

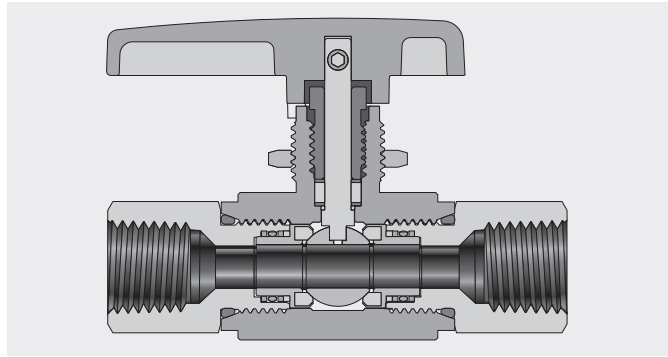
How to Order

F3 — F6 — M10 — S90 — 316

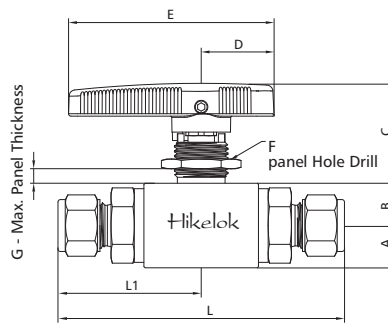
Filter Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Element Type	Element Nominal Pore Size	Body Material
F3	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		S Sintered	05 0.5µm	316 316 S.S.
	NPT Male NPT	4 1/4 in.				2 2µm	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator			7 7µm	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm				15 15µm	304L 304L S.S.
	FMS Female ISO 261	10 10 mm				40 40µm	
	MS Male ISO 261	12 3/4 in. or 12 mm				60 60µm	
	FBP Female BSPP	14 14 mm or M14 x 1.5				90 90µm	
	MBP Male BSPP	16 1 in. or 16 mm					
	F Fractional Tube Fitting	18 18 mm					
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm					
	FSW Fractional Tube Socket Weld	22 22 mm or M22 x 1.5					
	FBW Fractional Tube Butt Weld	25 25 mm					
	GFS Male GFS Fitting						

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
- ❖ Low operating torque
- ❖ Panel mountable
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections
- ❖ Color coded handles



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)								
				L	L1	A	B	C	D	E	F	G
BV1-F2-02-	1/8" Hikelok	0.093 (2.4)	0.21	2.72 (69.1)	1.36 (34.5)							
BV1-M3-02-	3 mm Hikelok			2.74 (69.6)	1.37 (34.8)							
BV1-FNPT2-04-	1/8 Female NPT	0.165 (4.2)	0.93	2.14 (54.4)	1.07 (27.2)	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-NPT2-04-	1/8 Male NPT			2.36 (60.0)	1.18 (30.0)							
BV1-NPT4-04-	1/4 Male NPT			2.70 (68.6)	1.35 (34.3)							
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-FNPT4-06	1/4 Female NPT			3.02 (76.8)	1.51 (38.4)							
BV1-NPT4-06	1/4 Male NPT			3.24 (82.2)	1.62 (41.1)							
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			3.90 (99.0)	1.95 (49.5)							
BV1-M18-10-	18 mm Hikelok											
BV1-FNPT6-10-	3/8 Female NPT			4.30 (109.2)	2.15 (54.6)							
BV1-FNPT8-10-	1/2 Female NPT											
BV1-NPT8-10-	1/2 Male NPT											
BV1-NPT8-10-	1/2 Male NPT											
BV1-F12-13-	3/4" Hikelok			0.50 (12.7)	10.0							
BV1-M20-13-	20 mm Hikelok	4.12 (105)	2.06 (52.3)									
BV1-M22-13-	22 mm Hikelok											
BV1-FNPT12-13-	3/4 Female NPT	4.57 (116)	2.28 (58.0)									
BV1-NPT12-13-	3/4 Male NPT											

How to Order

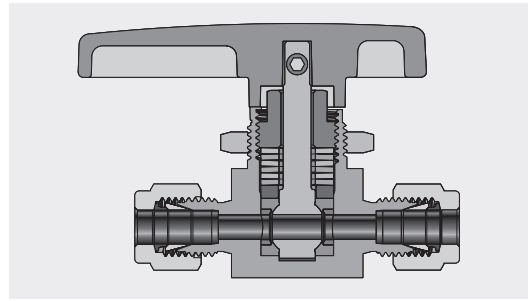
Series	Port 1 Type	Port 1 Size	Port 2/3 Port 2/3 Type Size	Seat Material	Orifice Size	Handle	Flow pattern	Body Material
BV1	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size	P PEEK	02 0.093 in. (2.4 mm)	Black	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm	If port 2/3 and port 1 are the same, eliminate the port 2/3 designator	K PCTFE	04 0.165 in. (4.2 mm)	R1 Red	A1 Angle	316L 316L S.S.
	FBT Female BSPT	4 1/4 in.		T PTFE	05 0.187 in. (4.7 mm)	G1 Green	3 3-way	304 304 S.S.
	MBT Male BSPT	5 5/16 in.			06 0.250 in. (6.4 mm)	L1 Blue		304L 304L S.S.
	FMS Female ISO 261	6 3/8 in. or 6 mm			10 0.406 in. (10.3 mm)	Y1 Yellow		A400 Alloy 400
	MS Male ISO 261	8 1/2 in. or 8 mm				PSC		BR Brass
	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						
	UGF Nut + Gasket + Bulge Fractional Tube Nipple	18 18 mm						
	UGM Nut + Gasket + Metric Tube Bulge Nipple	20 20 mm						
		22 22 mm						

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

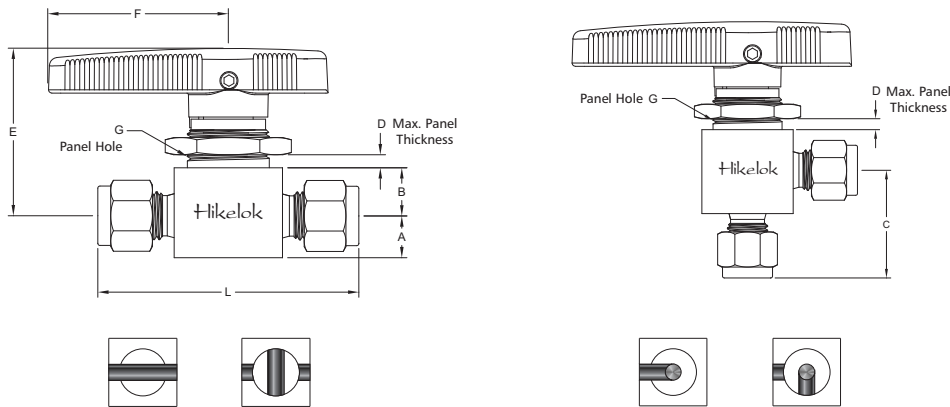
❖ Electric Actuators: **E**

Ball Valves-BV2 Series

- ❖ Maximum working pressure up to 3000 psig (206 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



Dimension



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-F1-01-	1/16" Hikelok	0.052 (1.32)	0.10	—	1.68 (42.7)			—				
BV2-F2-02-	1/8" 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)	1.12 (28.4)	19/32 (15.1)
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	0.281 (7.1)	6.00	2.00	2.58 (65.5)	3.05 (77.5)	0.56 (14.2)	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)		2.07 (52.6)	2.00 (50.8)	1 1/8 (28.6)
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)	3/8 (9.5)	2.43 (61.7)	3.00 (76.2)	1 1/2 (38.1)
BV2-F12-10-	3/4" Hikelok	0.406 (10.3)	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	0.281 (7.1)	6.00	2.00	2.46 (62.5)	3.07 (78.0)	0.56 (14.2)	1.20 (30.5)				
BV2-M10-07-	10 mm Hikelok	0.281 (7.1)	6.00	2.00	3.92 (99.6)	0.69 (17.5)	0.69 (17.5)	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)	3/8 (9.5)	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-	1/4 Female NPT	0.281 (7.1)	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						2.43 (61.7)		3.00 (76.2)	11/2 (38.1)
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)				
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 BSPT		0.90			2.06 (52.3)						
BV2-FBT6-07-	3/8 Female BSPT	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 BSPT	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-GFS4-03-	1/4" Male GFS	0.125 (3.2)	0.60	0.35	2.13 (54.1)	0.38 (9.7)	0.44 (11.2)	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)

How to Order

BV2 — M12 — FNPT8 — T10 — 3 — 316

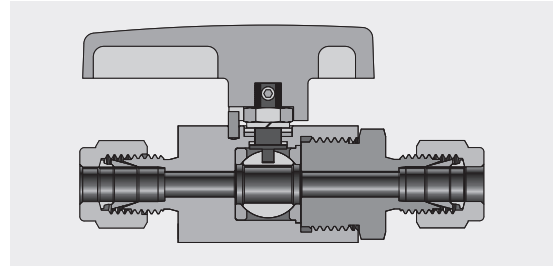
Series	Port 1 Type	Port 1 Size	Port 2/3 /4/5/6/7 Type	Port 2/3 /4/5/6/7 Size	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material
BV2	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size		T PTFE	00 0.052in. (1.32 mm)	Black	Straight	316 316 S.S.
	NPT Male NPT	3 3 mm				01 0.062in. (1.57 mm)	R1 Red	A1 Angle	316L 316L S.S.
	FBT Female BSPT	4 1/4 in.	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 ISO 261	6 3/8 in. or 6 mm	05 0.187in. (4.8 mm)	Y1 Yellow		5 5-way	A400 Alloy 400		
	MS Male ISO 261	8 1/2 in. or 8 mm	07 0.281in. (7.1 mm)	PSC		6 6-way	BR Brass		
	FBP Female BSPP	10 10 mm	10 0.406in. (10.3 mm)	PSO		7 7-way			
	MBP Male BSPP	12 3/4 in. or 12 mm		PD					
	F Fractional Tube Fitting			E					
	M Metric Tube Fitting								
GFS Male GFS									

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

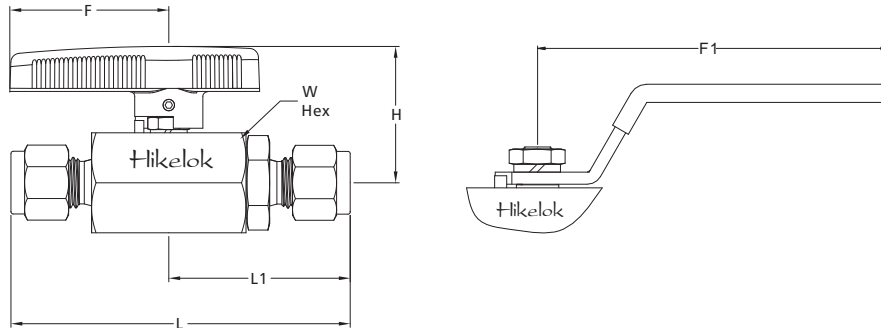
❖ Electric Actuators: **E**

Ball Valves-BV3 Series

- ❖ Maximum working pressure: 1500 psig (103.4 bar)
- ❖ Working temperature: -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



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														
BV3-FBP2-07-	1/8 Female BSPP			1.85 (47.0)	1.08 (27.4)	7/8 (22.23)	1.18 (30)	1.38 (35.0)	3.22 (82.0)						
BV3-FBP4-07-	1/4 Female BSPP														
BV3-FNPT4-07-	1/4 Female NPT														
BV3-M10-07-	10 mm Hikelok			0.354 (9.0)	6.4	2.87 (72.9)	1.68 (42.7)	15/16 (24.0)	1.54 (39)	1.65 (42.0)	3.22 (82.0)				
BV3-F6-07-	3/8" Hikelok														
BV3-FBP6-07-	3/8 Female BSPP	2.03 (51.6)	1.18 (30.0)			15/16 (24.0)	1.54 (39)					1.65 (42.0)	3.22 (82.0)		
BV3-FNPT6-07-	3/8 Female NPT														
BV3-M12-09-	12 mm Hikelok														
BV3-F8-09-	5/8" 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-F10-09-	5/8" Hikelok														
BV3-FBP8-09-	1/2 Female BSPP					2.05 (52.1)	1.12 (28.5)					15/16 (24.0)	1.54 (39)	1.65 (42.0)	3.22 (82.0)
BV3-FNPT8-09-	1/2 Female NPT														

❖ If working pressure up to 6,000 psi, please refer to BV36 series.
If working pressure up to 10,000 psi, please refer to BV31 series.

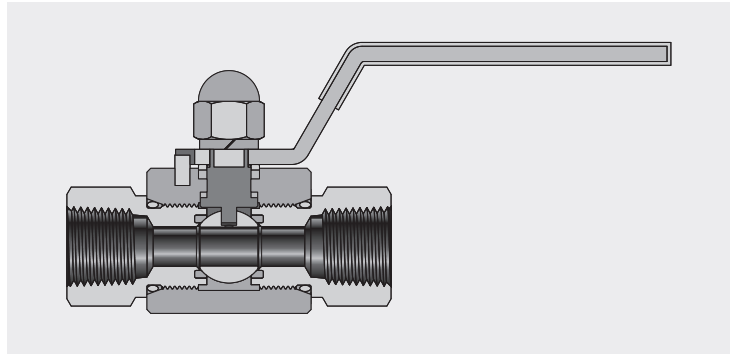
How to Order

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Handle	Body Material	
BV3	FNPT	Female NPT	Same as inlet type and inlet size	2 1/8 in.	T PTFE	07	Black	316 316 S.S.	
	NPT	Male NPT	Same as inlet type and inlet size	3 3 mm	T PTFE	09	Aluminium Directional Handle (ADH)	316L 316L S.S.	
	FBT	Female BSPT	Same as inlet type and inlet size	4 1/4 in.	T PTFE	13	R1 Red ADH	304 304 S.S.	
	MBT	Male BSPT	Same as inlet type and inlet size	5 5/16 in.	T PTFE	15	G1 Green ADH	304L 304L S.S.	
	FMS	Female ISO 261	Same as inlet type and inlet size	6 3/8 in. or 6 mm	T PTFE		L1 Blue ADH		
	MS	Male ISO 261	Same as inlet type and inlet size	8 1/2 in. or 8 mm	T PTFE		Y1 Yellow ADH		
	FBP	Female BSPP	Same as inlet type and inlet size	10 10 mm	T PTFE		BL Black Lever Handle		
	MBP	Male BSPP	Same as inlet type and inlet size	12 3/4 in. or 12 mm	T PTFE		RL Red Lever Handle		
	F	Fractional Tube Fitting	Same as inlet type and inlet size	14 14 mm	T PTFE		GL Green Lever Handle		
	M	Metric Tube Fitting	Same as inlet type and inlet size	16 1 in. or 16 mm	T PTFE		LL Blue Lever Handle		
	UGF	Nut + Gasket + Bulge Fractional Tube Nipple	Same as inlet type and inlet size	18 18 mm	T PTFE		YL Yellow Lever Handle		
	UGM	Nut + Gasket + Metric Tube Bulge Nipple	Same as inlet type and inlet size	20 11/4 in. or 20 mm	T PTFE				
				22 22 mm	T PTFE				
				25 1 in. or 25 mm	T PTFE				

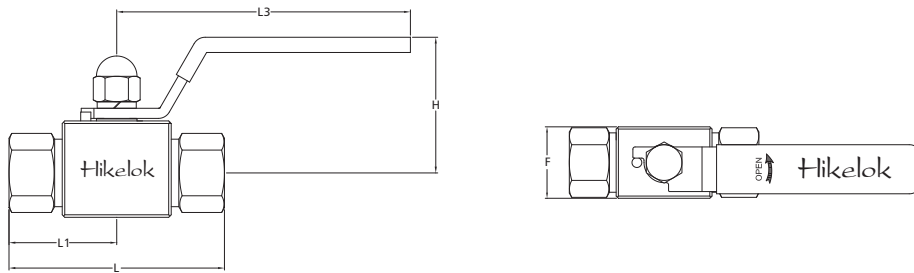
BV3 — M12 — FNPT8 — T09 — LL — 316

Ball Valves-BV4 Series

- ❖ Maximum working pressure: 10000 psig (689 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



Dimensions



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		1.2	3.60 (91.6)	1.80 (45.8)							
BV4-F4-10-	1/4" Hikelok			3.72 (94.6)	1.86 (47.3)							
BV4-F6-10-	3/8" Hikelok		7.5	3.92 (99.6)	1.96 (49.8)							
BV4-F8-10-	1/2" Hikelok			2.52 (64.0)	1.26 (32.0)							
BV4-FNPT4-10-	1/4 Female NPT			2.80 (71.0)	1.40 (35.5)							
BV4-FNPT6-10-	3/8 Female NPT		3.7	3.11 (79.0)	1.56 (39.5)							
BV4-FNPT8-10-	1/2 Female NPT			3.36 (85.4)	1.68 (42.7)							
BV4-NPT4-10-	1/4 Male NPT		7.5	3.75 (95.2)	1.88 (47.6)							
BV4-NPT6-10-	3/8 Male NPT											
BV4-NPT8-10-	1/2 Male NPT		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)
BV4-24C12-10-	24°O-ring (M18X1.5)				4.12 (104.6)				2.06 (52.3)			
BV4-M16-13-	16 mm Hikelok				4.43 (112.6)				2.22 (56.3)			
BV4-M18-13-	18 mm Hikelok	4.36 (110.6)			2.18 (55.3)							
BV4-M20-13-	20 mm Hikelok											
BV4-M22-13-	22 mm Hikelok	3.54 (90.0)			1.77 (45.0)							
BV4-F10-13-	5/8" Hikelok	4.14 (105.2)			2.07 (52.6)							
BV4-F12-13-	3/4" Hikelok											
BV4-FNPT8-13-	1/2 Female NPT											
BV4-FNPT12-13-	3/4 Female NPT											
BV4-NPT12-13-	3/4 Male NPT											
BV4-24C18-13-	24°O-ring (M26X1.5)											

How to Order

BV4 — **M12** — **FNPT8** — **P10** — **3** — **316**

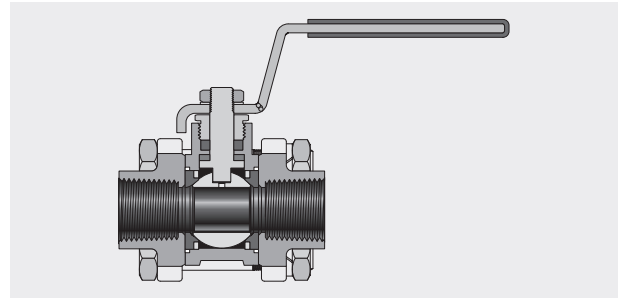
Series	Port 1 Type	Port 1 Size	Port 2/3 Port 2/3 Type Size	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material	
BV4	FNPT	Female NPT	2 1/8 in.	Same as port 1 type and port 1 size If Port 2/3 and port 1 are the same, eliminate the port 2/3 designator	P PEEK	10	0.406 in. (10.3 mm)	316 316 S.S.	
	NPT	Male NPT	3 3 mm		K PCTFE	13	0.5 in. (12.7 mm)	3-way Vertical Pattern	316L 316L S.S.
	FBT	Female BSPT	4 1/4 in.		T PTFE	19	0.75 in. (19.0 mm)	3-way Horizontal Pattern	304 304 S.S.
	MBT	Male BSPT	5 5/16 in.		R RPTFE	25	1 in. (25.4 mm)	3H	304L 304L S.S.
	FMS	Female ISO 261	6 3/8 in. or 6 mm			32	1.25 in. (31.8 mm)		A400 Alloy 400
	MS	Male ISO 261	8 1/2 in. or 8 mm			40	1.5 in. (38.1 mm)		CS Steel
	FBP	Female BSPP	10 10 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						
	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

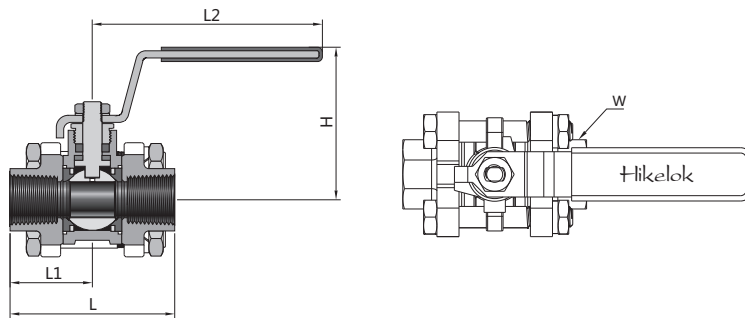
❖ Electric Actuators: **E**

Ball Valves-BV5 Series

- ❖ Maximum working pressure: 1000 psig (68.9 bar)
- ❖ Working temperature: -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



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L	L1	W	H	L2
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-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-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-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-F12-15-	3/4" Hikelok							
BV5-M18-15-	18 mm Hikelok							
BV5-M20-15-	20 mm Hikelok							
BV5-FNPT12-20-	3/4 Female NPT	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)

How to Order

BV5 — M12 — FNPT8 — T10 — Y1 — 316

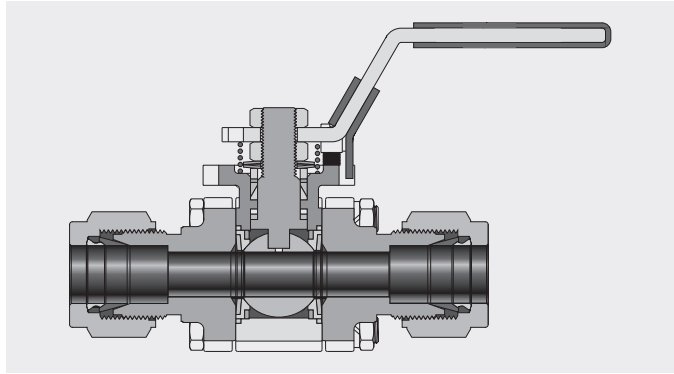
Series	Port 1 Type	Port 1 Size	Port 2 Type	Port 2 Size	Seat Material	Orifice Size	Handle	Body Material
BV5	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size If port2 and port 1 are the same, eliminate the port 2 designator		T PTFE	05 0.188 in. (4.8 mm)	Blue	316L CF3M
	NPT Male NPT	3 3 mm				R1 Red	316 CF8M	
	FBT Female BSPT	4 1/4 in.				G1 Green	304L CF3	
	MBT Male BSPT	5 5/16 in.				B1 Black	304 CF8	
	FMS Female ISO 261	6 3/8 in. or 6 mm				Y1 Yellow		
	MS Male ISO 261	8 1/2 in. or 8 mm				PSC		
	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						
		28 28 mm						
	32 2 in. or 32 mm							

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

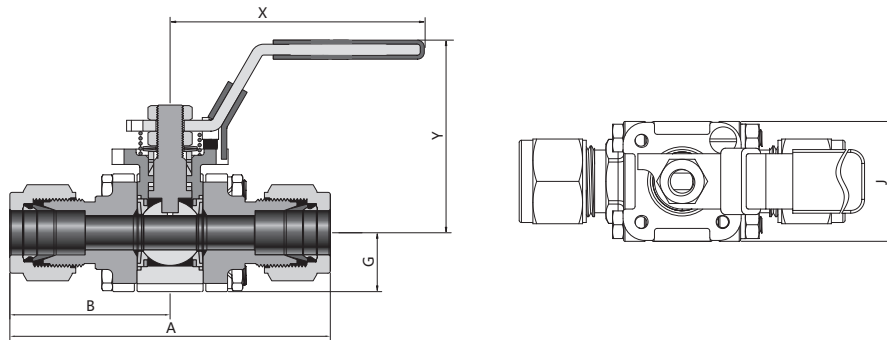
❖ Electric Actuators: **E**

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: 4.8 mm to 38.1 mm
- ❖ Blowout-proof stem
- ❖ Coned-disc spring-loaded seat
- ❖ Live-loaded chevron stem packing
- ❖ Pneumatic and electric actuators
- ❖ Variety of end connections
- ❖ Lever, oval, extended oval, and locking handles



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)					
				A	B	G	J	X	Y
BV6-F4-05-	1/4" Hikelok	0.188 (4.8)	1.2	3.17 (80.5)	1.59 (40.4)	0.68 (17.3)	1.35 (34.3)	2.37 (60.2)	1.66 (42.2)
BV6-M6-05-	6 mm Hikelok								
BV6-M8-05-	8 mm Hikelok								
BV6-FNPT2-07-	1/8 Female NPT	0.281 (7.1)	3.8	2.16 (54.9)	1.08 (27.4)	0.68 (17.3)	1.35 (34.6)	2.37 (60.2)	1.66 (42.2)
BV6-FNPT4-07-	1/4 Female NPT								
BV6-F5-07-	5/16" Hikelok								
BV6-F6-07-	3/8" Hikelok								
BV6-M10-07-	10 mm Hikelok	0.417 (10.6)	7.5	3.20 (81.3)	1.60 (40.6)	0.89 (22.6)	1.78 (45.2)	4.50 (114.0)	2.35 (59.7)
BV6-F8-10-	1/2" Hikelok								
BV6-M12-10-	12 mm Hikelok								
BV6-FNPT6-13-	3/8 Female NPT	0.50 (12.7)	12	2.70 (68.6)	1.35 (34.3)	0.89 (22.6)	1.78 (45.2)	4.50 (114.0)	2.35 (59.7)
BV6-FNPT8-13-	1/2 Female NPT								
BV6-F12-13-	3/4" Hikelok		13.6	4.04 (102.6)	2.02 (51.3)				
BV6-M16-13-	16 mm Hikelok								
BV6-M18-13-	18 mm Hikelok								

How to Order

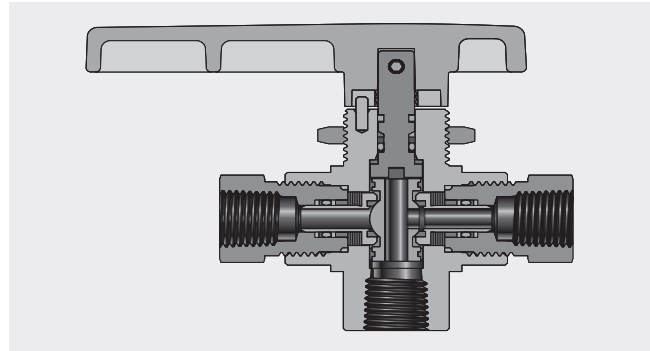
Series	Port 1 Type	Port 1 Size	Port 2/3 Port 2/3 Type Size	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material
BV6	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size If port 2/3 and port 1 are the same, eliminate the port 2/3 designator	P PEEK	05 0.188 in. (4.8 mm)	Blue	Straight	316L CF3M
	NPT Male NPT	3 3 mm		07 0.281 in. (7.1 mm)	R1 Red	3 3-way	316 CF8M	
	FBT Female BSPT	4 1/4 in.		10 0.417 in. (10.6 mm)	G PEEK with Grafoil weir ring	G1 Green	F Fire series	304L CF3
	MBT Male BSPT	5 5/16 in.		13 0.5 in. (12.7 mm)		B1 Black		304 CF8
	FMS Female ISO 261	6 3/8 in. or 6 mm		22 0.875 in. (22.2 mm)		Y1 Yellow		
	MS Male ISO 261	8 1/2 in. or 8 mm		28 1.125 in. (28.6 mm)		P5C		
	FBP Female BSPP	10 10 mm		32 1.250 in. (31.75 mm)		PSO		
	MBP Male BSPP	12 3/4 in. or 12 mm		38 1.5 in. (38.1 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 M27x2						
		28 28 mm						
	32 2 in. or 32 mm							

❖ Pneumatic Actuators: P5C Spring return, normally closed / PSO Spring return, normally open / PD Double acting

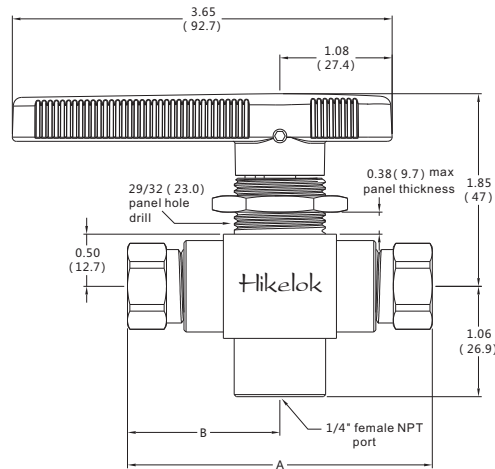
❖ Electric Actuators: E

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)
- ❖ 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



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice 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					
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)

❖ If working pressure up to 10,000 psi, please refer to BV71 series.

How to Order

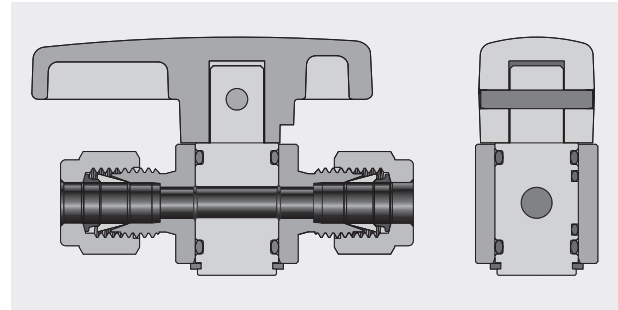
Series	Port 1 Type	Port 1 Size	Port 2/3 Port 2/3 Type	Seat Material	Orifice Size	Handle	Flow Pattern	Body Material
BV7	FNPT Female NPT NPT Male NPT FBT Female BSPT MBT Male BSPT FMS Female ISO 261 MS Male ISO 261 FBP Female BSPP MBP Male BSPP F Fractional Tube Fitting M Metric Tube Fitting	2 1/8 in. 3 3 mm 4 1/4 in. 5 5/16 in. 6 3/8 in. or 6 mm 8 1/2 in. or 8 mm 10 10 mm 12 12 mm	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	K PCTFE P PEEK T PTFE	05 0.187 in. (4.7 mm)	Black L1 Blue R1 Red G1 Green Y1 Yellow PSC PSO PD E	Straight 3 3-way	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. A400 Alloy 400

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

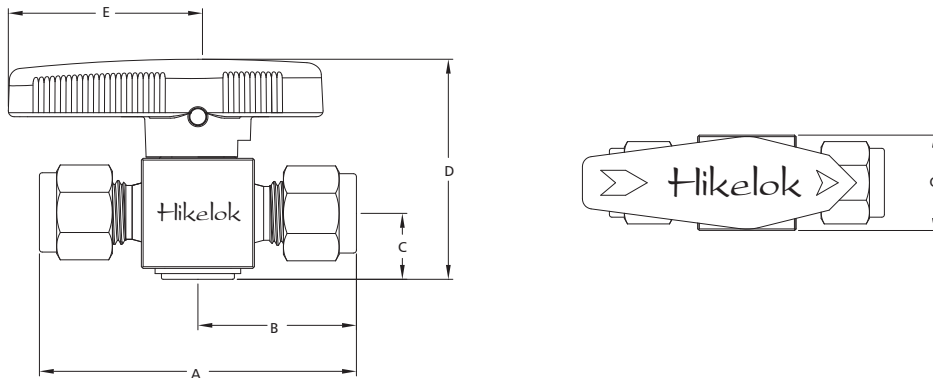
❖ Electric Actuators: **E**

Plug Valves-PV1 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Quarter turn operation
- ❖ O-ring seal
- ❖ Easy to maintain and clean
- ❖ Replaceable plug assembly
- ❖ 316 stainless steel and brass material
- ❖ Variety of end connections
- ❖ Color coded handles for option



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)					
				A	B	C	D	E	G
PV1-F2-02-	1/8" Hikelok	0.093 (2.4)	0.10	1.99 (50.5)	0.98 (24.9)				
PV1-F4-04-	1/4" Hikelok	0.172 (4.4)	1.6	2.17 (55.1)	1.08 (27.4)	0.46 (11.7)	1.54 (39.1)	1.14 (29.0)	0.75 (19.0)
PV1-F6-04-	3/8" Hikelok		1.1	2.29 (58.2)	1.14 (29.0)				
PV1-F6-07-	3/8" Hikelok	0.283 (7.2)	6.4	2.66 (67.6)	1.33 (33.8)	0.66 (16.8)	2.14 (54.4)	1.50 (38.1)	1.12 (28.5)
PV1-F8-07-	1/2" Hikelok		4.4	2.88 (73.2)	1.44 (36.6)				
PV1-M3-02-	3 mm Hikelok	0.093 (2.4)	0.10	1.99 (50.5)	0.98 (24.9)	0.46 (11.7)	1.54 (39.1)	1.14 (29.0)	0.75 (19.0)
PV1-M6-04-	6 mm Hikelok	0.172 (4.4)	1.6	2.17 (55.1)	1.08 (27.4)				
PV1-M8-07-	8 mm Hikelok	0.283 (7.2)	6.4	2.66 (67.6)	1.30 (33.0)	0.66 (16.8)	2.14 (54.4)	1.50 (38.1)	1.12 (28.5)
PV1-M10-07-	10 mm Hikelok		6.4	2.68 (68.1)	1.34 (34.0)				
PV1-M12-07-	12 mm Hikelok		4.8	2.96 (75.2)	1.44 (36.6)				
PV1-FNPT2-04-	1/8 Female NPT	0.172 (4.4)	1.2	1.78 (45.2)	0.89 (22.6)	0.46 (11.7)	1.54 (39.1)	1.14 (29.0)	0.75 (19.0)
PV1-FNPT4-04-	1/4 Female NPT		0.9	2.09 (53.1)	1.05 (26.7)				
PV1-FNPT4-07-	1/4 Female NPT	0.283 (7.2)	4.3	2.38 (60.5)	1.19 (30.2)	0.66 (16.8)	2.14 (54.4)	1.50 (38.1)	1.12 (28.5)
PV1-FNPT8-07-	1/2 Female NPT		2.7	2.88 (73.2)	1.44 (36.6)				
PV1-NPT2-04-	1/8 Male NPT	0.172 (4.4)	1.0	1.53 (38.9)	0.76 (19.3)	0.46 (11.7)	1.54 (39.1)	1.14 (29.0)	0.75 (19.0)
PV1-NPT4-04-	1/4 Male NPT		1.0	1.90 (48.3)	0.95 (24.1)				

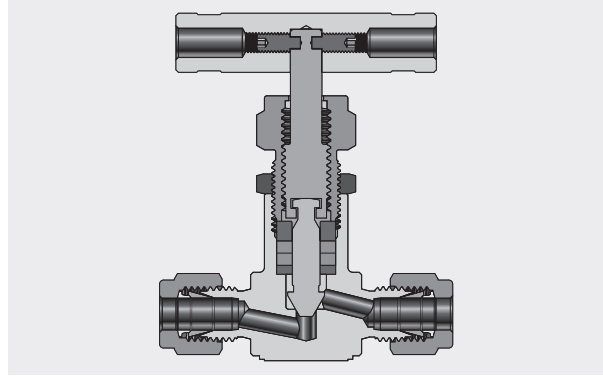
How to Order

PV1 — M10 — FNPT4 — V07 — R1 — 316

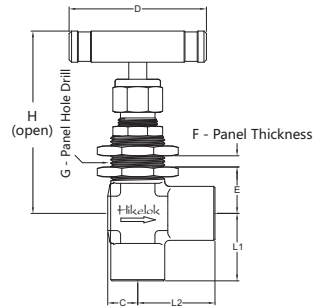
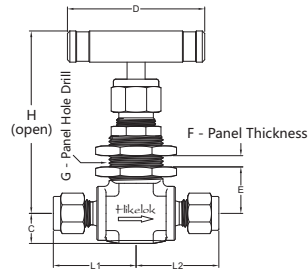
Series	Port 1 Type	Port 1 Size	Port 2 Type	Port 2 Size	Seat Material	Orifice Size	Handle	Body Material
PV1	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 2 size		V Fluorocarbon FKM	02 0.093 in. (2.4 mm)	Black	316 316 S.S.
	NPT Male NPT	3 3 mm			B BunaN	04 0.172 in. (4.4 mm)	L1 Blue	316L 316L
	FBT Female BSPT	4 1/4 in.	If port2 as port 1 are the same, eliminate the port 2 designator		E Ethylene propylene	07 0.283 in. (7.2 mm)	R1 Red	304 304
	MBT Male BSPT	5 5/16 in.			N Neoprene		G1 Green	304L 304L
	FMS Female ISO 261	6 3/8 in. or 6 mm			Z Kalrez		Y1 Yellow	BR Brass
	MS Male ISO 261	8 1/2 in. or 8 mm						
	FBP Female BSPP	10 10 mm						
	MBP Male BSPP	12 12 mm						
	F Fractional Tube Fitting							
	M Metric Tube Fitting							

Needle Valves-NV1 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ One-piece forged body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting available
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				L1	L2	H	D	C	E	F	G
NV1-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	2.85 (72.5)	2.17 (55)	0.53 (13.5)	0.71 (18.0)	0.25 (6.4)	0.77 (19.6)
NV1-FNPT4-04-	1/4 Female NPT			1.03 (26.2)	1.03 (26.2)						
NV1-F4-04-	1/4" Hikelok			1.22 (30.9)	1.22 (30.9)						
NV1-M6-04-	6 mm Hikelok			1.25 (31.75)	1.25 (31.75)						
NV1-M8-04-	8 mm Hikelok			1.19 (30.2)	1.19 (30.2)						
NV1-NPT6-04-	3/8 Male NPT			1.13 (28.6)	1.13 (28.6)						
NV1-FNPT4-06-	1/4 Female NPT	0.236 (6.0)	0.85	1.44 (36.5)	1.44 (36.5)	3.38 (85.8)	2.50 (63.5)	0.62 (15.8)	0.87 (22.0)	0.38 (9.7)	0.96 (24.4)
NV1-FNPT6-06-	3/8 Female NPT			1.13 (28.6)	1.13 (28.6)						
NV1-NPT6-06-	3/8 Male NPT			1.44 (36.5)	1.44 (36.5)						
NV1-F6-06-	3/8" Hikelok			1.53 (38.9)	1.53 (38.9)						
NV1-M10-06-	10 mm Hikelok			1.56 (39.7)	1.56 (39.7)						
NV1-M12-06-	12 mm Hikelok			1.26 (32.0)	1.26 (32.0)						
NV1-M14-06-	14 mm Hikelok			1.50 (38.1)	1.50 (38.1)						
NV1-FNPT8-06-	1/2 Female NPT			1.53 (38.9)	1.53 (38.9)						
NV1-NPT8-06-	1/2 Male NPT			1.13 (28.6)	1.13 (28.6)						
NV1-F8-06-	1/2" Hikelok			1.13 (28.6)	1.13 (28.6)						
NV1-FSW6-06-	3/8" FSW			1.50 (38.1)	1.50 (38.1)						
NV1-FSW8-06-	1/2" FSW			2.92 (74.1)	2.92 (74.1)						
NV1-MSW12-06-	12 mm MSW			1.50 (38.1)	1.50 (38.1)						
NV1-MSW14-06-	14 mm MSW			2.92 (74.1)	2.92 (74.1)						
NV1-MSW16-06-	16 mm MSW	1.50 (38.1)	1.50 (38.1)								
NV1-MBW14-06-	14 mm MBW	1.50 (38.1)	1.50 (38.1)								
NV1-MBW16-06-	16 mm MBW	2.92 (74.1)	2.92 (74.1)								
NV1-UGM14-06-	14 mm UGM	1.50 (38.1)	1.50 (38.1)								
NV1-UGM16-06-	16 mm UGM	2.92 (74.1)	2.92 (74.1)								
NV1-MS20-06-	M20 x 1.5 Male ISO	1.50 (38.1)	1.50 (38.1)								
NV1-MS22-06-	M22 x 1.5 Male ISO										

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)										
				L1	L2	H	D	C	E	F	G			
NV1-FNPT8-11-	1/2 Female NPT	0.433 (11.0)	2.18	1.56 (39.7)	1.56 (39.7)									
NV1-FNPT12-11-	3/4 Female NPT													
NV1-NPT8-11-	1/2 Male NPT													
NV1-NPT12-11-	3/4 Male NPT													
NV1-F12-11-	3/4" Hikelok			1.97 (50.0)	1.97 (50.0)									
NV1-M14-11-	14 mm Hikelok													
NV1-M16-11-	16 mm Hikelok													
NV1-M18-11-	18 mm Hikelok													
NV1-M20-11-	20 mm Hikelok			3.86 (98.0)	3.5 (88.9)	0.8 (20.2)	1.1 (28.3)	0.38 (9.7)	1.08 (27.5)					
NV1-M25-11-	25 mm Hikelok													
NV1-MSW14-11-	14 mm MSW													
NV1-MSW16-11-	16 mm MSW													
NV1-MSW18-11-	18 mm MSW			1.56 (39.7)	1.56 (39.7)									
NV1-FSW12-11-	3/4" FSW													
NV1-FSW8-11-	1/2" FSW													
NV1-MBW14-11-	14 mm MBW													
NV1-MBW16-11-	16 mm MBW			2.98 (75.7)	2.98 (75.7)									
NV1-UGM14-11-	14 mm UGM													
NV1-UGM16-11-	16 mm UGM			1.56 (39.7)	1.56 (39.7)									
NV1-MS27-11-	M27 x 2 Male ISO													
NV1-FNPT12-15-	3/4 Female NPT	0.591 (15.0)	3.27	1.97 (50.0)	1.97 (50.0)	6.5 (165)	5.0 (127)	1.3 (33.0)	1.61 (41.0)	0.38 (9.7)	1.45 (36.8)			
NV1-FSW16-15-	1" FSW													
NV1-MSW25-15-	25 mm MSW			2.35 (59.7)	2.35 (59.7)									
NV1-MSW28-15-	28 mm MSW													
NV1-F12-15-	3/4" Hikelok													
NV1-F16-15-	1" Hikelok													
NV1-M20-15-	20 mm Hikelok													
NV1-M22-15-	22 mm Hikelok													
NV1-M25-15-	25 mm Hikelok			0.787 (20.0)	5.65	1.97 (50.0)	1.97 (50.0)	6.5 (165)	5.5 (165)	1.3 (33.0)	1.61 (41.0)	0.38 (9.7)	1.45 (36.8)	
NV1-FNPT16-20-	1 Female NPT													
NV1-FSW16-20-	1" FSW													
NV1-MSW25-20-	25 mm MSW													
NV1-MSW28-20-	28 mm MSW													

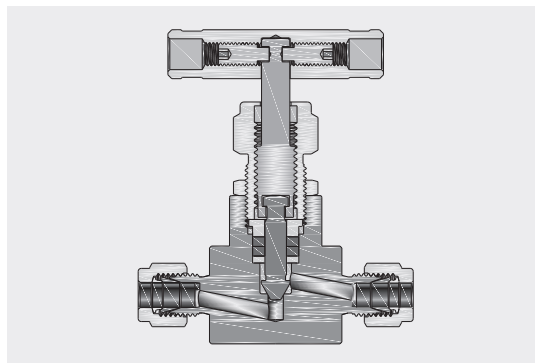
How to Order

NV1— MBW8 — M12 — S06S — GY — A1 — 316

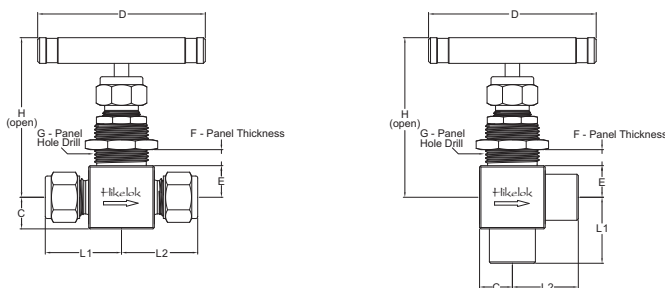
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow pattern	Body Material	
NV1	FNPT	Female NPT	2 1/8 in.	Same as inlet type and inlet size	Same as Body	04	Same as Body	Blunt	PTFE	No	Black Aluminum Bar	Straight	316 316 S.S.	
	NPT	Male NPT	4 1/4 in.		S	06	S	R Regulating	G Graphite	Y Yes	Red Aluminum Bar	A1 Angle	316L 316L S.S.	
	FBT	Female BSPT	3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		11		A Ball						304 304 S.S.
	MBT	Male BSPT	1/2 in. or 8 mm			15								304L 304L S.S.
	FMS	Female ISO 261	10 10 mm			20								321 321 S.S.
	MS	Male ISO 261	12 12 mm											F91 F91
	FBP	Female BSPP	14 14 mm or M14 x 1.5											F92 F92
	MBP	Male BSPP	16 1 in. or 16 mm											A400 Alloy 400
	F	Fractional Tube Fitting	18 18 mm											A20 Alloy 20
	M	Metric Tube Fitting	20 20 mm or M20 x 1.5											A600 Alloy 600
	UGF	Nut + Gasket + Fractional Bulge Nipple	22 22 mm or M22 x 1.5											A825 Alloy 825
	UGM	Nut + Gasket + Metric Bulge Nipple	24 M24 x 1.5											A276 Alloy C276
	FSW	Fractional Tube Socket Weld	25 25mm											DU7 Duplex 2507
	MSW	Metric Tube Socket Weld	27 M27 x 2											BR Brass
	FBW	Fractional Tube Butt Weld	28 28mm											
	MBW	Metric Tube Butt Weld												
PSW	Pipe Socket Weld													
PBW	Pipe Butt Weld													

Needle Valves-NV2 Series

- ❖ Maximum working pressure up to 10000 psig (689 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ One-piece heavy wall forged body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Safety back seating needle in fully open position
- ❖ Panel mounting available
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)																	
				L1	L2	C	D	E	F	G	H										
NV2-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.13 (28.6)	1.13 (28.6)	0.53 (13.5)	2.17 (55)	0.53 (13.5)	0.25 (6.4)	0.96 (24.4)	2.85 (72.5)										
NV2-FNPT4-04-	1/4 Female NPT																				
NV2-FNPT4-NPT4-04-	1/4 Female to Male NPT																				
NV2-NPT4-04-	1/4 Male NPT																				
NV2-F4-04-	1/4" Hikelok																				
NV2-M6-04-	6 mm Hikelok																				
NV2-M8-04-	8 mm Hikelok																				
NV2-FSW4-04-	1/4" FSW																				
NV2-FNPT4-06-	1/4 Female NPT											0.236 (6.0)	0.85	1.13 (28.6)	1.13 (28.6)	0.625 (15.88)	2.50 (63.5)	0.625 (15.88)	0.38 (9.7)	1.09 (27.7)	3.5 (88.9)
NV2-FNPT6-06-	3/8 Female NPT																				
NV2-FNPT8-06-	1/2 Female NPT																				
NV2-F6-06-	3/8" Hikelok																				
NV2-F8-06-	1/2" Hikelok																				
NV2-M10-06-	10 mm Hikelok																				
NV2-M12-06-	12 mm Hikelok																				
NV2-M14-06-	14 mm Hikelok																				
NV2-FSW6-06-	3/8" FSW																				
NV2-FSW8-06-	1/2" FSW																				
NV2-MSW12-06-	12 mm MSW	0.433 (11.0)	2.18	1.56 (39.6)	1.56 (39.6)	0.875 (22.2)	3.5 (88.9)	0.875 (22.2)	0.38 (9.7)	1.28 (32.5)	4.17 (106)										
NV2-FNPT8-11-	1/2 Female NPT																				
NV2-FNPT12-11-	3/4 Female NPT																				
NV2-F12-11-	3/4" Hikelok																				
NV2-M14-11-	14 mm Hikelok																				
NV2-M16-11-	16 mm Hikelok																				
NV2-M18-11-	18 mm Hikelok																				
NV2-MSW14-11-	14 mm MSW																				
NV2-MSW16-11-	16 mm MSW																				

How to Order

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow Pattern	Body Material
NV2	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size	Same as Body	04 0.157 in. (4.0 mm)	Same as Body	Blunt	PTFE	No	Black Aluminum Bar	Straight	316 316 S.S.	
	NPT Male NPT	4 1/4 in.		Same as Body	06 0.236 in. (6.0 mm)	Same as Body	R Regulating	G Graphite	Y Yes	Red Aluminum Bar	A1 Angle	316L 316L S.S.	
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator	S Stellite	11 0.433 in. (11 mm)	S Stellite	A Ball						304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			15 0.591 in. (15 mm)								304L 304L S.S.
	FMS Female ISO	10 10 mm			20 0.787 in. (20 mm)								321 321 S.S.
	MS Male ISO	12 12 mm											F91 F91
	FBP Female BSPP	14 14 mm or M14 x 1.5											F92 F92
	MBP Male BSPP	16 1 in. or 16 mm											A400 Alloy 400
	F Fractional Tube Fitting	18 18 mm											A20 Alloy 20
	M Metric Tube Fitting	20 20 mm or M20 x 1.5											A600 Alloy 600
	UGF Nut + Gasket + Fractional Bulge Nipple	22 22 mm or M22 x 1.5											A825 Alloy 825
	UGM Nut + Gasket + Metric Bulge Nipple	24 M24 x 1.5											A276 Alloy C276
	FSW Fractional Tube Socket Weld	25 25 mm											DU7 Duplex 2507
	MSW Metric Tube Socket Weld	27 M27 x 2											BR Brass
	FBW Fractional Tube Butt Weld	28 28 mm											
	MBW Metric Tube Butt Weld												
	PSW Pipe Socket Weld												
	PBW Pipe Butt Weld												

— 316

— R1

— GY

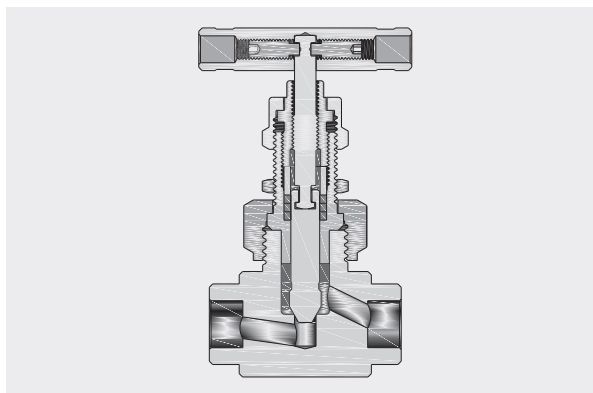
— S06S

— FNPT8—

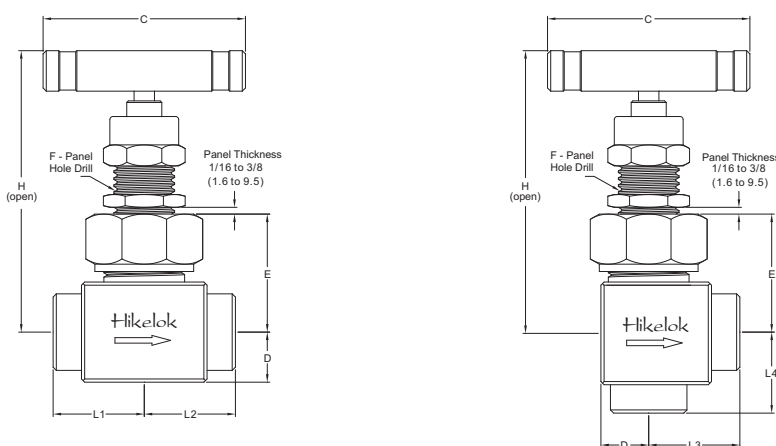
— MBW8

Needle Valves-NV3 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting available
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)									
				L1	L2	L3	L4	C	D	E	F	H	
NV3-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	0.89 (22.6)	1.00 (25.4)	1.75 (44.5)	0.39 (9.9)	1.09 (27.7)	19/32 (15.1)	3.04 (77.2)	
NV3-FNPT4-04-	1/4 Female NPT			1.03 (26.2)	1.03 (26.2)								
NV3-NPT4-FNPT4-04-	1/4 Male NPT			1.00 (25.4)	1.03 (26.2)								
NV3-NPT4-04-	1/4 Male NPT			1.00 (25.4)	1.00 (25.4)	1.00 (25.4)							
NV3-NPT6-04-	3/8 Male NPT			1.03 (26.2)	1.03 (26.2)	0.89 (22.6)							
NV3-FBP4-04-	1/4 Female BSPP			1.00 (25.4)	1.22 (30.9)	1.16 (29.5)							
NV3-NPT4-F4-04-	1/4 Male NPT			1.03 (26.2)	1.22 (30.9)								
NV3-FNPT4-F4-04-	1/4 Female NPT			1.03 (26.2)	1.22 (30.9)								
NV3-F4-04-	1/4" Hikelok			1.22 (30.9)	1.22 (30.9)	1.48 (37.6)							
NV3-M6-04-	6 MM Hikelok			0.91 (23.1)	0.91 (23.1)	0.88 (22.4)							1.19 (30.2)
NV3-M8-04-	8 MM Hikelok												
NV3-FSW4-04-	1/4" FWS												
NV3-FNPT4-06-	1/4 Female NPT			0.236 (6.0)	0.8	1.13 (28.6)							1.13 (28.6)
NV3-FNPT6-06-	3/8 Female NPT	1.06 (26.9)											
NV3-NPT6-06-	3/8 Male NPT	1.50 (38.1)	1.50 (38.1)			1.25 (31.8)	1.50 (38.1)						
NV3-NPT8-06-	1/2 Male NPT	1.41 (35.9)	1.41 (35.9)			1.29 (32.8)	1.66 (42.2)						
NV3-F6-06-	3/8" Hikelok	1.52 (38.6)	1.52 (38.6)			1.40 (35.6)	1.65 (41.9)						
NV3-F8-06-	1/2" Hikelok	1.42 (36.1)	1.42 (36.1)			1.30 (33.0)	1.55 (39.4)						
NV3-M10-06-	10 MM Hikelok												

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)																			
				L1	L2	L3	L4	C	D	E	F	H											
NV3-M12-06-	12 mm Hikelok	0.236 (6.0)	0.8																				
NV3-M14-06-	14 mm Hikelok			1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)																
NV3-M16-06-	16 mm Hikelok																						
NV3-FSW6-06-	3/8" FSW																						
NV3-FSW8-06-	1/2" FSW																						
NV3-MSW12-06-	12 mm MSW					1.13 (28.6)	1.13 (28.6)	1.00 (25.4)	1.13 (28.6)		2.50 (63.5)	0.50 (12.7)	1.34 (34.0)	25/32 (19.8)	3.70 (94)								
NV3-MSW14-06-	14 mm MSW																						
NV3-MSW16-06-	16 mm MSW																						
NV3-MBW14-06-	14 mm MBW					1.50 (38.1)	1.50 (38.1)	1.25 (31.8)	1.50 (38.1)														
NV3-MBW16-06-	16 mm MBW					2.92 (74.1)	2.92 (74.1)	2.55 (64.7)	2.92 (74.1)														
NV3-UGM14-06-	14 mm UGM					1.50 (38.1)	1.50 (38.1)	1.13 (28.6)	1.50 (38.1)														
NV3-MS20-06-	M20 x 1.5 Male ISO																						
NV3-MS22-06-	M22 x 1.5 Male ISO																						
NV3-FNPT8-11-	1/2 Female NPT			0.433 (11.0)	1.8	1.56 (39.6)	1.56 (39.6)	1.31 (33.3)	1.56 (39.6)														
NV3-FNPT12-11-	3/4 Female NPT	1.63 (41.3)	1.63 (41.3)																				
NV3-FNPT16-11-	1 Female NPT	1.81 (46.0)	1.81 (46.0)																				
NV3-NPT12-11-	3/4 Male NPT	1.63 (41.3)	1.63 (41.3)																				
NV3-F8-11-	1/2" Hikelok																						
NV3-F12-11-	3/4" Hikelok																						
NV3-M14-11-	14 mm Hikelok					1.97 (50.0)	1.97 (50.0)	1.68 (42.7)	2.08 (52.8)														
NV3-M16-11-	16 mm Hikelok																						
NV3-M18-11-	18 mm Hikelok																						
NV3-M20-11-	20 mm Hikelok										3.50 (88.9)	0.78 (19.8)	1.91 (48.5)	11/32 (26.2)	4.85 (123)								
NV3-MSW14-11-	14 mm MSW																						
NV3-MSW16-11-	16 mm MSW																						
NV3-FSW8-11-	1/2" FSW					1.56 (39.7)	1.56 (39.7)	1.31 (33.3)	1.69 (42.9)														
NV3-FSW12-11-	3/4" FSW																						
NV3-MBW14-11-	14 mm MBW																						
NV3-MBW16-11-	16 mm MBW																						
NV3-UGM14-11-	14 mm UGM					2.98 (75.7)	2.98 (75.7)																
NV3-MS27-11-	M27 x 2 Male ISO					1.56 (39.7)	1.56 (39.7)																

❖ If working pressure up to 10,000 psi, please refer to NV31 series.

How to Order

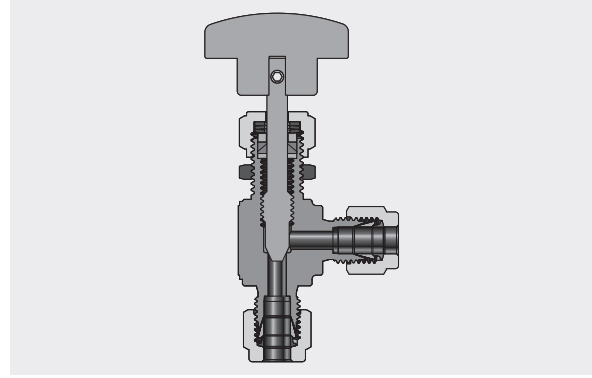
NV3 — **FNPT8** — **F8** — **GY** — **R1** — **316**

S06S

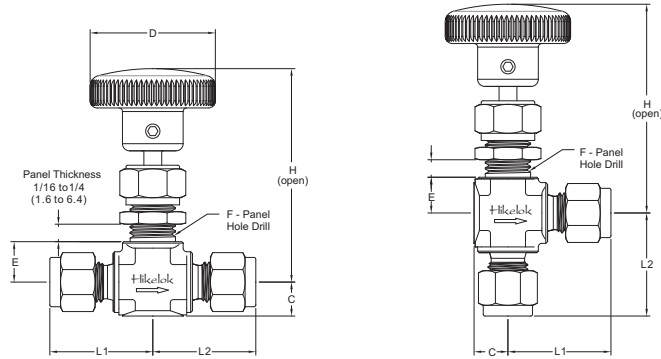
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow Pattern	Body Material	
NV3	FNPT	Female NPT	2 1/8 in.	Same as inlet type and inlet size	Same as Body	04	Same as Body	Blunt	PTFE	No	Black Aluminum Bar	Straight	316 316 S.S.	
	NPT	Male NPT	4 1/4 in.		S Stellite	06	S Stellite	R Regulating	G Graphite	Y Yes	Red Aluminum Bar	A1 Angle	316L 316L S.S.	
	FBT	Female BSPT	3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		11		A Ball						304 304 S.S.
	MBT	Male BSPT	1/2 in. or 8 mm			15								304L 304L S.S.
	FMS	Female ISO	10			20								321 321 S.S.
	MS	Male ISO	12											F91 F91
	FBP	Female BSPP	14											F92 F92
	MBP	Male BSPP	16											A400 Alloy 400
	F	Fractional Tube Fitting	18											A20 Alloy 20
	M	Metric Tube Fitting	20											A600 Alloy 600
	UGF	Nut + Gasket + Fractional Bulge Nipple	22											A825 Alloy 825
	UGM	Nut + Gasket + Metric Bulge Nipple	24											A276 Alloy C276
	FSW	Fractional Tube Socket Weld	25											DU7 Duplex 2507
	MSW	Metric Tube Socket Weld	27											BR Brass
	FBW	Fractional Tube Butt Weld	28											
	MBW	Metric Tube Butt Weld												
PSW	Pipe Socket Weld													
PBW	Pipe Butt Weld													

Needle Valves-NV4 Series

- ❖ Maximum working pressure up to 5000 psig (344 bar)
- ❖ Working temperature from -65°F to 600°F (-53°C to 315°C)
- ❖ Live-Loaded Packing System
- ❖ Packing nut enables easy external adjustments
- ❖ Straight, angle and cross patterns
- ❖ Softseat stem with PCTFE tip available
- ❖ Panel mounting available
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)						
				L1	L2	C	D	E	F	H
NV4-FNPT2-02-	1/8 Female NPT	0.093 (2.4)	0.09	0.81 (20.6)	0.81 (20.6)	0.31 (7.9)	1.0 (25.4)	0.44 (11.2)	0.47 (11.9)	2.28 (57.9)
NV4-F2-02-	1/8" Hikelok			0.98 (25.0)	0.98 (25.0)					
NV4-M3-02-	3 mm Hikelok									
NV4-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	0.81 (20.6)	0.81 (20.6)	0.39 (9.9)	1.38 (35.0)	0.44 (11.2)	0.53 (13.5)	2.50 (63.5)
NV4-NPT2-04-	1/8 Male NPT			0.98 (25.0)	0.98 (25.0)					
NV4-NPT4-04-	1/4 Male NPT			1.13 (28.7)	1.13 (28.7)					
NV4-F4-04-	1/4" Hikelok			1.17 (29.7)	1.17 (29.7)					
NV4-M6-04-	6 mm Hikelok	0.236 (6.0)	0.70	1.06 (26.9)	1.06 (26.9)	0.5 (12.7)	1.88 (47.8)	0.5 (12.7)	0.78 (19.8)	2.97 (75.4)
NV4-FNPT4-06-	1/4 Female NPT			1.12 (28.4)	1.12 (28.4)					
NV4-FNPT6-06-	3/8" Female NPT			1.50 (38.1)	1.50 (38.1)					
NV4-NPT6-06-	3/8 Male NPT			1.29 (32.8)	1.29 (32.8)					
NV4-NPT8-06-	1/2 Male NPT			1.4 (35.6)	1.4 (35.6)					
NV4-F6-06-	3/8" Hikelok			1.3 (33.0)	1.3 (33.0)					
NV4-F8-06-	1/2" Hikelok			1.4 (35.6)	1.4 (35.6)					
NV4-M10-06-	10 mm Hikelok			1.56 (39.7)	1.56 (39.7)					
NV4-M12-06-	12 mm Hikelok			1.50 (38.1)	1.50 (38.1)					
NV4-M14-06-	14 mm Hikelok			1.50 (38.1)	1.50 (38.1)					
NV4-MS20-06-	M20 x 1.5 Male ISO	0.433 (11.0)	1.80	1.50 (38.1)	1.50 (38.1)	0.75 (19.1)	3.00 (76.2)	0.75 (19.1)	1.03 (26.2)	3.91 (99.3)
NV4-FNPT8-11-	1/2 Female NPT			1.63 (41.3)	1.63 (41.3)					
NV4-FNPT12-11-	3/4 Female NPT			1.90 (48.3)	1.90 (48.3)					
NV4-NPT12-11-	3/4 Male NPT									
NV4-F8-11-	1/2" Hikelok									
NV4-F12-11-	3/4" Hikelok									
NV4-M14-11-	14 mm Hikelok									

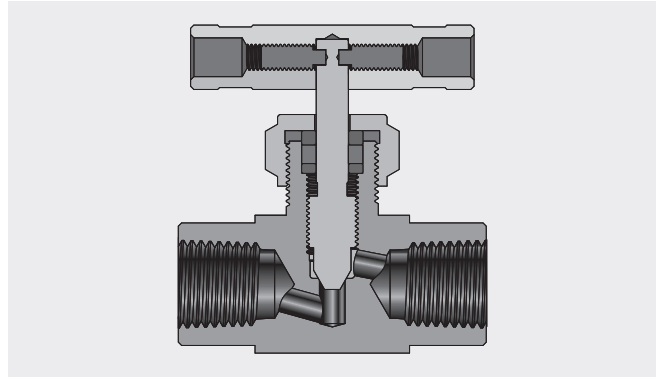
How to Order

NV4— **FNPT8** — **M12** — **06K** — **HB** — **316**

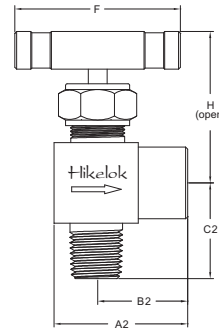
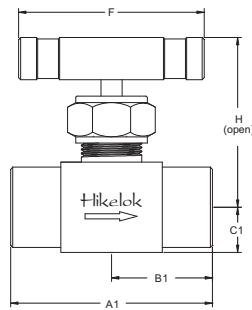
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Type	Handle	Flow Pattern	Body Material
NV4	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size	02	0.093 in. (2.4 mm)	Same as Body	Black Round	Straight	316 316 S.S.
	NPT Male NPT	4 1/4 in.							
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator	04	0.157 in. (4.0 mm)	R Regulating	R1 Red Round	A1 Angle	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm				A Ball	G1 Green Round	3 3-way	304L 304L S.S.
	FMS Female ISO	10 10 mm				Soft	L1 Blue Round	Black Aluminum Bar	A400 Alloy 400
	MS Male ISO	12 3/4 in. or 12 mm	11	11	0.433 in. (11 mm)	T PTFE			A20 Alloy 20
	FBP Female BSPP	14 14 mm or M14 x 1.5				K PCTFE			A600 Alloy 600
	MBP Male BSPP					P PEEK			A825 Alloy 825
	F Fractional Tube Fitting								A276 Alloy C276
	M Metric Tube Fitting								DU7 Duplex 2507

Needle Valves-NV5 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 600°F (-53°C to 315°C)
- ❖ Compact size design
- ❖ Packing nut enables easy external adjustments
- ❖ Straight and angle patterns
- ❖ Softseat stem with PCTFE tip available
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				A1	A2	B1	B2	C1	C2	F	H
Soft-seat stem or PCTFE seat tip											
NV5-FNPT4-02-	1/4 Female Female NPT	0.08 (2.0)	0.09	1.88 (47.8)	—	0.94 (23.9)	—	0.42 (10.7)	—	1.75 (44.4)	1.66 (42.2)
NV5-NPT4-02-	1/4 Male Male NPT			1.94 (49.3)	—	0.97 (24.6)	—	—	—	—	
NV5-NPT4-FNPT4-02-	1/4 Male to Female NPT			1.91 (48.5)	1.44 (36.6)	0.94 (23.9)	1.00 (25.4)	—	1.03 (26.2)	—	
Vee stem											
NV5-F4-03-	1/4" Hikelok	0.125 (3.2)	0.21	2.46 (62.5)	1.57 (39.9)	1.23 (31.2)	1.13 (28.7)	0.42 (10.7)	1.16 (29.5)	1.75 (44.4)	1.66 (42.2)
NV5-F6-06-	3/8" Hikelok	0.25 (6.4)	0.73	3.08 (78.2)	—	1.54 (39.1)	—	0.66 (16.8)	—	2.50 (63.5)	2.31 (58.7)
NV5-F8-06-	1/2" Hikelok			3.30 (83.8)	—	1.65 (41.9)	—	—	—	—	
NV5-FNPT4-03-	1/4 Female NPT	0.125 (3.2)	0.21	1.88 (47.8)	1.44 (36.6)	0.94 (23.9)	1.00 (25.4)	0.42 (10.7)	1.00 (25.4)	1.75 (44.4)	1.66 (42.2)
NV5-FNPT6-06-	3/8 Female NPT	0.25 (6.4)	0.73	2.50 (63.5)	—	1.25 (31.8)	—	0.66 (16.8)	—	2.50 (63.5)	2.31 (58.7)
NV5-FNPT8-06-	1/2 Female NPT			2.06 (52.3)	1.41 (35.8)	—	—	—	—	—	
NV5-NPT4-03-	1/4 Male NPT	0.125 (3.2)	0.21	1.94 (49.3)	—	0.97 (24.6)	—	0.42 (10.7)	—	—	—
NV5-NPT4-F4-03-	1/4 Male NPT to 1/4" Hikelok			—	1.57 (39.9)	—	1.13 (28.7)	—	1.00 (25.4)	1.75 (44.4)	1.66 (42.2)
NV5-NPT4-FNPT4-03-	1/4 Male to Female NPT			1.91 (48.5)	1.44 (36.6)	0.94 (23.9)	1.00 (25.4)	0.42 (10.7)	1.03 (26.2)	—	—
NV5-NPT6-FNPT6-06-	3/8 Male to Female NPT	0.25 (6.4)	0.73	2.50 (63.5)	2.06 (52.3)	1.25 (31.8)	1.41 (35.8)	0.66 (16.8)	1.22 (31.0)	2.50 (63.5)	2.31 (58.7)
NV5-NPT8-FNPT8-06-	1/2 Male to Female NPT			2.55 (64.8)	—	—	—	—	1.41 (35.8)	—	—
NV5-NPT12-FNPT8-06-	3/4 Male to 1/2 Female NPT			2.50 (63.5)	—	—	—	—	—	—	—
NV5-FBT4-03-	1/4 Female BSPT	0.125 (3.2)	0.21	1.88 (47.8)	—	0.94 (23.9)	—	0.42 (10.7)	—	1.75 (44.4)	1.66 (42.2)
NV5-FBT8-06-	1/2 Female BSPT	0.25 (6.4)	0.73	2.50 (63.5)	—	1.25 (31.8)	—	0.66 (16.8)	—	2.50 (63.5)	2.31 (58.7)

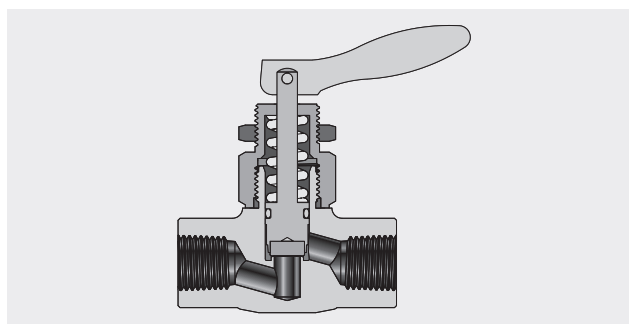
How to Order

NV5 — **FNP4** — **FNPT4** — **03R** — **R1** — **316**

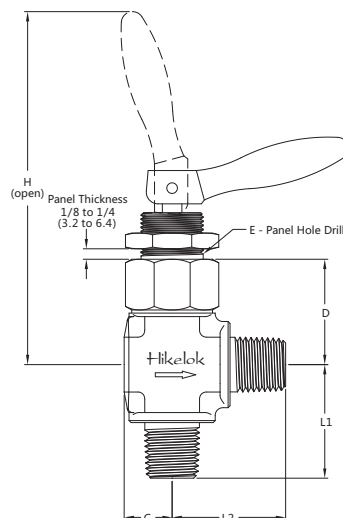
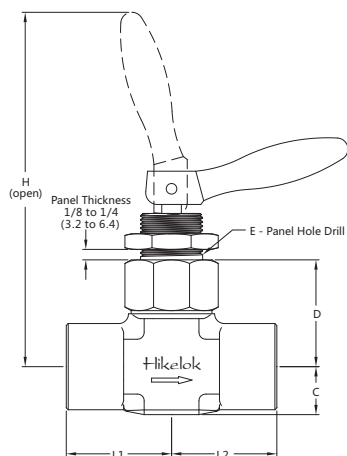
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Type	Handle	Flow Pattern	Body Material
NV5	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		02 0.08 in. (2.0 mm)	Same as Body	Black Aluminum Bar	Straight	316 316 S.S.
	NPT Male NPT	4 1/4 in.							
	FBT Female BSPT	6 3/8 in. or 6 mm							
	MBT Male BSPT	8 1/2 in. or 8 mm							
	FMS Female ISO	10 10 mm							
	MS Male ISO	12 3/4 in. or 12 mm							
	FBP Female BSPP	14 14 mm or M14 x 1.5							
	MBP Male BSPP								
	F Fractional Tube Fitting								
	M Metric Tube Fitting								
					06 0.250 in. (6.4 mm)	R Regulating	G1 Green Aluminum Bar	304 304 S.S.	
						A Ball	L1 Blue Aluminum Bar	304L 304L S.S.	
						Soft			
						T PTFE			
						K PCTFE	S1 Stainless Steel Bar		
						P PEEK			

Needle Valves-NV6 Series

- ❖ Maximum working pressure up to 300 psig (20.6 bar)
- ❖ Working temperature from -20°F to 200°F (-28°C to 93°C)
- ❖ One-piece forged body
- ❖ Straight and angle flow patterns
- ❖ Opens and closes quickly
- ❖ Soft-seat shutoff
- ❖ O-ring stem seal needs no adjustment



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)					
				L1	L2	C	D	E	H
NV6-NPT2-02-	1/8 Male NPT	0.08 (2.0)	0.11	0.75 (19.0)	0.75 (19.0)	0.31 (7.9)	0.92 (23.4)	0.53 (13.5)	2.87 (72.9)
NV6-NPT2-F2-02-	1/8 Male NPT			0.75 (19.0)	0.98 (25.0)				
NV6-F2-02-	1/8" Hikelok			0.98 (25.0)	0.98 (25.0)				
NV6-M3-02-	3 mm Hikelok								
NV6-FNPT2-03-	1/8 Female NPT	0.125 (3.2)	0.20	0.81 (20.6)	0.81 (20.6)	0.39 (9.9)	0.92 (23.4)	0.53 (13.5)	2.87 (72.9)
NV6-NPT2-03-	1/8 Male NPT			0.86 (21.8)	0.86 (21.8)				
NV6-NPT4-03-	1/4 Male NPT			25.0 (0.98)	25.0 (0.98)				
NV6-NPT4-F4-03-	1/4 Male NPT			25.0 (0.98)					
NV6-F4-03-	1/4" Hikelok				1.13 (28.7)				
NV6-M6-03-	6 mm Hikelok								
NV6-M8-03-	8 mm Hikelok								
NV6-FNPT4-06-	1/4 Female NPT								
NV6-FNPT6-06-	3/8 Female NPT	0.25 (6.4)	0.70	1.06 (26.9)	1.06 (26.9)	0.5 (12.7)	1.06 (26.9)	0.66 (16.8)	3.56 (90.4)
NV6-NPT6-06-	3/8 Male NPT			1.12 (28.4)	1.12 (28.4)				
NV6-F6-06-	3/8" Hikelok			1.29 (32.8)	1.29 (32.8)				
NV6-F8-06-	1/2" Hikelok			1.4 (35.6)	1.4 (35.6)				
NV6-M10-06-	10 mm Hikelok			1.36 (34.5)	1.36 (34.5)				
NV6-M12-06-	12 mm Hikelok			1.46 (37.1)	1.46 (37.1)				
NV6-MS20-06-	M20 x 1.5 Male ISO			1.50 (38.1)	1.50 (38.1)				
NV6-MS22-06-	M22 x 1.5 Male ISO								

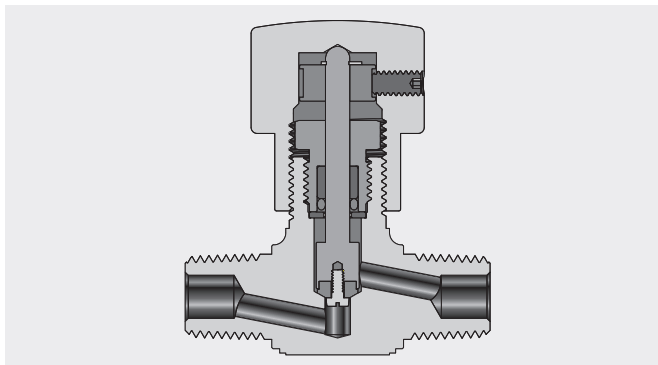
How to Order

NV6— NPT4 — F4 — 03 — Z — A1 — 316

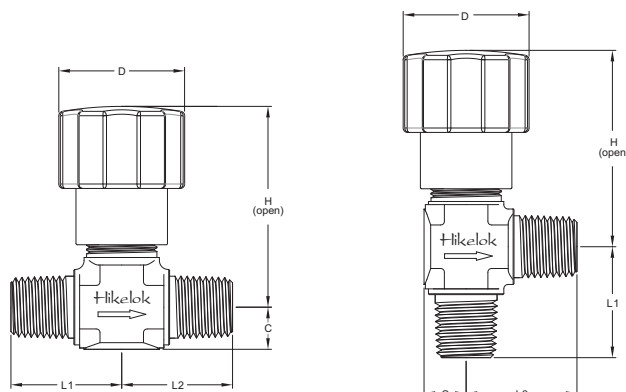
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	O-Ring Material	Flow Pattern	Body Material
NV6	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		02 0.080 in. (2.0 mm)	Fluorocarbon FKM	Straight	316 316 S.S.
	NPT Male NPT	4 1/4 in.				B Buna N		
	FBT Female BSPT	6 3/8 in. or 6 mm				E Ethylene Propylene	304 304 S.S.	
	MBT Male BSPT	8 1/2 in. or 8 mm				N Neoprene		304L 304L S.S.
	FMS Female ISO	10 10 mm	Z Kalrez					
	MS Male ISO	12 3/4 in. or 12 mm						
	FBP Female BSPP							
	MBP Male BSPP							
	F Fractional Tube Fitting							
	M Metric Tube Fitting							

Needle Valves-NV7 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -20°F to 450°F (-28°C to 232°C)
- ❖ One-piece forged body
- ❖ Straight and angle patterns
- ❖ Nonrotating stem provides repetitive shutoff
- ❖ Protective handle prevents contaminants from entering
- ❖ Actuation threads isolated from system
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)				
				L1	L2	C	D	H
NV7-NPT2-02-	1/8 Male NPT	0.09 (2.4)	0.12	0.75 (19.0)	0.75 (19.0)	0.31 (7.9)	1.06 (26.9)	1.86 (47.2)
NV7-NPT2-F2-02-	1/8 Male NPT to 1/8" Hikelok			0.75 (19.0)	1.1 (27.9)			
NV7-F2-02-	1/8" Hikelok			1.1 (27.9)	1.1 (27.9)			
NV7-M3-02-	3 mm Hikelok							
NV7-FNPT2-04-	1/8 Female NPT	0.156 (4.0)	0.27	0.81 (20.6)	0.81 (20.6)	0.39 (9.9)	1.06 (26.9)	1.86 (47.2)
NV7-NPT2-04-	1/8 Male NPT			0.86 (21.8)	0.86 (21.8)			
NV7-NPT4-04-	1/4 Male NPT			25.0 (0.98)	25.0 (0.98)			
NV7-NPT4-F4-04-	1/4 Male NPT to 1/4" Hikelok			25.0 (0.98)	1.13 (28.7)			
NV7-F4-04-	1/4" Hikelok			1.13 (28.7)				
NV7-M6-04-	6 mm Hikelok							
NV7-M8-04-	8 mm Hikelok							
NV7-FNPT4-06-	1/4 Female NPT	0.218 (5.6)	0.53	1.06 (26.9)	1.06 (26.9)	0.5 (12.7)	1.12 (28.4)	2.02 (51.3)
NV7-FNPT6-06-	3/8 Female NPT			1.12 (28.6)	1.12 (28.6)			
NV7-NPT6-06-	3/8 Male NPT			1.29 (32.8)	1.29 (32.8)			
NV7-F6-06-	3/8" Hikelok			1.4 (35.6)	1.4 (35.6)			
NV7-F8-06-	1/2" Hikelok			1.3 (33.0)	1.3 (33.0)			
NV7-M10-06-	10 mm Hikelok			1.4 (35.6)	1.4 (35.6)			
NV7-M12-06-	12 mm Hikelok			1.50 (38.1)	1.50 (38.1)			
NV7-MS20-06-	M20 x 1.5 Male ISO							
NV7-MS22-06-	M22 x 1.5 Male ISO							

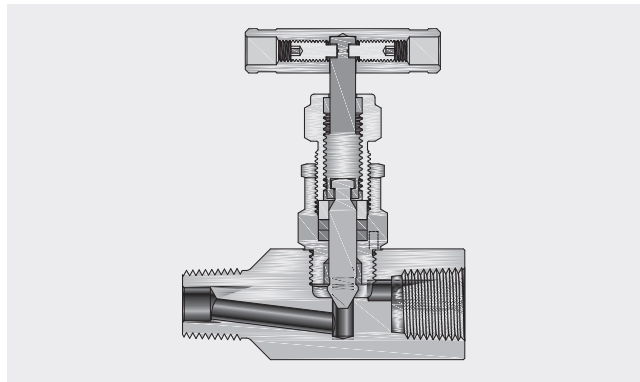
How to Order

NV7 — NPT8 — F6 — 06P — Z — A1 — 316

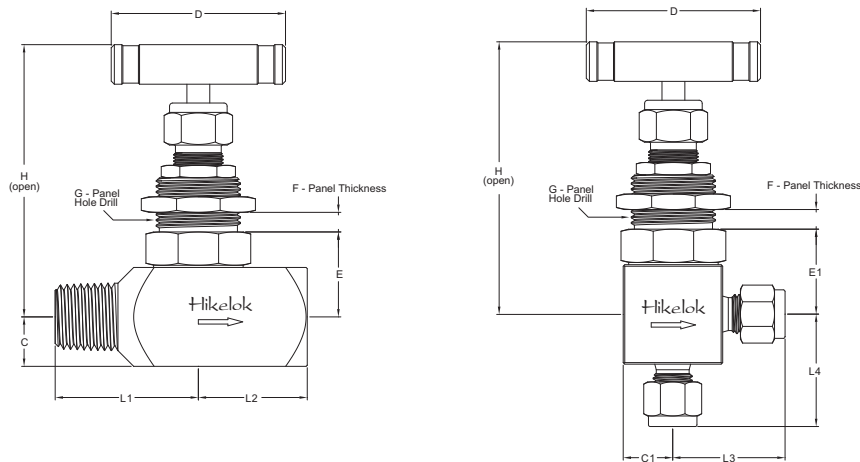
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	O-Ring Material	Handle	Flow Pattern	Body Material
NV7	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		02 0.093 in. (2.4 mm)	PCTFE	Fluorocarbon FKM	Black Round	Straight	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. A400 Alloy 400 A20 Alloy 20 BR Brass
	NPT Male NPT	4 1/4 in.								
	FBT Female BSPT	6 3/8 in. or 6 mm								
	MBT Male BSPT	8 1/2 in. or 8 mm	If outlet and inlet are the same, eliminate the outlet designator	04 0.157 in. (4.0 mm)	P PEEK	B Buna N	R1 Red Round	A1 Angle		
	FMS Female ISO								10 10 mm	
	MS Male ISO	12 3/4 in. or 12 mm				E Ethylene Propylene	G1 Green Round			
	FBP Female BSPP					N Neoprene	L1 Blue Round			
	MBP Male BSPP					Z Kalrez				
	F Fractional Tube Fitting									
	M Metric Tube Fitting									

Needle Valves-NV8 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Bar stock valve body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Two-piece knuckle joint provides nonrotating needle feature
- ❖ Nonrotating, hardened needle for positive shutoff
- ❖ Safety back-seating in fully open position
- ❖ Optional handle colors available



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)																									
				L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1													
NV8-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)	0.563 (14.3)	0.5 (12.7)	0.5 (12.7)	2.17 (55)	0.84 (21.4)	0.84 (21.4)	0.25 (6.4)	0.77 (19.6)	2.85 (72.4)	2.85 (72.4)	0.9 (23.0)	2.91 (74.0)											
NV8-FNPT4-04-	1/4 Female NPT			1.06 (26.9)	1.06 (26.9)																								
NV8-NPT4-04-	1/4 Male NPT			1.03 (26.2)	1.03 (26.2)	1.06 (26.9)	1.06 (26.9)																						
NV8-NPT6-04-	3/8 Male NPT			1.19 (30.2)	1.19 (30.2)																								
NV8-F4-04-	1/4" Hikelok																												
NV8-M6-04-	6 mm Hikelok					1.20 (30.5)	1.20 (30.5)																						
NV8-M8-04-	8 mm Hikelok																												
NV8-OFS4-04-	1/4" Male OFS																												
NV8-GFS4-04-	1/4" Male GFS					1.03 (26.2)	1.03 (26.2)																						
NV8-FNPT4-06-	1/4 Female NPT			0.236 (6.0)	0.85	1.12 (28.6)	1.12 (28.6)										1.12 (28.6)	0.63 (15.9)	0.563 (14.3)	0.563 (14.3)	2.5 (63.5)	1.0 (25.4)	1.0 (25.4)	0.38 (9.7)	0.96 (24.4)	3.5 (88.9)	3.5 (88.9)	1.06 (27.0)	3.56 (90.5)
NV8-FNPT6-06-	3/8 Female NPT																												
NV8-NPT6-06-	3/8 Male NPT																												
NV8-F6-06-	3/8" Hikelok					1.41 (35.8)	1.41 (35.8)	1.32 (33.6)	1.32 (33.6)																				
NV8-F8-06-	1/2" Hikelok					1.52 (38.6)	1.52 (38.6)	1.42 (36.1)	1.42 (36.1)																				
NV8-M10-06-	10 mm Hikelok					1.42 (36.1)	1.42 (36.1)	1.33 (33.8)	1.33 (33.8)																				
NV8-M12-06-	12 mm Hikelok					1.52 (38.6)	1.52 (38.6)																						
NV8-M14-06-	14 mm Hikelok					1.56 (39.7)	1.56 (39.7)	1.42 (36.1)	1.42 (36.1)																				
NV8-FSW6-06-	3/8" FSW																												
NV8-FSW8-06-	1/2" FSW																												
NV8-MSW12-06-	12 mm MSW					1.13 (28.6)	1.13 (28.6)	1.13 (28.6)	1.13 (28.6)																				
NV8-MSW14-06-	14 mm MSW																												
NV8-MSW16-06-	16 mm MSW																												
NV8-MBW14-06-	14 mm MBW					1.50 (38.1)	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)																				
NV8-MBW16-06-	16 mm MBW																												
NV8-UGM14-06-	14 mm UGM					2.92 (74.1)	2.92 (74.1)																						
NV8-UGM16-06-	16 mm UGM																												
NV8-OFS8-06-	1/2" Male OFS					1.13 (28.6)	1.13 (28.6)																						
NV8-GFS8-06-	1/2" Male GFS					1.56 (39.7)	1.56 (39.7)																						
NV8-MS20-06-	M20 x 1.5 Male ISO					1.50 (38.1)	1.50 (38.1)																						
NV8-MS22-06-	M22 x 1.5 Male ISO																												
NV8-FNPT8-11-	1/2 Female NPT	0.433 (11.0)	2.18	1.75 (44.5)	1.75 (44.5)	1.63 (41.3)	1.50 (38.1)	0.875 (22.2)	0.75 (19.05)	3.5 (88.9)	1.38 (34.9)	1.25 (31.75)	0.38 (9.7)	1.08 (27.5)	4.12 (104.8)	4.0 (101.6)													
NV8-FNPT12-11-	3/4 Female NPT																												
NV8-NPT12-11-	3/4 Male NPT																1.50 (38.1)												
NV8-F12-11-	3/4" Hikelok																												
NV8-M14-11-	14 mm Hikelok					1.97 (50.0)	1.97 (50.0)										1.61 (41.0)	1.61 (41.0)											
NV8-M16-11-	16 mm Hikelok																												
NV8-M18-11-	18 mm Hikelok																												
NV8-MSW14-11-	14 mm MSW																												
NV8-MSW16-11-	16 mm MSW																												
NV8-FSW12-11-	3/4" FSW					1.75 (44.5)	1.75 (44.5)																						
NV8-MBW14-11-	14 mm MBW																												
NV8-MBW16-11-	16 mm MBW																												
NV8-UGM14-11-	14 mm UGM					2.98 (75.7)	2.98 (75.7)																						
NV8-OFS12-11-	3/4" Male OFS																												
NV8-GFS8-11-	1/2" Male GFS					1.56 (39.7)	1.56 (39.7)																						
NV8-MS27-11-	M27 x 2 Male ISO																												

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)														
				L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1		
NV8-FNPT12-15-	3/4 Female NPT	0.591 (15.0)	3.27			1.75 (44.5)	1.14 (29.0)											
NV8-FSW16-15-	1" FSW																	
NV8-MSW25-15-	25 mm MSW			1.75 (44.5)	1.75 (44.5)	1.75 (44.5)	1.75 (44.5)	1.14 (29.0)	0.875 (22.2)	5.0 (127)	1.7 (43.2)	1.43 (36.4)	0.38 (9.7)	1.28 (32.5)	5.0 (127)	4.72 (120)		
NV8-MSW28-15-	28 mm MSW																	
NV8-PSW12-15-	3/4 PSW																	
NV8-M20-15-	20 mm Hikelok			2.35 (59.7)	2.35 (59.7)	2.35 (59.7)	2.0 (51.0)											
NV8-M22-15-	22 mm Hikelok																	
NV8-FNPT16-20-	1 Female NPT			0.787 (20.0)	5.65													
NV8-MSW25-20-	25 mm MSW																	
NV8-FSW16-20-	1" FSW	1.97 (50.0)	1.97 (50.0)					1.25 (31.75)		5.5 (140)							5.2 (132)	
NV8-MSW28-20-	28 mm MSW																	
NV8-PSW12-20-	3/4 PSW																	
NV8-PSW16-20-	1 PWS																	

❖ If working pressure up to 10,000 psi, please refer to NV81 series.

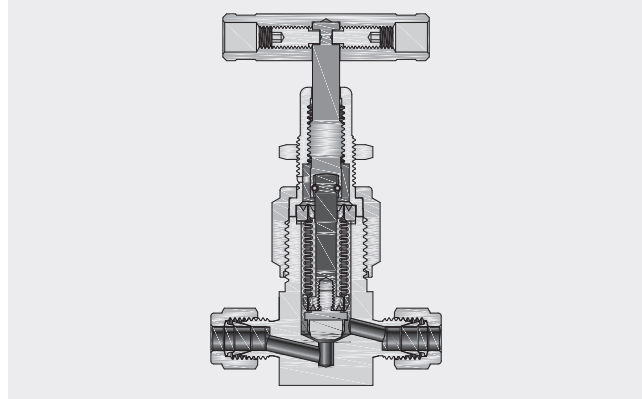
How to Order

NV8 — MBW8 — M12 — S06S — GY — A1 — 316

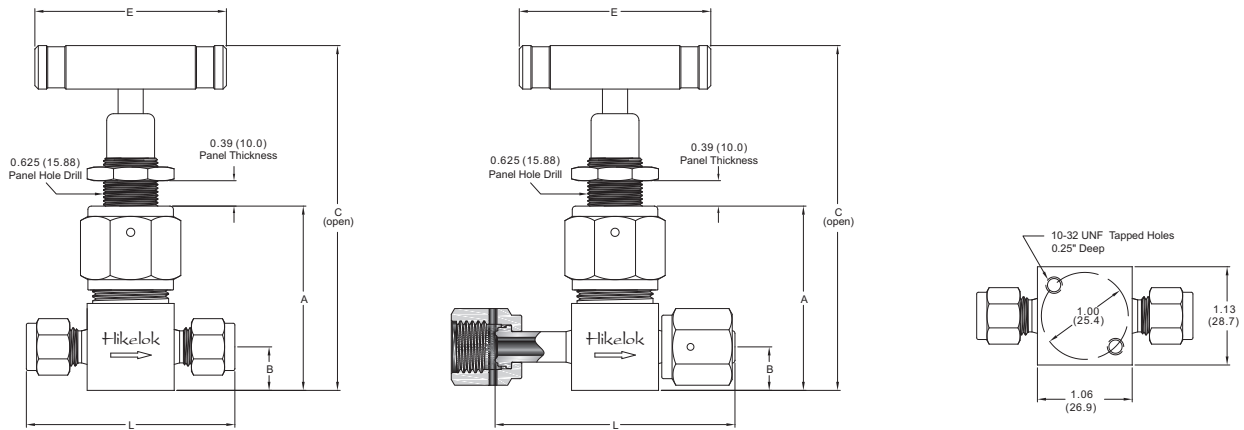
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow Pattern	Body Material	
NV8	FNPT	Female NPT	2	1/8 in.	Same as inlet type and inlet size	04	0.157 in. (4.0 mm)	Blunt	PTFE	No	Black Aluminum Bar	Straight	316 316 S.S.	
	NPT	Male NPT	4	1/4 in.	Same as inlet type and inlet size	06	0.236 in. (6.0 mm)	R Regulating	G Graphite	Y Yes	Red Aluminum Bar	A1 Angle	316L 316L S.S	
	FBT	Female BSPT	6	3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator	11	0.433 in. (11 mm)	A Ball			Green Aluminum Bar		304 304 S.S.	
	MBT	Male BSPT	8	1/2 in. or 8 mm		15	0.591 in. (15 mm)	T PTFE			Blue Aluminum Bar		304L 304L S.S.	
	FMS	Female ISO	10	10 mm		20	0.787 in. (20 mm)	K PCTFE			Stainless Steel Bar		321 321 S.S.	
	MS	Male ISO	12	3/4 in. or 12 mm				P PEEK						F91 F91
	FBP	Female BSPP	14	14 mm or M1.4 x 1.5										F92 F92
	MBP	Male BSPP	16	1 in. or 16 mm										A400 Alloy 400
	F	Fractional Tube Fitting	18	18 mm										A20 Alloy 20
	M	Metric Tube Fitting	20	20 mm or M2.0 x 1.5										A600 Alloy 600
	UGF	Nut + Gasket + Fractional Bulge Nipple	22	22 mm or M2.2 x 1.5										A825 Alloy 825
	UGM	Nut + Gasket + Metric Bulge Nipple	24	24 mm or M2.4 x 1.5										A276 Alloy C276
	FSW	Fractional Tube Socket Weld	25	25 mm										DU7 Duplex 2507
	MSW	Metric Tube Socket Weld	27	27 mm or M2.7 x 2										BR Brass
	FBW	Fractional Tube Butt Weld	28	28 mm										
	MBW	Metric Tube Butt Weld												
PSW	Pipe Socket Weld													
PBW	Pipe Butt Weld													

Bellows-Sealed Valves-BS1 Series

- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -20°F to 900°F (-28°C to 482°C)
- ❖ Flow coefficients (Cv) from 0.12 to 1.2
- ❖ Variety of end connections
- ❖ 316S.S., brass and monel 400 materials
- ❖ Panel and bottom mounting
- ❖ Bar, round handle are available
- ❖ Precision-formed metal bellows provides reliable seal
- ❖ Nonrotating stem tip: spherical, conical and regulating
- ❖ Gasket body to bellows seal is standard, weld seal also available
- ❖ Replaceable bellows and stem assembly
- ❖ Every valve is tested with helium for 10s to a maximum leak rate of 4×10^{-9} std cm³/s



Dimensions



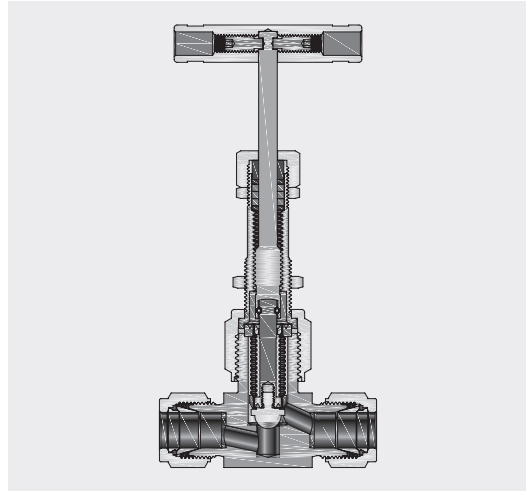
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)								
				A	B	C	D	E	L	W	H	Ød
BS1-F4-04-	1/4" Hikelok	0.16 (4.1)	0.36	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.46 (62.5)	1.00 (25.4)	1.06 (27.0)	1.00 (25.4)
BS1-F6-06-	3/8" Hikelok	0.26 (6.6)	0.80	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.52 (64.0)	3.09 (78.5)	1.00 (25.4)	1.57 (39.9)	1.00 (25.4)
BS1-F8-08-	1/2" Hikelok	0.30 (7.6)	1.20	2.24 (56.8)	0.56 (14.2)	4.13 (104.8)	0.39 (10.0)	2.52 (64.0)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS1-M6-04-	6 mm Hikelok	0.16 (4.1)	0.36	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.46 (62.5)	1.00 (25.4)	1.06 (27)	1.00 (25.4)
BS1-M10-07-	10 mm Hikelok	0.28 (7.1)	1.00	2.24 (56.8)	0.56 (14.2)	4.13 (104.8)	0.39 (10.0)	2.52 (64.0)	3.11 (79.0)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS1-M12-08-	12 mm Hikelok	0.30 (7.6)	1.20	2.24 (56.8)	0.56 (14.2)	4.13 (104.8)	0.39 (10.0)	2.52 (64.0)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS1-FGFS4-04-	1/4" Female GFS	0.16 (4.1)	0.36	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.52 (64.0)	2.76 (70.1)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS1-FGFS8-08-	1/2" Female GFS	0.30 (7.6)	1.20	2.24 (56.8)	0.56 (14.2)	4.13 (104.8)	0.39 (10.0)	2.52 (64.0)	3.12 (79.2)	1.13 (28.7)	1.50 (38.1)	1.13 (28.7)
BS1-GFS4-04-	1/4" Male GFS	0.16 (4.1)	0.36	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.24 (56.9)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS1-GFS8-08-	1/2" Male GFS	0.30 (7.6)	1.20	2.24 (56.8)	0.56 (14.2)	4.13 (104.8)	0.39 (10.0)	2.52 (64.0)	3.00 (76.2)	1.13 (28.7)	1.50 (38.1)	1.13 (28.7)

How to Order

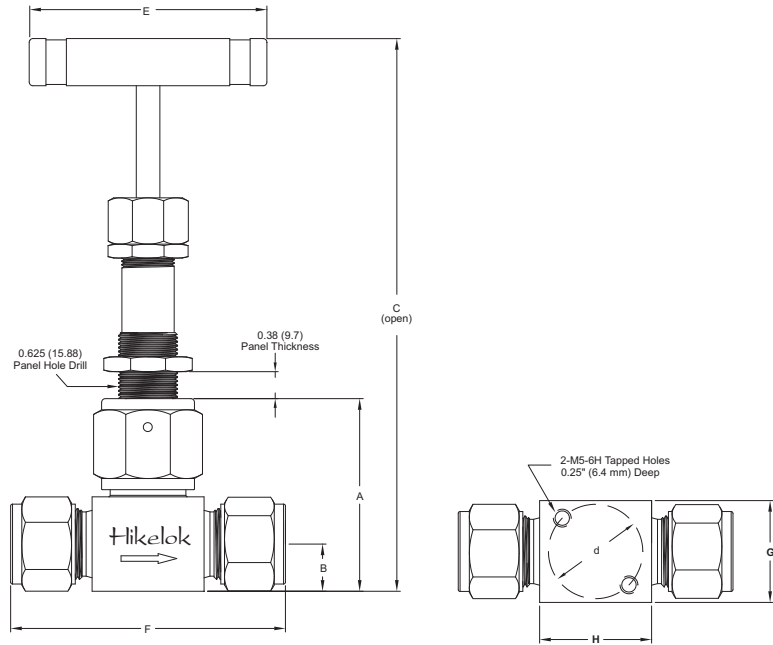
Series	MBW10		M10		07		KR		G1		316	
	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	Tip Type	Body-to-bellows Seal	Handle	Body Material		
BS1	FBW Fractional Tube Butt Weld	2 1/8 in. 4 1/4 in.	Same as inlet type and inlet size		04 (4.1 mm)	Same as Body Material	Blunt	Gasket Seal	Black Aluminum	316 316 S.S.		
	MBW Metric Tube Butt Weld	3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		06 (6.6 mm)	K PCTFE	A Ball Regula- ting	W Welded Seal	Blue Aluminum L1	316L 316L S.S.		
	F Fractional Tube Fitting	8 1/2 in. or 8 mm			07 (7.1 mm)				Red Aluminum R1	304 304 S.S.		
	M Metric Tube Fitting	10 10 mm			08 (7.6 mm)				Green Aluminum G1	304L 304L S.S.		
	UGF Nut+Gasket+ Fractional Bulge Nipple	12 3/4 in. or 12 mm			11 (11 mm)				Stainless Steel S1			
	UGM Nut+Gasket+ Metric Bulge Nipple				15 (15 mm)				Black Knob K1			
	FGFS Female GFS Fitting				20 (20 mm)							
	GFS Male GFS Fitting											

Bellows-Sealed Valves-BS2 Series

- ❖ Maximum working pressure up to 2500 psig (172 bar)
- ❖ Working temperature from -20°F to 900°F (-28°C to 482°C)
- ❖ Upper packing provides secondary containment system above the bellows
- ❖ Hydraulic-formed multilayer bellows enhanced cycle life
- ❖ Nonrotating stem tip eliminates galling within the seat area
- ❖ Strictly controlled bellows stroke to improve safety and cycle life
- ❖ Replaceable bellows and stem assembly
- ❖ Regulating, conical, and spherical stem tips available
- ❖ Panel, bottom, and side mounting available
- ❖ Handle color options are available
- ❖ Every Hikelok bellows-sealed valve is factory tested with helium to a maximum leak rate of 4×10^{-9} std cm³/s at the seat, envelope and all seals



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)								
				A	B	C	D	E	F	G	H	d
BS2-F4-04-	1/4" Hikelok	0.16 (4.1)	0.36	2.69 (59.9)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.46 (62.5)	1.00 (25.4)	1.06 (26.9)	1.00 (25.4)
BS2-F6-06-	3/8" Hikelok	0.26 (6.6)	0.85	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.09 (78.5)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS2-F8-08-	1/2" Hikelok	0.30 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS2-M6-04-	6 mm Hikelok	0.16 (4.1)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.46 (62.5)	1.00 (25.4)	1.06 (26.9)	1.00 (25.4)
BS2-M10-07-	10 mm Hikelok	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.11 (79.0)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS2-M12-07-	12 mm Hikelok	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS2-FGFS4-04-	1/4" Female GFS	0.16 (4.1)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.76 (70.1)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS2-FGFS8-08-	1/2" Female GFS	0.30 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.98 (75.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
BS2-GFS4-04-	1/4" Male GFS	0.16 (4.1)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.24 (56.9)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS2-GFS8-08-	1/2" Male GFS	0.30 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.00 (76.2)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)

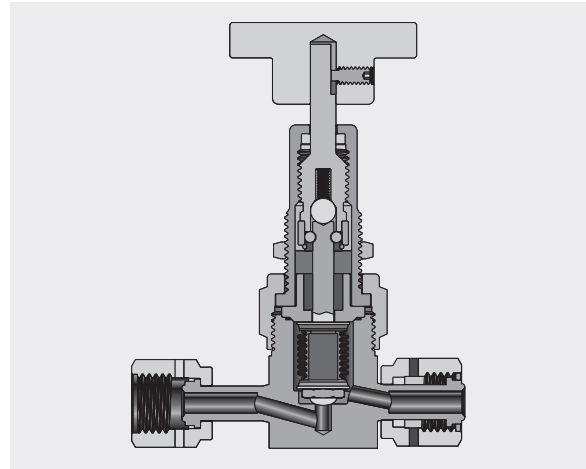
How to Order

BS2— MBW10 — M10 — 07 — KR — A1 — 316

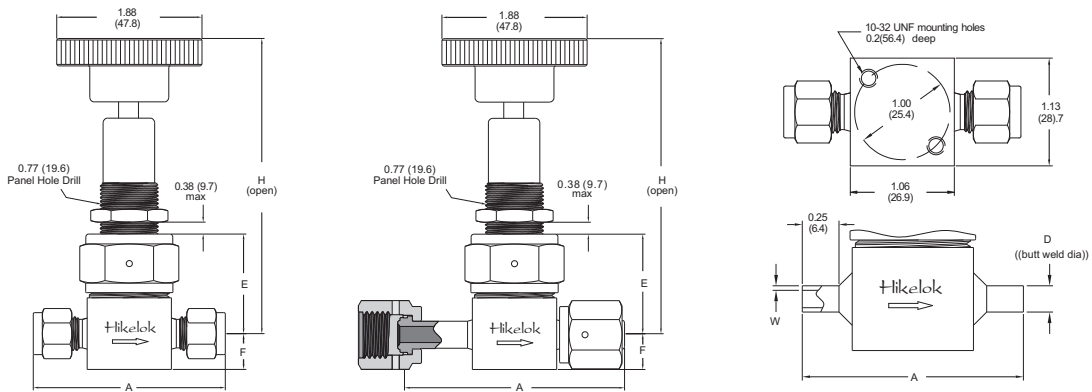
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	Tip Type	Handle	Flow Pattern	Body Material
BS2	FSW Fractional Tube Socket Weld	2 1/8"	Same as inlet type and inlet size	0.16 in. (4.1 mm)	Blunt	Same as Body Material	Black Aluminum	Straight	316 316 S.S.	
		4 1/4"								
	MSW Metric Tube Socket Weld	6 3/8" or 6 mm	If outlet and inlet are the same, eliminate the outlet designator	0.26 in. (6.6 mm)	A Ball	K PCTFE	L1 Blue Aluminum	A1 Angle	316L 316L S.S.	
		8 1/2" or 8 mm								
	FBW Fractional Tube Butt Weld	10 10 mm		0.28 in. (7.1 mm)	R Regulating	W Stellite	R1 Red Aluminum		304 304 S.S.	
		12 3/4" or 12 mm								
	MBW Metric Tube Butt Weld	14 14 mm or M14		0.3 in. (7.6 mm)			G1 Green Aluminum		304L 304L S.S.	
		16 1" or 16 mm								
	F Fractional Tube Fitting	18 18 mm		0.433 in. (11 mm)			S1 Stainless Steel		A400 Alloy 400	
		20 1 1/4 or 20 mm or M20 x 1.5								
	M Metric Tube Fitting	22 22 mm or M22 x 1.5		0.591 in. (15 mm)						
		25 25 mm								
	UGF Nut+Gasket+ Fractional Bulge Nipple	27 M27 x 2		0.787 in. (20 mm)						
		28 28 mm								
UGM Nut+Gasket+ Metric Bulge Nipple										
FGFS Female FR Fitting										
GFS Male FR Fitting										

Bellows-Sealed Valves-BS3 Series

- ❖ Maximum working pressure up to 500 psig (34.4 bar)
- ❖ Working temperature from -40°F to 200°F (-40°C to 93°C)
- ❖ Flow coefficients (Cv) : 0.3 and 0.7
- ❖ Variety of end connections
- ❖ 316S.S and 316L VAR S.S. materials
- ❖ Panel and bottom mounting
- ❖ Bar, round handle are available
- ❖ Precision-formed metal bellows provides reliable seal
- ❖ Nonrotating stem tip
- ❖ Bonnet seals to body without gasket
- ❖ Actuator-stem coupling design for smooth actuation
- ❖ Every valve is tested with helium for 10s to a maximum leak rate of 4×10^{-9} std cm³/s



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)															
				A	D	E	F	H	W										
BS3-F4-04-	1/4" Hikelok	0.157 (4.0)	0.30	2.46 (62.5)	—	1.27 (32.3)	0.45 (11.4)	3.88 (98.6)	—										
BS3-F6-04-	3/8" Hikelok			2.58 (65.5)															
BS3-M6-04-	6mm Hikelok			2.46 (62.5)															
BS3-M8-04-	8mm Hikelok			2.53 (64.3)															
BS3-FBW4-04-	1/4" FBW			1.74 (44.2)						0.25 (6.4)	0.38 (9.6)	0.035 (0.89)							
BS3-FBW6-04-	3/8" FBW			1.75 (44.4)						0.38 (9.6)	0.035 (0.89)								
BS3-MBW6-04-	6mm MBW			1.75 (44.4)						0.38 (9.6)	0.035 (0.89)								
BS3-FSW4-04-	1/4" FSW			1.75 (44.4)						0.38 (9.6)	0.035 (0.89)								
BS3-GFS4-04-	1/4" Male GFS			2.30 (58.4)						—	—	—							
BS3-OFS4-04-	1/4" Male OFS			2.00 (50.8)															
BS3-FGFS4-04-	1/4" Female GFS			2.76 (70.1)															
BS3-FGFS4-GFS4-04-	1/4" Female/Male GFS			2.54 (64.5)															
BS3-F6-08-	3/8" Hikelok			0.313 (8.0)									0.70	2.58 (65.5)	—	1.28 (32.5)	0.53 (13.5)	3.88 (98.5)	—
BS3-F8-08-	1/2" Hikelok													2.80 (71.1)					
BS3-M10-08-	10mm Hikelok	2.60 (66.0)																	
BS3-M12-08-	12mm Hikelok	2.80 (71.1)																	
BS3-FBW6-08-	3/8" FBW	1.74 (44.2)	0.38 (9.6)		0.035 (0.89)														
BS3-FBW8-08-	1/2" FBW	1.74 (44.2)	0.50 (12.7)		0.049 (1.2)														
BS3-FT8-08-	1/2" FT	3.40 (86.4)	—		—														
BS3-GFS8-08-	1/2" Male GFS	2.58 (65.5)	1.33 (33.7)		0.66 (16.8)	3.94 (100.2)	—												
BS3-FGFS8-08-	1/2" Female GFS	3.15 (80.0)	1.27 (32.2)		3.87 (98.2)	—													

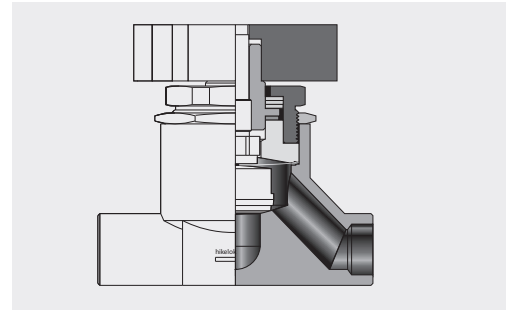
How to Order

BS3— MBW10 — M10 — 04 — A1 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Handle	Flow Pattern	Body Material		
BS3	FBW Fractional Tube Butt Weld	2 1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator	Same as inlet type and inlet size	04 0.157 in. (4.0 mm)	Black Aluminum	Straight	316 316 S.S.		
	MBW Metric Tube Butt Weld	4 1/4 in.							316L 316L S.S.	
	F Fractional Tube Fitting	6 3/8 in. or 6 mm								316LV 316L VAR
	M Metric Tube Fitting	8 1/2 in. or 8 mm								
	FGFS Female GFS Fitting	10 10 mm								
	GFS Male GFS Fitting	12 3/4 in. or 12 mm								
	RGFS Rotatable Male FR Fitting									

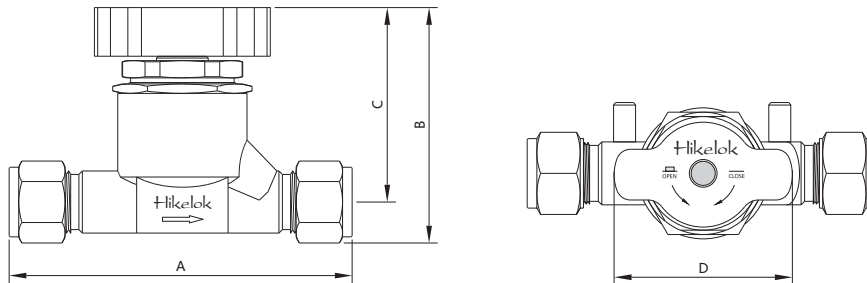
Diaphragm Valves-DV1, DV2, DV3 Series

- ❖ Maximum working pressure: 300 psig (20.7 bar)
- ❖ Working temperature: -20°F to 300°F (-28°C to 148°C)
- ❖ Variety of end connections
- ❖ Body material: Cast, forged and bar stock stainless steel
- ❖ No spring or thread within wetted area for cleaner operation
- ❖ Wetted surface finish machined to an average of 0.51 µm Ra for cast body, electropolished to 0.25 µm Ra for forged and bar stock body
- ❖ PCTFE stem tip insert for leak-tight shutoff
- ❖ Diaphragms welded to the stem for leak-tight performance
- ❖ Optimum combination of strength, flexibility and cycle life by three diaphragms
- ❖ The upper stem as an indicator of the valve position-open or closed



Dimensions

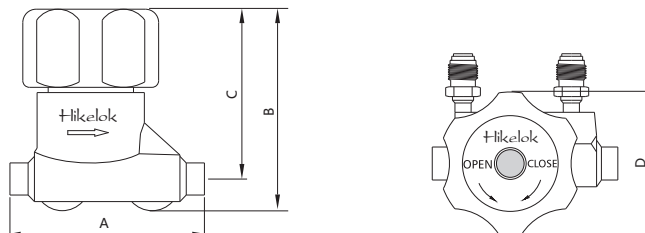
DV1 Series: Cast-body



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)			
				A	B	C	D
DV1-F8-13-	1/2" Hikelok	0.5 (12.7)	2.8	5.30 (135)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-F12-25-	3/4" Hikelok	1.0 (25.4)	12.0	8.28 (210)	5.12 (130.0)	4.35 (110.0)	4.0 (102.0)
DV1-F16-25-	1" Hikelok	1.0 (25.4)	12.0	8.46 (215)	5.12 (130.0)	4.35 (110.0)	4.0 (102.0)
DV1-M12-13-	12 mm Hikelok	0.5 (12.7)	2.8	5.30 (135)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-M25-25-	25 mm Hikelok	1.0 (25.4)	12.0	8.63 (219)	5.12 (130.0)	4.35 (110.0)	4.0 (102.0)
DV1-FNPT8-13-	1/2 Female NPT	0.5 (12.7)	2.8	5.61 (142)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-FNPT16-25-	1 Female NPT	1.0 (25.4)	12.0	8.46 (215)	5.12 (130.0)	4.35 (110.0)	4.0 (102.0)
DV1-GFS8-13-	1/2" Male GFS	0.5 (12.7)	2.8	4.58 (116)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-FBW8-13-	1/2" X 0.049 " Fractional Tube	0.5 (12.7)	2.8	8.82 (224)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-FBW12-13-	3/4" X 0.065" Fractional Tube	0.5 (12.7)	2.8	8.79 (223)	2.95 (74.9)	2.41 (61.2)	2.25 (57.2)
DV1-FBW16-25-	1" X 0.065" Fractional Tube	1.0 (25.4)	12.0	10.87 (276)	5.12 (130.0)	4.35 (110.0)	4.0 (102.0)

Dimensions

DV2 Series: Forged-body

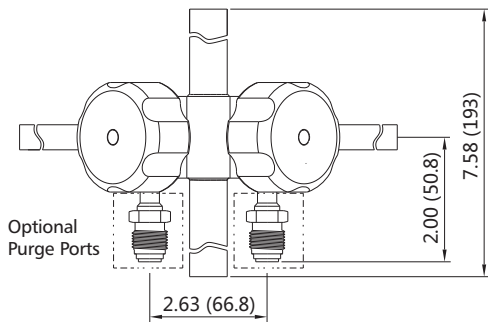
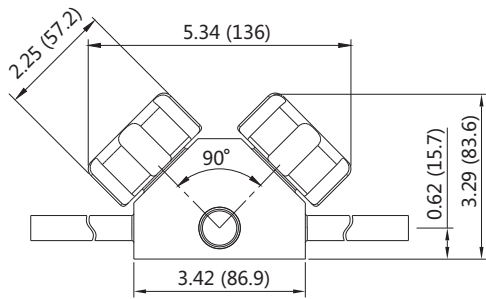
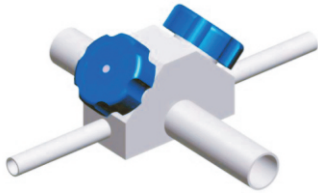
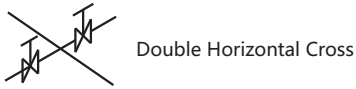


Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)			
				A	B	C	D
DV2-F8-13-	1/2" Hikelok	0.5 (12.7)	2.8	5.30 (135)	3.03 (77.0)	2.54 (64.5)	2.25 (57.2)
DV2-M12-13-	12 mm Hikelok			5.30 (135)			
DV2-FGFS8-13-	1/2" Female GFS Fitting			4.09 (104)			
DV2-RGFS8-13-	1/2" Rotatable Male GFS Fitting			5.43 (138)			
DV2-FBW6-13-	3/8" X 0.049" Fractional Tube			8.86 (225)			
DV2-FBW8-13-	1/2" X 0.049" Fractional Tube			8.86 (225)			

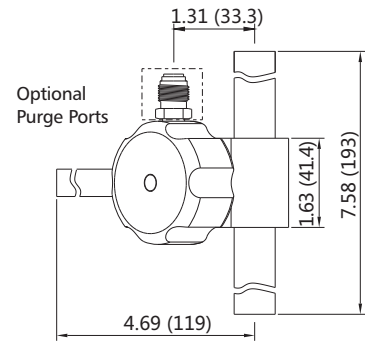
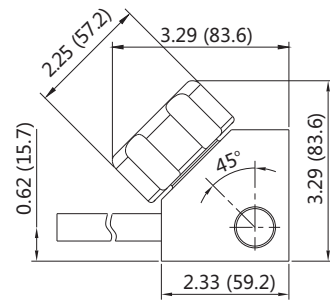
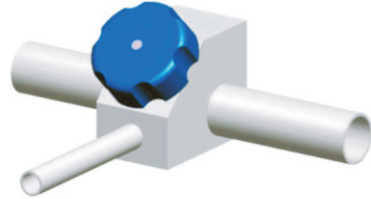
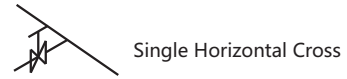
How to Order

	DV1	FGFS8	FGFS4	13	D	E	316L	
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Purge Port	Handle Color	Body Material
DV1	FNPT Female NPT	2 1/8 (in.)	Same as inlet type and inlet size		13 0.5 in. (12.7 mm)	None	Blue	316 316 S.S.
DV2	NPT Male NPT	4 1/4 (in.)				If outlet and inlet are the same, eliminate the outlet designator	25 1 in. (25.4 mm)	U Upstream
	FBT Female BSPT	6 3/8 (in.) or 6 mm	D Downstream	G Gold				
	FBP Female BSPP	8 1/2 (in.) or Ø1/2 x 0.049" or 8 mm	UD Upstream and Downstream	E Green				
	MBP Male BSPP	10 10 mm	B Black					
	FSW Fractional Tube Socket Weld	12 3/4 (in.) or Ø3/4 x 0.065" 12 mm or 12 x 1	P Purple					
	MSW Metric Tube Socket Weld	14 14 mm	O Orange					
	FBW Fractional Tube Butt Weld	16 1 (in.) or 16 mm	I Pink					
	MBW Metric Tube Butt Weld	18 18 mm or Ø18 x 1.5	R Brown					
	F Fractional Tube Fitting	20 1 1/4 (in.) or 20 mm or M20 x 1.5	S Silver					
	M Metric Tube Fitting	22 22 mm	W White					
	FGFS Female FR Fitting	25 25 mm	Y Yellow					
	GFS Male FR Fitting							
	RGFS Rotatable Male FR Fitting							
	FTE 3" Fractional Tube Extension							
	MTE 3" Metric Tube Extension							

DV3D Series: Bar Stock-body



DV3S Series: Bar Stock-body

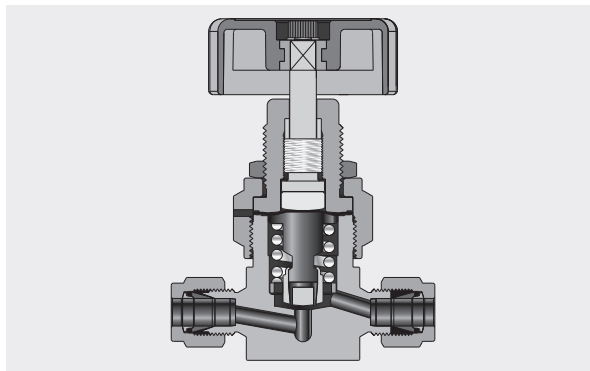


Basic Ordering Number	Tube Size		Orifice in.(mm)	Cv
	Main	Branch		
DV3D-8-8-	1/2" x 0.049"	1/2" x 0.049"	0.5 (12.7)	2.8
DV3D-8-RGFS8-	1/2" x 0.049"	1/2" rotatable male GFS fitting		
DV3D-12-8-	3/4" x 0.065"	1/2" x 0.049"		
DV3D-12-RGFS8-	3/4" x 0.065"	1/2" rotatable male GFS fitting		
DV3D-16-8-	1" x 0.065"	1/2" x 0.049"		
DV3D-16-RGFS8-	1" x 0.065"	1/2" rotatable male GFS fitting		

Basic Ordering Number	Tube Size		Orifice in.(mm)	Cv
	Main	Branch		
DV3S-8-4-	1/2" x 0.049"	1/4" x 0.035"	0.5 (12.7)	2.8
DV3S-8-8-	1/2" x 0.049"	1/2" x 0.049"		
DV3S-8-RGFS4-	1/2" x 0.049"	1/4" rotatable male GFS fitting		
DV3S-8-RGFS8-	1/2" x 0.049"	1/2" rotatable male GFS fitting		
DV3S-12-8-	3/4" x 0.065"	1/2" x 0.049"		
DV3S-12-RGFS8-	3/4" x 0.065"	1/2" rotatable male GFS fitting		
DV3S-16-8-	1" x 0.065"	1/2" x 0.049"		
DV3S-16-RGFS8-	1" x 0.065"	1/2" rotatable male GFS fitting		

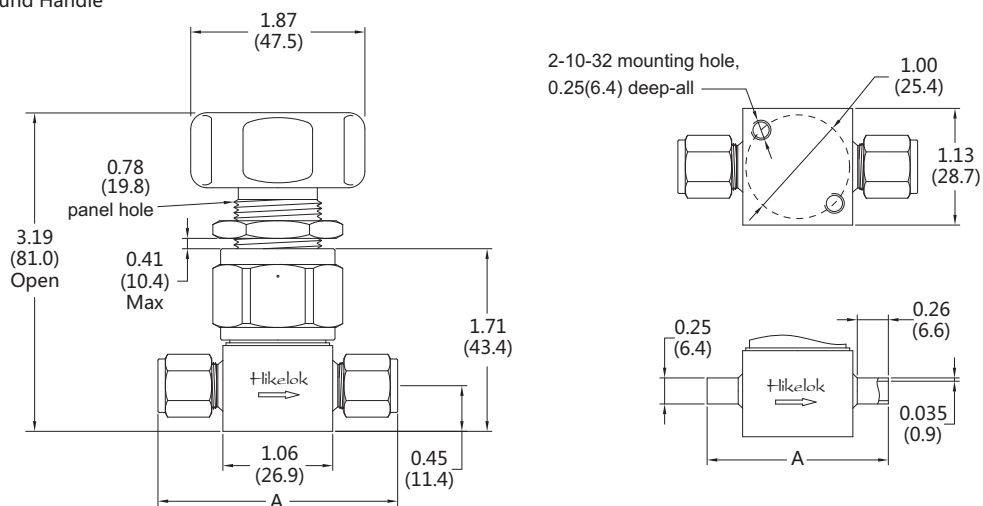
Diaphragm Valves-DV4 Series

- ❖ Maximum working pressure: 3500 psig (241 bar)
- ❖ Working temperature: -100°F to 250°F (-73°C to 121°C)
- ❖ Repetitive shutoff with fully contained softseat stem tip
- ❖ Position indicator ring for lever handle
- ❖ Manual or pneumatic actuation
- ❖ Helium leak tested, maximum leak rate of 4×10^{-5} std cm³/s
- ❖ Different handle types and colors are available
- ❖ Can be used in vacuum applications



Dimensions

Round Handle



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)	
		A	Orifice in. (mm)
DV4-F4-	1/4" hikelok	2.46 (62.5)	0.156(4.0)
DV4-F6-	3/8" hikelok	2.58 (65.5)	
DV4-M6-	6 mm hikelok	2.46 (62.5)	
DV4-M8-	8 mm hikelok	2.53 (64.3)	
DV4-FBW4-	1/4" Tube butt weld	1.74 (44.2)	
DV4-FBW6-	3/8" Tube butt weld	1.74 (44.2)	
DV4-FBW6-FSW4-	3/8" Tube butt weld to 1/4" tube socket weld	1.75 (44.4)	
DV4-FBW8-FSW6-	1/2" Tube butt weld to 3/8" tube socket weld	1.81 (46.0)	
DV4-NPT4-	1/4" Male NPT	2.46 (62.5)	
DV4-FNPT4-	1/4" Female NPT	2.46 (62.5)	
DV4-GFS4-	1/4" Male GFS	2.30 (58.4)	
DV4-FGFS4-	1/4" Female GFS	2.76 (70.1)	
DV4-FGFS4-GFS4-	1/4" Female GFS to 1/4" Male GFS	2.54 (64.5)	
DV4-GFS4-FGFS4-	1/4" Male GFS to 1/4" Female GFS	2.54 (64.5)	

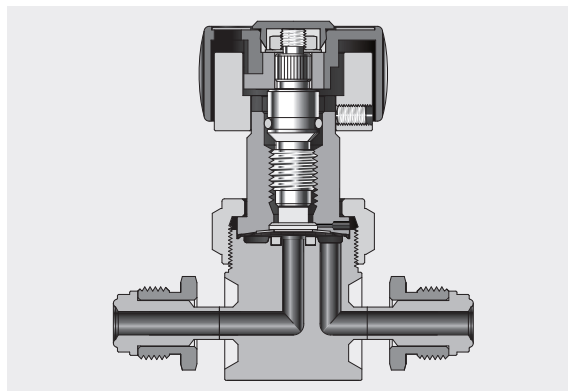
How to Order

DV4— **FGFS4** — **GFS4** — **T** — **EA** — **NC** — **316L**

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Stem Tip Material	Handle Color	Flow Pattern	Actuator	Body Material	
DV4	F Fractional Tube Fitting	2 1/8"	Same as inlet type and inlet size		PCTFE	Blue	Straight	Round Handle	316 316 S.S.	
	M Metric Tube Fitting	4 1/4"				C Red				A Angle
	FBW Fractional Tube Butt Weld	6 6 mm	If outlet and inlet are the same, eliminate the outlet designator		V Polyimide	G Gold		Pneumatic, Normally Closed NC	316L 316L S.S.	
	MBW Metric Tube Butt Weld	8 1/2"				E Green				
	GFS Male GFS Fitting					B Black				Pneumatic, Normally Open NO
	FGFS Female GFS Fitting					P Purple				
	NPT Male NPT			O Orange						
	FNPT Female NPT			I Pink						
				R Brown						
				S Silver						
			W White							
			Y Yellow							

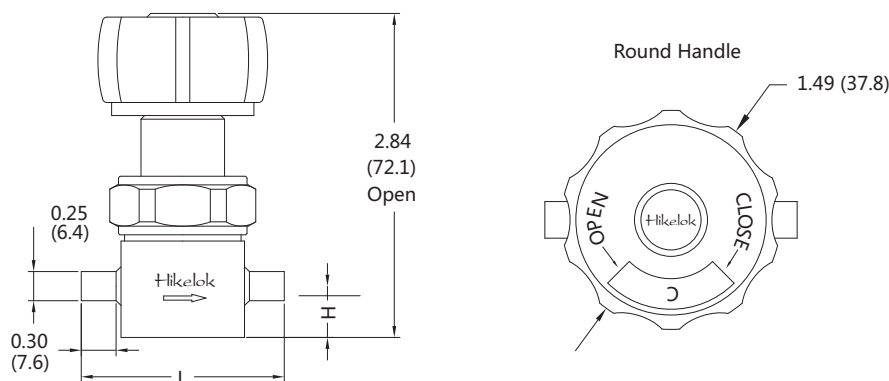
Diaphragm Valves-DV5 Series

- ❖ Working temperature from -10°F to 150°F (-23°C to 65°C)
- ❖ Low-pressure Valve Maximum working pressure: 250 psi (17.2 bar)
High-pressure Valve Maximum working pressure: 3045 psi (210 bar)
- ❖ 316L VIM-VAR stainless steel body is available
- ❖ Suitable for ultrahigh-purity applications
- ❖ Elgiloy material for strength and corrosion resistance for long cycle life
- ❖ Fully contained PCTFE seat design provides excellent resistance to swelling and contamination
- ❖ Wetted Surface Electropolished, Roughness Ra finished to an average of Ra5 $\mu\text{in.}$ (0.13 μm)
- ❖ Helium leak tested, maximum leak rate of 1×10^{-9} std cm^3/s
- ❖ Low-pressure and high-pressure models
- ❖ Manual or pneumatic actuation
- ❖ Different handle types and colors are available



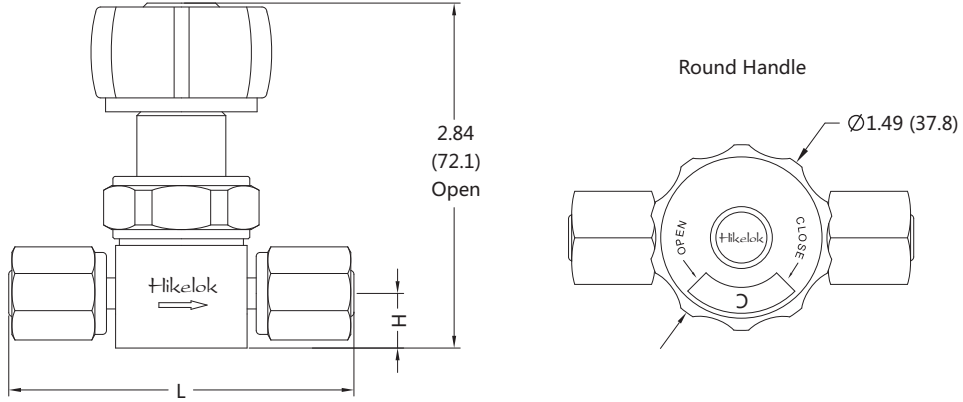
Dimensions

Low-Pressure Valves



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)		Orifice in. (mm)
		L	H	
DV5-FBW4-L-	1/4" tube butt weld 0.30"(7.6 mm) tube stub, 0.035"(0.89 mm) wall	1.74 (44.2)	0.44(11.2)	0.16(4.1)
DV5-FBW4S-L-	1/4" tube butt weld 0.26"(6.6 mm) tube stub, 0.035" (0.89 mm) wall	1.61 (40.9)	0.44 (11.2)	
DV5-MBW6-L-	6 mm tube butt weld, 1 mm wall	1.74 (44.2)	0.44 (11.2)	
DV5-FGFS4-L-	1/4" female GFS fitting	2.78 (70.6)	0.44 (11.2)	
DV5-RGFS4-L-	1/4" rotatable male GFS fitting			
DV5-GFS4-L-	1/4" integral male GFS fitting			
DV5-F4-L-	1/4" Hikelok tube fittings	2.46 (62.5)	0.44 (11.2)	
DV5-M6-L-	6 mm Hikelok tube fittings	2.45 (62.2)	0.44 (11.2)	

High-Pressure Valves



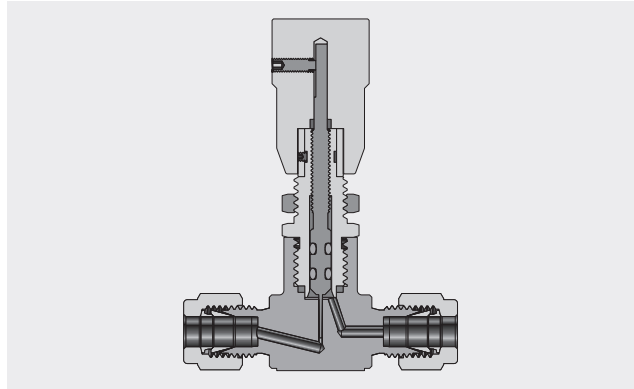
Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)		Orifice in. (mm)
		L	H	
DV5-FBW4-H-	1/4" tube butt weld 0.30" (7.6mm) tube stub, 0.035" (0.89 mm) wall	1.74 (44.2)	0.44 (11.2)	0.16(4.1)
DV5-FBW4S-H-	1/4" tube butt weld 0.26" (6.6 mm) tube stub, 0.035" (0.89 mm) wall	1.61 (40.9)	0.44 (11.2)	
DV5-MBW6-H-	6 mm tube butt weld, 1 mm wall	1.74 (44.2)	0.44 (11.2)	
DV5-FGFS4-H-	1/4" female GFS fitting	2.78 (70.6)	0.44 (11.2)	
DV5-RGFS4-H-	1/4" rotatable holes are male GFS fitting			
DV5-GFS4-H-	1/4" integral male GFS fitting	2.30 (58.4)	0.44 (11.2)	
DV5-F4-H-	1/4" Hikelok tube fittings	2.46 (62.5)	0.44 (11.2)	
DV5-M6-H-	6 mm Hikelok tube fittings	2.45 (62.2)	0.44 (11.2)	

How to Order

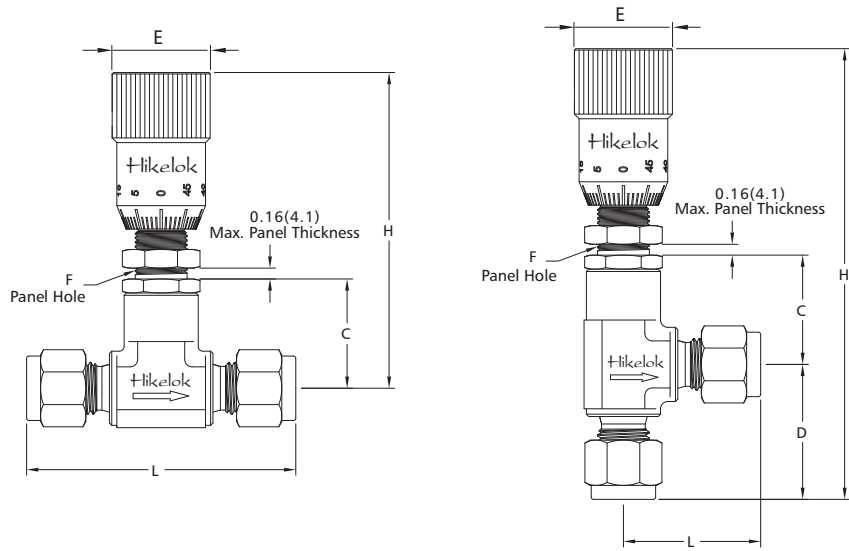
Series	Port 1 Type	Port 1 Size	Port 2/3/4/5 Type	Port 2/3/4/5 Size	Pressure Type	Colour	Flow Path	Actuator/Handle	Body Material	
DV5	F Fractional Tube Fitting	2 1/8"	Same as port 1	Port 2/3/4/5 Size	H High-Pressure Valves	Blue	Straight	Round Handle	316 316 S.S.	
	M Metric Tube Fitting	4 1/4"	Specify in the same way as port 1 type and port 1 size		L Low-Pressure Valves	B Black	2L	DH Directional Handle	316L 316L S.S.	
	FBW Fractional Tube Butt Weld	6 6 mm					W White	2N	IH Integral Lockout Handle	316LV 316 VAR S.S.
	MBW Metric Tube Butt Weld						Y Yellow	2R	TH Toggle Handle	316LV 316L VM-VARS
	GFS Male GFS Fitting						G Green	3A	NC Pneumatic, Normally closed	
	FGFS Female GFS Fitting						R Red	3B	NO Pneumatic, Normally open	
	RGFS Rotatable Male GFS Fitting							3C		
								3F		
								3G		
								4D		
						4E				
						M1V				
						M2V				
						MID				

Metering Valves-MV1 Series

- ❖ Maximum working pressure up to 2000 psig (137 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Orifice size: 0.032" (0.81 mm)
- ❖ Stem taper: 1°
- ❖ Shutoff service: not available
- ❖ Panel mountable
- ❖ Straight, angle, cross and double pattern
- ❖ Knurled, vernier and slotted handle
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)					
		H	L	C	D	E	F
Straight Pattern							
MV1-F1-	1/16" Hikelok	2.34 (59.4)	1.56 (39.6)	0.92 (23.4)	—	0.83 (21.0)	0.45 (11.4)
MV1-F2-	1/8" Hikelok		1.90 (48.3)				
MV1-F4-	1/4" Hikelok		2.04 (51.8)				
MV1-M3-	3 mm Hikelok		1.90 (48.3)				
MV1-M6-	6 mm Hikelok		2.04 (51.8)				
Angle Pattern							
MV1-F1-	1/16" Hikelok	3.22 (81.8)	0.81 (20.6)	0.92 (23.4)	0.88 (22.4)	0.83 (21.0)	0.45 (11.4)
MV1-F2-	1/8" Hikelok	3.32 (84.3)	0.98 (24.9)		0.98 (24.9)		
MV1-F4-	1/4" Hikelok	3.36 (85.3)	1.02 (25.9)		1.02 (25.9)		
MV1-M3-	3 mm Hikelok	3.32 (84.3)	0.98 (24.9)		0.99 (25.1)		
MV1-FNPT2-	1/8 Female NPT	3.07 (78.0)			0.98 (24.9)		

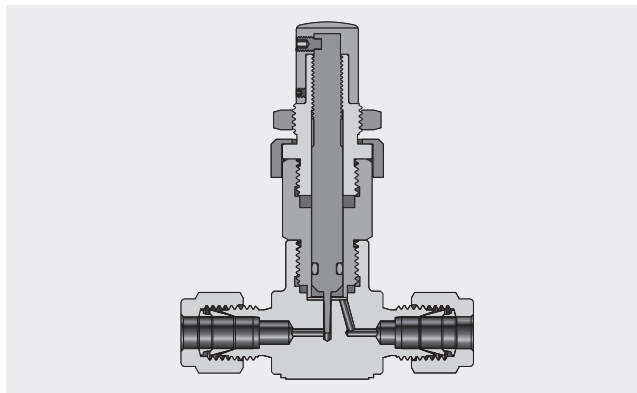
How to Order

MV1— NPT4 — M6 — EV — A1 — 316

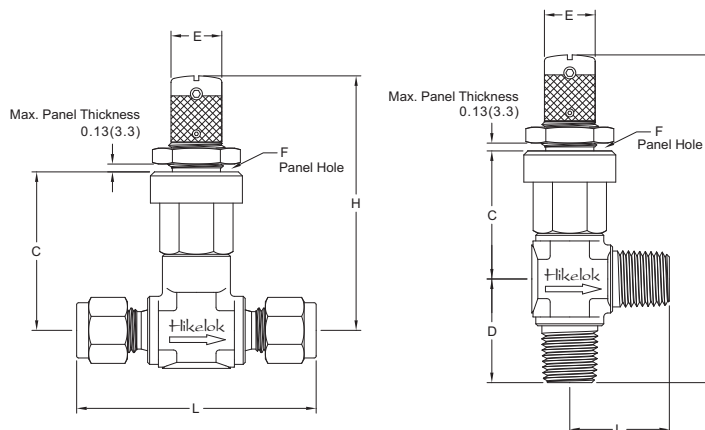
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	O-Ring Material	Handle Type	Flow Pattern	Material
MV1	FNPT Female NPT	1 1/16 in.	Same as inlet type and inlet size		Fluorocarbon FKM B Buna N E Ethylene propylene N Neoprene Z Kalrez	Knurled, round	Straight	316 316 S.S.
	NPT Male NPT	2 1/8 in.						
	FBT Female BSPT	3 3 mm						
	MBT Male BSPT	4 1/4 in.						
	FMS Female ISO 261	6 3/8 in. or 6 mm						
	MS Male ISO 261	8 1/2 in. or 8 mm						
	FBP Female BSPP	10 10 mm						
	MBP Male BSPP	12 3/4 in. or 12 mm						
	F Fractional Tube Fitting							
	M Metric Tube Fitting							
	GFS Male GFS Fitting							

Metering Valves-MV2 Series

- ❖ Maximum working pressure: 1000 psig (68.9 bar)
- ❖ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ❖ Orifice sizes: 0.056" (1.42 mm)
- ❖ Stem taper: 3°
- ❖ Shutoff service: not available
- ❖ Panel mountable
- ❖ Flow pattern: straight, angle, cross and double
- ❖ Handle type: knurled, vernier and slotted
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)					
		H	L	C	D	E	F
Straight Pattern							
MV2-F2-	1/8" Hikelok	2.78 (70.6)	2.02 (51.3)	1.56 (39.6)	—	0.50 (12.7)	0.58 (14.7)
MV2-F4-	1/4" Hikelok		2.20 (55.9)				
MV2-M3-	3 mm Hikelok		2.02 (51.3)				
MV2-M6-	6 mm Hikelok		2.20 (55.9)				
MV2-NPT2-	1/8 Male NPT		1.50 (38.1)				
MV2-NPT4-	1/4 Male NPT		1.96 (49.8)				
MV2-FNPT2-	1/8 Female NPT		1.94 (49.3)				
Angle Pattern							
MV2-F2-	1/8" Hikelok	3.30 (83.8)	1.01 (25.7)	1.07 (27.2)	1.10 (27.9)	0.50 (12.7)	0.58 (14.7)
MV2-F4-	1/4" Hikelok	3.39 (86.1)	1.10 (27.9)				
MV2-M3-	3 mm Hikelok	3.30 (83.8)	1.01 (25.7)				
MV2-M6-	6 mm Hikelok	3.39 (86.1)	1.10 (27.9)				
MV2-NPT2-	1/8 Male NPT	3.04 (77.2)	0.75 (19.1)				
MV2-NPT4-	1/4 Male NPT	3.27 (83.1)	0.98 (24.9)				
MV2-FNPT2-	1/8 Female NPT	3.04 (77.2)	1.01 (25.7)				

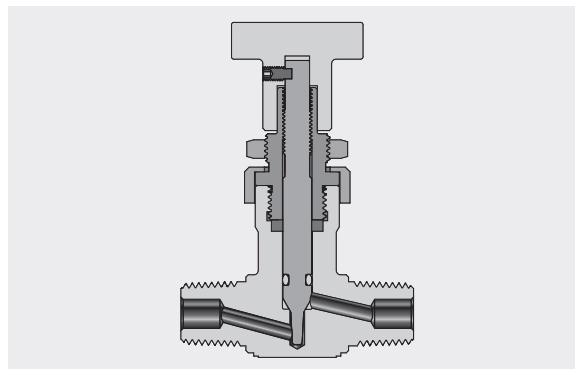
How to Order

MV2 — **NPT4** — **M6** — **EV** — **A1** — **316**

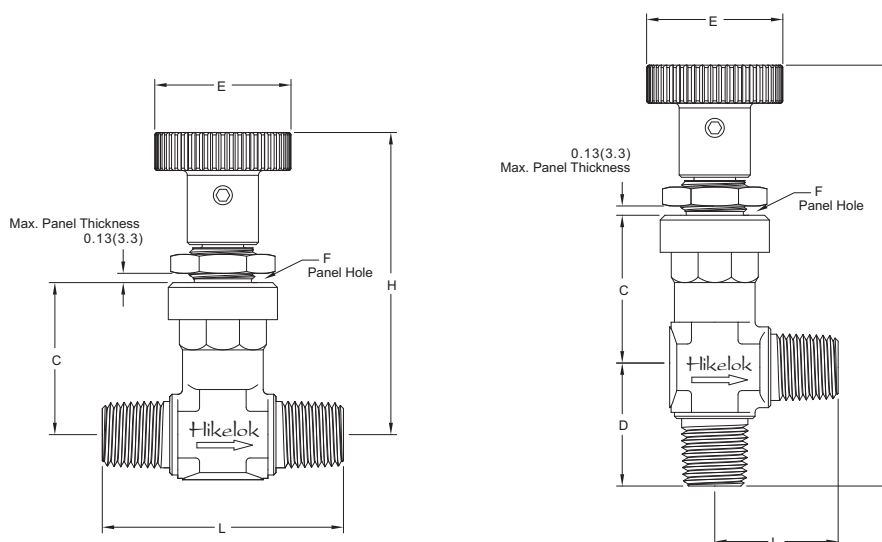
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	O-Ring Material	Handle Type	Flow Pattern	Material
MV2	FNPT Female NPT	1 1/16 in.	Same as inlet type and inlet size		Fluorocarbon FKM B Buna N E Ethylene propylene N Neoprene Z Kalrez	Knurled, round	Straight	316 316 S.S. 316L 316L 304 304 304L 304L BR Brass
	NPT Male NPT	2 1/8 in.						
	FBT Female BSPT	3 3 mm	If outlet and inlet are the same, eliminate the outlet designator			V Vernier	A1 Angle	
	MBT Male BSPT	4 1/4 in.						
	FMS Female ISO 261	6 3/8 in. or 6 mm				D Double		
	MS Male ISO 261	8 1/2 in. or 8 mm						
	FBP Female BSPP	10 10 mm				C Cross		
	MBP Male BSPP							
	F Fractional Tube Fitting							
	M Metric Tube Fitting							
GFS Male GFS Fitting								

Metering Valves-MV3 Series

- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Orifice size: 0.128" (3.25 mm)
- ❖ Stem taper: 5°
- ❖ Shutoff service: yes
- ❖ Panel mountable
- ❖ Straight and angle pattern
- ❖ Knurled handle
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)					
		H	L	C	D	E	F
Straight Pattern							
MV3-F4-	1/4" Hikelok	2.82 (71.6)	2.34 (59.4)	1.26 (32.0)	—	1.13 (28.7)	0.58 (14.7)
MV3-F6-	3/8" Hikelok		2.46 (62.5)				
MV3-M6-	6 mm Hikelok		2.34 (59.4)				
MV3-NPT4-	1/4 Male NPT		2.00 (50.8)				
Angle Pattern							
MV3-F4-	1/4" Hikelok	3.77 (95.8)	1.17 (29.7)	1.04 (26.4)	1.17 (29.7)	1.13 (28.7)	0.58 (14.7)
MV3-M6-	6 mm Hikelok						

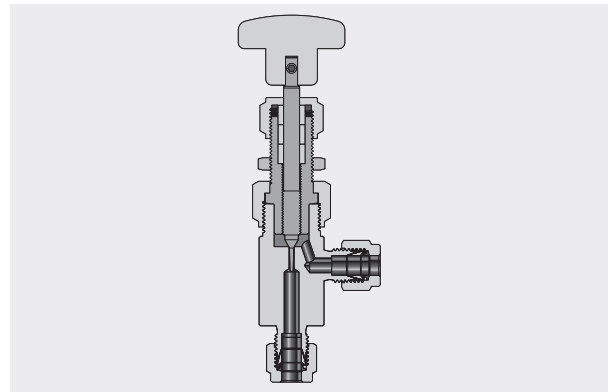
How to Order

MV3— NPT4 — M6 — E — A1 — 316

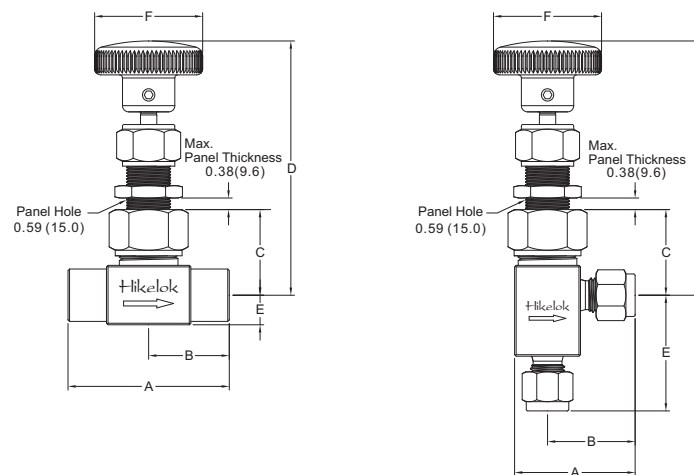
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	O-Ring Material	Flow Pattern	Material
MV3	FNPT Female NPT	1 1/16 in.	Same as inlet type and inlet size		Fluorocarbon FKM	Straight	316 316 S.S.
	NPT Male NPT	2 1/8 in.					
	FBT Female BSPT	3 3 mm					
	MBT Male BSPT	4 1/4 in.	If outlet and inlet are the same, eliminate the outlet designator		B Buna N	A1 Angle	316L 316L
	FMS Female ISO 261	6 3/8 in. or 6 mm					
	MS Male ISO 261	8 1/2 in. or 8 mm					
	FBP Female BSPP	10 10 mm					
	MBP Male BSPP	12 3/4 in. or 12 mm					
	F Fractional Tube Fitting						
	M Metric Tube Fitting						
	GFS Male GFS Fitting						

Metering Valves-MV4 Series

- ❖ Maximum working pressure: 5000 psig (344 bar)
- ❖ Working temperature: -65°F to 850°F (-54°C to 454°C)
- ❖ Orifice size: 0.062" (1.6 mm)
- ❖ Flow coefficient (Cv): 0.04
- ❖ Stem taper: 2°
- ❖ Shutoff service: available
- ❖ Variety of end connections
- ❖ Panel mountable
- ❖ Flow pattern: straight and angle
- ❖ Handle type: round



Dimensions



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)					
		A	B	C	D	E	F
Straight Pattern							
MV4-F4-	1/4" Hikelok	2.40 (61.0)	1.20 (30.5)	1.09 (27.7)	3.60 (91.4)	0.38 (9.6)	1.38 (35.1)
MV4-M6-	6 mm Hikelok						
MV4-FNPT2-	1/8 Female NPT	2.00 (50.8)	1.00 (25.4)				
MV4-FNPT4-	1/4 Female NPT	2.06 (52.3)	1.03 (26.2)				
Angle Pattern							
MV4-F4-	1/4" Hikelok	1.54 (39.1)	1.16 (29.5)	1.09 (27.7)	3.60 (91.4)	1.48 (37.6)	1.38 (35.1)
MV4-M6-	6 mm Hikelok						
MV4-FNPT2-	1/8 Female NPT	1.28 (32.5)	0.91 (23.1)				
MV4-FNPT4-	1/4 Female NPT						

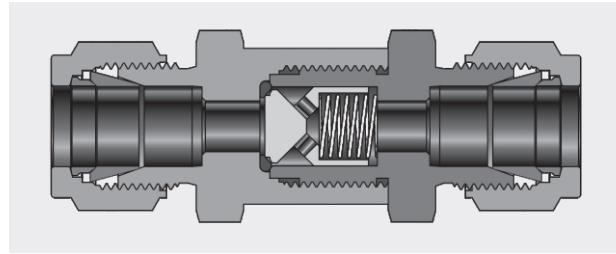
How to Order

MV4 — **NPT4** — **M6** — **G** — **A1** — **316**

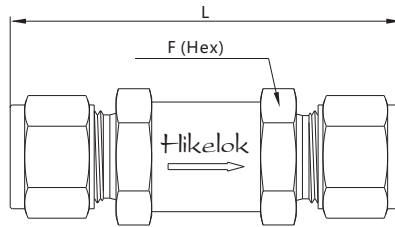
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Packing Material	Flow Pattern	Material
MV4	FNPT Female NPT	1 1/16 in.	Same as inlet type and inlet size		PTEE	Straight	316 316 S.S.
	NPT Male NPT	2 1/8 in.			G Graphite	A1 Angle	316L 316L
	FBT Female BSPT	3 3 mm	If outlet and inlet are the same, eliminate the outlet designator				304 304
	4 1/4 in.	304L 304L					
	MBT Male BSPT	6 3/8 in. or 6 mm					BR Brass
	FMS Female ISO 261	8 1/2 in. or 8 mm					
	MS Male ISO 261	10 10 mm					
	FBP Female BSPP	12 3/4 in. or 12 mm					
	MBP Male BSPP						
	F Fractional Tube Fitting						
	M Metric Tube Fitting						
	GFS Male GFS Fitting						

Check Valves-CV1 Series

- ❖ Maximum working pressure: 3000 psig (206 bar)
- ❖ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ❖ Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ Variety of end connections and materials available



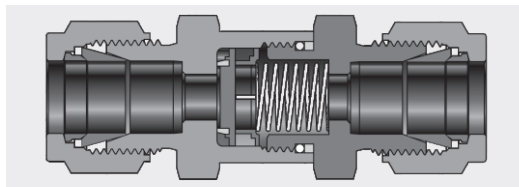
Dimensions



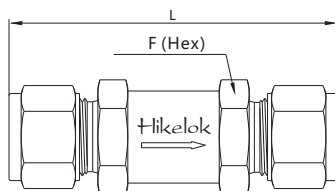
Basic Ordering Number	Connection Type and Size	CV	Dimension, in. (mm)	
			L	F
CV1-F2-	1/8" Hikelok	0.16	2.14 (54.3)	5/8 (15.88)
CV1-F4-	1/4" Hikelok	0.47	2.35 (59.7)	
CV1-F6-	3/8" Hikelok	1.47	3.17 (80.5)	7/8 (22.23)
CV1-F8-	1/2" Hikelok	1.68	3.42 (86.9)	
CV1-F12-	3/4" Hikelok	4.48	4.32 (110)	1 1/4 (31.75)
CV1-F16-	1" Hikelok		4.74 (120)	1 3/8 (34.93)
CV1-M6-	6 mm Hikelok	0.47	2.36 (59.9)	5/8 (15.88)
CV1-M10-	10 mm Hikelok	1.68	3.32 (84.3)	7/8 (22.23)
CV1-M12-	12 mm Hikelok		3.42 (86.9)	
CV1-FNPT2-	1/8 Female NPT	0.16	1.89 (48.0)	5/8 (15.88)
CV1-FNPT4-	1/4 Female NPT	0.47	2.15 (54.6)	3/4 (19.05)
CV1-FNPT6-	3/8 Female NPT	1.47	2.98 (75.7)	7/8 (22.23)
CV1-FNPT8-	1/2 Female NPT	1.68	3.58 (90.9)	1 1/16 (26.99)
CV1-FNPT12-	3/4 Female NPT	4.48	4.08 (104)	1 1/4 (31.75)
CV1-FNPT16-	1 Female NPT		4.84 (123)	1 5/8 (41.28)
CV1-NPT2-	1/8 Male NPT	0.16	1.71 (43.4)	5/8 (15.88)
CV1-NPT4-	1/4 Male NPT	0.47	2.09 (53.1)	
CV1-NPT6-	3/8 Male NPT	1.47	2.78 (70.6)	7/8 (22.23)
CV1-NPT8-	1/2 Male NPT	1.68	3.16 (80.3)	
CV1-NPT12-	3/4 Male NPT	4.48	4.08 (104)	1 1/4 (31.75)
CV1-NPT16-	1 Male NPT		4.52 (115)	1 5/8 (41.28)

Check Valves-CV2 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ With bonded elastomer seal structure design
- ❖ Liquid or gas service
- ❖ Cracking pressure: 1/3 to 50 psig (0.02 to 0.34 bar)
- ❖ Variety of end connections and materials available



Dimensions



Basic Ordering Number	Connection Type and Size	CV	Dimension, in. (mm)	
			L	F
CV2-F2-	1/8" Hikelok	0.67	2.27 (57.7)	11/16 (17.46)
CV2-F4-	1/4" Hikelok		2.43 (61.7)	
CV2-F6-	3/8" Hikelok	1.8	2.75 (69.9)	1 (25.4)
CV2-F8-	1/2" Hikelok		2.96 (75.2)	
CV2-F12-	3/4" Hikelok	4.7	3.52 (89.4)	1 5/8 (41.28)
CV2-F16-	1" Hikelok		3.88 (98.6)	
CV2-M6-	6 mm Hikelok	0.67	2.43 (61.7)	11/16 (17.46)
CV2-M8-	8 mm Hikelok	1.8	2.70 (68.6)	1 (25.4)
CV2-M10-	10 mm Hikelok		2.80 (71.1)	
CV2-M12-	12 mm Hikelok		2.96 (75.2)	
CV2-M22-	22 mm Hikelok	4.7	3.48 (88.4)	1 5/8 (41.28)
CV2-M25-	25 mm Hikelok		3.88 (98.6)	
CV2-FNPT4-	1/4 Female NPT	0.67	2.13 (54.1)	11/16 (17.46)
CV2-FNPT6-	3/8 Female NPT	1.8	2.55 (64.8)	1 (25.4)
CV2-FNPT8-	1/2 Female NPT		3.03 (77.0)	1 1/16 (26.99)
CV2-FNPT12-	3/4 Female NPT	4.7	3.23 (82.0)	1 5/8 (41.28)
CV2-FNPT16-	1 Female NPT		3.83 (97.3)	
CV2-NPT2-	1/8 Male NPT	0.67	1.79 (45.4)	11/16 (17.46)
CV2-NPT4-	1/4 Male NPT		2.17 (55.1)	
CV2-NPT6-	3/8 Male NPT	1.8	2.36 (59.9)	1 (25.4)
CV2-NPT8-	1/2 Male NPT		2.73 (69.3)	
CV2-NPT12-	3/4 Male NPT	4.7	3.29 (83.6)	1 5/8 (41.28)
CV2-NPT16-	1 Male NPT		3.67 (93.2)	
CV2-FBT4-	1/4 Female BSPT	0.67	2.28 (57.9)	11/16 (17.46)
CV2-FBT8-	1/2 Female BSPT	1.8	3.29 (83.6)	1 1/16 (26.99)
CV2-FBT12-	3/4 Female BSPT	4.7	3.55 (90.2)	1 5/8 (41.28)
CV2-FBT16-	1 Female BSPT		3.83 (97.3)	
CV2-MBT4-	1/4 Male BSPT	0.67	2.17 (55.1)	11/16 (17.46)
CV2-MBT8-	1/2 Male BSPT	1.8	2.73 (69.3)	1 (25.4)
CV2-MBT12-	3/4 Male BSPT	4.7	3.35 (85.1)	1 5/8 (41.28)
CV2-MBT16-	1 Male BSPT		3.67 (93.2)	

How to Order

CV1 — F8 — M10 — N — 1 — 316

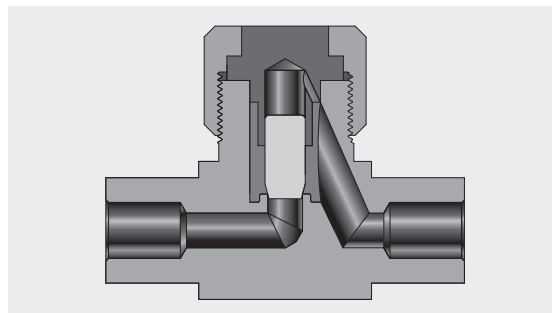
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV1	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm			E Ethylene propylene	3 3 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			N Neoprene	10 10 psig	304L 304L S.S.
	FMS Female ISO 261	10 10 mm			Z Kalrez	25 25 psig	A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm					A20 Alloy 20
	FBP Female BSPP	14 14 mm					A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm					A825 Alloy 825
	F Fractional Tube Fitting	18 18 mm					A276 Alloy C276
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm					DU7 Duplex 2507
	UGF Nut + Gasket+ Fractional Bulge Nipple	22 22 mm					BR Brass
	UGM Nut + Gasket+ Metric Bulge Nipple	25 25 mm					

CV2 — F8 — M10 — N — 1 — 316

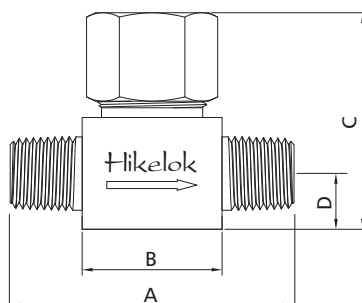
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV2	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm			E Ethylene propylene	3 3 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			N Neoprene	10 10 psig	304L 304L S.S.
	FMS Female ISO 261	10 10 mm				25 25 psig	A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm				50 50 psig	A20 Alloy 20
	FBP Female BSPP	14 14 mm					A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm					A825 Alloy 825
	F Fractional Tube Fitting	18 18 mm					A276 Alloy C276
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm					DU7 Duplex 2507
	UGF Nut + Gasket+ Fractional Bulge Nipple	22 22 mm					BR Brass
	UGM Nut + Gasket+ Metric Bulge Nipple	25 25 mm					
	FGFS Female GFS Fitting						
	GFS Male GFS Fitting						
	RGFS Rotatable Male GFS Fitting						

Check Valves-CV3 Series

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 900°F (-53°C to 482°C)
- ❖ Metal to metal seal structure design
- ❖ Reverse flow coefficient less than 0.1% of forward flow coefficient
- ❖ No springs or elastomers
- ❖ Liquid or gas service
- ❖ Variety of end connections and materials



Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)			
			A	B	C	D
CV3-F4	1/4" Hikelok	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CV3-F6	3/8" Hikelok	0.64	2.83 (71.9)	1.31 (33.3)	1.85 (47.0)	0.50 (12.7)
CV3-F8	1/2" Hikelok	2.20	3.92 (99.6)	2.19 (55.6)	2.44 (62.0)	0.62 (15.7)
CV3-F12	3/4" Hikelok					
CV3-M6	6 mm Hikelok	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CV3-FNPT2	1/8 Female NPT					
CV3-FNPT4	1/4 Female NPT	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FNPT6	3/8 Female NPT	2.20	3.12 (79.2)	1.86 (47.2)	2.44 (62.0)	0.62 (15.7)
CV3-FNPT8	1/2 Female NPT					
CV3-FSW4	1/4" FSW	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CV3-FSW6	3/8" FSW	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FSW8	1/2" FSW	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (47.0)	0.62 (15.7)
CV3-FBW4	1/4" FBW	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CV3-FBW6	3/8" FBW	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FBW8	1/2" FBW	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (62.0)	0.62 (15.7)

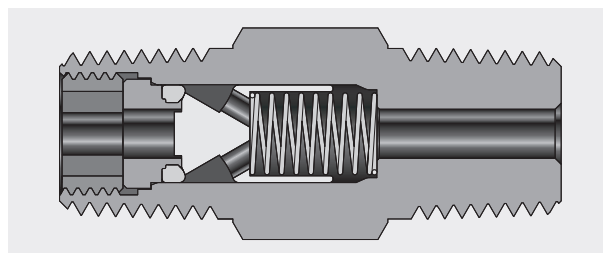
How to Order

CV3 — F8 — M10 — 316

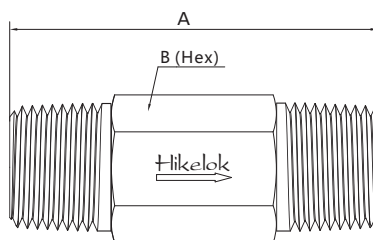
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Material
CV3	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		316 316 S.S.
	NPT Male NPT	4 1/4 in.			316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			304L 304L S.S.
	FMS Female ISO 261	10 10 mm			A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm			A20 Alloy 20
	FBP Female BSPP	14 14 mm			A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm			A825 Alloy 825
	MSW Metric Tube Socket Weld	18 18 mm			A276 Alloy C276
	FBW Fractional Tube Butt Weld	20 1 1/4 in. or 20 mm			DU7 Duplex 2507
	MBW Metric Tube Butt Weld	22 22 mm			CS Steel
	PSW Pipe Socket Weld	25 25 mm			
	PBW Pipe Buttt Weld				
	F Fractional Tube Fitting				
	M Metric Tube Fitting				
	UGF Nut + Gasket+ Fractional Bulge Nipple				
	UGM Nut + Gasket+ Metric Bulge Nipple				

Check Valves-CV4 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Fully contained O-ring seal
- ❖ Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)	
			A	B
CV4-FNPT4-	1/4 Female NPT	0.35	2.41 (61.2)	3/4 (19.05)
CV4-FNPT8-	1/2 Female NPT	1.20	3.71 (94.2)	1 1/16 (26.99)
CV4-NPT4-	1/4 Male NPT	0.35	1.62 (41.1)	9/16 (14.29)
CV4-NPT8-	1/2 Male NPT	1.20	2.28 (57.9)	7/8 (22.23)
CV4-FBT4-	1/4 Female BSPT	0.35	2.54 (64.5)	3/4 (19.05)
CV4-MBT4-	1/4 Male BSPT	0.35	1.62 (41.1)	9/16 (14.29)

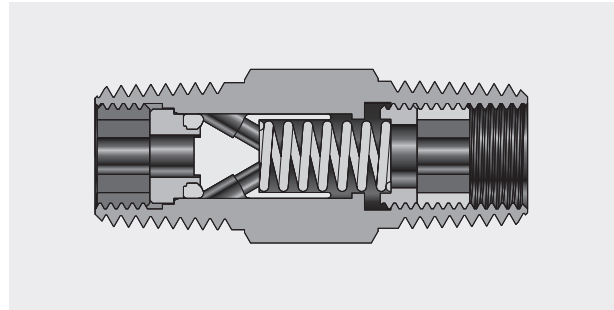
How to Order

CV4— NPT8 — MBT8 — V — 1 — 316

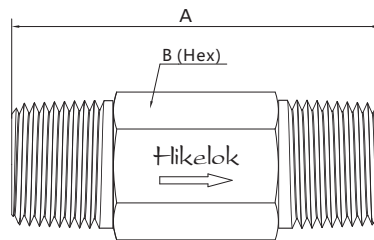
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV4	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator	E Ethylene propylene	3 3 psig	304 304 S.S.	
	MBT Male BSPT	8 1/2 in. or 8 mm		N Neoprene	10 10 psig	304L 304L S.S.	
	FMS Female ISO 261			Z Kalrez	25 25 psig	A400 Alloy 400	
	MS Male ISO 261					A20 Alloy 20	
	FBP Female BSPP					A600 Alloy 600	
	MBP Male BSPP					A825 Alloy 825	
				A276 Alloy C276			
				DU7 Duplex 2507			
				BR Brass			

Check Valves-CV5 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Fully contained O-ring seal
- ❖ Adjustable spring sets cracking pressure
- ❖ Locking screw maintains setting
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)	
			A	B
CV5-FNPT4-	1/4 Female NPT	0.35	2.98 (75.7)	3/4 (19.05)
CV5-NPT4-	1/4 Male NPT	0.35	1.62 (41.1)	9/16 (14.29)
CV5-NPT8-	1/2 Male NPT	1.20	2.56 (65.0)	7/8 (22.23)
CV5-MBT4-	1/4 Male BSPT	0.35	1.62 (41.1)	9/16 (14.29)
CV5-MBT8-	1/2 Male BSPT	1.20	2.56 (65.0)	7/8 (22.23)

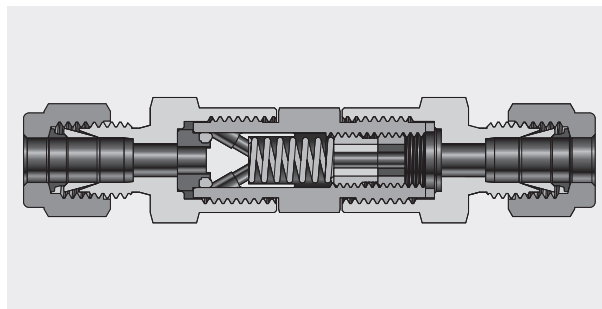
How to Order

CV5 — NPT8 — MBT8 — V — 50 — 316

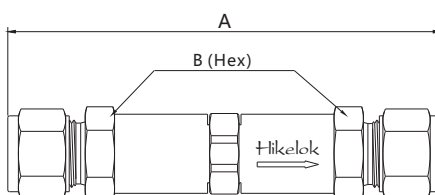
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV5	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	50 3 to 50 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.				150 50 to 150 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		B Buna N E Ethylene propylene N Neoprene Z Kalrez	350 150 to 350 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm				600 350 to 600 psig	304L 304L S.S.
	FMS Female ISO 261					A400 Alloy 400	
	MS Male ISO 261					A20 Alloy 20	
	FBP Female BSPP					A600 Alloy 600	
	MBP Male BSPP					A825 Alloy 825	
			A276 Alloy C276				
			DU7 Duplex 2507				
			BR Brass				

Check Valves-CV6 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Fully contained O-ring seal
- ❖ Adjustable spring sets cracking pressure
- ❖ Locking screw maintains setting
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	CV	Dimension, in. (mm)	
			A	B
CV6-F4-	1/4" Hikelok	0.37	3.23 (82.0)	5/8 (15.88)
CV6-M6-	6 mm Hikelok			
CV6-M8-	8 mm Hikelok		3.32 (84.3)	
CV6-GFS4-	1/4" Male GFS		3.09 (78.5)	

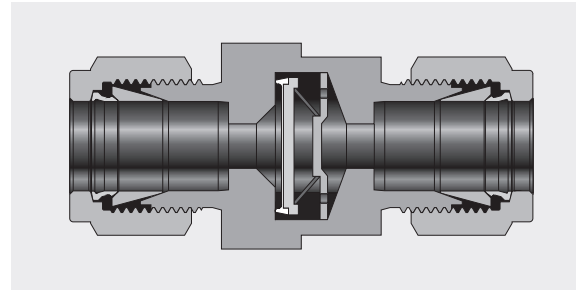
How to Order

CV6 — F4 — M6 — V — 50 — 316

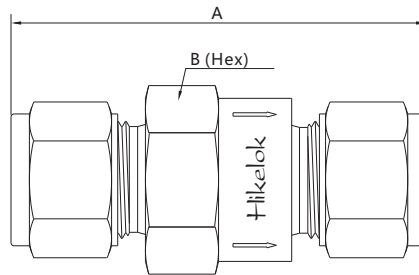
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV6	F Fractional Tube Fitting	2 1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator		V Fluorocarbon FKM	50 3 to 50 psig	316 316 S.S.
		4 1/4 in.			B Buna N	150 50 to 150 psig	316L 316L S.S.
	M Metric Tube Fitting	6 3/8 in. or 6 mm			E Ethylene propylene	350 150 to 350 psig	304 304 S.S.
		8 1/2 in. or 8 mm			N Neoprene	600 350 to 600 psig	304L 304L S.S.
	GFS Male GFS Fitting					Z Kalrez	A400 Alloy 400
						A20 Alloy 20	
						A600 Alloy 600	
						A825 Alloy 825	
						A276 Alloy C276	
						DU7 Duplex 2507	
	BR Brass						

Check Valves-CV7 Series

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ All-Welded body design
- ❖ Standard or high-purity wetted surface finishes for choice
- ❖ Cracking pressure less than 2 psig (0.14 bar)
- ❖ 316L stainless steel body material
- ❖ Tube butt weld, female GFS fitting, integral male GFS fitting, rotatable male GFS fitting, and Hikelok tube fitting end connections are available



Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)	
			A	B
CV7-FBW4	1/4" FBW	0.55	1.24 (31.5)	7/8 (22.23)
CV7-FBW6	3/8" FBW	0.70		
CV7-FBW8	1/2" FBW			
CV7-MBW6	6 mm MBW	0.55	1.80 (45.7)	
CV7-GFS4	1/4" Male GFS	0.70	2.06 (53.8)	1 (25.4)
CV7-GFS8	1/2" Male GFS			
CV7-F4	1/4" Hikelok	0.55	1.96 (49.8)	7/8 (22.23)
CV7-M6	6 mm Hikelok	0.70		

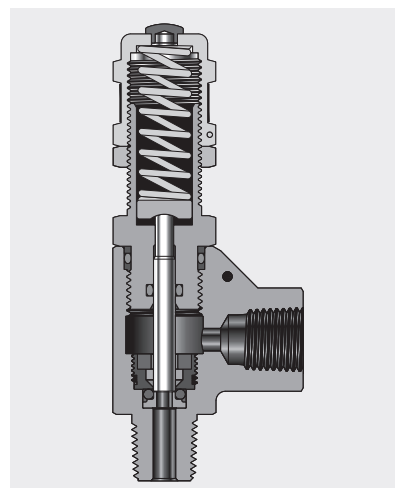
How to Order

CV7— F4 — M6 — V — 316L

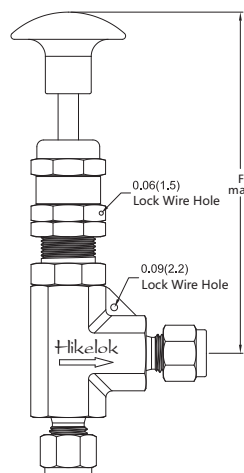
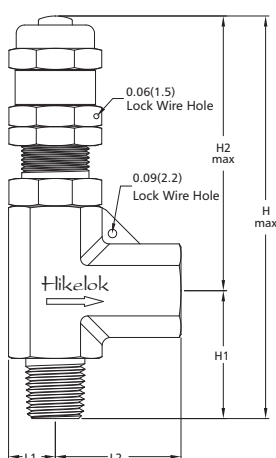
Series	Inlet Type	Inlet Size	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV7	F Fractional Tube Fitting	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	316 316 S.S.
	M Metric Tube Fitting	4 1/4 in.			B Buna N	316L 316L S.S.
	FBW Fractional Tube Butt Weld	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	
	MBW Metric Tube Butt Weld	8 1/2 in. or 8 mm			N Neoprene	
	GFS Male GFS Fitting					
	FGFS Female GFS Fitting					
	RGFS Rotatable Male GFS Fitting					

Proportional Relief Valves-RV1 Series

- ❖ Liquid or gas service
- ❖ Working temperature from -10°F to 300°F (-23°C to 148°C)
- ❖ Set pressure from 50 to 6000 psig (3.4 to 413 bar)
- ❖ Spring adjusts to provide desired set pressure
- ❖ The effect of system back pressure is minimized by the design of these valves
- ❖ 7 color-coded springs available for a wide range of set pressure



Dimensions



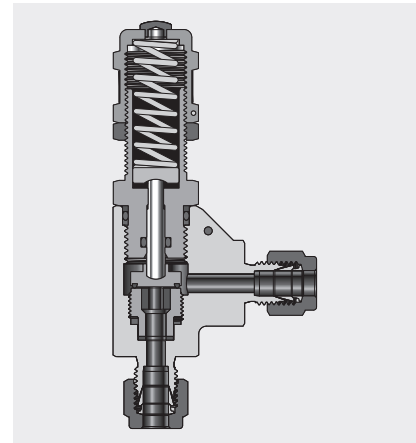
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			L1	L2	H1	H2	H	F
RV1-F4-03-	1/4" Hikelok	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (104)
RV1-F6-03-	3/8" Hikelok		0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (103.9)	5.81 (147.6)	5.37 (136)
RV1-F8-03-	1/2" Hikelok		0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (104)
RV1-M6-03-	6 mm Hikelok		0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150.4)	5.37 (136)
RV1-M8-03-	8 mm Hikelok		0.43 (10.9)	1.38 (34.9)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.09 (104)
RV1-M12-03-	12 mm Hikelok		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-FNPT4-03-	1/4 Female NPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-FNPT8-03-	1/2 Female NPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-NPT4-03-	1/4 Male NPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-NPT8-03-	1/2 Male NPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-FBT4-03-	1/4 Female BSPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-FBT8-03-	1/2 Female BSPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)

How to Order

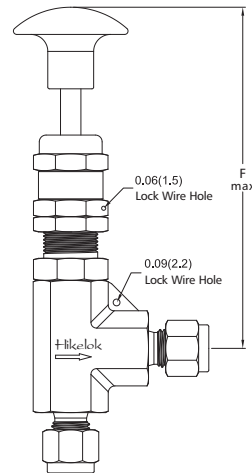
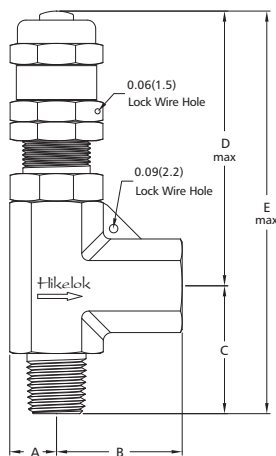
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring Kit Color	Manual Override Handle	Body Material
RV1	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		03 0.14 in. (3.6 mm)	V Fluorocarbon FKM	G Green 50~300 psig	None	316 316 S.S.
	NPT Male NPT	4 1/4 in.				B Buna N	O Orange 300~700 psig	M Manual Override Handle	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6mm	If outlet and inlet are the same, eliminate the outlet designator	E Ethylene propylene		Y Yellow 700~1500 psig		304 304 S.S.	
	MBT Male BSPT	8 1/2 in. or 8mm		N Neoprene		P Purple 1500~2500 psig		304L 304L S.S.	
	FMS Female ISO 261	10 10 mm		Z Kalrez		W White 2500~3500 psig			
	MS Male ISO 261	12 3/4 in. or 12mm				J Blue 3500~4500 psig			
	FBP Female BSPP					R Red 4500~6000 psig			
	MBP Male BSPP								
	F Fractional Tube Fitting								
	M Metric Tube Fitting								

Proportional Relief Valves-RV2 Series

- ❖ Liquid or gas service
- ❖ Working temperature from -10°F to 300°F (-23°C to 148°C)
- ❖ Set pressure from 10 to 225 psig (0.68 to 15.5bar)
- ❖ Spring adjusts to provide desired set pressure



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			A	B	C	D	E	F
RV2-F4-04-	1/4" Hikelok	0.19 (4.8)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.7 (68.8)	4.14 (105)	4.09 (104)
RV2-M6-04-	6 mm Hikelok							
RV2-NPT4-04-	1/4 Male NPT							
RV2-FNPT4-04-	1/4 Female NPT							
RV2-F8-06-	1/2" Hikelok	0.25 (6.4)	0.5 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
RV2-M12-06-	12 mm Hikelok							
RV2-NPT8-06-	1/2 Male NPT							
RV2-FNPT8-06-	1/2 Female NPT							

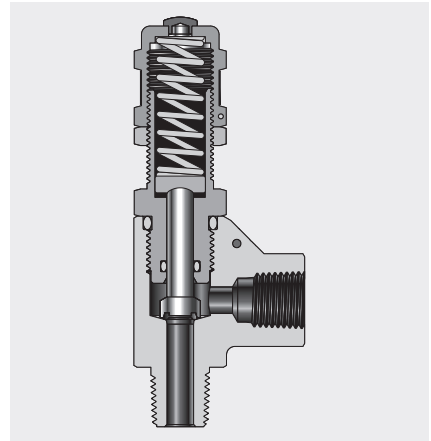
How to Order

RV2— FNPT8 — M8 — 06V — GM — 316

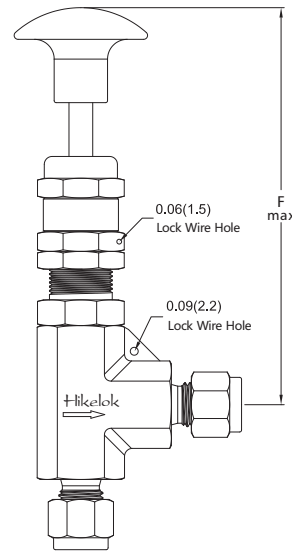
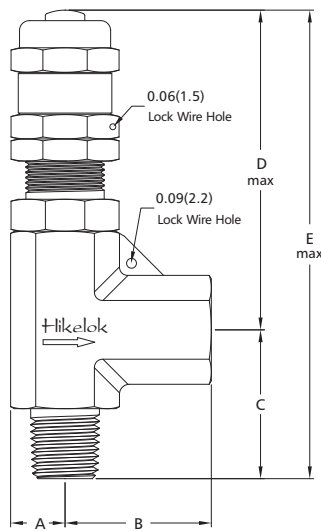
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material
RV2	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		04 0.19 in. (4.8 mm)	V Fluorocarbon FKM	G Green 10~225 psig	None	316 316 S.S.
	NPT Male NPT	4 1/4 in.				B Buna N		M Manual Override Handle	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6mm	If outlet and inlet are the same, eliminate the outlet designator		06 0.25 in. (6.4 mm)	E Ethylene propylene			304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8mm				N Neoprene			304L 304L S.S.
	FMS Female ISO 261	10 10 mm							
	MS Male ISO 261	12 3/4 in. or 12mm							
	FBP Female BSPP								
	MBP Male BSPP								
F Fractional Tube Fitting									
M Metric Tube Fitting									

Proportional Relief Valves-RV3 Series

- ❖ Liquid or gas service
- ❖ Working temperature from -10°F to 300°F (-23°C to 148°C)
- ❖ Set pressure from 50 to 1500 psig (3.4 to 103 bar)
- ❖ Spring adjusts to provide desired set pressure



Dimensions



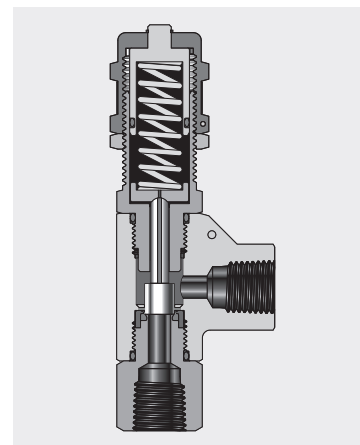
Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			A	B	C	D	E	F
RV3-F8-06-	1/2" Hikelok	0.25 (6.4)	0.5 (12.7)	1.43 (36.3)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
RV3-M12-06-	12 mm Hikelok							
RV3-NPT8-06-	1/2 Male NPT			1.43 (36.3)	1.44 (36.6)	5.52 (140)		
RV3-MBT8-06-	1/2 Male BSPT							
RV3-FNPT8-06-	1/2 Female NPT							
RV3-FBT8-06-	1/2 Female BSPT							

How to Order

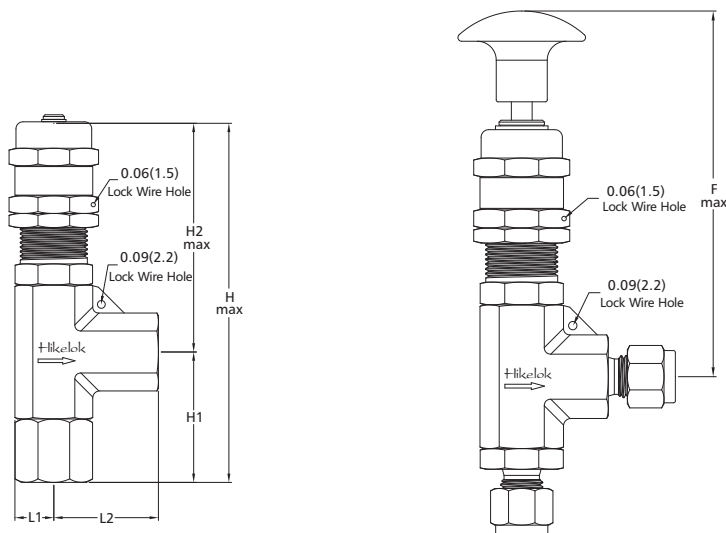
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring Kit Color	Manual Override Handle	Body Material		
RV3	FNPT Female NPT	8 1/2 in. or 8mm	Same as inlet type and inlet size		06 0.25 in. (6.4 mm)	V Fluorocarbon FKM	G Green 50~350 psig	None	316 316 S.S.		
	NPT Male NPT	10 10 mm								If outlet and inlet are the same, eliminate the outlet designator	B Buna N
	FBT Female BSPT	12 3/4 in. or 12mm	E Ethylene propylene	Y Yellow 750~1500 psig					304 304 S.S.		
	MBT Male BSPT										N Neoprene
	FMS Female ISO 261										
	MS Male ISO 261										
	FBP Female BSPP										
	MBP Male BSPP										
	F Fractional Tube Fitting										
	M Metric Tube Fitting										

Proportional Relief Valves-RV4 Series

- ❖ Liquid or gas service
- ❖ Working temperature from -20°F to 400°F (-29°C to 204°C)
- ❖ Set pressure from 5 to 550 psig (0.34 to 37.9 bar)
- ❖ Spring adjusts to provide desired set pressure
- ❖ Zero friction poppets increases accuracy of cracking pressure and reset pressure



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			L1	L2	H1	H2	H	F
RV4-F4-05-	1/4" Hikelok	0.23 (5.8)	0.43 (10.9)	1.60 (40.6)	1.60 (40.6)	2.70 (68.6)	4.30 (109.2)	4.09 (104)
RV4-F6-05-	3/8" Hikelok		0.50 (12.7)	1.72 (43.7)	1.87 (47.7)	4.09 (103.9)	5.96 (151.6)	5.37 (136)
RV4-F8-05-	1/2" Hikelok		0.43 (10.9)	1.60 (40.6)	1.60 (40.6)	2.70 (68.6)	4.30 (109.2)	4.09 (104)
RV4-M6-05-	6 mm Hikelok		0.50 (12.7)	1.83 (46.5)	2.00 (50.5)	4.09 (103.9)	6.07 (154.4)	5.37 (136)
RV4-M8-05-	8 mm Hikelok		0.43 (10.9)	1.38 (34.9)	1.53 (38.9)	2.70 (68.6)	4.23 (107.5)	4.09 (104)
RV4-M12-05-	12 mm Hikelok		0.50 (12.7)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)
RV4-FNPT4-05-	1/4 Female NPT		0.43 (10.9)	1.17 (29.7)	1.34 (34.2)	2.70 (68.6)	4.04 (102.8)	4.09 (104)
RV4-FNPT8-05-	1/2 Female NPT		0.50 (12.7)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)
RV4-NPT4-05-	1/4 Male NPT		0.43 (10.9)	1.17 (29.7)	1.34 (34.2)	2.70 (68.6)	4.04 (102.8)	4.09 (104)
RV4-NPT8-05-	1/2 Male NPT		0.50 (12.7)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)

How to Order

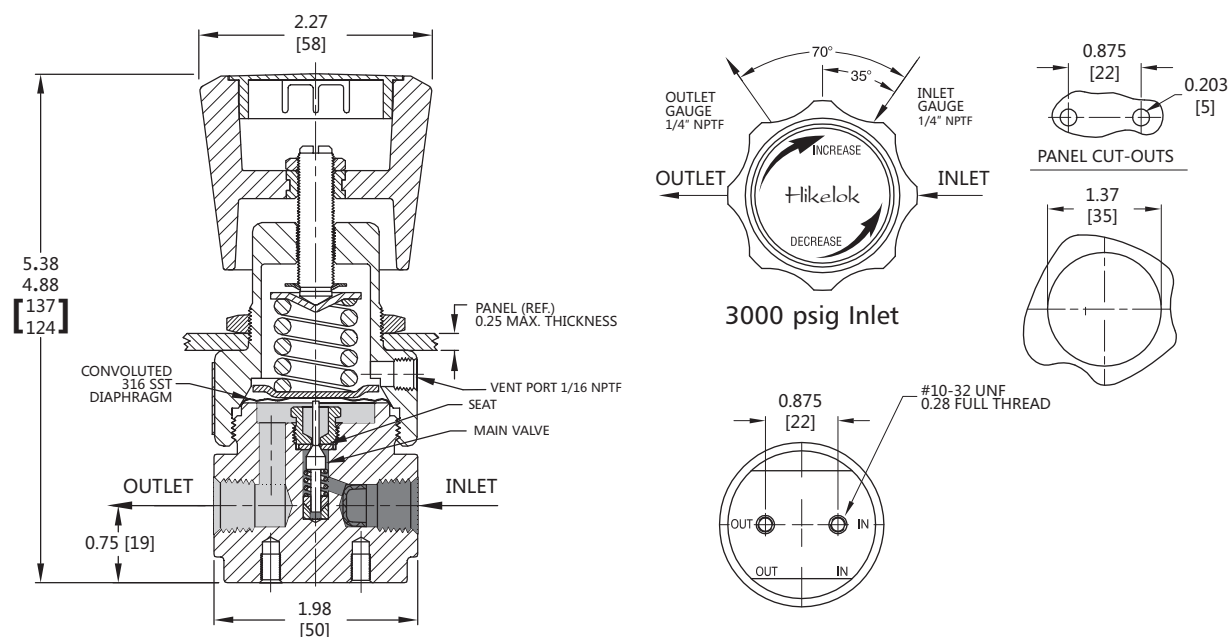
RV4 — **NPT8** — **FNPT8** — **05V** — **GM** — **316**

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material	
RV4	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		05 0.23 in. (5.8 mm)	V Fluorocarbon FKM	G Green 5~300 psig	None	316 316 S.S.	
	NPT Male NPT	4 1/4 in.								316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6mm								304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8mm	If outlet and inlet are the same, eliminate the outlet designator	304L 304L S.S.						
	FMS Female ISO 261	10 10 mm								
	MS Male ISO 261	12 3/4 in. or 12mm								
	FBP Female BSPP									
	MBP Male BSPP									
	F Fractional Tube Fitting									
	M Metric Tube Fitting									

Pressure Reducing Regulators-PR1 Series

- ❖ Maximum Inlet Pressure 3000 psig (206 bar)
- ❖ Outlet Pressure Ranges
 - 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (0-34.5 bar)
- ❖ Design Proof Pressure
 - 150% maximum rated
- ❖ Leakage
 - Internal: bubble-tight
 - External: design to meet $\leq 2 \times 10^{-8}$ atm cc/sec
- ❖ Operating Temperature
 - PCTFE: -40°F to 176°F (-40°C to 80°C)
 - PEEK: -40°F to 392°F (-40°C to 200°C)
 - PI: -40°F to 500°F (-40°C to 260°C)
- ❖ Flow Capacity
 - Cv = 0.06

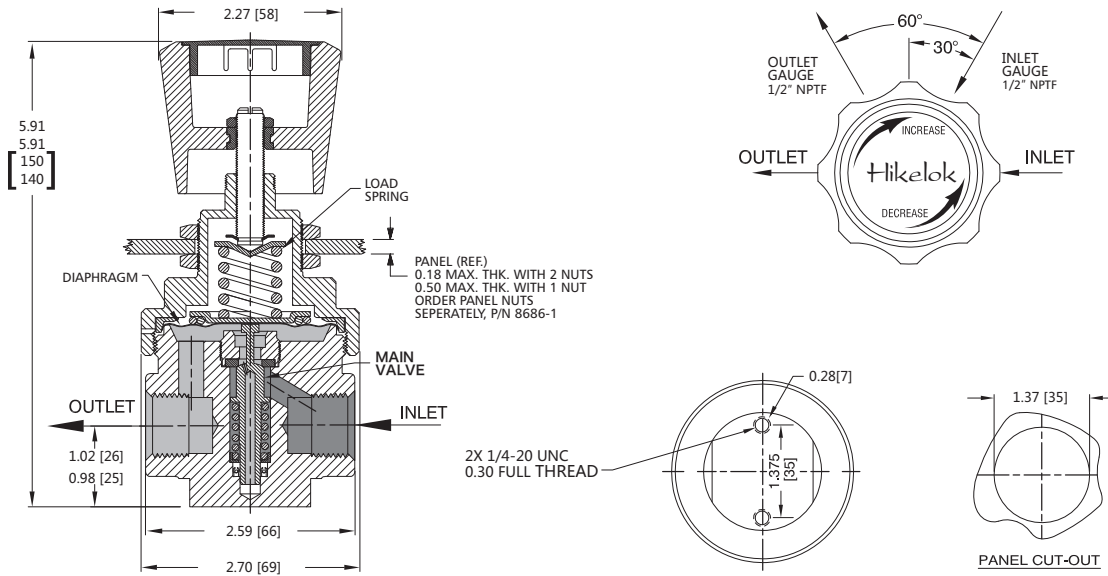
Dimensions In. [millimeter]



Pressure Reducing Regulators-PR2 Series

- ❖ Maximum Inlet Pressure
 - 3000 psig (206 bar)
- ❖ Outlet Pressure Ranges
 - 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.8 bar), 0-125 psig (0-8.6 bar), 0-250 psig (0-17.2 bar)
- ❖ Design Proof Pressure
 - 150% maximum rated
- ❖ Leakage
 - Internal: bubble-tight
 - External: design to meet $\leq 2 \times 10^{-8}$ atm cc/sec
- ❖ Operating Temperature
 - PCTFE seat: -40°F to 140 °F (-40°C to 60°C)
 - PEEK: -40°F to 392°F (-40°C to 200°C)
 - PI seat -40°F to 250 °F (-40°C to 121°C)
- ❖ Flow Capacity
 - Cv = 1.0

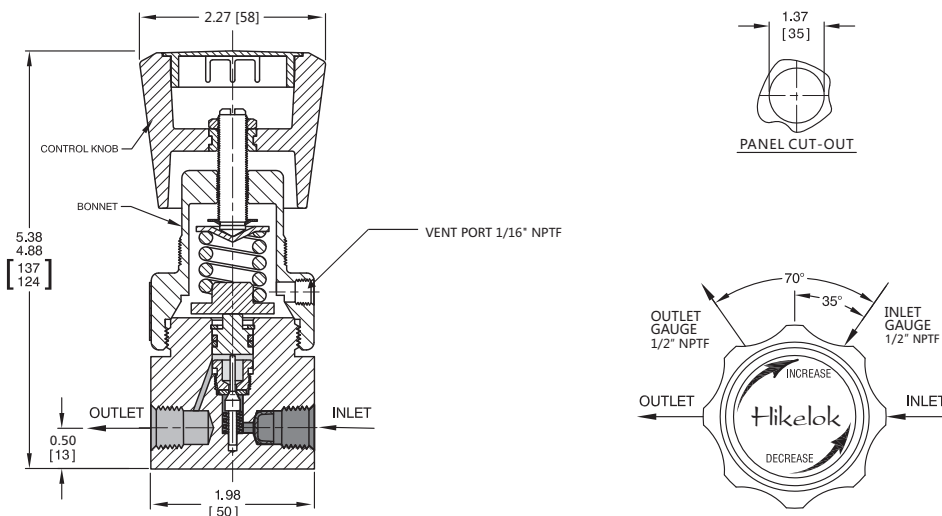
Dimensions In. [millimeter]



Pressure Reducing Regulators-PR3 Series

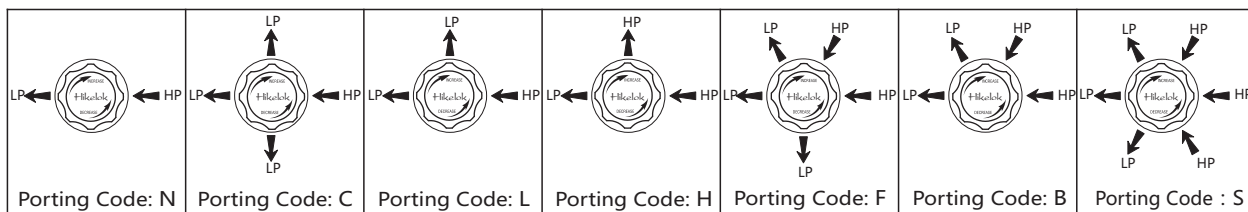
- ❖ Maximum Inlet Pressure
6000 psig (413 bar)
- ❖ Outlet Pressure Ranges
0-250 psig (0-17.2 bar), 0-500 psig (0-34.4 bar), 0-1500 psig (0-103.4 bar), 0-2500 psig (0-172 bar)
- ❖ Design Proof Pressure
150% maximum rated
- ❖ Leakage
Internal: bubble-tight
- ❖ Operating Temperature
PCTFE seat: -40°F to 140 °F (-40°C to 60°C)
PEEK: -40°F to 392°F (-40°C to 200°C)
PI seat: -40°F to 250 °F (-40°C to 121°C)
- ❖ Flow Capacity
Cv =0.06

Dimensions In. [millimeter]



Port Configurations

Notes: HP=High Pressure; LP=Low Pressure



How to Order

PR1 — FNPT4 — IB — 3500G — 316L

Series	Inlet Type Outlet Type	Inlet Size Outlet Size	Seat Material	Porting	Intel Pressure	Out Pressure	Gauges	Body Material
PR1	FNPT Female NPT	2 1/8 in.	PCTFE	N No Gauge Ports	3 3000 psig	500 0-500 psig	No gauges G with gauges	316 316 S.S.
	NPT Male NPT	4 1/4 in.	P PEEK	L One Gauge Ports		250 0-250 psig		316L 316L S.S.
	FBT Female BSPT	6 6 mm	I PI	C One Gauge Ports		100 0-100 psig		A400 Alloy 400
	MBT Male BSPT	8 8 mm		B Two Gauge Ports		50 0-50 psig		A276 Alloy C276
	F Fractional Tube Fitting			F Two Gauge Ports		25 0-25 psig		BR Brass
	M Metric Tube Fitting			S Two Gauge Ports				

PR2 — FNPT8 — IB — 3250G — 316L

Series	Inlet Type Outlet Type	Inlet Size Outlet Size	Seat Material	Porting	Intel Pressure	Out Pressure	Gauges	Body Material
PR2	FNPT Female NPT	6 3/8 in.	PCTFE	N No Gauge Ports	3 3000 psig	250 0-250 psig	No gauges G with gauges	316 316 S.S.
	FBT Female BSPT	8 1/2 in.	P PEEK	L One Gauge Ports		125 0-125 psig		316L 316L S.S.
	F Fractional Tube Fitting	10 10 mm	I PI	C One Gauge Ports		100 0-100 psig		A400 Alloy 400
	M Metric Tube Fitting	12 12 mm		B Two Gauge Ports		50 0-50 psig		A276 Alloy C276
				F Two Gauge Ports		25 0-25 psig		BR Brass
				S Two Gauge Ports				

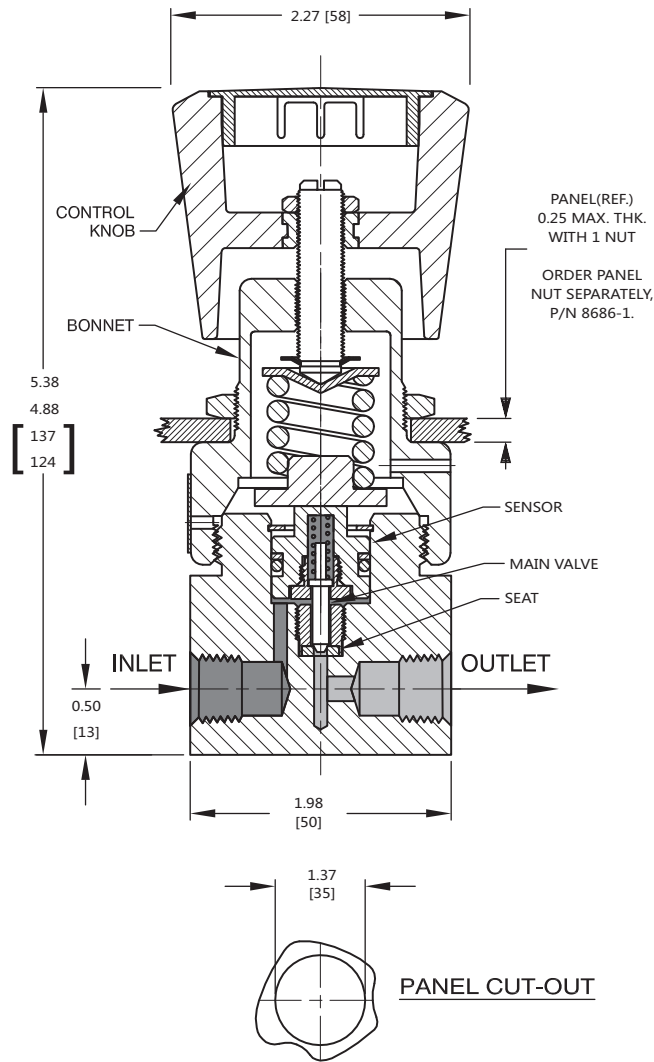
PR3 — FNPT4 — IB — 62500G — 316L

Series	Inlet Type Outlet Type	Inlet Size Outlet Size	Seat Material	Porting	Intel Pressure	Out Pressure	Gauges	Body Material
PR3	FNPT Female NPT	2 1/8 in.	PCTFE	N No Gauge Ports	6 6000 psig	2500 0-2500 psig	No gauges G with gauges	316 316 S.S.
	FBT Female BSPT	4 1/4 in.	P PEEK	L One Gauge Ports		1500 0-1500 psig		316L 316L S.S.
	F Fractional Tube Fitting	6 6 mm	I PI	C One Gauge Ports		500 0-500 psig		A400 Alloy 400
	M Metric Tube Fitting	8 8 mm		B Two Gauge Ports		250 0-250 psig		A276 Alloy C276
				F Two Gauge Ports				BR Brass
				S Two Gauge Ports				

Back-Pressure Regulators-BR1 Series

- ❖ Maximum Inlet Pressure
800 psig (55.1 bar)
- ❖ Controlled Pressure Ranges
40-150 psig (2.75-10.3 bar), 40-300 psig (2.75-20.6 bar), 100-700psig (6.89-48.2 bar), 100-800 psig (6.89-55.1 bar)
- ❖ Design Proof Pressure
150% maximum rated
- ❖ Leakage
Bubble-tight
- ❖ Operating Temperature
PCTFE: -15°F to 140°F (-26°C to 60°C)
PEEK: -40°F to 392°F (-40°C to 200°C)
PI: -40°F to 250°F (-40°C to 121°C)
- ❖ Flow Capacity
Cv=0.10

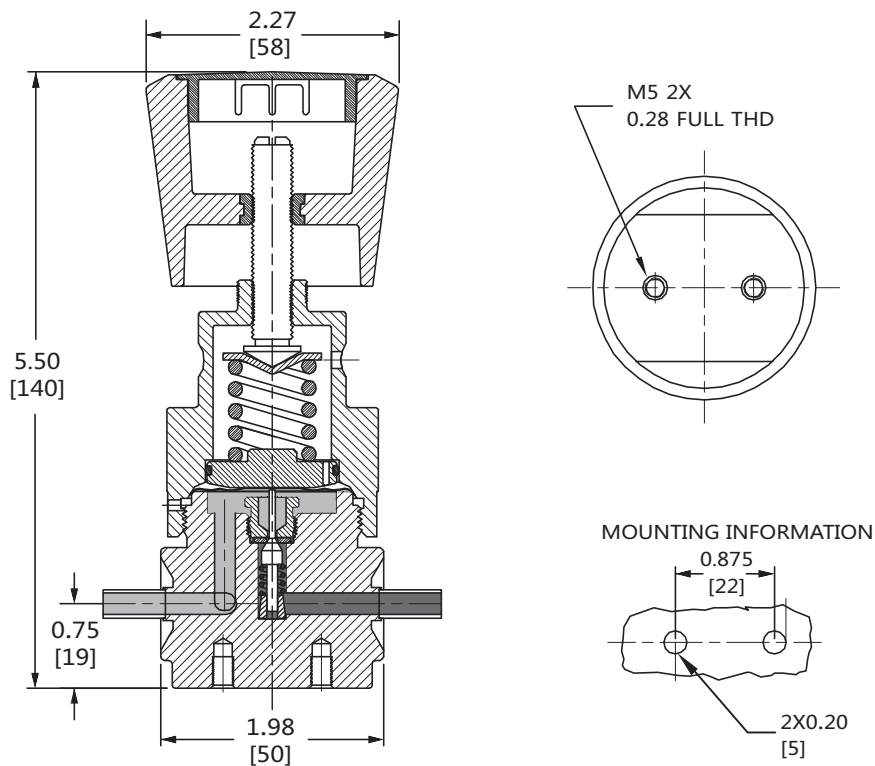
Dimensions In. [millimeter]



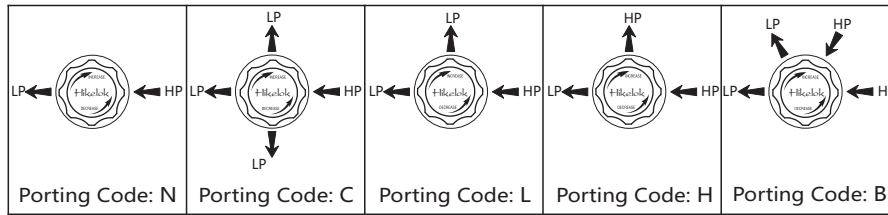
High Purity Pressure Reducing Regulators-PPR1 Series

- ❖ Maximum Inlet Pressure
3000 psig (206 bar)
- ❖ Outlet Pressure Ranges
0-30 psig (0-2.1 bar), 0-60 psig (0-4.1 bar), 0-100 psig (0-6.9bar), 0-150 psig (0-10.3 bar), 0-250 psig (0-17.2 bar)
- ❖ Design Proof Pressure
150% maximum rated
- ❖ Leakage
Internal: Bubble-tight
External: Design to meet $\leq 2 \times 10^{-9}$ atm cc/sec He
- ❖ Internal Surface Finish 10 μ in. (0.25 μ m) Ra
- ❖ Operating Temperature
PTFE Seat: -40°F to 140°F (-40°C to 60°C)
PI Seat: -40°F to 350°F (-40°C to 177°C)
- ❖ Flow Capacity
Cv = 0.06

Dimensions In. [millimeter]



Port Configurations Notes: HP=High Pressure; LP=Low Pressure



How to Order

BR1— FNPT4 — IH — 8700G — 316L

Series	Inlet Type Outlet Type	Inlet Size Outlet Size	Seat Material	Porting	Intel Pressure	Out Pressure	Gauges	Body Material
BR1	FNPT Female NPT	2 1/8 in.	PCTFE	N No Gauge Ports	8 800 psig	800 100-800 psig	No Gauges	316 316 S.S.
	FBT Female BSPT	4 1/4 in.	P PEEK	H One Gauge Ports		700 100-700 psig	G With Gauges	316L 316L S.S.
	F Fractional Tube Fitting	6 6 mm	I PI			300 40-300 psig		A400 Alloy 400
	M Metric Tube Fitting	8 8 mm				150 40-150 psig		A276 Alloy C276 BR Brass

PPR1— FGFS4 — IB — 3250G — 316L

Series	Inlet Type Outlet Type	Inlet Size Outlet Size	Seat Material	Porting	Intel Pressure	Out Pressure	Gauges	Body Material
PPR1	GFS Male GFS Fitting	2 1/8 in.	PCTFE	N No Gauge Ports	3 3000 psig	250 0-250 psig	W No Gauges	316L 316L S.S.
	FGFS Female GFS Fitting	4 1/4 in.	I PI	L One Gauge Ports		150 0-150 psig	G With Gauges	316LV 316L VAR S.S.
	F Fractional Tube Fitting	6 6 mm		C One Gauge Ports		100 0-100 psig		
	M Metric Tube Fitting	8 8 mm		B Two Gauge Ports		60 0-60 psig		
	FBW Fractional Tube Butt Weld					30 0-30 psig		
	MBW Metric Tube Butt Weld							

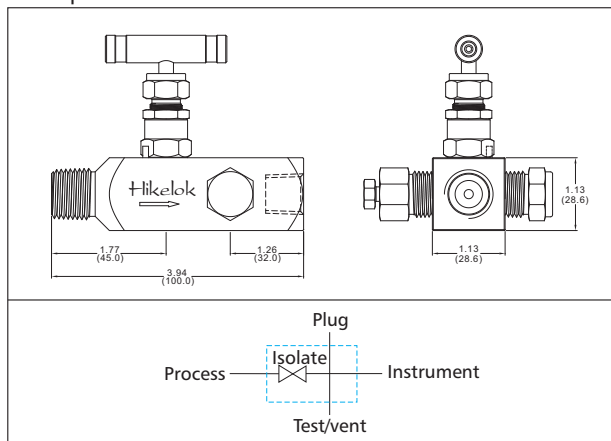
Gauge Valves-GV1, GV2 Series

- ❖ Maximum working pressures:
 - GV1 up to 6000 psig (413 bar)
 - GV2 up to 10000 psig (689 bar)
- ❖ Working temperature:
 - PTFE packing: from -65°F to 450°F (-54°C to 232°C)
 - Graphite packing: from -65°F to 1200°F (-54°C to 649°C)
- ❖ Orifice size: 0.16" (4.0 mm)
- ❖ Non-rotating lower stem, ball tip design
- ❖ Safety back seating seals in fully open position
- ❖ Rolled spindle operating threads
- ❖ Lubricant for stem thread isolated from the media
- ❖ Low torque operating T bar handle
- ❖ Handle of different colors available for option

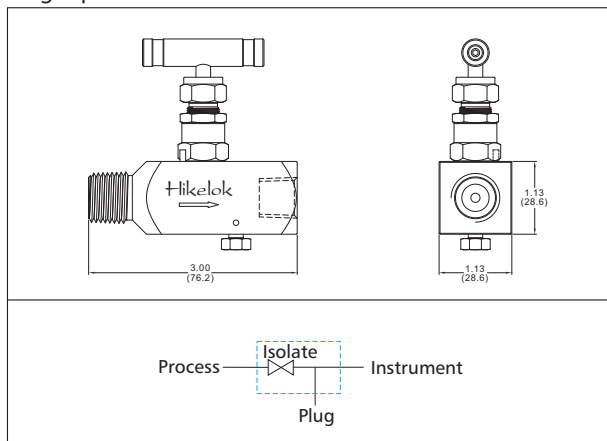
Dimensions

GV1 Series

Multi-port

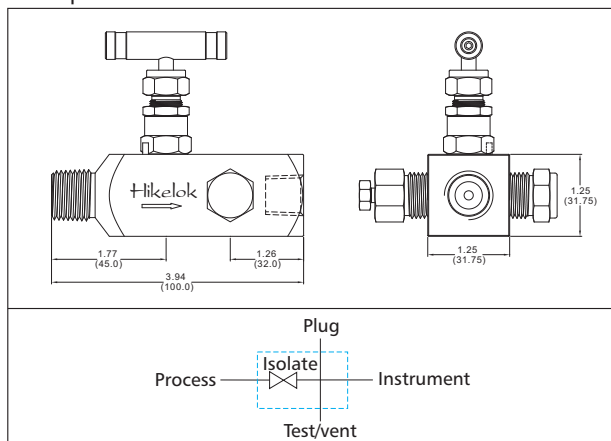


Single-port

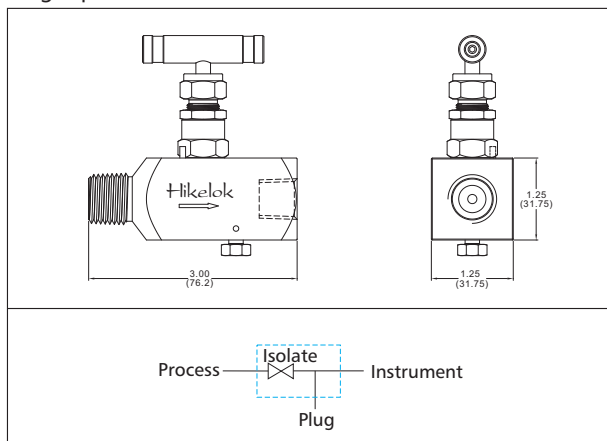


GV2 Series

Multi-port



Single-port



- ❖ Bleed valve and plug must be ordered separately

How to Order

GV2 — NPT8 — FNPT8 — SR1 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Type	Handle	Body Material
GV1	FNPT Female NPT	8 1/2 in.	Same as inlet type and inlet size		S Single-port	Black Aluminum	316 316 S.S.
GV2	NPT Male NPT	12 3/4 in.			M Multi-port	R1 Red Aluminum	316L 316L S.S.
	FBT Female BSPT	20 M20 x 1.5	If outlet and inlet are the same, eliminate the outlet designator			S1 304 Stainless Steel	304 304 S.S.
	MBT Male BSPT						304L 304L S.S.
	FMS Female Metric Thread (for BP)						A400 Alloy 400
	MS Male Metric Thread (for BG)						A20 Alloy 20
	FBP Female BSPP (for BP)						A600 Alloy 600
	MBP Male BSPP (for BP)						A825 Alloy 825
							A276 Alloy C276
					DU7 Duplex 2507		

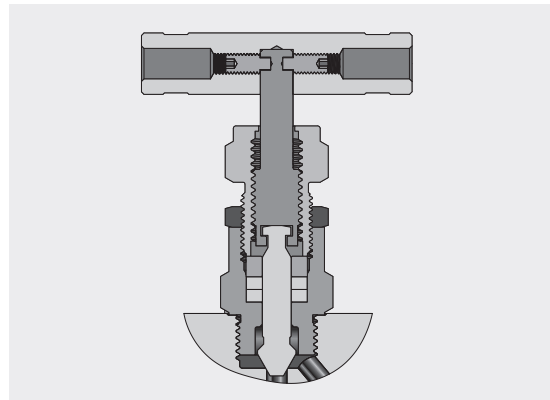
- ❖ To order plug, add "-P" suffixes to ordering number, for example: GV1-NPT8-FNPT8-M-316-P.
- ❖ To order bleed valve, add "-V" suffixes to ordering number, for example: GV1-NPT8-FNPT8-M-316-V.
- ❖ To order plug and bleed valve, add "-VP" suffixes to ordering number, for example: GV1-NPT8-FNPT8-M-316-VP.

2M — NPT8 — FNPT8 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Material
2M	FNPT Female NPT	4 1/4 in.	Same as inlet type and inlet size		316 316 S.S.
	NPT Male NPT	6 3/8 in. or 6 mm			316L 316L S.S.
	FBT Female BSPT	8 1/2 in. or 8 mm	If outlet and inlet are the same, eliminate the outlet designator		304 304 S.S.
	MBT Male BSPT	10 10 mm			304L 304L S.S.
	FMS Female Metric Thread (for BP)	12 3/4 in. or 12 mm			A276 Alloy C276
	MS Male Metric Thread (for BG)	14 M14x1.5 or 14 mm			A400 Alloy 400
	FBP Female BSPP (for BP)	20 M20x1.5 or 20 mm			
	MBP Male BSPP (for BP)				
	F Fractional Tube Fitting				
	M Metric Tube Fitting				

Instrumentation Manifolds

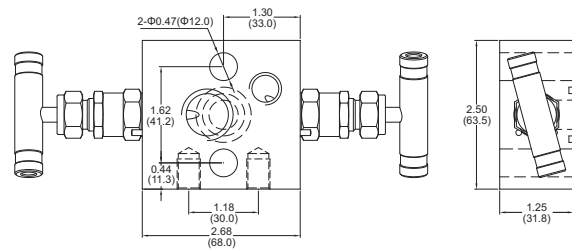
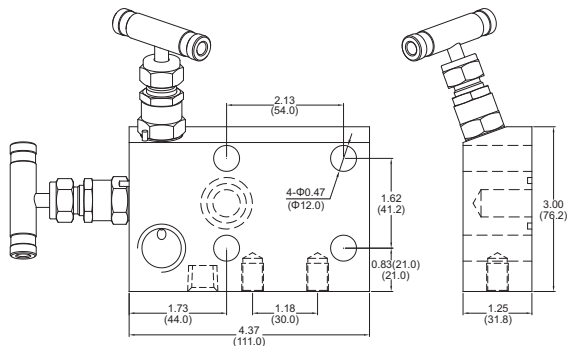
- ❖ working pressures:
 - Stainless steel up to 6000 psig (413 bar)
 - Alloy C-276 up to 6000 psig (413 bar)
 - Alloy 400 up to 5000 psig (344 bar)
- ❖ Working temperatures:
 - PTFE packing from -65°F to 450°F (-54°C to 232°C)
 - Graphite packing from -65°F to 1200°F (-54°C to 649°C)
- ❖ Orifice: 0.157 in. (4.0 mm), CV: 0.35
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Safety back seating seals in fully open position



2-valve Manifolds

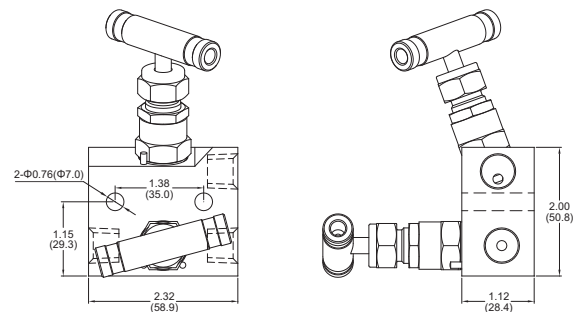
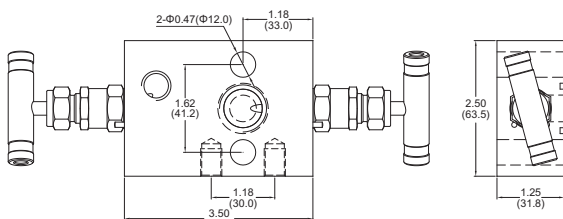
Ordering Number	2M-201-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	Flanged	
Test / Vent	1/4 Female NPT	

Ordering Number	2M-202-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	Flanged	
Test / Vent	1/4 Female NPT	

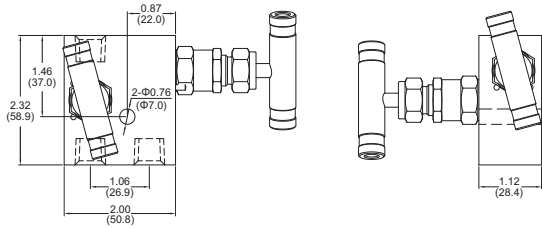


Ordering Number	2M-203-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	Flanged	
Test / Vent	1/4 Female NPT	

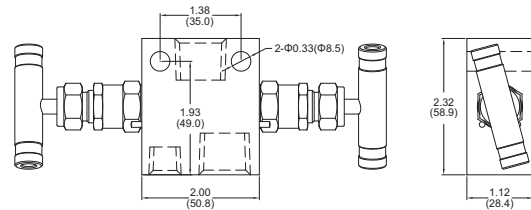
Ordering Number	2M-204-316	Instrument
Inlet / Process	1/4 Female NPT	
Outlet / Instrument	1/4 Female NPT	
Test / Vent	1/4 Female NPT	



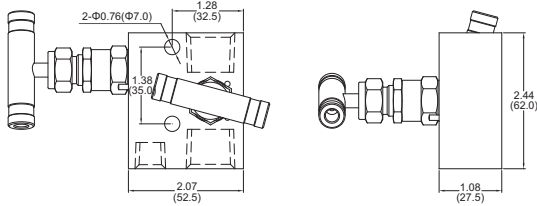
Ordering Number	2M-205-316	Instrument
Inlet / Process	1/4 Female NPT	
Outlet / Instrument	1/4 Female NPT	
Test / Vent	1/4 Female NPT	



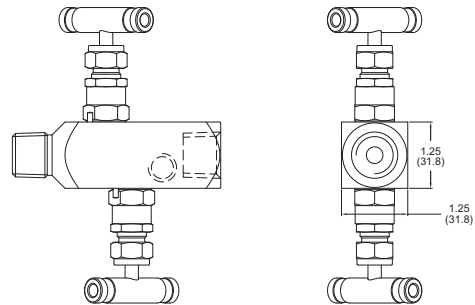
Ordering Number	2M-206-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	1/2 Female NPT	
Test / Vent	1/4 Female NPT	



Ordering Number	2M-207-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	1/2 Female NPT	
Test / Vent	1/4 Female NPT	

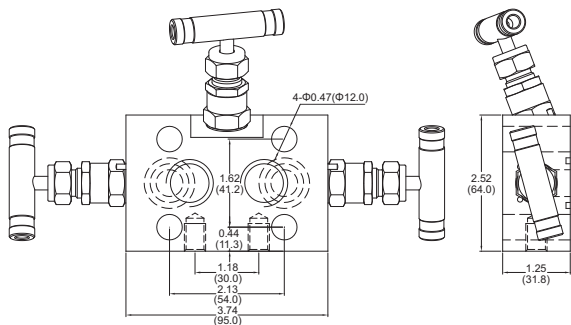


Ordering Number	2M-XX-XX-316	Instrument
❖ How to order this 2M series, see page 139.		

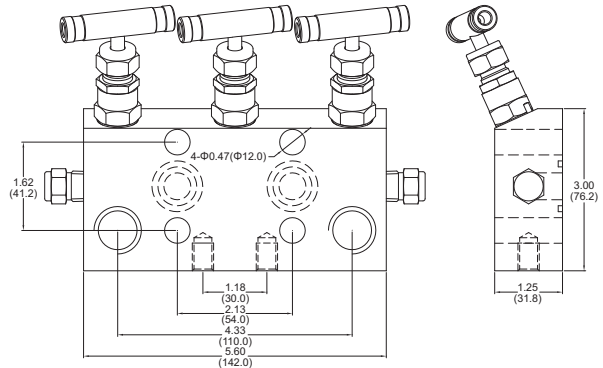


3-valve Manifolds

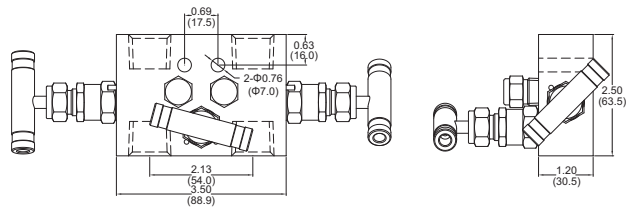
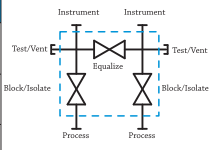
Ordering Number	3M-301-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	Flange	



Ordering Number	3M-302-316	Instrument
Inlet / Process	1/2 Female NPT	
Outlet / Instrument	Flange	
Test / Vent	Optional	

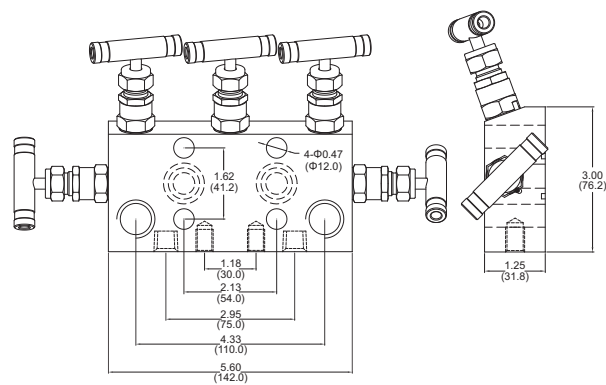
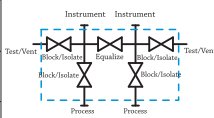


Ordering Number	3M-303-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	1/2 Female NPT
Test / Vent	1/4 Female NPT

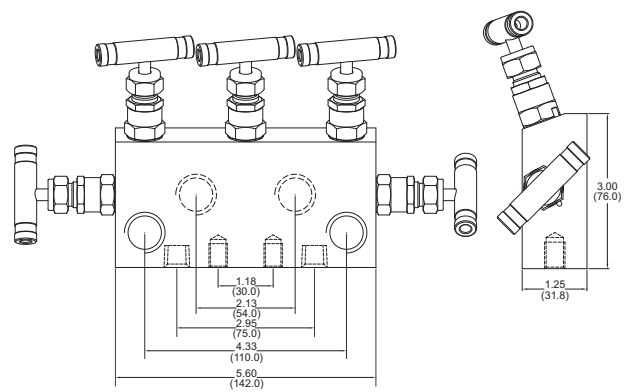
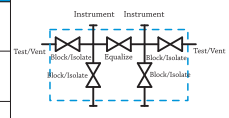


5-valve Manifolds

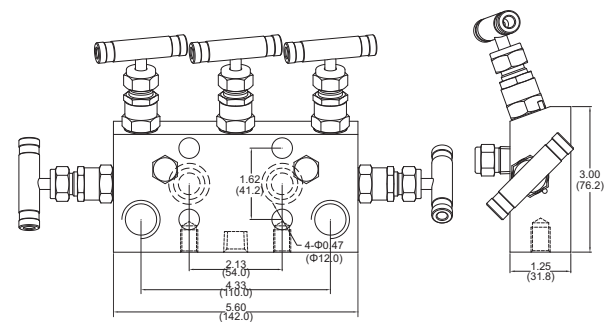
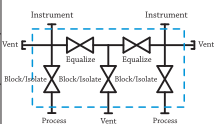
Ordering Number	5M-501-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	Flange
Test / Vent	1/4 Female NPT



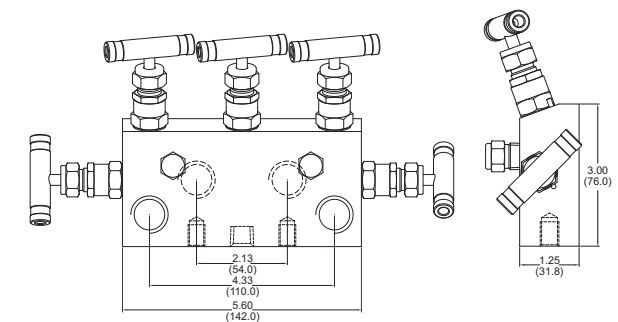
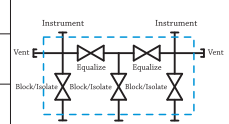
Ordering Number	5M-502-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	1/2 Female NPT
Test / Vent	1/4 Female NPT



Ordering Number	5M-503-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	Flanged
Vent	1/4 Female NPT
Test	Optional



Ordering Number	5M-504-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	1/2 Female NPT
Vent	1/4 Female NPT
Test	Optional

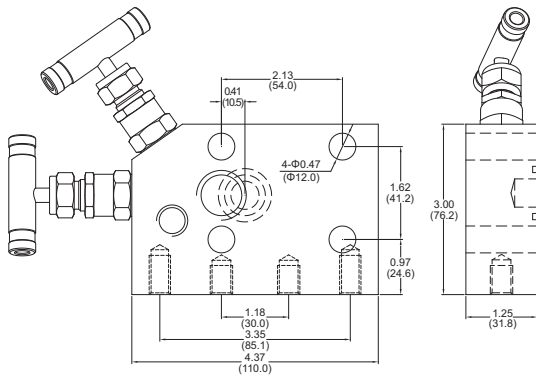
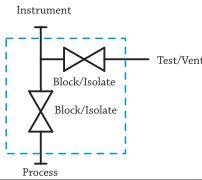


Integral Manifolds

❖ This section is presently characterized by manifold designed specifically for Rosemount® coplanar™ pressure transmitters including the model 3051C, model 3051P, model 2024 and the model 3095.

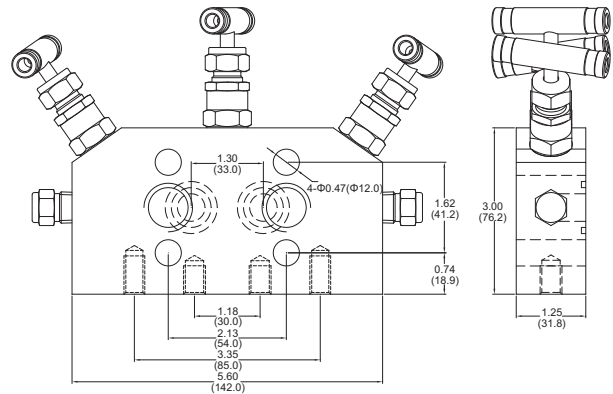
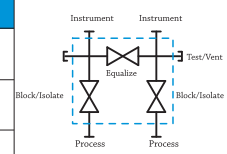
2-valve Manifolds

Ordering Number	2M-201R-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	Flanged
Test / Vent	1/4 Female NPT



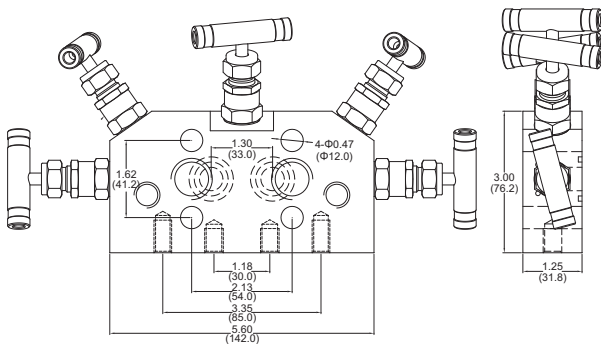
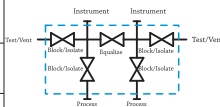
3-valve Manifolds

Ordering Number	3M-301R-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	Flanged
Test / Vent	Optional



5-valve Manifolds

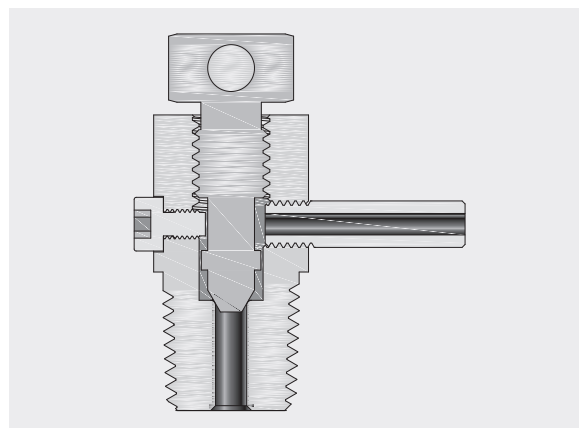
Ordering Number	5M-501R-316
Inlet / Process	1/2 Female NPT
Outlet / Instrument	Flanged
Test / Vent	1/4 Female NPT



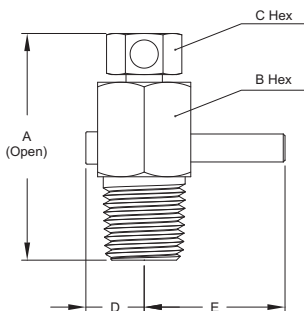
- ❖ All direct mount manifolds are provided with 4 of 7/16 UNF x 2" high tensile zinc plated carbon steel bolts and 2 of PTFE seal rings.
- ❖ Bleed valve and plug must be ordered separately. To order bleed valve, see page 144. To order plug, add "-P" suffixes to ordering number, for example: 2M-201-316-P.
- ❖ To order Graphite packing, add "-G" suffixes to ordering number, for example: 3M-301-316-G.

Bleed Valves-BP1 Series

- ❖ Maximum working pressure up to 10 000 psig (689 bar)
- ❖ Working temperature from -65°F to 850°F (-53°C to 454°C)
- ❖ Compact design for easy installation
- ❖ Back stop screw prevents accidental stem disassembly
- ❖ Vent tube directs excess liquid or gas from system lines
- ❖ 316 stainless steel and alloy R-405 material
- ❖ Variety of end connections



Dimensions



Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)				
		A	B	C	D	E
BP1-NPT2-	1/8 Male NPT	1.56 (39.6)	5/8 (15.9)	7/16 (11.1)	0.41 (10.4)	0.94 (23.9)
BP1-NPT4-	1/4 Male NPT					
BP1-NPT6-	3/8 Male NPT	1.69 (42.9)	7/8 (22.2)		0.44 (11.2)	1.03 (26.2)
BP1-NPT8-	1/2 Male NPT					
BP1-MBT4-	1/4 Male BSPT	1.56 (39.6)	5/8 (15.9)		0.41 (10.4)	0.94 (23.9)
BP1-MBT6-	3/8 Male BSPT					
BP1-MBT8-	1/2 Male BSPT	1.69 (42.9)	7/8 (22.2)		0.44 (11.2)	1.03 (23.6)
BP1-MS14-	M14 x 1.5 Male ISO	1.56 (39.6)				
BP1-MS20-	M20 x 1.5 Male ISO	1.69 (42.9)				

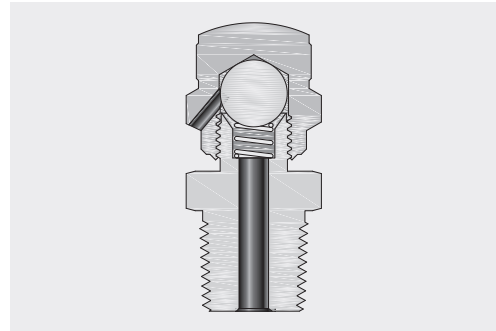
How to Order

BP1 — NPT8 — 316

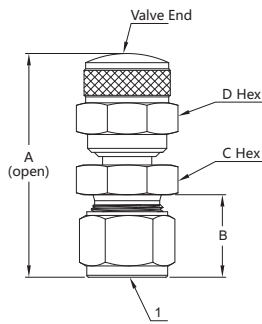
Series	Inlet Type	Inlet Size	Body Material
BP1	NPT Male NPT	2 1/8 in.	316 316 S.S.
	MBT Male BSPT	4 1/4 in.	316L 316L S.S.
	MS Male ISO 261	6 3/8 in.	304 304 S.S.
	MBP Male BSPP	8 1/2 in.	304L 304L S.S.
		14 M14x1.5	A405 Alloy R-405
		20 M20x1.5	

Purge Valves-BP2 Series

- ❖ Maximum working pressure: 4000 psig (275 bar)
- ❖ Working temperature: -65°F to 600°F (-53°C to 315°C)
- ❖ Compact design for easy installation
- ❖ Bonnet crimped to valve body to prevent accidental disassembly
- ❖ 316 stainless steel and brass material
- ❖ Variety of end connections



Dimensions



Type I

Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)				
		A	B	C	D	
BP2-I	-F2-	1/8" Hikelok	1.84 (46.7)	0.59 (15.0)	5/8 (15.9)	1/2 (12.7)
	-F4-	1/4" Hikelok	1.94 (49.3)	0.69 (17.5)	5/8 (15.9)	1/2 (12.7)
	-F6-	3/8" Hikelok	2.03 (51.6)	0.75 (19.1)	3/4 (19.1)	5/8 (15.9)
	-F8-	1/2" Hikelok	2.19 (55.6)	0.88 (22.4)	7/8 (22.2)	3/4 (19.1)
	-M6-	6 mm Hikelok	1.94 (49.3)	0.69 (17.5)	5/8 (15.9)	1/2 (12.7)
	-M8-	8 mm Hikelok	2.00 (50.8)	0.72 (18.3)	5/8 (15.9)	1/2 (12.7)
	-M10-	10 mm Hikelok	1.05 (26.7)	0.75 (19.1)	3/4 (19.1)	5/8 (15.9)
	-M12-	12 mm Hikelok	1.05 (26.7)	0.88 (22.4)	7/8 (22.2)	3/4 (19.1)
	-NPT2-	1/8 Male NPT	1.62 (41.1)	0.38 (9.7)	5/8 (15.9)	1/2 (12.7)
	-NPT4-	1/4 Male NPT	1.81 (46.0)	0.56 (14.2)	5/8 (15.9)	5/8 (15.9)
	-NPT6-	3/8 Male NPT	1.84 (46.7)	0.56 (14.2)	3/4 (19.1)	3/4 (19.1)
	-NPT8-	1/2 Male NPT	2.09 (53.1)	0.75 (19.1)	7/8 (22.2)	7/8 (22.2)

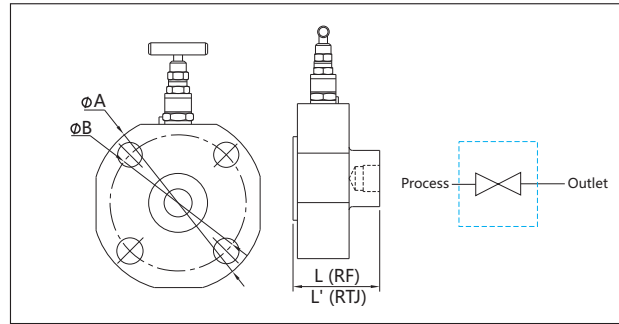
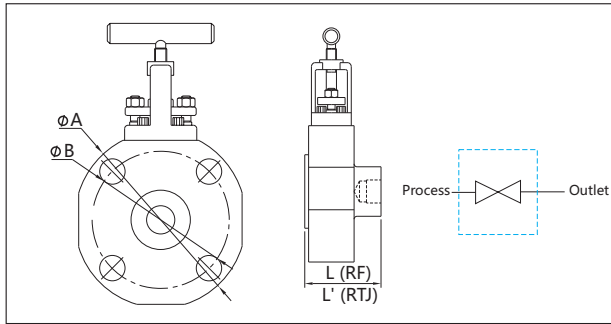
How to Order

BP2 — BT — M10 — FNPT4 — 316

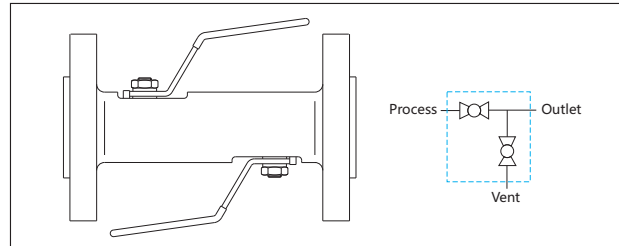
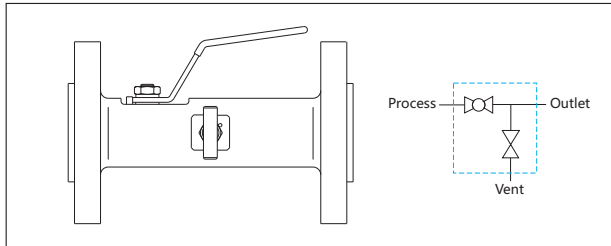
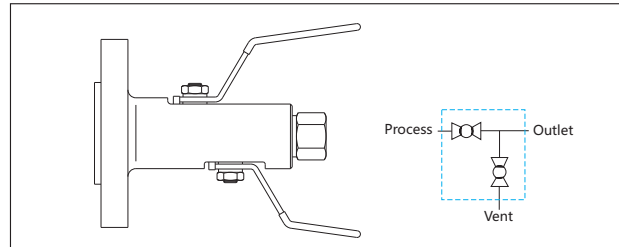
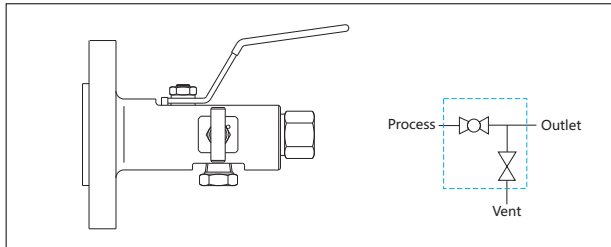
Series	Type	Port 1 Type	Port 1 Size	Port 2/3 /4 Type /4 Size		Body Material
				Port 2/3 /4 Type	Port 2/3 /4 Size	
BP2	I Inline	FNPT Female NPT	2 1/8 in.	Same as port 1 type and port 1 size If port 2/3/4 and port 1 are the same, eliminate the port 2/3/4 designator		316 316 S.S.
	BT Branch Tee	NPT Male NPT	3 3 mm			316L 316L S.S.
	RT Run Tee	FBT Female BSPT	4 1/4 in.			304 304 S.S.
	C Cross	MBT Male BSPT	5 5/16 in.			304L 304L S.S.
		FMS Female ISO 261	6 3/8 in. or 6 mm			BR Brass
		MS Male ISO 261	8 1/2 in. or 8 mm			
		FBP Female BSPP	10 10 mm			
		MBP Male BSPP	12 12 mm			
		F Fractional Tube Fitting				
		M Metric Tube Fitting				

Block and Bleed Valves

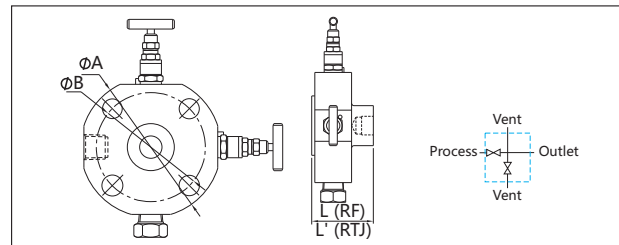
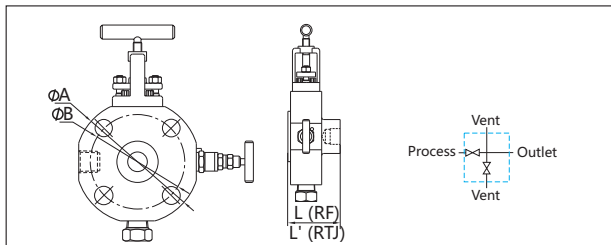
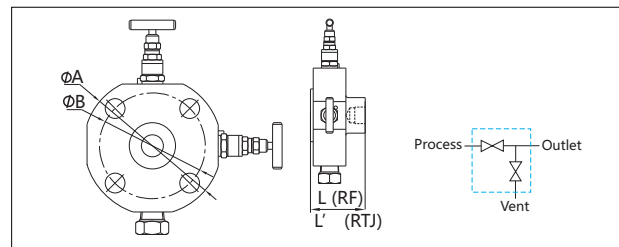
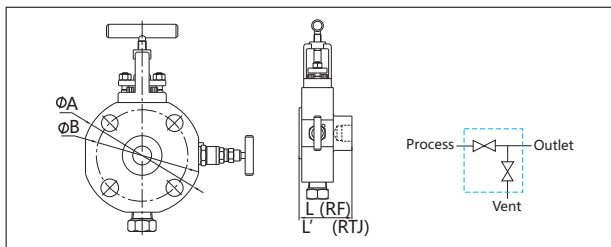
MB1 Series: Single Block Valve



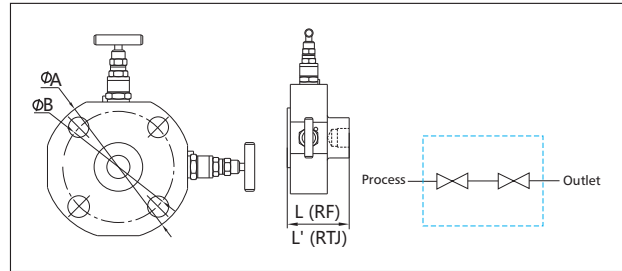
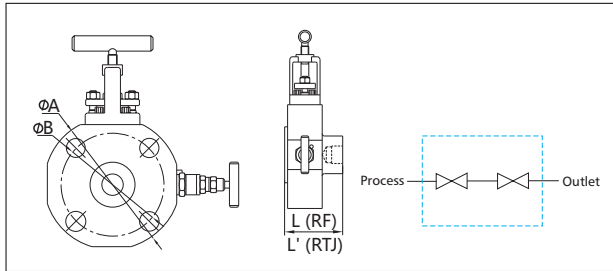
BB1 Series: Flange Block and Bleed Valves



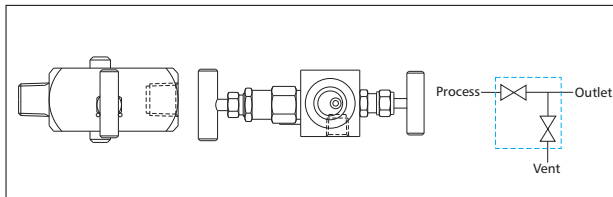
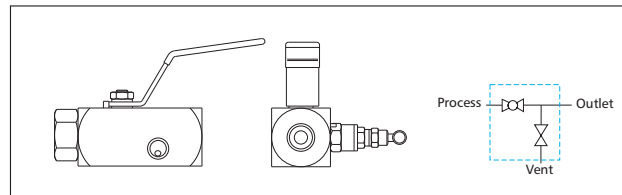
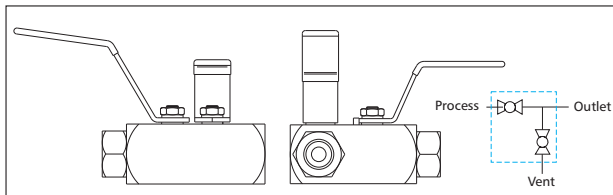
BB2 Series: Monoflange Single Block and Bleed Valves



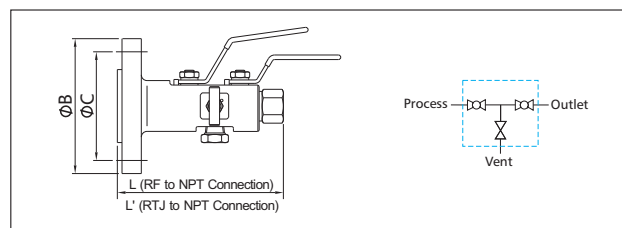
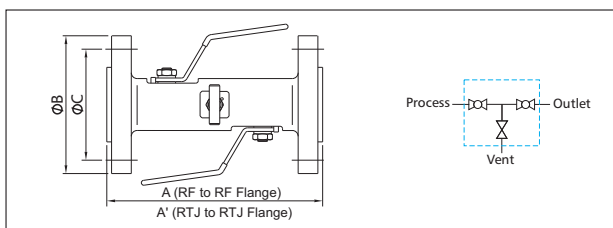
BB3 Series: Double Block Valves



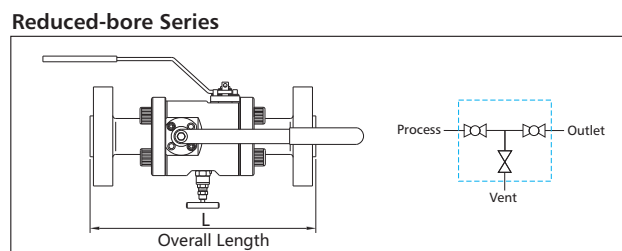
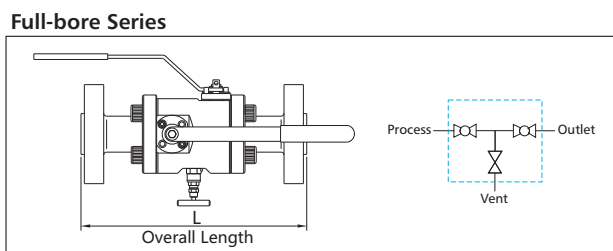
BB4 Series: Single Block and Bleed Valves



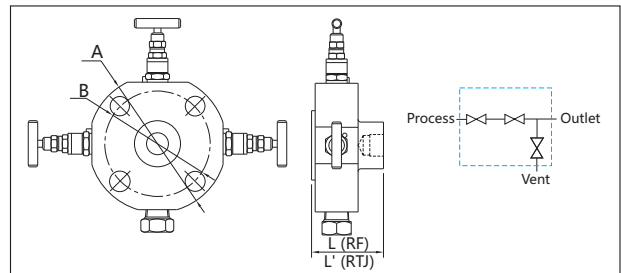
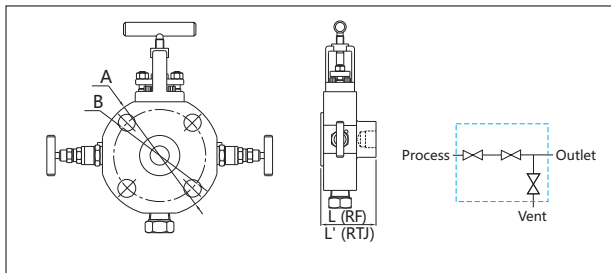
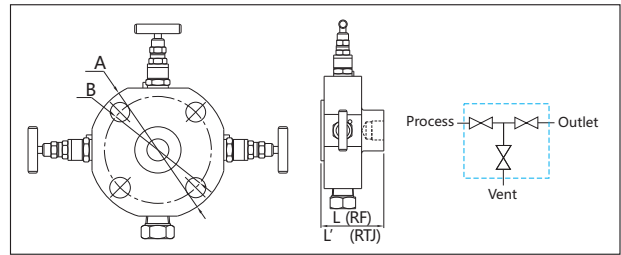
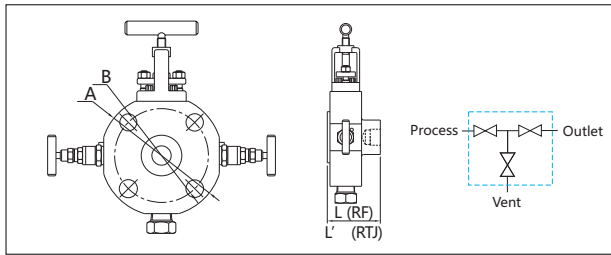
DBB1 Series: Flange Double Block and Bleed Valves



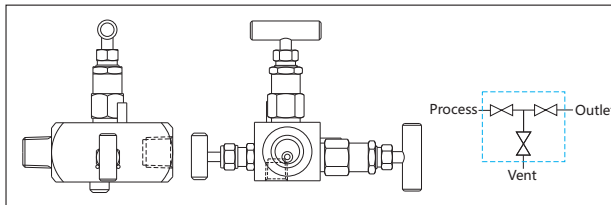
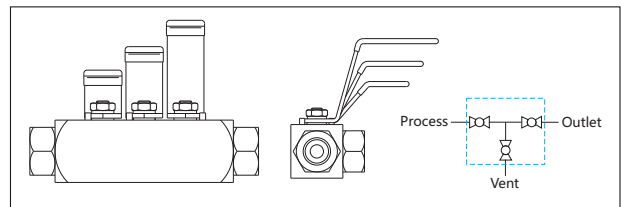
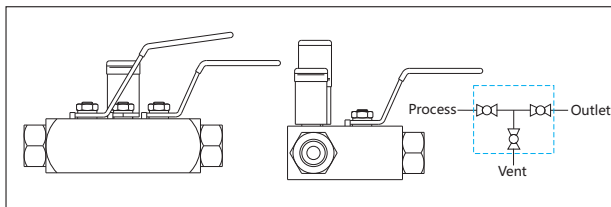
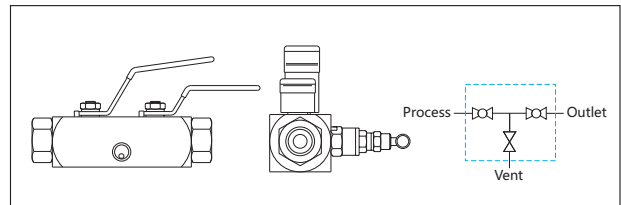
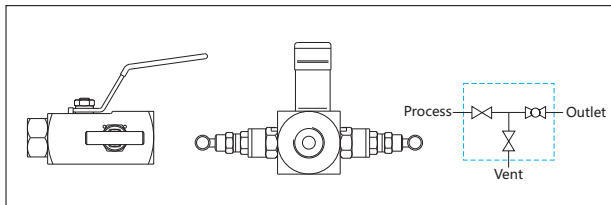
DBB2 Series: Large-bore Bolted Double Block and Bleed Valves



DBB3 Series: Monoflange Double Block & Bleed Valves



DBB4 Series: Double Block and Bleed Valves



❖ Bleed valve and plug must be ordered separately

How to Order

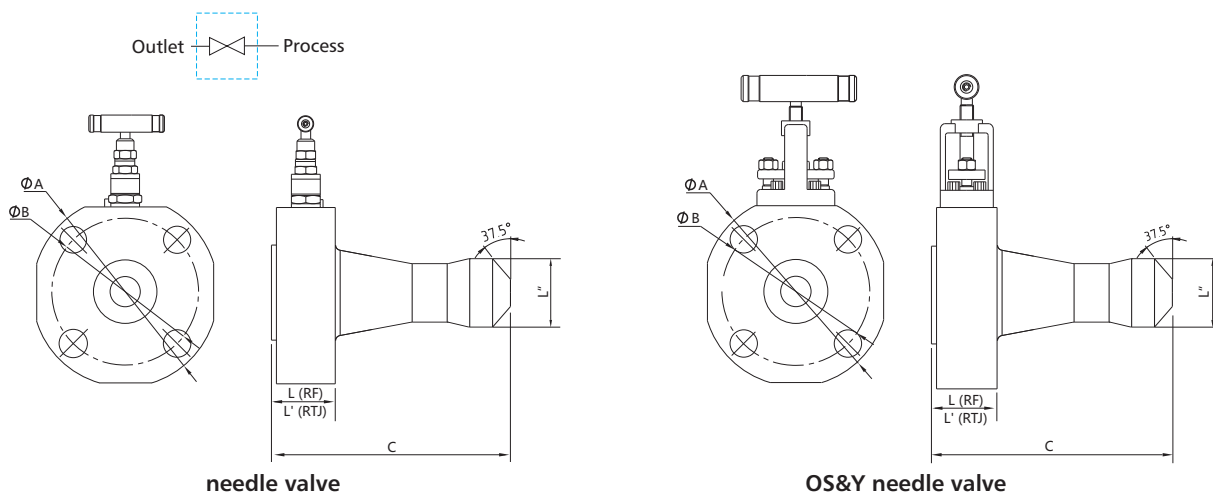
DBB1 — **BBN** — **G10** — **RF8300** — **FNPT8** — **8** — **316L**

Serialize	Configuration	Packing Material	Bore of ball valve	Port 1 Type	Inlet Size	ASME Class	Port 2 Type	Port 2 Size	Vent Type and Size	Body Material
MB1	Primary	PTFE	3/8 in. (9.5 mm)	FNPT Female NPT	2 1/8 in.	300 Class 300	Same as Port 1		4 1/4 Female NPT	316 316 S.S.
BB1	Secondary	G Graphite	10 (9.5 mm)	NPT Male NPT	3 3 mm	600 Class 600			8 1/2 Female NPT	316L 316L S.S.
BB2	Needle		15 (1.4 mm)	FBT Female BSPT	4 1/4 in.	900 Class 900			4P 1/4 Female NPT with Plug	304 304 S.S.
BB3	Ball		20 (20 mm)	MBT Male BSPT	5 5/16 in.	1500 Class 1500			8P 1/2 Female NPT with Plug	304L 304L S.S.
BB4	Ball		25 (25 mm)	FMS Female ISO 216 (for BG)	6 3/8 in. or 6 mm	2500 Class 2500			24 2-1/4 NPT Female NPT	A400 Alloy 400
DBB1	OS&Y		1 in. (25 mm)	MS Male ISO 216 (for BG)	8 1/2 in. or 8 mm				28 2-1/2 NPT Female NPT	A20 Alloy 20
DBB2	Ball			F Fractional Tube Fitting	10 10 mm				24P 2-1/4 NPT Female NPT with Plug	A600 Alloy 600
DBB3	Needle			M Metric Tube Fitting	12 3/4 in. or 12 mm				28P 2-1/2 NPT Female NPT with Plug	A825 Alloy 825
DBB4	Ball			RF RF Flange	14 14 mm				A276 Alloy C276	Du7 Duplex 2507
	Needle			RTJ RTJ Flange	16 1 in. or 16 mm				CS Steel	
	Needle				18 18 mm				For DBB3 Vent Port	
	Needle				20 20 mm				8 1/2 Female NPT (between Process and Outlet)	
	Needle				24 1 1/2 in.				D8 1/2 Female NPT (after Process and Outlet)	
	Needle				32 2 in.				8P 1/2 Female NPT with Plug (between Process and Outlet)	
	Needle				48 3 in.				D8P 1/2 Female NPT with Plug (after Two Isolation Valves)	
	Needle				64 4 in.					

Root Valves-RTV1 Series

- ❖ Maximum working pressure up to 10000 psig (689 bar)
- ❖ Working temperature up to 1200°F(649°C) with Graphite packing
- ❖ Every valve is hydraulic pressure tested in accordance with EN 12266-1 and API 598. Every set is tested with nitrogen for leak-tight performance at 6000 psig
- ❖ Fire-tested design in accordance with BS 6755 part 2/API 607
- ❖ Flanged connections comply with ASME B16.5 RF and RTJ
- ❖ Pressure ratings in accordance with ASME B16.34

Dimensions



Flange Size	Orifice Size in. (mm)	ASME Class	C in. (mm)	L in. (mm)	L' in. (mm)	ØA in. (mm)	ØB in. (mm)	L''
1/2 (DN15)	0.157 (4.0) More Orifice Sizes Available	150	6.50 (165.0)	2.03 (51.6)	—	3.50 (88.9)	2.38 (60.5)	1.57 (40.0)
		300			2.03 (51.6)	3.75 (95.2)	2.62 (66.5)	
		600				4.75 (120.7)	3.25 (82.5)	
		900/1500				5.25 (133.4)	3.50 (88.9)	
		2500				—	3.88 (98.6)	
150		2.03 (51.6)		4.62 (117.3)		3.25 (82.6)		
300				5.13 (130.3)	3.50 (88.9)			
600				5.50 (139.7)	3.75 (95.2)			
900/1500				—	4.25 (108.0)	3.12 (79.2)		
2500				2.11 (53.5)	2.11 (53.5)	5.50 (139.7)	3.75 (95.2)	
1 (DN 25)	2.03 (51.6)	150	2.03 (51.6)	2.03 (51.6)	4.25 (108.0)	3.12 (79.2)		
		300			4.88 (124.0)	3.50 (88.9)		
		600			5.88 (149.4)	4.00 (101.6)		
		900/1500			—	4.25 (108.0)	4.00 (101.6)	
		2500			2.11 (53.5)	2.11 (53.5)	6.25 (158.8)	4.25 (108.0)

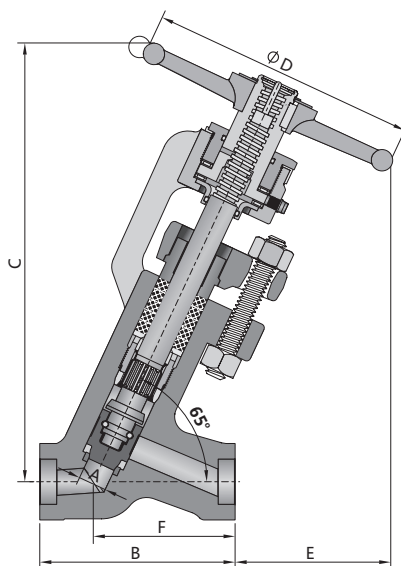
How to Order

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Flange Class	ASME Class	Packing Material	Vent Type and Size	Body Material			
RTV1	O	Needle Fractional Tube Butt Weld Metric Tube Butt Weld Pipe Butt Weld	8 1/2 in. or 8 mm 12 3/4 in. or 12 mm 14 14 mm 16 1 in. or 16 mm 18 18 mm 20 1 1/4 in. or 20 mm 22 22 mm 24 1 1/2 in. 25 25mm 28 28mm	FNPT Female NPT NPT Male NPT FBT Female BSPT MBT Male BSPT FMS Female ISO MS Male ISO FBP Female BSPP RF RF Flange RTJ RTJ Flange	4 1/4 in. 6 3/8 in. 8 1/2 in. 12 3/4 in. 14 M14 x 1.5 16 1 in. 20 1 1/2 in. or M20 x 1.5 22 M22 x 1.5 24 1 1/2 in. or M24 x 1.5 27 M27 x 2 32 2 in.	300 Class 300 600 Class 600 900 Class 900 1500 Class 1500 2500 Class 2500 4500 Class 4500	Graphite T PTFE	No Vent 4P 1/4 Female NPT with Plug 8P 1/2 Female NPT with Plug	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. A105 A105 A400 Alloy 400 A20 Alloy 20 A600 Alloy 600 A825 Alloy 825 A276 Alloy C276 DU7 Duplex 2507			
										RF8600	T8P	316
										PBW8		

Globe Valves-GL1 Series

- ❖ One-piece forged body and bonnet, no joints to leak and no welds to cut for servicing
- ❖ Working temperature: -20°F to 1250°F (-28°C to 676°C)
- ❖ 65° Y patterns design reduces pressure drop
- ❖ One step removal of all working parts for quick and easy maintenance
- ❖ Non rotating stem design ensures low torque and prevents torsional damage of the packing
- ❖ The top- and bottom-guided disc assures perfect seat and disc alignment in spite of side thrust caused by high velocity flow. This prevents stem from scoring and galling and provides longer disc seal and body life
- ❖ Solid Stellite disc, seat ring and backseat provide excellent long service life even in severe services
- ❖ Precision stem and packing chambers to 8 RMS finish
- ❖ Fully enclosed, lubricated stem drive system with needle bearings ensures low operating torque
- ❖ Rugged and knobbed handwheel make sure the grip when wearing gloves

Dimensions



NPS DN	Ø A in mm		B in mm		C in mm		Ø D in mm		E in mm		F in mm	
	Port		End to End		Center to top		Handwheel		Clearance Open		Center to End	
	1500 2500	4500	1500 2500	4500	1500 2500	4500	1500 2500	4500	1500 2500	4500	1500 2500	4500
1/2 15	0.559 14.2	0.375 9.5	4.88 124	5.75 146	9.63 245	11.75 298	6.00 152	6.00 152	3.63 92	3.25 83	3.20 81	4.19 106
3/4 20	0.559 14.2	0.559 14.2	4.88 124	7.00 178	9.63 245	14.20 361	6.00 152	8.00 203	3.63 92	6.00 152	3.20 81	3.88 99
1 25	0.833 21.2	0.559 14.2	5.75 146	7.00 178	13.19 335	14.20 361	8.00 203	8.00 203	5.13 130	6.00 152	4.19 106	3.88 99
1 1/4 32	1.125 28.6	0.833 21.2	7.25 184	10.13 257	16.63 422	18.88 480	12.00 305	12.00 305	7.57 192	7.00 178	4.94 125	6.57 167
1 1/2 40	1.125 28.6	1.125 28.6	7.25 184	12.00 305	16.63 422	20.75 527	12.00 305	18.00 457	7.57 192	8.00 203	4.94 125	8.00 203
2 50	1.688 42.9	1.50 38.1	10.13 257	12.00 305	19.86 505	20.75 527	12.00 305	18.00 457	7.50 190	8.00 203	6.57 167	8.00 203
2 1/2 65	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 406	16.00 406	7.25 184	7.25 184	8.00 203	8.00 203
3 50	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 406	16.00 406	7.25 184	7.25 184	8.00 203	8.00 203
4 100	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 406	16.00 406	7.25 184	7.25 184	8.00 203	8.00 203

How to Order

GL1 — PBW8 — CL4500 — 316

Series	Type of Connection	Size of Connection	ASME Class	Body Material
GL1	FNPT Female NPT	6 3/8 in.	CL1500 Class 1500	316 316 S.S.
	FBT Female BSPT	8 1/2 in.	CL2500 Class 2500	316L 316L S.S.
	FSW Fractional Tube Socket Weld	12 3/4 in.	CL4500 Class 4500	316H 316H S.S.
	MSW Metric Tube Socket Weld	16 1 in.		304 304 S.S.
	FBW Fractional Tube Butt Weld	20 1 1/4		304L 304L S.S.
	MBW Metric Tube Butt Weld	24 1 1/2		F91 F91
	PSW Pipe Socket Weld	32 2 in.		F92 F92
	PBW Pipe Butt Weld			A105 Alloy A105
				F11 F11
			F22 F22	
			WB36 WB36	

Globe Valves-GL2 Series

- ❖ Three Bonnet designs: Bolted Bonnet, Outside Screw and Yoke (OS&Y).
- ❖ Working temperature: -20°F to 1250°F (-28°C to 676°C)
- ❖ The top and bottom-guided disc assures perfect seat and disc alignment in spite of side thrust caused by high velocity flow. This prevents stem from scoring and galling and provides longer disc seal and body life.
- ❖ Large clearance between stem and disc allows disc to move freely.
- ❖ Precision stem and packing chambers, Packing rings individually pre-stressed for tight seal
- ❖ Two-piece self-aligning gland.

Dimensions

