

# 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)

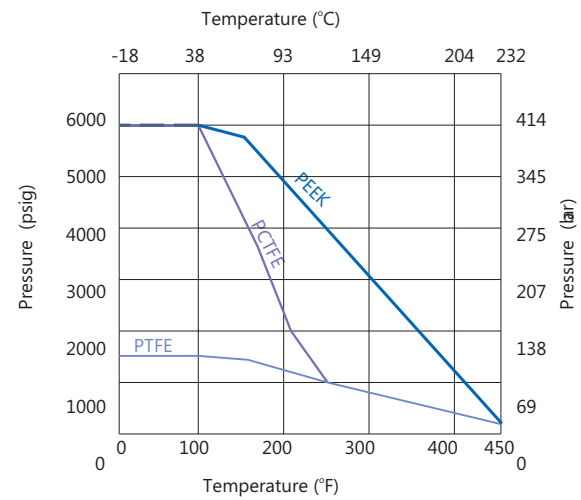
### Features

- ☆ 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

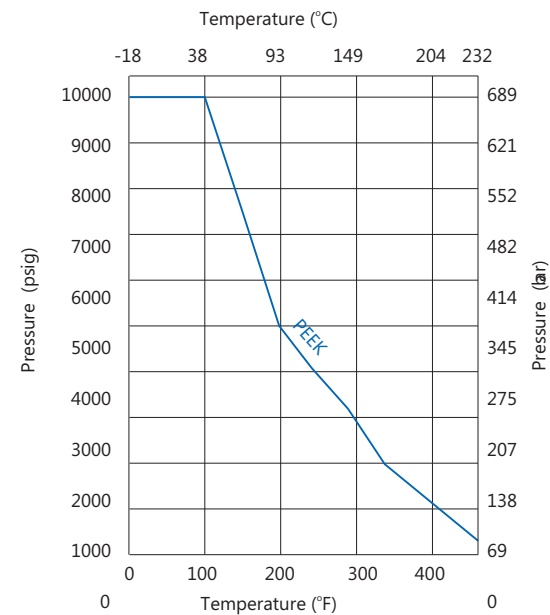


### Pressure vs. Temperature

60B Series



60HB Series



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

### 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 ( $\Delta p$ ) psig (bar)	Air Flow std ft <sup>3</sup> /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 ( $\Delta p$ ) psig (bar)	Air Flow std ft <sup>3</sup> /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 ( $\Delta p$ ) psig (bar)	Air Flow std ft <sup>3</sup> /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)

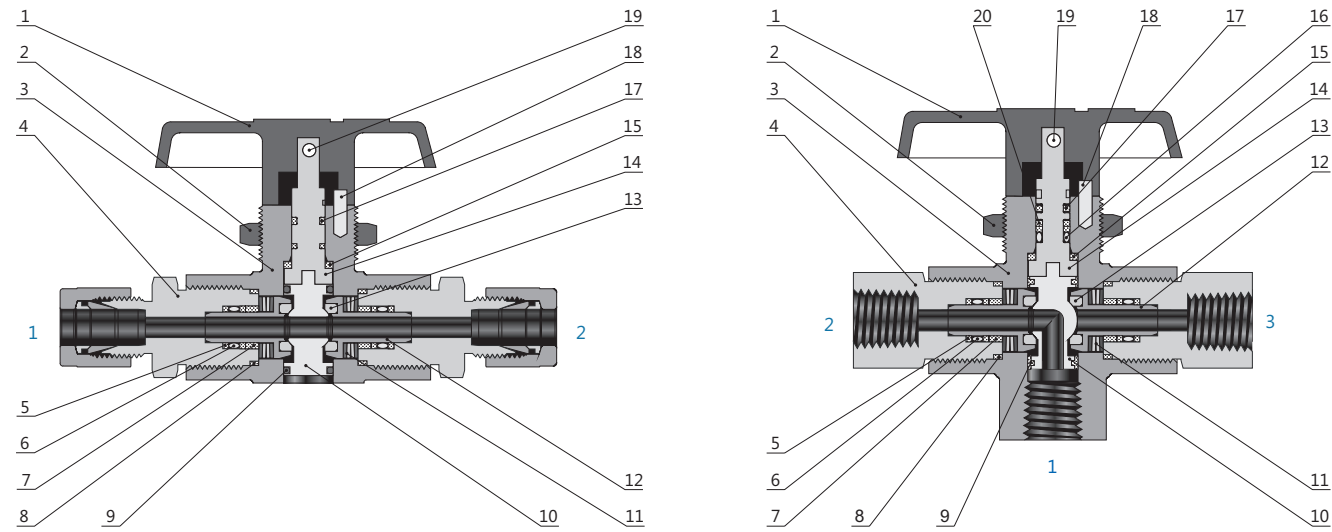
60HB Series 3-way

0.187" (4.8 mm) orifice, 0.75 Cv

Inlet Pressure psig (bar)	Pressure Drop ( $\Delta p$ ) psig (bar)	Air Flow std ft <sup>3</sup> /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

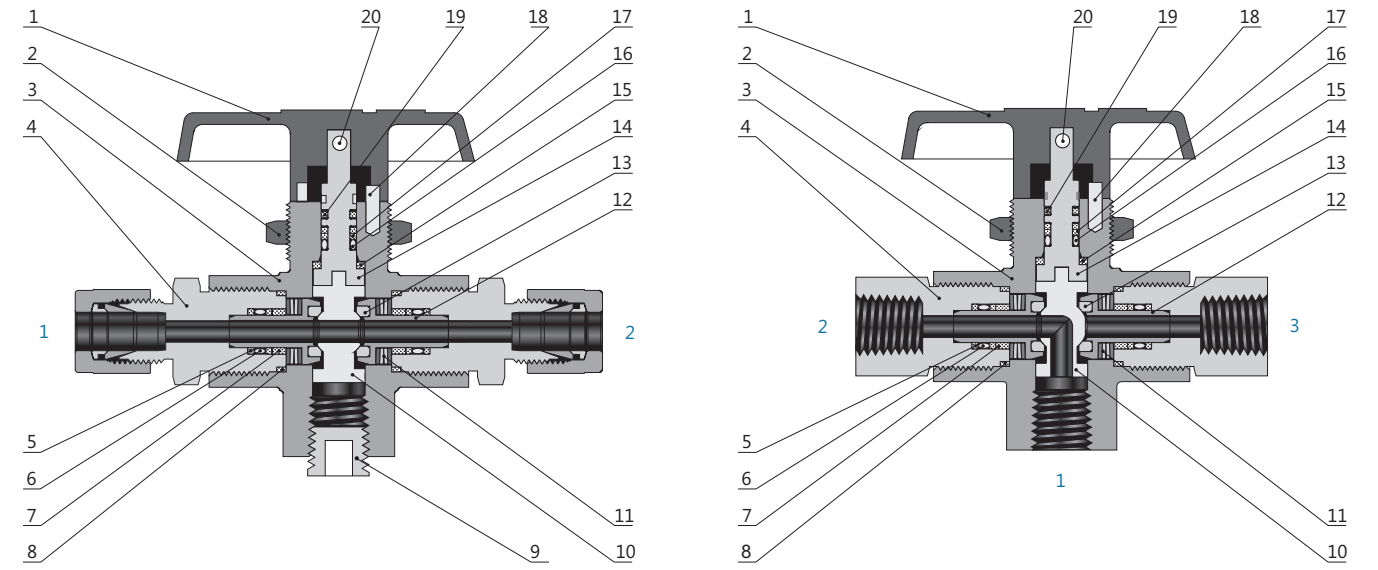


Item	Component	Valve Body Material			
		316 Stainless Steel		Alloy 400	
		2-way	3-way	2-way	3-way
Material Grade/ASTM Specification					
1	Handle	Nylon or Aluminium			
2	Panel Nut	316 SS/B783			
3	Body	316 SS/A479	316 SS/A182	Alloy 400/B164	
4	End Connector	316 SS/A479		Alloy R-405/B164	
5	Seat Retainer 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			

1. Ball trunnions are PTFE coated in 60B series 2-way valve.

2. Other materials are available upon request, refer to the ordering information.

### 60HB Series

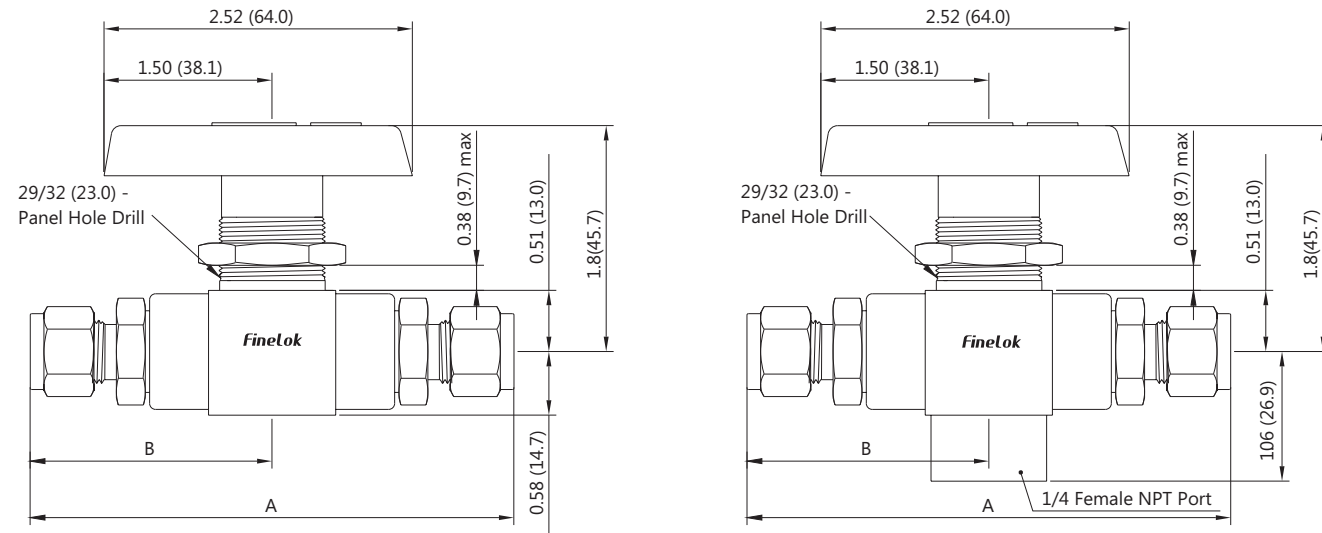


Item	Component	2-way	3-way
		Material Grade/ASTM Specification	
1	Handle	Nylon or Aluminium	
2	Panel Nut	316 SS/B783	
3	Body	316 SS/A479	316 SS/A182
4	End Connector	316 SS/A479	
5	Seat Retainer Guide	Reinforced PTFE	
6	Seat Retainer O-ring	Fluorocarbon FKM	
7	Seat Carrier Guide	316 SS/A276	
8	End Connector Seal	PTFE/D1710	
9	Plug	316 SS/A276	
10	Ball	S21800/A276	
11	Seat Spring	Alloy X-750/AMS 5542	
12	Seat Retainer	316 SS/A276	
13	Seat	PEEK	
14	Stem	316 SS/A276	
15	Stem Washer	PEEK	
16	Stem O-ring	Fluorocarbon FKM	
17	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-FNT23	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			
-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)

- FINELOK means FINELOK double ferrule tube fittings.
- Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.
- 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

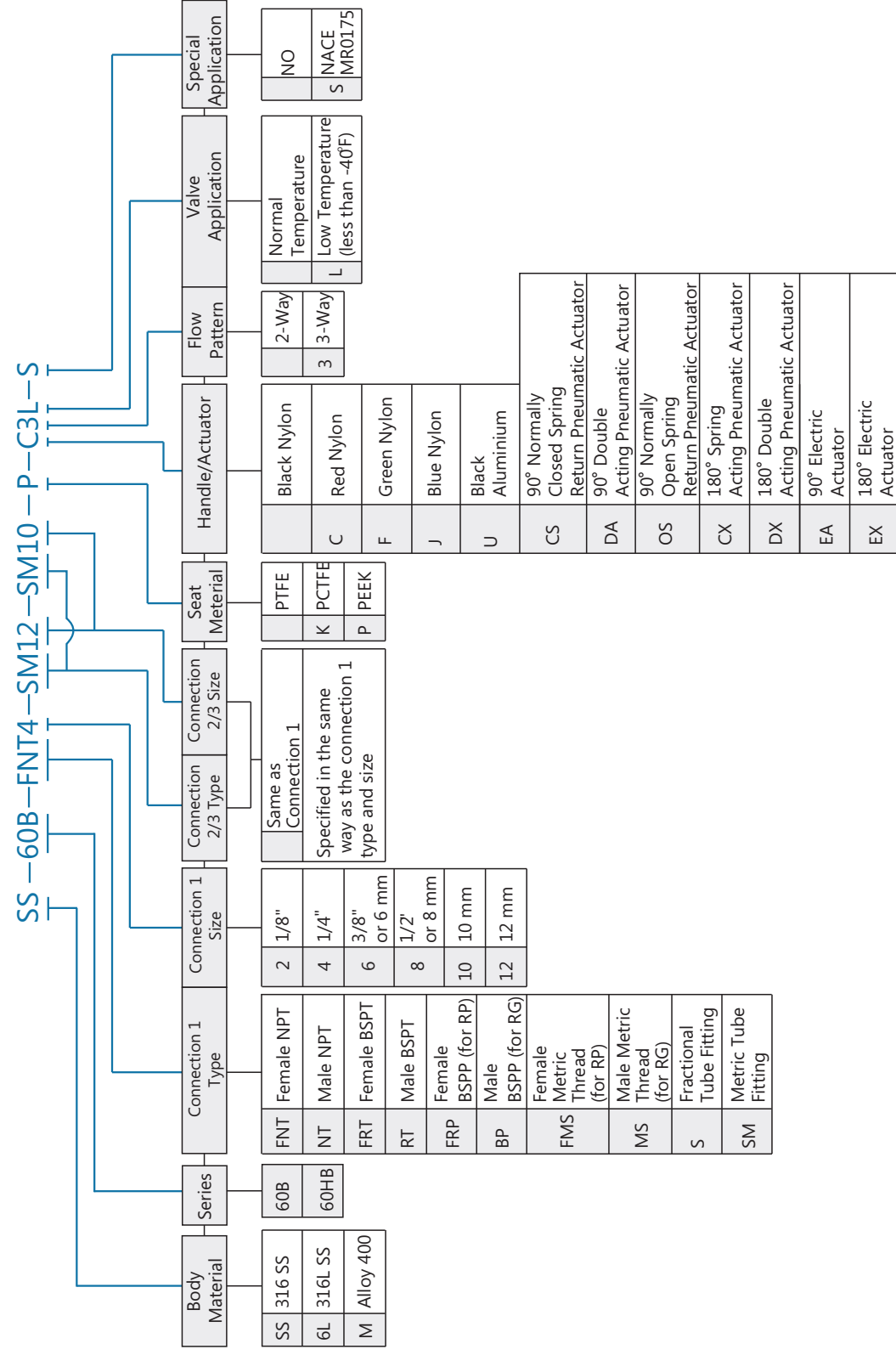
Trunnion ball valves for low-temperature service, with a temperature rating of -40°F to 200°F (-40°C to 93°C) are available. Low-temperature valves have low-temperature Buna C O-rings. All other materials and ratings are the same as those of standard valves.

#### 60B Series Low-temperature service Pressure - temperature Ratings

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

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				



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.