

Bellows-Sealed Valves

BS1-BS4 Series



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
- ❖ 316 S.S., brass and monel 400 materials

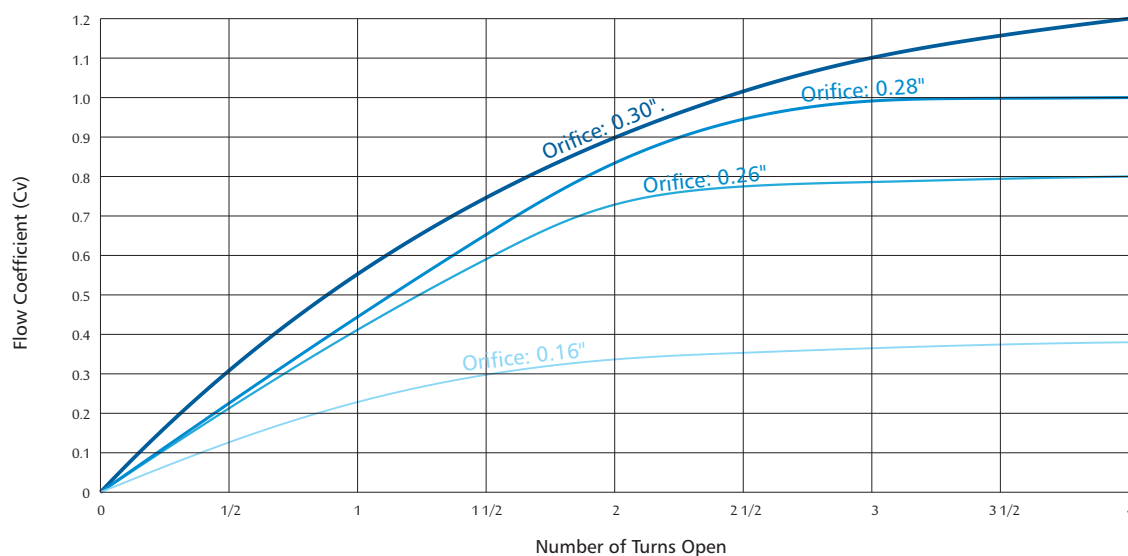
Features

- ❖ 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
- ❖ 316 S.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

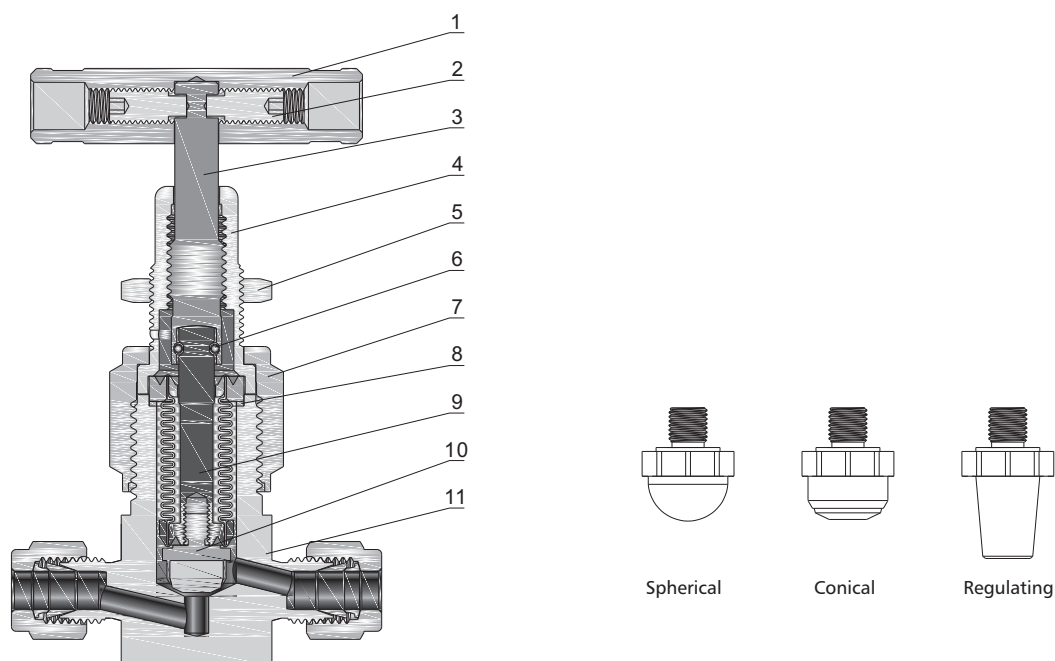
Pressure-Temperature Ratings

Body Material	316 S.S.	Brass	Alloy 400
Temperature, °F(°C)	Working Pressure, psig(bar)		
-20 (-28) to 100 (37)	1000 (68.9)	1000 (68.9)	700 (48.2)
200 (93)	830 (57.1)	710 (48.9)	610 (42.0)
300 (148)	660 (45.4)	430 (29.6)	530 (36.5)
400 (204)	500 (34.4)	430 (29.6)	450 (31.0)
500 (260)	450 (31.0)	—	375 (25.8)
600 (315)	400 (27.5)	—	—

Flow Coefficient vs. Turns Open

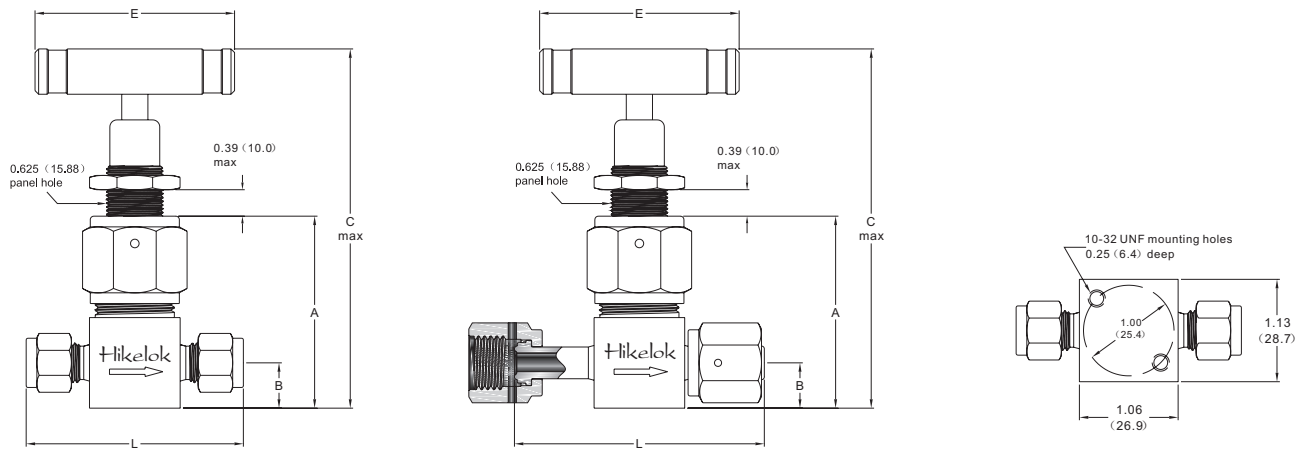


Standard Materials of Construction



Component		Material Grade/ASTM Specification		
		316 S.S.	Brass	Alloy 400
1	Handle	Anodized aluminum 2024-T4/B211		
2	Screw	Alloy Steel/ANSI 18.3		
3	Actuator	416 S.S./A582	416 S.S./A582	416 S.S./A582
4	Bonnet	316 S.S./A479	Brass/B16	316 S.S./A479
5	Nut	316 S.S./B783		
6	Pin	420 S.S.		
7	Bonnet Nut	Sliver-plated 316 S.S./A479	Slive-plated Brass/B16	Sliver-plated 316 S.S./A479
8	Gasket	Silver-plated 316 S.S./A580		Sliver-plated Alloy 400/AMS4730
		PTFE-coated 316 S.S./A580		PTFE-coated Alloy 400/AMS4730
9	Stem	316 S.S./A479		Alloy 400/B164
	Weld Ring	316 S.S./A479		Alloy 400/B164
	Bellows	316L S.S.		Alloy 400/B165
10	Stem Tip	316 S.S./A479 (regulating)		Alloy k-500/AMS4676 (regulating)
		PCTFE/D1430 (conical)		PCTFE/D1430 (conical)
		Weld Stellite (regulating or spherical)		—
11	Body	316 S.S./A479	Brass/B16	Alloy 400/B164

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-FSW4-04-	1/4" FSW	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)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS1-FSW6-07-	3/8" FSW	0.28 (7.1)	1.00	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.27 (57.7)	1.00 (25.4)	1.06 (27)	1.00 (25.4)
BS1-FSW8-08-	1/2" FSW	0.30 (7.6)	1.20	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.27 (57.7)	1.00 (25.4)	1.06 (27)	1.00 (25.4)
BS1-FBW4-04-	1/4" FBW	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)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS1-FBW6-07-	3/8" FBW	0.28 (7.1)	1.00	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.18 (55.4)	1.00 (25.4)	1.06 (27.0)	1.00 (25.4)
BS1-FBW8-08-	1/2" FBW	0.30 (7.6)	1.20	2.12 (53.8)	0.5 (12.7)	4.01 (101.8)	0.39 (10.0)	2.20 (56.0)	2.18 (55.4)	1.00 (25.4)	1.06 (27.0)	1.00 (25.4)
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

BS1		MBW10		M10		08		WR		G1		316	
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	Tip Type	Handle	Body Material				
BS1	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		04 0.16 in. (4.1 mm)	Gasket Seal	Soft Tip-PCTFE	Black Aluminum	304 304 S.S.				
	MBW Metric Tube Butt Weld	4 1/4 in.			08 0.3 in. (7.6 mm)	W Welded Seal	P Soft Tip-PEEK	L1 Blue Aluminum	304L 304L S.S.				
		6 3/8 in. or 6 mm				A Ball		R1 Red Aluminum	316 316 S.S.				
	F Fractional Tube Fitting	8 1/2 in. or 8 mm			11 0.433 in. (11 mm)	R Regulating	G1 Green Aluminum	316L 316L S.S.					
	M Metric Tube Fitting	10 10 mm			15 0.591 in. (15 mm)	S1 304 Stainless Steel							
	UGF Nut+Gasket+ Fractional Bulge Nipple	12 3/4 in. or 12 mm			20 0.787 in. (20 mm)	K1 Black Knob							
	UGM Nut+Gasket+ Metric Bulge Nipple					NC							
	FGFS Female GFS Fitting					NO							
	GFS Male GFS Fitting					PD							
						HNC							
			HNO										
			HPD										

❖ Pneumatic actuators : **NC** low pressure Pneumatic, normally closed; **NO** low pressure Pneumatic, normally open; **PD** low pressure Double action;
HNC high pressure Pneumatic, normally closed; **HNO** high pressure Pneumatic, normally open; **HPD** high pressure Double action.

Bellows-Sealed Valves

BS2 Series

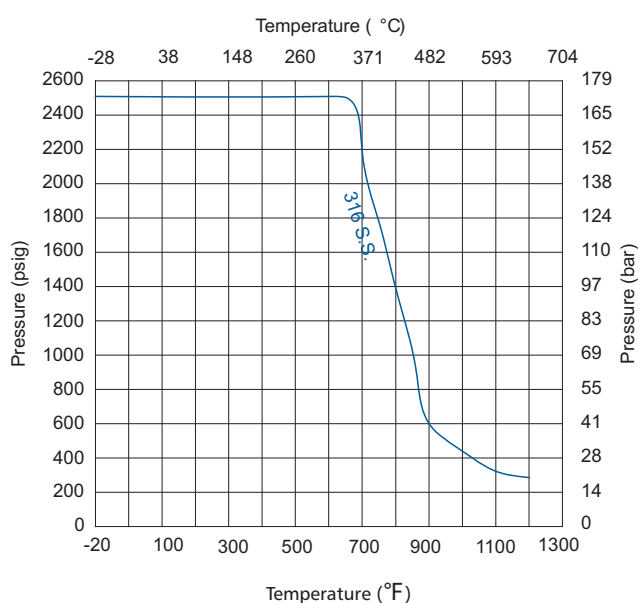


- ❖ Working pressure up to: 2500 psig (172 bar)
- ❖ Working temperature: -20°F to 1200°F (-28°C to 649°C)
- ❖ Variety of end connections
- ❖ 316 SS body material

Features

- ❖ 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
- ❖ Double lock-pins enable steady and durable fastening of the handle.
- ❖ 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

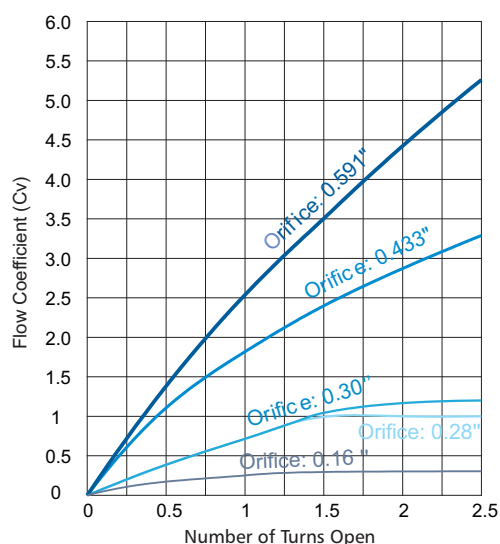
Pressure vs. Temperature



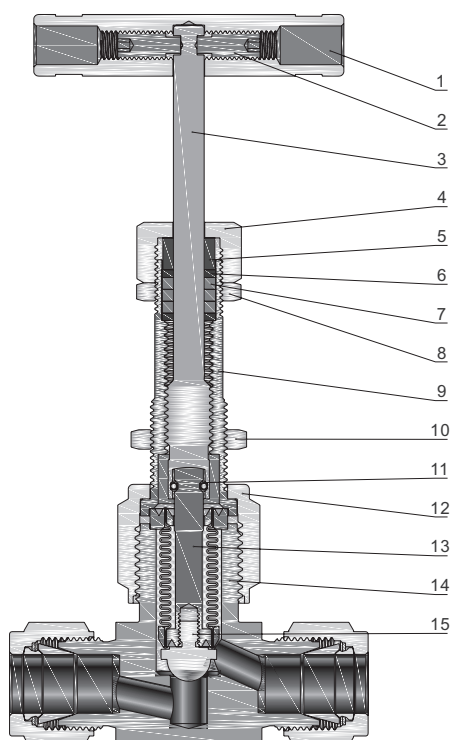
200°F (93°C) max. with PCTFE stem tip (soft tip).

Flow Coefficient vs. Turns Open

Regulating Stem



Standard Materials of Construction



Tip Types



Spherical



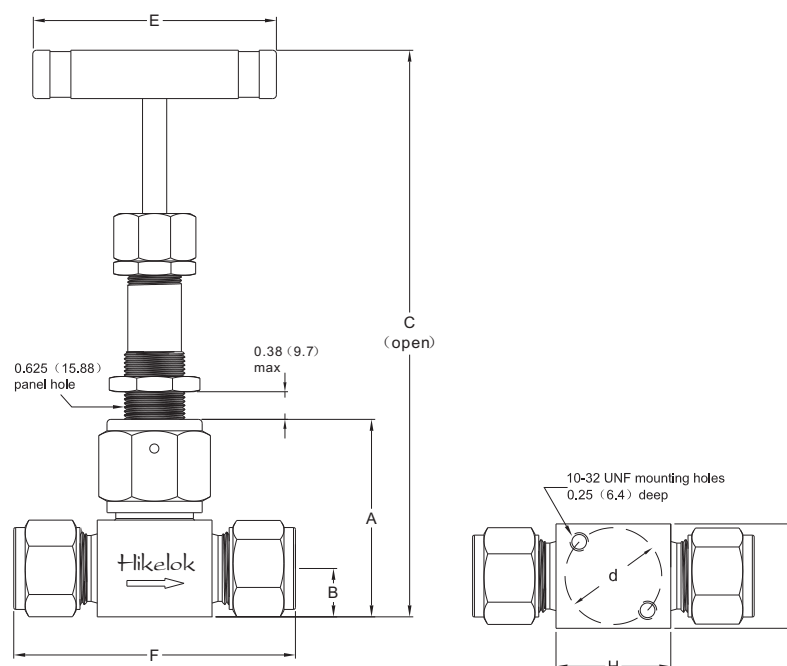
Conical



Regulating

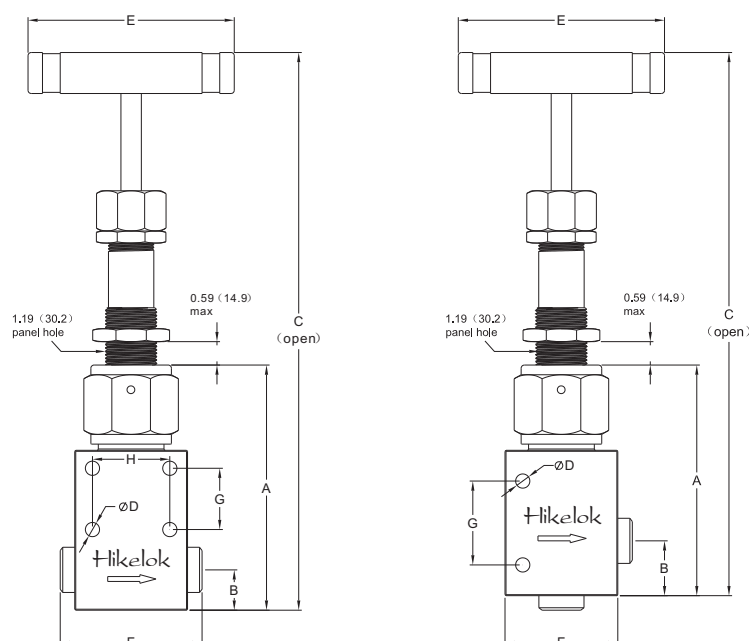
Component		Valve Body Material Grade/ASTM Specification
		316 S.S.
1	Handle	Green anodized aluminum 6061/B211
2	Screw	Alloy Steel/ANSI 18.3
3	Actuator	416 S.S./A582
4	Packing Nut	316 S.S./A276
5	Gland	316 S.S./A276
6	Spacer	316 S.S./A276
7	Packing	PTFE or Graphite
8	Nut	316 S.S./A276
9	Bonnet	316 S.S./A479
10	Nut	316 S.S./A479
11	Pin	Stainless steel
12	Bonnet Nut	316 S.S./A479
13	Stem	316 S.S./A479
	Weld Ring	316 S.S./A479
	Bellows	316L S.S.
14	Body	316 S.S./A182
15	Stem Tip	316 S.S./A479 (regulating)
		PCTFE/D1430 (conical)
		Weld Stellite (regulating or spherical)

Dimensions



Basic Ordering Number	End Connections	Orifice in. (mm)	Cv	Dimensions, in. (mm)							
				A	B	C	E	F	G	H	Ød
BS2-F4-04-	1/4" Hikelok	0.16 (4.1)	0.36	2.69 (59.9)	0.56 (14.2)	6.48 (165)	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)	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)	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)	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)	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)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
BS2-FSW4-04-	1/4" FSW	0.16 (4.1)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	2.50 (63.5)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS2-FSW6-06-	3/8" FSW	0.26 (6.6)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
BS2-FSW8-08-	1/2" FSW	0.30 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
BS2-FBW4-04-	1/4" FBW	0.16 (4.1)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	2.50 (63.5)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
BS2-FBW8-08-	1/2" FBW	0.30 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	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)	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)	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)	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)	2.50 (63.5)	3.00 (76.2)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)

Dimensions



Basic Ordering Number	End Connections	Orifice in. (mm)	CV	Dimensions, in. (mm)							
				A	B	C	E	F	G	H	ØD
BS2-FSW12-11-	3/4" FSW	0.433 (11.0)	3.10	4.88 (124)	1.00 (25.4)	11.60 (295)	4.00 (102)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	0.27 (6.9)
BS2-FBW12-11-	3/4" FBW	0.433 (11.0)	3.10	4.88 (124)	1.00 (25.4)	11.60 (295)	4.00 (102)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	0.27 (6.9)
BS2-FSW12-15-A-	3/4" FSW	0.591 (15.0)	5.30	4.88 (124)	1.44 (36.6)	11.60 (295)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)
BS2-FBW12-15-A-	3/4" FBW	0.591 (15.0)	5.30	4.88 (124)	1.44 (36.6)	11.60 (295)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)
BS2-FBW16-15-A-	1" FBW	0.591 (15.0)	5.30	4.88 (124)	1.44 (36.6)	11.60 (295)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)

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

Bellows-Sealed Valves

BS3 Series

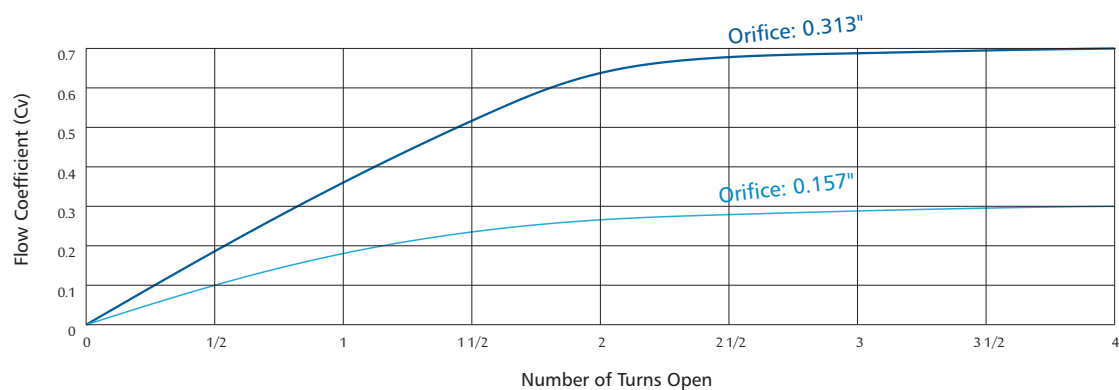


- ❖ Maximum working pressure up to 500 psig (34.4 bar)
- ❖ Working temperature from -40°F to 200°F (-40°C to 93°C)
- ❖ Flow coefficients (Cv) : 0.3 and 0.7
- ❖ Actuator-stem coupling design for smooth actuation
- ❖ 316L S.S and 316L VAR S.S. materials

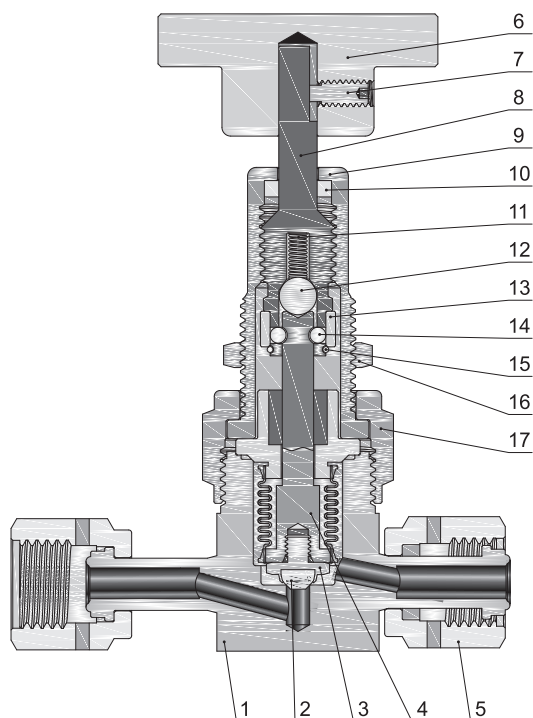
Features

- ❖ 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
- ❖ 316 S.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

Flow Coefficient vs. Turns Open

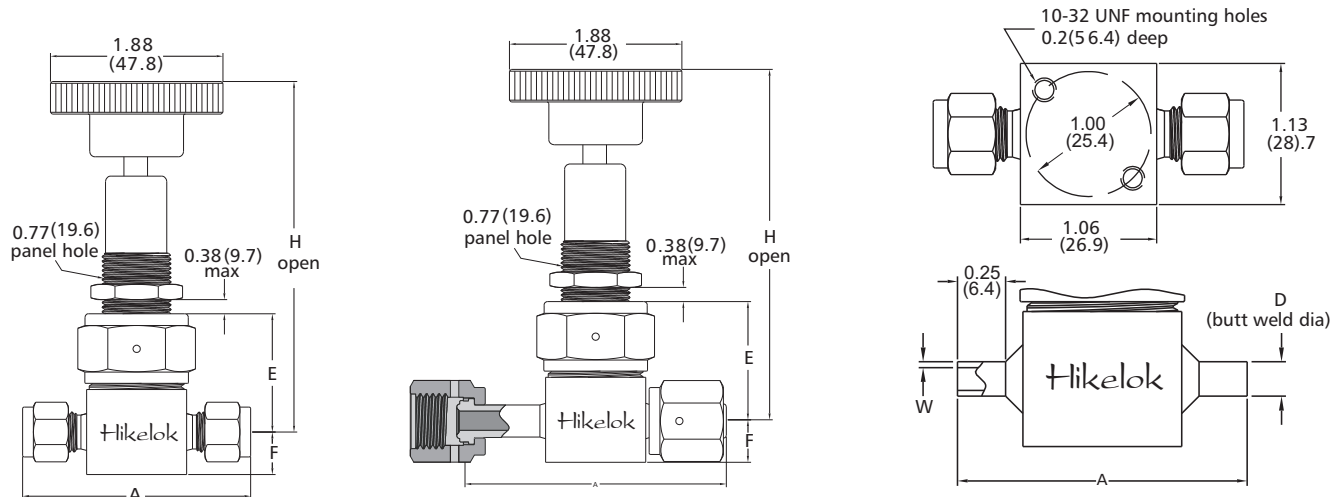


Standard Materials of Construction



Component		Material Grade/ASTM Specification
1	Body	316L SS/A479
2	Stem insert	PCTFE/AMS 3650
3	Adapter	316L SS/A479
4	Stem	316L SS/A479
	Bushing	Phosphor bronze C5400/B139
	Weld ring	316L SS/A479
	Bellows	300 series SS/A269 or A240
5	Nut	316L SS/A479
6	Handle	Green phenolic
7	Screw	Alloy steel/ANSI 18.3
8	Actuator	S17400 SS/A564
9	Bonnet	316 SS/A479
10	Stem wiper	PTFE/AMS 3656
11	Spring	302 SS/A313
12	Bearing	440C SS
13	Bearing retainer	316 SS/A479
14	Bearing	Chrome steel
15	Retainer ring	302 SS
16	Nut	316 SS/A479
17	Bonnet nut	316 SS/A479

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			0.25 (6.4)						0.035 (0.89)
BS3-FBW6-04-	3/8" FBW			1.74 (44.2)	0.38 (9.6)					
BS3-MBW6-04-	6mm MBW			(6.0)	(1.0)					
BS3-FSW4-04-	1/4" FSW			1.75 (44.4)	0.38 (9.6)				0.060 (1.5)	
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	2.58 (65.5)	0.313 (8.0)	0.70		—	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	(12.7)			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)

How to Order

BS3 — **MBW10** — **M10** — **04** — **BA** — **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		04 0.157 in. (4.0 mm)	Blue Aluminum	Straight	316 316 S.S.
	MBW Metric Tube Butt Weld	4 1/4 in.					A Angle	316L 316L S.S.
	F Fractional Tube Fitting	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		08 0.313 in. (8.0 mm)	B Black Aluminum	See porting configurations for the following code	316LV 316L VAR
	M Metric Tube Fitting	8 1/2 in. or 8 mm				R Red Aluminum	2L	
	FGFS Female GFS Fitting	10 10 mm				G Green Aluminum	2N	
	GFS Male GFS Fitting	12 3/4 in. or 12 mm					2R	
							3A	
							3B	
							3C	
							3F	
							3G	
							4D	
							4E	

Bellows-Sealed Valves

BS4 Series

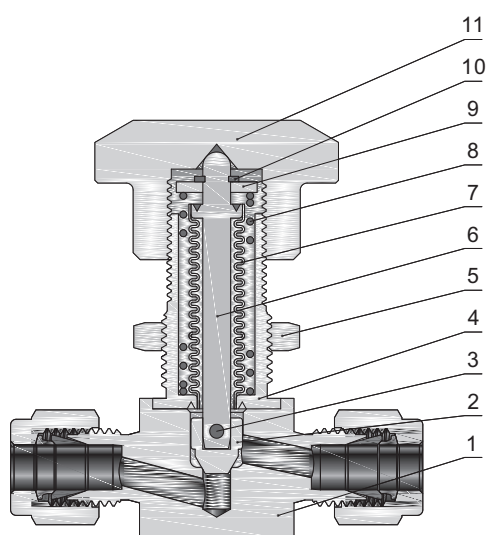


- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -80°F to 600 °F (-62 °C to 315 °C)
- ❖ Flow coefficients (Cv) from 0.11 to 0.28
- ❖ Variety of end connections
- ❖ 316 stainless steel body material

Features

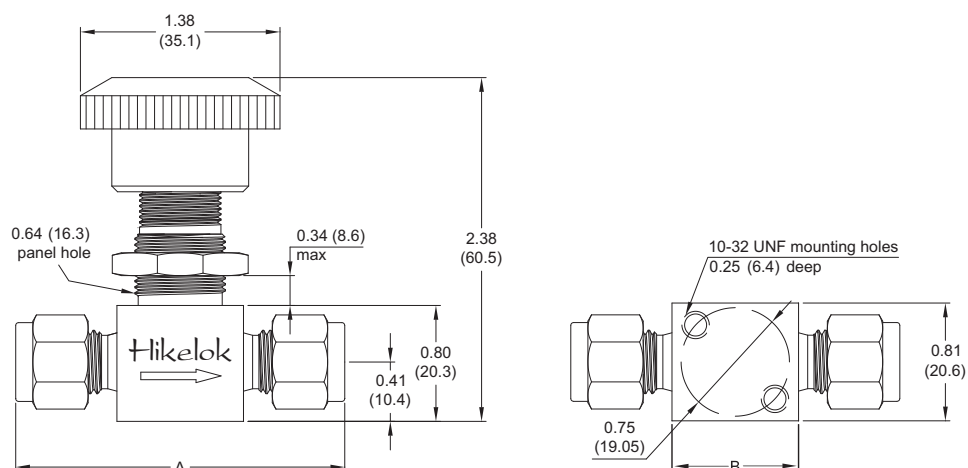
- ❖ Maximum working pressure up to 1000 psig (68.9 bar)
- ❖ Working temperature from -80°F to 600 °F (-62 °C to 315 °C)
- ❖ Flow coefficients (Cv) from 0.11 to 0.28
- ❖ Variety of end connections
- ❖ 316 stainless steel body material
- ❖ Panel and bottom mounting
- ❖ Precision-formed metal bellows provides reliable seal
- ❖ Nonrotating stem tip
- ❖ Welded body to bonnet seal
- ❖ Every valve is tested with helium for 10s to a maximum leak rate of 4×10^{-9} std cm³/s

Standard Materials of Construction



Component		Material Grade/ASTM Specification
1	Body	316 S.S./A479
2	Stem Tip	S17400/A564
3	Stem Pin	420 S.S.
4	Bonnet	316 S.S./A479
5	Nut	316 S.S./A479
6	Stem	420 S.S.
7	Bellows	321 S.S./A269
8	Spring	S17700/AMS 5678
9	Washer	316 S.S./A240
10	Retaining Ring	304 S.S.
11	Handle	Green-Anodized Aluminum

Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in.(mm)		Cv	Dimension in. (mm)	
		Body	Port		A	B
BS4-F2-04-	1/8" Hikelok	0.148 (3.8)	0.082	0.11	2.09 (53.1)	0.88 (22.3)
BS4-F4-04-	1/4" Hikelok		0.156 (4.0)	0.28	2.27 (57.7)	
BS4-M6-04-	6mm Hikelok				1.94 (49.3)	1.04 (26.4)
BS4-FNPT4-04-	1/4 Female NPT		0.125 (3.2)	0.20	1.57 (39.9)	0.81 (20.6)
BS4-NPT2-04-	1/8 Male NPT		0.156 (4.0)	0.28	1.94 (49.3)	0.82 (20.8)
BS4-NPT4-04-	1/4 Male NPT				2.12 (53.8)	0.88 (22.3)
BS4-GFS4-04-	1/4" Male GFS				2.57 (65.3)	0.82 (20.8)
BS4-FGFS4-04-	1/4" Female GFS				1.5 (38.1)	
BS4-FSW4-FBW6-04-	1/4" tube socket weld to 3/8" Tube butt weld					

How to Order

BS4 — FSW4 — FBW6 — 04 — 316

Series	Inlet Type		Inlet Size	Outlet Type	Outlet Size	Orifice Size	Tip Material	Body Material		
BS4	FBW	Fractional Tube Butt Weld	2	Same as inlet type and inlet size		04	0.148 in. (3.8 mm)	Same as Body Material	316 316 S.S.	
	FSW	Fractional Tube Socket Weld	4							1/4 in.
	MBW	Metric Tube Butt Weld	6	If outlet and inlet are the same, eliminate the outlet designator			S	Stellite		
	MSW	Metric Tube Socket Weld	8							8 mm
	FGFS	Female GFS Fitting								
	GFS	Male GFS Fitting								
	FNPT	Female NPT								
	NPT	Male NPT								
	FBT	Female BSPT								
	MBT	Male BSPT								
	F	Fractional Tube Fitting								
	M	Metric Tube Fitting								