

Bar Stock Ball Valves

BV4 Series

BV41 Series



BV4

Features

- ❖ Maximum working pressure: 6000 psig (413 bar)
- ❖ Working temperature: -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)	

BV41

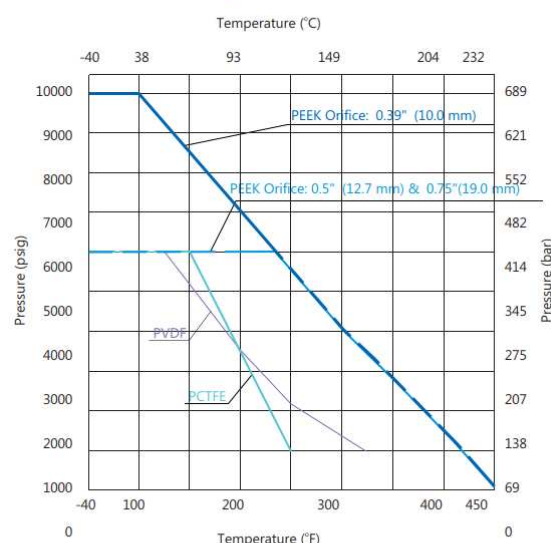
Features

Maximum working pressure: 10000 psig (689 bar)
Working temperature: -40°F to 450°F (-40°C to 232°C)

Features

- ☆ 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
- ☆ Options for handle color
- ☆ Optional pneumatic and electric actuator
- ☆ Leak-tight performance testing with nitrogen for every valve at the maximum working pressure, but not higher than 6000 psig

Pressure vs. Temperature



1. Graphs are for 2-way valves only.
2. Maximum working pressure for 3-way valves:
6000 psig: connection 1 as inlet, connection 2 and connection 3 as outlet
3000 psig: connection 2 and connection 3 as inlet, connection 1 as outlet

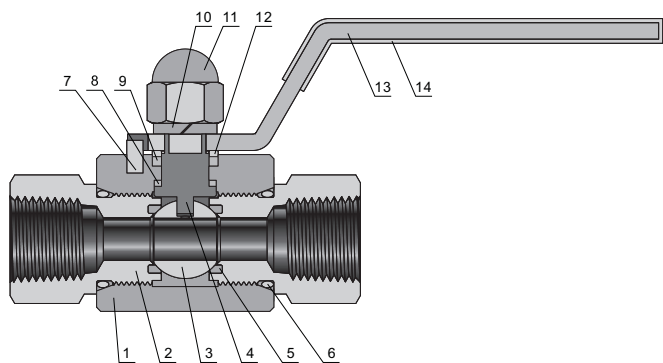
Disponibile anche con le tenute metalliche per alta temperatura:

Pressure vs. Temperature

Temperature °F (°C)	Working Pressure psig (bar)	Temperature °F (°C)	Working Pressure psig (bar)
-20 (-28) to 100 (38)	6000 (413)	700 (371)	3030 (208)
200 (93)	4910 (338)	800 (426)	2685 (184)
300 (148)	4470 (307)	900 (482)	2285 (157)
400 (204)	4130 (284)	1000 (537)	1715 (118)
500 (260)	3700 (254)	1100 (593)	1315 (91)
600 (315)	3280 (225)	1200 (648)	1200 (83)

Standard Materials of Construction

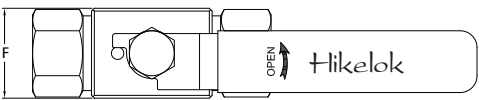
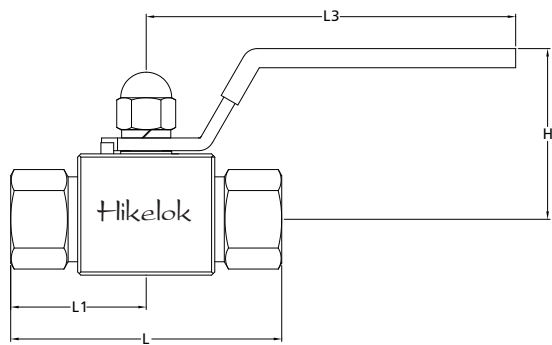
2-way Vavles



Item	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	

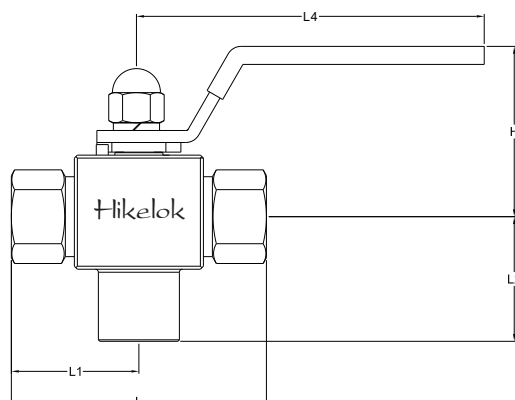
Dimensions

2-way Valves

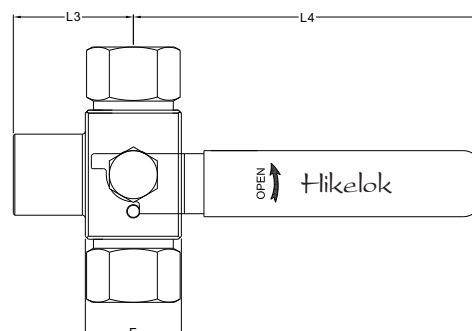


Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L	L1	L3	H	F
BV4-M6-10-	6 mm Hikelok	0.406 (10.3)	1.2	3.54 (90.0)	1.77 (45.0)	5.12 (130.0)	1.73 (44.0)	1.30 (32.0)
BV4-M8-10-	8 mm Hikelok			3.60 (91.6)	1.80 (45.8)			
BV4-M10-10-	10 mm Hikelok		3.7	3.70 (94.0)	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							
BV4-M22-13-	22 mm Hikelok			4.43 (112.6)	2.22 (56.3)			
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					
BV4-NPT12-19-	3/4 Male NPT			4.54 (115.2)	2.27 (57.6)			
BV4-NPT16-19-	1 Male NPT		30.0					
BV4-24C22-19-	24°O-ring(M30X2)			4.91 (124.8)	2.45 (62.4)			
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)			

3-way Valves



Vertical Pattern



Horizontal Pattern

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 (53.3)			
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		7.5	3.92 (99.6)	1.96 (49.8)	2.13 (54.0)			
BV4-FNPT4-10-3-	1/4 Female NPT			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						
BV4-NPT8-10-3-	1/2 Male NPT			3.75 (95.2)	1.88 (47.6)	2.09 (53.1)			
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								
BV4P-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		30.0	5.11 (129.8)	2.66 (64.9)	3.00 (76.2)			
BV4-M25-19-3-	25 mm Hikelok		19.0	4.59 (116.6)	2.29 (58.3)	2.75 (69.8)			
BV4-F12-19-3-	3/4" Hikelok		30.0	5.11 (129.8)	2.66 (64.9)	2.85 (72.4)			
BV4-F16-19-3-	1" Hikelok			3.54 (90.0)	1.77 (45.0)	2.22 (56.5)			
BV4-FNPT12-19-3-	3/4 Female NPT			3.86 (98.2)	1.93 (49.1)	2.40 (60.8)			
BV4-FNPT16-19-3-	1 Female NPT								
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.

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	3 3-way Vertical Pattern	316L 316L S.S.
	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	19 0.75 in. (19.0 mm)	G1 Green	3H 3-way Horizontal 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 ISO 261	6 3/8 in. or 6 mm				32 1.25 in. (31.8 mm)	Y1 Yellow		A400 Alloy 400
	MS Male ISO 261	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	12 3/4 in. or 12 mm					PD		
	F Fractional Tube Fitting	14 14 mm					E		
	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								

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

❖ Electric Actuators: **E**