

# Ball Valves

## BV7 Series Trunnion



- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ 2-way and 3-way flow pattern
- ❖ Spring-loaded seats
- ❖ Field repairable with seal kits
- ❖ 316 stainless steel and alloy 400 body material

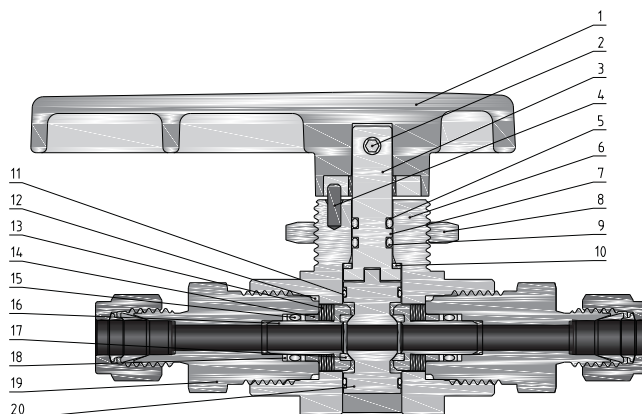
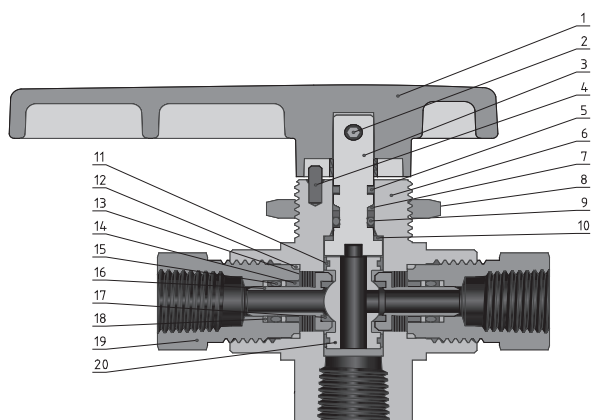
## Features

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ 2-way and 3-way pattern
- ❖ Spring-loaded seats reduce seat wear from pressure surges
- ❖ Field repairable with seal kits
- ❖ Trunnion-style ball and low operating torque
- ❖ Bottom-loaded stem prevents stem blowout
- ❖ Panel mountable
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections
- ❖ Color coded handles

## Pressure vs. Temperature

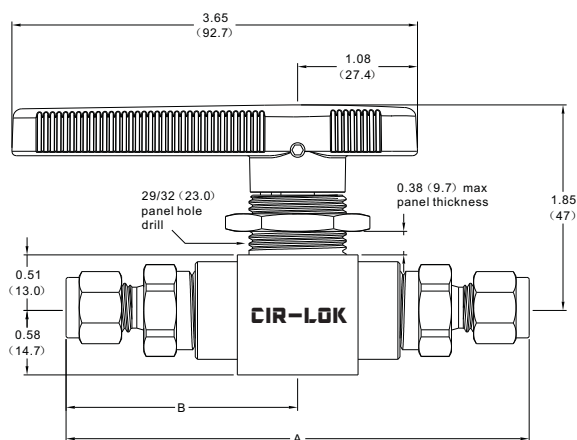
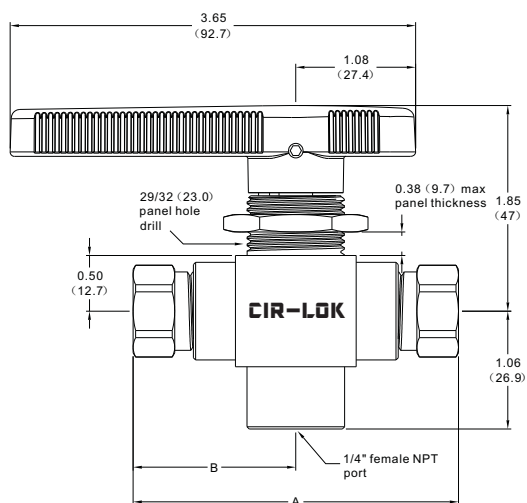
Body Material	316 S.S.			Alloy 400		
Seat Material	PEEK	PCTFE	PTFE	PEEK	PCTFE	PTFE
Temperature, °F (°C)	Working Pressure, psig (bar)					
-65 (-54) to 100 (37)	6000 (413)	6000 (413)	1500 (103)	5000 (344)	5000 (344)	1500 (103)
200 (93)	5000 (344)	2000 (137)	750 (151)	4390 (302)	2000 (137)	750 (151)
250 (121)	4100 (282)	1000 (68.9)	625 (43.0)	4100 (282)	1000 (68.9)	625 (43.0)
300 (148)	3200 (220)	—	500 (34.4)	3200 (220)	—	500 (34.4)
350 (176)	2300 (158)	—	375 (25.8)	2300 (158)	—	375 (25.8)
400 (204)	1400 (96.5)	—	250 (17.2)	1400 (96.5)	—	250 (17.2)
450 (232)	500 (34.4)	—	125 (8.6)	500 (34.4)	—	125 (8.6)

## 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 aluminium			
2	Set Screw	S17400 S.S.			
3	Body	316 S.S./A479	316 S.S./A182	Alloy 400/B164	
4	End Connector	316 S.S./A479		Alloy R-405/B164	
5	Seat Retainer Guide	Reinforced PTFE			
6	Seat Retainer O-ring	Fluorocarbon FKM			
7	Seat Carrier Guide	316 S.S./A276		Alloy R-405/B164	
8	End Connector Seal	PTFE/D1710			
9	Trunnion Bearing	Fluorocarbon FKM	PEEK	Fluorocarbon FKM	PEEK
10	Ball	316 S.S./A276	S21800/A276	Alloy R-405/B164	
11	Seat Spring	Alloy X-750/AMS 5542			
12	Seat Retainer	316 S.S./A276		Alloy R-405/B164	
13	Seat	PTFE or PEEK or PCTFE			
14	Stem	316 S.S./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	S17400 S.S.			
20	Secondary Stem Backup Ring	—	PEEK	—	PEEK

## Dimensions



### 2-way Valve

Basic Ordering Number	Connection Size	Orifice Size in. (mm)	Cv	Dimension, in. (mm)	
				A	B
BV7-FNPT2-05-	1/8 Female NPT	0.187 (4.75)	1.2	2.94 (74.7)	1.47 (37.3)
BV7-FNPT4-05-	1/4 Female NPT				
BV7-FNPT8-05-	1/2 Female NPT			4.25 (108.0)	2.13 (54.1)
BV7-F4-05-	1/4" CIR-LOK			4.14 (105.2)	2.07 (52.6)
BV7-F6-05-	3/8" CIR-LOK			4.39 (111.5)	2.19 (55.6)
BV7-F8-05-	1/2" CIR-LOK			4.60 (116.8)	2.30 (58.4)
BV7-M6-05-	6 mm CIR-LOK			4.14 (105.2)	2.07 (52.6)
BV7-M8-05-	8 mm CIR-LOK			4.15 (105.4)	
BV7-M10-05-	10 mm CIR-LOK			4.41 (112.0)	2.20 (55.9)
BV7-M12-05-	12 mm CIR-LOK			4.60 (116.8)	2.30 (58.4)

### 3-way Valve

Basic Ordering Number	Connection Size	Orifice Size in. (mm)	Cv	Dimension, in. (mm)	
				A	B
BV7-FNPT2-05-3-	1/8 Female NPT	0.187 (4.75)	0.75	2.94 (74.7)	1.47 (37.3)
BV7-FNPT4-05-3-	1/4 Female NPT				
BV7-F4-05-3-	1/4" CIR-LOK			4.14 (105.2)	2.07 (52.6)
BV7-F6-05-3-	3/8" CIR-LOK			4.39 (111.5)	2.19 (55.6)
BV7-F8-05-3-	1/2" CIR-LOK			4.60 (116.8)	2.30 (58.4)
BV7-M6-05-3-	6 mm CIR-LOK			4.14 (105.2)	2.07 (52.6)
BV7-M8-05-3-	8 mm CIR-LOK			4.15 (105.4)	
BV7-M10-05-3-	10 mm CIR-LOK			4.41 (112.0)	2.20 (55.9)
BV7-M12-05-3-	12 mm CIR-LOK			4.60 (116.8)	2.30 (58.4)

## Seal Kits

Seal kits contain components of the same materials as new components

Valve Series	Basic Seal Kits Ordering Number	Kit Contents
BV7 2-way	BV7-SK-S-316-	Instructions, O-rings, stem bearing, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant.
BV7 3-way	BV7-SK-3-316-	Instructions, stem, O-rings, backup rings, bearings, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant.

## Seal Kits Ordering Number

**BV7 — SK — S — 316 — P**

Series	Seal kits	Flow pattern	Body Material	Packing Material
BV7	SK Seal kits	S Straight 3 3-way	316 316L 304 304L Alloy400	T PTFE K PCTFE P PEEK

## How to Order

**BV7** — **M10** — **FNPT4** — **P05** — **L3** — **316**

Series	Port 1 Type	Port 1 Size	Port 2/3 Port 2/3 Type	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material		
BV7	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size  If port 2/3 and port 1 are the same, eliminate the port 2/3 designator	K PCTFE	0.187 in. (4.7 mm)	Black	Straight	316 316 S.S.		
	NPT Male NPT	3 3 mm		P PEEK		L Blue		3 3-way	316L 316L S.S.	
	FBT Female BSPT	4 1/4 in.		T PTFE		R Red			304 304 S.S.	
	MBT Male BSPT	5 5/16 in.				G Green			304L 304L S.S.	
	FMS Female ISO 261	6 3/8 in. or 6 mm				Y Yellow			A400 Alloy 400	
	MS Male ISO 261	8 1/2 in. or 8 mm								
	FBP Female BSPP	10 10 mm								
	MBP Male BSPP	12 12 mm								
	F Fractional Tube Fitting									
	M Metric Tube Fitting									