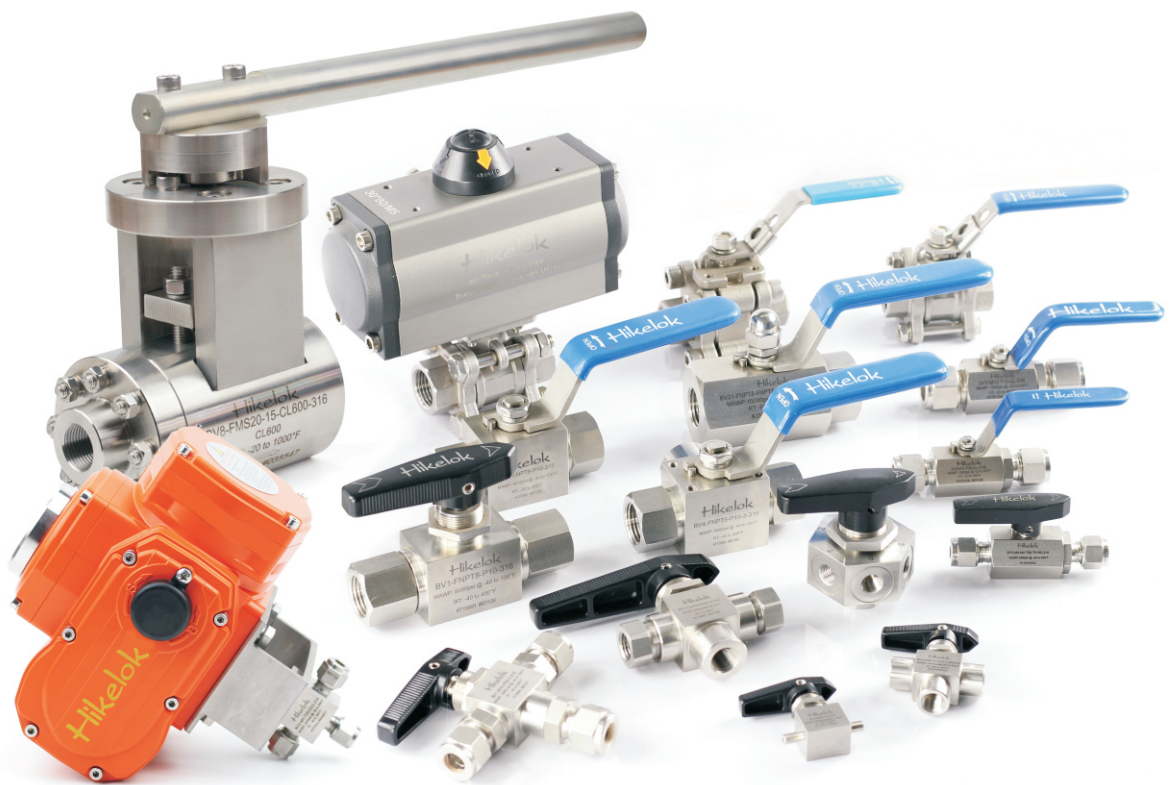




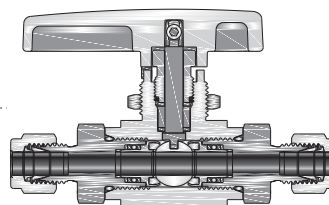
Ball Valves

BV Series

Contents

General-Purpose Ball Valves (BV1 Series)

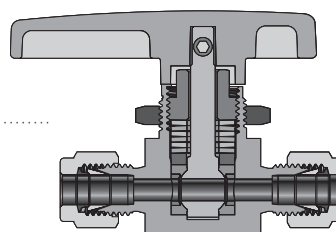
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ Orifice sizes from 0.093 to 0.5 in. (2.4 to 12.7 mm)
- ❖ 2-way, 3-way and angle flow pattern
- ❖ Field repairable with seal kit



5-4

One-piece Ball Valves (BV2 Series)

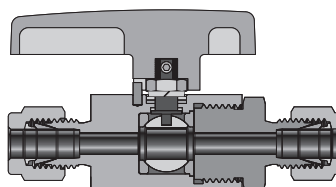
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -65°F to 300°F (-54°C to 148°C)
- ❖ Orifice sizes from 0.052 to 0.406 in. (1.32 to 10.3 mm)
- ❖ 2-way, 3-way and angle flow pattern
- ❖ Field repairable with seal kit



5-12

Two-Piece Ball Valves (BV3 Series)

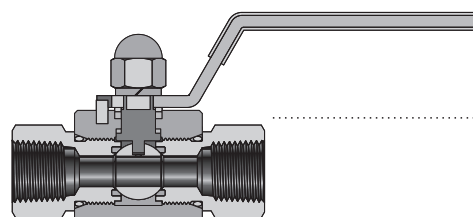
- ❖ Maximum working pressure up to 1500 psig (103.4 bar)
- ❖ Working temperature from -30°F to 400°F (-34°C to 204°C)
- ❖ Orifice sizes from 0.281 to 0.59 in. (7.1 to 15 mm)
- ❖ Field repairable with seal kit



5-20

High Pressure Ball Valves (BV4 Series)

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -40°F to 450°F (-40°C to 232°C)
- ❖ Orifice sizes from 0.406 to 1.5 in. (10.3 to 38.1 mm)
- ❖ 2-way and 3-way flow pattern
- ❖ Field repairable with seal kit

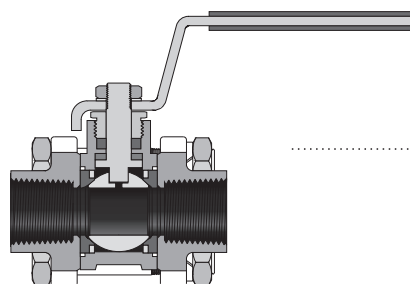


5-23

Contents

Three-Piece Ball Valves (BV5 Series)

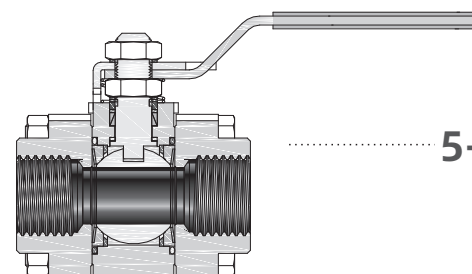
- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -20°F to 450°F (-28°C to 232°C)
- ❖ Orifice sizes from 0.188 to 2 in. (4.8 to 50 mm)
- ❖ Field repairable with seal kit



5-29

Swing-Out Ball Valves (BV6 Series)

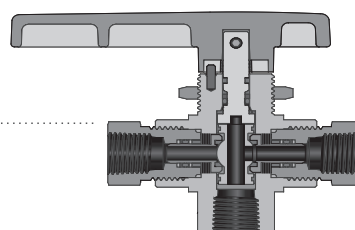
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -20°F to 450°F (-28°C to 232°C)
- ❖ Orifice sizes from 0.188 to 1.5 in. (4.8 to 38.1 mm)
- ❖ 2-way and 3-way flow pattern
- ❖ Field repairable with seal kit



5-32

Trunnion Ball Valves (BV7 Series)

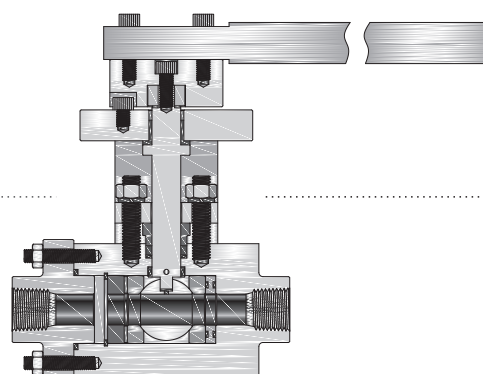
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ Orifice sizes 0.187 in. (4.75 mm)
- ❖ 2-way and 3-way flow pattern
- ❖ Field repairable with seal kit



5-35

Metal Seated Ball Valves (BV8 Series)

- ❖ Working pressure form ASME class 600 to 4500
- ❖ Working temperature from -20°F to 1500°F (-28°C to 815°C)
- ❖ Orifice sizes from 0.591 to 2.559 in. (15 to 65 mm)
- ❖ Field repairable with seal kit



5-40

General-Purpose Ball Valves

BV1 Series

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-Temperature Ratings

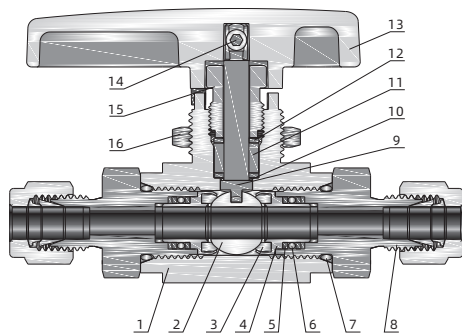
- ❖ Data based on Fluorocarbon FKM sealing material

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)	—	—	—

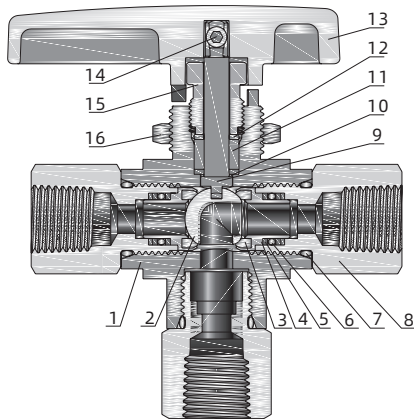
Temperature Ranges

Packing or Sealing Materials	Temperature Range °F (°C)
PTFE	-40 to 450 (-40 to 232)
Buna-N	-40 to 250 (-40 to 121)
Fluorocarbon FKM	-65 to 450 (-54 to 232)
Neoprene	-40 to 250 (-40 to 121)

Standard Materials of Construction



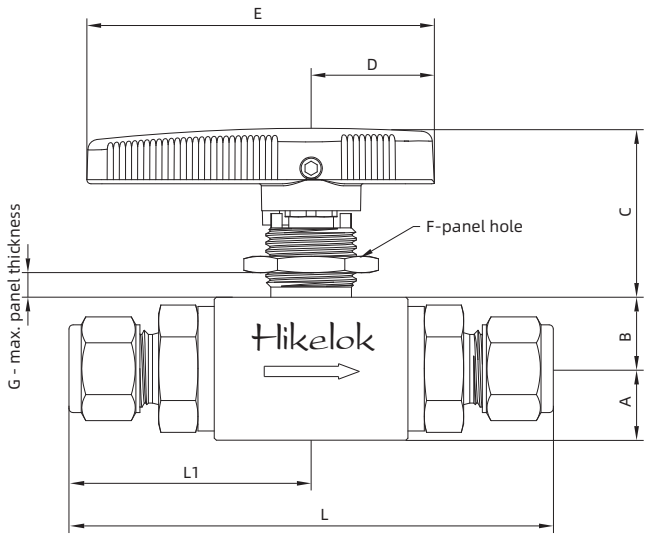
2-way Valves



3-way Valves

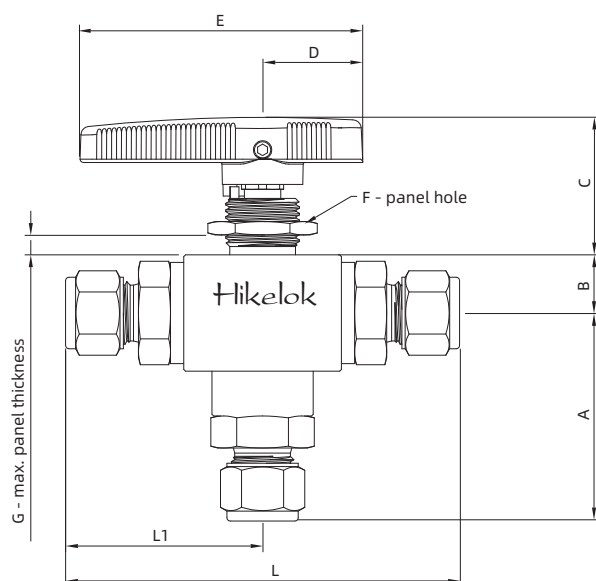
Component		Material Grade / ASTM Specification
		316 S.S.
1	Body	316 S.S./A479
2	Ball	316 S.S./A479
3	Seat	PEEK or PCTFE or PTFE
4	Seat Retainer	316 S.S./A479
5	Back Up Ring	PTFE/D1710
6	O-Ring	Fluorocarbon FKM
7	O-Ring	Fluorocarbon FKM
8	Conector	316 S.S./A479
9	Stem	316 S.S./A479
10	Stem Washer	PTFE/D1710
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 Valves

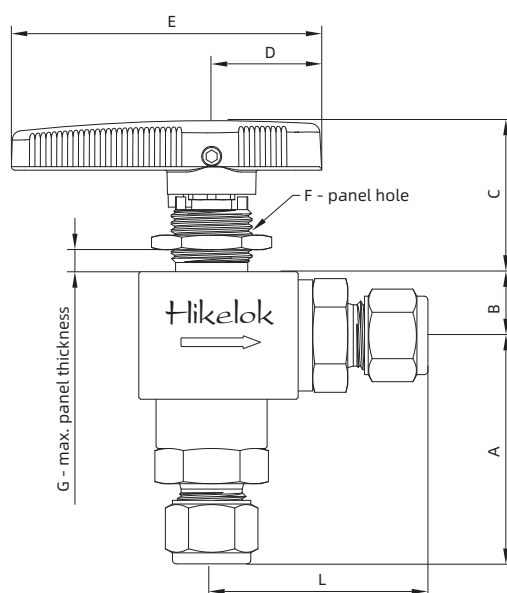
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)																				
				L	L1	A	B	C	D	E	F	G												
BV1-F1-01-	1/16" Hikelok	0.093 (2.4)	0.21	2.60 (66.0)	1.30 (33.0)																			
BV1-F2-02-	1/8" Hikelok			2.72 (69.1)	1.36 (34.5)																			
BV1-M3-02-	3 mm Hikelok			2.74 (69.6)	1.37 (34.8)																			
BV1-FBT2-04-	1/8" Female BSPT	0.165 (4.2)	0.93			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-FBP2-04-	1/8" Female BSPP												2.14 (54.4)	1.07 (27.2)										
BV1-FNPT2-04-	1/8" Female NPT																							
BV1-MBT2-04-	1/8" Male BSPT																							
BV1-MBP2-04-	1/8" Male BSPP																							
BV1-NPT2-04-	1/8" Male NPT																							
BV1-MBT4-04-	1/4" Male BSPT																							
BV1-MBP4-04-	1/4" Male BSPP			2.70 (68.6)	1.35 (34.3)																			
BV1-NPT4-04-	1/4" Male NPT																							
BV1-F4-05-	1/4" Hikelok	0.187 (4.7)	1.05	3.48 (88.4)	1.74 (44.2)																			
BV1-M6-05-	6 mm Hikelok			3.50 (89.0)	1.75 (44.5)																			
BV1-F6-06-	3/8" Hikelok	0.250 (6.4)	2.34	3.60 (91.4)	1.80 (45.7)	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-M8-06-	8 mm Hikelok			3.56 (90.4)	1.78 (45.2)																			
BV1-M10-06-	10 mm Hikelok			3.62 (92.0)	1.81 (46.0)																			
BV1-FBT4-06-	1/4" Female BSPT			3.02 (76.8)	1.51 (38.4)	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-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" Hikelok	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 Hikelok			4.66 (118.4)	2.33 (59.2)																			
BV1-M14-10-	14 mm Hikelok																							
BV1-M16-10-	16 mm Hikelok																							
BV1-M18-10-	18 mm Hikelok			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																							
BV1-FBT8-10-	1/2" Female BSPT			4.30 (109.2)	2.15 (54.6)																			
BV1-FBP8-10-	1/2" Female BSPP																							
BV1-FNPT8-10-	1/2" Female NPT																							
BV1-MBT8-10-	1/2" Male BSPT			4.44 (112.8)	2.22 (56.4)																			
BV1-MBP8-10-	1/2" Male BSPP																							
BV1-NPT8-10-	1/2" Male NPT																							
BV1-F12-13-	3/4" Hikelok	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 Hikelok			4.12 (105)	2.06 (52.3)																			
BV1-M22-13-	22 mm Hikelok																							
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" 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											
BV1-MBP4-04-3-	1/4" Male BSPP			2.70 (68.6)	1.35 (34.3)	1.43 (36.3)						
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)	1.74 (44.2)	1.89 (48.0)						
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			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/ 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											
BV1-M16-10-3-	16 mm Hikelok											
BV1-M18-10-3-	18 mm Hikelok			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											
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											
BV1-M22-13-3-	22 mm Hikelok											
BV1-FBT12-13-3-	3/4" Female BSPT			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" Hikelok	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" 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)						
BV1-FBP2-04-A-	1/8" Female BSPP										
BV1-FNPT2-04-A-	1/8" Female NPT			1.18 (30.0)	1.26 (32.0)						
BV1-MBT2-04-A-	1/8" Male BSPT										
BV1-MBP2-04-A-	1/8" Male BSPP										
BV1-NPT2-04-A-	1/8" Male NPT			1.35 (34.3)	1.43 (36.3)						
BV1-MBT4-04-A-	1/4" Male BSPT										
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										

ISO 5211-Compliant Pneumatic Actuators

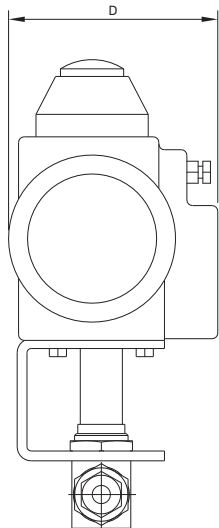
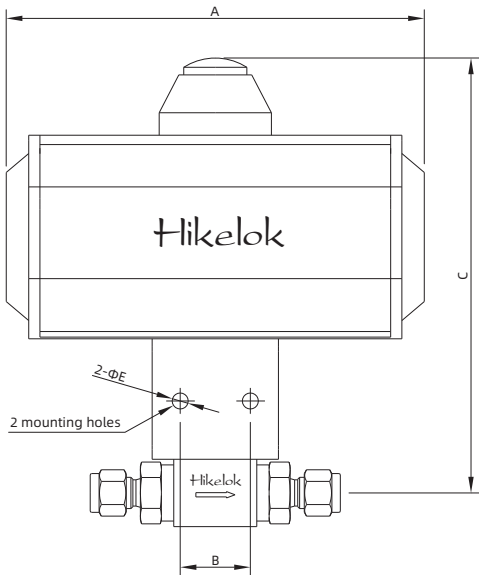
❖ Hikelok ISO 5211-compliant rack and pinion pneumatic actuators are available in spring-return and double-acting modes.

Pressure-Temperature Ratings

Temperature Range °F (°C)	Maximum Actuator Pressure, psig(bar)
-4 to 176 (-20 to 80)	101 (7.0)



Dimensions



Valve Series®	Actuation Modes (Angle range)	Dimensions, in.(mm)®				
		A	B	C	D	E
BV1-06	Spring Return or Double Acting (0-90°)	5.70 (145)	0.98 (25)	6.10 (155)	2.79 (71)	0.22 (5.7)
BV1-10		5.70 (145)	2.18 (55.6)	6.50 (165)	2.79 (71)	0.34 (8.6)
BV1-13		7.91 (201)	2.18 (55.6)	7.71 (196)	3.70 (94)	0.34 (8.6)

① Example: BV1-06 refers to BV1 series, 2-way, orifice 6.4mm valves

② Dimensions are for reference only and are subject to change

How to Order

BV1 — **M12** — **FNPT8** — **P10** — **3** — **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
BV 1	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size		P PEEK	02 0.093 in. (2.4 mm)	Black	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm			K PCTFE	04 0.165 in. (4.2 mm)	R1 Red		
	FBT Female BSPT	4 1/4 in.	If port 2/3 and port 1 are the same, eliminate the port 2/3 designator		T PTFE	05 0.187 in. (4.7 mm)	G1 Green	3 Angle 3 3-way	316L 316L S.S. 304 304 S.S. 304L 304L S.S. A400 Alloy 400
	MBT Male BSPT	5 5/16 in.				06 0.250 in. (6.4 mm)	L1 Blue		
	FMS Female Metric	6 3/8 in. or 6 mm				10 0.406 in. (10.3 mm)	Y1 Yellow		
	MS Male Metric (for BG)	8 1/2 in. or 8 mm				13 0.5 in. (12.7 mm)	PSC		
	FBP Female BSPP	10 10 mm					PSO		
	MBP Male BSPP (for BG)	12 3/4 in. or 12 mm					PD		
	F Fractional Tube Fitting	14 14 mm					EA		
	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							

Note:

PSC (ISO 5211-Compliant Pneumatic Actuators, spring return normally closed)

PSO (ISO 5211-Compliant Pneumatic Actuators, spring return normally open)

PD (ISO 5211-Compliant Pneumatic Actuators, double acting)

EA (Electric Actuator, Please consult customer service for parameters)

One-piece Ball Valves

BV2 Series

Features

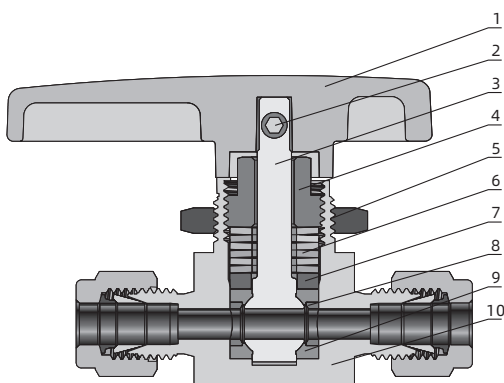
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -65°F to 300°F (-54°C to 148°C)
- ❖ 2-way (On-Off), 3,5,7-way (Switching), 4,6-way (Crossover) models for service
- ❖ One-piece body and one piece seat and packing
- ❖ No dead space, easily cleaned and purged
- ❖ Live-loaded packing reduces adjustment
- ❖ Top-loaded design allows adjustment with the valve in-line
- ❖ Handle of different colors available
- ❖ 316 stainless steel, brass and alloy body material
- ❖ End connection size from 1/16" to 3/4" or 3 mm to 12 mm



Pressure-Temperature Ratings

Body Material	316 S.S.								
Seat Material	PTFE								
Valve Type	angle, 3-way	2-way	2-way	2-way	angle, 3-way	4-way, 5-way	4-way	5-way	6-way, 7-way
Orifice (Ordering Number)	2.4(-02) 3.2(-03) 4.8(-05)	2.4(-02) 3.2(-03)	4.8(-05)	7.1(-07) 10.3(-10)	7.1(-07) 10.3(-10)	1.32(-00) 1.57(-01)	4.8(-05) 7.1(-07) 10.3(-10)	4.8(-05) 7.1(-07) 10.3(-10)	1.32(-00) 1.57(-01)
Temperature, °F (°C)	Working Pressure, psig(bar)								
-65 (-53) to 50 (10)	2500 (172)	2500 (172)	3000 (206)	—	—	—	—	—	—
50 (10) to 150 (65)	2500 (172)	2500 (172)	3000 (206)	2500 (172)	1500 (103)	2500 (172)	1500 (103)	1500 (103)	500 (34.4)
200 (93)	2500 (172)	2500 (172)	2800 (193)	—	—	—	—	—	—
250 (121)	2500 (172)	2500 (172)	2650 (182)	—	—	—	—	—	—
300 (148)	2500 (172)	2500 (172)	2500 (172)	—	—	—	—	—	—

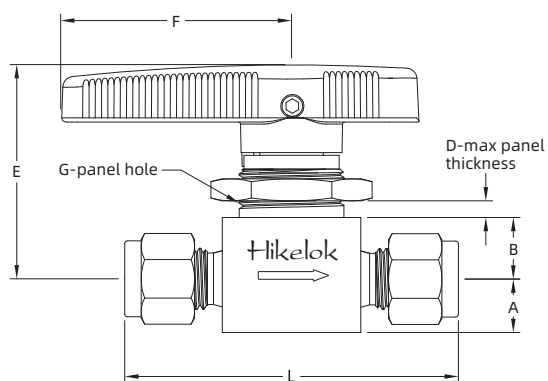
Standard Materials of Construction



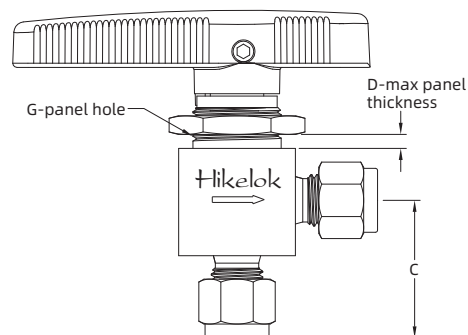
Component		Material Grade / ASTM Specification		
		316 S.S.	Brass	Alloy 400
1	Handle	Aluminum		
2	Screw	S17400 S.S. / A564		
3	Ball Stem	316 S.S. / A479	Brass CDA 360 / B16	Alloy 400 / B164
4	Packing Bolt	316 S.S. / A479	Brass CDA 360 / B16	Alloy R-405 / B164
5	Panel Nut	Powdered metal S.S.	Brass CDA 360 / B16	Powdered metal S.S.
6	Spring	S17700 / A693		
7	Gland	316 S.S. / A479	Brass CDA 360/B16	Alloy 400 / B164
8	Support Ring	Fluorocarbon-coated powderedmetal 316 S.S. / B783		Fluorocarbon-coated alloy 400 powdered metal
9	Seat	PTFE / D1710		
10	Body	316 S.S. / A479	Brass CDA 360/B16	Alloy 400 / B164

Dimensions

On-Off Valves



2-way Valves

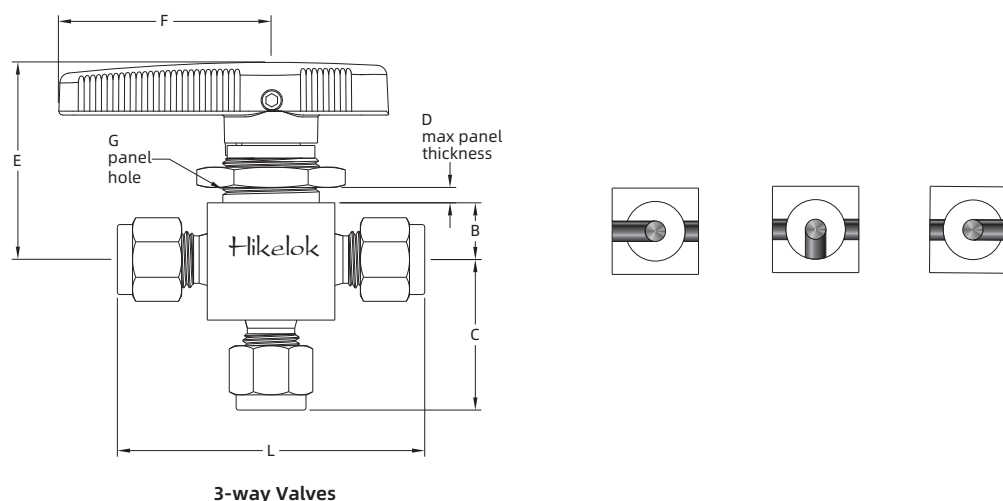


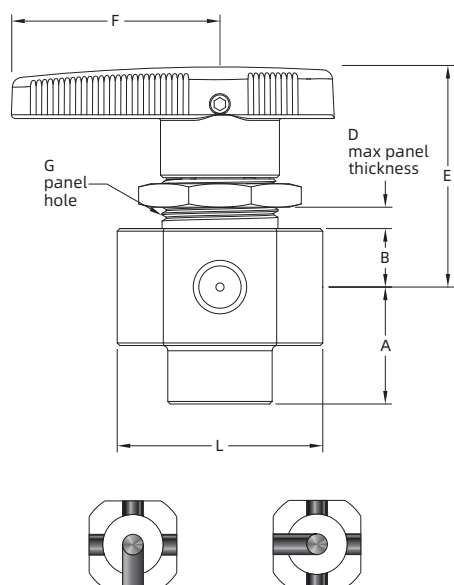
Angle Pattern Valves

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)							
			Straight	Angle	L	A	B	C	D	E	F	G
BV2-F1-00-	1/16" Hikelok	0.052 (1.32)	0.10	—	1.68 (42.7)	0.28 (7.1)	0.34 (8.6)	—	1/4 (6.4)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)
BV2-F2-02-	1/8" Hikelok	0.093 (2.4)	0.20	0.15	2.01 (51.1)			0.97 (24.6)				
BV2-F4-03-	1/4" Hikelok	0.125 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)				
BV2-F4-05-		0.187 (4.8)	1.40	0.90	2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)
BV2-F6-05-	3/8" Hikelok		1.50		2.58 (65.5)			1.29 (32.8)				
BV2-F6-07-			0.281 (7.1)	6.00	2.00	3.05 (77.5)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)
BV2-F8-10-	1/2" Hikelok	0.406 (10.3)	12.00	4.60	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)	2.43 (61.7)		3.00 (76.2)	1 1/2 (38.1)
BV2-F12-10-	3/4" Hikelok		6.40	3.80								
BV2-M3-02-	3 mm Hikelok	0.093 (2.4)	0.20	0.15	2.01 (51.1)	0.28 (7.1)	0.34 (8.6)	0.97 (24.6)	1/4 (6.4)	1.36 (34.5)	1.36 (34.5)	19/32 (15.1)
BV2-M6-03-	6 mm Hikelok	0.125 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)				
BV2-M6-05-		0.187 (4.8)	1.40	0.90	2.39 (60.7)	0.38 (9.7)	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.47 (37.3)	1.47 (37.3)	25/32 (19.8)
BV2-M8-05-	8 mm Hikelok		1.50		2.46 (62.5)			1.20 (30.5)				
BV2-M10-07-	10 mm Hikelok	0.281 (7.1)	6.00	2.00	3.07 (78.0)	0.56 (14.2)	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.07 (52.6)	1 1/8 (28.6)
BV2-M12-10-	12 mm Hikelok	0.406 (10.3)	12.00	4.60	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	1.74 (44.2)		2.43 (61.7)	2.43 (61.7)	1 1/2 (38.1)

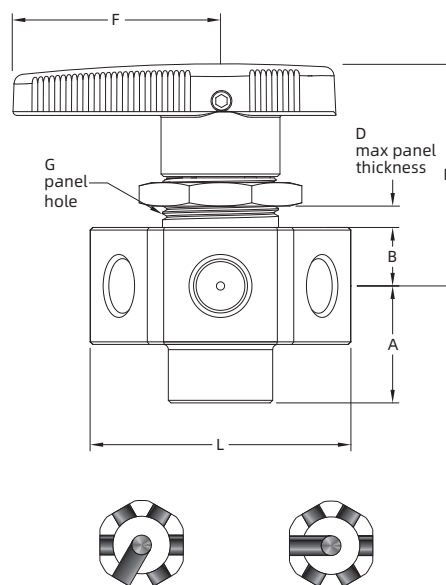
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)								
			Straight	Angle	L	A	B	C	D	E	F	G	
BV2-FNPT2-03-	1/8" Female NPT	0.125 (3.2)	0.50	0.30	1.63 (41.4)	0.28 (7.1)	0.34 (8.6)	0.81 (20.6)	1/4 (6.4)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)	
BV2-FNPT2-05-		0.187 (4.8)	1.20	0.70	2.0 (50.8)	0.38 (9.7)	0.44 (11.2)	1.0 (25.4)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-FNPT4-05-	0.90		0.75	2.06 (52.3)	1.03 (26.2)								
BV2-FNPT4-07-	1/4" Female NPT	0.281 (7.1)	3.00	1.70	2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	1.25 (31.8)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	11/8 (28.6)	
BV2-FNPT6-07-			3/8" Female NPT	2.60									1.50
BV2-FNPT8-10-	1/2" Female NPT	0.406 (10.3)	6.30	3.50	3.12 (79.2)	0.69 (17.5)	0.69 (17.5)	1.56 (39.6)		2.43 (61.7)	3.00 (76.2)	11/2 (38.1)	
BV2-NPT4-05-	1/4" Male NPT	0.187 (4.8)	1.20	0.75	2.00 (50.8)	0.38 (9.7)	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-FBT4-05-	1/4" Female ISO Tapered		0.90	—	2.06 (52.3)			—					
BV2-FBT6-07-	3/8" Female ISO Tapered	0.281 (7.1)	2.60		2.50 (63.5)	0.56 (14.2)	0.56 (14.2)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	11/8 (28.6)		
BV2-FBT8-10-	1/2" Female ISO Tapered	0.406 (10.3)	6.30		3.12 (79.2)	0.69 (17.5)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	11/2 (38.1)		
BV2-NPT4-F4-05-	1/4" Male NPT to 1/4" Hikelok	0.187 (4.8)	1.60	0.75	2.20 (55.9)	0.38 (9.7)	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-OFS4-03-	1/4" Male OFS	0.125 (3.2)	0.60	0.35	1.75 (44.4)	0.38 (9.7)	0.44 (11.2)	0.94 (23.9)	1/8 (3.2)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)	
BV2-OFS4-05-		0.187 (4.8)	2.40	0.90	1.88 (47.8)				3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-GFS4-03-	1/4" Male GFS	0.125 (3.2)	0.60	0.35	2.13 (54.1)			1.09 (27.7)	1/8 (3.2)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)	
BV2-GFS4-05-		0.187 (4.8)	2.40	0.90					3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-GFS8-07-	1/2" Male GFS	0.281 (7.1)	6.00	—	2.88 (73.2)	0.56 (14.2)		—	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	11/8 (28.6)	
BV2-GFS8-10-		0.406 (10.3)	12.00		3.12 (79.2)	0.69 (17.5)				2.43 (61.7)	3.00 (76.2)	11/2 (38.1)	

Switching Valves



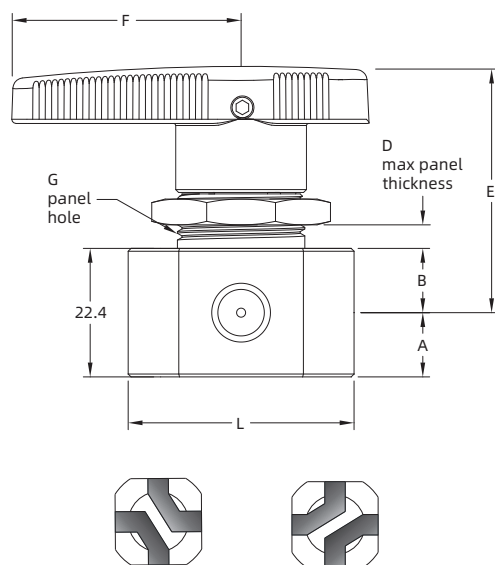


5-way Valves

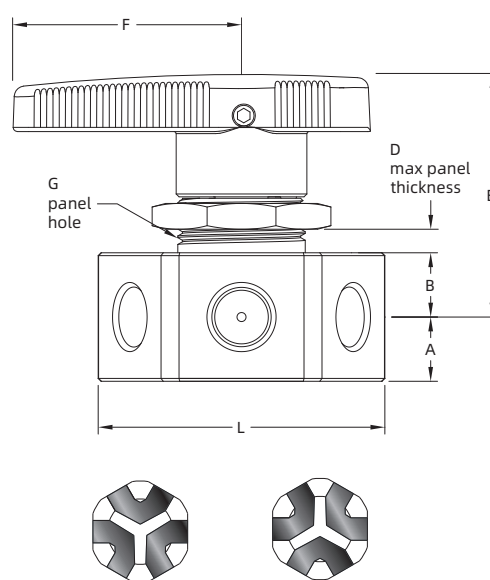


7-way Valves

Crossover Valves



4-way Valves



6-way Valves

Basic Ordering Number	Connection Type and Size	Orifice in.(mm)	CV	Dimension, in.(mm)							
				L	A	B	C	D	E	F	G
3-Way Valves											
BV2-F1-00-3-	1/16" Hikelok	0.052 (1.32)	0.08	1.68 (42.7)	—	0.34 (8.6)	0.81 (20.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)
BV2-F2-02-3-	1/8" Hikelok	0.093 (2.4)	0.15	2.01 (51.1)	—		0.97 (24.6)				
BV2-F4-03-3-	1/4" Hikelok	0.125 (3.2)	0.35	2.21 (56.1)	—		1.07 (27.2)				
BV2-F4-05-3-		0.187 (4.8)	0.90	2.39 (60.7)	—	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.47 (37.3)	1.65 (42)	25/32 (19.8)
BV2-F6-07-3-	3/8" Hikelok	0.281 (7.1)	2.00	2.89 (73.4)	—	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
BV2-F8-10-3-	1/2" Hikelok	0.406 (10.3)	4.60	3.48 (88.4)	—	0.69 (17.5)	1.74 (44.2)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)
BV2-F12-10-3-	3/4" Hikelok		4.90		—						
BV2-M3-02-3-	3mm Hikelok	0.093 (2.4)	0.15	2.01 (51.1)	—	0.34 (8.6)	0.97 (24.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)
BV2-M6-03-3-	6mm Hikelok	0.125 (3.2)	0.35	2.21 (56.1)	—		1.07 (27.2)				
BV2-M6-05-3-		0.187 (4.8)	0.90	2.39 (60.7)	—	0.44 (11.2)	1.17 (29.7)	3/16 (4.8)	1.47 (37.3)	1.65 (42)	25/32 (19.8)
BV2-M8-05-3-	8mm Hikelok		0.80	2.46 (62.5)	—		1.20 (30.5)				
BV2-M10-07-3-	10mm Hikelok	0.281 (7.1)	2.00	2.89 (73.4)	—	0.56 (14.2)	1.43 (36.3)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
BV2-M12-07-3-	12mm Hikelok	0.406 (10.3)	4.60	3.48 (88.4)	—	0.69 (17.5)	1.74 (44.2)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)
BV2-FNPT2-03-3-	1/8" Female NPT	0.125 (3.2)	0.30	1.63 (41.4)	—	0.34 (8.6)	0.81 (20.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)
BV2-FNPT4-05-3-	1/4" Female NPT	0.187 (4.8)	0.75	2.06 (52.3)	—	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.47 (37.3)	1.65 (42)	25/32 (19.8)
BV2-FNPT4-07-3-		0.281 (7.1)	1.70	2.50 (63.5)	—	0.56 (14.2)	1.25 (31.8)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
BV2-FNPT6-07-3-	3/8" Female NPT		1.50		—						
BV2-FNPT8-10-3-	1/2" Female NPT	0.406 (10.3)	3.50	3.13 (79.5)	—	0.69 (17.5)	1.56 (39.6)			2.43 (61.7)	3.00 (76.2)
BV2-FBT4-05-3-	1/4" Female BSPT	0.187 (4.8)	0.75	2.06 (52.3)	—	0.44 (11.2)	1.03 (26.2)	3/16 (4.8)	1.47 (37.3)	1.65 (42)	25/32 (19.8)
BV2-FBT6-07-3-	3/8" Female BSPT	0.281 (7.1)	1.50	2.50 (63.5)	—	0.56 (14.2)	1.25 (31.8)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
BV2-FBT8-10-3-	1/2" Female BSPT	0.406 (10.3)	3.50	3.13 (79.5)	—	0.69 (17.5)	1.56 (39.6)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)
4, 5-Way Valves											
BV2-F2-01-4-	1/8" Hikelok	0.062 (1.6)	0.07	2.60 (66.1)	0.44 (11.2)	0.44 (11.2)	—	5/32 (4.1)	1.69 (42.9)	1.65 (42)	29/32 (23.1)
BV2-F2-01-5-					1.30 (33.1)	0.44 (11.2)	—				
BV2-FNPT2-01-4-	1/8" Female NPT	0.062 (1.6)	0.07	1.55 (39.4)	0.44 (11.2)	0.44 (11.2)	—				
BV2-FNPT2-01-5-					0.88 (22.4)	0.44 (11.2)	—				
BV2-FNPT8-10-4-	1/2" Female NPT	0.406 (10.3)	3.50	3.30 (84)	0.82 (21)	0.82 (21)	—	3/8 (9.5)	2.62 (66.7)	3.63 (92.2)	1 3/4 (44)
BV2-FNPT8-10-5-					1.73 (44)	0.82 (21)	—				
6, 7-Way Valves											
BV2-F1-00-6-	1/16" Hikelok	0.052 (1.3)	0.05	1.94 (49.3)	0.44 (11.2)	0.44 (11.2)	—	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)
BV2-F1-00-7-					0.97 (24.6)	0.44 (11.2)	—				
BV2-F2-01-6-	1/8" Hikelok	0.062 (1.6)	0.07	2.60 (66.1)	0.44 (11.2)	0.44 (11.2)	—	3/16 (4.8)	1.69 (39.1)	1.65 (42)	29/32 (23.1)
BV2-F2-01-7-					1.30 (33.1)	0.44 (11.2)	—				

Compact Pneumatic Actuators

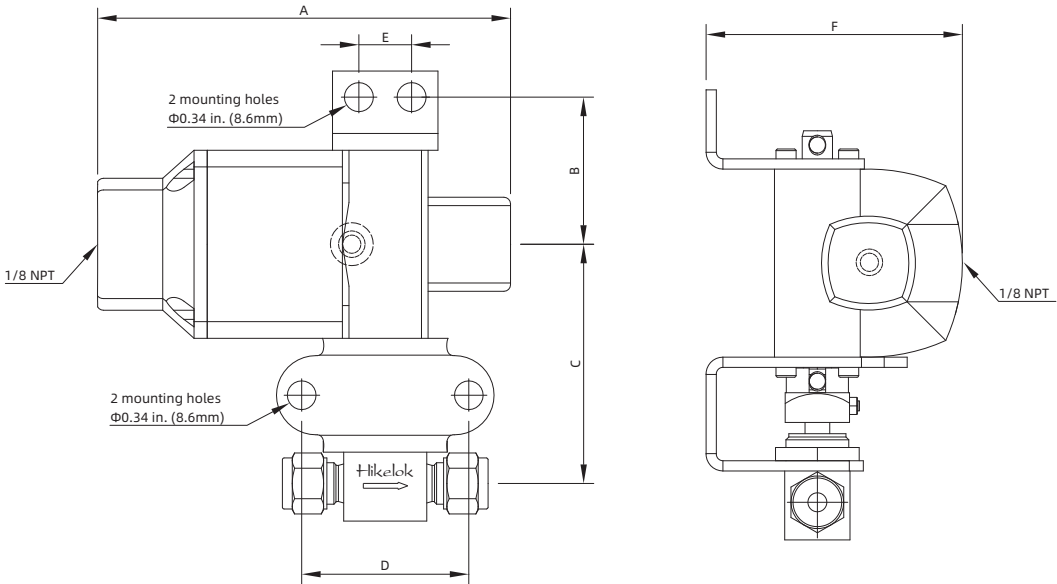
❖ Hikelok rack and pinion pneumatic actuators are compact, lightweight, easily mountable, and can be operated with standard shop air, spring return normally open and normally closed option.

Pressure-Temperature Ratings

Temperature Range °F (°C)	Maximum Actuator Pressure, psig(bar)	
	At 100°F 37°C	At Maximum Temperature
-20 to 200 (-28 to 93)	200 (13.7)	165 (11.3)



Dimensions



Valve Series ^①	Actuation Modes (Angle range)	Dimensions, in.(mm) ^②					
		A	B	C	D	E	F
BV2-05-	Spring Return (0-90°)	4.91 (125)	1.75 (44.5)	2.91 (73.9)	2.00 (50.8)	0.62 (15.8)	3.04 (77.2)
BV2-05-3-	Spring Return (0-180°)						

① Example: BV2-05 refers to BV2 series, 2-way, orifice 4.8mm valves

② Dimensions are for reference only and are subject to change

ISO 5211-Compliant Pneumatic Actuators

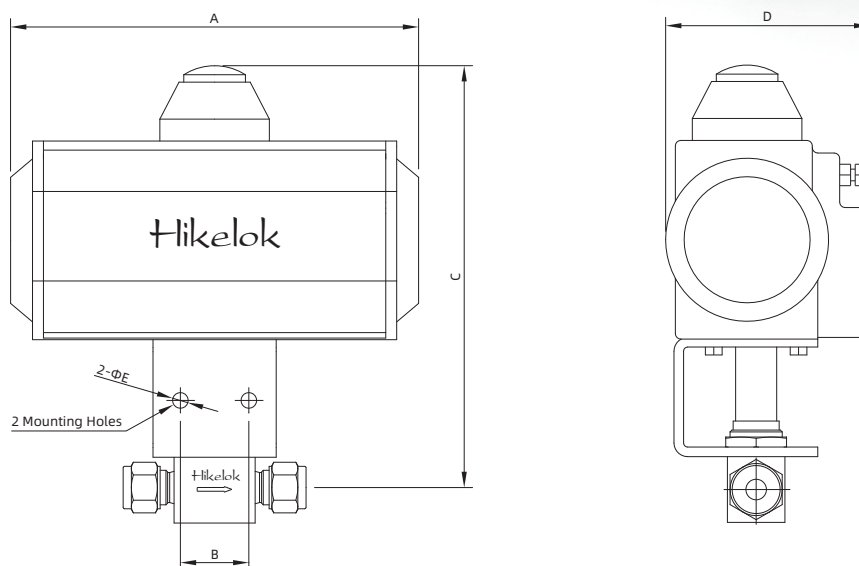
❖ Hikelok ISO 5211-compliant rack and pinion pneumatic actuators are available in spring-return and double-acting modes.

Pressure-Temperature Ratings

Temperature Range °F (°C)	Maximum Actuator Pressure, psig(bar)
-4 to 176 (-20 to 80)	101 (7.0)



Dimensions



Valve Series ^①	Actuation Modes (Angle range)	Dimensions, in.(mm) ^②				
		A	B	C	D	E
BV2-02	Spring Return or Double Acting (0-90°)	5.70 (145)	0.98 (25)	5.70 (145)	2.79 (71)	0.22 (5.7)
BV2-03		5.70 (145)	0.98 (25)	5.70 (145)	2.79 (71)	0.22 (5.7)
BV2-05		5.70 (145)	0.98 (25)	5.70 (145)	2.79 (71)	0.22 (5.7)
BV2-07		5.70 (145)	0.98 (25)	6.18 (157)	2.79 (71)	0.22 (5.7)
BV2-10		6.65 (169)	1.37 (35)	7.24 (184)	3.23 (82)	0.34 (8.6)

① BV2-03 refers to BV2 series, 2-way, orifice 3.2mm valves

② Dimensions are for reference only and are subject to change

How to Order

BV2 — **M12** — **FNPT8** — **T10** — **3** — **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
BV2	FNPT	Female NPT	2 1/8 in.	Same as Port1 Type and Port1 Size		T PTFE	00 0.052 in. (1.32 mm)	Black	Straight	316 316 S.S.
	NPT	Male NPT	3 3 mm				01 0.062 in. (1.57 mm)	R1 Red	A1 Angle	316L 316L S.S.
	FBT	Female BSPT	4 1/4 in.	If Port 2/3 and Port1 are the same, eliminate the Port 2/3 designator			02 0.093 in. (2.4 mm)	G1 Green	3 3-way	304 304 S.S.
	MBT	Male BSPT	5 5/16 in.				03 0.125 in. (3.2 mm)	L1 Blue	4 4-way	304L 304L S.S.
	FMS	Female Metric	6 3/8 in. or 6 mm				05 0.187 in. (4.7 mm)	Y1 Yellow	5 5-way	A400 Alloy 400
	MS	Male Metric (for BG)	8 1/2 in. or 8 mm				07 0.281 in. (7.1 mm)	PSC	6 6-way	BR Brass
	FBP	Female BSPP	10 10 mm				10 0.406 in. (10.3 mm)	PSO	7 7-way	
	MBP	Male BSPP (for BG)	12 3/4 in. or 12 mm					PD	See Note	
	F	Fractional Tube Fitting						CPSC		
	M	Metric Tube Fitting						CPSO		
	GFS	Male GFS						EA		

Note:

PSC (ISO 5211-Compliant Pneumatic Actuators, spring return normally closed)

PSO (ISO 5211-Compliant Pneumatic Actuators, spring return normally open)

PD (ISO 5211-Compliant Pneumatic Actuators, double acting)

CPSC (Compact Pneumatic Actuators, spring return normally closed)

CPSO (Compact Pneumatic Actuators, spring return normally open)

EA (Electric Actuator, please consult customer service for parameters)

Two-Piece Ball Valves

BV3 Series

Features

- ❖ Maximum working pressure up to 1500 psig (103.4 bar)
- ❖ Working temperature from -30°F to 400°F (-34°C to 204°C)
- ❖ Compact and economical design
- ❖ Free floating ball design for seat wear compensation
- ❖ Bi-directional flow
- ❖ Blowout proof stem
- ❖ Options for handle color

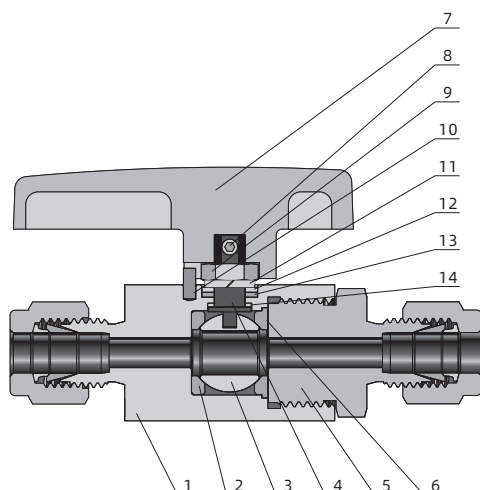


Pressure-Temperature Ratings

Temperature, °F(°C)	Working Pressure, psig(bar)
-30 (-34) to 100 (37)	1500 (103)
200 (93)	1000 (68)
300 (148)	800 (55)
400 (204)	330 (23)

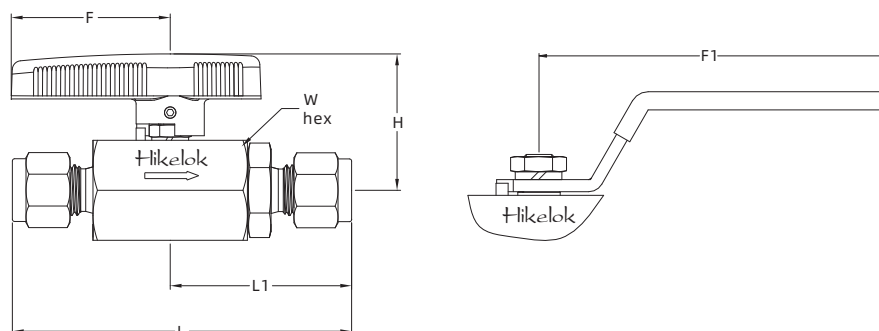
❖ The above data is based on 316 S.S. valve bodies and connectors

Standard Materials of Construction



Component		Material Grade / ASTM Specification		
		316 S.S.	304 S.S.	Brass
1	Body	316 S.S. / A276	304 S.S. / A276	Brass / B16
2	Seat	PTFE / D1710		
3	Ball	316 S.S. / A276		
4	Stem	316 S.S. / A276		
5	Connector	316 S.S. / A276	304 S.S. / A276	Brass / B16
6	Seat	PTFE / D1710		
7	Handle	Aluminum		
8	Screw	S17400 / A564		
9	Nut	316 S.S. / A194		
10	Pin	304 S.S. / A276		
11	Washer	304 S.S.		
12	Gland	316 S.S. / A276		
13	Packing	PTFE / D1710		
14	Stem Washer	PTFE / D1710		

Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)					
				L	L1	W	H	F	F1
BV3-M6-07-	6 mm Hikelok	0.281 (7.1)	2.3	2.63 (66.8)	1.50 (38.1)	3/4 (19.05)	1.18 (30)	1.38 (35.0)	3.22 (82.0)
BV3-M8-07-	8 mm Hikelok								
BV3-F4-07-	1/4" Hikelok								
BV3-F5-07-	5/16" Hikelok								
BV3-FNPT2-07-	1/8" Female NPT			1.85 (47.0)	1.08 (27.4)	7/8 (22.23)			
BV3-FBP2-07-	1/8" Female BSPP								
BV3-FBP4-07-	1/4" Female BSPP								
BV3-FNPT4-07-	1/4" Female NPT								
BV3-M10-07-	10 mm Hikelok			2.87 (72.9)	1.68 (42.7)	7/8 (22.23)			
BV3-F6-07-	3/8" Hikelok								
BV3-FBP6-07-	3/8" Female BSPP								
BV3-FNPT6-07-	3/8" Female NPT								
BV3-M12-09-	12 mm Hikelok	0.354 (9.0)	6.4	3.15 (80.0)	1.83 (46.5)	15/16 (24.0)	1.54 (39)	1.65 (42.0)	3.22 (82.0)
BV3-F8-09-	5/8" Hikelok								
BV3-F10-09-	5/8" Hikelok								
BV3-FBP8-09-	1/2" Female BSPP			2.05 (52.1)	1.12 (28.5)				
BV3-FNPT8-09-	1/2" Female NPT								
BV3-M16-13-	16mm Hikelok	0.50 (12.7)	8.0	4.05 (103)	2.18 (55.5)	1.25 (31.75)	1.59 (40.4)	1.97 (50.0)	3.46 (88.0)
BV3-M18-13-	18mm Hikelok								
BV3-F12-13-	3/4" Hikelok								
BV3-FBP12-13-	3/4" Female BSPP								
BV3-FNPT12-13-	3/4" Female NPT			3.46 (87.9)	1.96 (49.8)				
BV3-M25-15-	25mm Hikelok	0.59 (15.0)	17.0	4.78 (121.5)	2.56 (65.0)	1.62 (41.29)	1.89 (48.0)	2.36 (60.0)	4.02 (102.0)
BV3-F16-15-	1" Hikelok			3.62 (92.0)	1.85 (47.0)				
BV3-FBP16-15-	1" Female BSPP								
BV3-FNPT16-15-	1" Female NPT								

How to Order

BV3 —		M12		— FNPT8 —		T09		— LL —		316		
Series	Inlet Type		Inlet Size		Outlet Type	Outlet Size	Seat Material	Orifice Size		Handle		Body Material
BV3	FNPT	Female NPT	2 1/8 in.		Same as inlet type and inlet size		T PTFE	07	0.281 in. (7.1mm)	Black Aluminium Directional Handle (ADH)	316 316 S.S.	
	NPT	Male NPT	3 3 mm					09	0.354 in (9.0mm)			316L 316L S.S.
	FBT	Female BSPT	4 1/4 in.		If outlet and inlet are the same, eliminate the outlet designator			13	0.5 in. (12.7 mm)	R1	Red ADH	
	MBT	Male BSPT	5 5/16 in.					15	0.59 in. (15.0mm)	G1	Green ADH	304L 304L S.S.
	FMS	Female Metric	6 3/8 in. or 6 mm							L1	Blue ADH	
	MS	Male Metric (for BG)	8 1/2 in. or 8 mm							Y1	Yellow ADH	
	FBP	Female BSPP	10 10 mm							BL	Black Lever Handle	
	MBP	Male BSPP (for BG)	12 3/4 in. or 12 mm							RL	Red Lever Handle	
	F	Fractional Tube Fitting	14 14 mm					GL	Green Lever Handle			
	M	Metric Tube Fitting	16 1 in. or 16 mm					LL	Blue Lever Handle			
	UGF	Nut + Gasket + Bulge Fractional Tube Nipple	18 18 mm					YL	Yellow Lever Handle			
	UGM	Nut + Gasket + Metric Tube Bulge Nipple	20 1 1/4 in. or 20 mm									
			22 22 mm									
			25 25 mm									

High Pressure Ball Valves

BV4 Series

Features

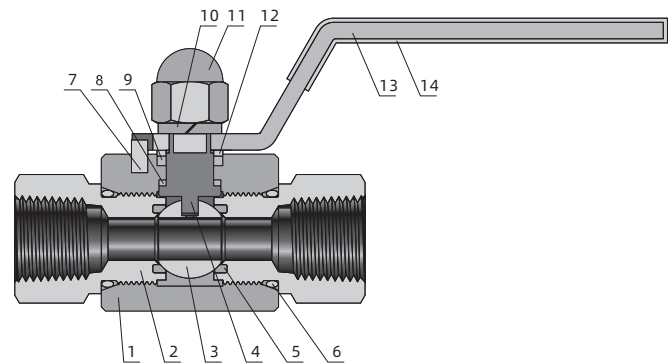
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -40°F to 450°F (-40°C to 232°C)
- ❖ Bi-directional flow for 2-way valves
- ❖ Seat wear compensation by free floating ball
- ❖ Variety of end connections
- ❖ Blowout proof stem with self-sealing function
- ❖ Handle of different colors available for option
- ❖ Optional pneumatic and electric actuator
- ❖ All wetted components are compatible with hydrogen and compressed natural gas (CNG)



Technical Data

Seat Material	Temperature Range °F (°C)	Pressure Rating at 100°F (37°C) psig(bar)	
		Stainless Steel	Steel
Orifice: 0.39"(10.0 mm)			
PCTFE PEEK	-40 to 450 (-40 to 232)	6000(413)	6000(413)
Orifice: 0.5" (12.7 mm) to 0.75" (19.0 mm)			
PCTFE	-40 to 50 (-40 to 11)	6000(413)	5000(344)
PEEK	-40 to 450 (-40 to 232)	6000(413)	5000(344)
PTFE		1500(103)	
Orifice: 1" (25.4 mm) to 1.5" (38.1 mm)			
PCTFE	-40 to 50 (-40 to 11)	4500(310)	4500(310)
PEEK	-40 to 450 (-40 to 232)	4500(310)	4500(310)
PTFE		1500(103)	

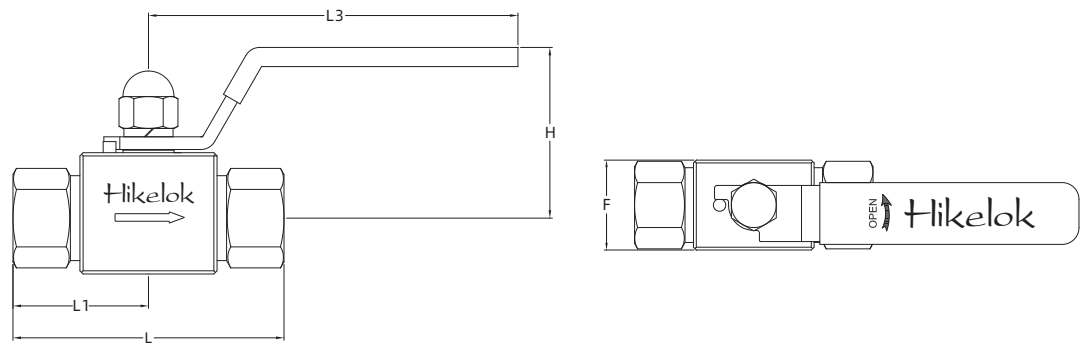
Standard Materials of Construction



2-way Valves

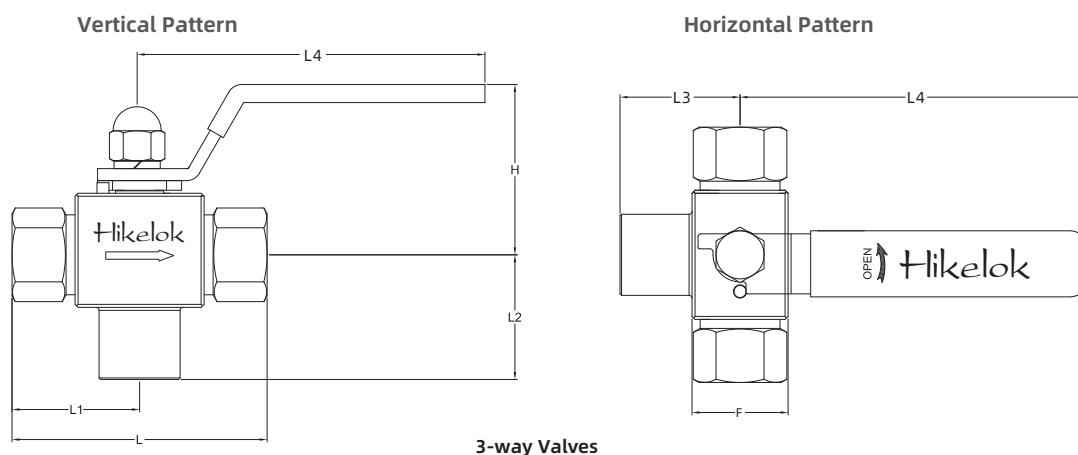
Component		Body Material	
		316 S.S.	Steel
1	Body	316 S.S./A479	Alloy 1020/A108
2	End Connector	316 S.S./A276	Alloy 1020/A108
3	Ball	316 S.S./A479	Alloy 1020/A108
4	Stem	316 S.S./A276	
5	Seat	PTFE or PCTFE or PEEK	
6	End Seal	Fluorocarbon FKM or Neoprene or Buna N	
7	Pin	Stainless Steel	
8	Stem Washer	PTFE/D1710	
9	Stem Packing	PTFE/D1710	
10	Spring Washer	Stainless Steel	
11	Nut	Stainless Steel	
12	Gland	316 S.S./A276	
13	Handle	Stainless Steel	
14	Handle sleeve	Vinyl	

Dimensions



2-way Valves

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L	L1	L3	H	F
BV4-M6-10-	6 mm Hikelok	0.406 (10.3)	1.2	3.54 (90.0)	1.77 (45.0)	5.12 (130.0)	1.73 (44.0)	1.30 (32.0)
BV4-M8-10-	8 mm Hikelok			3.60 (91.6)	1.80 (45.8)			
BV4-M10-10-	10 mm Hikelok		3.7	3.70 (94.0)	1.85 (47.0)			
BV4-M12-10-	12 mm Hikelok		7.5	3.94 (100.0)	1.97 (50.0)			
BV4-M14-10-	14 mm Hikelok							
BV4-F4-10-	1/4" Hikelok		1.2	3.60 (91.6)	1.80 (45.8)			
BV4-F6-10-	3/8" Hikelok		3.7	3.72 (94.6)	1.86 (47.3)			
BV4-F8-10-	1/2" Hikelok		7.5	3.92 (99.6)	1.96 (49.8)			
BV4-FNPT4-10-	1/4" Female NPT			2.52 (64.0)	1.26 (32.0)			
BV4-FNPT6-10-	3/8" Female NPT			2.80 (71.0)	1.40 (35.5)			
BV4-FNPT8-10-	1/2" Female NPT			3.11 (79.0)	1.56 (39.5)			
BV4-NPT4-10-	1/4" Male NPT		3.7	3.36 (85.4)	1.68 (42.7)			
BV4-NPT6-10-	3/8" Male NPT		7.5					
BV4-NPT8-10-	1/2" Male NPT			3.75 (95.2)	1.88 (47.6)			
BV4-24C12-10-	24°O-ring (M18X1.5)							
BV4-M16-13-	16 mm Hikelok	0.5 (12.7)	10.0	4.04 (102.6)	2.02 (51.3)	5.71 (145.0)	1.89 (48.0)	1.50 (38.0)
BV4-M18-13-	18 mm Hikelok			4.12 (104.6)	2.06 (52.3)			
BV4-M20-13-	20 mm Hikelok			4.43 (112.6)	2.22 (56.3)			
BV4-M22-13-	22 mm Hikelok							
BV4-F10-13-	5/8" Hikelok			4.36 (110.6)	2.18 (55.3)			
BV4-F12-13-	3/4" Hikelok							
BV4-FNPT8-13-	1/2" Female NPT			3.54 (90.0)	1.77 (45.0)			
BV4-FNPT12-13-	3/4" Female NPT							
BV4-NPT12-13-	3/4" Male NPT			4.14 (105.2)	2.07 (52.6)			
BV4-24C18-13-	24°O-ring (M26X1.5)							
BV4-M20-19-	20 mm Hikelok	0.71 (19.0)	19.0	4.87 (123.8)	2.43 (61.9)	6.30 (160.0)	2.08 (53.0)	1.96 (50.0)
BV4-M22-19-	22 mm Hikelok		30.0	5.11 (129.8)	2.66 (64.9)			
BV4-M25-19-	25 mm Hikelok		19.0	4.59 (116.6)	2.29 (58.3)			
BV4-F12-19-	3/4" Hikelok		30.0	5.11 (129.8)	2.66 (64.9)			
BV4-F16-19-	1" Hikelok			3.54 (90.0)	1.77 (45.0)			
BV4-FNPT12-19-	3/4" Female NPT			3.86 (98.2)	1.93 (49.1)			
BV4-FNPT16-19-	1" Female NPT		19.0	4.54 (115.2)	2.27 (57.6)			
BV4-NPT12-19-	3/4" Male NPT							
BV4-NPT16-19-	1" Male NPT		30.0	4.91 (124.8)	2.45 (62.4)			
BV4-24C22-19-	24°O-ring(M30X2)							
BV4-24C28-25-	24°O-ring(M36X2)	1 (25.4)	38.0	4.25 (108)	2.13 (54)	6.70 (170.0)	5.28 (134.0)	2.28 (58.0)
BV4-24C35-32-	24°O-ring(M45X2)	1.25 (31.8)	90.0	4.41 (112)	2.21 (56)			
BV4-24C42-40-	24°O-ring(M52X2)	1.5 (38.1)	100.0	4.41 (112)	2.21 (56)			



Basic Ordering Number	Connection Type and Size	Orifice	Cv	Dimension, in. (mm)					
		in. (mm)		L	L1	L2	L3	H	F
BV4-M6-10-3-	6 mm Hikelok	0.406 (10.3)	1.2	3.54 (90.0)	1.77 (45.0)	2.00 (51.0)	5.12 (130.0)	1.73 (44.0)	1.30 (32.0)
BV4-M8-10-3-	8 mm Hikelok			3.60 (91.6)	1.80 (45.8)	2.02 (51.3)			
BV4-M10-10-3-	10 mm Hikelok		3.7	3.70 (94.0)	1.85 (47.0)	2.07 (52.5)			
BV4-M12-10-3-	12 mm Hikelok		7.5	3.94 (100.0)	1.97 (50.0)	2.18 (55.5)			
BV4-M14-10-3-	14 mm Hikelok								
BV4-F4-10-3-	1/4" Hikelok		1.2	3.60 (91.6)	1.80 (45.8)	2.01 (51.3)			
BV4P-F6-10-3-	3/8" Hikelok		3.7	3.72 (94.6)	1.86 (47.3)	2.16 (54.8)			
BV4P-F8-10-3-	1/2" Hikelok			3.92 (99.6)	1.96 (49.8)	2.13 (54.0)			
BV4-FNPT4-10-3-	1/4" Female NPT		7.5	2.52 (64.0)	1.26 (32.0)	1.44 (36.5)			
BV4-FNPT6-10-3-	3/8" Female NPT			2.80 (71.0)	1.40 (35.5)	1.57 (40.0)			
BV4-FNPT8-10-3-	1/2" Female NPT			3.11 (79.0)	1.56 (38.5)	1.73 (44.0)			
BV4-NPT4-10-3-	1/4" Male NPT		3.7	3.36 (85.4)	1.68 (42.7)	1.90 (48.2)			
BV4-NPT6-10-3-	3/8" Male NPT		7.5	3.75 (95.2)	1.88 (47.6)	2.09 (53.1)			
BV4-NPT8-10-3-	1/2" Male NPT								
BV4-M16-13-3-	16 mm Hikelok	0.5 (12.7)	10.0	4.04 (102.6)	2.02 (51.3)	2.41 (61.3)	5.71 (145.0)	1.89 (48.0)	1.50 (38.0)
BV4-M18-13-3-	18 mm Hikelok			4.12 (104.6)	2.06 (52.3)	2.45 (62.3)			
BV4-M20-13-3-	20 mm Hikelok			4.43 (112.6)	2.22 (56.3)	2.61 (66.3)			
BV4-M22-13-3-	22 mm Hikelok								
BV4-F10-13-3-	5/8" Hikelok			4.36 (110.6)	2.18 (55.3)	2.57 (65.3)			
BV4-F12-13-3-	3/4" Hikelok								
BV4-FNPT8-13-3-	1/2" Female NPT			3.54 (90.0)	1.77 (45.0)	1.95 (49.5)			
BV4-FNPT12-13-3-	3/4" Female NPT					2.16 (55.0)			
BV4-NPT12-13-3-	3/4" Male NPT			4.14 (105.2)	2.07 (52.6)	2.46 (62.6)			
BV4-M20-19-3-	20 mm Hikelok	0.71 (19.0)	19.0	4.87 (123.8)	2.43 (61.9)	2.89 (73.4)	6.30 (160.0)	2.08 (53.0)	1.96 (50.0)
BV4-M22-19-3-	22 mm Hikelok								
BV4-M25-19-3-	25 mm Hikelok		30.0	5.11 (129.8)	2.66 (64.9)	3.00 (76.2)			
BV4-F12-19-3-	3/4" Hikelok		19.0	4.59 (116.6)	2.29 (58.3)	2.75 (69.8)			
BV4-F16-19-3-	1" Hikelok			5.11 (129.8)	2.66 (64.9)	2.85 (72.4)			
BV4-FNPT12-19-3-	3/4" Female NPT		30.0	3.54 (90.0)	1.77 (45.0)	2.22 (56.5)			
BV4-FNPT16-19-3-	1" Female NPT			3.86 (98.2)	1.93 (49.1)	2.40 (60.8)			
BV4-NPT12-19-3-	3/4" Male NPT		19.0	4.54 (115.2)	2.27 (57.6)	2.72 (69.1)			
BV4-NPT16-19-3-	1" Male NPT		30.0	4.91 (124.8)	2.45 (62.4)	2.90 (73.9)			

❖ If working pressure up to 10,000 psi, please refer to BV41 series.

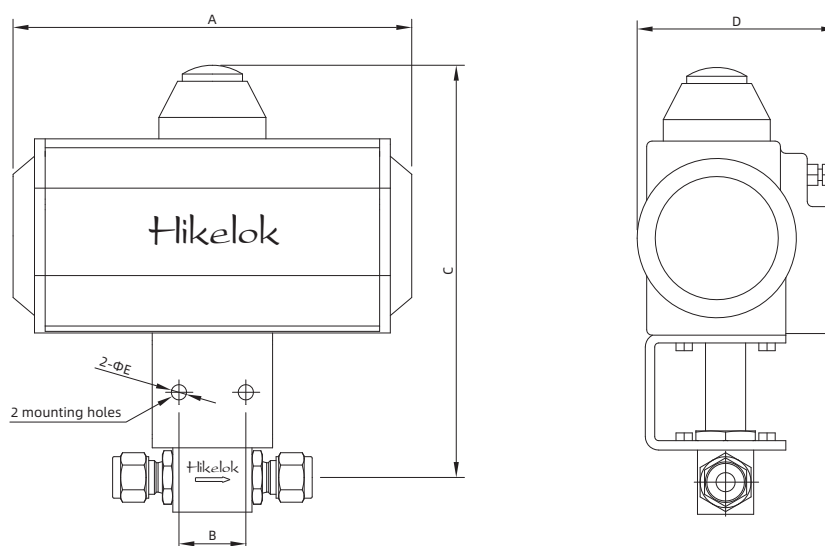
ISO 5211-Compliant Pneumatic Actuators

❖ Hikelok ISO 5211-compliant rack and pinion pneumatic actuators are available in spring-return and double-acting modes.

Pressure-Temperature Ratings

Temperature Range °F (°C)	Maximum Actuator Pressure, psig(bar)
-4 to 176 (-20 to 80)	101 (7.0)

Dimensions



Valve Series ^①	Actuation Modes (Angle range)	Dimensions, in.(mm) ^②				
		A	B	C	D	E
BV4-10	Spring Return or Double Acting (0-90°)	5.70 (145)	1.18 (30)	6.65 (169)	2.79 (71)	0.34 (8.6)
BV4-13		5.70 (145)	1.18 (30)	6.65 (169)	2.79 (71)	0.34 (8.6)
BV4-19		7.91 (201)	2.18 (55.6)	7.71 (196)	3.70 (94)	0.34 (8.6)

① Example: BV4-10 refers to BV4 series, 2-way, orifice 10.3mm valves

② Dimensions are for reference only and are subject to change

How to Order

BV4 — M12 — FNPT8 — P10 — 3 — 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
BV4	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size		P PEEK	10 0.406 in. (10.3 mm)	Blue	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm			K PCTFE	13 0.5 in. (12.7 mm)	R1 Red		316L 316L S.S.
	FBT Female BSPT	4 1/4 in.	If Port 2/3 and port1 are the same, eliminate the port 2/3 designator		T PTFE	19 0.75 in. (19.0 mm)	G1 Green	3-way Vertical Pattern	304 304 S.S.
	MBT Male BSPT	5 5/16 in.			R RPTFE	25 1 in. (25.4 mm)	B1 Black		304L 304L S.S.
	FMS Female Metric	6 3/8 in. or 6 mm				32 1.25 in. (31.8 mm)	Y1 Yellow		A400 Alloy 400
	MS Male Metric (for BG)	8 1/2 in. or 8 mm				40 1.5 in. (38.1 mm)	PSC		CS Steel
	FBP Female BSPP	10 10 mm					PSO		
	MBP Male BSPP (for BG)	12 3/4 in. or 12 mm					PD		
	F Fractional Tube Fitting	14 14 mm					EA		
	M Metric Tube Fitting	16 1 in. or 16 mm							
	MSW Metric Tube Socket Weld	18 18 mm							
	FSW Fractional Tube Socket Weld	20 1 1/4 in or 20 mm							
	MBW Metric Tube Butt Weld	22 22 mm							
	FBW Fractional Tube Butt Weld	24 1 1/2 in.							
	PSW Pipe Socket Weld	25 25 mm							
	PBW Pipe Butt Weld	27 M27x 2							
	UGF Nut + Gasket + Bulge Fractional Tube Nipple	28 28 mm							
	UGM Nut + Gasket + Metric Tube Bulge Nipple	32 2 in. or 32 mm							
	24C 24°C Cone Connection								

Note:

PSC (ISO 5211-Compliant Pneumatic Actuators, spring return normally closed)

PSO (ISO 5211-Compliant Pneumatic Actuators, spring return normally open)

PD (ISO 5211-Compliant Pneumatic Actuators, double acting)

EA (Electric Actuator, Please consult customer service for parameters)

Three-Piece Ball Valves

BV5 Series

Features

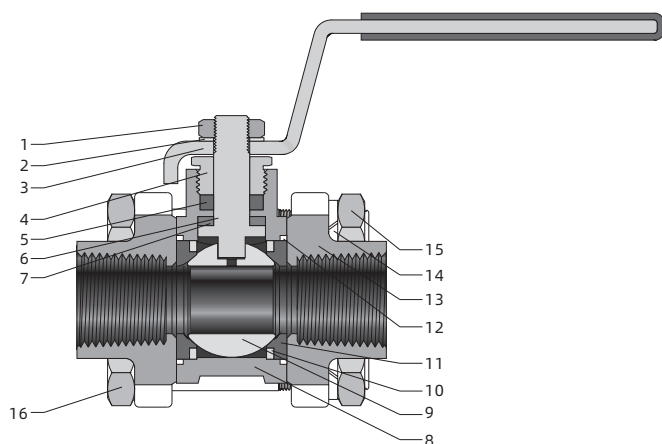
- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -20°F to 450°F (-28°C to 232°C)
- ❖ Orifice sizes: 4.8 mm to 50 mm
- ❖ Blowout-proof stem
- ❖ Pneumatic and electric actuation are available

Pressure-Temperature Ratings

Body Material	CF3M	CF8M	CF3	CF8
Seat Material	PTFE			
Temperature, °F (°C)	Working Pressure, psig(bar)			
-20(-28) to 100(37)	1000(68.9)			
150(65)	1000(68.9)			
200(93)	1000(68.9)			
250(121)	1000(68.9)			
300(148)	800(55.1)			
350(176)	560(38.5)			
400(204)	330(22.7)			
450(232)	100(6.8)			

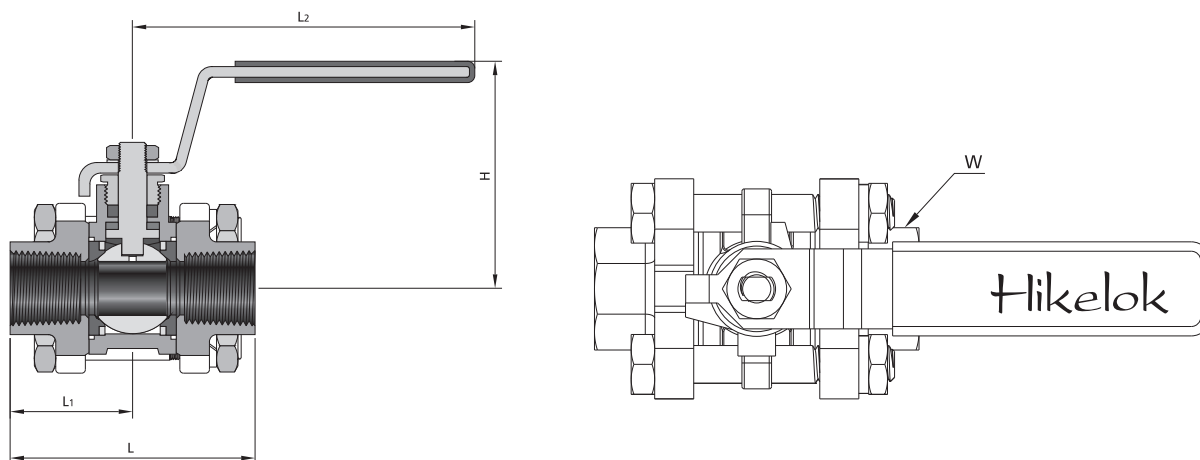


Standard Materials of Construction



Component	Valve Body Material			
	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
1 Stem Nut	Gr.8M/A194			
2 Gasket	304 S.S.			
3 Handle	304 S.S./A240 (with vinyl sleeve)			
4 Gland	316 S.S./A479 or 304 S.S./A479			
5 Stem Packing	Graphite			
6 Stem	316 S.S./A479			
7 Stem Bearing	Graphite			
8 Body	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
9 Ball	316 S.S./A479			
10 Support Ring	316 S.S./A479			
11 Seat	PTFE/D1710			
12 Flange Seal	PTFE/D1710			
13 Flange	CF8M/A351	CF3M/A351	CF8/A351	CF3/A351
14 Gasket	304 S.S.			
15 Nut	Gr.8M/A194			
16 Body Bolt	Gr.B8M/A193			

Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L	L ₁	W	H	L ₂
BV5-FNPT2-05	1/8" Female NPT	0.188 (4.8)	1.2	2.57 (65.2)	1.28 (32.6)	0.93 (23.5)	3.94 (100.0)	2.15 (54.7)
BV5-FBT2-05-	1/8" Female BSPT							
BV5-PBW4-05	1/4" PBW							
BV5-F4-05	1/4" Hikelok							
BV5-M6-05-	6 mm Hikelok							
BV5-M8-05	8 mm Hikelok							
BV5-FNPT4-07-	1/4" Female NPT	0.281 (7.1)	3.8	2.57 (65.2)	1.28 (32.6)	0.93 (23.5)	3.94 (100.0)	2.15 (54.7)
BV5-FBT4-07-	1/4" Female BSPT							
BV5-PSW4-07-	1/4" PSW							
BV5-PBW6-07-	3/8" PBW							
BV5-F6-07-	3/8" Hikelok							
BV5-M10-07-	10 mm Hikelok							
BV5-F8-10-	1/2" Hikelok	0.417 (10.6)	7.5	4.04 (103.0)	2.02 (51.3)	0.93 (23.5)	3.94 (100.0)	2.15 (54.7)
BV5-M12-10-	12 mm Hikelok							
BV5-M14-10-	14 mm Hikelok							
BV5-FNPT6-13-	3/8" Female NPT	0.50 (12.7)	11.3	2.57 (65.2)	1.28 (32.6)	0.88 (22.3)	3.94 (100.0)	2.26 (57.5)
BV5-FBT6-13-	3/8" Female BSPT							
BV5-PSW6-13-	3/8" PSW							
BV5-PBW8-13-	1/2" PBW							
BV5-F10-13-	5/8" Hikelok							
BV5-M16-13-	16 mm Hikelok							
BV5-FNPT8-15	1/2" Female NPT	0.591 (15.0)	13.0	2.74 (69.5)	1.37 (34.8)	1.06 (27.0)	3.94 (100.0)	2.26 (57.5)
BV5-FBT8-15-	1/2" Female BSPT							
BV5-PSW8-15-	1/2" PSW							
BV5-MBW22-15	22 mm MBW							
BV5-PSW12-15	3/4" PSW							
BV5-MSW18-15-	18 mm MSW							
BV5-F12-15-	3/4" Hikelok							
BV5-M18-15-	18 mm Hikelok							
BV5-M20-15-	20 mm Hikelok							
BV5-FNPT12-20-	3/4" Female NPT			3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.08 (129.0)	2.48 (63.0)
BV5-FBT12-20-	3/4" Female BSPT							

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L	L ₁	W	H	L ₂
BV5-PBW12-20	3/4" PBW	0.787 (20.0)	50.0	3.15 (80.0)	1.57 (40.0)	1.34 (34.0)	5.08 (129.0)	2.48 (63.0)
BV5-PSW12-20	3/4" PSW							
BV5-PSW16-20	1" PSW							
BV5-MBW25-20	25 mm MBW							
BV5-MSW25-20	25 mm MSW			5.36 (136.0)	2.68 (68.1)			
BV5-F16-20	1" Hikelok							
BV5-M22-20	22 mm Hikelok							
BV5-M25-20	25 mm Hikelok							
BV5-M28-20	28 mm Hikelok							
BV5-FNPT16-25	1" Female NPT	1.00 (25.4)	93.0	3.54 (90.0)	1.77 (45.0)	1.63 (41.3)	6.14 (156.0)	2.97 (75.5)
BV5-FBT16-25	1" Female BSPT							
BV5-PSW16-25	1" PSW							
BV5-PBW16-25	1" PBW							
BV5-F20-25	1 1/4" Hikelok			7.59(193.0)	3.79(96.3)			
BV5-FNPT20-32	1 1/4" Female NPT	1.25 (31.75)	110.0	4.33 (110.0)	2.17 (55.0)	1.94 (49.2)	6.14 (156.0)	3.19 (81.0)
BV5-FBT20-32	1 1/4" Female BSPT							
BV5-PBW20-32	1 1/4" PBW							
BV5-FNPT24-38	1 1/2" Female NPT	1.50 (38.1)	130.0	4.72 (120.0)	2.36 (60.0)	2.24 (57.0)	7.19 (182.5)	3.70 (94.0)
BV5-FBT24-38	1 1/2" Female BSPT							
BV5-PBW24-38	1 1/2" PBW							
BV5-FNPT32-50	2" Female NPT	1.97 (50.0)	270.0	5.51 (140.0)	2.75 (70.0)	2.76 (70.0)	7.19 (182.5)	4.11 (104.5)
BV5-FBT32-50	2" Female BSPT							
BV5-PBW32-50	2" PBW							

How to Order

BV5 — M12 — FNPT8 — T10 — Y1 — 316								
Series	Port 1 Type	Port 1 Size	Port 2 Type	Port 2 Size	Seat Material	Orifice Size	Handle	Body Material
BV5	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size If port2 and port 1 are the same, eliminate the port 2 designator		T PTFE	05 0.188 in. (4.8 mm) 07 0.281 in. (7.1 mm) 10 0.417 in. (10.6 mm) 13 0.5 in. (12.7 mm) 15 0.591 in. (15.0 mm) 20 0.787 in. (20.0 mm) 25 1.00 in. (25.4 mm) 32 1.250 in. (31.75 mm) 38 1.5 in. (38.1 mm) 50 2.00 in. (50.8 mm)	Blue R1 Red G1 Green B1 Black Y1 Yellow PSC PSO PD E	316L CF3M 316 CF8M 304L CF3 304 CF8
	NPT Male NPT	3 3 mm						
	FBT Female BSPT	4 1/4 in.						
	MBT Male BSPT	5 5/16 in.						
	FMS Female Metric	6 3/8 in. or 6 mm						
	MS Male Metric (for BG)	8 1/2 in. or 8 mm						
	FBP Female BSPP	10 10 mm						
	MBP Male BSPP (for BG)	12 3/4 in. or 12 mm						
	F Fractional Tube Fitting	14 14 mm						
	M Metric Tube Fitting	16 1 in. or 16 mm						
	M Metric Tube Fitting	18 18 mm						
	MSW Metric Tube Socket Weld	20 1 1/4 in. or 20 mm						
	FSW Fractional Tube Socket Weld	22 22 mm						
	MBW Metric Tube Butt Weld	24 1 1/2 in.						
	FBW Fractional Tube Butt Weld	25 25 mm						
	PSW Pipe Socket Weld	27 M27x 2						
	PSW Pipe Socket Weld	28 28 mm						
	PBW Pipe Butt Weld	32 2 in. or 32 mm						

❖ Pneumatic Actuators: **PSC** Spring return, normally closed / **PSO** Spring return, normally open / **PD** Double acting

❖ Electric Actuators: **E**

Swing-Out Ball Valves

BV6 Series

Features

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -20°F to 450°F (-28°C to 232°C)
- ❖ 3-piece precision cast body construction
- ❖ Orifice sizes: 0.188"(4.8mm) to 1.500"(38.1mm)
- ❖ Blowout proof stem
- ❖ Multiple end connections available
- ❖ Pneumatic and electric actuator available
- ❖ Leak-tight performance testing with nitrogen or compressed air for every valve at the rated pressure to meet the requirement of no visible leak



Pressure-Temperature Ratings

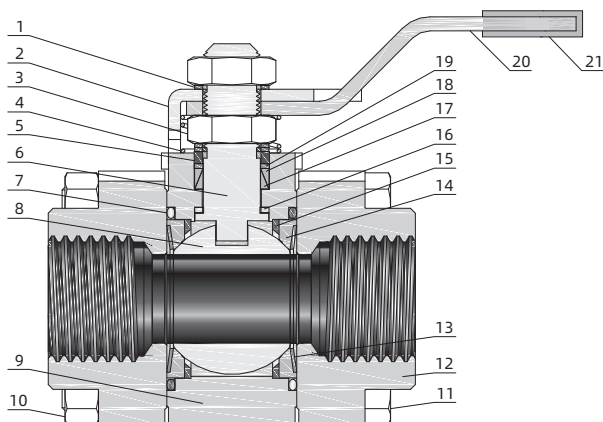
PEEK Seats

Orifice, in.(mm)	0.188 (4.8)	1.250 (31.8)
	0.281 (7.1) 0.516 (13.1) 0.875 (22.2)	1.500 (38.1)
Temperature, °F (°C)	Pressure, psig(bar)	
-20 (-28) to 100 (37)	3000 (206)	1500 (103)
150 (65)	2420 (166)	1210 (83.3)
200 (93)	1870 (128)	930 (64.0)
250 (121)	1770 (121)	880 (60.6)
300 (148)	1600 (110)	780 (53.7)
350 (176)	1430 (98.5)	690 (47.5)
400 (204)	1260 (86.8)	590 (40.6)
450 (232)	800 (55.1)	500 (34.4)

PTFE Seats

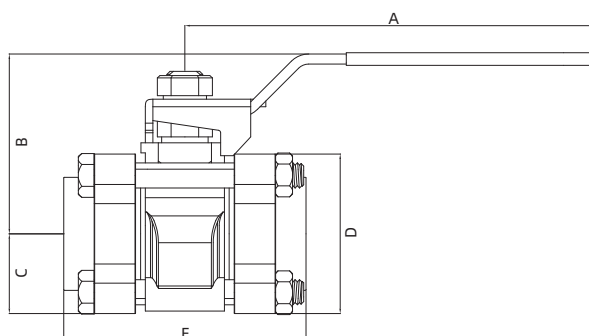
Orifice, in.(mm)	0.188 (4.8)	1.250 (31.8)
	0.281 (7.1) 0.516 (13.1) 0.875 (22.2)	1.500 (38.1)
Temperature, °F (°C)	Pressure, psig(bar)	
-20 (-28) to 100 (37)	1500 (103)	1500 (103)
150 (65)	1500 (103)	1210 (83.3)
200 (93)	1500 (103)	930 (64.0)
250 (121)	1150 (79.2)	880 (60.6)
300 (148)	800 (55.1)	780 (53.7)
350 (176)	560 (38.5)	560 (38.5)
400 (204)	330 (22.7)	330 (22.7)
450 (232)	100 (6.8)	100 (6.8)

Standard Materials of Construction



Component		Material Grade/ASTM Specification
1	Stem spring	Strain hardened 316 S.S. /ASTM A240
2	Stop plate	304 S.S. /ASTM A240
3	Stem Nut	304 S.S.
4	Grounding spring	302 S.S. /ASTM A313
5	Gland	PTFE-coated 316 S.S./ASTM B783
6	Stem	316 S.S. /ASTM A479
7	Flange seals	Fluorocarbon FKM
8	Ball	316 S.S. /ASTM A479
9	Body	CF3M /ASTM A351
10	Body hex nuts	304 S.S.
11	Body fasteners	304 S.S.
12	Flange	CF3M /ASTM A351
13	Coned-disc springs	Strain hardened 316 S.S. /ASTM A240
14	Seats	PTFE or PEEK
15	Support rings	316 S.S. /ASTM A240, ASTM A479
16	Stem bearings	PEEK
17	Bottom packing	PTFE or Reinforced PTFE
18	Top packing	PTFE or Reinforced PTFE
19	Packing support	PEEK
20	Handle	304 S.S.
21	Handle Sleeve	PVC

Dimensions



Basic Ordering Number	Connection Type and Size	Orifice, in.(mm)	Cv	A in.(mm)	B in.(mm)	C in.(mm)	D in.(mm)	E in.(mm)
BV6-F4-05-	1/4" Hikelok	0.188 (4.8)	1.2	4.50 (114)	2.35 (59.7)	0.89 (22.6)	1.78 (45.2)	3.72 (94.5)
BV6-M6-05-	6 mm Hikelok							3.76 (81.5)
BV6-FSW4-05-	1/4" Tube Socket Weld							3.76 (95.5)
BV6-PBW4-05-	1/4 Pipe Butt Weld							2.70 (68.6)
BV6-F6-07-	3/8" Hikelok	0.281 (7.1)	3.8	4.50 (114)	2.35 (59.7)	0.89 (22.6)	1.78 (45.2)	3.76 (95.5)
BV6-M10-07-	10 mm Hikelok							2.70 (68.6)
BV6-FNPT2-07-	1/8 Female NPT							2.70 (68.6)
BV6-FNPT4-07-	1/4 Female NPT							4.04 (103)
BV6-FBT4-07-	1/4 Female BSPT	0.516 (13.1)	12	4.50 (114)	2.35 (59.7)	0.89 (22.6)	1.78 (45.2)	2.70 (68.6)
BV6-FSW6-07-	3/8" Tube Socket Weld							2.70 (68.6)
BV6-FNPT6-13-	3/8 Female NPT							2.69(68.3)
BV6-FNPT8-13-	1/2 Female NPT							3.59 (91.2)
BV6-FBT8-13-	1/2 Female BSPT	0.875 (22.2)	13.6	4.50 (114)	2.35 (59.7)	0.89 (22.6)	1.78 (45.2)	4.39 (112)
BV6-F12-13-	3/4" Hikelok							4.51(115)
BV6-M18-13-	18 mm Hikelok							4.57(116)
BV6-FSW12-13-	3/4" Tube Socket Weld							4.94 (125)
BV6-PSW8-13-	1/2 Pipe Socket Weld	1.250 (31.8)	15	6.50 (165)	2.76 (70.0)	1.25 (31.8)	2.50 (63.5)	9.95(253)
BV6-PBW8-13-	1/2 Pipe Butt Weld							4.94(125)
BV6-FNPT12-22-	3/4 Female NPT							4.94(125)
BV6-FNPT16-22-	1 Female NPT							4.94(125)
BV6-FBT12-22-	3/4 Female BSPT	1.500 (38.1)	31	6.50 (165)	2.76 (70.0)	1.25 (31.8)	2.50 (63.5)	4.94(125)
BV6-FBT16-22-	1 Female BSPT							4.94(125)
BV6-M25-22-	25 mm Hikelok							4.94(125)
BV6-F16-22-	1" Hikelok							4.94(125)
BV6-FSW16-22-	1" Tube Socket Weld	1.500 (38.1)	36	6.50 (165)	2.76 (70.0)	1.25 (31.8)	2.50 (63.5)	4.94(125)
BV6-PSW12-22-	3/4 Pipe Socket Weld							4.94(125)
BV6-PBW16-22-	1 Pipe Butt Weld							4.94(125)
BV6-F24-32-	1 1/2" Hikelok							4.94(125)
BV6-FNPT20-32-	1 1/4 Female NPT	1.250 (31.8)	90	9.14 (232)	4.16 (106)	1.74 (44.2)	3.47 (88.1)	4.94(125)
BV6-FNPT24-32-	1 1/2 Female NPT							4.94(125)
BV6-FBT24-32-	1 1/2 Female BSPT							4.94(125)
BV6-FSW24-32-	1 1/2" Tube Socket Weld							4.94(125)
BV6-PSW20-32-	1 1/4 Pipe Socket Weld	1.500 (38.1)	100	9.14 (232)	4.16 (106)	1.74 (44.2)	3.47 (88.1)	4.94(125)
BV6-PSW24-32-	1 1/2 Pipe Socket Weld							4.94(125)
BV6-PBW24-32-	1 1/2 Pipe Butt Weld							4.94(125)
BV6-FNPT32-38-	2 Female NPT							4.94(125)
BV6-FBT32-38-	2 Female BSPT	1.500 (38.1)	130	9.14 (232)	4.16 (106)	1.74 (44.2)	3.47 (88.1)	4.94(125)
BV6-F32-38-	2" Hikelok							4.94(125)
BV6-FSW32-38-	2" Tube Socket Weld							4.94(125)
BV6-PSW32-38-	2 Pipe Socket Weld							4.94(125)
BV6-PBW32-38-	2 Pipe Butt Weld							4.94(125)

❖ All dimensions for reference only and subject to change

How to Order

BV6 — FNPT8 — FNPT6 — P13 — R1 — 316

Series	Port 1 Type	Port 1 Size	Port 2 Type	Port 2 Size	Seat Material	Orifice Size	Handle	Body Material
BV6	F Fractional Tube Fitting	4 1/4 in.	Same as port 1 type and port 1 size		P PEEK	05 0.188 in. (4.8mm)	Blue	316 CF8M
	M Metric Tube Fitting	6 3/8 in. or 6 mm			T PTFE	07 0.281 in. (7.1mm)	R1 Red	316L CF3M
	NPT Male NPT	8 1/2 in. or 8 mm	If port 2 and port 1 are the same, eliminate the port 2 designator			13 0.516 in. (13.1 mm)	G1 Green	304 CF8
	FNPT Female NPT	10 10 mm				22 0.875 in. (22.2 mm)	B1 Black	304L CF3
	MBT Male BSPT	12 3/4 in. or 12 mm				32 1.250 in. (31.8 mm)	Y1 Yellow	
	FBT Female BSPT	14 14 mm				38 1.500 in. (38.1 mm)		
	MBW Metric Tube Butt Weld	16 1 in. or 16 mm						
	FBW Fractional Tube Butt Weld	24 1 1/2 in.						
	PBW Pipe Butt Weld	25 25 mm						
	MSW Metric Tube Socket Weld	32 2 in. or 32 mm						
	FSW Fractional Tube Socket Weld							
	PSW Pipe Socket Weld							

Trunnion Ball Valves

BV7 Series

Features

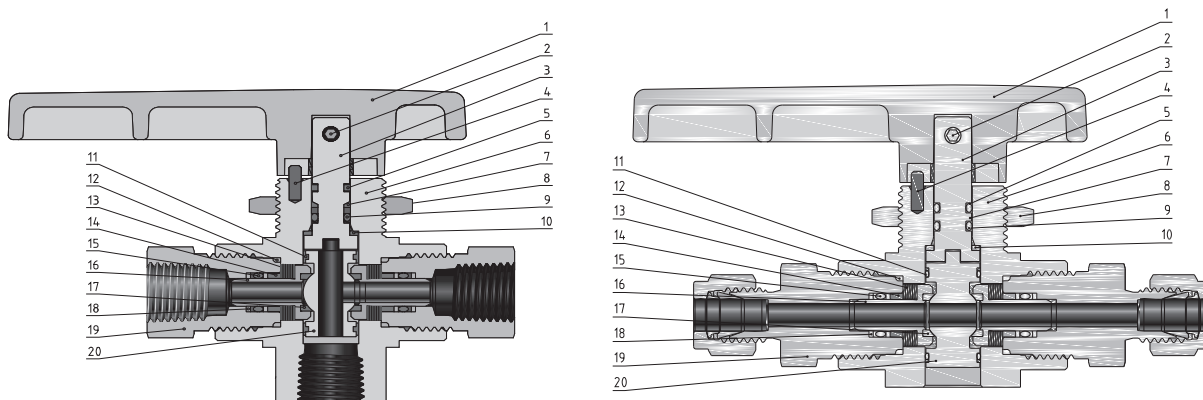
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 450°F (-54°C to 232°C)
- ❖ 2-way and 3-way pattern
- ❖ Spring-loaded seats reduce seat wear from pressure surges
- ❖ Field repairable with seal kits
- ❖ Trunnion-style ball and low operating torque
- ❖ Bottom-loaded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



Pressure-Temperature Ratings

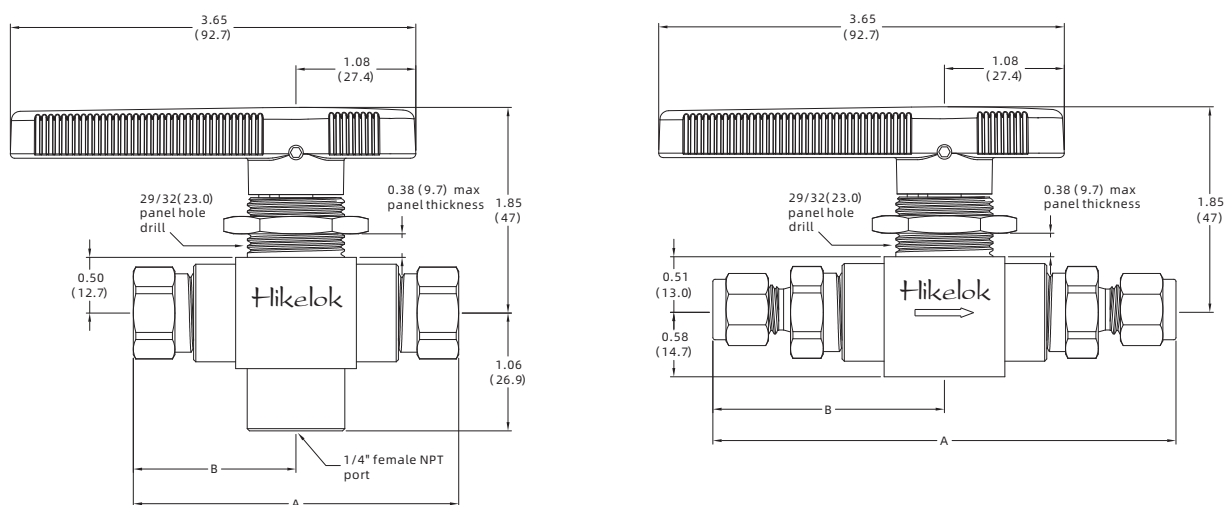
Body Material	316 S.S.			Alloy 400		
Seat Material	PEEK	PCTFE	PTFE	PEEK	PCTFE	PTFE
Temperature, °F (°C)	Working Pressure, psig (bar)					
-65 (-54) to 100 (37)	6000 (413)	6000 (413)	1500 (103)	5000 (344)	5000(344)	1500 (103)
200 (93)	5000 (344)	2000 (137)	750 (151)	4390 (302)	2000(137)	750 (151)
250 (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



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	Stem	316 S.S./A276		Alloy R-405/B164	
4	Pin	Stainless Steel			
5	Primary Stem Backup Ring	PTFE/D1710			
6	Body	316 S.S./A479	316 S.S./A182	Alloy 400/B164	
7	Secondary Stem Backup Ring	——	PEEK	——	PEEK
8	Panel Nut	Stainless Steel			
9	Stem O-ring	——	Fluorocarbon FKM	——	Fluorocarbon FKM
10	Stem Washer	Reinforced PTFE	PEEK	Reinforced PTFE	PEEK
11	Trunnion Bearing	Fluorocarbon FKM	PEEK	Fluorocarbon FKM	PEEK
12	End Connector Seal	PTFE/D1710			
13	Seat Spring	Alloy X-750/AMS 5542			
14	Seat Carrier Guide	316 S.S./A276		Alloy R-405/B164	
15	Seat Retainer O-ring	Fluorocarbon FKM			
16	Seat Retainer	316 S.S./A276		Alloy R-405/B164	
17	Seat	PTFE or PEEK or PCTFE			
18	Seat Retainer Guide	Reinforced PTFE			
19	End Connector	316 S.S./A479		Alloy R-405/B164	
20	Ball	316 S.S./A276	S21800/A276	Alloy R-405/B164	

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" Hikelok			4.14 (105.2)	2.07 (52.6)
BV7-F6-05-	3/8" Hikelok			4.39 (111.5)	2.19 (55.6)
BV7-F8-05-	1/2" Hikelok			4.60 (116.8)	2.30 (58.4)
BV7-M6-05-	6 mm Hikelok			4.14 (105.2)	2.07 (52.6)
BV7-M8-05-	8 mm Hikelok			4.15 (105.4)	
BV7-M10-05-	10 mm Hikelok			4.41 (112.0)	2.20 (55.9)
BV7-M12-05-	12 mm Hikelok			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" Hikelok			4.14 (105.2)	2.07 (52.6)
BV7-F6-05-3-	3/8" Hikelok			4.39 (111.5)	2.19 (55.6)
BV7-F8-05-3-	1/2" Hikelok			4.60 (116.8)	2.30 (58.4)
BV7-M6-05-3-	6 mm Hikelok			4.14 (105.2)	2.07 (52.6)
BV7-M8-05-3-	8 mm Hikelok			4.15 (105.4)	
BV7-M10-05-3-	10 mm Hikelok			4.41 (112.0)	2.20 (55.9)
BV7-M12-05-3-	12 mm Hikelok			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.

How to Order

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 Alloy 400	T PTFE K PCTFE P PEEK

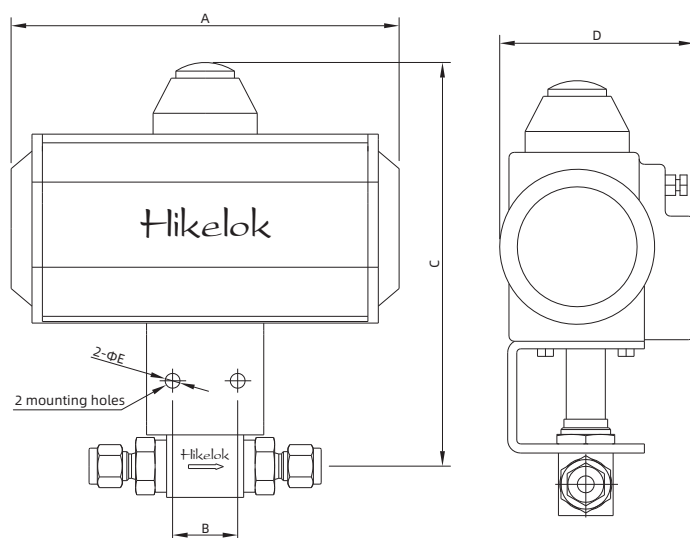
ISO 5211-Compliant Pneumatic Actuators

❖ Hikelok ISO 5211-compliant rack and pinion pneumatic actuators are available in spring-return and double-acting modes.

Pressure-Temperature Ratings

Temperature Range °F (°C)	Maximum Actuator Pressure, psig(bar)
-4 to 176 (-20 to 80)	101 (7.0)

Dimensions



Valve Series ^①	Actuation Modes (Angle range)	Dimensions, in.(mm) ^②				
		A	B	C	D	E
BV7-05	Spring Return or Double Acting (0-90°)	5.70 (145)	0.98 (25)	6.10 (155)	2.79 (71)	0.22 (5.7)

① Example: BV7-05 refers to BV7 series, 2-way, orifice 4.75mm valves
② Dimensions are for reference only and are subject to change

How to Order

BV7 — **M10** — **FNPT4** — **P05** — **L3** — **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
BV7	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size		K PCTFE	05 0.187 in. (4.7 mm)	Black	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm			P PEEK		L Blue		
	FBT Female BSPT	4 1/4 in.	If port2/3 and port 1 are the same, eliminate the port 2/3 designator		T PTFE		R Red	3 3-way	304 304 S.S.
	MBT Male BSPT	5 5/16 in.					G Green		304L 304L S.S.
	FMS Female Metric	6 3/8 in. or 6 mm					Y Yellow		A400 Alloy 400
	MS Male Metric (for BG)	8 1/2 in. or 8 mm					PSC		See Note
	FBP Female BSPP	10 10 mm					PSO		
	MBP Male BSPP (for BG)	12 12 mm					PD		
	F Fractional Tube Fitting						EA		
	M Metric Tube Fitting								

Note:

PSC (ISO 5211-Compliant Pneumatic Actuators, spring return normally closed)

PSO (ISO 5211-Compliant Pneumatic Actuators, spring return normally open)

PD (ISO 5211-Compliant Pneumatic Actuators, double acting)

EA (Electric Actuator, Please consult customer service for parameters)

Metal Seated Ball Valves

BV8 Series

Features

- ❖ Working pressure from ASME class 600 to 4500
- ❖ Working temperature from -20°F to 1500°F (-28°C to 815°C)
- ❖ One-piece forged body
- ❖ Live-loaded Grafoil and Stainless Steel packing
- ❖ High velocity oxygen fueled (HVOF) coating
- ❖ Mate-lapped ball & seats
- ❖ Guide bearing for smooth, quarter-turn opening
- ❖ Variety of end connections
- ❖ Lever, gear, pneumatic or electric actuation

Applicable Codes and Standards

- ❖ Working temperature from ASME TDP-1: Prevention of Water Damage to Steam Turbines
- ❖ ASME B16.34: Valves-Flanged, Threaded and Welding End
- ❖ ASME B31.1: Power Piping Code
- ❖ MSS-SP 61: Pressure Testing of Steel Valves
- ❖ API 598: Valve Inspection and Testing



Typical applications

- ❖ Feedwater Drains
- ❖ Gauge Glass Drain and Isolation
- ❖ Boiler/Reheat/Superheat Drain, Vents and Root
- ❖ Economizer Stop
- ❖ Flash Tank
- ❖ HP Feedwater System
- ❖ IP Heater Applications
- ❖ Blowdown
- ❖ Condensate Drain
- ❖ Mud Drum Drain
- ❖ Steam Trap Isolation
- ❖ Sootblower System
- ❖ Inert Steam System
- ❖ HP Turbine Steam Supply & Extraction

Technical Data

SIZE	ANSI	BORE	Cv	
	LIMITED CLASS		SCHEDULE- 160	SCHEDULE- XXS
0.5"	1500	0.56"	5.5	4.5
0.75"	1500	0.56"	19	13
1"	1500	0.56"	15	32
1"	1500	0.76"	55	35
1.5"	1500	0.76"	21	27
1.5"	1500	1.12"	86	194
2"	1500	1.12"	40	49
2"	1500	1.4"	132	202
2.5"	1500	1.4"	63	89
0.5"	2500	0.56"	5.5	4.5
0.75"	2500	0.56"	19	13
1"	2500	0.56"	15	32
1"	2500	0.76"	55	35

SIZE	ANSI	BORE	Cv	
	LIMITED CLASS		SCHEDULE- 160	SCHEDULE- XXS
1.5"	2500	0.76"	21	27
1.5"	2500	1.12"	86	194
2"	2500	1.12"	40	49
2"	2500	1.4"	132	202
2.5"	2500	1.4"	63	89
0.5"	4500	0.65"	—	6
0.75"	4500	0.65"	—	7
1"	4500	0.65"	—	56
1.5"	4500	0.65"	—	15
2"	4500	0.65"	—	13
2"	4500	1.25"	—	103
2.5"	4500	1.25"	—	72

Pressure-Temperature Ratings

A182-F22 (2 1/4 Cr.- 1 Mo.)

Ansi Rating	Temperature, °F																	
	-20 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
	psig																	
900	2250	2150	2030	1945	1920	1815	1765	1705	1595	1525	1460	1350	1130	780	525	330	205	125
1500	5625	5369	5076	4860	4798	4536	4414	4258	3988	3808	3654	3370	2830	1954	1310	824	514	310
2500	7750	7551	7226	6956	6721	6249	6081	5866	5492	5244	5034	4644	3901	2692	1806	1134	708	426
4500	11250	11250	10925	10585	9965	9070	8825	8515	7970	7610	7305	6740	5665	3910	2625	1645	1030	615

A105 (Carbon Steel)**

Ansi Rating	Temperature, °F													
	-20 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000
	psig													
900	2250	2025	1970	1900	1795	1640	1610	1600	1510	1235	805	515	310	155
1500	5625	5063	4923	4753	4491	4104	4028	3996	3780	3088	2008	1288	774	388
2500	7750	6974	6783	6548	6187	5655	5549	5505	5208	4252	2764	1772	1066	532
4500	11250	10120	9845	9505	8980	8210	8055	7990	7560	6170	4010	2570	1545	770

** per ASME/ANSI B16.34
Permissible, but not recommended for prolonged usage above 800 °F.

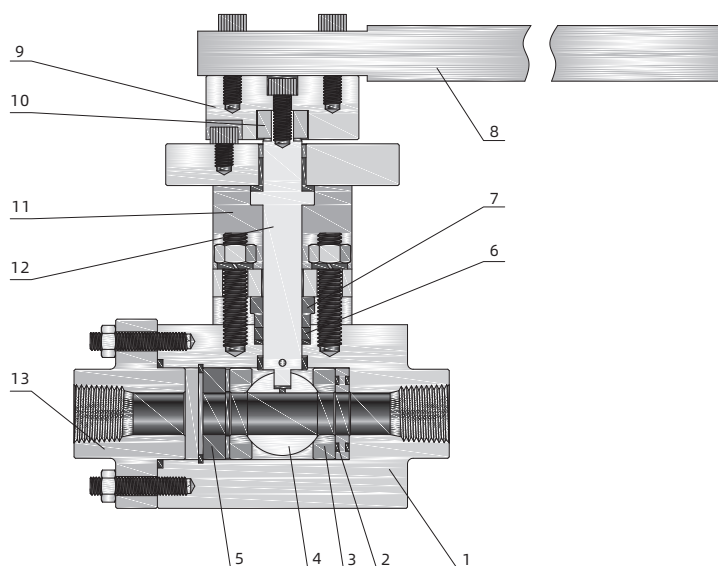
A182-F316 (316 Stainless Steel)

Ansi Rating	Temperature, °F																	
	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
	psig																	
900	1330	1305	1280	1265	1255	1245	1160	1050	1030	915	710	555	440	350	290	225	175	125
1500	3330	3258	3204	3168	3133	3114	2898	2624	2579	2290	1774	1390	1106	874	720	568	436	310
2500	4588	4489	4415	4365	4316	4291	3993	3614	3552	3154	2444	1914	1524	1204	992	780	602	428
4500	6660	6515	6410	6335	6265	6230	5795	5245	5155	4575	3550	2775	2210	1750	1440	1130	875	620

A182-F91 (9Cr.-1 Mo.)

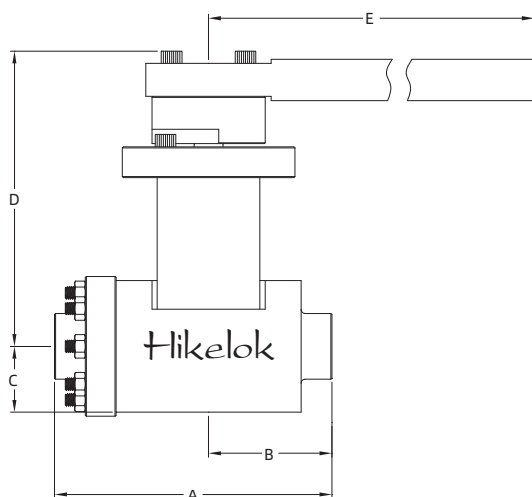
Ansi Rating	Temperature, °F																	
	-20 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
	psig																	
900	2250	2250	2185	2115	1995	1815	1765	1705	1595	1525	1460	1350	1109	1090	1080	965	718	448
1500	5625	5625	5463	5293	4986	4536	4414	4258	3988	3808	2904	3370	2898	2728	2700	2416	1800	1105
2500	7750	7750	7527	7292	6868	6249	6081	5866	5492	5244	4334	4644	3993	3756	3720	3330	2480	1523
4500	11250	11250	10925	10585	9965	9070	8825	8515	7970	7610	7305	6740	5795	5450	5400	4835	3600	2211

Standard Materials of Construction



Description		Materials
1	Body	316 S.S.
2	Packing	Graphite
3	Seat	316S.S. HVOF-CC Coating
4	Ball	316S.S. HVOF-CC Coating
5	Adjustment set	316 S.S.
6	Stem packing	Graphite
7	Packing sets	316 S.S.
8	Handle	304 S.S.
9	Limiting block	316 S.S.
10	Anti-flight ring	316S.S. Spray PTFE Coating
11	Support plate	304 S.S.
12	Stem	316 S.S.
13	Connector	316 S.S.

Dimensions



Class 600/900/1500/2500-Socket welding/butt welding

Termination in. (mm)			Orifice Size in. (mm)	Dimension, in. (mm)				
				A	B	C	D	E
3/4 (20)	1 (25)	1-1/2 (40)	0.63 (16)	8.5 (216)	4.25 (108)	6.85 (174)	8.9 (226)	15.75 (400)
1-1/2 (40)	2 (50)		0.984 (25)	8.5 (216)	4.25 (108)	6.85 (174)	8.9 (226)	15.75 (400)
2 (50)	2-1/2 (65)		1.3 (33)	10.39 (264)	5.2 (132)	7.87 (200)	10.31 (262)	20.78 (528)
2 (50)	2-1/2 (65)		1.5 (38)	10.39 (264)	5.2 (132)	7.87 (200)	10.31 (262)	20.78 (528)

Class 4500-Socket welding/butt welding

Termination in. (mm)			Orifice Size in. (mm)	Dimension, in. (mm)				
				A	B	C	D	E
3/4 (20)	1 (25)	1-1/2 (40)	0.63 (16)	10.39 (264)	5.2 (132)	7.87 (200)	10.31 (262)	17.72 (450)
1-1/2 (40)	2 (50)		0.984 (25)	10.39 (264)	5.2 (132)	7.87 (200)	10.31 (262)	17.72 (450)

订购信息

BV8 — PSW8 — PBW8 — 15 — CL1500 — G — 316

Series	Inlet Type		Inlet Size	Outlet Type	Outlet Size	Orifice Size	ASME Class	Type of Drive	Body Material				
BV8	MSW	Metric Tube Socket Weld	8	Same as inlet type and inlet size		15	0.591 in. (15.0mm)	CL600	Class600	Lever	304	304 S.S.	
	FSW	Fractional Tube Socket Weld	12			20	0.787 in. (20.0mm)	CL900	Class900	G	Geared	304L	304L S.S.
	MBW	Metric Tube Butt Weld	16	If outlet and inlet are the same, eliminate the outlet designator		25	0.984 in. (25.0mm)	CL1500	Class1500	P	Pneumatic	316	316 S.S.
	FBW	Fractional Tube Butt Weld	18			32	1.26 in. (32.0mm)	CL2500	Class2500	E	Electric	316L	316L S.S.
	PSW	Pipe Socket Weld	20			40	1.575 in. (40.0mm)	CL4500	Class4500				
	PBW	Pipe Butt Weld	24			50	1.969 in. (50.0mm)						
			32			65	2.559 in. (65.0mm)						
			48										
			64										