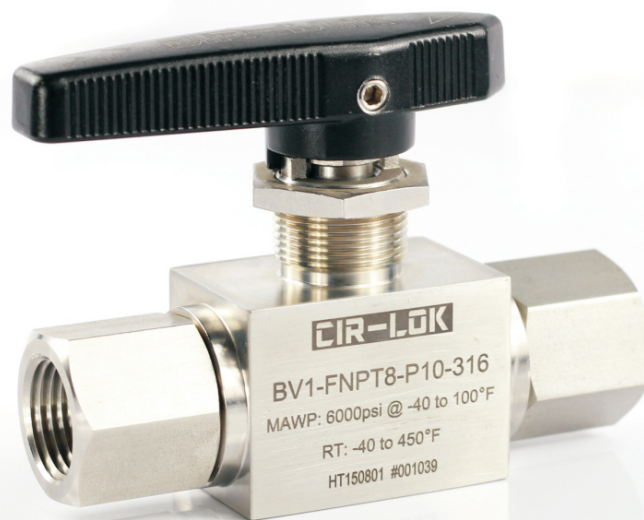


Bar Stock Ball Valves

BV1 Series



- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ 2-way, 3-way and angle flow pattern
- ❖ Field repairable with seal kit
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections

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, 3-way and angle flow pattern
- ❖ Field repairable with seal kit
- ❖ Low operating torque
- ❖ Panel mountable
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections
- ❖ Color coded handles

Pressure vs. Temperature

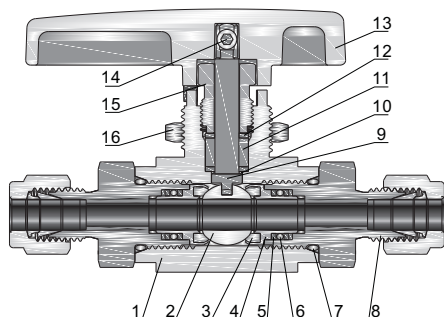
Body Material	316 S.S.			Brass
Seat Material	PEEK	PCTFE	PTFE	PTFE
Temperature, °F (°C)	Working Pressure, psig(bar)			
-65 (-54) to 100 (37)	6000 (413)	6000 (413)	1500 (103)	1500 (103)
200 (93)	5000 (344)	2000 (137)	750 (151)	750 (151)
250 (121)	4100 (282)	—	—	—
300 (148)	3200 (220)	—	—	—
350 (176)	2300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

Temperature Ranges

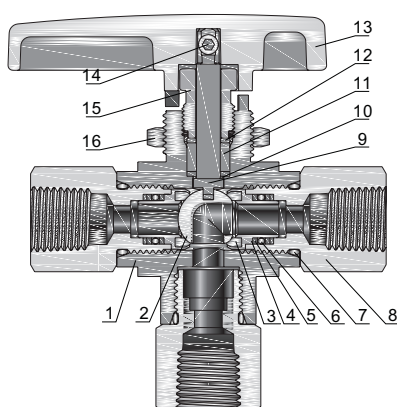
Packing Materials	Temperature Range °F (°C)
PTFE	-40 to 450 (-40 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

Standard Materials of Construction

2-way Vavles



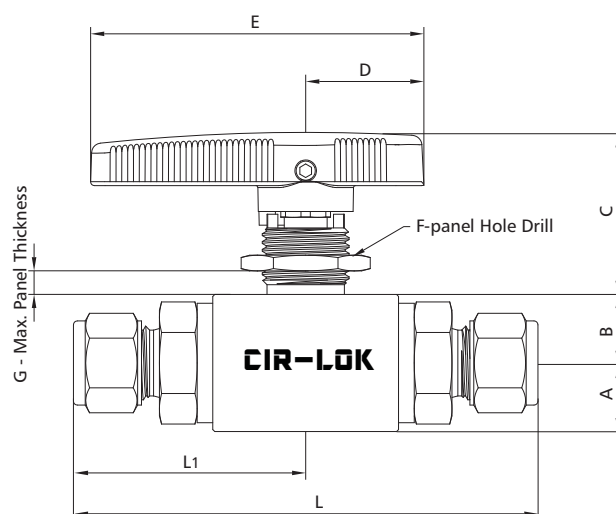
3-way Valves



Item	Component	Material Grade/ASTM Specification
		316 S.S.
1	Body	316 S.S./A479
2	Ball	316 S.S./A479
3	Seat	PEEK or PCTFE or PTFE
4	Seat Retainer	316 S.S./A479
5	Back Up Ring	PTFE/D1710
6	O-Ring	Fluorocarbon FKM
7	O-Ring	Fluorocarbon FKM
8	Conector	316 S.S./A479
9	Stem	316 S.S./A479
10	Stem Washer	PTFE/D1710
11	Packing	PTFE or Fluorocarbon FKM or Neoprene or Buna N
12	Packing Washer	316 S.S./A479
13	Handle	Aluminum
14	Screw	304 S.S.
15	Stem Bolt	316 S.S./A479
16	Nut	316 S.S./A479

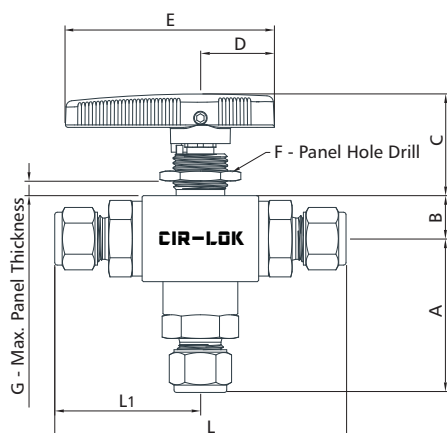
Dimensions

2-way Vavles



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)															
				L	L1	A	B	C	D	E	F	G							
BV1-F1-01-	1/16" CIR-LOK	0.093 (2.4)	0.21	2.60 (66.0)	1.30 (33.0)	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)							
BV1-F2-02-	1/8" CIR-LOK			2.72 (69.1)	1.36 (34.5)														
BV1-M3-02-	3 mm CIR-LOK			2.74 (69.6)	1.37 (34.8)														
BV1-FBT2-04-	1/8 Female BSPT	0.165 (4.2)	0.93	2.14 (54.4)	1.07 (27.2)														
BV1-FBP2-04-	1/8 Female BSPP																		
BV1-FNPT2-04-	1/8 Female NPT																		
BV1-MBT2-04-	1/8 Male BSPT			2.36 (60.0)	1.18 (30.0)														
BV1-MBP2-04-	1/8 Male BSPP																		
BV1-NPT2-04-	1/8 Male NPT																		
BV1-MBT4-04-	1/4 Male BSPT			2.70 (68.6)	1.35 (34.3)														
BV1-MBP4-04-	1/4 Male BSPP																		
BV1-NPT4-04-	1/4 Male NPT																		
BV1-F4-05-	1/4" CIR-LOK	0.187 (4.7)	1.05	3.48 (88.4)	1.74 (44.2)								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)
BV1-M6-05-	6 mm CIR-LOK			3.50 (89.0)	1.75 (44.5)														
BV1-F6-06-	3/8" CIR-LOK	0.250 (6.4)	2.34	3.60 (91.4)	1.80 (45.7)														
BV1-M8-06-	8 mm CIR-LOK			3.56 (90.4)	1.78 (45.2)														
BV1-M10-06-	10 mm CIR-LOK			3.62 (92.0)	1.81 (46.0)														
BV1-FBT4-06-	1/4 Female BSPT			3.02 (76.8)	1.51 (38.4)														
BV1-FBP4-06-	1/4 Female BSPP																		
BV1-FNPT4-06-	1/4 Female NPT																		
BV1-MBT4-06-	1/4 Male BSPT			3.24 (82.2)	1.62 (41.1)														
BV1-MBP4-06-	1/4 Male BSPP																		
BV1-NPT4-06-	1/4 Male NPT																		
BV1-MBT6-06-	3/8 Male BSPT																		
BV1-MBP6-06-	3/8 Male BSPP																		
BV1-NPT6-06-	3/8 Male NPT																		
BV1-F8-10-	1/2 " CIR-LOK	0.406 (10.3)	6.42	4.68 (118.8)	2.34 (59.4)	0.69 (17.5)	0.70 (17.8)	1.71 (43.5)	1.42 (36.0)	4.0 (101.6)	0.90 (22.9)	0.38 (9.7)							
BV1-M12-10-	12 mm CIR-LOK			4.66 (118.4)	2.33 (59.2)														
BV1-M14-10-	14 mm CIR-LOK																		
BV1-M16-10-	16 mm CIR-LOK																		
BV1-M18-10-	18 mm CIR-LOK			3.90 (99.0)	1.95 (49.5)	0.69 (17.5)	0.70 (17.8)												
BV1-FBT6-10-	3/8 Female BSPT																		
BV1-FBP6-10-	3/8 Female BSPP																		
BV1-FNPT6-10-	3/8 Female NPT			4.30 (109.2)	2.15 (54.6)														
BV1-FBT8-10-	1/2 Female BSPT																		
BV1-FBP8-10-	1/2 Female BSPP																		
BV1-FNPT8-10-	1/2 Female NPT			4.44 (112.8)	2.22 (56.4)														
BV1-MBT8-10-	1/2 Male BSPT																		
BV1-MBP8-10-	1/2 Male BSPP																		
BV1-NPT8-10-	1/2 Male NPT																		
BV1-F12-13-	3/4 " CIR-LOK	0.50 (12.7)	10.0	4.80 (122)	2.15 (61)	0.75 (19.0)	0.75 (19.0)	1.78 (45.2)	1.58 (40.0)	4.58 (116.2)	1.26 (32.0)	0.38 (9.7)							
BV1-M20-13-	20 mm CIR-LOK			4.12 (105)	2.06 (52.3)														
BV1-M22-13-	22 mm CIR-LOK																		
BV1-FBT12-13-	3/4 Female BSPT																		
BV1-FBP12-13-	3/4 Female BSPP			4.0 (101.6)	2.0 (50.8)														
BV1-FNPT12-13-	3/4 Female NPT			4.12 (105)	2.06 (52.3)														
BV1-MBT12-13-	3/4 Male BSPT			4.57 (116)	2.28 (58.0)														
BV1-MBP12-13-	3/4 Male BSPP																		
BV1-NPT12-13-	3/4 Male NPT																		

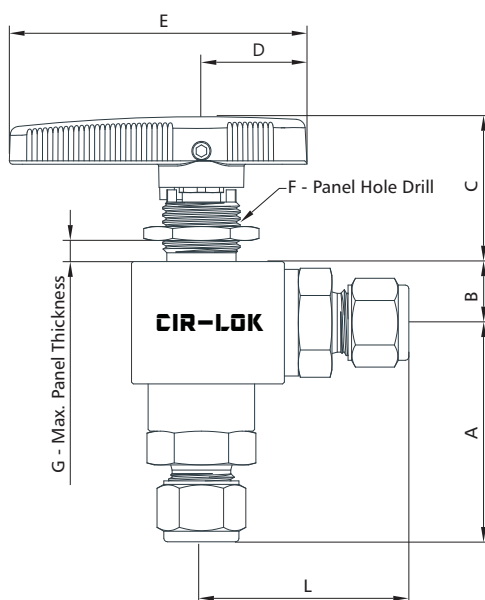
3-way Valves



Basic Ordering Number	Connection type and size	Orifice in. (mm)	Cv	Dimension, in. (mm)								
				L	L1	A	B	C	D	E	F	G
BV1-F1-01-3-	1/16" CIR-LOK	0.093 (2.4)	0.21	2.60 (66.0)	1.30 (33.0)	1.39 (35.3)						
BV1-F2-02-3-	1/8" CIR-LOK			2.72 (69.1)	1.36 (34.5)							
BV1-M3-02-3-	3 mm CIR-LOK			2.74 (69.6)	1.37 (34.8)							
BV1-FBT2-04-3-	1/8 Female BSPT	0.165(4.2)	0.93	2.14 (54.4)	1.07 (27.2)	1.15 (29.2)	0.33 (8.4)	1.00 (25.4)	1.16 (29.5)	1.88 (47.8)	0.58 (14.7)	0.18 (4.6)
BV1-FBP2-04-3-	1/8 Female BSPP											
BV1-FNPT2-04-3-	1/8 Female NPT											
BV1-MBT2-04-3-	1/8 Male BSPT			2.36 (60.0)	1.18 (30.0)	1.26 (32.0)						
BV1-MBP2-04-3-	1/8 Male BSPP											
BV1-NPT2-04-3-	1/8 Male NPT											
BV1-MBT4-04-3-	1/4 Male BSPT			2.70 (68.6)	1.35 (34.3)	1.43 (36.3)						
BV1-MBP4-04-3-	1/4 Male BSPP											
BV1-NPT4-04-3-	1/4 Male NPT											
BV1-F4-05-3-	1/4 " CIR-LOK	0.187 (4.7)	1.05	3.48 (88.4)	1.74 (44.2)	1.89 (48.0)						
BV1-M6-05-3-	6 mm CIR-LOK			3.50 (89.0)	1.75 (44.5)	1.88 (47.8)						
BV1-F6-06-3-	3/8" CIR-LOK	0.250(6.4)	2.34	3.60 (91.4)	1.80 (45.7)	1.94 (49.3)	0.47 (11.9)	1.48 (37.5)	0.75 (19.1)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)
BV1-M8-06-3-	8 mm CIR-LOK			3.56 (90.4)	1.78 (45.2)	1.91 (48.5)						
BV1-M10-06-3-	10 mm CIR-LOK			3.62 (92.0)	1.81 (46.0)	1.95 (49.5)						
BV1-FBT4-06-3-	1/4 Female BSPT											
BV1-FBP4-06-3-	1/4 Female BSPP			3.02 (76.8)	1.51 (38.4)	1.65 (41.9)						
BV1-FNPT4-06-3-	1/4 Female NPT											
BV1-MBT4-06-3-	1/4 Male BSPT											
BV1-MBP4-06-3-	1/4 Male BSPP											
BV1-NPT4-06-3-	1/4 Male NPT			3.24 (82.2)	1.62 (41.1)	1.76 (44.7)						
BV1-MBT6-06-3-	3/8 Male BSPT											
BV1-MBP6-06-3-	3/8 Male BSPP											
BV1-NPT6-06-3-	3/8 Male NPT											

Basic Ordering Number	Connection type and size		Orifice in. (mm)	Cv	Dimension, in. (mm)										
	Connection 1	Connection 2/3			L	L1	A	B	C	D	E	F	G		
BV1-F8-10-3-	1/2" CIR-LOK	0.406 (10.3)	6.42	4.68 (118.8)	2.34(59.4)	2.68(68.0)	0.70 (17.8)	1.71 (43.5)	1.42 (36.0)	4.00 (101.6)	0.90 (22.9)	0.38 (9.7)			
BV1-M12-10-3-	12 mm CIR-LOK			4.66(118.4)	2.33 (59.2)	2.67 (67.8)									
BV1-M14-10-3-	14 mm CIR-LOK														
BV1-M16-10-3-	16 mm CIR-LOK														
BV1-M18-10-3-	18 mm CIR-LOK			3.90 (99.0)	1.95 (49.5)	2.29 (58.2)									
BV1-FBT6-10-3-	3/8 Female BSPT														
BV1-FBP6-10-3-	3/8 Female BSPP														
BV1-FNPT6-10-3-	3/8 Female NPT			4.30 (109.2)	2.15 (54.6)	2.49 (63.2)									
BV1-FBT8-10-3-	1/2 Female BSPT														
BV1-FBP8-10-3-	1/2 Female BSPP														
BV1-FNPT8-10-3-	1/2 Female NPT			4.44 (112.8)	2.22 (56.4)	2.59 (65.8)									
BV1-MBT8-10-3-	1/2 Male BSPT														
BV1-MBP8-10-3-	1/2 Male BSPP														
BV1-NPT8-10-3-	1/2 Male NPT			0.50 (12.7)	10.0	4.80 (122)							2.40 (61)	2.69 (68.3)	0.75 (19.0)
BV1-F12-13-3-	3/4" CIR-LOK	4.12 (105)	2.06 (52.3)			2.35 (59.6)									
BV1-M20-13-3-	20 mm CIR-LOK														
BV1-M22-13-3-	22 mm CIR-LOK														
BV1-FBT12-13-3-	3/4 Female BSPT	4.0 (101.6)	2.0 (50.8)			2.28 (58)	4.12 (105)	2.06 (52.3)	2.35 (59.6)						
BV1-FBP12-13-3-	3/4 Female BSPP														
BV1-FNPT12-13-3-	3/4 Female NPT														
BV1-MBT12-13-3-	3/4 Male BSPT	4.57 (116)	2.28 (58.0)			2.57 (65.4)									
BV1-MBP12-13-3-	3/4 Male BSPP														
BV1-NPT12-13-3-	3/4 Male NPT														

Angle Pattern Valves



Basic Ordering Number	Connection type and size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				L	A	B	C	D	E	F	G
BV1-F1-01-A-	1/16" CIR-LOK	0.093 (2.4)	0.21	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)
BV1-F2-02-A-	1/8" CIR-LOK			1.36 (34.5)							
BV1-M3-02-A-	3 mm CIR-LOK			1.37 (34.8)							
BV1-FBT2-04-A-	1/8 Female BSPT	0.107 (27.2)	1.15 (29.2)								
BV1-FBP2-04-A-	1/8 Female BSPP										
BV1-FNPT2-04-A-	1/8 Female NPT										
BV1-MBT2-04-A-	1/8 Male BSPT	0.165 (4.2)	0.93	1.18 (30.0)	1.26 (32.0)						
BV1-MBP2-04-A-	1/8 Male BSPP										
BV1-NPT2-04-A-	1/8 Male NPT										
BV1-MBT4-04-A-	1/4 Male BSPT			1.35 (34.3)	1.43 (36.3)						
BV1-MBP4-04-A-	1/4 Male BSPP										
BV1-NPT4-04-A-	1/4 Male NPT										
BV1-F4-05-A-	1/4" CIR-LOK	0.187 (4.7)	1.05	1.74 (44.2)	1.89 (48.0)						
BV1-M6-05-A-	6 mm CIR-LOK			1.75 (44.5)	1.88 (47.8)						
BV1-F6-06-A-	3/8" CIR-LOK	0.250 (6.4)	2.34	1.80 (45.7)	1.94 (49.3)	0.47 (11.9)	1.48 (37.5)	0.75 (19.1)	2.52 (64.0)	0.77 (19.6)	0.25 (6.4)
BV1-M8-06-A-	8 mm CIR-LOK			1.78 (45.2)	1.91 (48.5)						
BV1-M10-06-A-	10 mm CIR-LOK			1.81 (46.0)	1.95 (49.5)						
BV1-FBT4-06-A-	1/4 Female BSPT			1.51 (38.4)	1.65 (41.9)						
BV1-FBP4-06-A-	1/4 Female BSPP										
BV1-FNPT4-06-A-	1/4 Female NPT										

How to Order

BV1 —		M12		— FNPT8 —		P10		— Y3		— 316	
Series	Port 1 Type	Port 1 Size	Port 2/3 Type	Port 2/3 Size	Seat Material	Orifice Size	Handle	Flow pattern	Body Material		
BV1	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		P PEEK	02 0.093 in. (2.4 mm)	Black	Straight	316 316 S.S.		
	NPT Male NPT	3 3 mm			K PCTFE	03 0.125 in. (3.2 mm)	R Red	A Angle	316L 316L S.S.		
	FBT Female BSPT	4 1/4 in.			T PTFE	04 0.165 in. (4.2 mm)	G Green	3 3-way	304 304 S.S.		
	MBT Male BSPT	5 5/16 in.				L Blue		304L 304L S.S.			
	FMS Female ISO 261	6 3/8 in. or 6 mm				05 0.187 in. (4.7 mm)	Y Yellow		A400 Alloy 400		
	MS Male ISO 261	10 10 mm		06 0.250 in. (6.4 mm)			BR Brass				
	FBP Female BSpp	12 3/4 in. or 12 mm		10 0.406 in. (10.3 mm)							
	MBP Male BSpp	14 14 mm		13 0.5 in. (12.7 mm)							
	F Fractional Tube Fitting	16 1 in. or 16 mm									
	M Metric Tube Fitting	18 18 mm									
	UGF Nut + Gasket + Bulge Fractional Tube Nipple	20 20 mm									
	UGM Nut + Gasket + Metric Tube Bulge Nipple	22 22 mm									