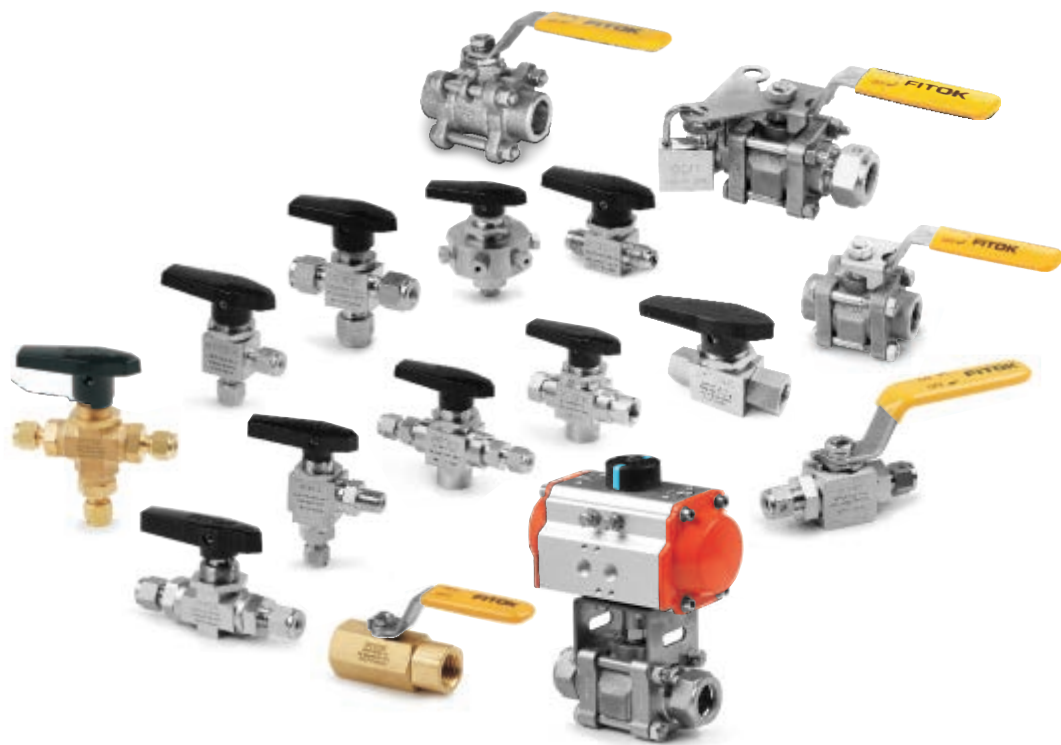


Ball Valves

BF, BFH, BG, BH, BO, BP, BR, BRC,
BV, BK and BU Series

Ball Valves
Plug Valves



Contents

Trunnion Ball Valves

BF and BFH Series



B-04

3-Piece Ball Valves

BG Series



B-11

3-Piece Ball Valves

BH Series



B-16

One-Piece Instrumentation Ball Valves

BO Series



B-24

Bar Stock Ball Valves

BP Series



B-38

Hex Bar Stock Ball Valves

BR and BRC Series



B-45

High Performance Ball Valves

BV Series



B-50

High Temperature Metal-seated Ball Valves

BK Series



B-59

Alternative Fuel Service (AFS) Ball Valves

BU Series



B-63

Important Information about Ball Valves

- ⦿ FITOK ball valves are designed to be used in fully open or fully closed position.
- ⦿ Packing adjustment may be required during the service life of the valve (except for BF, BFH and BU series).
- ⦿ For better quality maintenance, FITOK ball valves should be kept in fully open position in warehouse.
- ⦿ Valves that have not been actuated for a period of time may have a higher initial actuation torque.

One-Piece Instrumentation Ball Valves

BO Series

Features

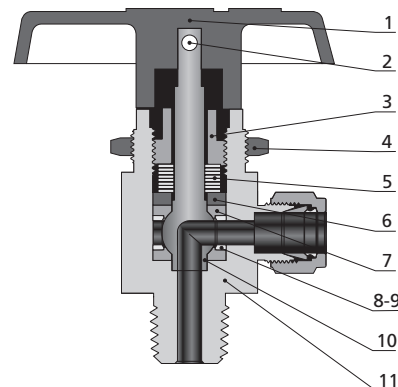
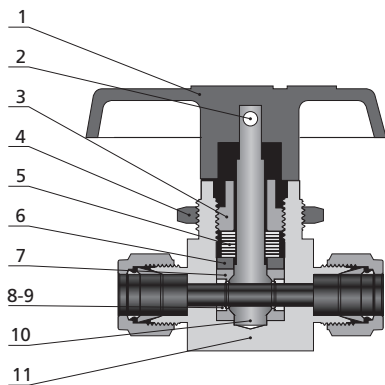
- ⦿ Working pressure up to: 3000 psig (207 bar)
- ⦿ Working temperature: -65°F to 300°F (-54°C to 148°C)
- ⦿ End connections:
1/4 to 1/2 thread
1/16" to 3/4" and 3 mm to 18 mm tube fitting
- ⦿ 2-, 3-, 4-, 5-, 6- and 7-way models for on-off, switching and crossover service available
- ⦿ One-piece body and one-piece ball stem
- ⦿ No dead space
- ⦿ Top-loaded design to allow adjustment with the valve in-line
- ⦿ Thermal cycle performance improved and wear compensated by live-loaded design
- ⦿ Any reasonable connections available
- ⦿ Pneumatic and electric actuator available
- ⦿ Handle color options available
- ⦿ Full operating pressure at any port
- ⦿ Leak-tight performance testing with nitrogen or compressed air for every valve at the rated pressure to meet the requirement of no visible leak
- ⦿ The inlet can be any port except for valves with vent ports



Notes:

1. To prevent seat leakage, packing adjustment may be required periodically during the service life of the valve.
2. A higher initial actuation torque may happen to the valves that have not been actuated for a period of time.
3. Before installation, instrumentation ball valves exposed to dynamic temperature conditions may lose their initial packing load. Stem packing adjustment should be required.

Standard Materials of Construction



Item	Component	Valve Body Material		
		316 SS	Brass	Alloy 400
		Material Grade/ASTM Specification		
1	Handle	Nylon or Aluminium		
2	Set Screw	Zinc-plated carbon steel		
3	Packing Bolt	316 SS/A479	Brass C36000/B16	Alloy 400/B164
4	Panel Nut	316 SS/A479	Brass C36000/B16	316 SS/A479
5	Disc Spring	S17700/A693		
6	Gland	316 SS/A479	316 SS/A479	Alloy 400/B164
7	<i>Packing Seat</i>	<i>PTFE/D1710 or UHMWPE/D4020 or PFA/D3307</i>		
8	<i>Support Ring</i>	316 SS/A479	316 SS/A479	Alloy 400/B164
9	<i>Support Disc</i>			
10	<i>Ball Stem</i>	316 SS/A479	Brass C36000/B16	Alloy 400/B164
11	<i>Body</i>	316 SS/A182	Brass C37700/B283	Alloy 400/B164
<i>Wetted Lubricant</i>		<i>Fluorinated-based and silicone-based</i>		
Non-wetted Lubricant		Molybdenum disulfide with hydrocarbon binder coat		

Note: Wetted components are listed in italics.
For other materials, please contact FITOK Group or our authorized distributors.

On-Off (2-way) Valves

Standard Flow Path

Straight Pattern



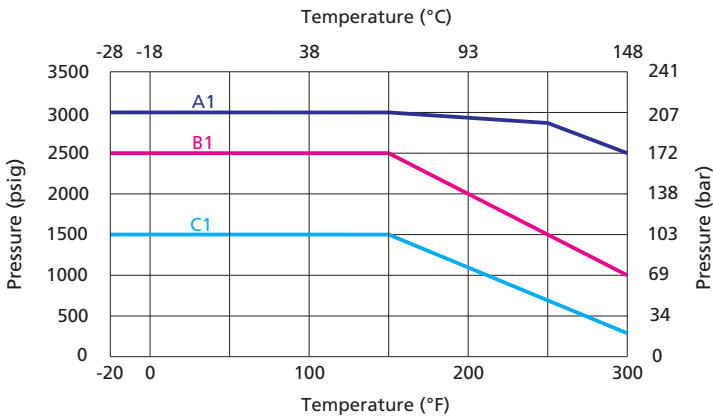
Angle Pattern



Pressure vs. Temperature

Straight Pattern and Angle Pattern

PTFE Packing Seat



A1: Straight Pattern Valves (orifice 0.19")

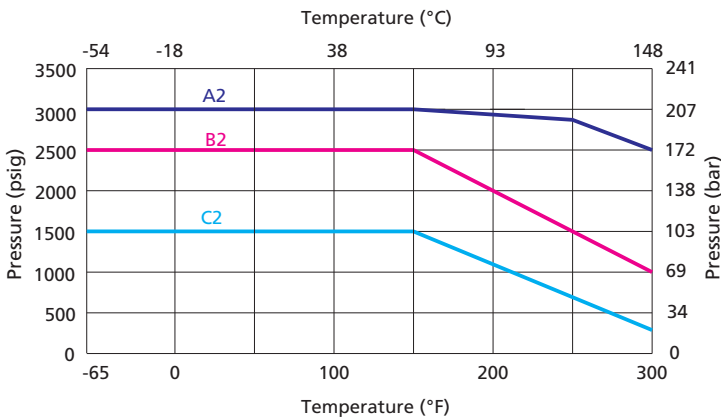
B1: Straight Pattern Valves (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.28" & 0.41")

Angle Pattern Valves (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.19")

C1: Angle Pattern Valves (orifice 0.28" & 0.41")

PFA, UHMWPE Packing Seat

The working temperature of UHMWPE packing seat should not be higher than 150°F (65°C).



A2: Straight Pattern Valves (orifice 0.19")

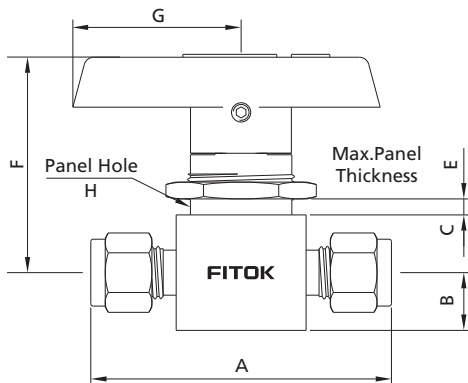
B2: Straight Pattern Valves (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.28" & 0.41")

Angle Pattern Valves (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.19")

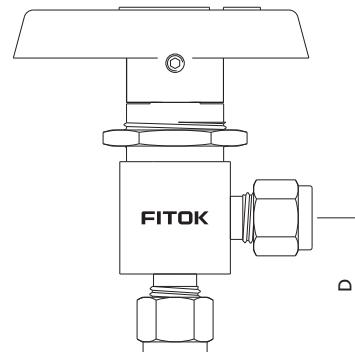
C2: Angle Valves (orifice 0.28" & 0.41")

Dimensions

Straight Pattern



Angle Pattern

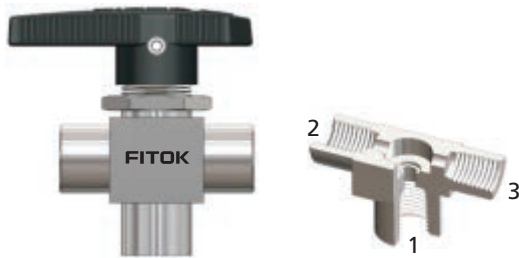


Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimensions, in. (mm)								
			Straight	Angle	A	B	C	D	E	F	G	H	
BO□□-FL1-00	1/16" FITOK	0.05 (1.3)	0.10	—	1.68 (42.7)				—				
BO□□-FL2-02	1/8" FITOK	0.09 (2.4)	0.20	0.15	2.01 (51.1)	0.28 (7.1)	0.34 (8.6)	0.97 (24.6)	0.25 (6.4)	1.43 (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)	0.19 (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)	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)	
BO□□-FL12-10	3/4" FITOK		6.40	3.80									
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)	0.25 (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)	0.19 (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)	
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)	0.25 (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)	0.19 (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)	0.49 (12.5)	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)	0.19 (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□□-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)	0.25 (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)	0.38 (9.7)	0.44 (11.2)		0.19 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
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)	0.25 (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)		0.19 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)	
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

Standard Flow Path

3-way Valves

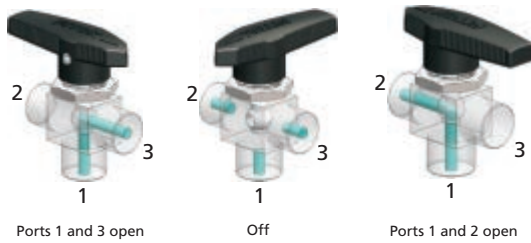


4-way Valves



3L Flow Path

This type of valve can connect one side port to the bottom port or shut off 3 ports. Switch between 0°, 90° and 180° positions with 180° rotation handle.

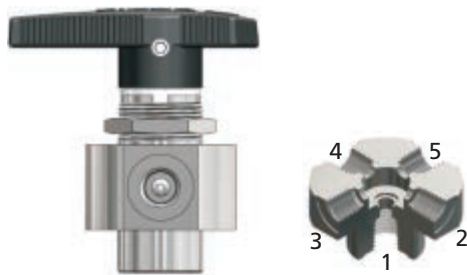


4L Flow Path

This type of valve can connect one side port to the bottom port, and shut off other 2 side ports at the same time. Switching can be done in 120° increments with 360° rotation handle.

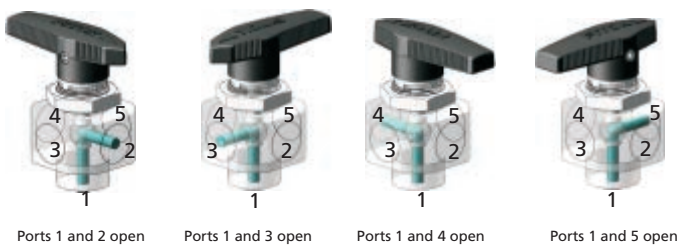


5-way Valves



5L Flow Path

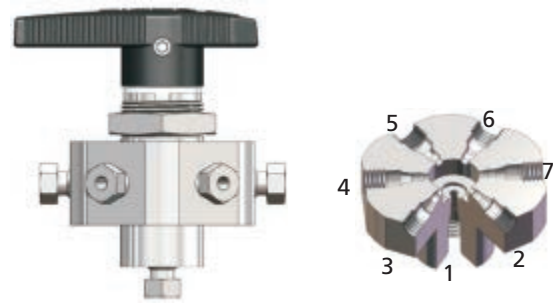
This type of valve can connect one side port to the bottom port, and shut off other 3 side ports at the same time. Switching can be done in 90° increments with 360° rotation handle.



6-way Valves



7-way Valves

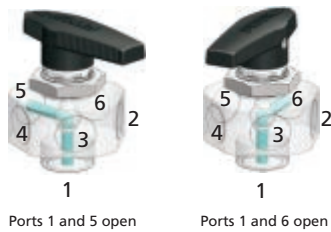


6L Flow Path

This type of valve can connect one side port to the bottom port, and shut off other 4 side ports at the same time. Switching can be done in 72° increments with 360° rotation handle.

7L Flow Path

This type of valve can connect one side port to the bottom port, and shut off other 5 side ports at the same time. Switching can be done in 60° increments with 360° rotation handle.

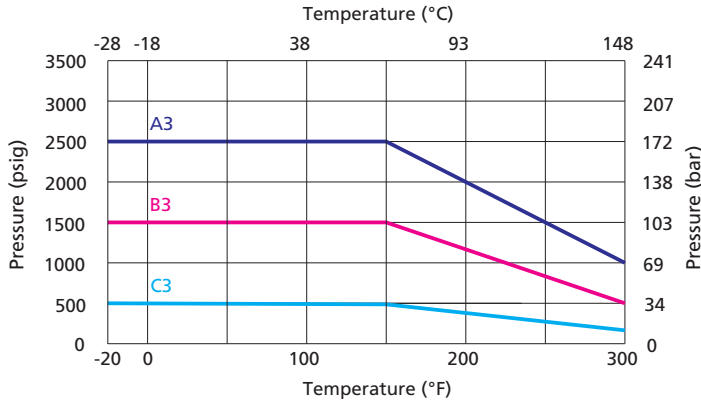


Ball Valves
Plug Valves

Pressure vs. Temperature

Switching Valves

PTFE Packing Seat



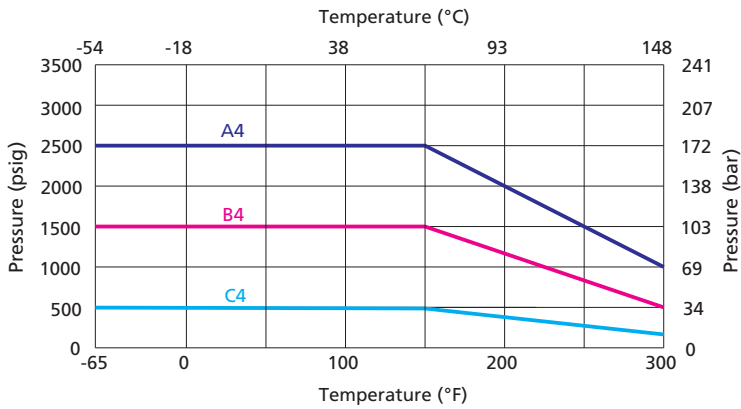
A3: 3-way (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.19")
4-way / 5-way (orifice 0.06")

B3: 3-way (orifice 0.28" & 0.41")
4-way / 5-way (orifice 0.41")

C3: 6-way / 7-way (orifice 0.05" & 0.06")

PFA, UHMWPE Packing Seat

The working temperature of UHMWPE packing seat should not be higher than 150°F (65°C).



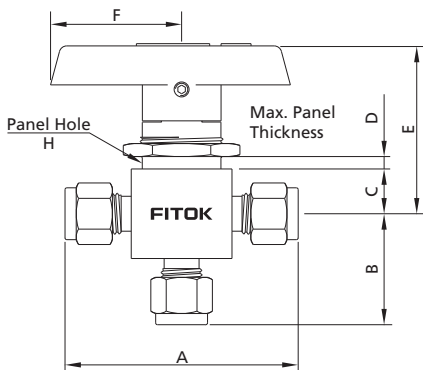
A4: 3-way (orifice 0.05" & 0.06" & 0.09" & 0.13" & 0.19")
4-way / 5-way (orifice 0.06")

B4: 3-way (orifice 0.28" & 0.41")
4-way / 5-way (orifice 0.41")

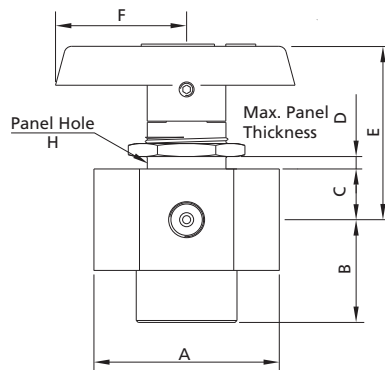
C4: 6-way / 7-way (orifice 0.05" & 0.06")

Dimensions

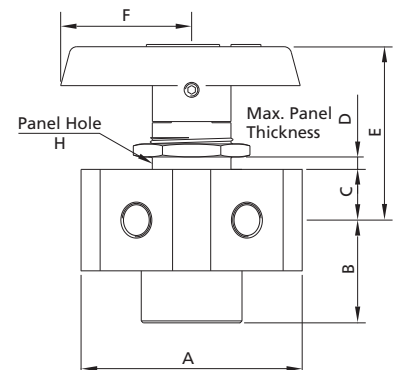
3-way Valves



4-and 5-way Valves



6-and 7-way Valves

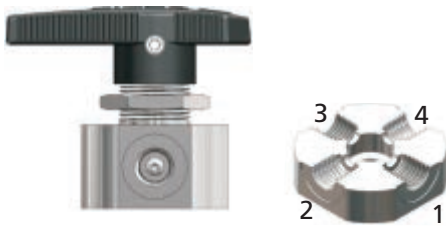


Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimensions, in. (mm)						
				A	B	C	D	E	F	H
3-way Valves										
BO□□-FL1-00-3L	1/16" FITOK	0.05 (1.3)	0.08	1.68 (42.7)	0.81 (20.6)					
BO□□-FL2-02-3L	1/8" FITOK	0.09 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	0.25 (6.4)	1.43 (36.2)	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)	0.19 (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							
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)	0.25 (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		8 mm FITOK	0.19 (4.8)	0.90	2.39 (60.7)	1.17 (29.7)	0.44 (11.2)	0.19 (4.8)	1.64 (41.7)	1.57 (39.9)
BO□□-ML8-05-3L	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)	0.25 (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)	0.19 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-FNS4-07-3L		0.28 (7.1)	1.70	2.5 (63.5)	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)	0.49 (12.5)	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)	0.19 (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	2.5 (63.5)	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 Valves										
BO□□-FL2-01-4L	1/8" Female FITOK Tube Fitting	0.06 (1.6)	0.07	2.36 (60)	1.32 (33.5)	0.44 (11.2)	0.20 (5.2)	1.76 (44.6)	1.57 (39.9)	29/32 (23.1)
BO□□-FL2-01-5L				1.85 (47)	0.88 (22.4)					
BO□□-FNS2-01-4L	1/8 Female NPT	0.06 (1.6)	0.07	1.55 (39.4)						
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)	2.67 (70.2)	2.63 (66.7)	1 1/2 (38.1)
BO□□-FNS8-10-5L										
6 - & 7-way Valves										
BO□□-FL1-00-6L	1/16" Female FITOK Tube Fitting	0.05 (1.3)	0.05	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□□-FL1-00-7L										
BO□□-FL2-01-6L	1/8" Female FITOK Tube Fitting	0.06 (1.6)	0.07	2.26 (57.6)	0.97 (24.7)					
BO□□-FL2-01-7L										

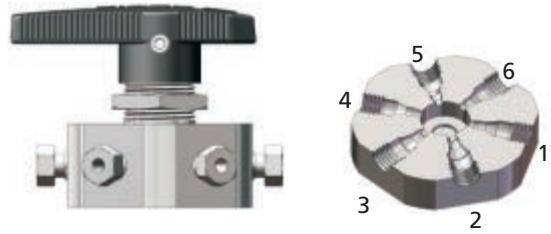
Crossover (4-, 6-Way) Valves

Standard Flow Path

4-way Valves

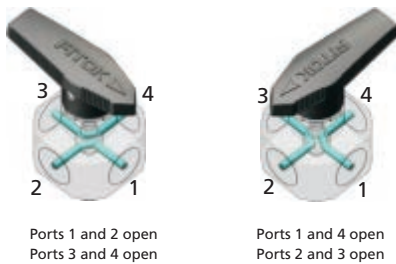


6-way Valves



4C Flow Path

This type of valve can connect two groups of adjacent ports at the same time. Switch between 0° and 90° positions with 90° rotation handle.

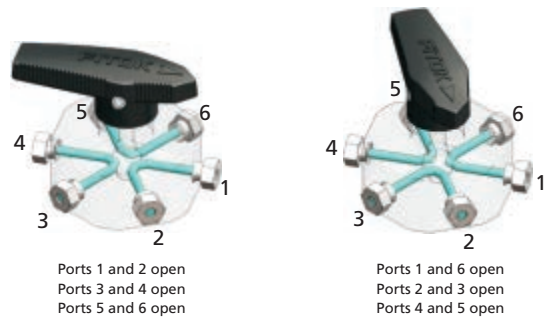


Ports 1 and 2 open
Ports 3 and 4 open

Ports 1 and 4 open
Ports 2 and 3 open

6C Flow Path

This type of valve can connect three groups of adjacent ports at the same time. Switch between 0° and 60° positions with 60° rotation handle.



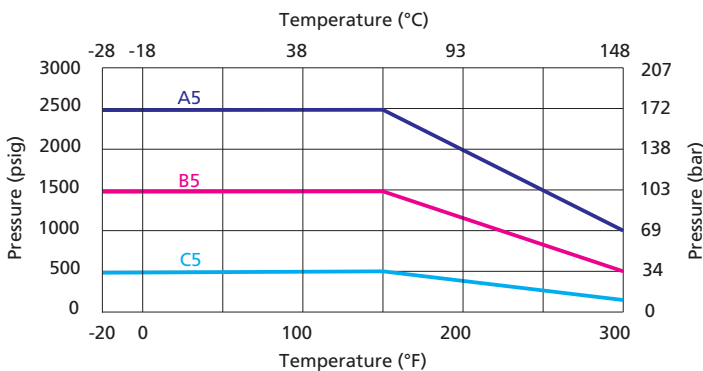
Ports 1 and 2 open
Ports 3 and 4 open
Ports 5 and 6 open

Ports 1 and 6 open
Ports 2 and 3 open
Ports 4 and 5 open

Pressure vs. Temperature

Crossover Valves

PTFE Packing Seat



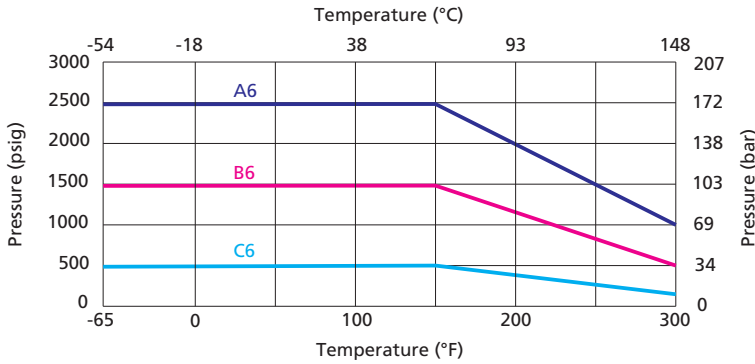
A5: 4-way (orifice 0.06")

B5: 4-way (orifice 0.41")

C5: 6-way (orifice 0.05" & 0.06")

PFA, UHMWPE Packing Seat

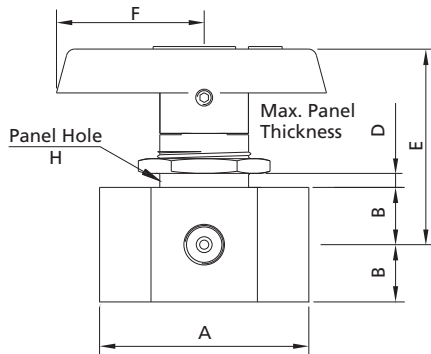
The working temperature of UHMWPE packing seat should not be higher than 150°F (65°C).



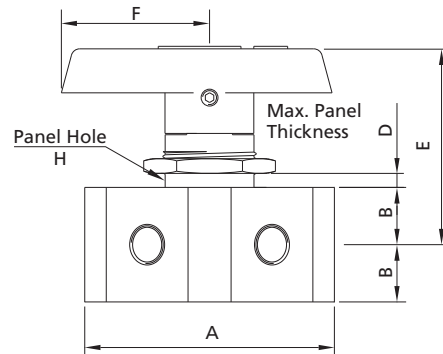
- A6: 4-way (orifice 0.06")
- B6: 6-way (orifice 0.41")
- C6: 6-way (orifice 0.05" & 0.06")

Dimensions

4-way Valves



6-way Valves



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimensions, in. (mm)					
				A	B	D	E	F	H
4-way Valve									
BO□□-FL1-00-4C	1/16" Female FITOK Tube Fitting ^①	0.05 (1.3)	0.06	1.95 (49.6)					
BO□□-FL2-01-4C	1/8" Female FITOK Tube Fitting ^①	0.06 (1.6)	0.08	2.61 (66.3)	0.44 (11.2)	0.19 (4.8)	1.64 (41.7)	1.57 (39.9)	25/32 (19.8)
BO□□-FNS2-01-4C	1/8" Female NPT ^②			1.55 (39.4)					
BO□□-FNS8-07-4C	1/2" Female NPT ^②	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" Female FITOK Tube Fitting	0.05 (1.3)	0.06	1.95 (49.5)	0.44 (11.2)	0.19 (4.8)	1.68 (42.7)	1.53 (38.9)	29/32 (23.1)
BO□□-FL2-01-6C	1/8" Female FITOK Tube Fitting	0.06 (1.6)	0.08	2.59 (65.8)					

Notes: Connection type for ball valves in 4L, 5L, 6L, 7L, 4C, 6C, 4H, 4HL, 4V, 5HL, 5H and 5LV flow path is female FITOK tube fitting, which can not be used directly with standard FT and MT connections. Please contact FITOK Group or authorized distributors for use with standard FT and MT connections.

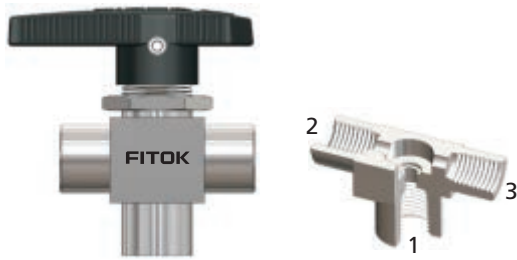
① There might be an across-connection flow during switching. If it is not acceptable to you, please specify a spherical orifice of 0.049 in. Example: BOSS-FL2-01-4C-049.

② There might be an across-connection flow during switching. If it is not acceptable to you, please specify a spherical orifice of 0.093 in. Example: BOSS-FNS8-07-4C-093.

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

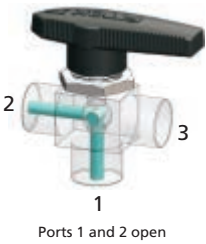
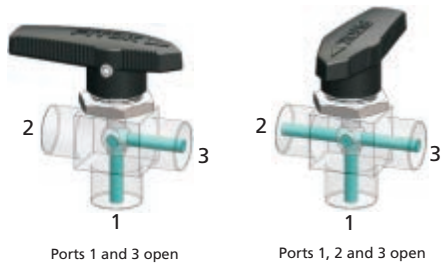
Special Flow Path

3-way Valves



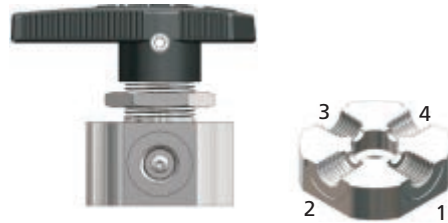
3HL Flow Path

This type of valve can connect one side port to the bottom port, or connect two side ports to the bottom port. Switching can be done in 90° increments with 180° rotation handle.



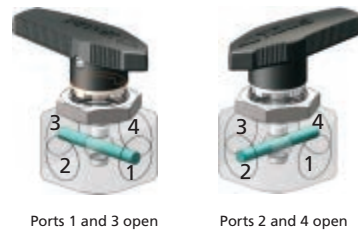
Note: For Temperature VS. Pressure curves and dimensions of 3-way valves, see Switching (3-way) Valves above. For Temperature VS. Pressure curves and dimensions of 4-way valves, see Crossover (4-way) Valves above.

4-way Valves



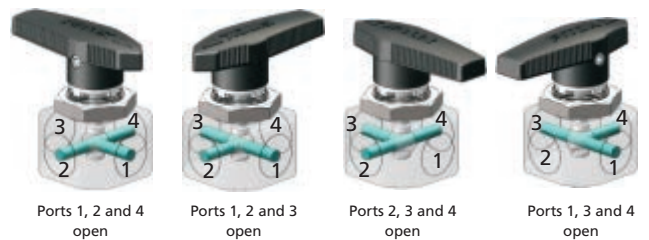
4H Flow Path

This type of valve can connect two opposite ports. Switch between 0° and 90° positions with 90° rotation handle.



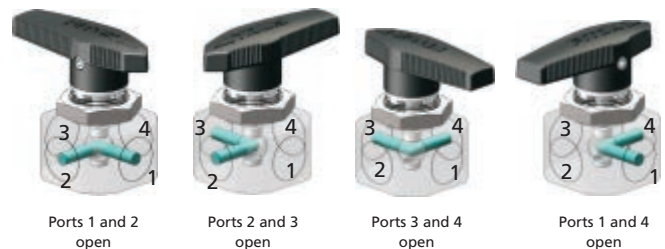
4HL Flow Path

This type of valve can connect three adjacent ports and shut off other ports. Switching can be done in 90° increments with 360° rotation handle.



4V Flow Path

This type of valve can connect two adjacent ports and shut off other ports. Switching can be done in 90° increments with 360° rotation handle.



5-way Valves

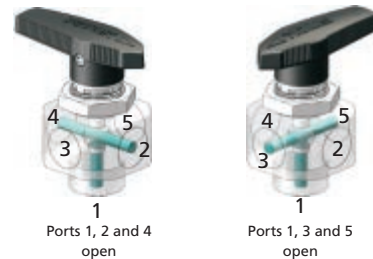
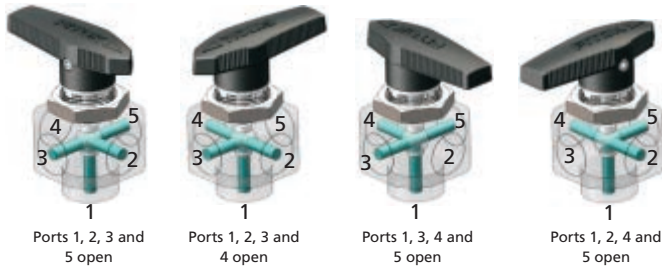


5HL Flow Path

This type of valve can connect three side ports to the bottom port, and shut off the fourth side port at the same time. Switching can be done in 90° increments with 360° rotation handle.

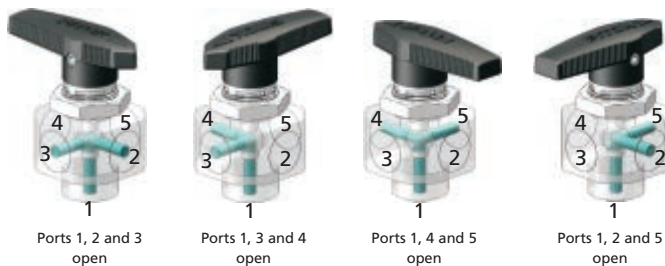
5H Flow Path

This type of valve can connect the bottom port to port 2 and port 4, or connect the bottom port to port 3 and port 5. Switch between 0° and 90° positions with 90° rotation handle.



5LV Flow Path

This type of valve can connect two adjacent ports to the bottom port, and shut off other two side ports at the same time. Switching can be done in 90° increments with 360° rotation handle.



Note: For Temperature vs. Pressure curve and dimensions of 5-way valves, see Switching (5-way) Valves above.

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.

Process Option

Valves with FOG process are available. FOG refers to FC-02 without lubrication.

To order a valve with FOG process, add -FOG suffix to the valve ordering number, for example: BOSS-FL4-05-FOG.

The pressure rating of valves with FOG process: 200 psig (13.8 bar) for orifice 10, 500 psig (34.4 bar) for other orifice.

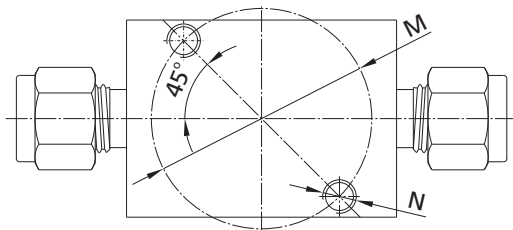
The starting torque of valves with FOG process is greater than that of the lubricated valves.

Bottom Screw Panel Mounting Options

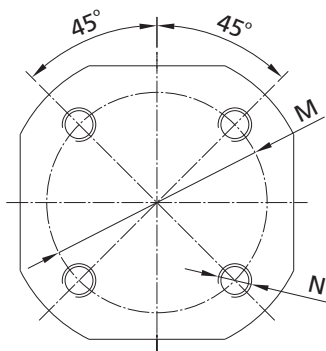
Mounting Dimensions

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

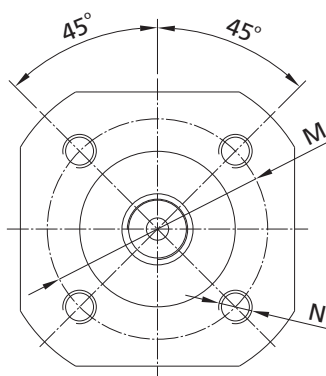
2-way



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	0.05~0.06 (1.3~1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
	0.28 (7.1)	2.00 (50.8)	M5 x 0.8 deep 0.24" (6)
5-way	0.05~0.06 (1.3~1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
	0.41 (10.3)	2.00 (50.8)	M5 x 0.8 deep 0.24" (6)

Locking Device

- ⦿ Locking Device 1 can lock BO series valves with 90° or 180° rotation handle, locking hole diameter is 0.21 in (5.2 mm);
- ⦿ To order a ball valve with locking device 1, add -LH to the valve ordering number.
Example: BOSS-FL6-07-LH/BOSS-FL6-07-3L-LH
- ⦿ Locking Device 2 can lock BO series valves with 90°, 180°, or 360° rotation handle, locking hole diameter is 0.34 in (8.7 mm);
- ⦿ To order a ball valve with locking device 2, add -LK to the valve ordering number.
Example: BOSS-ML6-05-LK/BOSS-ML6-05-5L-LK

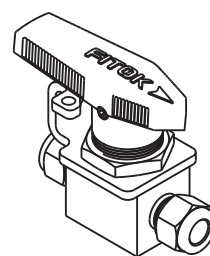


Diagram of Locking Device 1

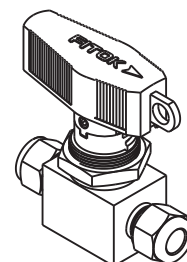


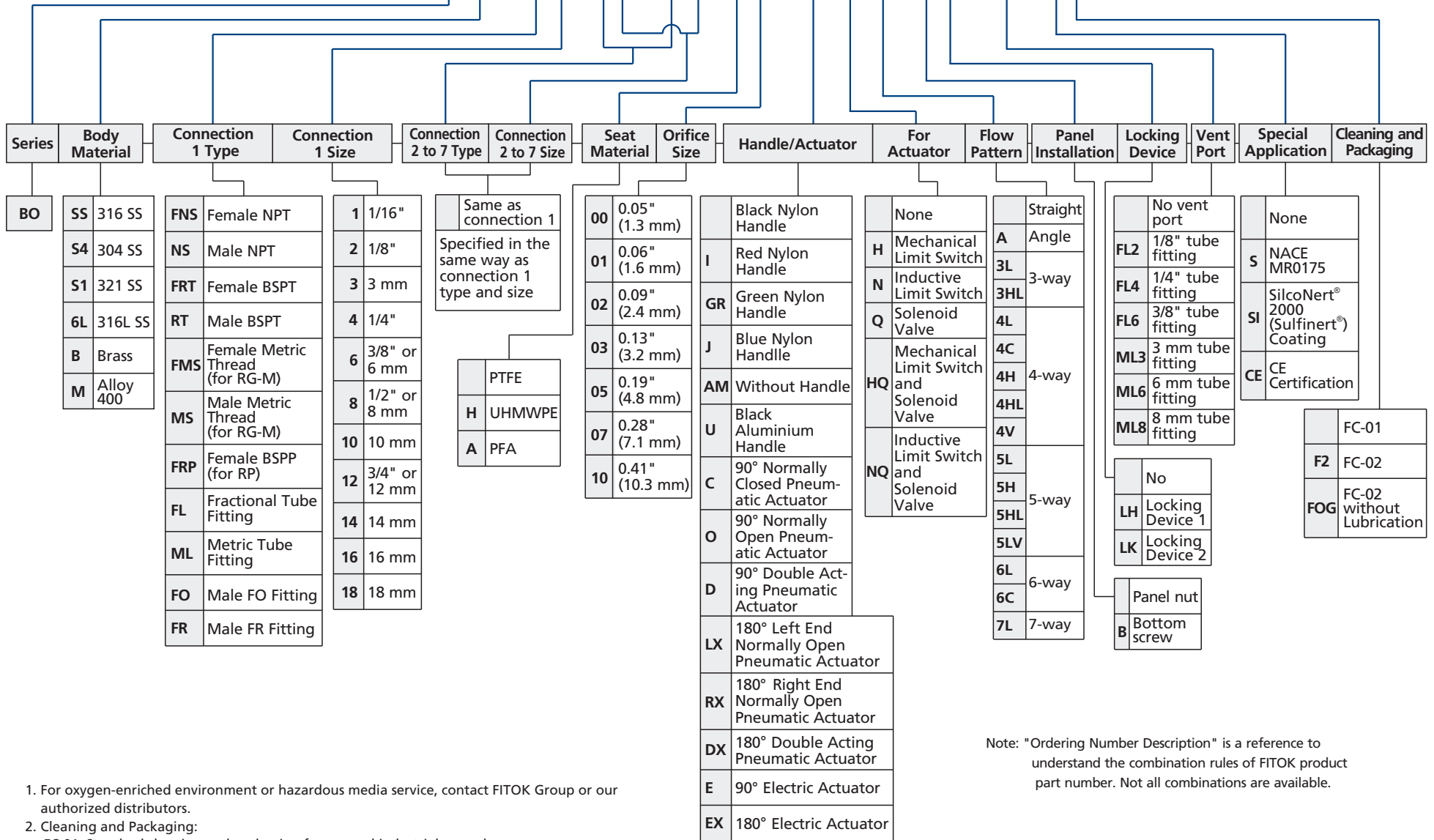
Diagram of Locking Device 2

Ball Valve without Handle

- ⦿ Ball Valve without handle can be directly connected to the FITOK actuator assembly.
- ⦿ To order, please add -AM to the valve ordering number.
Example: BOSS-FL4-05-AM

Ordering Number Description

BOSS - ML6 - FL4 - ML8 - H05 - DXHQ3L - BLH - FL4 - SF2



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

- For oxygen-enriched environment or hazardous media service, contact FITOK Group or our authorized distributors.
- 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 of ASTM G93 Level C.
- For more information about pneumatic actuator ball valves, please refer to the catalog Automatic Control Ball Valves.
- SilcoNert® 2000 (Sulfinert®) Coating: Wetted metal components SilcoNert® 2000 (Sulfinert®) coated.
- CE certification is available. For more information, please contact FITOK group or our authorized distributors.