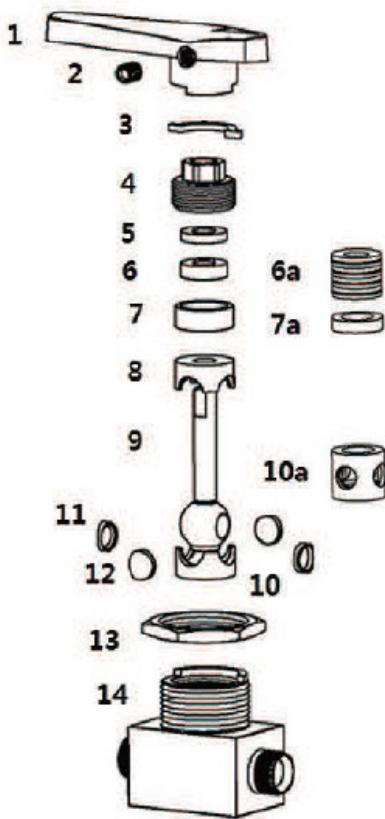




Features

- Directional Handle indicates flow direction.
- Panel mounting nut provides ability to mount valve to control panel or actuator.
- Live-loaded disc springs maintain load to packing to seal and compensate thermal cycles.
- One piece body reduces potential leak path.
- One piece ball stem prevents backlash during valve actuation.
- Capsule packing fills voids between body and ball allowing no fluid entrapment.
- Capsule packing design does not require system pressure to seal.
- Discs and rings prevent the packing from deformation.

Materials of Construction



Components	Valve Body Material	
	Stainless Steel	Brass
	Material Grade / ASTM Standard	
1. Handle	Nylon with Zinc insert	
2. Set screw	SS304 /A276	
3. Handle Stopper	SS316 / A240 Applicable to VB2D & VB23D Series	
4. Packing bolt	SS316/A276	Brass C3604/JIS H3250, C36000/B16
5. Upper gland	SS316/A276	
6. Bushing	PTFE /D1710	
6a. Disc Springs for VB2G Series	S17400/A693, VB2A Series 8 springs; VB2B Series 6 Springs	
7. Lower gland	SS316/A276	Brass C3604/ JIS H3250, C36000/B16
7a. Gland for VB2G Series	SS316/A276	
8. Upper packing	PTFE /D1710	
10. Lower packing	PTFE /D1710	
10a. One-Piece Packing for VB2G Series	PFA/D3307	
9. Ball stem	SS316/A276	
11. Side disc (2)	PTFE coated	
12. Side ring (2)	Powered SS 300 Series / B783	
13. Panel nut	SS316/A276	Brass C3604/ JIS H3250, C36000/B16
14. Body	SS316/A276	
Wetted Parts listed in BOLD letters		
Lubricant	Wetted parts: Silicon-based	
	Non-wetted parts: Molybdenum disulfide with hydrocarbon binder coating	

Pressure-Temperature Ratings

Temp. °F (°C)	VB2G Series psig (bar)					
	VB2GA, VB23GA Series		VB2GB, VB23GB Series			
	SS316	Brass	SS316		Brass	
	2-way In-Line & Angle, 3-Way		2-way In-Line	Angle, 3-Way	2-way In-Line	Angle, 3-Way
-65 to 100 (-53 to 37)	2500 (172)	2500 (172)	3000 (206)	2500 (172)	3000 (206)	2500 (172)
150 (65)	2500 (172)	2500 (172)	3000 (206)	2500 (172)	3000 (206)	2500 (172)
200 (93)	2500 (172)	2350 (162)	2800 (193)	2500 (172)	2630 (181)	2350 (162)
250 (121)	2500 (172)	2300 (158)	2650 (182)	2500 (172)	2570 (177)	2300 (158)
300 (148)	2500 (172)	2250 (155)	2500 (172)	2500 (172)	2520 (173)	2250 (155)

Valve Pattern	VB2 Series psig (bar)		
	Valve Series		
2-way In-Line	VB2A, VB2C, VB2D	VB2B	-
2-way Angle	VB2A, VB2B	-	VB2C, VB2D
3-way	VB23A, B23B	-	VB23C, B23D
4-way	VB24A	-	VB24B
5-way	VB25A	-	VB25B
Pressure	2500 (172)	3000 (205)	1500 (103)
Temp.	50 to 150 °F (10 to 65 °C)		

Ball Valve

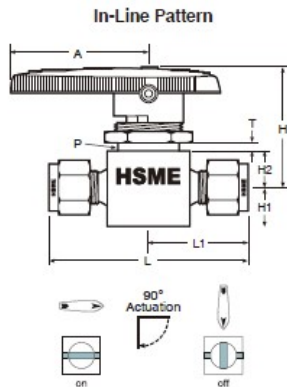
VB2 Series

VALVE

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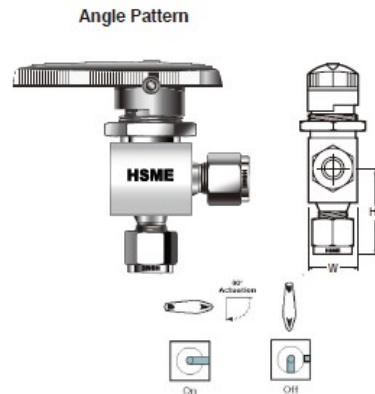
VB2 Series 2-Way On-Off Ball Valves 90° Actuation Valves



Handle Indicates Flow Direction

P panel hole
 Valve Unit: mm (in.)
 Series
 VB2A 15.1 (19/32)
 VB2B 19.8 (25/32)
 VB2C 28.6 (1 1/8)
 VB2D 38.1 (1 1/2)

T panel thickness
 Valve Unit: mm (in.)
 Series max. min.
 VB2A 6.4 (1/4) 3.2 (1/8)
 VB2B 4.8 (3/16) 3.2 (1/8)
 VB2C 9.5 (3/8) 3.2 (1/8)
 VB2D 9.5 (3/8) 3.2 (1/8)



Handle Indicates Flow Direction

Ordering Information and Dimensions

Basic Ordering Number		End Connections		Orifice mm (in.)	Cv		Dimensions mm (in.)							
		Inlet	Outlet		In-Line	Angle	L	L1	H	H1	H2	H3	A	W
VB2A- VB2GA-	A2T-	1/8 in. OD M Tube Fitting		2.36 (0.93)	0.2	0.15	51.1 (2.01)	25.7 (1.01)	34.5 (1.36)	7.1 (0.28)	8.6 (0.34)	24.6 (0.97)	28.4 (1.12)	14.7 (0.58)
	A4T-	1/4 in. OD M Tube Fitting		3.18 (0.125)	0.6	0.35	56.1 (2.21)	27.9 (1.10)				27.2 (1.07)		
	A3M-	3mm OD M Tube Fitting		2.36 (0.93)	0.2	0.15	51.1 (2.01)	25.7 (1.01)				24.6 (0.97)		
	A6M-	6mm OD M Tube Fitting		3.18 (0.125)	0.6	0.35	56.1 (2.21)	27.9 (1.10)				27.2 (1.07)		
	F2N-	1/8 in. Female NPT			0.5	0.3	41.4 (1.63)	20.6 (0.81)				20.6 (0.81)		
VB2B- VB2GB-	A4T-	1/4 in. OD M Tube Fitting		4.75 (0.187)	2.4	0.9	60.7 (2.39)	30.5 (1.20)	37.3 (1.56)	9.7 (0.38)	11.2 (0.44)	29.7 (1.17)	38.9 (1.53)	19.8 (0.78)
	A6T-	3/8 in. OD M Tube Fitting			1.5	0.9	65.5 (2.58)	32.8 (1.29)				32.8 (1.29)		
	A6M-	6mm OD M Tube Fitting			2.4	0.9	60.7 (2.39)	30.5 (1.20)				29.7 (1.17)		
	A8M-	8mm OD M Tube Fitting			1.5	0.9	62.5 (2.46)	31.2 (1.23)				30.5 (1.2)		
	F2N-	1/8 in. Female NPT			1.2	0.7	50.8 (2.0)	25.4 (1.0)				25.4 (1.0)		
	F4N-	1/4 in. Female NPT			0.9	0.75	52.3 (2.06)	26.2 (1.03)				26.2 (1.03)		
	F4R-	1/4 in. ISO Female Tapered			0.9	0.75								
	M4N-	1/4 in. Male NPT			1.2	0.75	50.8 (2.0)	25.4 (1.0)						
MA4N4T-	1/4 in. Male NPT to 1/4 in. OD M Tube Fitting		1.6	0.75	55.9 (2.0)	30.5 (1.20)								
VB2C-	A6T-	3/8 in. OD M Tube Fitting		7.14 (0.281)	6	2	77.5 (3.05)	38.6 (1.52)	52.6 (2.07)	14.2 (0.56)	14.2 (0.56)	36.3 (1.43)	50.8 (2.0)	28.4 (1.12)
	A10M	10mm OD M Tube Fitting			6	2	78.0 (3.07)	38.9 (1.53)				36.3 (1.43)		
	F4N-	1/4 in. Female NPT			3	1.7	63.5 (2.5)	31.8 (1.25)				31.8 (1.25)		
	F6N-	3/8 in. Female NPT			2.6	1.5								
	F6R-	3/8 in. ISO Female Tapered			2.6	1.5								
VB2D-	A8T-	1/2 in. OD M Tube Fitting		10.3 (0.406)	12	4.6	99.6 (3.92)	49.8 (1.96)	61.7 (2.43)	17.5 (0.69)	17.5 (0.69)	44.2 (1.74)	76.2 (3.0)	38.1 (1.50)
	A12T-	3/4 in. OD M Tube Fitting			6.4	3.8								
	A12M-	12mm OD M Tube Fitting			12	4.6								
	F8N-	1/2 in. Female NPT			6.3	3.5	79.2 (3.12)	39.6 (1.56)				39.6 (1.56)		
	F8R-	1/2 in. ISO Female Tapered			6.3	3.5								

All dimensions shown are for reference only and are subject to change. Dimensions with M Tube Fitting nuts are in finger-tight position.

NINE TECH

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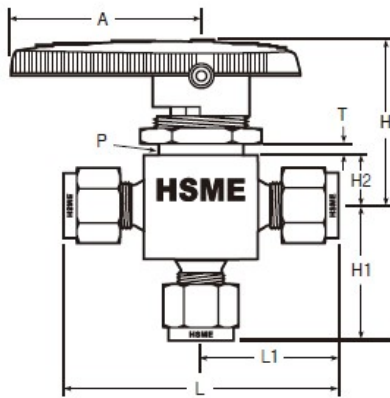
www.ninetech21.com

Suite 203, Sanho Bldg, 12-1, Donhwamun-ro, Jongno-gu, Seoul, Korea

VALVE

VB23 Series 3-Way Switching Valves

180° Actuation Valves



P panel hole

Valve Unit: mm (in.)

Series

VB23A 15.1 (19/32)

VB23B 19.8 (25/32)

VB23C 28.6 (1 1/8)

VB23D 38.1 (1 1/2)

T panel thickness

Valve Unit: mm (in.)

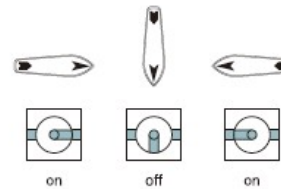
Series max. min.

VB23A 6.4 (1/4) 3.2 (1/8)

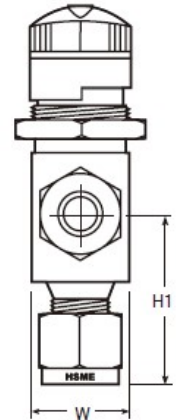
VB223 4.8 (3/16) 3.2 (1/8)

VB23C 9.5 (3/8) 3.2 (1/8)

VB23D 9.5 (3/8) 3.2 (1/8)



Handle Indicates Flow Direction



Ordering Information and Dimensions

Basic Ordering Number	End Connections	Orifice mm (in.)	Cv	Dimensions mm (in.)						
				L	L1	H	H1	H2	A	W
VB23A- VB23GA-	A2T- 1/8 in. ODM Tube Fitting	2.36 (0.093)	0.15	51.1(2.01)	25.7(1.01)	34.5 (1.36)	24.6(0.97)	8.6 (0.34)	28.7 (1.13)	14.7 (0.58)
	A4T- 1/4 in. ODM Tube Fitting	3.10 (0.125)	0.35	56.1(2.21)	27.9(1.10)		27.2(1.07)			
	A3M- 3mm ODM Tube Fitting	2.36 (0.093)	0.15	51.1(2.01)	25.7(1.01)		24.6(0.97)			
	A6M- 6mm ODM Tube Fitting	3.10 (0.125)	0.35	56.1(2.21)	27.9(1.10)		27.2(1.07)			
	F2N- 1/8 in. Female NPT		0.3	41.4(1.63)	20.6(0.81)		20.6(0.81)			
VB23B- VB23GB-	A4T- 1/4 in. ODM Tube Fitting	4.75 (0.187)	0.9	60.7(2.39)	30.5(1.20)	37.3 (1.47)	29.7(1.17)	11.2 (0.44)	38.9 (1.53)	19.8 (0.78)
	A6M- 6mm ODM Tube Fitting		0.8	62.5(2.46)	31.2(1.23)		30.5(1.20)			
	A8M- 8mm ODM Tube Fitting		0.75	62.3(2.06)	26.2(1.03)		26.2(1.03)			
	F4N- 1/4 in. Female NPT		0.8	60.7(2.39)	30.5(1.20)					
	MA4N4T- 1/4 in. Male NPT to 1/4 in. ODM Tube Fitting		0.75	62.3(2.06)	26.2(1.03)					
	F4R- 1/4 in. ISO Female Tapered									
VB23C-	A6T- 3/8 in. ODM Tube Fitting	7.10 (0.281)	2.0	73.4(2.89)	36.8(1.45)	52.6 (2.07)	36.3(1.43)	14.2 (0.56)	50.8 (2.0)	28.4 (1.12)
	A10M- 10mm ODM Tube Fitting		1.7	63.5(2.50)	31.8(1.25)		31.8(1.25)			
	F4N- 1/4 in. Female NPT		1.5							
	F6N- 3/8 in. Female NPT									
	F6R- 3/8 in. ISO Female Tapered									
VB23D-	A8T- 1/2 in. ODM Tube Fitting	10.3 (0.406)	4.6	88.4(3.48)	44.2(1.74)	61.7 (2.43)	44.2(1.74)	17.5 (0.69)	76.2 (3.0)	38.1 (1.50)
	A12T- 3/4 in. ODM Tube Fitting		3.8							
	A12M- 12mm ODM Tube Fitting		4.6							
	F8N- 1/2 in. Female NPT		3.5	79.5(3.13)	39.6(1.56)		39.6(1.56)			
	F8R- 1/2 in. ISO Female Tapered									

All dimensions shown are for reference only and are subject to change. Dimensions with M Tube Fitting nuts are in finger-tight position.