

“BALL
VALVE



C-LOK the high quality
instrumentation valves
& fittings specialized
production manufacture

C-LOK

Instrument Valve Co., Ltd.

C-LOK the high quality instrumentation valves
& fittings specialized production manufacture



One-pieces Ball Valves

B1 Series

Features

- Working pressure up to 3000 psig (207 bar)
 - Working temperature from -65°F to 300°F (-54°C to 148°C)
 - 2-way, 3-way models for on-off and switching service available
 - One piece body and one piece ball stem eliminates multiple seal points
 - Top entry design allows in-line inspection and repair after system depressurizing, simplifies maintenance
 - Live-loading with packing springs compensates for thermal effects and wear
 - Pneumatic and electric actuation available
 - Panel mountable
- 100% factory tested

Technical Data

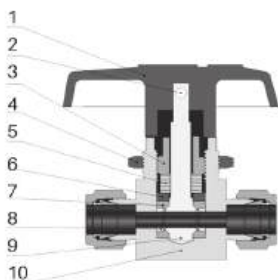
Temperature		Working pressure, psig (bar)
°F	°C	
-65~50	-54~10	3000(207)
50~150	10~65	3000(207)
200	93	2800(193)
250	121	2650(182)
300	148	2500(172)



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One - piece Instrument Ball Valves

B1 Series

Dimensions

Item	Component	Valve Body Materials		
		Stainless Steel	Brass	Alloy 400
		Material Grade/ASTM Specification		
1	Handle	Aluminum alloy		
2	Set screw	302 SS		
3	Packing screw	316 SS/A176	Brass CDA 360/B16	Alloy R-405/B164
4	Panel nut	S17400S	Brass CDA 360/B16	S17400S
5	Packing springs	316 SS/A240		
6	Gland	316 SS/A276		
7	Packing seat	PTFE/Reinforced PTFE/UHMWPE		
8	Support rings	Fluorocarbon coated 316 SS/A276		Fluorocarbon coated alloy 400
9	Ball stem	316 SS/A276 and A479		Alloy R-405/B164
10	Body	316 SS/A182	Brass CDA 360/B283	Alloy 400/B564
	Lubricant	Hydrocarbon-based and silicone-based		



One-pieces Ball Valves

B1 Series

Table of Dimension

Basic Model Number	End Connection		Orifice in. (mm)	Cv
	Port 1	Port 2/3		
-B1-S1-1	1/16"OD	1/16"OD	0.052 (1.32)	0.10
-B1-S2-2	1/8"OD	1/8"OD	0.093 (2.36)	0.20
-B1-SM3-2	3mmOD	3mmOD		
-B1-F2-3	1/8 Female NPT	1/8 Female NPT	0.125 (3.18)	0.60
-B1-S4-3	1/4"OD	1/4"OD		
-B1-SM5-3	6mmOD	6mmOD	0.187 (4.75)	1.5
-B1-F2-5	1/8 Female NPT	1/8 Female NPT		
-B1-F4-5	1/4 Female NPT	1/4 Female NPT		
-B1-FR4-5	1/4 Female BSPT	1/4 Female BSPT		
-B1-M4-5	1/4 Male NPT	1/4 Male NPT		
-B1-M4-S4-5	1/4 Male NPT	1/4"OD		
-B1-S4-5	1/4"OD	1/4"OD		
-B1-S6-5	3/8"OD	3/8"OD		
-B1-SM5-5	6mmOD	6mmOD		
-B1-SM8-5	8mmOD	8mmOD		
-B1-F4-7	1/4 Female NPT	1/4 Female NPT	0.281 (7.14)	6.0
-B1-F6-7	3/8 Female NPT	3/8 Female NPT		
-B1-FR6-7	3/8 Female BSPT	3/8 Female BSPT		
-B1-S6-7	3/8"OD	3/8"OD		
-B1-SM10-7	10mmOD	10mmOD		
-B1-SM12-7	12mmOD	12mmOD	0.406 (10.3)	12
-B1-SM14-7	14mmOD	14mmOD		
-B1-F8-10	1/2 Female NPT	1/2 Female NPT		
-B1-FR8-10	1/2 Female BSPT	1/2 Female BSPT		
-B1-S8-10	1/2"OD	1/2"OD		
-B1-S12-10	3/4"OD	3/4"OD		
-B1-SM12-10	12mmOD	12mmOD		
-B1-SM14-10	14mmOD	14mmOD		
-B1-SM16-10	16mmOD	14mmOD		

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Hex Bar Stock Ball Valves

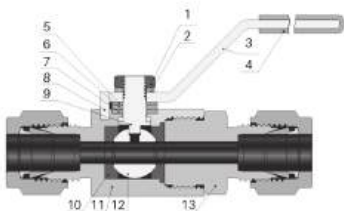
B2 Series

Features

- Working pressure up to 2000 psig (138 bar)
- Working temperature from -65°F to 450°F (-54°C to 232°C)
- Size from 1/8" to 1" or mm to 25 mm
- Compact design with one piece hexagon body
- Low torque for easy operation
- Free floating ball design provides seat wear compensation
- depressurizing, simplifies maintenance
- 100% factory tested

Technical Data

Temperature		Working pressure, psig (bar)
°F	°C	
-65~100	-54~37	2000(138)
150	65	1820(125)
200	93	1650(113)
250	121	1480(101)
300	148	1310(90)
350	176	1140(79)
400	204	970(67)
450	232	800(55)



Hex Bar Stock Ball Valves

B2 Series

Standard Materials of Construction

Item	Component	Body Materials	
		316 SS	Brass
1	Stem nut	316 SS	
2	Spring washer	Spring steel	
3	Handle	316 SS	
4	Handle sleeve	Vinyl	
5	Washer	304 SS	
6	Gland	316 SS/A276	
7	Packing	PTFE (TFM1600)	
8	Stop pin	316 SS/A276	
9	Stem	316 SS/A276	
10	Seat	Reinforced PTFE	
11	Body	316 SS/ A276	Brass/ B453
12	Ball	316 SS/A479	
13	End connector	316 SS/ A276	Brass/ B453

Hex Bar Stock Ball Valves

B2 Series

Table of Dimentions

Basic Model Number	End Connection		Orifice in. (mm)	Cv
	Port 1	Port 2/3		
-B2-F2-5	1/8 Female NPT	1/8 Female NPT	0.197 (5.0)	1.25
-B2-F4-5	1/4 Female NPT	1/4 Female NPT		
-B2-FR4-5	1/4 Female BSPT	1/4 Female BSPT		
-B2-S4-5	1/4" OD	1/4" OD		
-B2-SM6-5	6mm OD	6mm OD		
-B2-F6-7	3/8 Female NPT	3/8 Female NPT	0.28 (7.1)	2.5
-B2-FR6-7	3/8 Female BSPT	3/8 Female BSPT		
-B2-S6-7	3/8" OD	3/8" OD		
-B2-SM8-7	8mm OD	8mm OD		
-B2-SM10-7	10mm OD	10mm OD		
-B2-F8-9	1/2 Female NPT	1/2 Female NPT	0.35 (9.0)	9.25
-B2-FR8-9	1/2 Female BSPT	1/2 Female BSPT		
-B2-S8-9	1/2" OD	1/2" OD		
-B2-SM12-9	12mm OD	12mm OD		
-B2-F12-13	3/4 Female NPT	3/4 Female NPT	0.49 (12.5)	12.65
-B2-FR12-13	3/4 Female BSPT	3/4 Female BSPT		
-B2-S10-13	5/8" OD	5/8" OD		
-B2-S12-13	3/4" OD	3/4" OD		
-B2-SM14-13	14mm OD	14mm OD		
-B2-SM16-13	16mm OD	16mm OD		
-B2-F16-16	1 Female NPT	1 Female NPT	0.63 (16.0)	17.35
-B2-FR16-16	1 Female BSPT	1 Female BSPT		
-B2-S16-16	1" OD	1" OD		
-B2-SM25-16	25mm OD	25mm OD		



Trunnion Ball Valves

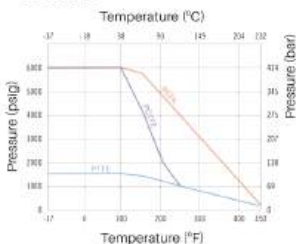
B3 Series

Features

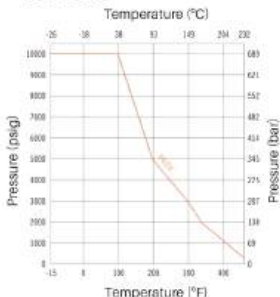
- Maximum working pressure 6000 -10000 psig (690 bar)
- Working temperature: 0°F to 450°F (-17°C to 232°C)
- Fixed ball with double sealing
- Automatic compensation of seat sealing
- Low operating torque
- Blowout proof stem
- Handle as indicator of flow direction
- Positive handle stop
- Pneumatic or electric actuator available
- Panel mountable
- Options for handle color
- Leak-tight performance testing with nitrogen for every Valve at the maximum working pressure, but not higher than 6000 psig

Pressure VS. Temperature

B3 Series



B3H Series



1. Graphs are for 2-way Valves only

2. Maximum working pressure for 3-way Valves:

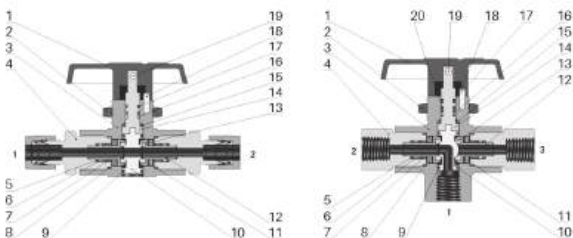
6000 psig: connection 1 as inlet, connection 2 and connection 3 as outlet

3000 psig: connection 1 as inlet, connection 3 and connection 1 as outlet

Trunnion Ball Valves

B3 Series

Standard Materials of Construction



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 aluminum			
2	Panel Nut	316 SS/B703			
3	Body	316 SS/A179		Alloy 400/B164	
4	End Connector	316 SS/A179		Alloy B-405/B254	
5	Seat Retainer Guide	Reinforced PTFE			
6	Seat Retainer O-ring	Fluorocarbon FKM			
7	Seat Center Guide	316 SS/A276		Alloy B-405/B254	
8	End Connector Seal	PIPE/01710			
9	Trunnion Bearing	Fluorocarbon FKM	PEEK	Fluorocarbon FKM	PEEK
10	Ball	316 SS/A276	S21800/V4275	Alloy B-405/B254	
11	Seat Spring	Alloy K-750/AMS 5542			
12	Seat Retainer	316 SS/A276		Alloy B-405/B254	
13	Seat	PTFE or PEEK or PCPTE			
14	Stem	316 SS/A276		Alloy B-405/B254	
15	Stem Washer	Reinforced PTFE	PEEK	Reinforced PTFE	PEEK
16	Stem O-ring	—	Fluorocarbon FKM	—	Fluorocarbon FKM
17	Primary Stem Backup Ring	PIPE/01710			
18	Pin	Stainless Steel			
19	Set Screw	S17400 SS			
20	Secondary Stem Backup Ring	—	PEEK	—	PEEK
Lubricants		Molybdenum and Tungsten disulfide and Fluorinated-based			

Trunnion Ball Valves

B3 Series

Dimensions

2-way Valve

Basic Ordering Number	Connection Size		Cv
	Connection 1	Connection 2	
B3 Series			
-B3-F2	1/8 Female NPT	1/8 Female NPT	1.2
-B3-F4	1/4 Female NPT	1/4 Female NPT	
-B3-F8	1/2 Female NPT	1/2 Female NPT	
-B3-S4	1/4" OD	1/4" OD	
-B3-S6	3/8" OD	3/8" OD	
-B3-S8	1/2" OD	1/2" OD	
-B3-SM6	6 mm OD	6 mm OD	
-B3-SM8	8 mm OD	8 mm OD	
-B3-SM10	10 mm OD	10 mm OD	
-B3-SM12	12 mm OD	12 mm OD	

3-way Valve

Basic Ordering Number	Connection Size			Cv
	Connection 1	Connection 2	Connection 3	
B3 Series				
-B3-F2-3	1/4 Female NPT	1/8 Female NPT	1/8 Female NPT	0.75
-B3-F4-3		1/4 Female NPT	1/4 Female NPT	
-B3-S4-3		1/4" OD	1/4" OD	
-B3-S6-3		3/8" OD	3/8" OD	
-B3-S8-3		1/2" OD	1/2" OD	
-B3-SM6-3		6 mm OD	6 mm OD	
-B3-SM8-3		8 mm OD	8 mm OD	
-B3-SM10-3		10 mm OD	10 mm OD	
-B3-SM12-3		12 mm OD	12 mm OD	

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Trunion Ball Valves

B3 Series

Service Option

B3 Series 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 (345)	1500 (103)
100 to 200 (37 to 93)	See Pressure vs. Temperature			

