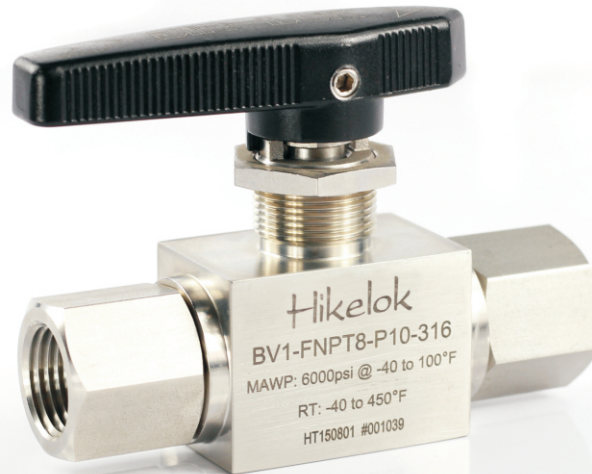


# Bar Stock Ball Valves

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

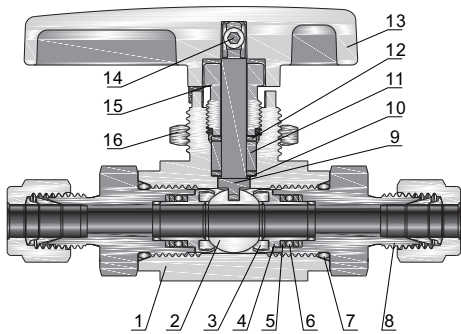
Body Material	316 S.S.			Brass
Seat Material	PEEK	PCTFE	PTFE	PTFE
Temperature, °F (°C)	Working Pressure, psig(bar)			
-65 (-54) to 100 (37)	6000 (413)	6000 (413)	1500 (103)	1500 (103)
200 (93)	5000 (344)	2000 (137)	750 (151)	750 (151)
250 (121)	4100 (282)	—	—	—
300 (148)	3200 (220)	—	—	—
350 (176)	2300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

## Temperature Ranges

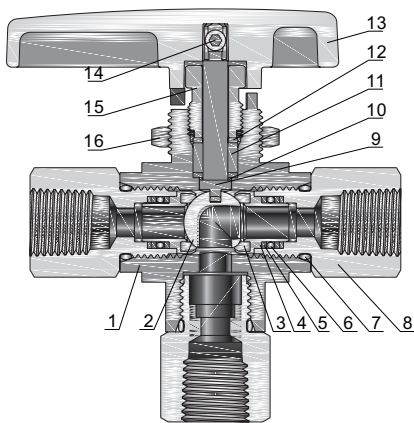
Packing Materials	Temperature Range °F (°C)
PTFE	-40 to 450 (-40 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

## Standard Materials of Construction

### 2-way Vavles



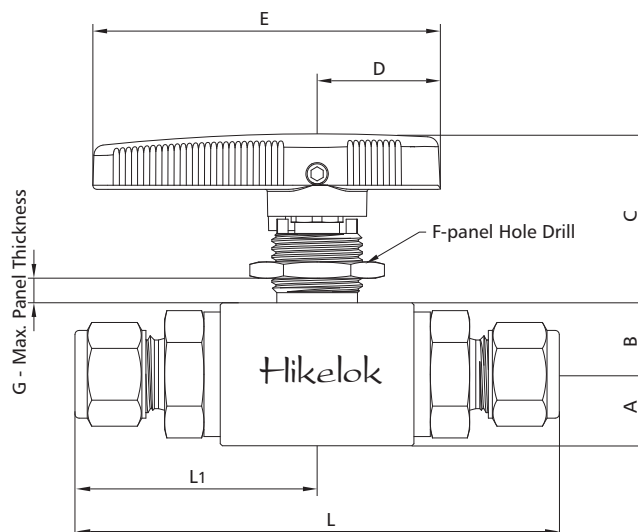
### 3-way Valves



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

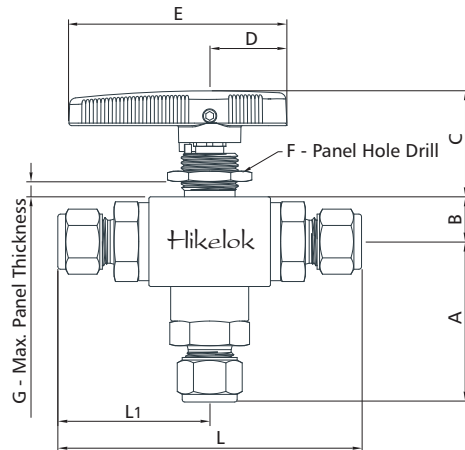
## Dimensions

### 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" Hikelok	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" Hikelok			2.72 (69.1)	1.36 (34.5)																
BV1-M3-02-	3 mm Hikelok			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)	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-FBP2-04-	1/8 Female BSPP			2.36 (60.0)	1.18 (30.0)																
BV1-FNPT2-04-	1/8 Female NPT			2.70 (68.6)	1.35 (34.3)																
BV1-MBT2-04-	1/8 Male BSPT																				
BV1-MBP2-04-	1/8 Male BSPP																				
BV1-NPT2-04-	1/8 Male NPT			0.187 (4.7)	1.05								3.48 (88.4)	1.74 (44.2)	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-MBT4-04-	1/4 Male BSPT												2.70 (68.6)	1.35 (34.3)							
BV1-MBP4-04-	1/4 Male BSPP												3.24 (82.2)	1.62 (41.1)							
BV1-NPT4-04-	1/4 Male NPT																				
BV1-F4-05-	1/4" Hikelok			0.250 (6.4)	2.34								3.60 (91.4)	1.80 (45.7)	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-M6-05-	6 mm Hikelok												3.50 (89.0)	1.75 (44.5)							
BV1-F6-06-	3/8" Hikelok												3.62 (92.0)	1.81 (46.0)							
BV1-M8-06-	8 mm Hikelok	0.406 (10.3)	6.42	3.02 (76.8)	1.51 (38.4)	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-M10-06-	10 mm Hikelok			3.24 (82.2)	1.62 (41.1)																
BV1-FBT4-06-	1/4 Female BSPT			4.30 (109.2)	2.15 (54.6)																
BV1-FBP4-06-	1/4 Female BSPP																				
BV1-FNPT4-06-	1/4 Female NPT																				
BV1-MBT4-06-	1/4 Male BSPT			4.44 (112.8)	2.22 (56.4)																
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			0.50 (12.7)	10.0								4.68 (118.8)	2.34 (59.4)	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-NPT6-06-	3/8 Male NPT												4.66 (118.4)	2.33 (59.2)							
BV1-F8-10-	1/2" Hikelok												4.80 (122)	2.15 (61)							
BV1-M12-10-	12 mm Hikelok	4.12 (105)	2.06 (52.3)																		
BV1-M14-10-	14 mm Hikelok																				
BV1-M16-10-	16 mm Hikelok																				
BV1-M18-10-	18 mm Hikelok	4.0 (101.6)	2.0 (50.8)																		
BV1-FBT6-10-	3/8 Female BSPT																				
BV1-FBP6-10-	3/8 Female BSPP																				
BV1-FNPT6-10-	3/8 Female NPT																				
BV1-FBT8-10-	1/2 Female BSPT	4.12 (105)	2.06 (52.3)																		
BV1-FBP8-10-	1/2 Female BSPP																				
BV1-FNPT8-10-	1/2 Female NPT																				
BV1-MBT8-10-	1/2 Male BSPT																				
BV1-MBP8-10-	1/2 Male BSPP	4.57 (116)	2.28 (58.0)																		
BV1-NPT8-10-	1/2 Male NPT																				
BV1-F12-13-	3/4" Hikelok																				
BV1-M20-13-	20 mm Hikelok																				
BV1-M22-13-	22 mm Hikelok	4.0 (101.6)	2.0 (50.8)																		
BV1-FBT12-13-	3/4 Female BSPT																				
BV1-FBP12-13-	3/4 Female BSPP																				
BV1-FNPT12-13-	3/4 Female NPT																				
BV1-MBT12-13-	3/4 Male BSPT	4.12 (105)	2.06 (52.3)																		
BV1-MBP12-13-	3/4 Male BSPP																				
BV1-NPT12-13-	3/4 Male NPT																				
BV1-NPT12-13-	3/4 Male NPT																				

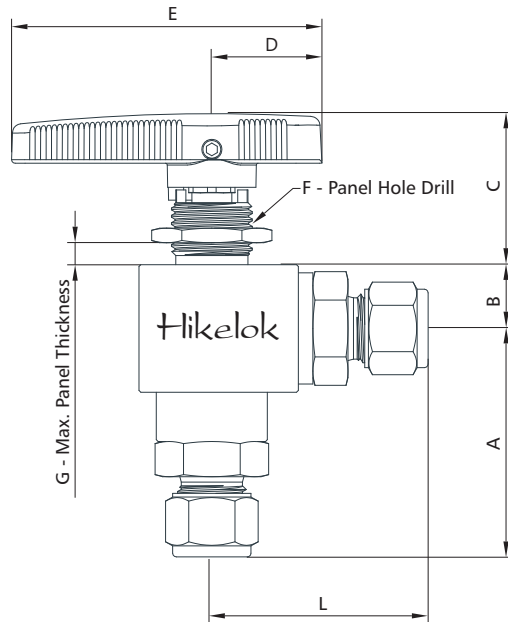
### 3-way Valves



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" Hikelok	0.093 (2.4)	0.21	2.60 (66.0)	1.30 (33.0)	1.39 (35.3)							
BV1-F2-02-3-	1/8" Hikelok			2.72 (69.1)	1.36 (34.5)								
BV1-M3-02-3-	3 mm Hikelok			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 " Hikelok			0.187 (4.7)		1.05							3.48 (88.4)
BV1-M6-05-3-	6 mm Hikelok	3.50 (89.0)	1.75 (44.5)		1.88 (47.8)								
BV1-F6-06-3-	3/8" Hikelok	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 Hikelok			3.56 (90.4)	1.78 (45.2)								1.91 (48.5)
BV1-M10-06-3-	10 mm Hikelok												
BV1-FBT4-06-3-	1/4 Female BSPT			3.02 (76.8)	1.51 (38.4)	1.65 (41.9)							
BV1-FBP4-06-3-	1/4 Female BSPP												
BV1-FNPT4-06-3-	1/4 Female NPT												
BV1-MBT4-06-3-	1/4 Male BSPT				3.24 (82.2)	1.62 (41.1)							1.76 (44.7)
BV1-MBP4-06-3-	1/4 Male BSPP												
BV1-NPT4-06-3-	1/4 Male NPT												
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" Hikelok		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 Hikelok				4.66(118.4)	2.33 (59.2)	2.67 (67.8)						
BV1-M14-10-3-	14 mm Hikelok				3.90 (99.0)	1.95 (49.5)	2.29 (58.2)						
BV1-M16-10-3-	16 mm Hikelok												
BV1-M18-10-3-	18 mm Hikelok				4.30 (109.2)	2.15 (54.6)	2.49 (63.2)						
BV1-FBT6-10-3-	3/8 Female BSPT												
BV1-FBP6-10-3-	3/8 Female BSPP				4.44 (112.8)	2.22 (56.4)	2.59 (65.8)						
BV1-FNPT6-10-3-	3/8 Female NPT												
BV1-FBT8-10-3-	1/2 Female BSPT				4.44 (112.8)	2.22 (56.4)	2.59 (65.8)						
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				4.44 (112.8)	2.22 (56.4)	2.59 (65.8)						
BV1-NPT8-10-3-	1/2 Male NPT												
BV1-F12-13-3-	3/4" Hikelok		0.50 (12.7)	10.0	4.80 (122)	2.40 (61)	2.69 (68.3)	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-M20-13-3-	20 mm Hikelok				4.12 (105)	2.06 (52.3)	2.35 (59.6)						
BV1-M22-13-3-	22 mm Hikelok				4.0 (101.6)	2.0 (50.8)	2.28 (58)						
BV1-FBT12-13-3-	3/4 Female BSPT												
BV1-FBP12-13-3-	3/4 Female BSPP				4.12 (105)	2.06 (52.3)	2.35 (59.6)						
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" Hikelok	0.093 (2.4)	0.21	1.30 (33.0)	1.39 (35.3)														
BV1-F2-02-A-	1/8" Hikelok			1.36 (34.5)															
BV1-M3-02-A-	3 mm Hikelok			1.37 (34.8)															
BV1-FBT2-04-A-	1/8 Female BSPT	0.165 (4.2)	0.93	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-A-	1/8 Female BSPP																		
BV1-FNPT2-04-A-	1/8 Female NPT																		
BV1-MBT2-04-A-	1/8 Male BSPT			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" Hikelok			0.187 (4.7)	1.05							1.74 (44.2)	1.89 (48.0)						
BV1-M6-05-A-	6 mm Hikelok											1.75 (44.5)	1.88 (47.8)						
BV1-F6-06-A-	3/8" Hikelok			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 Hikelok	1.78 (45.2)	1.91 (48.5)																
BV1-M10-06-A-	10 mm Hikelok	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 Port 2/3 Type 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.			05 0.187 in. (4.7 mm)	L Blue			304L 304L S.S.
	FMS Female ISO 261	6 3/8 in. or 6 mm			06 0.250 in. (6.4 mm)	Y Yellow			A400 Alloy 400
	MS Male ISO 261	8 1/2 in. or 8 mm			10 0.406 in. (10.3 mm)				BR Brass
	FBP Female BSPP	10 10 mm			13 0.5 in. (12.7 mm)				
	MBP Male BSPP	12 3/4 in. or 12 mm							
	F Fractional Tube Fitting	14 14 mm							
	M Metric Tube Fitting	16 1 in. or 16 mm							
	UGF Nut + Gasket + Bulge Fractional Tube Nipple	18 18 mm							
	UGM Nut + Gasket + Metric Tube Bulge Nipple	20 20 mm							
		22 22 mm							