2.45 (62.4)	2.90 (73.9)								

1. FITOK means FITOK double ferrule tube fittings, TS means fractional tube socket weld, MTS means metric tube socket weld, TB means fractional tube butt weld, MTB means metric tube butt weld, PS means pipe socket weld, PB means pipe butt weld.
2. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Panel Mounting Options

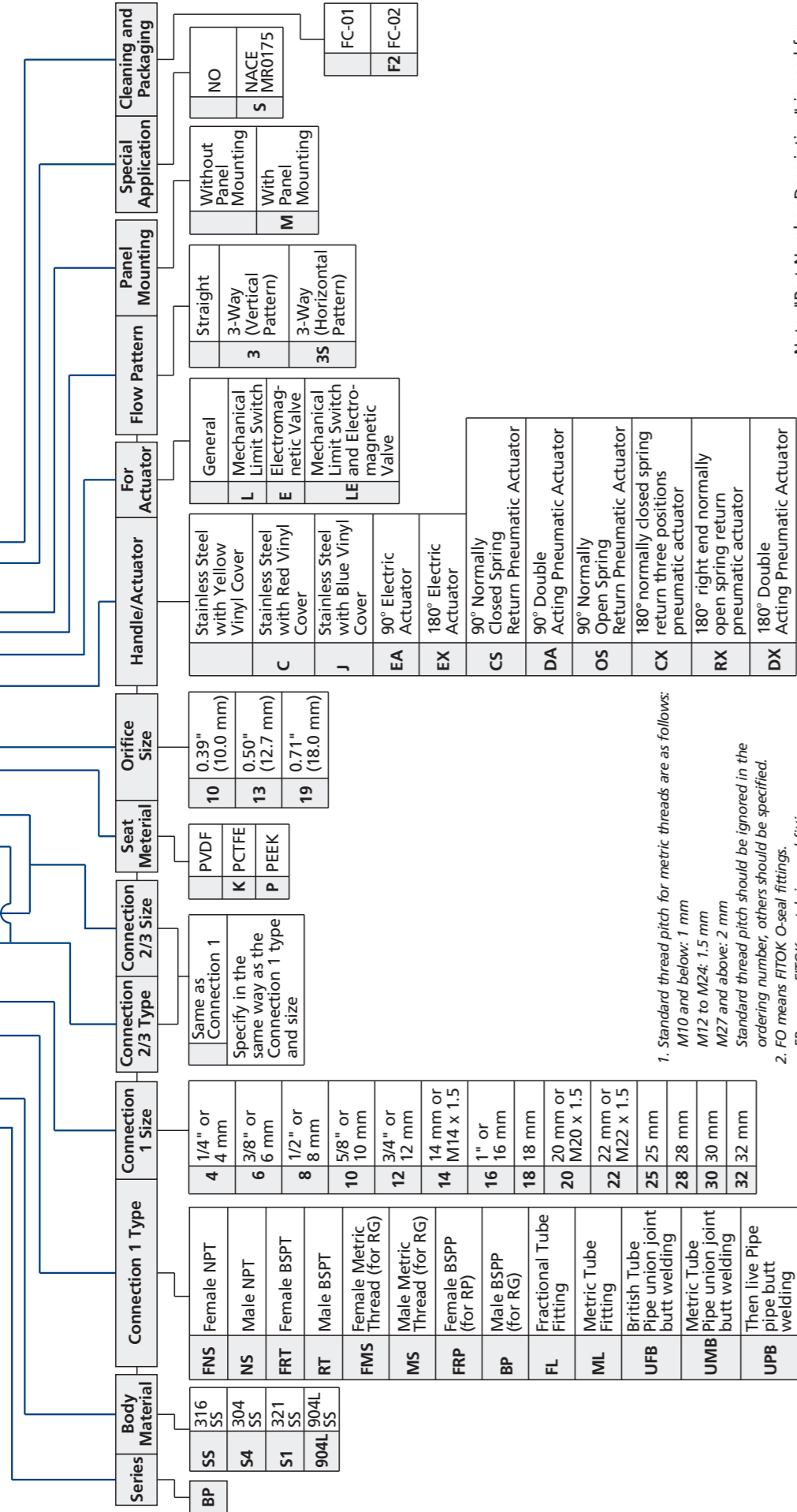
Dimension for panel mounting

Orifice in. (mm)	L1 in. (mm)	L2 in. (mm)	T1 in. (mm)	T2 in. (mm)	Panel Thickness in. (mm)
0.39 (10.0)	1.02 (26.0)	1.02 (26.0)	0.20 (5.0)	1.18 (30.0)	Max. 3/8 (9.5)
0.50 (12.7)	1.26 (32.0)	1.26 (34.0)	0.20 (5.0)	1.50 (38.0)	
0.71 (18.0)	1.42 (36.0)	1.42 (36.0)	0.20 (5.0)	1.50 (38.0)	



Part Number Description

BPSS – ML20 – FL12 – FNS8 – P13 – OSLE3M – SF2



1. Standard thread pitch for metric threads are as follows:

- M10 and below: 1 mm
- M12 to M24: 1.5 mm
- M27 and above: 2 mm

Standard thread pitch should be ignored in the ordering number, others should be specified.

2. FO means FITOK O-seal fittings.

FR means FITOK metal ring seal fittings.

3. For information about pneumatic and electric actuator, please contact the authorized representative or FITOK Group.

4. For oxygen or virulent medium service, contact the authorized representative or FITOK Group.

5. Cleaning and Packaging:

FC-01: Standard cleaning and packaging for general industrial procedures.

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirements as stated in ASTM G93 Level C.

Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

Hex Bar Stock Ball Valves

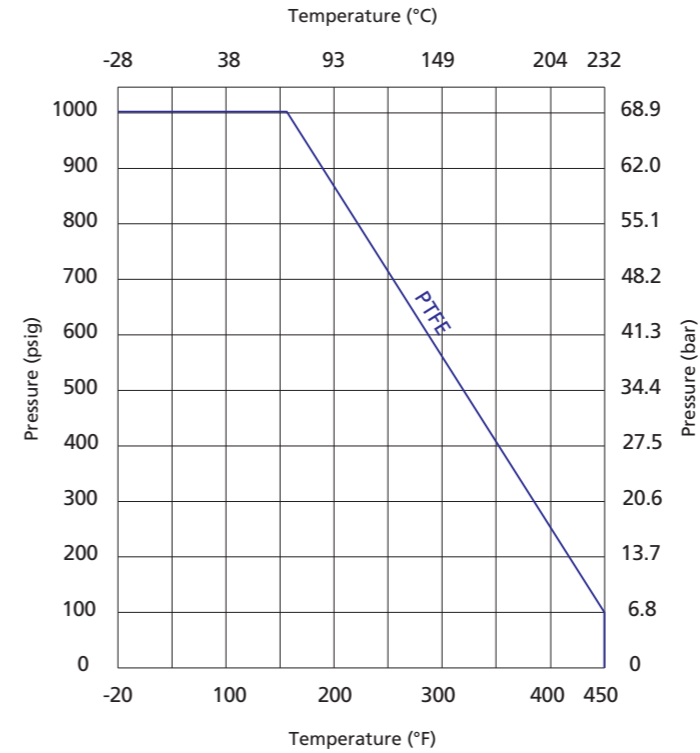
BR Series

Features

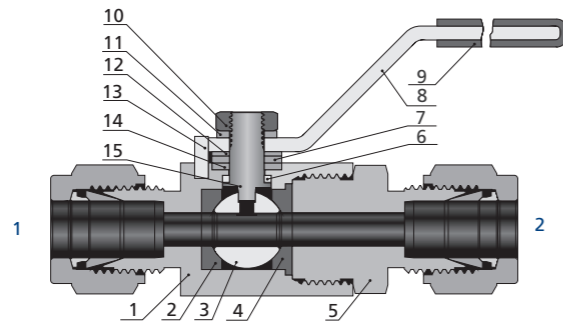
- Maximum working pressure: 1000 psig (68.9 bar)
- Working temperature: -20°F to 450°F (-28°C to 232°C)
- Compact and economical design
- Free floating ball design for seat wear compensation
- Bi-directional flow
- Low operating torque
- Any reasonable connections available
- Blowout proof stem
- Options for handle color
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen



Pressure vs. Temperature



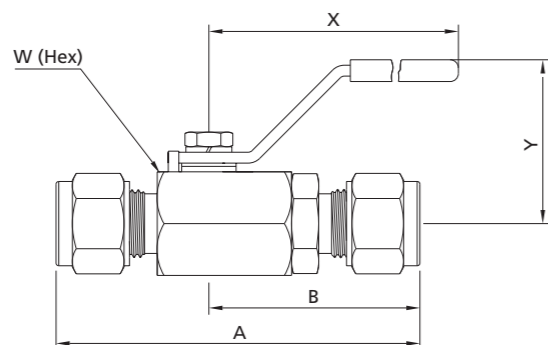
Standard Materials of Construction



Item	Component	Valve Body Material			
		316 SS	304 SS	316L SS	Brass
1	Body	316 SS/A276 316 SS/A351	304 SS/A276 304 SS/A351	316L SS/A276 316L SS/A351	Brass/B16
2	Front Seat	PTFE/D1710			
3	Ball	316 SS/A276			
4	Back Seat	PTFE/D1710			
5	End Connector	316 SS/A276	304 SS/A276	316L SS/A276	Brass/B16
6	Bottom Packing	PTFE/D1710			
7	Washer	316 SS/A276			
8	Handle	304 SS/A240 or Aluminium			
9	Sleeve	Vinyl			
10	Stem Nut	Stainless steel			
11	Gasket	Stainless steel			
12	Coned-disk Spring	S17700/A693			
13	Pin	Stainless steel			
14	Top Packing	PTFE/D1710			
15	Stem	316 SS/A276			

Other materials available upon request.

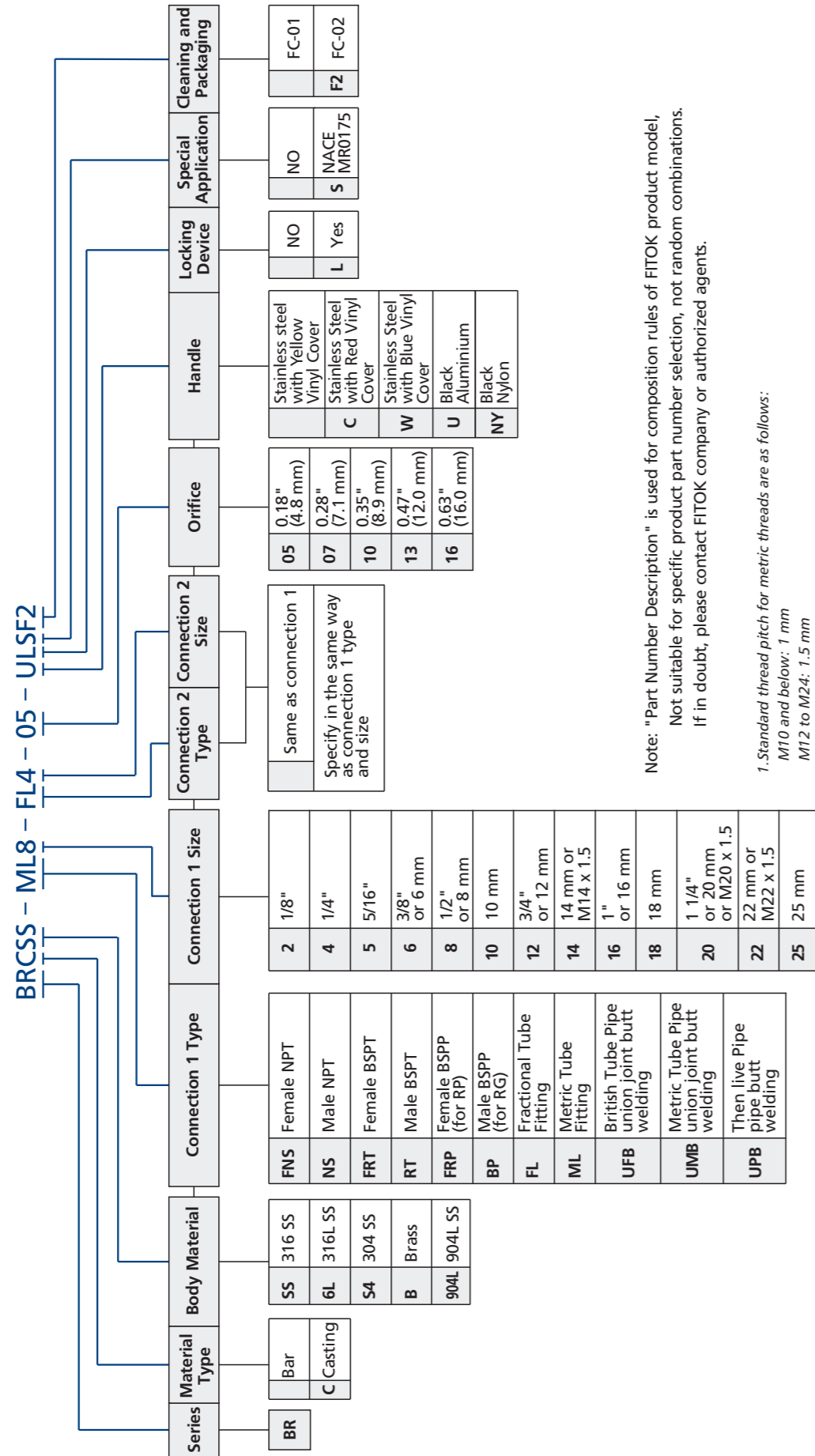
Dimensions



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
BR□□-ML6-05	6 mm FITOK	6 mm FITOK	0.19 (4.8)	1.25	2.57 (65.2)	1.50 (38.1)	3/4 (19.05)	2.36 (60)	1.18 (30)
BR□□-ML8-05	8 mm FITOK	8 mm FITOK			2.63 (66.8)	1.53 (38.8)			
BR□□-FL4-05	1/4" FITOK	1/4" FITOK			2.57 (65.2)	1.50 (38.1)			
BR□□-FL5-05	5/16" FITOK	5/16" FITOK			2.63 (66.8)	1.53 (38.8)			
BR□□-FNS2-05	1/8 Female NPT	1/8 Female NPT			1.85 (47.0)	1.08 (27.4)			
BR□□-FRP2-05	1/8 Female BSPP	1/8 Female BSPP			2.00 (50.0)	1.14 (29.0)			
BR□□-FRP4-05	1/4 Female BSPP	1/4 Female BSPP			2.00 (50.0)	1.14 (29.0)			
BR□□-FNS4-05	1/4 Female NPT	1/4 Female NPT			1.85 (47.0)	1.08 (27.4)			
BR□□-ML10-07	10 mm FITOK	10 mm FITOK			0.28 (7.1)	2.50			
BR□□-FL6-07	3/8" FITOK	3/8" FITOK	2.03 (51.6)	1.18 (30.0)					
BR□□-FRP6-07	3/8 Female BSPP	3/8 Female BSPP							
BR□□-FNS6-07	3/8 Female NPT	3/8 Female NPT							
BR□□-ML12-10	12 mm FITOK	12 mm FITOK	0.35 (8.9)	9.25	3.15 (80.0)	1.83 (46.5)	27.0	3.15 (80)	1.54 (39)
BR□□-ML14-10	14 mm FITOK	14 mm FITOK			3.24 (82.2)	1.87 (47.5)			
BR□□-FL8-10	1/2" FITOK	1/2" FITOK			3.15 (80.0)	1.83 (46.5)			
BR□□-FL10-10	5/8" FITOK	5/8" FITOK			3.24 (82.2)	1.87 (47.5)			
BR□□-FRP8-10	1/2 Female BSPP	1/2 Female BSPP			2.08 (53.0)	1.12 (28.5)			
BR□□-FNS8-10	1/2 Female NPT	1/2 Female NPT			2.08 (53.0)	1.12 (28.5)			
BR□□-ML16-13	16 mm FITOK	16 mm FITOK	0.47 (12.0)	12.65	3.50 (88.9)	2.00 (50.8)	1 1/4 (31.75)	3.94 (100)	2.03 (51.7)
BR□□-ML18-13	18 mm FITOK	18 mm FITOK							
BR□□-FL12-13	3/4" FITOK	3/4" FITOK							
BR□□-FRP12-13	3/4 Female BSPP	3/4 Female BSPP			2.48 (63.0)	1.30 (33.0)			
BR□□-FNS12-13	3/4 Female NPT	3/4 Female NPT			2.39 (60.7)	1.20 (30.5)			
BR□□-ML22-16	22 mm FITOK	22 mm FITOK			3.96 (100.6)	2.24 (57.1)			
BR□□-ML25-16	25 mm FITOK	25 mm FITOK			4.31 (109.5)	2.42 (61.5)			
BR□□-FL16-16	1" FITOK	1" FITOK							
BR□□-FRP16-16	1 Female BSPP	1 Female BSPP			3.25 (82.6)	1.63 (41.3)			
BR□□-FNS16-16	1 Female NPT	1 Female NPT	3.00 (76.5)	1.50 (38.1)					

1. FITOK means FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

1. Standard thread pitch for metric threads are as follows:

M10 and below: 1 mm

M12 to M24: 1.5 mm

M27 and above: 2 mm

Standard thread pitch should be ignored in the ordering number, others should be specified.

2. For oxygen or virulent medium service, contact the authorized representative or FITOK Group.

3. Cleaning and Packaging:

FC-01: Standard cleaning and packaging for general industrial procedures.

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleaning requirement as stated in ASTM G93 Level C.

High Performance Ball Valves

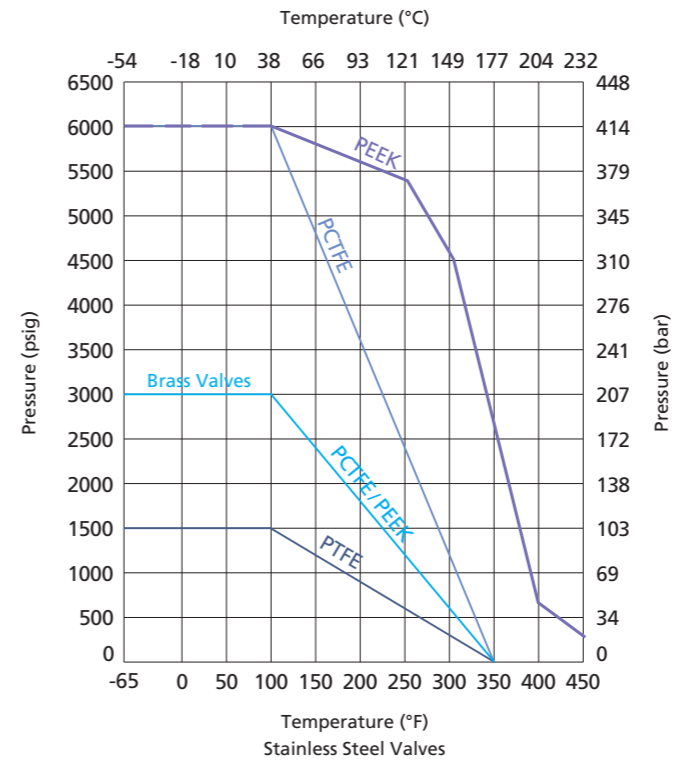
BV Series

Features

- Maximum working pressure: 6000 psig (414 bar)
- Working temperature: -65°F to 450°F (-54°C to 232°C)
- Bi-directional flow for straight valves
- Low operating torque
- Positive handle stop
- Handle as flow direction indicator
- Options for handle color
- Manual, electric or pneumatic actuator available
- Leak-tight performance testing for every valve at the maximum working pressure with nitrogen
- The inlet of 3-way valves and angle pattern valves should be only from the bottom.



Pressure vs. Temperature

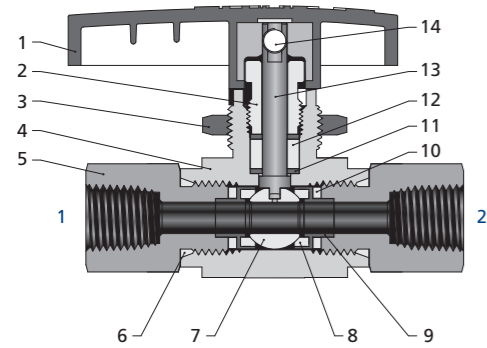


Temperature Ranges

Packing Materials	Temperature Range °F (°C)
PTFE	-65 to 450 (-54 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-15 to 450 (-26 to 232)
Neoprene	-40 to 250 (-40 to 121)

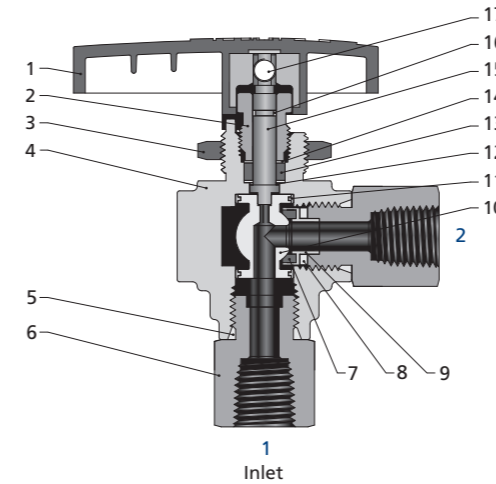
Standard Materials of Construction

Straight Valves



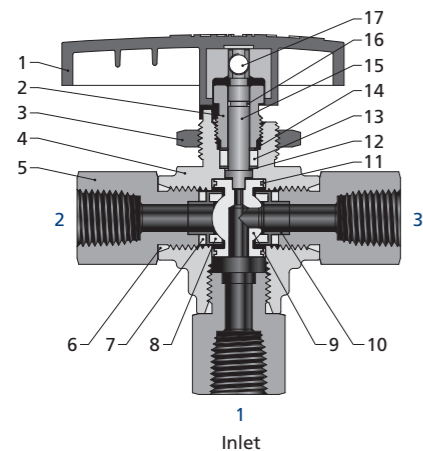
Item	Component	Valve Body Material	
		Stainless steel	Brass
1	Handle	Nylon or Aluminium	
2	Packing Nut	316 SS/A276	C34000/B453
3	Panel Nut	316 SS/A276	C36000/B16
4	Body	CF8M/A351	C37700/B283
5	End Connector	316 SS/A479	C36000/B16
6	Connector O-ring	PTFE/D1710	
7	Ball	316 SS/A479	
8	Seat	PTFE or PCTFE or PEEK	
9	Seat Retainer	316 SS/A276	C36000/B16
10	Seat Packing	PTFE/D1710	
11	Stem Washer	316/A276	
12	Stem Packing	PTFE or Fluorocarbon FKM or Neoprene or Buna N	
13	Stem	316 SS/A276	
14	Set Screw	Stainless steel	
	Lubricants	Fluorinated-based and silicone-based	

Angle Pattern Valves



Item	Component	Valve Body Material	
		Stainless Steel	Brass
1	Handle	Nylon or Aluminium	
2	Packing Nut	316 SS/A276	C34000/B453
3	Panel Nut	316 SS/A276	C36000/B16
4	Body	CF8M/A351	C37700/B283
5	Connector O-ring	PTFE/D1710	
6	End Connector	316 SS/A479	C36000/B16
7	Seat	PTFE or PCTFE or PEEK	
8	Packing	PTFE/D1710	
9	Seat Retainer	316 SS/A276	C36000/B16
10	Ball	316 SS/A479	
11	Trunnion Bearing	PEEK	
12	Stem Back-up Ring	PEEK	
13	Stem Packing	PTFE or Fluorocarbon FKM or Neoprene or Buna N	
14	Stem Washer	316 SS/A276	
15	Stem	316 SS/A276	
16	Stem Bearing	PTFE/D1710	
17	Set Screw	Stainless steel	
	Lubricants	Fluorinated-based and silicone-based	

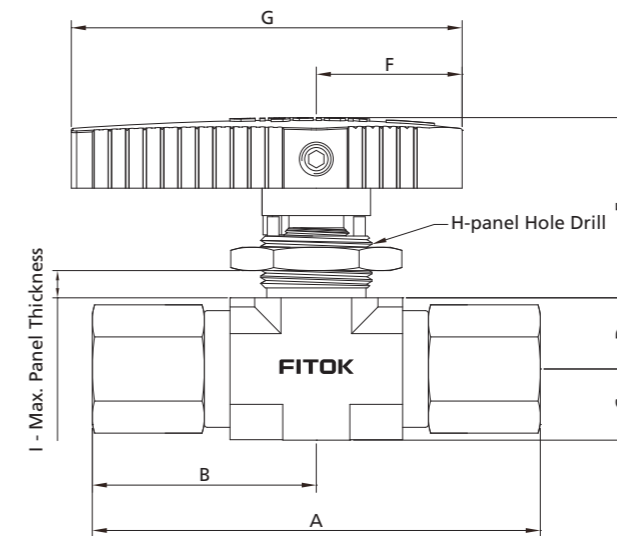
3-way Valves



Item	Component	Valve Body Material	
		Stainless Steel	Brass
1	Handle	Nylon or Aluminium	
2	Packing Nut	316 SS/A276	C34000/B453
3	Panel Nut	316 SS/A276	C36000/B16
4	Body	CF8M/A351	C37700/B283
5	End Connector	316 SS/A479	C36000/B16
6	Connector O-ring	PTFE/D1710	
7	Packing	PTFE/D1710	
8	Seat	PTFE or PCTFE or PEEK	
9	Ball	316 SS/A479	
10	Seat Retainer	316 SS/A276	C36000/B16
11	Trunnion Bearing	PEEK	
12	Stem Back-up Ring	PEEK	
13	Stem Packing	PTFE or Fluorocarbon FKM or Neoprene or Buna N	
14	Stem Washer	316 SS/A276	
15	Stem	316 SS/A276	
16	Stem Bearing	PTFE/D1710	
17	Set Screw	Stainless steel	
	Lubricants	Fluorinated-based and silicone-based	

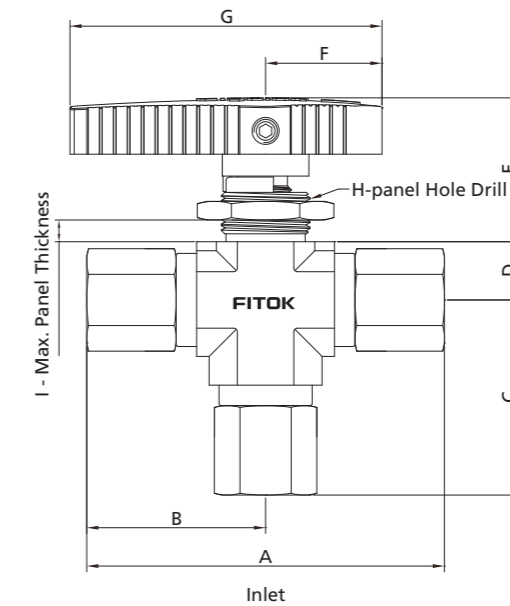
Dimensions

Straight Valves



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)											
	Connection 1	Connection 2			A	B	C	D	E	F	G	H	I			
BV□□-FL1-01	1/16" FITOK	1/16" FITOK	0.05 (1.3)	0.06	2.60 (66.0)	1.30 (33.0)										
BV□□-FL2-02	1/8" FITOK	1/8" FITOK	0.09 (2.4)	0.21	2.72 (69.0)	1.36 (34.5)										
BV□□-ML3-02	3 mm FITOK	3 mm FITOK			2.74 (69.6)	1.37 (34.8)										
BV□□-FRT2-04	1/8 Female BSPT	1/8 Female BSPT	0.17 (4.2)	0.93	2.14 (54.4)	1.07 (27.2)	0.36 (9.2)	0.33 (8.5)	0.94 (23.9)	0.79 (20.0)	1.97 (50.0)	0.58 (14.7)	0.18 (4.6)			
BV□□-FRP2-04	1/8 Female BSPP	1/8 Female BSPP														
BV□□-FNS2-04	1/8 Female NPT	1/8 Female NPT														
BV□□-RT2-04	1/8 Male BSPT	1/8 Male BSPT														
BV□□-BP2-04	1/8 Male BSPP	1/8 Male BSPP														
BV□□-NS2-04	1/8 Male NPT	1/8 Male NPT														
BV□□-RT4-04	1/4 Male BSPT	1/4 Male BSPT														
BV□□-BP4-04	1/4 Male BSPP	1/4 Male BSPP														
BV□□-NS4-04	1/4 Male NPT	1/4 Male NPT	2.70 (68.6)	1.35 (34.3)												
BV□□-FL4-05	1/4" FITOK	1/4" FITOK	0.19 (4.7)	1.04	3.48 (88.4)	1.74 (44.2)										
BV□□-ML6-05	6 mm FITOK	6 mm FITOK			3.50 (89.0)	1.75 (44.5)										
BV□□-FL6-06	3/8" FITOK	3/8" FITOK	0.25 (6.4)	2.34	3.60 (91.4)	1.80 (45.7)	0.48 (12.2)	0.48 (12.2)	1.24 (31.5)	0.59 (25.0)	2.64 (67.0)	0.77 (19.6)	0.25 (6.4)			
BV□□-ML8-06	8 mm FITOK	8 mm FITOK														
BV□□-ML10-06	10 mm FITOK	10 mm FITOK														
BV□□-FRT4-06	1/4 Female BSPT	1/4 Female BSPT														
BV□□-FRP4-06	1/4 Female BSPP	1/4 Female BSPP														
BV□□-FNS4-06	1/4 Female NPT	1/4 Female NPT														
BV□□-RT4-06	1/4 Male BSPT	1/4 Male BSPT														
BV□□-BP4-06	1/4 Male BSPP	1/4 Male BSPP														
BV□□-NS4-06	1/4 Male NPT	1/4 Male NPT	3.24 (82.2)	1.62 (41.1)												
BV□□-RT6-06	3/8 Male BSPT	3/8 Male BSPT	0.41 (10.3)	6.42	4.68 (118.8)	2.34 (59.4)	0.75 (19.0)	0.71 (18.0)	1.54 (39.0)	1.42 (36.0)	3.78 (96.0)	0.90 (22.9)	0.38 (9.7)			
BV□□-BP6-06	3/8 Male BSPP	3/8 Male BSPP														
BV□□-NS6-06	3/8 Male NPT	3/8 Male NPT														
BV□□-FL8-10	1/2" FITOK	1/2" FITOK														
BV□□-FL12-10	3/4" FITOK	3/4" FITOK														
BV□□-ML12-10	12 mm FITOK	12 mm FITOK														
BV□□-ML14-10	14 mm FITOK	14 mm FITOK														
BV□□-ML16-10	16 mm FITOK	16 mm FITOK														
BV□□-ML18-10	18 mm FITOK	18 mm FITOK	4.66 (118.4)	2.33 (59.2)												
BV□□-ML20-10	20 mm FITOK	20 mm FITOK	0.41 (10.3)	6.42	4.84 (123.0)	2.42 (61.5)	0.75 (19.0)	0.71 (18.0)	1.54 (39.0)	1.42 (36.0)	3.78 (96.0)	0.90 (22.9)	0.38 (9.7)			
BV□□-ML22-10	22 mm FITOK	22 mm FITOK														
BV□□-FRT6-10	3/8 Female BSPT	3/8 Female BSPT														
BV□□-FRP6-10	3/8 Female BSPP	3/8 Female BSPP														
BV□□-FNS6-10	3/8 Female NPT	3/8 Female NPT														
BV□□-FRT8-10	1/2 Female BSPT	1/2 Female BSPT														
BV□□-FRP8-10	1/2 Female BSPP	1/2 Female BSPP														
BV□□-FNS8-10	1/2 Female NPT	1/2 Female NPT														
BV□□-FRT12-10	3/4 Female BSPT	3/4 Female BSPT	4.30 (109.2)	2.15 (54.6)												
BV□□-FRP12-10	3/4 Female BSPP	3/4 Female BSPP	0.41 (10.3)	6.42	4.50 (114.2)	2.25 (57.1)	0.75 (19.0)	0.71 (18.0)	1.54 (39.0)	1.42 (36.0)	3.78 (96.0)	0.90 (22.9)	0.38 (9.7)			
BV□□-FNS12-10	3/4 Female NPT	3/4 Female NPT														
BV□□-RT8-10	1/2 Male BSPT	1/2 Male BSPT														
BV□□-BP8-10	1/2 Male BSPP	1/2 Male BSPP														
BV□□-NS8-10	1/2 Male NPT	1/2 Male NPT														
BV□□-RT12-10	3/4 Male BSPT	3/4 Male BSPT														
BV□□-BP12-10	3/4 Male BSPP	3/4 Male BSPP														
BV□□-NS12-10	3/4 Male NPT	3/4 Male NPT												4.44 (112.8)	2.22 (56.4)	

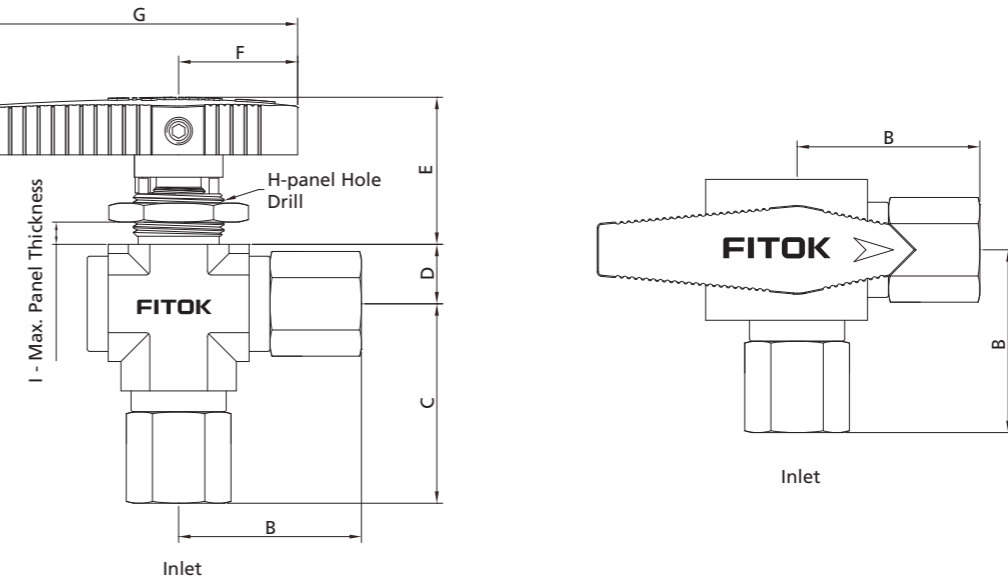
3-way Valves



Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)											
	Connection 1	Connection 2/3			A	B	C	D	E	F	G	H	I			
BV□□-FL1-01-3	1/16" FITOK	1/16" FITOK	0.05 (1.3)	0.06	2.60 (66.0)	1.30 (33.0)	1.35 (34.3)									
BV□□-FL2-02-3	1/8" FITOK	1/8" FITOK	0.09 (2.4)	0.21	2.72 (69.0)	1.36 (34.5)	1.41 (35.8)									
BV□□-ML3-02-3	3 mm FITOK	3 mm FITOK			2.74 (69.6)	1.37 (34.8)	1.42 (36.1)									
BV□□-FRT2-04-3	1/8 Female BSPT	1/8 Female BSPT	0.12 (3.0)	0.28	2.14 (54.4)	1.07 (27.2)	1.12 (28.5)	0.33 (8.5)	0.94 (23.9)	0.79 (20.0)	1.97 (50.0)	0.58 (14.7)	0.18 (4.6)			
BV□□-FRP2-04-3	1/8 Female BSPP	1/8 Female BSPP														
BV□□-FNS2-04-3	1/8 Female NPT	1/8 Female NPT														
BV□□-RT2-04-3	1/8 Male BSPT	1/8 Male BSPT														
BV□□-BP2-04-3	1/8 Male BSPP	1/8 Male BSPP														
BV□□-NS2-04-3	1/8 Male NPT	1/8 Male NPT														
BV□□-RT4-04-3	1/4 Male BSPT	1/4 Male BSPT														
BV□□-BP4-04-3	1/4 Male BSPP	1/4 Male BSPP														
BV□□-NS4-04-3	1/4 Male NPT	1/4 Male NPT	2.36 (60.0)	1.18 (30.0)	1.23 (31.3)											
BV□□-RT4-06-3	1/4 Male BSPT	1/4 Male BSPT	0.19 (4.7)	0.70	3.48 (88.4)	1.74 (44.2)	1.88 (47.7)	0.48 (12.2)	1.24 (31.5)	0.59 (25.0)	2.64 (67.0)	0.77 (19.6)	0.25 (6.4)			
BV□□-FL4-05-3	1/4" FITOK	1/4" FITOK														
BV□□-ML6-05-3	6 mm FITOK	6 mm FITOK														
BV□□-FL6-06-3	3/8" FITOK	3/8" FITOK														
BV□□-ML8-06-3	8 mm FITOK	8 mm FITOK														
BV□□-ML10-06-3	10 mm FITOK	10 mm FITOK														
BV□□-FRT4-06-3	1/4 Female BSPT	1/4 Female BSPT														
BV□□-FRP4-06-3	1/4 Female BSPP	1/4 Female BSPP														
BV□□-FNS4-06-3	1/4 Female NPT	1/4 Female NPT	3.02 (76.8)	1.51 (38.4)	1.65 (41.9)											
BV□□-RT4-06-3	1/4 Male BSPT	1/4 Male BSPT	0.19 (4.7)	0.70	3.24 (82.2)	1.62 (41.1)	1.76 (44.6)	0.48 (12.2)	1.24 (31.5)	0.59 (25.0)	2.64 (67.0)	0.77 (19.6)	0.25 (6.4)			
BV□□-BP4-06-3	1/4 Male BSPP	1/4 Male BSPP														
BV□□-NS4-06-3	1/4 Male NPT	1/4 Male NPT														
BV□□-RT6-06-3	3/8 Male BSPT	3/8 Male BSPT														
BV□□-BP6-06-3	3/8 Male BSPP	3/8 Male BSPP														
BV□□-NS6-06-3	3/8 Male NPT	3/8 Male NPT														

Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)											
	Connection 1	Connection 2/3			B	C	D	E	F	G	H	I				
BV□□-FL8-10-3	1/2" FITOK	1/2" FITOK	0.37 (9.5)	3.48	2.34 (59.4)	2.68 (68.1)										
BV□□-FL12-10-3	3/4" FITOK	3/4" FITOK														
BV□□-ML12-10-3	12 mm FITOK	12 mm FITOK														
BV□□-ML14-10-3	14 mm FITOK	14 mm FITOK														
BV□□-ML16-10-3	16 mm FITOK	16 mm FITOK														
BV□□-ML18-10-3	18 mm FITOK	18 mm FITOK														
BV□□-ML20-10-3	20 mm FITOK	20 mm FITOK														
BV□□-ML22-10-3	22 mm FITOK	22 mm FITOK														
BV□□-FRT6-10-3	3/8 Female BSPT	3/8 Female BSPT														
BV□□-FRP6-10-3	3/8 Female BSPP	3/8 Female BSPP														
BV□□-FNS6-10-3	3/8 Female NPT	3/8 Female NPT														
BV□□-FRT8-10-3	1/2 Female BSPT	1/2 Female BSPT														
BV□□-FRP8-10-3	1/2 Female BSPP	1/2 Female BSPP														
BV□□-FNS8-10-3	1/2 Female NPT	1/2 Female NPT														
BV□□-FRT12-10-3	3/4 Female BSPT	3/4 Female BSPT														
BV□□-FRP12-10-3	3/4 Female BSPP	3/4 Female BSPP														
BV□□-FNS12-10-3	3/4 Female NPT	3/4 Female NPT														
BV□□-RT8-10-3	1/2 Male BSPT	1/2 Male BSPT														
BV□□-BP8-10-3	1/2 Male BSPP	1/2 Male BSPP														
BV□□-NS8-10-3	1/2 Male NPT	1/2 Male NPT														
BV□□-RT12-10-3	3/4 Male BSPT	3/4 Male BSPT														
BV□□-BP12-10-3	3/4 Male BSPP	3/4 Male BSPP														
BV□□-NS12-10-3	3/4 Male NPT	3/4 Male NPT														

Angle Pattern Valves



Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)										
	Connection 1	Connection 2/3			B	C	D	E	F	G	H	I			
BV□□-FL1-01-A	1/16" FITOK	1/16" FITOK	0.05 (1.3)	0.06	1.30 (33.0)	1.35 (34.3)									
BV□□-FL2-02-A	1/8" FITOK	1/8" FITOK	0.09 (2.4)	0.21	1.36 (34.5)	1.41 (35.8)									
BV□□-ML3-02-A	3 mm FITOK	3 mm FITOK			1.37 (34.8)	1.42 (36.1)									
BV□□-FRT2-04-A	1/8 Female BSPT	1/8 Female BSPT	0.12 (3.0)	0.28	1.07 (27.2)	1.12 (28.5)									
BV□□-FRP2-04-A	1/8 Female BSPP	1/8 Female BSPP													
BV□□-FNS2-04-A	1/8 Female NPT	1/8 Female NPT													
BV□□-RT2-04-A	1/8 Male BSPT	1/8 Male BSPT													
BV□□-BP2-04-A	1/8 Male BSPP	1/8 Male BSPP													
BV□□-NS2-04-A	1/8 Male NPT	1/8 Male NPT													
BV□□-RT4-04-A	1/4 Male BSPT	1/4 Male BSPT													
BV□□-BP4-04-A	1/4 Male BSPP	1/4 Male BSPP													
BV□□-NS4-04-A	1/4 Male NPT	1/4 Male NPT													
BV□□-FL4-05-A	1/4" FITOK	1/4" FITOK			0.19 (4.7)	0.70	1.74 (44.2)	1.88 (47.7)							
BV□□-ML6-05-A	6 mm FITOK	6 mm FITOK													
BV□□-FL6-06-A	3/8" FITOK	3/8" FITOK													
BV□□-ML8-06-A	8 mm FITOK	8 mm FITOK													
BV□□-ML10-06-A	10 mm FITOK	10 mm FITOK													
BV□□-FRT4-06-A	1/4 Female BSPT	1/4 Female BSPT													
BV□□-FRP4-06-A	1/4 Female BSPP	1/4 Female BSPP													
BV□□-FNS4-06-A	1/4 Female NPT	1/4 Female NPT													
BV□□-RT4-06-A	1/4 Male BSPT	1/4 Male BSPT													
Bv□□-BP4-06-A	1/4 Male BSPP	1/4 Male BSPP													
BV□□-NS4-06-A	1/4 Male NPT	1/4 Male NPT													
BV□□-RT6-06-A	3/8 Male BSPT	3/8 Male BSPT													
BV□□-BP6-06-A	3/8 Male BSPP	3/8 Male BSPP													
BV□□-NS6-06-A	3/8 Male NPT	3/8 Male NPT													

Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)													
	Connection 1	Connection 2/3			A	B	C	D	E	F	G	H	I					
BV□□-FL8-10-A	1/2" FITOK	1/2" FITOK	0.37 (9.5)	3.48	4.68 (118.8)	2.34 (59.4)	2.68 (68.1)											
BV□□-FL12-10-A	3/4" FITOK	3/4" FITOK																
BV□□-ML12-10-A	12 mm FITOK	12 mm FITOK																
BV□□-ML14-10-A	14 mm FITOK	14 mm FITOK																
BV□□-ML16-10-A	16 mm FITOK	16 mm FITOK																
BV□□-ML18-10-A	18 mm FITOK	18 mm FITOK																
BV□□-ML20-10-A	20 mm FITOK	20 mm FITOK																
BV□□-ML22-10-A	22 mm FITOK	22 mm FITOK																
BV□□-FRT6-10-A	3/8 Female BSPT	3/8 Female BSPT																
BV□□-FRP6-10-A	3/8 Female BSPP	3/8 Female BSPP																
BV□□-FNS6-10-A	3/8 Female NPT	3/8 Female NPT																
BV□□-FRT8-10-A	1/2 Female BSPT	1/2 Female BSPT									0.71 (18.0)	1.54 (39.0)	1.42 (36.0)	3.78 (96.0)	0.90 (22.9)	0.38 (9.7)		
BV□□-FRP8-10-A	1/2 Female BSPP	1/2 Female BSPP																
BV□□-FNS8-10-A	1/2 Female NPT	1/2 Female NPT																
BV□□-FRT12-10-A	3/4 Female BSPT	3/4 Female BSPT																
BV□□-FRP12-10-A	3/4 Female BSPP	3/4 Female BSPP																
BV□□-FNS12-10-A	3/4 Female NPT	3/4 Female NPT																
BV□□-RT8-10-A	1/2 Male BSPT	1/2 Male BSPT																
BV□□-BP8-10-A	1/2 Male BSPP	1/2 Male BSPP																
BV□□-NS8-10-A	1/2 Male NPT	1/2 Male NPT																
BV□□-RT12-10-A	3/4 Male BSPT	3/4 Male BSPT																
BV□□-BP12-10-A	3/4 Male BSPP	3/4 Male BSPP																
BV□□-NS12-10-A	3/4 Male NPT	3/4 Male NPT																

1. FITOK means FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request.
3. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Cautions:

1. For better quality maintenance, FITOK ball valve should be kept in closed position in warehouse.
2. FITOK ball valves should be operated in a fully open or fully closed position.
3. If the valve system needs to be tested at higher pressure than the maximum working pressure, the valve must be in open position during the test so as not to damage the valve seat.

Part Number Description

