

Ball Valves

100B, 60B, 60HB, 61B, 30B, 31B,
10B and 11B Series



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Bar Stock Ball Valves

100B Series

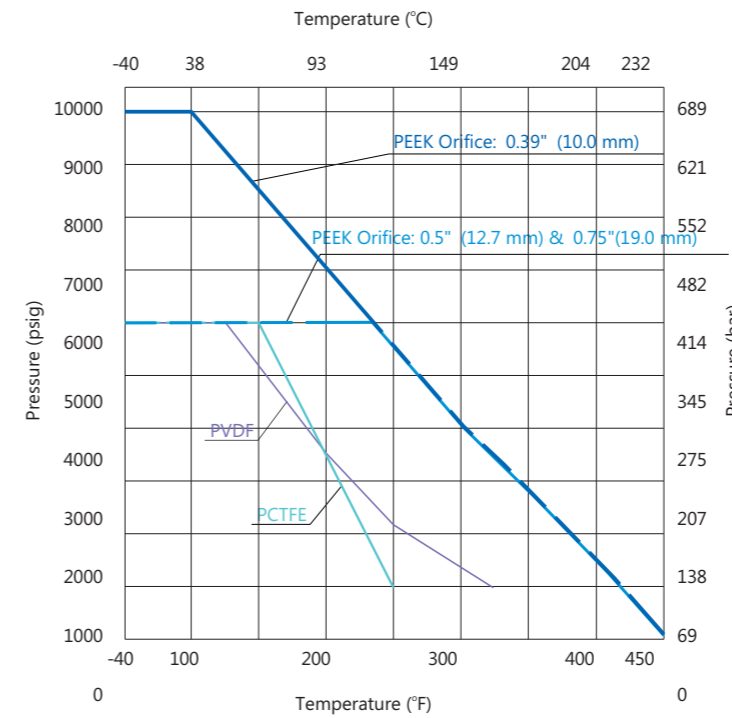
Maximum working pressure: 10000 psig (689 bar)
Working temperature: -40°F to 450°F (-40°C to 232°C)

Features

- ☆ 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



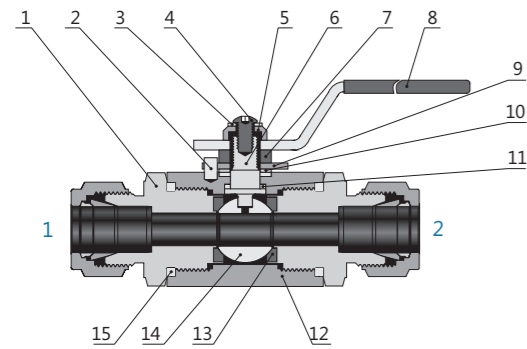
Pressure vs. Temperature



1. Graphs are for 2-way valves only.
2. 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

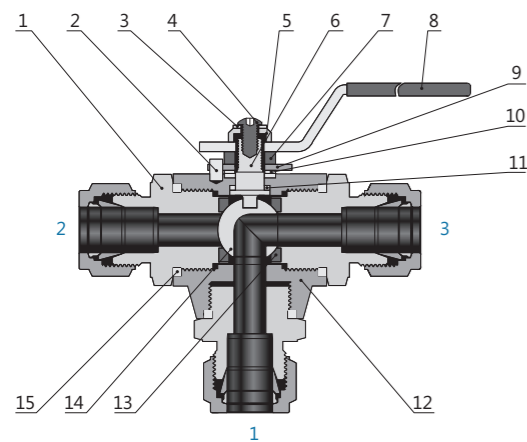
Standard Materials of Construction

2-way Valves



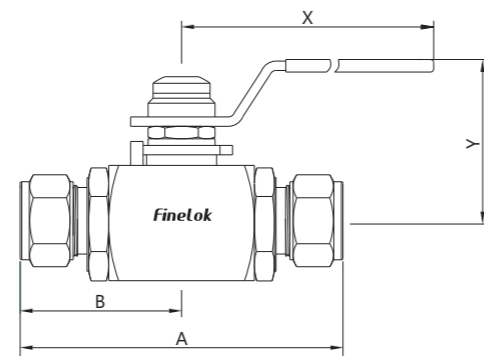
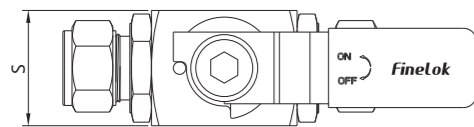
Item	Component	Body Material	
		316 SS	Alloy 400
1	End Connector	316 SS/A276	Alloy 400/B164
2	Stop Pin	Stainless steel	
3	Spring Washer	316 SS/A276	
4	Bolt	Stainless steel	
5	Cover	316 SS/A276	
6	Stem	316 SS/A276	Alloy 400/B164
7	Stem Nut	Stainless steel	
8	Handle	Stainless steel with vinyl cover	
9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

3-way Valves



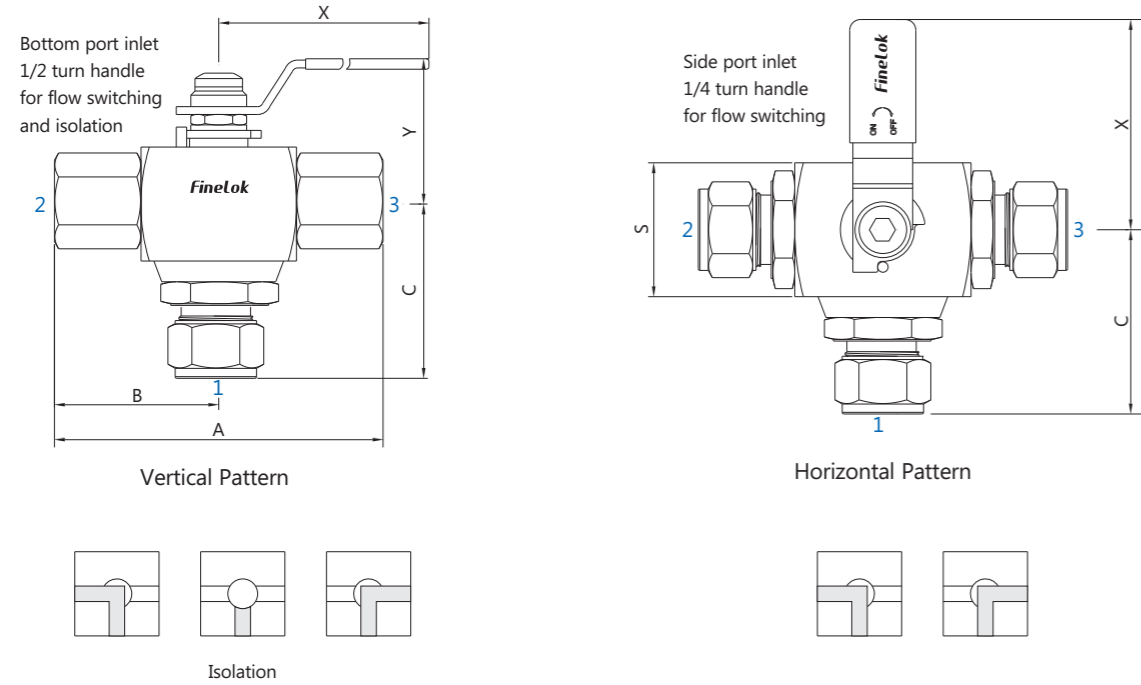
Dimensions

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	
-100B-SM6-10	6 mm FINELOK	6 mm FINELOK	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)	
-100B-SM8-10	8 mm FINELOK	8 mm FINELOK			3.60 (91.6)	1.80 (45.8)				
-100B-SM10-10	10 mm FINELOK	10 mm FINELOK			3.70 (94.0)	1.85 (47.0)				
-100B-SM12-10	12 mm FINELOK	12 mm FINELOK		7.5	3.94 (100.0)	1.97 (50.0)				
-100B-SM14-10	14 mm FINELOK	14 mm FINELOK		1.2	3.60 (91.6)	1.80 (45.8)				
-100B-S4-10	1/4" FINELOK	1/4" FINELOK		3.7	3.72 (94.6)	1.86 (47.3)				
-100B-S6-10	3/8" FINELOK	3/8" FINELOK		7.5	3.92 (99.6)	1.96 (49.8)				
-100B-S8-10	1/2" FINELOK	1/2" FINELOK			2.52 (64.0)	1.26 (32.0)				
-100B-FNT4-10	1/4 Female NPT	1/4 Female NPT			2.80 (71.0)	1.40 (35.5)				
-100B-FNT6-10	3/8 Female NPT	3/8 Female NPT		3.11 (79.0)	1.56 (39.5)					
-100B-FNT8-10	1/2 Female NPT	1/2 Female NPT		3.7	3.36 (85.4)	1.68 (42.7)				
-100B-NT4-10	1/4 Male NPT	1/4 Male NPT		7.5	3.75 (95.2)	1.88 (47.6)				
-100B-NT6-10	3/8 Male NPT	3/8 Male NPT			4.04 (102.6)	2.02 (51.3)				
-100B-NT8-10	1/2 Male NPT	1/2 Male NPT			4.12 (104.6)	2.06 (52.3)				
-100B-SM16-13	16 mm FINELOK	16 mm FINELOK		0.5 (12.7)	10.0	4.43 (112.6)				2.22 (56.3)
-100B-SM18-13	18 mm FINELOK	18 mm FINELOK	4.36 (110.6)			2.18 (55.3)				
-100B-SM20-13	20 mm FINELOK	20 mm FINELOK	3.54 (90.0)			1.77 (45.0)				
-100B-SM22-13	22 mm FINELOK	22 mm FINELOK	4.14 (105.2)			2.07 (52.6)				
-100B-S10-13	5/8" FINELOK	5/8" FINELOK	3.54 (90.0)			1.77 (45.0)				
-100B-S12-13	3/4" FINELOK	3/4" FINELOK	4.14 (105.2)			2.07 (52.6)				
-100B-FNT8-13	1/2 Female NPT	1/2 Female NPT	19.0		4.87 (123.8)	2.43 (61.9)				
-100B-FNT12-13	3/4 Female NPT	3/4 Female NPT			30.0	5.11 (129.8)	2.66 (64.9)			
-100B-NT12-13	3/4 Male NPT	3/4 Male NPT			19.0	4.59 (116.6)	2.29 (58.3)			
-100B-SM20-19	20 mm FINELOK	20 mm FINELOK			30.0	5.11 (129.8)	2.66 (64.9)			
-100B-SM22-19	22 mm FINELOK	22 mm FINELOK		3.54 (90.0)		1.77 (45.0)				
-100B-S12-19	3/4" FINELOK	3/4" FINELOK		4.26 (108.2)		2.13 (54.1)				
-100B-S16-19	1" FINELOK	1" FINELOK		19.0	4.54 (115.2)	2.27 (57.6)				
-100B-FNT12-19	3/4 Female NPT	3/4 Female NPT			30.0	4.91 (124.8)	2.45 (62.4)			
-100B-FNT16-19	1 Female NPT	1 Female NPT								
-100B-NT12-19	3/4 Male NPT	3/4 Male NPT								
-100B-NT16-19	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
-100B-SM6-10-3□	6 mm FINELOK	6 mm FINELOK	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)
-100B-SM8-10-3□	8 mm FINELOK	8 mm FINELOK		3.7	3.60 (91.6)	1.80 (45.8)	2.02 (51.3)			
-100B-SM10-10-3□	10 mm FINELOK	10 mm FINELOK		7.5	3.70 (94.0)	1.85 (47.0)	2.07 (52.5)			
-100B-SM12-10-3□	12 mm FINELOK	12 mm FINELOK		1.2	3.94 (100.0)	1.97 (50.0)	2.18 (55.5)			
-100B-SM14-10-3□	14 mm FINELOK	14 mm FINELOK		3.7	3.60 (91.6)	1.80 (45.8)	2.01 (51.3)			
-100B-S4-10-3□	1/4" FINELOK	1/4" FINELOK		7.5	3.72 (94.6)	1.86 (47.3)	2.16 (54.8)			
-100B-S6-10-3□	3/8" FINELOK	3/8" FINELOK		1.2	3.92 (99.6)	1.96 (49.8)	2.13 (54.0)			
-100B-S8-10-3□	1/2" FINELOK	1/2" FINELOK		3.7	2.52 (64.0)	1.26 (32.0)	1.44 (36.5)			
-100B-FNT4-10-3□	1/4 Female NPT	1/4 Female NPT		7.5	2.80 (71.0)	1.40 (35.5)	1.57 (40.0)			
-100B-FNT6-10-3□	3/8 Female NPT	3/8 Female NPT		3.7	3.11 (79.0)	1.56 (38.5)	1.73 (44.0)			
-100B-FNT8-10-3□	1/2 Female NPT	1/2 Female NPT		7.5	3.36 (85.4)	1.68 (42.7)	1.90 (48.2)			
-100B-NT4-10-3□	1/4 Male NPT	1/4 Male NPT		3.7	3.75 (95.2)	1.88 (47.6)	2.09 (53.1)			
-100B-NT6-10-3□	3/8 Male NPT	3/8 Male NPT		7.5						
-100B-NT8-10-3□	1/2 Male NPT	1/2 Male NPT								

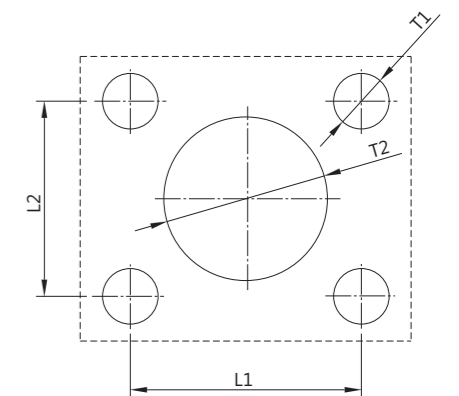
Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)											
	Connection 1	Connection 2/3			A	B	C	X	Y	S						
-100B-SM16-13-3□	16 mm FINELOK	16 mm FINELOK	0.5 (12.7)	10.0	4.04 (102.6)	2.02 (51.3)	2.41 (61.3)	5.71 (145.0)	1.89 (48.0)	1.50 (38.0)						
-100B-SM18-13-3□	18 mm FINELOK	18 mm FINELOK			4.12 (104.6)	2.06 (52.3)	2.45 (62.3)									
-100B-SM20-13-3□	20 mm FINELOK	20 mm FINELOK			4.43 (112.6)	2.22 (56.3)	2.61 (66.3)									
-100B-SM22-13-3□	22 mm FINELOK	22 mm FINELOK			4.36 (110.6)	2.18 (55.3)	2.57 (65.3)									
-100B-S10-13-3□	5/8" FINELOK	5/8" FINELOK			3.54 (90.0)	1.77 (45.0)	1.95 (49.5)									
-100B-S12-13-3□	3/4" FINELOK	3/4" FINELOK			4.14 (105.2)	2.07 (52.6)	2.46 (62.6)									
-100B-FNT8-10-3□	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)	
-100B-FNT12-13-3□	3/4 Female NPT	3/4 Female NPT					30.0				5.11 (129.8)	2.66 (64.9)				3.00 (76.2)
-100B-FNT12-19-3□	3/4 Female NPT	3/4 Female NPT					19.0				4.59 (116.6)	2.29 (58.3)				2.75 (69.8)
-100B-SM20-19-3□	20 mm FINELOK	20 mm FINELOK					30.0				5.11 (129.8)	2.66 (64.9)				2.85 (72.4)
-100B-SM22-19-3□	22 mm FINELOK	22 mm FINELOK	19.0	3.54 (90.0)			1.77 (45.0)	2.22 (56.5)								
-100B-SM25-19-3□	25 mm FINELOK	25 mm FINELOK	30.0	4.26 (108.2)			2.13 (54.1)	2.40 (60.8)								
-100B-S12-19-3□	3/4" FINELOK	3/4" FINELOK	19.0	4.54 (115.2)			2.27 (57.6)	2.72 (69.1)								
-100B-S16-19-3□	1" FINELOK	1" FINELOK	30.0	4.91 (124.8)			2.45 (62.4)	2.90 (73.9)								
-100B-FNT16-19-3□	1 Female NPT	1 Female NPT														
-100B-NT12-19-3□	3/4 Male NPT	3/4 Male NPT														
-100B-NT16-19-3□	1 Male NPT	1 Male NPT														

1. FINELOK means FINELOK double ferrule tube fittings, FS means fractional tube socket weld, MW means metric tube socket weld, FB means fractional tube butt weld, MB 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 FINELOK 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 FINELOK.

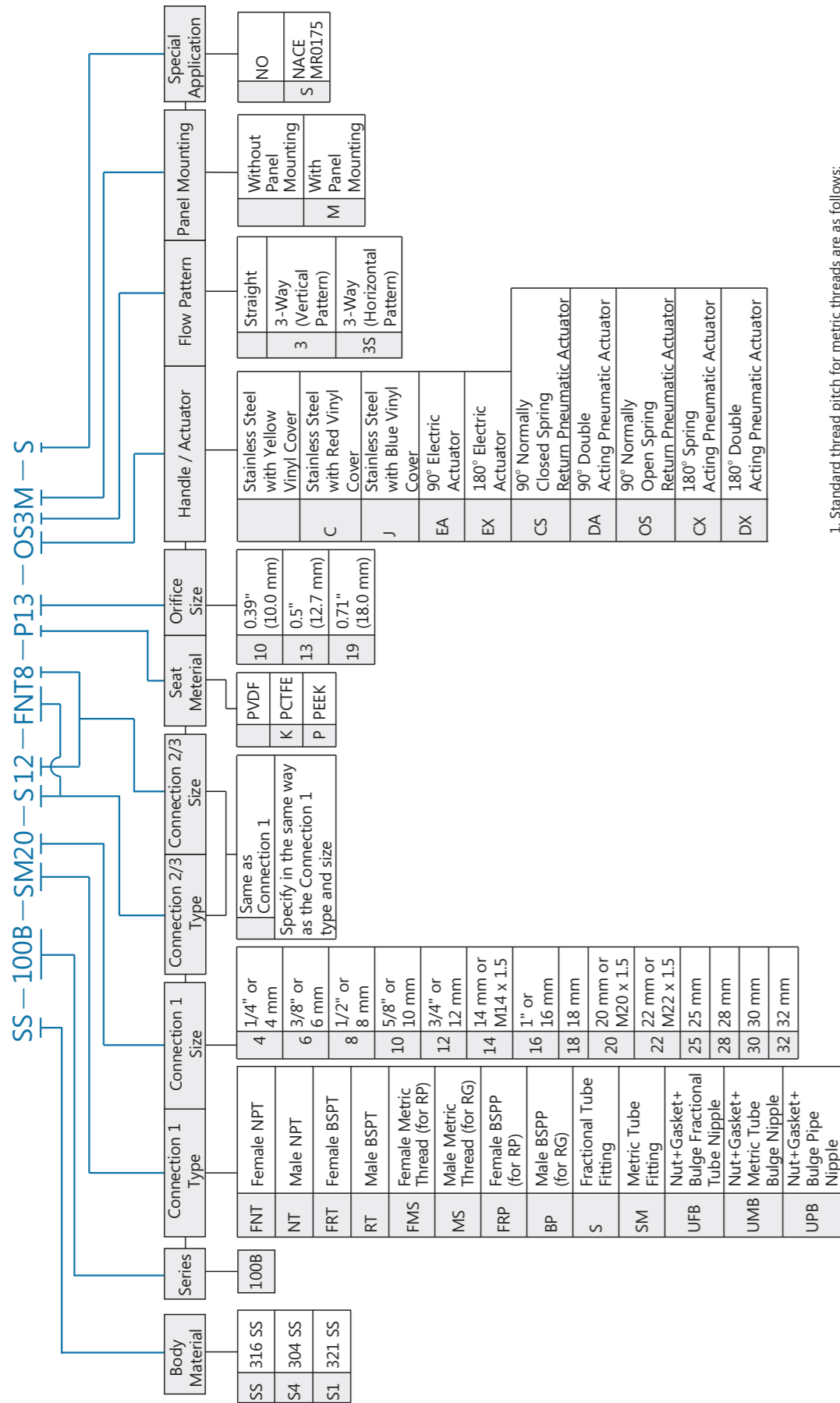
Panel Mounting Options

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)	1.34 (34.0)	1.34 (34.0)	0.20 (5.0)	1.50 (38.0)	
0.75 (19.0)	1.73 (44.0)	1.73 (44.0)	0.20 (5.0)	1.50 (38.0)	



Ordering Information



- 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. For information about pneumatic and electric actuator, please contact the authorized representative or FINELOK.
- For oxygen or virulent medium service, contact the authorized representative or FINELOK.

Trunnion Ball Valves

60B and 60HB Series High Pressure Service

Maximum working pressure: 10000 psig (689 bar)
Working temperature: 0°F to 450°F (-18°C to 232°C)

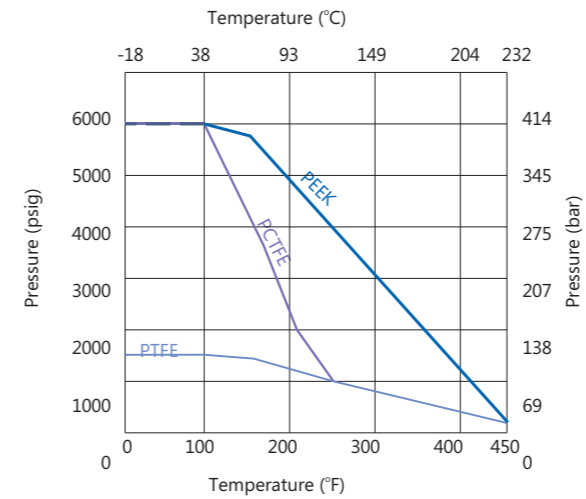
Features

- ☆ Fixed ball with double sealing
- ☆ Automatic compensation of seat sealing
- ☆ Low operating torque
- ☆ Blowout proof stem
- ☆ Handle as indicator of flow direction
- ☆ Positive handle stop
- ☆ Options for handle color
- ☆ Pneumatic or electric actuator available
- ☆ Panel mountable
- ☆ Leak-tight performance testing with nitrogen for every valve at the maximum working pressure, but not higher than 6000 psig

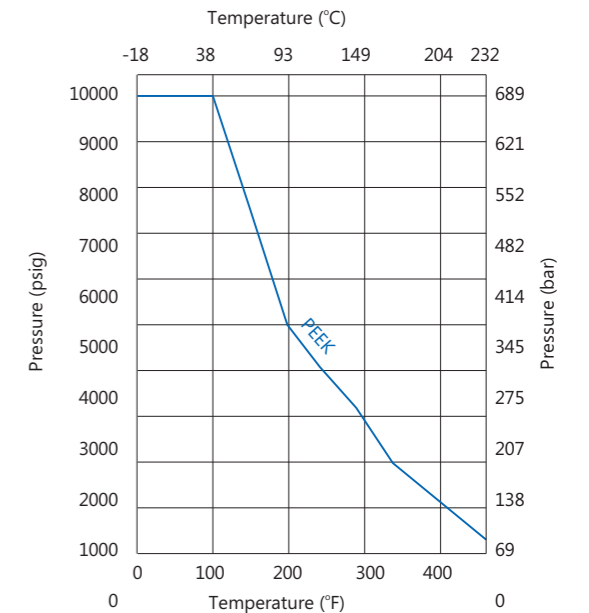


Pressure vs. Temperature

60B Series



60HB Series



- 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

Flow Data at 70°F (20°C)

60B Series 2-way

0.187" (4.8 mm) orifice, 1.2 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std ft ³ /min (std L/min)	Water Flow U.S. gal/min (L/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)

60B Series 3-way

0.187" (4.8 mm) orifice, 0.75 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std ft ³ /min (std L/min)	Water Flow U.S. gal/min (L/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)

60HB Series 2-way

0.187" (4.8 mm) orifice, 1.2 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std ft ³ /min (std L/min)	Water Flow U.S. gal/min (L/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)

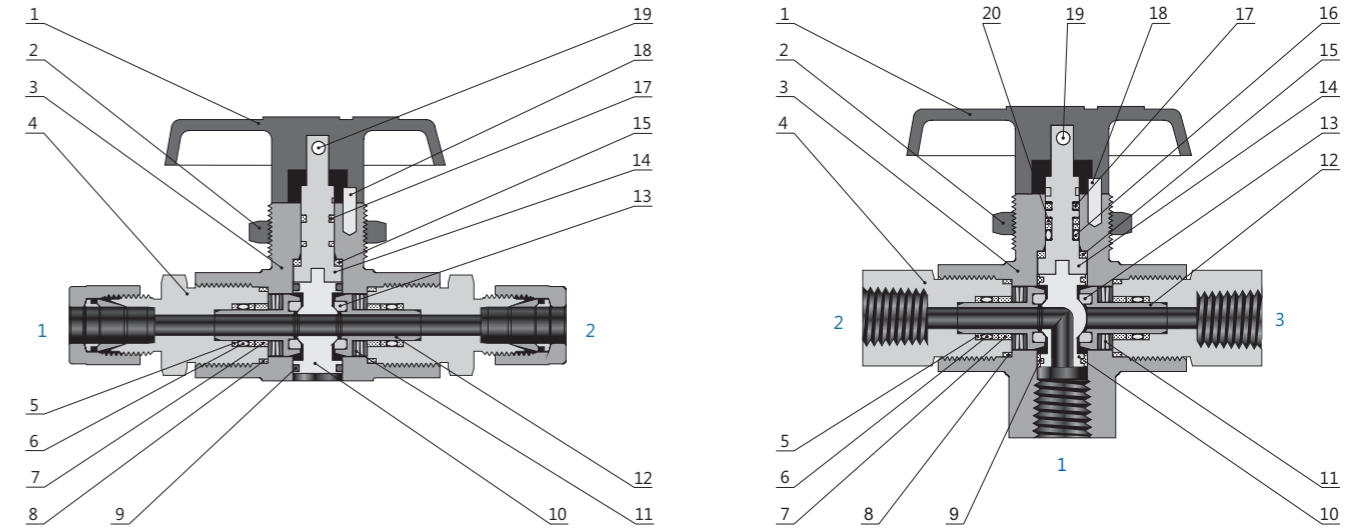
60HB Series 3-way

0.187" (4.8 mm) orifice, 0.75 Cv

Inlet Pressure psig (bar)	Pressure Drop (Δp) psig (bar)	Air Flow std ft ³ /min (std L/min)	Water Flow U.S. gal/min (L/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

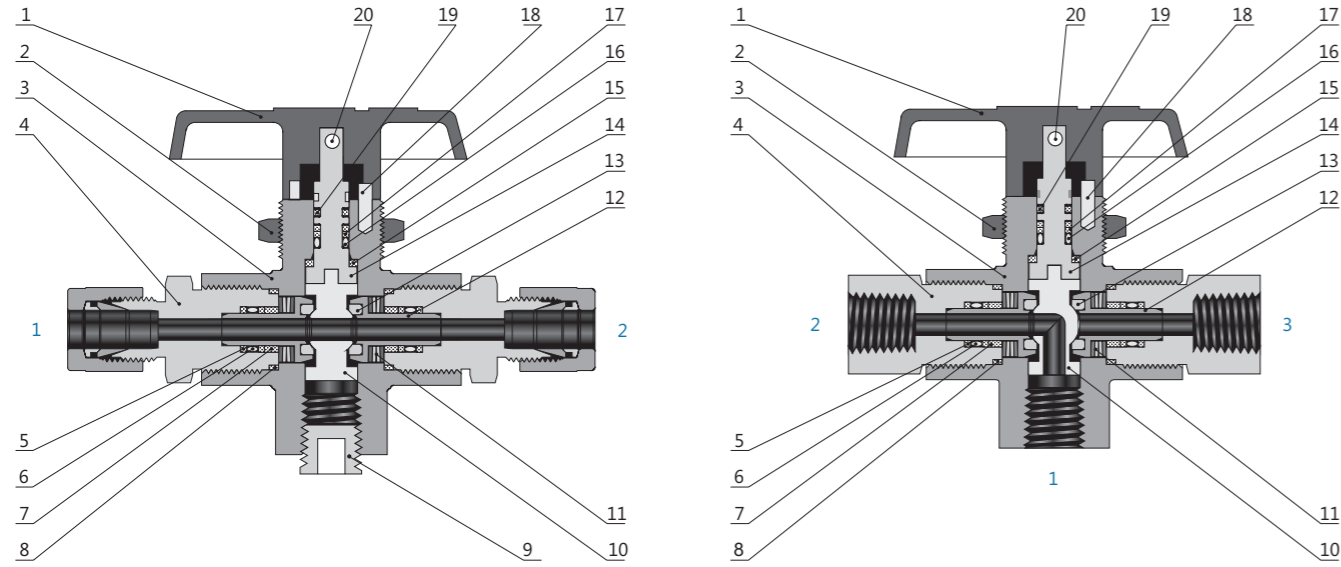
60B Series



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 Guide	Reinforced PTFE			
6	Seat Retainer O-ring	Fluorocarbon FKM			
7	Seat Carrier Guide	316 SS/A276		Alloy R-405/B164	
8	End Connector Seal	PTFE/D1710			
9	Trunnion Bearing	Fluorocarbon FKM	PEEK	Fluorocarbon FKM	PEEK
10	Ball	316 SS/A276	S21800/A276	Alloy R-405/B164	
11	Seat Spring	Alloy X-750/AMS 5542			
12	Seat Retainer	316 SS/A276		Alloy R-405/B164	
13	Seat	PTFE or PEEK or PCTFE			
14	Stem	316 SS/A276		Alloy R-405/B164	
15	Stem Washer	Reinforced PTFE	PEEK	Reinforced PTFE	PEEK
16	Stem O-ring	—	Fluorocarbon FKM	—	Fluorocarbon FKM
17	Primary Stem Backup Ring	PTFE/D1710			
18	Pin	Stainless Steel			
19	Set Screw	Stainless Steel			
20	Secondary Stem Backup Ring	—	PEEK	—	PEEK
Lubricants		Molybdenum and Tungsten disulfide and Fluorinated-based			

- Ball trunnions are PTFE coated in 60B series 2-way valve.
- Other materials are available upon request, refer to the ordering information.

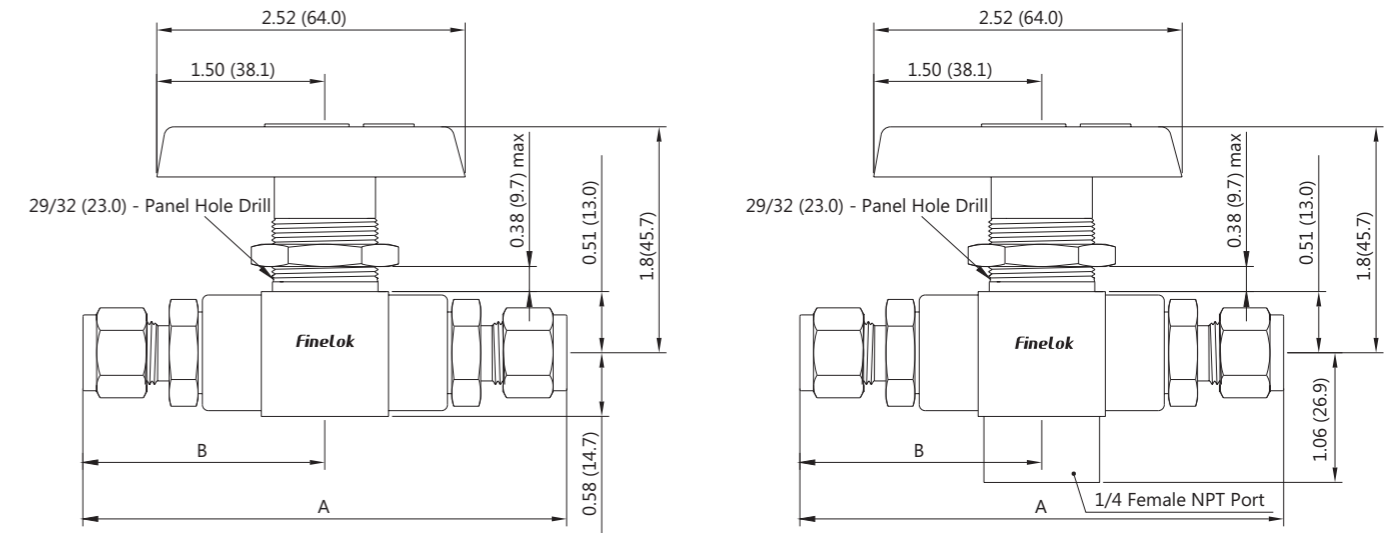
60HB Series



Item	Component	Material Grade/ASTM Specification	
		2-way	3-way
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	Stem Back-up Ring	PTFE/D1710	
18	Pin	Stainless Steel	
19	Stem Backup Ring	PEEK	
20	Set Screw	Stainless Steel	
Lubricants		Molybdenum and Tungsten disulfide and Fluorinated-based	

1. Ball trunnions are Xylan® coated in 60HB series 2-way valve.
2. Other materials are available upon request, refer to the ordering information.

Dimensions



2-way Valve

Basic Ordering Number		Connection Size		Cv	Dimension, in. (mm)	
60B Series	60HB Series	Connection 1	Connection 2		A	B
-60B-FNT2	-60HB-FNT2	1/8 Female NPT	1/8 Female NPT	1.2	2.94 (74.7)	1.47 (37.3)
-60B-FNT4	-60HB-FNT4	1/4 Female NPT	1/4 Female NPT		3.93 (99.8)	1.97 (50.0)
-60B-FNT8	-60HB-FNT8	1/2" Female NPT	1/2" Female NPT		4.25 (108.0)	2.13 (54.1)
-60B-S4	-60HB-S4	1/4" FINELOK	1/4" FINELOK		4.14 (105.2)	2.07 (52.6)
-60B-S6	-60HB-S6	3/8" FINELOK	3/8" FINELOK		4.39 (111.5)	2.19 (55.6)
-60B-S8	-60HB-S8	1/2" FINELOK	1/2" FINELOK		4.60 (116.8)	2.30 (58.4)
-60B-SM6	-60HB-SM6	6 mm FINELOK	6 mm FINELOK		4.14 (105.2)	2.07 (52.6)
-60B-SM8	-60HB-SM8	8 mm FINELOK	8 mm FINELOK		4.15 (105.4)	
-60B-SM10	-60HB-SM10	10 mm FINELOK	10 mm FINELOK		4.41 (112.0)	2.20 (55.9)
-60B-SM12	-60HB-SM12	12 mm FINELOK	12 mm FINELOK		4.60 (116.8)	2.30 (58.4)

3-way Valve

Basic Ordering Number		Connection Size			Cv	Dimension, in. (mm)	
60B Series	60HB Series	Connection 1	Connection 2	Connection 3		A	B
-60B-FNT2-3	-60HB-FNT2-3	1/4 Female NPT	1/8 Female NPT	1/8 Female NPT	0.75	2.94 (74.7)	1.47 (37.3)
-60B-FNT4-3	-60HB-FNT4-3		1/4 Female NPT	1/4 Female NPT		3.93 (99.8)	1.97 (50.0)
-60B-S4-3	-60HB-S4-3		1/4" FINELOK	1/4" FINELOK		4.14 (105.2)	2.07 (52.6)
-60B-S6-3	-60HB-S6-3		3/8" FINELOK	3/8" FINELOK		4.39 (111.5)	2.19 (55.6)
-60B-S8-3	-60HB-S8-3		1/2" FINELOK	1/2" FINELOK		4.60 (116.8)	2.30 (58.4)
-60B-SM6-3	-60HB-SM6-3		6 mm FINELOK	6 mm FINELOK		4.14 (105.2)	2.07 (52.6)
-60B-SM8-3	-60HB-SM8-3		8 mm FINELOK	8 mm FINELOK		4.15 (105.4)	
-60B-SM10-3	-60HB-SM10-3		10 mm FINELOK	10 mm FINELOK		4.41 (112.0)	2.20 (55.9)
-60B-SM12-3	-60HB-SM12-3		12 mm FINELOK	12 mm FINELOK		4.60 (116.8)	2.30 (58.4)

1. FINELOK means FINELOK 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 FINELOK 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 FINELOK.

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.

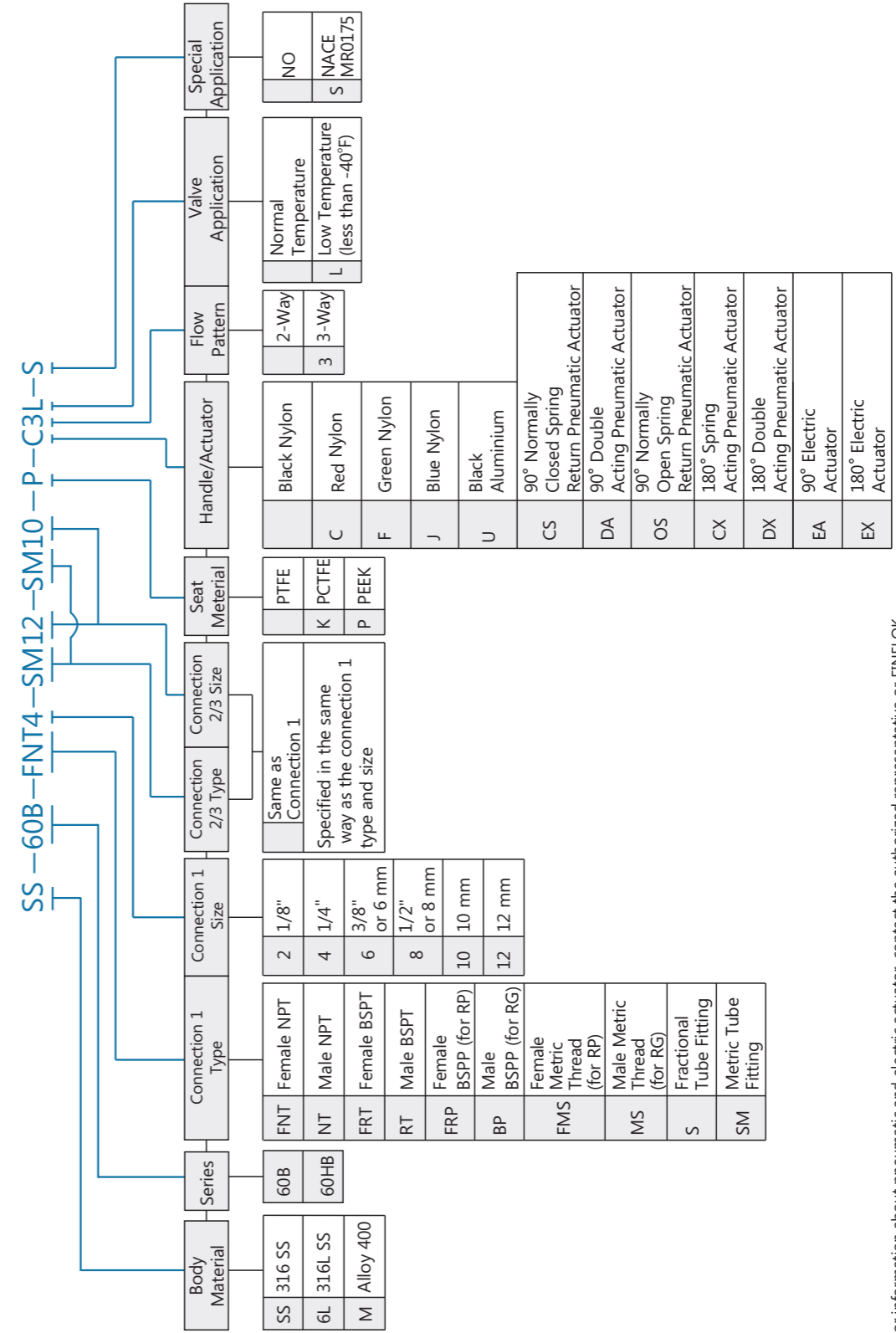
60B Series Low-temperature service Pressure - temperature Ratings

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			

60HB Series Low-temperature service Pressure - temperature Ratings

Material	316 SS				
End Connection	FNT2, FNT4 S4, SM6	ML10	S6 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				

Ordering Information



1. For information about pneumatic and electric actuator, contact the authorized representative or FINELOK.
2. For oxygen or virulent medium service, contact the authorized representative or FINELOK.

High Performance Ball Valves

61B Series

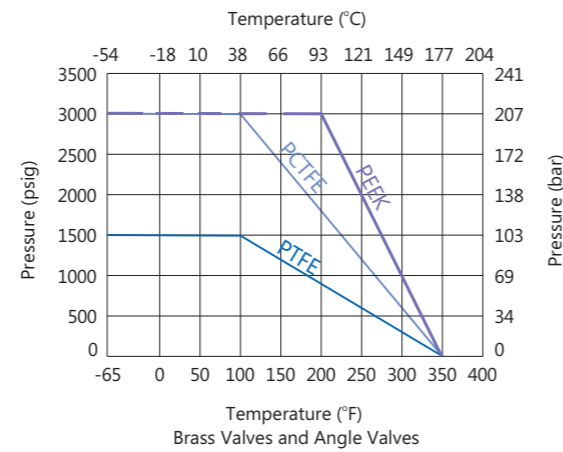
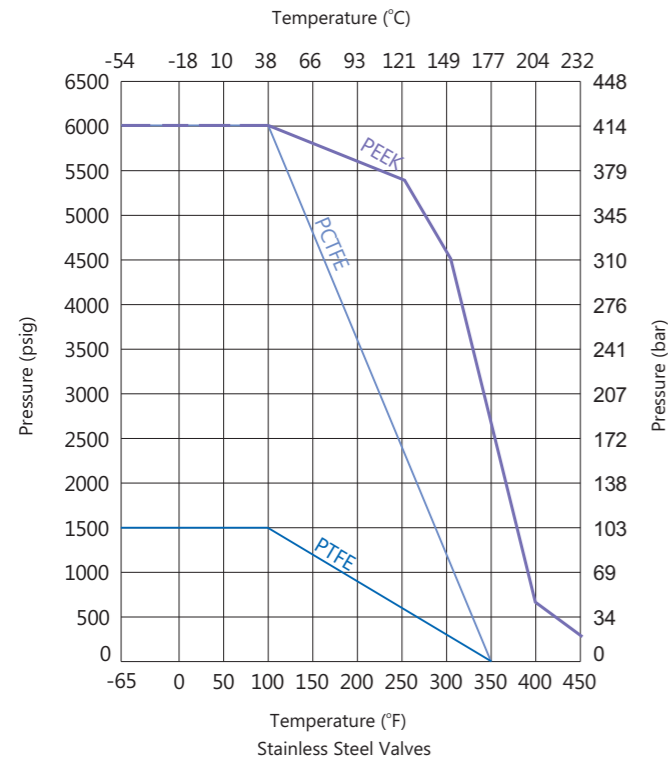
Maximum working pressure: 6000 psig (414 bar)
 Working temperature: -65°F to 450°F (-54°C to 232°C)

Features

- ☆ 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



Pressure vs. Temperature



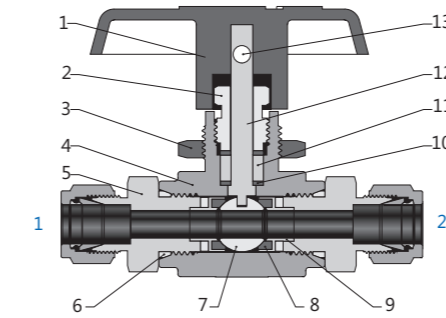
1. Graphs are for 2-way valves only.
2. Maximum working pressure for 3-way valves:
 6000 psig: connection 1 as inlet, connection 2 and connection 3 as outlet
 3000 psig: connection 2 and connection 3 as inlet, connection 1 as outlet

Temperature Ranges

Packing Materials	Temperature Range °F (°C)
PTFE	-40 to 450 (-40 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

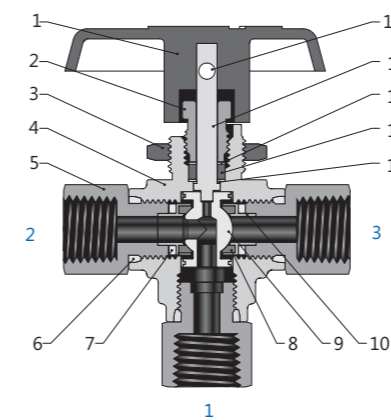
Standard Materials of Construction

Straight Valves



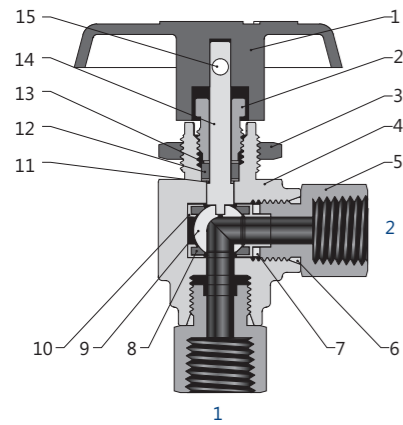
Item	Component	Valve Body Material	
		Stainless steel	Brass
1	Handle	Nylon or Aluminium	
2	Packing Nut	316 SS/A276	C34000/B453
3	Panel Nut	316 SS/A276	C36000/B16
4	Body	CF8M/A351	C37700/B283
5	End connector	316 SS/A479	C36000/B16
6	Connector O-ring	PTFE/D1710	
7	Ball	316 SS/A479	
8	Seat	PTFE or PCTFE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

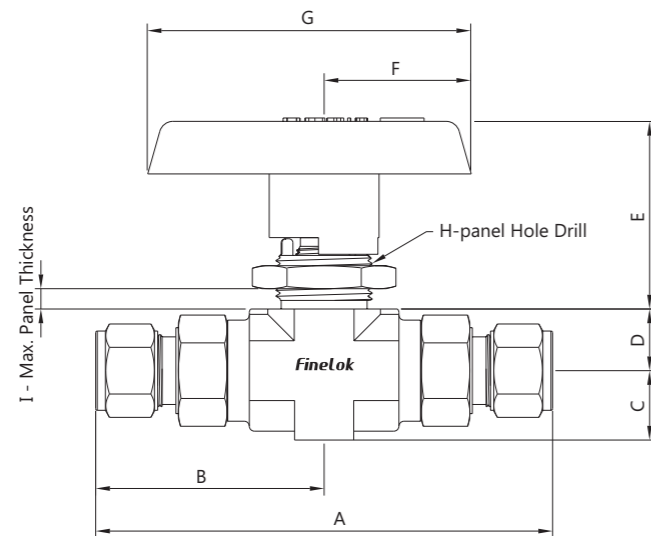
Angle Pattern Valves



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	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	Stem Back-up Ring	PEEK	
12	Stem Packing	PTFE or Fluorocarbon FKM or Neoprene or Buna N	
13	Stem Washer	316 SS/A276	
14	Stem	316 SS/A276	
15	Set Screw	Stainless steel	
	Lubricants	Fluorinated-based and silicone-based	

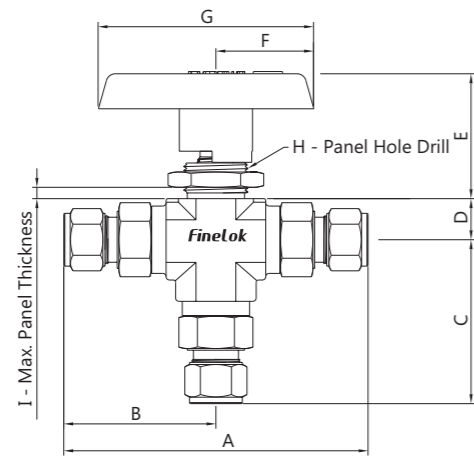
Dimensions

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					
-61B-S1-01	1/16" FINELOK	1/16" FINELOK	0.052 (1.3)	0.06	2.60 (66.0)	1.30 (33.0)												
-61B-SM3-01	3 mm FINELOK	3 mm FINELOK			2.74 (69.6)	1.37 (34.8)												
-61B-S2-02	1/8" FINELOK	1/8" FINELOK	0.093 (2.4)	0.21	2.72 (69.1)	1.36 (34.5)												
-61B-SM3-02	3 mm FINELOK	3 mm FINELOK			2.74 (69.6)	1.37 (34.8)												
-61B-FRT2-04	1/8 Female BSPT	1/8 Female BSPT	0.165 (4.2)	0.93	2.14 (54.4)	1.07 (27.2)	0.33 (8.4)	0.33 (8.4)	1.00 (25.4)	1.16 (29.5)	1.88 (47.8)	0.58 (14.7)	0.18 (4.6)					
-61B-FRP2-04	1/8 Female BSPP	1/8 Female BSPP			2.36 (60.0)	1.18 (30.0)												
-61B-FNT2-04	1/8 Female NPT	1/8 Female NPT			2.70 (68.6)	1.35 (34.3)												
-61B-RT2-04	1/8 Male BSPT	1/8 Male BSPT																
-61B-BP2-04	1/8 Male BSPP	1/8 Male BSPP																
-61B-NT2-04	1/8 Male NPT	1/8 Male NPT																
-61B-RT4-04	1/4 Male BSPT	1/4 Male BSPT																
-61B-BP4-04	1/4 Male BSPP	1/4 Male BSPP																
-61B-NT4-04	1/4 Male NPT	1/4 Male NPT																
-61B-S4-05	1/4" FINELOK	1/4" FINELOK			0.187 (4.8)	1.05	3.48 (88.4)	1.74 (44.2)										
-61B-SM6-05	6 mm FINELOK	6 mm FINELOK	3.50 (89.0)	1.75 (44.5)														
-61B-S6-06	3/8" FINELOK	3/8" FINELOK	0.250 (6.4)	2.34	3.60 (91.4)	1.80 (45.7)												
-61B-SM8-06	8 mm FINELOK	8 mm FINELOK			3.56 (90.4)	1.78 (45.2)												
-61B-SM10-06	10 mm FINELOK	10 mm FINELOK			3.62 (92.0)	1.81 (46.0)												
-61B-FRT4-06	1/4 Female BSPT	1/4 Female BSPT			3.02 (76.8)	1.51 (38.4)	0.42 (10.7)	0.47 (11.9)	1.48 (37.5)	0.75 (19.05)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)					
-61B-FRP4-06	1/4 Female BSPP	1/4 Female BSPP																
-61B-FNT4-06	1/4 Female NPT	1/4 Female NPT																
-61B-RT4-06	1/4 Male BSPT	1/4 Male BSPT																
-61B-BP4-06	1/4 Male BSPP	1/4 Male BSPP																
-61B-NT4-06	1/4 Male NPT	1/4 Male NPT																
-61B-RT6-06	3/8 Male BSPT	3/8 Male BSPT																
-61B-BP6-06	3/8 Male BSPP	3/8 Male BSPP																
-61B-NT6-06	3/8 Male NPT	3/8 Male NPT																
-61B-S8-10	1/2" FINELOK	1/2" FINELOK	0.406 (10.3)	6.42	4.68 (118.8)	2.34 (59.4)												
-61B-S12-10	3/4" FINELOK	3/4" FINELOK			4.66 (118.4)	2.33 (59.2)	0.69 (17.5)	0.70 (17.8)										
-61B-SM12-10	12 mm FINELOK	12 mm FINELOK																
-61B-SM14-10	14 mm FINELOK	14 mm FINELOK																
-61B-SM16-10	16 mm FINELOK	16 mm FINELOK																
-61B-SM18-10	18 mm FINELOK	18 mm FINELOK																
-61B-SM20-10	20 mm FINELOK	20 mm FINELOK			4.84 (123.0)	2.42 (61.5)	0.89 (22.5)	0.89 (22.5)										
-61B-SM22-10	22 mm FINELOK	22 mm FINELOK																
-61B-FRT6-10	3/8 Female BSPT	3/8 Female BSPT			3.90 (99.0)	1.95 (49.5)												
-61B-FRP6-10	3/8 Female BSPP	3/8 Female BSPP																
-61B-FNT6-10	3/8 Female NPT	3/8 Female NPT																
-61B-FRT8-10	1/2 Female BSPT	1/2 Female BSPT	4.30 (109.2)	2.15 (54.6)			1.71 (43.5)	1.42 (36.0)	4.0 (101.6)	0.90 (22.9)	0.38 (9.7)							
-61B-FRP8-10	1/2 Female BSPP	1/2 Female BSPP																
-61B-FNT8-10	1/2 Female NPT	1/2 Female NPT																
-61B-FRT12-10	3/4 Female BSPT	3/4 Female BSPT	4.36 (110.8)	2.18 (55.4)	0.69 (17.5)	0.70 (17.8)												
-61B-FRP12-10	3/4 Female BSPP	3/4 Female BSPP	4.50 (114.2)	2.25 (57.1)														
-61B-FNT12-10	3/4 Female NPT	3/4 Female NPT																
-61B-RT8-10	1/2 Male BSPT	1/2 Male BSPT																
-61B-BP8-10	1/2 Male BSPP	1/2 Male BSPP																
-61B-NT8-10	1/2 Male NPT	1/2 Male NPT																
-61B-RT12-10	3/4 Male BSPT	3/4 Male BSPT	4.44 (112.8)	2.22 (56.4)														
-61B-BP12-10	3/4 Male BSPP	3/4 Male BSPP																
-61B-NT12-10	3/4 Male NPT	3/4 Male NPT																

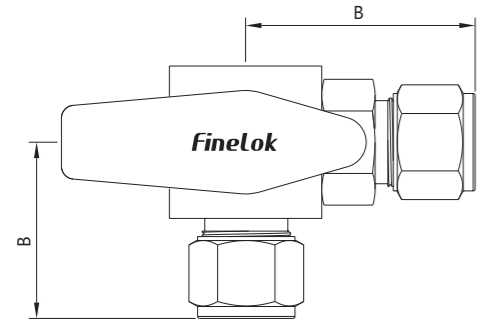
3-way Valves



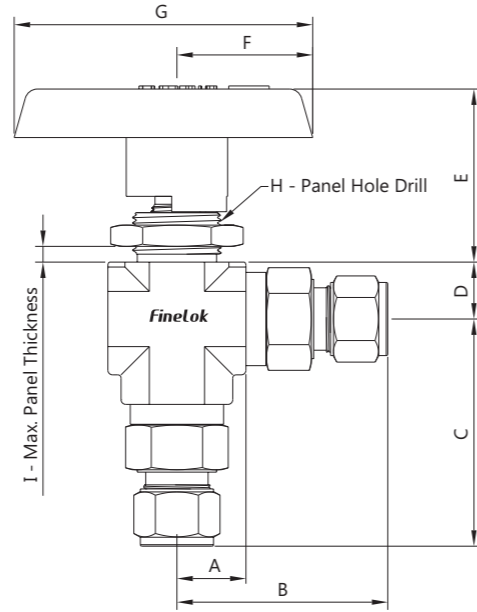
Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)																																							
	Connection 1	Connection 2/3			A	B	C	D	E	F	G	H	I																															
-61B-S1-01-3	1/16" FINELOK	1/16" FINELOK	0.052 (1.3)	0.06	2.60 (66.0)	1.30 (33.0)	1.39 (35.3)																																					
-61B-SM3-01-3	3 mm FINELOK	3 mm FINELOK			2.74 (69.6)	1.37 (34.8)																																						
-61B-S2-02-3	1/8" FINELOK	1/8" FINELOK			2.72 (69.1)	1.36 (34.5)																																						
-61B-SM3-02-3	3 mm FINELOK	3 mm FINELOK	0.093 (2.4)	0.21	2.74 (69.6)	1.37 (34.8)																																						
-61B-FRT2-04-3	1/8 Female BSPT	1/8 Female BSPT			2.14 (54.4)	1.07 (27.2)															1.15 (29.2)																							
-61B-FRP2-04-3	1/8 Female BSPP	1/8 Female BSPP	0.165 (4.2)	0.63																																								
-61B-FNT2-04-3	1/8 Female NPT	1/8 Female NPT																																										
-61B-RT2-04-3	1/8 Male BSPT	1/8 Male BSPT																			2.36 (60.0)	1.18 (30.0)	1.26 (32.0)	0.33 (8.4)	1.00 (25.4)	1.16 (29.5)	1.88 (47.8)	0.58 (14.7)	0.18 (4.6)															
-61B-BP2-04-3	1/8 Male BSPP	1/8 Male BSPP																																										
-61B-NT2-04-3	1/8 Male NPT	1/8 Male NPT																																										
-61B-RT4-04-3	1/4 Male BSPT	1/4 Male BSPT																																										
-61B-BP4-04-3	1/4 Male BSPP	1/4 Male BSPP																			2.70 (68.6)	1.35 (34.3)	1.43 (36.3)																					
-61B-NT4-04-3	1/4 Male NPT	1/4 Male NPT																																										
-61B-S4-05-3	1/4" FINELOK	1/4" FINELOK																			3.48 (88.4)	1.74 (44.2)	1.89 (48.0)																					
-61B-SM6-05-3	6 mm FINELOK	6 mm FINELOK																			3.50 (89.0)	1.75 (44.5)	1.88 (47.8)																					
-61B-S6-06-3	3/8" FINELOK	3/8" FINELOK	3.60 (91.4)	1.80 (45.7)	1.94 (49.3)																																							
-61B-SM8-06-3	8 mm FINELOK	8 mm FINELOK	3.56 (90.4)	1.78 (45.2)	1.91 (48.5)																																							
-61B-SM10-06-3	10 mm FINELOK	10 mm FINELOK	3.62 (92.0)	1.81 (46.0)	1.95 (49.5)																																							
-61B-FRT4-06-3	1/4 Female BSPT	1/4 Female BSPT	0.250(6.4)	1.35																																								
-61B-FRP4-06-3	1/4 Female BSPP	1/4 Female BSPP																			3.02 (76.8)	1.51 (38.4)	1.65 (41.9)																0.47 (11.9)	1.48 (37.5)	0.75 (19.1)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)
-61B-FNT4-06-3	1/4 Female NPT	1/4 Female NPT																																										
-61B-RT4-06-3	1/4 Male BSPT	1/4 Male BSPT																																										
-61B-BP4-06-3	1/4 Male BSPP	1/4 Male BSPP																																										
-61B-NT4-06-3	1/4 Male NPT	1/4 Male NPT																																										
-61B-RT6-06-3	3/8 Male BSPT	3/8 Male BSPT																			3.24 (82.2)	1.62 (41.1)	1.76 (44.7)																					
-61B-BP6-06-3	3/8 Male BSPP	3/8 Male BSPP																																										
-61B-NT6-06-3	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			A	B	C	D	E	F	G	H	I													
-61B-S8-10-3	1/2" FINELOK	1/2" FINELOK	0.406 (10.3)	3.62	4.68 (118.8)	2.34(59.4)	2.68(68.0)																			
-61B-S12-10-3	3/4" FINELOK	3/4" FINELOK			4.66(118.4)	2.33 (59.2)	2.67 (67.8)																			
-61B-SM12-10-3	12 mm FINELOK	12 mm FINELOK																								
-61B-SM14-10-3	14 mm FINELOK	14 mm FINELOK																								
-61B-SM16-10-3	16 mm FINELOK	16 mm FINELOK																								
-61B-SM18-10-3	18 mm FINELOK	18 mm FINELOK																								
-61B-SM20-10-3	20 mm FINELOK	20 mm FINELOK																								
-61B-SM22-10-3	22 mm FINELOK	22 mm FINELOK			4.84 (123.0)	2.42 (61.5)	2.76 (70.1)																			
-61B-FRT6-10-3	3/8 Female BSPT	3/8 Female BSPT			3.90 (99.0)	1.95 (49.5)	2.29 (58.2)																			
-61B-FRP6-10-3	3/8 Female BSPP	3/8 Female BSPP																								
-61B-FNT6-10-3	3/8 Female NPT	3/8 Female NPT																								
-61B-FRT8-10-3	1/2 Female BSPT	1/2 Female BSPT			4.30 (109.2)	2.15 (54.6)	2.49 (63.2)														0.70 (17.8)	1.71 (43.5)	1.42 (36.0)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)
-61B-FRP8-10-3	1/2 Female BSPP	1/2 Female BSPP																								
-61B-FNT8-10-3	1/2 Female NPT	1/2 Female NPT																								
-61B-FRT12-10-3	3/4 Female BSPT	3/4 Female BSPT			4.36 (110.8)	2.18 (55.4)	2.54 (64.5)																			
-61B-FRP12-10-3	3/4 Female BSPP	3/4 Female BSPP																								
-61B-FNT12-10-3	3/4 Female NPT	3/4 Female NPT																								
-61B-RT8-10-3	1/2 Male BSPT	1/2 Male BSPT			4.44 (112.8)	2.22 (56.4)	2.59 (65.8)																			
-61B-BP8-10-3	1/2 Male BSPP	1/2 Male BSPP																								
-61B-NT8-10-3	1/2 Male NPT	1/2 Male NPT																								
-61B-RT12-10-3	3/4 Male BSPT	3/4 Male BSPT																								
-61B-BP12-10-3	3/4 Male BSPP	3/4 Male BSPP																								
-61B-NT12-10-3	3/4 Male NPT	3/4 Male NPT																								

Angle Pattern Valves



Side Port Inlet



Bottom Port Inlet

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						
-61B-S1-01-A	1/16" FINELOK	1/16" FINELOK	0.052 (1.3)	0.06	0.480 (12.2)	1.30 (33.0)	1.39 (35.3)	0.33 (8.4)	1.00 (25.4)	1.16 (29.5)	1.88 (47.8)	0.58 (14.7)	0.18 (4.6)						
-61B-SM3-01-A	3 mm FINELOK	3 mm FINELOK				1.37 (34.8)													
-61B-S2-02-A	1/8" FINELOK	1/8" FINELOK	0.093 (2.4)	0.21		1.36 (34.5)													
-61B-SM3-02-A	3 mm FINELOK	3 mm FINELOK				1.37 (34.8)													
-61B-FRT2-04-A	1/8 Female BSPT	1/8 Female BSPT	0.165 (4.2)	0.63		1.07 (27.2)	1.15 (29.2)												
-61B-FRP2-04-A	1/8 Female BSPP	1/8 Female BSPP				0.47 (11.9)	1.48 (37.5)							0.75 (19.1)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)		
-61B-FNT2-04-A	1/8 Female NPT	1/8 Female NPT																1.18 (30.0)	1.26 (32.0)
-61B-RT2-04-A	1/8 Male BSPT	1/8 Male BSPT																1.35 (34.3)	1.43 (36.3)
-61B-NT2-04-A	1/8 Male NPT	1/8 Male NPT																	
-61B-RT4-04-A	1/4 Male BSPT	1/4 Male BSPT																1.74 (44.2)	1.89 (48.0)
-61B-BP2-04-A	1/8 Male BSPP	1/8 Male BSPP			1.75 (44.5)			1.88 (47.8)											
-61B-NT4-04-A	1/4 Male NPT	1/4 Male NPT			1.80 (45.7)			1.94 (49.3)											
-61B-BP4-04-A	1/4 Male BSPP	1/4 Male BSPP							1.78 (45.2)	1.91 (48.5)									
-61B-S4-05-A	1/4" FINELOK	1/4" FINELOK			0.187 (4.8)			0.75	1.81 (46.0)	1.95 (49.5)									
-61B-SM6-05-A	6 mm FINELOK	6 mm FINELOK	1.51 (38.4)	1.65 (41.9)															
-61B-S6-06-A	3/8" FINELOK	3/8" FINELOK				1.81 (46.0)	1.95 (49.5)												
-61B-SM8-06-A	8 mm FINELOK	8 mm FINELOK	0.250 (6.4)	1.35		1.51 (38.4)	1.65 (41.9)												
-61B-SM10-06-A	10 mm FINELOK	10 mm FINELOK				1.51 (38.4)	1.65 (41.9)												
-61B-FRT4-06-A	1/4 Female BSPT	1/4 Female BSPT	0.250 (6.4)	1.35		0.47 (11.9)	1.48 (37.5)		0.75 (19.1)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)							
-61B-FRP4-06-A	1/4 Female BSPP	1/4 Female BSPP																	
-61B-FNT4-06-A	1/4 Female NPT	1/4 Female NPT																	

- FINELOK means FINELOK double ferrule tube fittings.
- Sizes and types listed are standard. Other sizes and types are available upon request.
- Dimensions are shown with FINELOK 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 FINELOK.

Cautions:

- For better quality maintenance, FINELOK ball valve should be kept in closed position in warehouse.
- FINELOK ball valves should be operated in a fully open or fully closed position.
- 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.



Ordering Information

SS-61B-S8-SM12-SM10-P06V-C3-S

Body Material	SS CF8M	6L CF3M	S4 CF8	4L CF3	B Brass									
Series	61B													
Connection 1 Type	FNT Female NPT	NT Male NPT	FRT Female BSPT	RT Male BSPT	FMS Female Metric Thread (for RP)	MS Male Metric Thread (for RG)	FRP Female BSPP (For RP)	BP Male BSPP (For RG)	S Fractional Tube Fitting	SM Metric Tube Fitting	UFB Nut + Gasket + Bulge Fractional Tube Nipple	UMB Nut + Gasket + Metric Tube Bulge Nipple	UPB Nut + Gasket + Bulge Pipe Nipple	
Connection 1 Size	2 1/8"	3 3 mm	4 1/4"	5 5/16"	6 3/8" or 6 mm or M6 x 1	8 1/2" or 8 mm	10 10 mm or M10 x 1	12 3/4" or 12 mm	14 14 mm or M14 x 1.5	16 16 mm	18 18 mm	20 20 mm or M20 x 1.5	22 22 mm or M22 x 1.5	24 M24 x 1.5
Connection 2/3 Type	Same as Connection 1													
Connection 2/3 Size	Specify in the same way as the Connection 1 type and size													
Seat Material	PTFE K PCTFE P PEEK													
Orifice Size	02 0.093" (2.4 mm) 03 0.125" (3.2 mm) 04 0.165" (4.2 mm) 05 0.187" (4.7 mm) 06 0.250" (6.4 mm) 10 0.406" (10.3 mm)													
Packing Material	PTFE B Buna N N Neoprene V Fluorocarbon FKM													
Handle / Actuator	C Black Nylon F Red Nylon J Green Nylon Y Blue Nylon U Yellow Nylon EA Black Aluminium EX 90° Electric Actuator CS 180° Normally Closed Spring Return Pneumatic Actuator DA 90° Double Acting Pneumatic Actuator OS 90° Normally Open Spring Return Pneumatic Actuator CX 180° Spring Acting Pneumatic Actuator DX 180° Double Acting Pneumatic Actuator													
Flow Pattern	Straight A Angle (Bottom Port Inlet) AL Angle (Side Port Inlet) 3 3-Way (Diverter Valve)													
Special Application	No NACE S IMR0175													

- 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.
- For information about pneumatic and electric actuator, please contact the authorized representative or FINELOK.
- For oxygen or virulent medium service, contact the authorized representative or FINELOK.



One-piece Instrument Ball Valves

30B Series

- ☆ 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

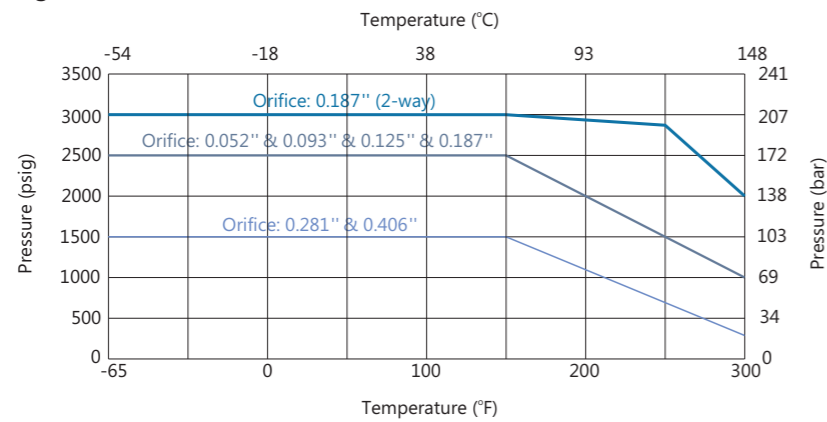
Features

- ☆ 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

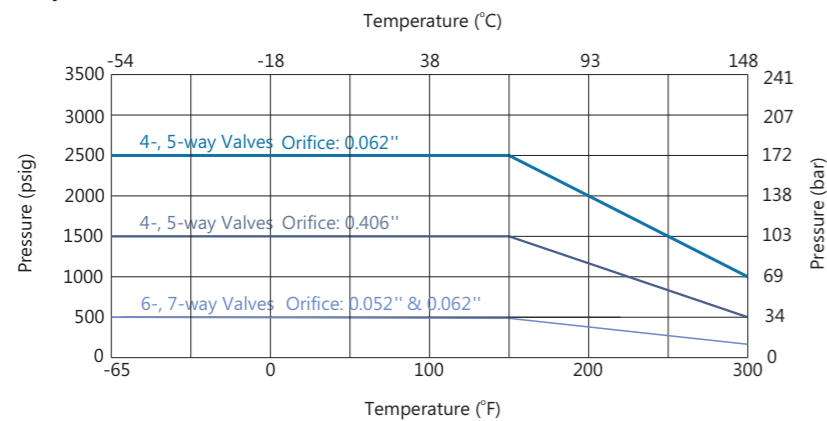


Pressure vs. Temperature

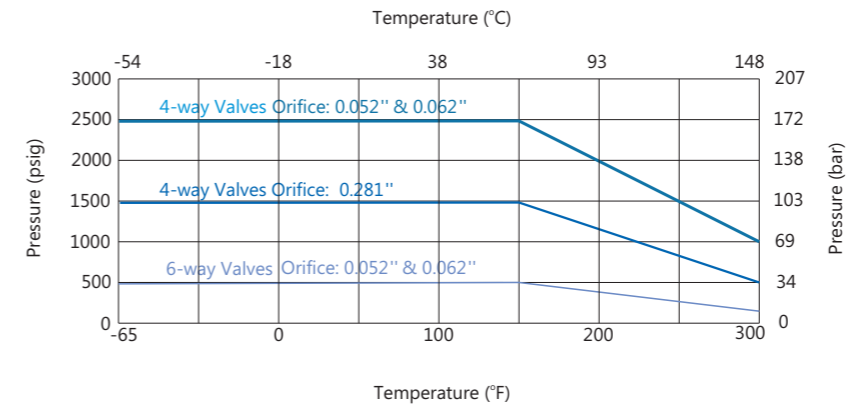
2-, 3-way, Angle Valves



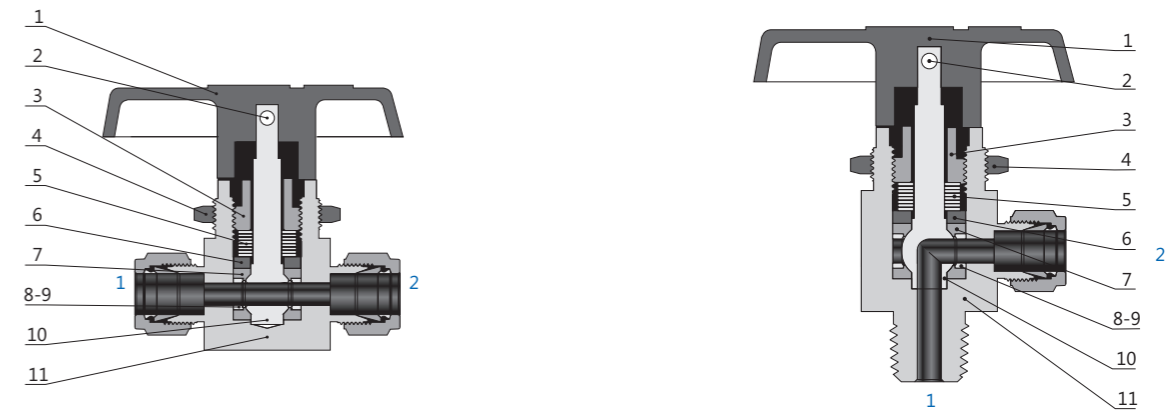
4-, 5-, 6-, 7-way Valves



Crossover (4-, 6-way) Valves



Standard Materials of Construction

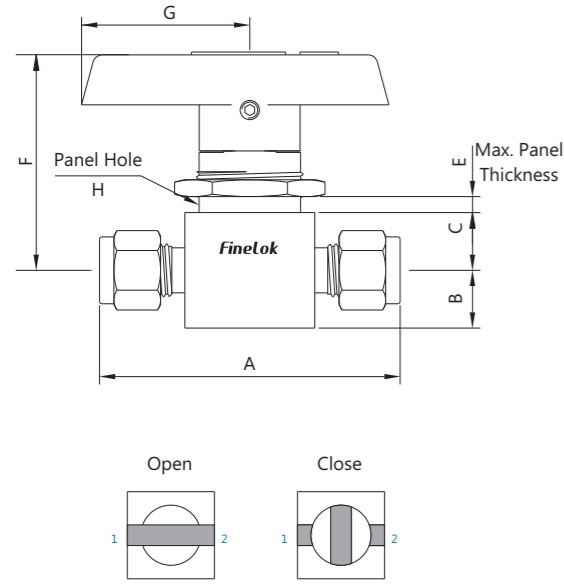


Item	Component	Valve Body Material		
		Stainless Steel	Brass	Alloy 400
		Material Grade/ASTM Specification		
1	Handle	Nylon or Aluminium		
2	Set Screw	S17400 SS/A564		
3	Packing Bolt	Powdered metal 300 series SS or 316 SS/A276, A479	Brass CDA 36000/B16	Alloy R-405/B164
4	Panel Nut	Powdered metal 300 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		

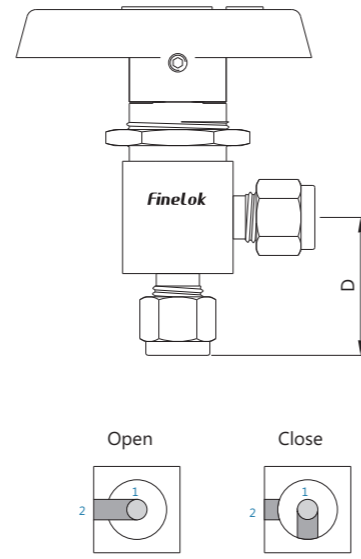
Contact the authorized representative or FINELOK for valves of other materials.

Dimensions

2-way Valves



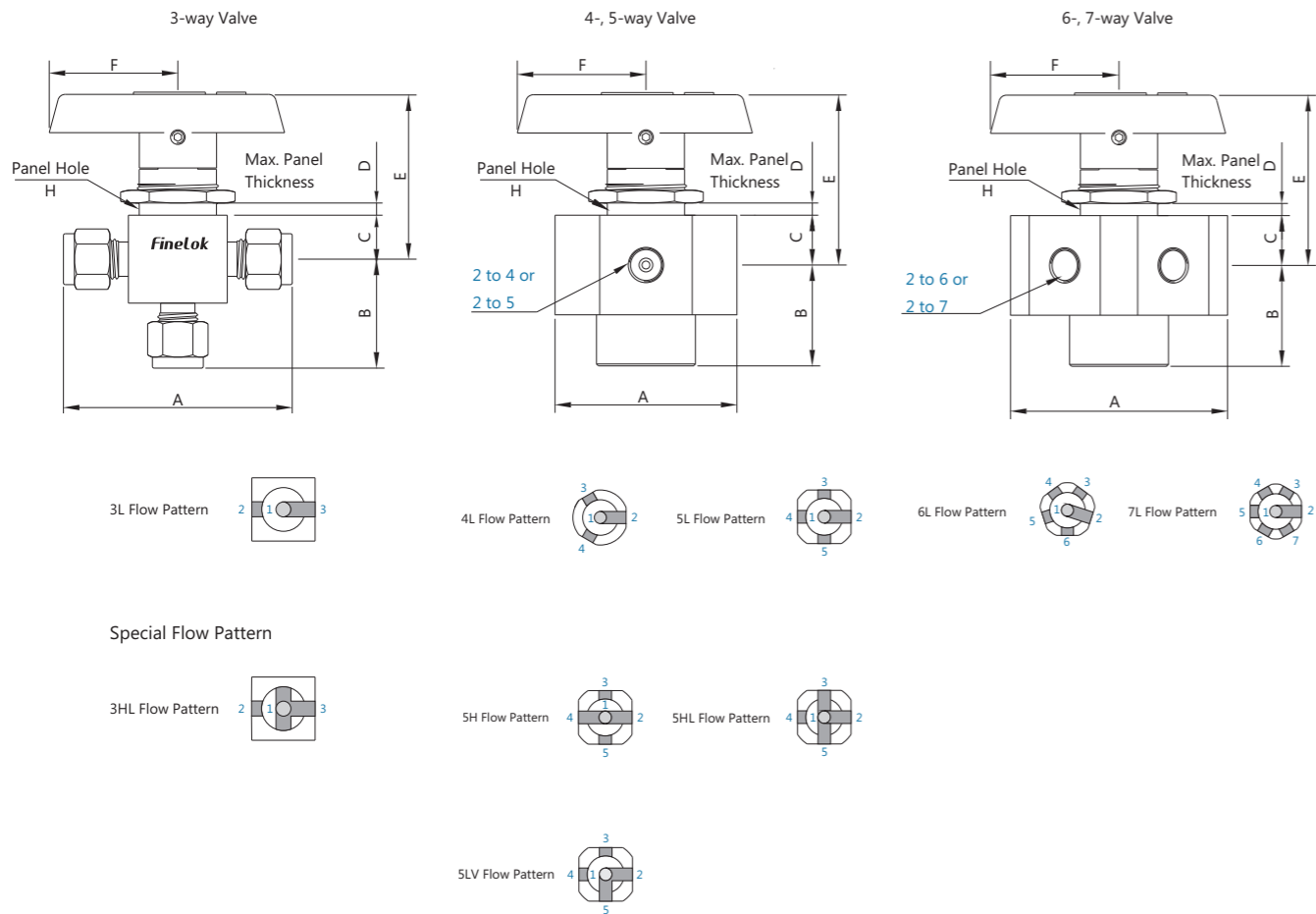
Angle Pattern Valves



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)												
			Straight	Angle	A	B	C	D	E	F	G	H					
-30B-S1-00	1/16" FINELOK	0.052 (1.3)	0.10	—	1.68 (42.7)												
-30B-S2-02	1/8" FINELOK	0.093 (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)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)					
-30B-S4-03	1/4" FINELOK	0.125 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)									
-30B-S4-05		0.187 (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)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)					
-30B-S6-05	3/8" FINELOK	0.281 (7.1)	1.50		2.58 (65.5)			1.29 (32.8)									
-30B-S6-07			6.00	2.00	3.05 (77.5)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)					
-30B-S8-10	1/2" FINELOK	0.406 (10.3)	12.00	4.60	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)					
-30B-S12-10	3/4" FINELOK		6.40	3.80													
-30B-SM3-02	3 mm FINELOK	0.093 (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)	1.36 (34.5)	1.36 (34.5)	19/32 (15.1)					
-30B-SM6-03	6 mm FINELOK	0.125 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)									
-30B-SM6-05		0.187 (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)	1.47 (37.3)	1.47 (37.3)	25/32 (19.8)					
-30B-SM8-05	8 mm FINELOK	0.281 (7.1)	1.50		2.46 (62.5)			1.20 (30.5)									
-30B-SM10-07	10 mm FINELOK		6.00	2.00	3.07 (78.0)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.07 (52.6)	1 1/8 (28.6)					
-30B-SM12-10	12 mm FINELOK	0.406 (10.3)	12.00	4.60	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)		2.43 (61.7)	2.43 (61.7)	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					
-30B-FNT2-03	1/8 Female NPT	0.125 (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)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)					
-30B-FNT2-05		0.187 (4.8)	1.20	0.70	2.0 (50.8)	0.38 (9.7)	0.44 (11.2)	1.0 (25.4)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)					
-30B-FNT4-05	1/4 Female NPT	0.281 (7.1)	0.90	0.75	2.06 (52.3)			1.03 (26.2)									
-30B-FNT4-07			3.00	1.70	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	1.25 (31.8)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)					
-30B-FNT6-07	3/8 Female NPT		2.60	1.50													
-30B-FNT8-10	1/2 Female NPT	0.406 (10.3)	6.30	3.50	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	1.56 (39.6)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)					
-30B-NT4-05	1/4 Male NPT	0.187 (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)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)					
-30B-FRT4-05	1/4 Female BSPT		0.90		2.06 (52.3)												
-30B-FRT6-07	3/8 Female BSPT	0.281 (7.1)	2.60	—	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	—	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)					
-30B-FRT8-10	1/2 Female BSPT	0.406 (10.3)	6.30		3.12 (79.2)	0.69 (17.5)	0.69 (17.5)			2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)					
-30B-FO4-03	1/4 Male FO	0.125 (3.2)	0.60	0.35	1.75 (44.4)								0.94 (23.9)	1/8 (3.2)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)
-30B-FO4-05		0.187 (4.8)	2.40	0.90	1.88 (47.8)										3/16 (4.8)	1.47 (37.3)	1.53 (38.9)
-30B-FR4-03	1/4 Male FR	0.125 (3.2)	0.60	0.35	2.13 (54.1)								1.09 (27.7)	1/8 (3.2)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)
-30B-FR4-05		0.187 (4.8)	2.40	0.90											3/16 (4.8)	1.47 (37.3)	1.53 (38.9)
-30B-FR8-07	1/2 Male FR	0.281 (7.1)	6.00	—	2.88 (73.2)	0.56 (14.2)								3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
-30B-FR8-10		0.406 (10.3)	12.00		3.12 (79.2)	0.69 (17.5)									2.43 (61.7)	3.00 (76.2)	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											
-30B-S1-00-3L	1/16" FINELOK	0.052 (1.3)	0.08	1.68 (42.7)	0.81 (20.6)						
-30B-S2-02-3L	1/8" FINELOK	0.093 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)	
-30B-S4-03-3L	1/4" FINELOK	0.125 (3.2)	0.35	2.21 (56.1)	1.07 (27.2)						
-30B-S4-05-3L		0.187 (4.8)	0.90	2.39 (60.7)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
-30B-S6-07-3L	3/8" FINELOK	0.281 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)		2.07 (52.6)	2.00 (50.8)	1 1/2 (28.6)	
-30B-S8-10-3L	1/2" FINELOK	0.406 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)	3/8 (9.5)	2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)	
-30B-S12-10-3L	3/4" FINELOK		4.90								

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				A	B	C	D	E	F	H	
-30B-SM3-02-3L	3 mm FINELOK	0.093 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)	
-30B-SM6-03-3L	6 mm FINELOK	0.125 (3.2)	0.35	2.21 (56.1)	1.07 (27.2)						
-30B-SM6-05-3L		0.187 (4.8)	0.90	2.39 (60.7)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
-30B-SM8-05-3L	8 mm FINELOK		0.80	2.46 (62.5)	1.20 (30.5)						
-30B-SM10-07-3L	10 mm FINELOK	0.281 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)	
-30B-SM12-07-3L	12 mm FINELOK	0.406 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)	
-30B-FNT2-03-3L	1/8 Female NPT	0.125 (3.2)	0.30	1.63 (41.4)	0.81 (20.6)	0.34 (8.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)	
-30B-FNT4-05-3L	1/4 Female NPT	0.187 (4.8)	0.75	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	3/8 (9.5)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
-30B-FNT4-07-3L		0.281 (7.1)	1.70	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)		2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)	
-30B-FNT6-07-3L	3/8 Female NPT		1.50								
-30B-FNT8-10-3L	1/2 Female NPT	0.406 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)	
-30B-FRT4-05-3L	1/4 Female BSPT	0.187 (4.8)	0.75	2.06 (52.3)	1.03 (26.2)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
-30B-FRT6-07-3L	3/8 Female BSPT	0.281 (7.1)	1.50	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)	
-30B-FRT8-10-3L	1/2 Female BSPT	0.406 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)	

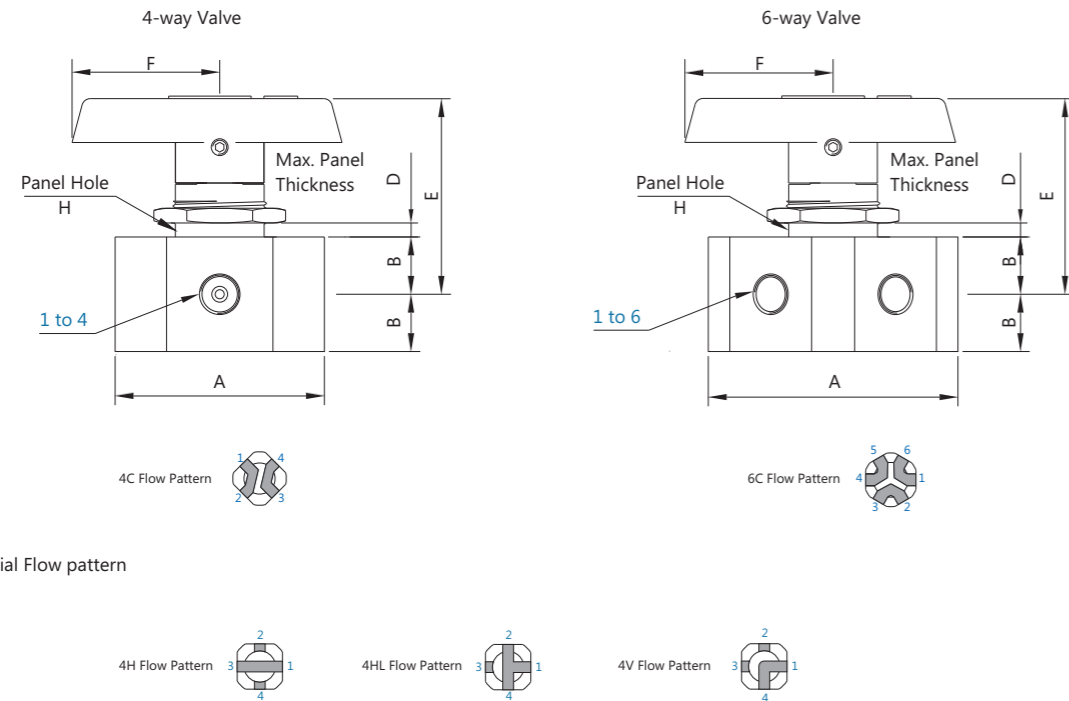
4- & 5-way Valve

-30B-S2-01-4L	1/8" FINELOK	0.062 (1.6)	0.07	1.94 (49.3)	0.97 (24.6)	0.44 (11.2)	5/32 (4.1)	1.69 (42.9)	1.53 (38.9)	29/32 (23.1)	
-30B-S2-01-5L											
-30B-FNT2-01-4L	1/8 Female NPT	0.062 (1.6)	0.07	1.55 (39.4)	0.88 (22.4)						
-30B-FNT2-01-5L											
-30B-FNT8-10-4L	1/2 Female NPT	0.406 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	3/8 (9.7)	2.43 (61.7)	3.00 (76.0)	1 1/2 (38.1)	
-30B-FNT8-10-5L											

6- & 7-way Valve

-30B-S1-00-6L	1/16" FINELOK	0.052 (1.3)	0.05	1.94 (49.3)	0.97 (24.6)	0.44 (11.2)	5/32 (4.1)	1.69 (42.9)	1.53 (38.9)	29/32 (23.1)	
-30B-S1-00-7L											
-30B-S2-01-6L	1/8" FINELOK	0.062 (1.6)	0.07								
-30B-S2-01-7L											

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									
-30B-S1-00-4C	1/16" FINELOK	0.052 (1.3)	0.06	1.55 (39.4)					
-30B-S2-01-4C	1/8" FINELOK	0.062 (1.6)	0.08	1.95 (49.5)	0.44 (11.2)	3/16 (4.8)	1.68 (42.7)	1.53 (38.9)	29/32 (23.1)
-30B-FNT2-01-4C	1/8 Female NPT			1.55 (39.4)					
-30B-FNT8-07-4C	1/2 Female NPT	0.281 (7.1)	1.60	3.13 (79.5)	0.69 (17.5)	3/8 (9.7)	2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)
6-way Valve									
-30B-S1-00-6C	1/16" FINELOK	0.052 (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)
-30B-S2-01-6C	1/8" FINELOK	0.062 (1.6)	0.08						

1. FINELOK means FINELOK 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 FTIOK 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 FINELOK.

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

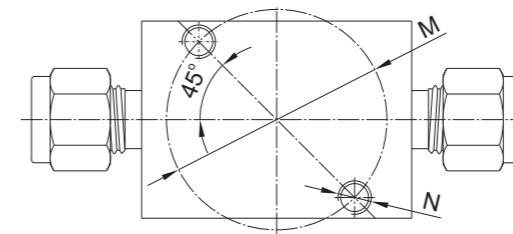
Bottom Screw Panel Mounting Options

Remark

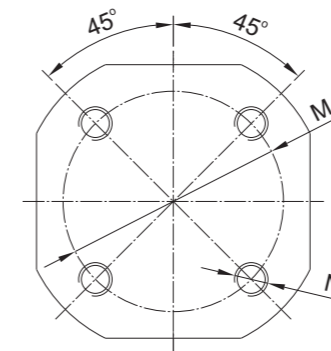
The bottom screw panel mounting options is not available on angle-pattern valves, 3-way valves, 6-way valves and 7-way valves.

Mounting Dimension

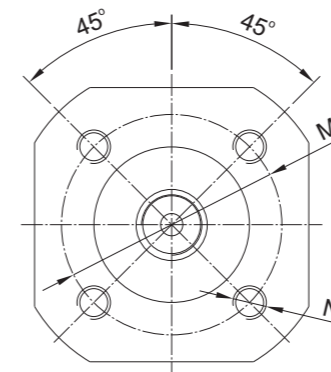
2-way



4-way

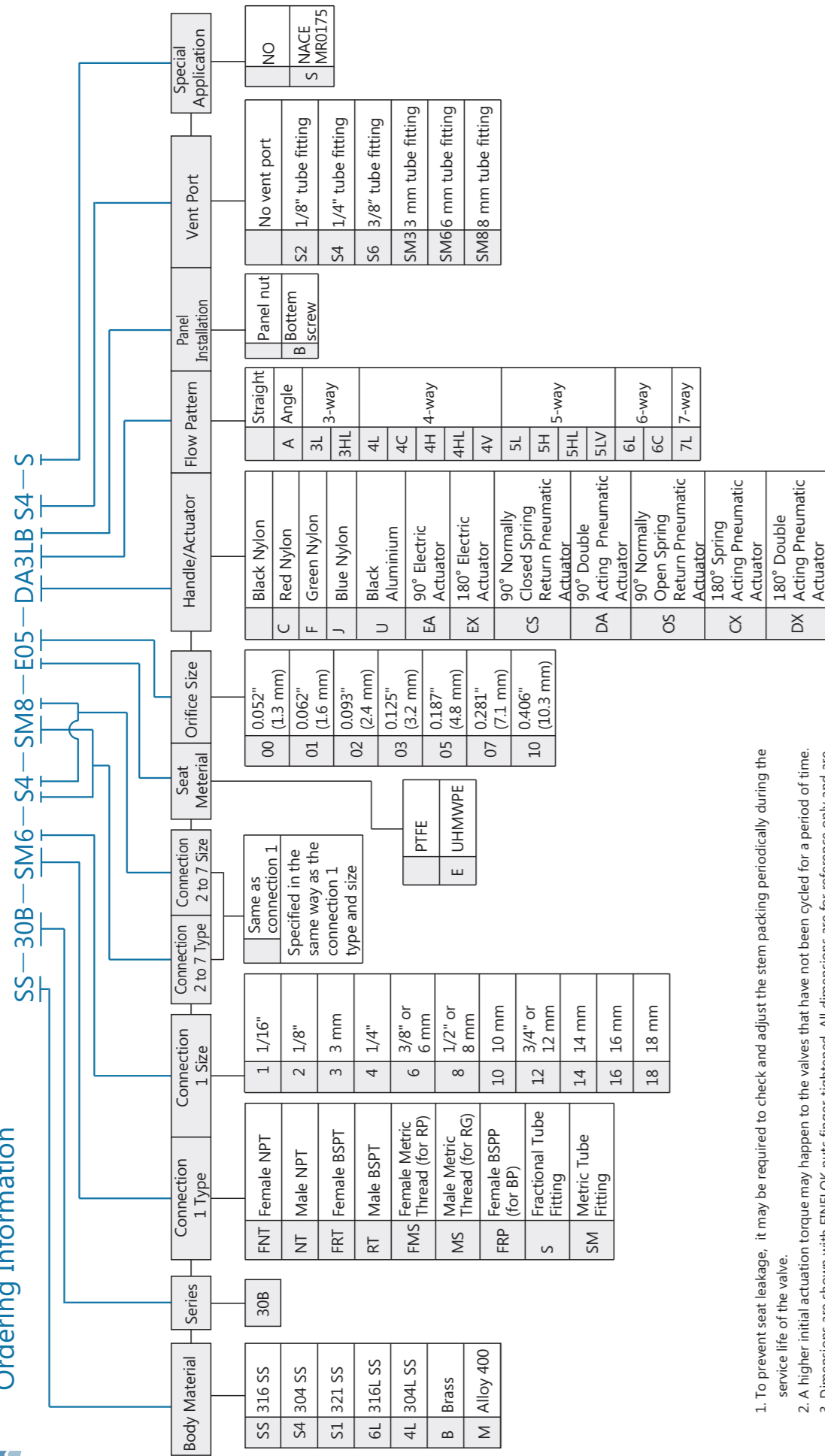


5-way



	Orifice in. (mm)	Dimensions, in. (mm)	
		M	N
2-way	0.052~0.125 (1.3~3.2)	0.625 (15.88)	M2.5 x 0.45 deep 0.24" (6)
	0.187 (4.8)	0.875 (22.23)	M3 x 0.5 deep 0.24" (6)
	0.281 (7.1)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
4-way	0.052~0.062 (1.3~1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
	0.281 (7.1)	2 (50.8)	M5 x 0.8 deep 0.24" (6)
5-way	0.052~0.062 (1.3~1.6)	1.25 (31.75)	M5 x 0.8 deep 0.24" (6)
	0.406 (10.3)	2 (50.8)	M5 x 0.8 deep 0.24" (6)

Ordering Information



1. To prevent seat leakage, it may be required to check and adjust the stem packing periodically during the service life of the valve.
2. A higher initial actuation torque may happen to the valves that have not been cycled for a period of time.
3. Dimensions are shown with FINELOK nuts finger-tightened. All dimensions are for reference only and are subject to change.
4. Sizes and types listed are standard. Other sizes and types are available upon request.
5. For information about pneumatic and electric actuator, please contact the authorized representative or FINELOK.
6. For oxygen or virulent medium service, contact the authorized representative or FINELOK.

3-piece Ball Valves

31B Series 2-way Valves

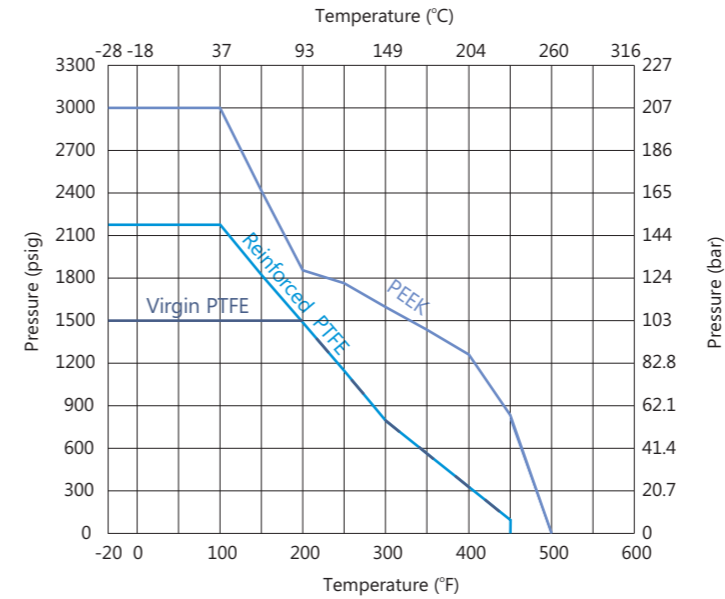
Maximum working pressure: 3000 psig (207bar)
 Working temperatures: -20°F to 450°F (-28°C to 232°C)
 End connections:
 1/8 to 2 thread
 1/8 to 2 pipe butt or socket weld
 1/2" to 2" and 12 mm to 50 mm tube butt or socket weld
 1/2" to 2" and 12 mm to 38 mm tube fitting



Features

- ☆ 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: 4.8 mm to 38.1 mm
- ☆ Fire-safe design available

Pressure vs. Temperature



3-way Valves

Maximum working pressure: 1000 psig (68.9 bar)

Working temperature: -20°F to 450°F (-28°C to 232°C)

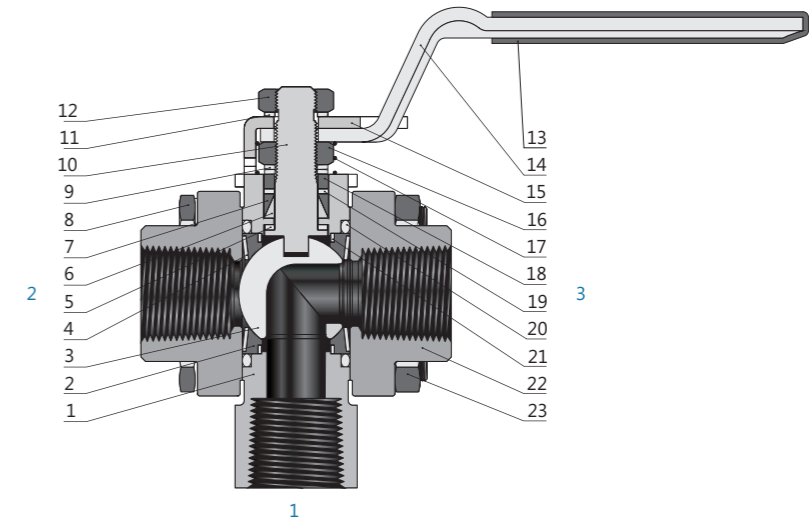
End connections:

1/4 to 2 thread

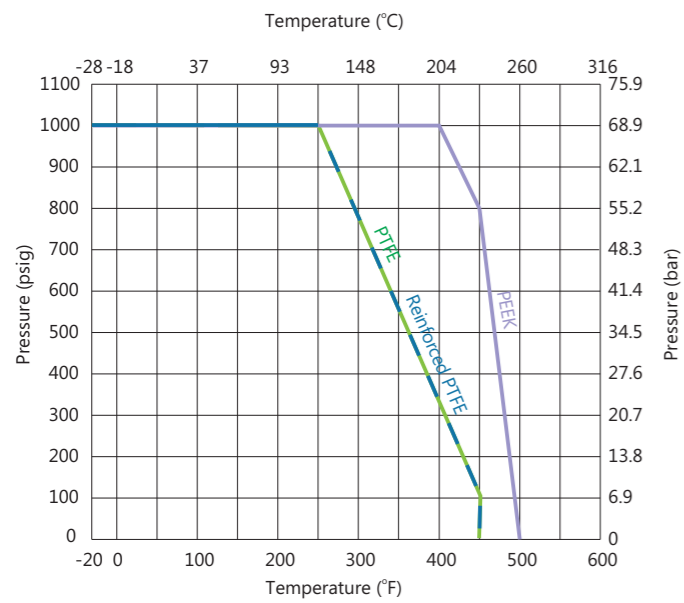
1/4" to 2" and 12 mm to 38 mm tube fitting

Features

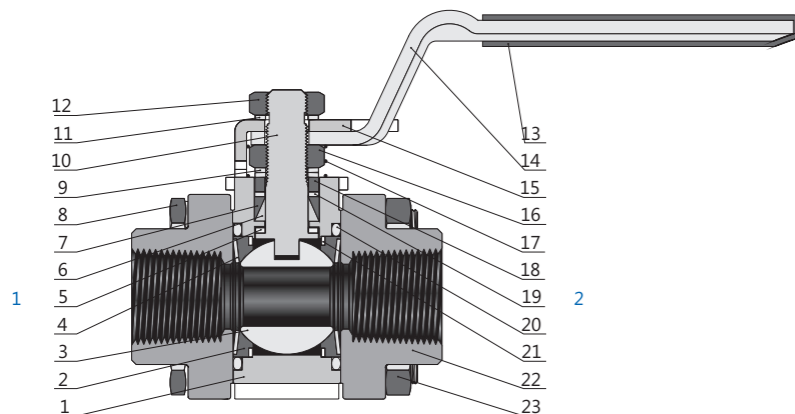
- ☆ One-piece center body without welding
- ☆ 180° actuation
- ☆ Inlet and outlet for 3-way valve: connection 1 as inlet, connection 2 and connection 3 as outlet
- ☆ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen



Pressure vs. Temperature



Standard Materials of Construction



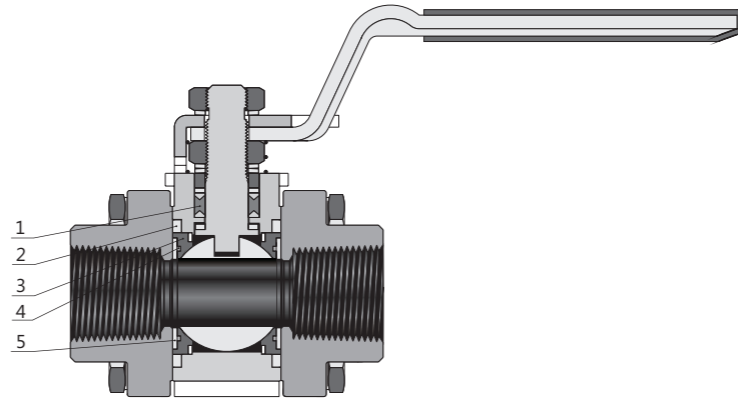
Item	Component	Valve Body Material			
		Material Grade/ASME Specification			
1	Body	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
2	Seat	PTFE/D1710			
3	Ball	316 SS/A276			
4	Coned-disc Spring	Strain-hardened 316 SS/A240			
5	Stem Bearing	PEEK (Polyetheretherketone)			
6	Lower Packing	Reinforced PTFE			
7	Upper 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 PTTE-based			

Other materials available upon request

Fire-safe Application

Features

- ★ Maximum working pressure: 2200psig (152bar)
- ★ Working temperature: -20°F to 400°F (-28°C to 244°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

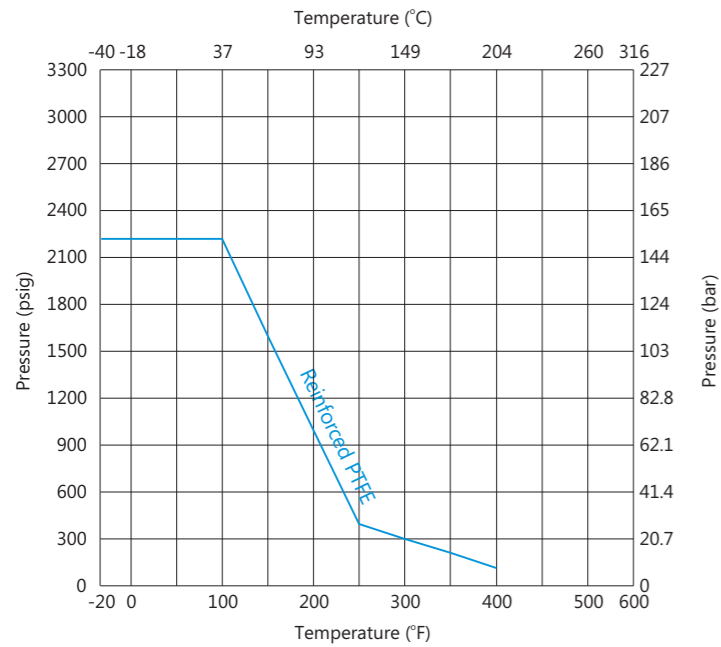


Standard Materials of Construction

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.

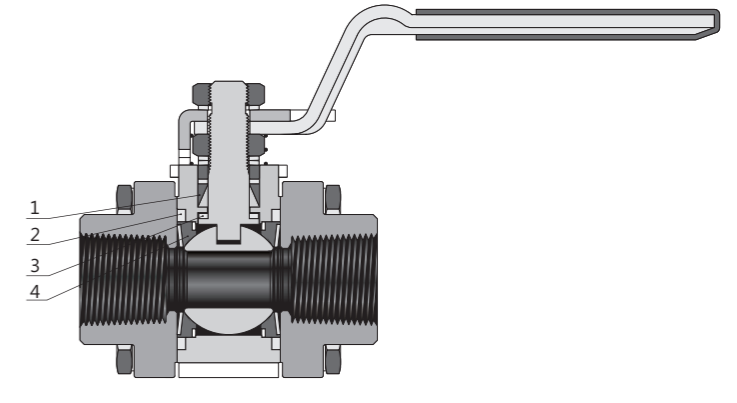
Pressure vs. Temperature



Steam Service

Features

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

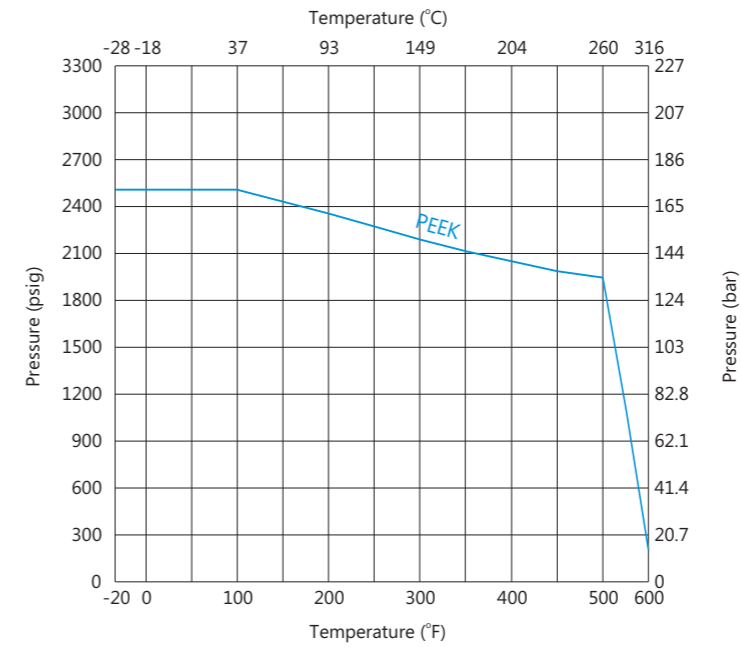


Materials of Construction

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.

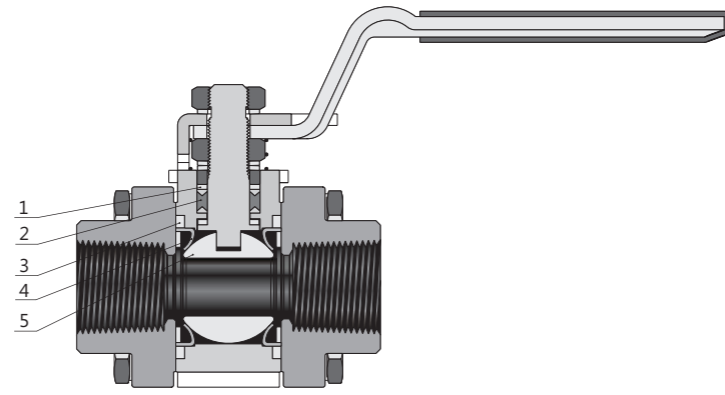
Pressure vs. Temperature



Thermal Service

Features

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

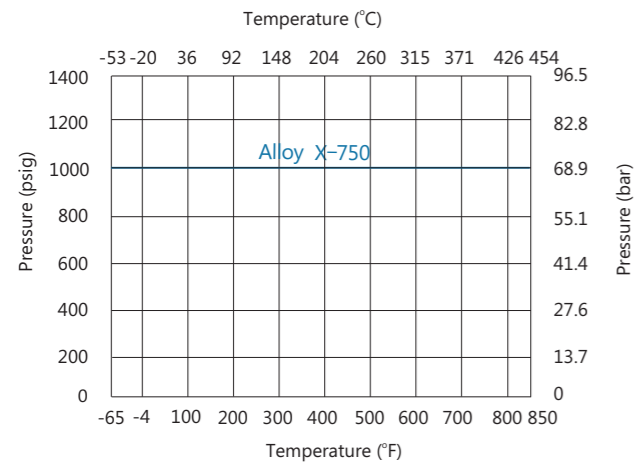


Materials of Construction

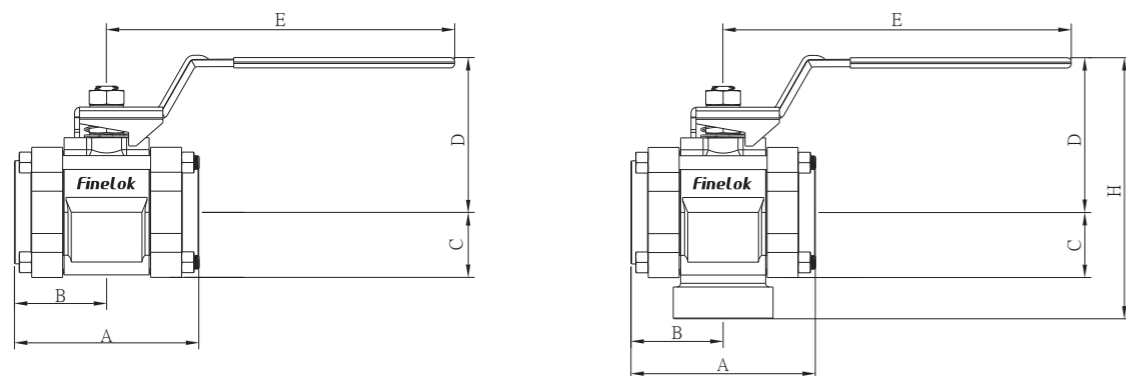
Item	Component	Valve Body Material			
		CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1	Packing bearing	Alloy X-750 /AMS 5542			
2	Packing	Graphite with 316 SS			
3	Flange seal	Graphite with 316 SS			
4	Seat	Alloy X-750 /AMS 5542			
5	Ball	S17400 SS/A564			
Lubricant		Fluorinated tungsten disulfide			

All other components same as general application.

Pressure vs. Temperature



Dimensions

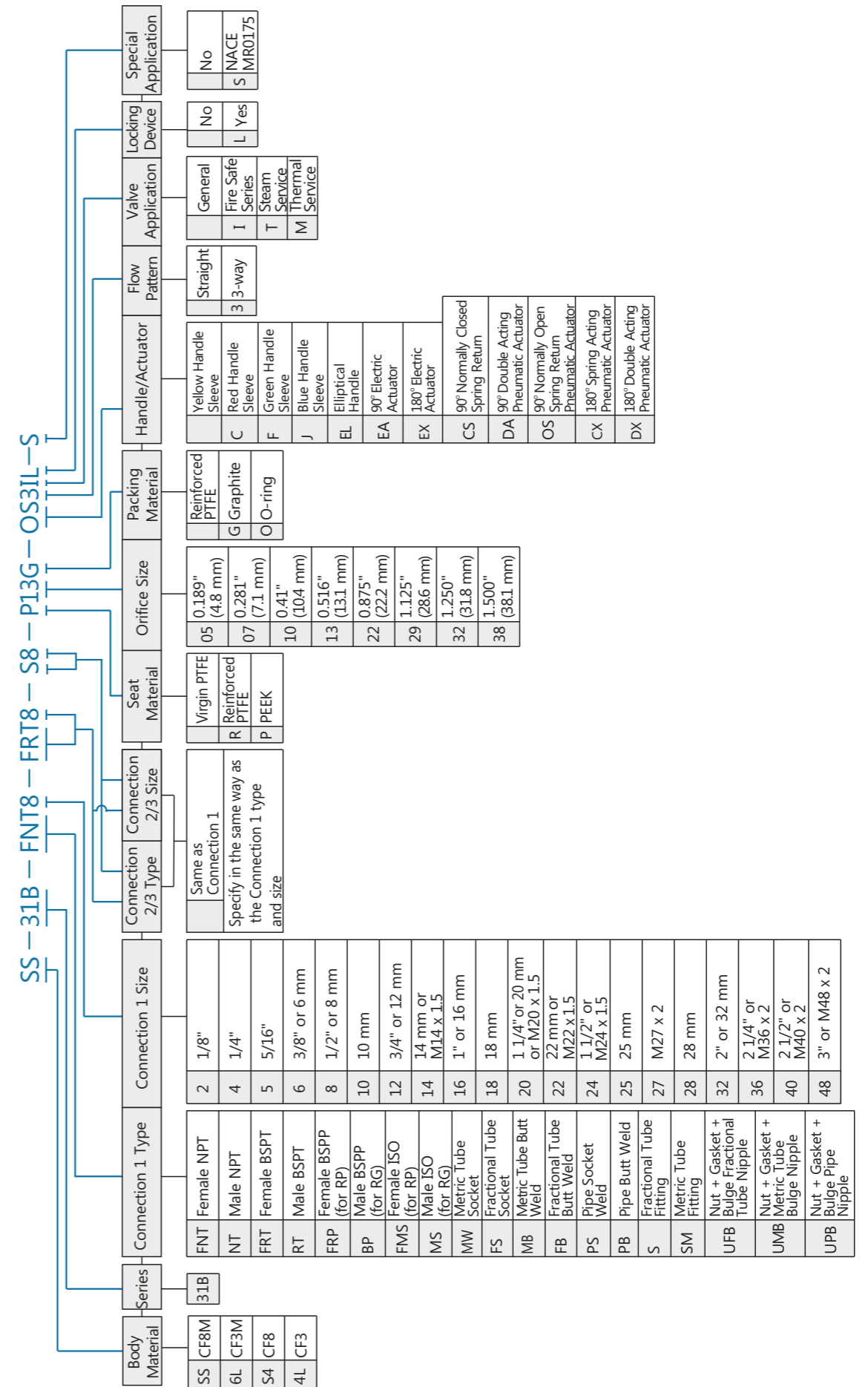


Basic Ordering Number		Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)					
Straight	3-way	Connection 1	Connection 2/3			A	B	C	D	E	H
-31B-S4-05	-31B-S4-05-3	1/4" FINELOK	1/4" FINELOK	0.188 (4.8)	1.2	3.17 (80.5)	1.59 (40.4)	0.68 (17.3)	1.66 (42.2)	2.37 (60.2)	3.35 (85.1)
-31B-SM6-05	-31B-SM6-05-3	6 mm FINELOK	6 mm FINELOK								
-31B-SM8-05	-31B-SM8-05-3	8 mm FINELOK	8 mm FINELOK								
-31B-FS4-05	-31B-FS4-05-3	1/4" FS	1/4" FS								
-31B-MW6-05	-31B-MW6-05-3	6 mm MW	6 mm MW								
-31B-PB4-05	-31B-PB4-05-3	1/4 PB	1/4 PB								
-31B-FNT2-07	-31B-FNT2-07-3	1/8 Female NPT	1/8 Female NPT	0.281 (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)
-31B-FRT2-07	-31B-FRT2-07-3	1/8 Female BSPT	1/8 Female BSPT								
-31B-FRP2-07	-31B-FRP2-07-3	1/8 Female BSPP	1/8 Female BSPP								
-31B-FNT4-07	-31B-FNT4-07-3	1/4 Female NPT	1/4 Female NPT								
-31B-FRT4-07	-31B-FRT4-07-3	1/4 Female BSPT	1/4 Female BSPT								
-31B-FRP4-07	-31B-FRP4-07-3	1/4 Female BSPP	1/4 Female BSPP								
-31B-S5-07	-31B-S5-07-3	5/16" FINELOK	5/16" FINELOK								
-31B-S6-07	-31B-S6-07-3	3/8" FINELOK	3/8" FINELOK								
-31B-SM10-07	-31B-SM10-07-3	10 mm FINELOK	10 mm FINELOK								
-31B-FS6-07	-31B-FS6-07-3	3/8" FS	3/8" FS								
-31B-PB6-07	-31B-PB6-07-3	3/8 PB	3/8 PB								
-31B-S8-10	-31B-S8-10-3	1/2" FINELOK	1/2" FINELOK								
-31B-SM12-10	-31B-SM12-10-3	12 mm FINELOK	12 mm FINELOK								
-31B-FS8-10	-31B-FS8-10-3	1/2" FS	1/2" FS								
-31B-FNT6-13	-31B-FNT6-13-3	3/8 Female NPT	3/8 Female NPT	0.516 (13.1)	12	2.7 (68.6)	1.35 (34.3)	0.89 (22.6)	2.35 (59.7)	4.5 (114)	4.19 (106)
-31B-FRT6-13	-31B-FRT6-13-3	3/8 Female BSPT	3/8 Female BSPT								
-31B-FRP6-13	-31B-FRP6-13-3	3/8 Female BSPP	3/8 Female BSPP								
-31B-FNT8-13	-31B-FNT8-13-3	1/2 Female NPT	1/2 Female NPT								
-31B-FRT8-13	-31B-FRT8-13-3	1/2 Female BSPT	1/2 Female BSPT								
-31B-FRP8-13	-31B-FRP8-13-3	1/2 Female BSPP	1/2 Female BSPP								
-31B-S12-13	-31B-S12-13-3	3/4" FINELOK	3/4" FINELOK								
-31B-SM16-13	-31B-SM16-13-3	16 mm FINELOK	16 mm FINELOK								
-31B-SM18-13	-31B-SM18-13-3	18 mm FINELOK	18 mm FINELOK								
-31B-FS12-13	-31B-FS12-13-3	3/4" FS	3/4" FS								
-31B-PS8-13	-31B-PS8-13-3	1/2 PS	1/2 PS								
-31B-PB8-13	-31B-PB8-13-3	1/2 PB	1/2 PB								
-31B-S12-13	-31B-S12-13-3	3/4" FINELOK	3/4" FINELOK	0.516 (13.1)	13.6	4.04 (102.6)	2.02 (51.3)	0.89 (22.6)	2.35 (59.7)	4.5 (114)	4.84 (123)
-31B-FS12-13	-31B-FS12-13-3	3/4" FS	3/4" FS								
-31B-PS8-13	-31B-PS8-13-3	1/2 PS	1/2 PS	0.516 (13.1)	15	2.7 (68.6)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.5 (114)	4.84 (123)
-31B-PB8-13	-31B-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
-31B-PB12-13	-31B-PB12-13-3	3/4 PB	3/4 PB	0.516 (13.1)	13.6	2.69 (68.3)	1.34 (34)	0.89 (22.6)	2.35 (59.7)	4.5 (114)	—
-31B-FNT12-22	-31B-FNT12-22-3	3/4 Female NPT	3/4 Female NPT	0.875 (22.2)	31	3.59 (91.2)	1.8 (45.7)	1.25 (31.8)	2.94 (74.7)	6 (152)	5.45 (138)
-31B-FRT12-22	-31B-FRT12-22-3	3/4 Female BSPT	3/4 Female BSPT								
-31B-FRP12-22	-31B-FRP12-22-3	3/4 Female BSPP	3/4 Female BSPP								
-31B-FNT16-22	-31B-FNT16-22-3	1 Female NPT	1 Female NPT								
-31B-FRT16-22	-31B-FRT16-22-3	1 Female BSPT	1 Female BSPT								
-31B-FRP16-22	-31B-FRP16-22-3	1 Female BSPP	1 Female BSPP								
-31B-S16-22	-31B-S16-22-3	1" FINELOK	1" FINELOK		40	5.36 (136)	2.68 (68)	1.25 (31.8)	2.94 (74.7)	6 (152)	
-31B-S20-22	-31B-S20-22-3	1 1/4" FINELOK	1 1/4" FINELOK			6.34 (161)	3.17 (80.5)				
-31B-SM25-22	-31B-SM25-22-3	25 mm FINELOK	25 mm FINELOK		40	5.36 (136)	2.68 (68)	1.25 (31.8)	2.94 (74.7)	6 (152)	
-31B-SM28-22	-31B-SM28-22-3	28 mm FINELOK	28 mm FINELOK			6.14 (156)	3.07 (78)				
-31B-FS16-22	-31B-FS16-22-3	1" FS	1" FS	38	3.59 (91.2)	1.8 (45.7)	1.25 (31.8)	2.94 (74.7)	6 (152)		
-31B-MW25-22	-31B-MW25-22-3	25 mm MW	25 mm MW		3.59 (91.2)	1.8 (45.7)					
-31B-PS12-22	-31B-PS12-22-3	3/4 PS	3/4 PS	36	3.59 (91.2)	1.8 (45.7)	1.25 (31.8)	2.94 (74.7)	6 (152)		
-31B-PS16-22	-31B-PS16-22-3	1 PS	1 PS								
-31B-PB12-22	-31B-PB12-22-3	3/4 PB	3/4 PB	40	3.46 (87.9)	1.73 (43.9)	1.25 (31.8)	2.94 (74.7)	6 (152)		
-31B-PB16-22	-31B-PB16-22-3	1 PB	1 PB								
-31B-FS20-29	-31B-FS20-29-3	1 1/4" FS	1 1/4" FS	80	4.39 (112)	2.19 (55.6)	1.53 (38.9)	4.03 (102)	9.14 (232)		
-31B-PB20-29	-31B-PB20-29-3	1 1/4 PB	1 1/4 PB		4.57 (116)	2.28 (57.9)					
-31B-FNT20-32	-31B-FNT20-32-3	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)	
-31B-FNT24-32	-31B-FNT24-32-3	1 1/2 Female NPT	1 1/2 Female NPT								
-31B-FS24-32	-31B-FS24-32-3	1 1/2" FS	1 1/2" FS								
-31B-PS20-32	-31B-PS20-32-3	1 1/4 PS	1 1/4 PS								
-31B-PS24-32	-31B-PS24-32-3	1 1/2 PS	1 1/2 PS								
-31B-PB24-32	-31B-PB24-32-3	1 1/2 PB	1 1/2 PB	100	4.57 (116)	2.29 (58)	1.53 (38.9)	4.03 (102)	9.14 (232)		
-31B-FNT32-38	-31B-FNT32-38-3	2 Female NPT	2 Female NPT		4.57 (116)	2.29 (58)					
-31B-FRT32-38	-31B-FRT32-38-3	2 Female BSPT	2 Female BSPT	1.5 (38.1)	130	4.94 (125.4)	2.47 (62.7)	1.74 (44.2)	4.16 (106)	9.14 (232)	
-31B-FS32-38	-31B-FS32-38-3	2" FS	2" FS								
-31B-PS32-38	-31B-PS32-38-3	2 PS	2 PS								
-31B-PB32-38	-31B-PB32-38-3	2 PB	2 PB								
											5.09 (129)

1. FINELOK means FINELOK double ferrule tube fittings, FS means fractional tube socket weld, MW means metric tube socket weld, FB means fractional tube butt weld, MB 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 FINELOK 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 FINELOK.

Ordering Information



3-piece Ball Valves

10B Series

General Application

Maximum working pressure: 1000 psig (68.9 bar)

Working temperature: -20°F to 450°F (-28°C to 232°C)

End connections:

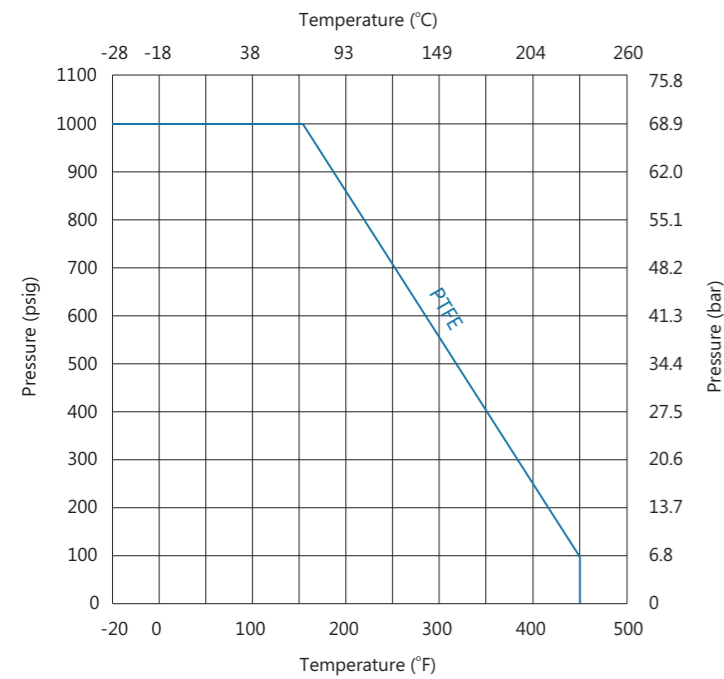
- 1/8 to 3 thread
- 1/8 to 3 pipe butt or socket weld
- 1/2" to 2" and 12 mm to 50 mm tube butt or socket weld
- 1/2" to 2" and 12 mm to 38 mm tube fitting
- 1/2 to 4 flange

Orifice sizes: 4.8 mm to 76 mm

Features

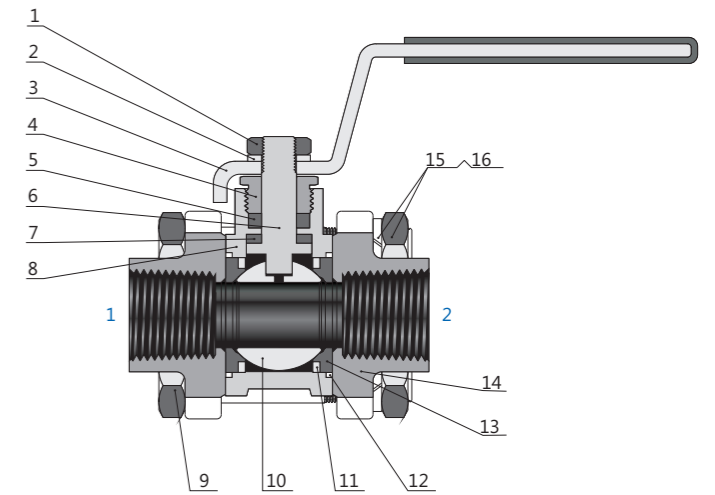
- ☆ Blowout proof stem
- ☆ Options for handle color
- ☆ Pneumatic and electric actuation available
- ☆ Leak-tight performance testing for every valve at the maximum working pressure

Pressure vs. Temperature

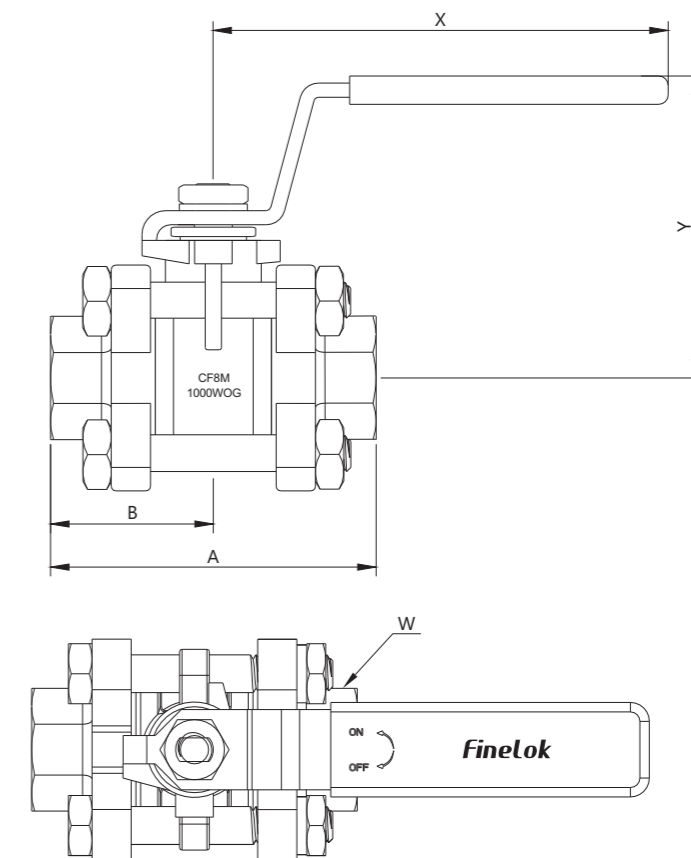


Standard Materials of Construction

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	CF8/A351 (with vinyl sleeve)			
4	Gland	316 SS/A276 or 304 SS/A276			
5	Stem Packing	PTFE/D1710			
6	Stem	316 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			
11	Support Ring	316 SS/A276			
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

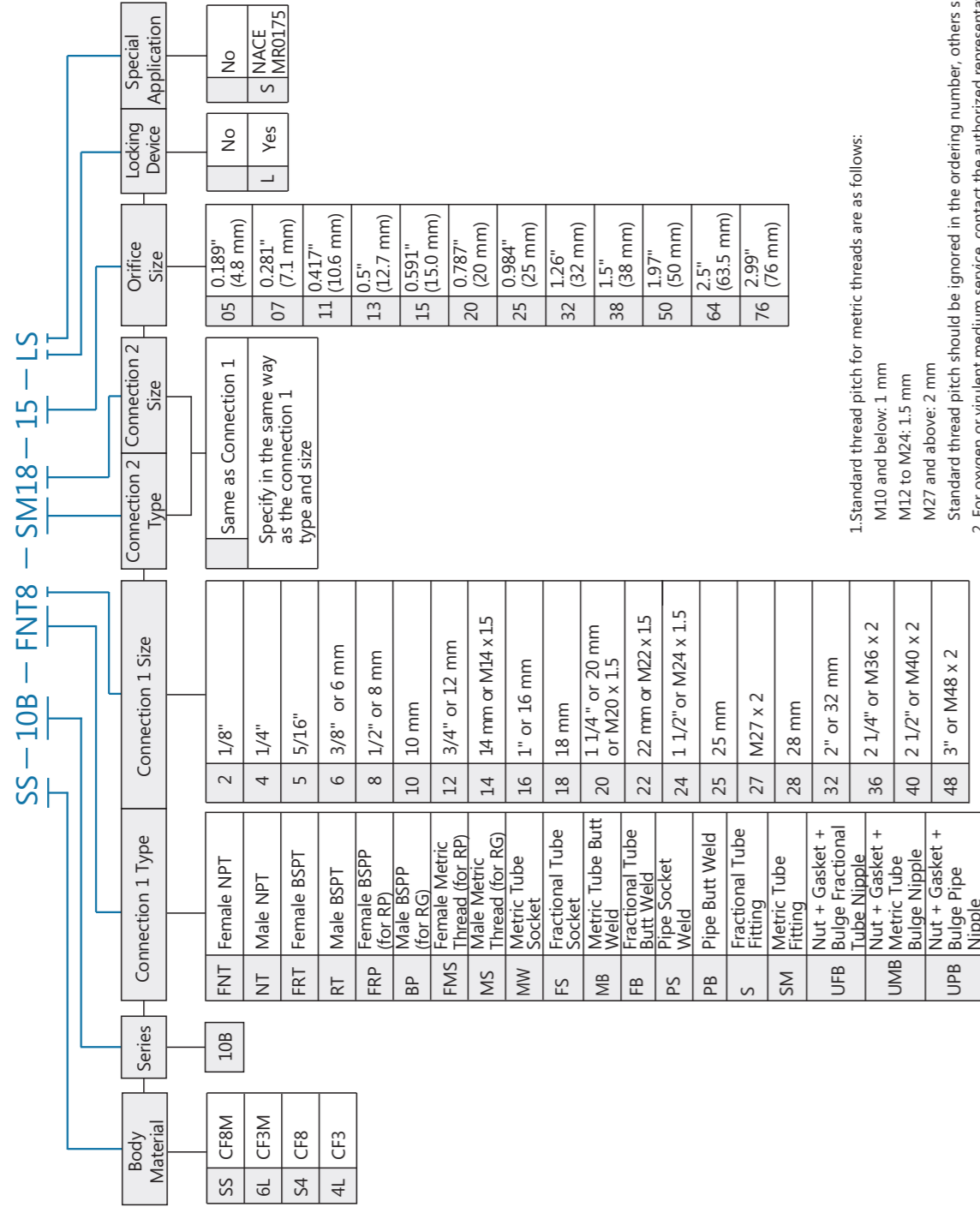


Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
-10B-FNT2-05	1/8 Female NPT	1/8 Female NPT	0.188 (4.8)	1.2	2.57 (65.2)	1.28 (32.6)			
-10B-FRP2-05	1/8 Female BSPP	1/8 Female BSPP							
-10B-PB4-05	1/4 PB	1/4 PB							
-10B-S4-05	1/4" FINELOK	1/4" FINELOK							
-10B-SM6-05	6 mm FINELOK	6 mm FINELOK							
-10B-SM8-05	8 mm FINELOK	8 mm FINELOK							
-10B-FNT4-07	1/4 Female NPT	1/4 Female NPT	0.281 (7.1)	3.8	2.57 (65.2)	1.28 (32.6)	0.93 (23.5)	3.94 (100.0)	2.15 (54.7)
-10B-FRP4-07	1/4 Female BSPP	1/4 Female BSPP							
-10B-PS4-07	1/4 PS	1/4 PS							
-10B-PB6-07	3/8 PB	3/8 PB							
-10B-S6-07	3/8" FINELOK	3/8" FINELOK							
-10B-SM10-07	10 mm FINELOK	10 mm FINELOK							
-10B-S8-11	1/2" FINELOK	1/2" FINELOK	0.417 (10.6)	7.5	4.04 (103.0)	2.02 (51.3)			
-10B-SM12-11	12 mm FINELOK	12 mm FINELOK							
-10B-SM14-11	14 mm FINELOK	14 mm FINELOK							
-10B-FNT6-13	3/8 Female NPT	3/8 Female NPT	0.50 (12.7)	11.3	2.57 (65.2)	1.28 (32.6)	0.88 (22.3)		
-10B-FRP6-13	3/8 Female BSPP	3/8 Female BSPP							
-10B-PS6-13	3/8 PS	3/8 PS							
-10B-PB8-13	1/2 PB	1/2 PB							
-10B-S10-13	5/8" FINELOK	5/8" FINELOK							
-10B-SM16-13	16 mm FINELOK	16 mm FINELOK							
-10B-FNT8-15	1/2 Female NPT	1/2 Female NPT	0.591 (15.0)	13.0	2.74 (69.5)	1.37 (34.8)	1.06 (27.0)	3.94 (100.0)	2.26 (57.5)
-10B-FRP8-15	1/2 Female BSPP	1/2 Female BSPP							
-10B-PS8-15	1/2 PS	1/2 PS							
-10B-MB22-15	22 mm MB	22 mm MB							
-10B-FS12-15	3/4" FS	3/4" FS							
-10B-MW18-15	18 mm MW	18 mm MW							
-10B-S12-15	3/4" FINELOK	3/4" FINELOK	4.06 (103.2)	2.03 (51.6)					
-10B-SM18-15	18 mm FINELOK	18 mm FINELOK							
-10B-SM20-15	20 mm FINELOK	20 mm FINELOK							
-10B-FNT12-20	3/4 Female NPT	3/4 Female NPT							
-10B-FRP12-20	3/4 Female BSPP	3/4 Female BSPP	0.787 (20.0)	50.0	3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.08 (129.0)	2.48 (63.0)

Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)				
	Connection 1	Connection 2			A	B	W	X	Y
-10B-PB12-20	3/4 PB	3/4 PB	0.787 (20.0)	50.0	3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.08 (129.0)	2.48 (63.0)
-10B-PS12-20	3/4 PS	3/4 PS							
-10B-FS16-20	1" FS	1" FS							
-10B-MB25-20	25 mm MB	25 mm MB							
-10B-MW25-20	25 mm MW	25 mm MW							
-10B-S16-20	1" FINELOK	1" FINELOK							
-10B-SM22-20	22 mm FINELOK	22 mm FINELOK							
-10B-SM25-20	25 mm FINELOK	25 mm FINELOK							
-10B-SM28-20	28 mm FINELOK	28 mm FINELOK							
-10B-FNT16-25	1 Female NPT	1 Female NPT							
-10B-FRP16-25	1 Female BSPP	1 Female BSPP							
-10B-PS16-25	1 PS	1 PS							
-10B-PB16-25	1 PB	1 PB							
-10B-S20-25	1 1/4" FINELOK	1 1/4" FINELOK							
-10B-FNT20-32	1 1/4 Female NPT	1 1/4 Female NPT							
-10B-FRP20-32	1 1/4 Female BSPP	1 1/4 Female BSPP	1.260 (32.0)	110.0	4.33 (110.0)	2.17 (55.0)	1.94 (49.2)	6.14 (156.0)	3.19 (81.0)
-10B-PB20-32	1 1/4 PB	1 1/4 PB							
-10B-FNT24-38	1 1/2 Female NPT	1 1/2 Female NPT							
-10B-FRP24-38	1 1/2 Female BSPP	1 1/2 Female BSPP	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)
-10B-PB24-38	1 1/2 PB	1 1/2 PB							
-10B-FNT32-50	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)
-10B-FRP32-50	2 Female BSPP	2 Female BSPP							
-10B-PB32-50	2 PB	2 PB							
-10B-FNT40-64	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)
-10B-FRP40-64	2 1/2 Female BSPP	2 1/2 Female BSPP							
-10B-PB40-64	2 1/2 PB	2 1/2 PB							
-10B-FNT48-76	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)
-10B-FRP48-76	3 Female BSPP	3 Female BSPP							
-10B-PB48-76	3 PB	3 PB							

1. FINELOK means FINELOK double ferrule tube fittings, FS means fractional tube socket weld, MW means metric tube socket weld, FB means fractional tube butt weld, MB 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 FINELOK 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 FINELOK.

Ordering Information



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. For oxygen or virulent medium service, others should be specified. 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 FINELOK.

Hex Bar Stock Ball Valves

11B Series

Maximum working pressure: 1000 psig (68.9 bar)

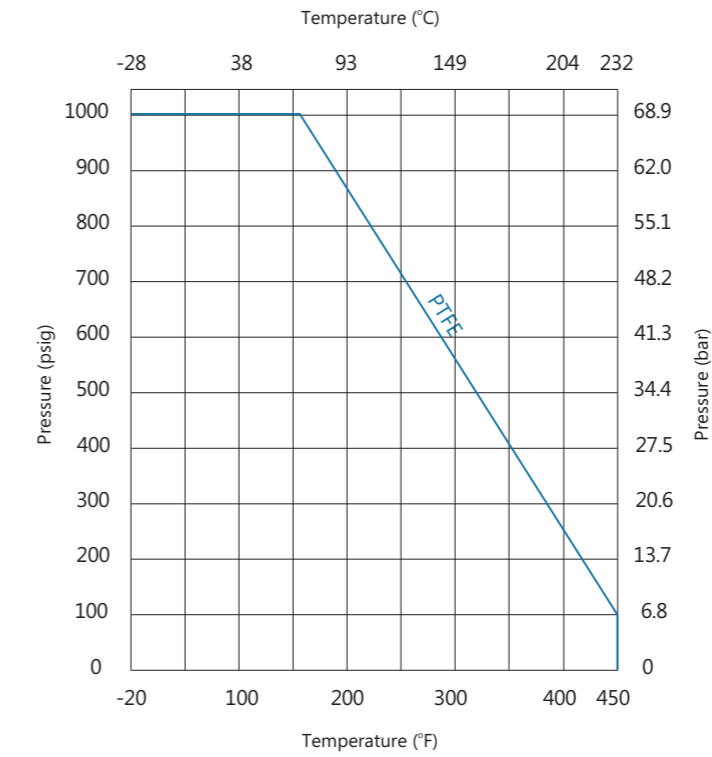
Working temperature: -20°F to 450°F (-28°C to 232°C)

Features

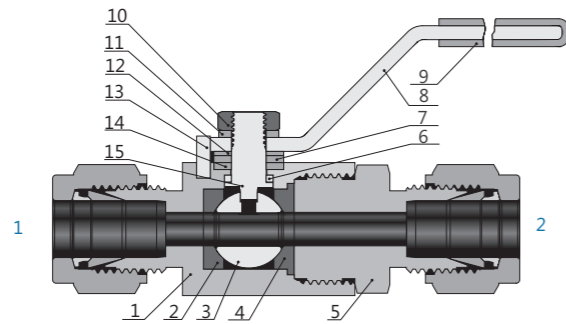
- ☆ Compact and economical design
- ☆ Free floating ball design for seat wear compensation
- ☆ Bi-directional flow
- ☆ Low operating torque
- ☆ Any reasonable connections available
- ☆ Blowout proof stem
- ☆ Options for handle color
- ☆ Leak-tight performance testing for every valve at the maximum working pressure with nitrogen



Pressure vs. Temperature



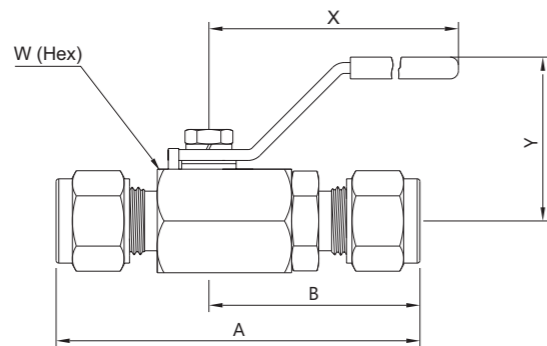
Standard Materials of Construction



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	Stainless steel			
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
-11B-SM6-05	6 mm FINELOK	6 mm FINELOK	0.18 (4.8)	1.25	2.63 (66.8)	1.50 (38.1)	3/4 (19.05)	2.36 (60)	1.18 (30)
-11B-SM8-05	8 mm FINELOK	8 mm FINELOK							
-11B-S4-05	1/4" FINELOK	1/4" FINELOK							
-11B-S5-05	5/16" FINELOK	5/16" FINELOK							
-11B-FNT2-05	1/8 Female NPT	1/8 Female NPT			1.85 (47.0)	1.08 (27.4)			
-11B-FRP2-05	1/8 Female BSPP	1/8 Female BSPP							
-11B-FRP4-05	1/4 Female BSPP	1/4 Female BSPP							
-11B-FNT4-05	1/4 Female NPT	1/4 Female NPT							
-11B-SM10-07	10 mm FINELOK	10 mm FINELOK	0.28 (7.1)	2.50	2.87 (72.9)	1.68 (42.7)	7/8 (22.23)		
-11B-S6-07	3/8" FINELOK	3/8" FINELOK							
-11B-FRP6-07	3/8 Female BSPP	3/8 Female BSPP			2.03 (51.6)	1.18 (30.0)			
-11B-FNT6-07	3/8 Female NPT	3/8 Female NPT							
-11B-SM12-10	12 mm FINELOK	12 mm FINELOK	0.35 (8.9)	9.25	3.15 (80.0)	1.83 (46.5)	15/16 (24.0)	3.15 (80)	1.54 (39)
-11B-S8-10	1/2" FINELOK	1/2" FINELOK							
-11B-S10-10	5/8" FINELOK	5/8" FINELOK			2.05 (52.1)	1.12 (28.5)			
-11B-FRP8-10	1/2 Female BSPP	1/2 Female BSPP							
-11B-FNT8-10	1/2 Female NPT	1/2 Female NPT	0.47 (12.0)	12.65	3.50 (88.9)	2.00 (50.8)	1 1/4 (31.75)		
-11B-SM14-13	14 mm FINELOK	14 mm FINELOK							
-11B-SM16-13	16 mm FINELOK	16 mm FINELOK			2.39 (60.7)	1.20 (30.5)			
-11B-SM18-13	18 mm FINELOK	18 mm FINELOK							
-11B-S12-13	3/4" FINELOK	3/4" FINELOK	0.63 (16.0)	17.35	3.93 (99.8)	2.24 (56.9)	1 5/8 (41.27)	3.94 (100)	1.77 (45)
-11B-FRP12-13	3/4 Female BSPP	3/4 Female BSPP							
-11B-FNT12-13	3/4 Female NPT	3/4 Female NPT			3.01 (76.5)	1.52 (38.6)			
-11B-SM22-16	22 mm FINELOK	22 mm FINELOK							
-11B-SM25-16	25 mm FINELOK	25 mm FINELOK	1" FINELOK	1" FINELOK					
-11B-S16-16	1" FINELOK	1" FINELOK							
-11B-FRP16-16	1 Female BSPP	1 Female BSPP							
-11B-FNT16-16	1 Female NPT	1 Female NPT							

1. FINELOK means FINELOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request.
3. Dimensions are shown with FINELOK 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 FINELOK.

