

One-piece Ball Valves

BV2 Series



- ❖ Maximum working pressure: 3000 psig (207 bar)
- ❖ Working temperature: -65°F to 300°F (-54°C to 148°C)
- ❖ One-piece body and one piece seat and packing
- ❖ 2-way (On-Off), 3,5,7-way (Switching), 4,6-way (Crossover) models for service
- ❖ 316 stainless steel, brass and alloy body material
- ❖ End connection size from 1/16" to 1/2" or 3 mm to 12 mm

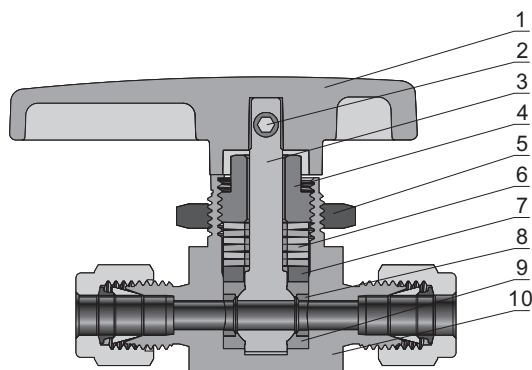
Features

- ❖ Maximum working pressure up to 3000 psig (207 bar)
- ❖ Working temperature: -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 1/2" or 3 mm to 12 mm

Pressure vs. Temperature

Body Material	316 S.S.				
Seat Material	Modified PTFE	PTFE	Modified PTFE	Modified PTFE	Modified PTFE
Valve Type	2-way, angle, 3-way	2-way	4, 5, -way	4, 5, -way	6, 7-way
Orifice mm (Ordering Number)	2.4(-02) 3.2(-03) 4.8(-05)	7.1(-07) 10.3(-10)	1.3(-00) 1.6(-01)	7.1(-07) 10.3(-10)	1.3(-00) 1.6(-01)
Temperature, °F (°C)	Working Pressure, psig(bar)				
-65 (-53) to 50 (10)	3000 (207)	1500 (103)	2500 (172)	1500 (103)	500 (34.4)
150 (65)	3000 (207)	1500 (103)	2500 (172)	1500 (103)	500 (34.4)
200 (93)	2800 (193)	—	—	—	—
250 (121)	2650 (182)	—	—	—	—
300 (148)	2500 (172)	—	—	—	—

Standard Materials of Construction

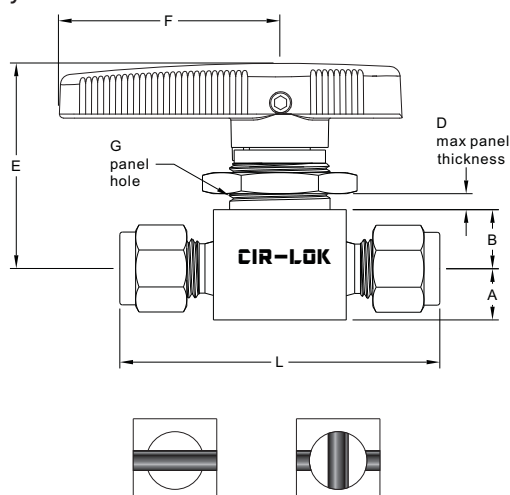


Component		Material Grade/ASTM Specification		
		316 S.S.	Brass	Alloy 400
1	Handle	Aluminum		
2	Screw	S17400 S.S./A564		
3	Ball Stem	316 S.S./A479	Brass CDA 360/B16	Alloy 400/B164
4	Packing Bolt	316 S.S./A479	Brass CDA 360/B16	Alloy R-405/B164
5	Panel Nut	Powdered metal S.S.	Brass CDA 360/B16	Powdered 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 powdered metal 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

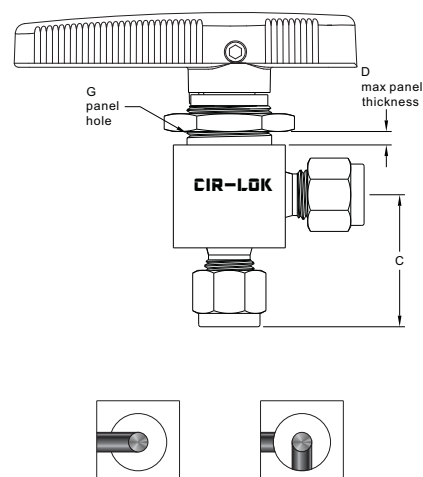
Dimension

On-Off Valves

2-way Valves



Angle Pattern Valves

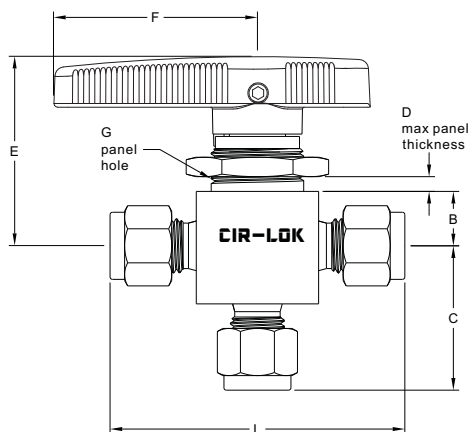


Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)							
			Straight	Angle	L	A	B	C	D	E	F	G
BV2-F1-00-	1/16" CIR-LOK	0.052 (1.32)	0.10	—	1.68 (42.7)	0.28 (7.1)	0.34 (8.6)	—	1/4 (6.4)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)
BV2-F2-02-	1/8" CIR-LOK	0.093 (2.4)	0.20	0.15	2.01 (51.1)			0.97 (24.6)				
BV2-F4-03-	1/4" CIR-LOK	0.125 (3.2)	0.60	0.35	2.21 (56.1)			1.07 (27.2)				
BV2-F4-05-		3/8" CIR-LOK	0.187 (4.8)	1.40	0.90	2.39 (60.7)	1.17 (29.7)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)	
BV2-F6-05-	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" CIR-LOK	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" CIR-LOK		6.40	3.80								
BV2-M3-02-	3 mm CIR-LOK	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 CIR-LOK	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)			1.17 (29.7)				
BV2-M8-05-	8 mm CIR-LOK		1.50		2.46 (62.5)	1.20 (30.5)						
BV2-M10-07-	10 mm CIR-LOK	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 CIR-LOK	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)

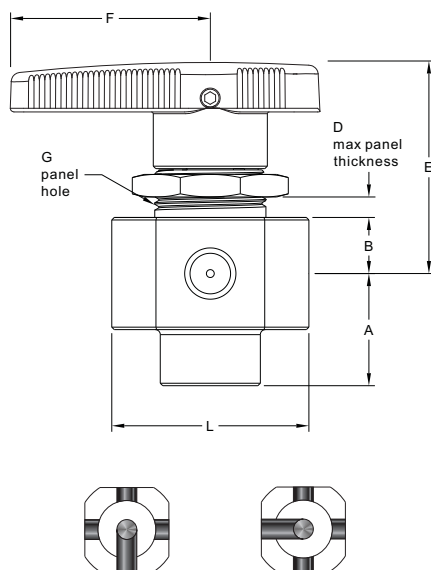
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv		Dimension, in. (mm)							
			Straight	Angle	L	A	B	C	D	E	F	G
BV2-FNPT2-03-	1/8 Female NPT	0.125 (3.2)	0.50	0.30	1.63 (41.4)	0.28 (7.1)	0.34 (8.6)	0.81 (20.6)	1/4 (6.4)	1.36 (34.5)	1.12 (28.4)	19/32 (15.1)
BV2-FNPT2-05-		1/4 Female NPT	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)
BV2-FNPT4-05-	0.90			0.75	2.06 (52.3)	1.03 (26.2)						
BV2-FNPT4-07-	3/8 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)
BV2-FNPT6-07-		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)	1 1/2 (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)	1 1/8 (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)
BV2-NPT4-F4-05-	1/4 Male NPT to 1/4" CIR-LOK	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)	1 1/8 (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)

Switching Valves

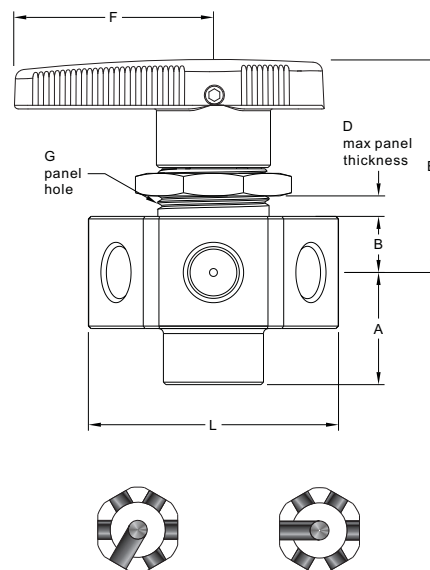
3-way Valve



5- Valve

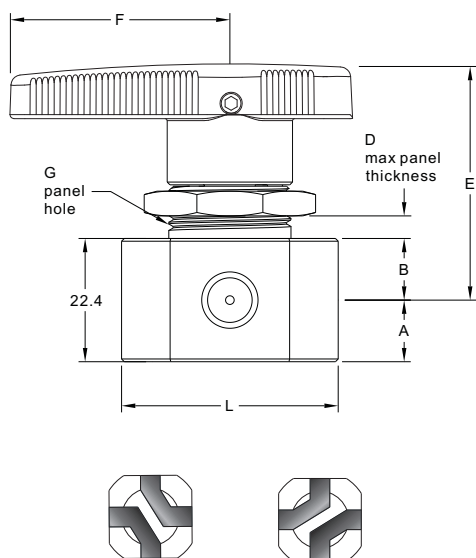


7-way Valve

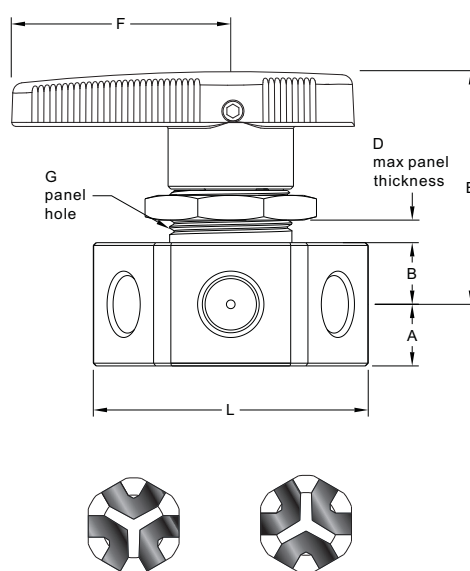


Crossover Valves

4-way Valve



6-way Valve



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)													
				L	A	B	C	D	E	F							
	3-way valve																
BV2-F1-00-3-	1/16" CIR-LOK	0.052 (1.32)	0.08	1.68 (42.7)	0.81 (20.6)	0.34 (8.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)							
BV2-F2-02-3-	1/8" CIR-LOK	0.093 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)												
BV2-F4-03-3-	1/4" CIR-LOK	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)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)							
BV2-F6-07-3-	3/8" CIR-LOK	0.281 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)							
BV2-F8-10-3-	1/2" CIR-LOK	0.406 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)							
BV2-F12-10-3-	3/4" CIR-LOK		4.90														
BV2-M3-02-3-	3 mm CIR-LOK	0.093 (2.4)	0.15	2.01 (51.1)	0.97 (24.6)	0.34 (8.6)	1/4 (6.4)	1.36 (34.5)	1.13 (28.7)	19/32 (15.1)							
BV2-M6-03-3-	6 mm CIR-LOK	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)	1.17 (29.7)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)							
BV2-M8-05-3-	8 mm CIR-LOK			0.80	2.46 (62.5)						1.20 (30.5)						
BV2-M10-07-3-	10 mm CIR-LOK	0.281 (7.1)	2.00	2.89 (73.4)	1.43 (36.3)	0.56 (14.2)	3/8 (9.5)	2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)							
BV2-M12-07-3-	12 mm CIR-LOK	0.406 (10.3)	4.60	3.48 (88.4)	1.74 (44.2)	0.69 (17.5)		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)	0.81 (20.6)	0.34 (8.6)	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)	1.03 (26.2)	0.44 (11.2)	3/16 (4.8)	1.47 (37.3)	1.53 (38.9)	25/32 (19.8)							
BV2-FNPT4-07-3-		0.281 (7.1)	1.70	2.50 (63.5)	1.25 (31.8)	0.56 (14.2)	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	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)		2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)							
BV2-FNPT8-10-3-	1/2 Female NPT	0.406 (10.3)	3.50			3/8 (9.5)	2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)								
BV2-FBT4-05-3-	1/4 Female BSPT	0.187 (4.8)	0.75	2.06 (52.3)	1.03 (26.2)					0.44 (11.2)							
BV2-FBT6-07-3-	3/8 Female BSPT	0.281 (7.1)	1.50	2.50 (63.5)	1.25 (31.8)					0.56 (14.2)							
BV2-FBT8-10-3-	1/2 Female BSPT	0.406 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)					0.69 (17.5)							
4,5-way valve																	
BV2-F2-01-4-	1/8" CIR-LOK	0.062 (1.6)	0.07	1.94 (49.3)	0.97 (24.6)	0.44 (11.2)	5/32 (4.1)	1.69 (42.9)	1.53 (38.9)	29/32 (23.1)							
BV2-F2-01-5-				1.55 (39.4)	0.88 (22.4)												
BV2-FNPT2-01-4-	1/8 Female NPT	0.062 (1.6)	0.07														
BV2-FNPT2-01-5-			1/2 Female NPT	0.406 (10.3)	3.50	3.13 (79.5)	1.56 (39.6)	0.69 (17.5)	3/8 (9.7)	2.43 (61.7)	3.00 (76.0)	1 1/2 (38.1)					
BV2-FNPT8-10-4-																	
BV2-FNPT8-10-5-																	
6,7-way valve																	
BV2-F1-00-6-	1/16" CIR-LOK	0.052 (1.3)	0.05	1.94 (49.3)	0.97 (24.6)	0.44 (11.2)	5/32 (4.1)	1.69 (42.9)	1.53 (38.9)	29/32 (23.1)							
BV2-F1-00-7-																	
BV2-F2-01-6-	1/8" CIR-LOK	0.062 (1.6)	0.07														
BV2-F2-01-7-																	

How to Order

BV2 — **M12** — **FNPT8** — **T10** — **Y3** — **316**

Series	Port 1 Type	Port 1 Size	Port 2/3 Type	Port 2/3 Size	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material
BV2	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size		T PTFE	00	Black	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm				01	R Red	A Angle	316L 316L S.S.
	FBT Female BSPT	4 1/4 in.				02	G Green	3 3-way	304 304 S.S.
	MBT Male BSPT	5 5/16 in.				03	L Blue	4 4-way	304L 304L S.S.
	FMS Female ISO 261	6 3/8 in. or 6 mm	04	Y Yellow		5 5-way	A400 Alloy 400		
	MS Male ISO 261	8 1/2 in. or 8 mm	05	Pneumatic Actuator		6 6-way	BR Brass		
	FBP Female BSPP	10 10 mm	06	PSC Spring return, normally closed		7 7-way			
	MBP Male BSPP	12 3/4 in. or 12 mm	07	PSO Spring return, normally open					
	F Fractional Tube Fitting		08	PDC Double-acting, normally closed					
	M Metric Tube Fitting		09	PDO Double-acting, normally open					
GFS Male GFS									

❖ Order Oval Handle

Add -BK to the valve ordering number.

❖ Order Marked Directional Name Plates

Add -DN1 to the valve ordering number.

❖ Order Blank Directional Name Plates

Add -DN2 to the valve ordering number.