



Two-Piece Ball Valves

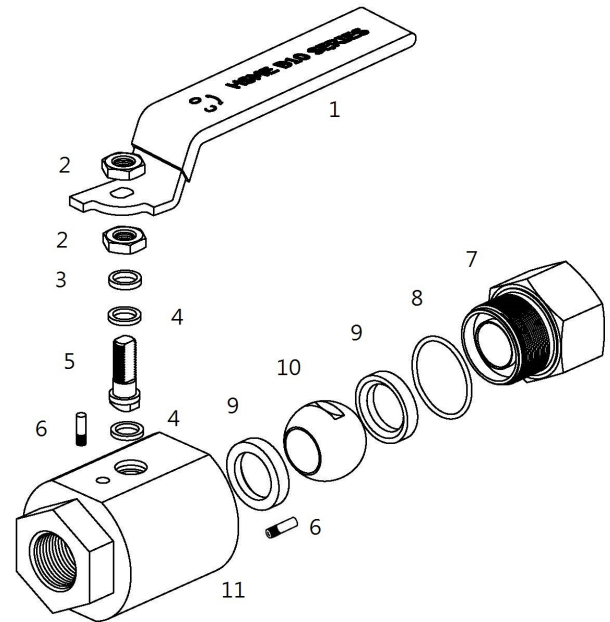
VB10 Series: 10 000 psig (689 bar)
VBM10 Series: 10 000 psig (689 bar)
VB103 Series: 10 000 psig (689 bar)

Features

- Two-piece body construction reduces potential leak path and provides straight through bore.
- Outstanding low operating torque from low to high pressure.
- Outstanding sealing performance across the pressure range.
- Designed for gas, liquid and vacuum service.
- Large bore in high pressure provides outstanding flow rate.
- High temperature service up to 500 °F (260 °C) with PEEK seats.
- Micro-finish ball for smooth valve actuation.
- Detachable handle design prevents unauthorized valve actuation.
- Nicely designed brackets for pneumatic actuator.

Materials of Construction

Components	Valve Body Material	
	Stainless Steel	
Valve Series	Material Grade/ASTM Standard	
	VB10 Series VBM10 Series VB103 Series	
1	Lever Handle	Stainless Steel with PVC Sleeve
2	Stem Nut (2)	Stainless
3	Gland	Stainless Type 316/A276
4	Packing (2)	PTFE with Carbon 25%
5	Stem	Stainless Type 316/A276
6	Stop Pin (2)	Stainless
7	End Connector	Stainless Type 316/A276, A479
8	End Connector Seal	PTFE
9	Seat (2)	PEEK
10	Ball	Stainless Type 316/A276
11	Body	Stainless Type 316/A276, A479



Wetted component lubrication: Fluorocarbon-based lubricant.

- Wetted components listed in **BOLD** letters

Application and Operation

- Gas including CNG, liquid, and vacuum for instrumentation, process control, shipbuilding, offshore and onshore gas and oil industries.
- Valves are designed to control fluid in full open and full close position; using the valves to throttle the flow may reduce the valve cycle life.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.

Factory Test and Cleaning

- Every valve is factory tested @ 1000 psig (69 bar) nitrogen for leakage at seats to a maximum allowable leak rate of 0.1 std cm³/min.
- The stem packing is tested @ 1000psig (69 bar) nitrogen for no detectable leakage.
- Every valve is cleaned and packaged in accordance with HSME cleaning standard CS-01. Special cleaning standard CS-11 in compliance with ASTM G93 Level C is for option.

Dimensions

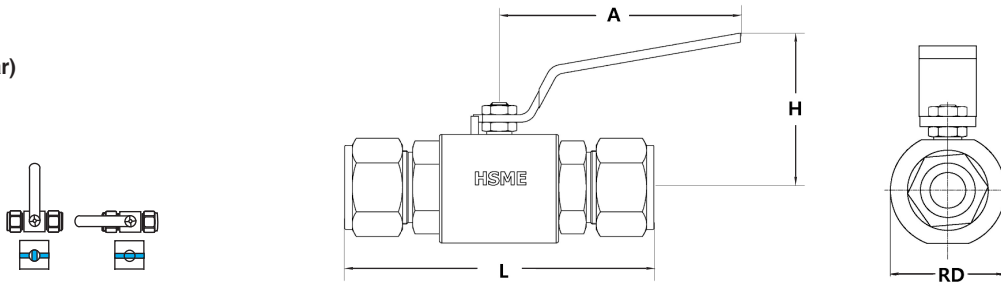
All dimensions shown in this catalog are for reference only and are subject to change. Dimensions with M Tube Fitting are in finger-tight position.

VB10 Series Two-Piece Ball Valves 2-Way On-Off Valves

90° Actuation

PEEK Seat

10 000 psig (689 bar)



Ordering Information and Dimensions

Ordering Number	End Connections Inlet/Outlet	Orifice mm (in.)	Cv	Dimensions, mm (in.)				
				L	H	A	RD	
VB10A-	A4T-SS	1/4 in. OD M Tube Fitting	4.8 (0.19)	1.6	107.0 (4.21)	63.2 (2.49)	134.0 (5.28)	45.0 (1.77)
	A6T-SS	3/8 in. OD M Tube Fitting	7.1 (0.28)	6.4	109.0 (4.29)			
	A8T-SS	1/2 in. OD M Tube Fitting	10.0 (0.39)	8	115.0 (4.53)			
	A10T-SS	5/8 in. OD M Tube Fitting			116.0 (4.57)			
	A6M-SS	6mm OD M Tube Fitting	4.8 (0.19)	1.6	106.0 (4.17)			
	A10M-SS	10mm OD M Tube Fitting	7.9 (0.31)	7	110.0 (4.33)			
	A12M-SS	12mm OD M Tube Fitting	9.5 (0.37)	7.5	113.0 (4.45)			
	A14M-SS	14mm OD M Tube Fitting	10.0 (0.39)	8	115.0 (4.53)			
	A16M-SS	16mm OD M Tube Fitting			80.0 (3.15)			
	F4N-SS	1/4 in. Female NPT						
	F6N-SS	3/8 in. Female NPT						
	F8N-SS	1/2 in. Female NPT	82.0 (3.23)					
	M4N-SS	1/4 in. Male NPT	7.1 (0.28)	6.4	100.0 (3.94)			
	M6N-SS	3/8 in. Male NPT	9.6 (0.38)	7.5	109.4 (4.31)			
M8N-SS	1/2 in. Male NPT	10.0 (0.39)	8					
VB10B	F8N-SS	1/2 in. Female NPT	12.7 (0.50)	10.1	89.00 (3.50)	65.7 (2.59)	134.0 (5.28)	50.0 (1.99)
	F12N-SS	3/4 in. Female NPT			90.00 (3.54)			
	A12M-SS	12mm M Tube Fitting	10.0 (0.39)	110.00 (4.33)				
	A16M-SS	16mm M Tube Fitting	12.7 (0.50)	116.00 (4.56)				
	A8T-SS	1/2 in. M Tube Fitting	10.4 (0.41)	110.00 (4.33)				
	A10T-SS	5/8 in. M Tube Fitting	12.7 (0.50)	116.00 (4.56)				
	A12T-SS	3/4 in. M Tube Fitting		115.00 (4.52)				
VB10C-	A12T-SS	3/4 in OD M Tube Fitting	15.7 (0.62)	18	127.9 (5.04)	89.2 (3.51)	160.0 (6.3)	60.0 (2.36)
	A16T-SS	1 in. OD M Tube Fitting	20.0 (0.79)	32	136.9 (5.39)			
	A20M-SS	20mm OD M Tube Fitting	15.9 (0.63)	18	127.3 (5.01)			
	A22M-SS	22mm OD M Tube Fitting	18.3 (0.72)	21	128.3 (5.05)			
	A25M-SS	25mm OD M Tube Fitting	20.0 (0.79)	32	137.2 (5.40)			
	F8N-SS	1/2 in. Female NPT	18.5 (0.73)	21	104.0 (4.09)			
	F12N-SS	3/4 in. Female NPT	20.0 (0.79)	32				
	F16N-SS	1 in. Female NPT						
VB10D-	A20T-SS	1 1/4 in. OD M Tube Fitting	25.0 (0.98)	50	193.3 (7.61)	100.5 (3.95)	160.0 (6.3)	80.0 (3.15)
	A24T-SS	1 1/2 in. OD M Tube Fitting			206.0 (8.11)			
	A32T-SS	2 in. OD M Tube Fitting			244.6 (9.63)			
	A32M-SS	32mm OD M Tube Fitting			199.0 (7.83)			
	A38M-SS	38mm OD M Tube Fitting			211.2 (8.31)			
	F12N-SS	3/4 in. Female NPT	23.9 (0.94)	45	130.0 (5.12)			
	F16N-SS	1 in. Female NPT	25.0 (0.98)	50				

How to order

To order, select a valve complete ordering number. Example: VB10A-A4T-SS

Fire Safe Valves

Valves are available for fire safe to API 607, BS6755 Part 2 standard.

Fire safe ball valves are supplied with PTFE seats, Graphite packing & end connector seal.

The pressure rating of fire safe VB10C and VB10D Series Ball Valves: 4000 psig (275 bar) @ 100°F (37°C).

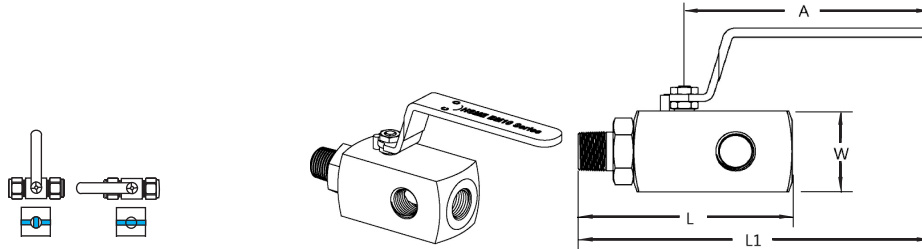
To order fire safe valve, insert "FS" in the ordering number. Example: VB10D-F16N-FS-SS

**VBM10 Series
2-Way Mult-Port Ball Valves**

90° Actuation
PEEK Seat
10 000 psig (689 bar)

Features

- By offering multiple outlets on the ball valve, these valves can ideally accommodate a maximum three branch connections.
- These valves are suitable for block-and-bleed assembly with a gauge and a purge valve on.
- Roddable straight-through orifice for easy cleaning.



Ordering Information and Dimensions

Ordering Number		End Connections		Orifice mm (in.)	Cv	Dimensions, mm (in.)			
		Inlet	Outlet			L	L1	A	W
VBM10A-	MF8N-SS	1/2 in. Male NPT	3x 1/2 in. Female NPT	10.0	8	116.5 (4.59)	188.0 (7.40)	134.0	40.0
	MF12N8N-SS	3/4 in. Male NPT	3x 1/2 in. Female NPT	(0.39)		119.5 (4.70)	191.0 (7.51)	(5.28)	(1.58)

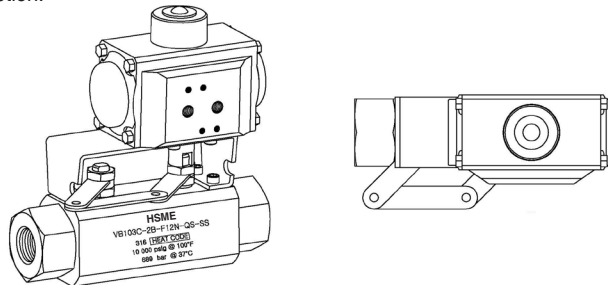
How to order: To order, select a valve complete ordering number. Example: VBM10A-MF8N-SS

**VB103 Series
3-Way Ball Valves**

90° Actuation
PEEK Seat
10 000 psig (689 bar)

Features

- Unique two balls in a 3-way valve.
- Valve is designed to function when one ball is in open position; the other ball is in closed position keeping the bottom inlet port open.
- Outstanding stem to stem bridge design enables the two-ball actuation at the same time with one manual handle or one pneumatic actuator.
- The 3-Way valve may be used as a selector valve, alternatively accepting media from either of two inlet side ports and directing it through a single outlet bottom port.
- Pressure rating with side ports as inlet: 10 000 psig (689 bar).
- The 3-Way valve is applicable to where repetitive bubble-tight closure, safety, and a long trouble-free life are required.
- Unique locking device is available for option.

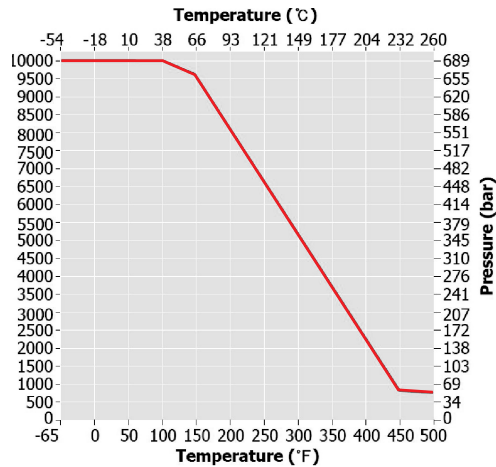


How to order

Complete Ordering Number		Orifice	Standard Bottom Inlet Port	Two Inlet Side Ports
VB103A-	2B-F8N-SS	10.0 mm (0.39 in.)	1/2 in. Female NPT	1/2 in. Female NPT
	2B-A8T-SS			1/2 in. OD M Tube Fittings
VB103B-	2B-F12N-SS	12.7 mm (0.50 in.)		3/4 in. Female NPT
	2B-A12T-SS			3/4 in. OD M Tube Fittings
VB103C-	2B-F16N-SS	20.0 mm (0.79 in.)		1 in. Female NPT
	2B-A16T-SS			1 in. OD M Tube Fittings

Pressure - Temperature Ratings
Peek Seats

VB10 Series
VBM10 Series
VB103 Series



Options

Sour Gas Service

Materials are selected in accordance with NACE MR0175/ISO 15156-3 or NACE MR0103 depending on the application. To order, add "SG" to the valve ordering number. Example: VB10A-F8N-SG-SS



Locking Device

The valve with locking device is manually locked out either in open or closed position. For additional security apply padlock to the valve. With the padlock on the valve, for valve to be actuated, the operator must obtain the padlock open key.

To order factory-assembled valve with locking device, insert "LD" to the valve ordering number. Example: VB10A-A4T-SG-LD-SS



Factory-Assembled Valve with Pneumatic Actuator

Pneumatic Actuator in compliance to ISO 5211

To order, select actuator designator. Example: **QSOLT**

Add the designator of the actuator to the valve ordering number. Example: VB10A-A4T-SG-QSOLT-SS


Step 1	Step 2	Step 3	Step 4
Q: 90° Actuation H: 180° Actuation	S: Spring Return D: Double Acting	O: Normally Open C: Normally Close Applicable to Spring Return actuator	Nil: Standard Temperature HT: High Temperature LT: Low Temperature

Actuator Operating Temperature, °F (°C)

Actuator	Standard Temperature	High Temperature	Low Temperature
Operating Temperature	-4 to 176 (-20 to 80)	-5 to 302 (-15 to 150)	-40 to 176 (-40 to 80)
Actuator O-Ring	NBR	FKM	Silicon

Safe Valve Selection

The selection of component for any application or system design must be considered to ensure safe performance. Component function, material compatibility, component pressure and temperature rating, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. HSME Corporation accepts no liability for any improper selection, installation, operation or maintenance.

	© Corporate Office & Factory 595-1 Hwajeon-dong, Gangseo-gu, Busan South Korea 618-280 www.hsmecorp.com	Contact Information	
		For Local Customers T 051-264-7700 – 4 F 051-264-7705 E sales@hsmecorp.com	For Overseas Customers T +82 70 4346 6211 / 6326 F +82 70 8282 5112 E hsme@hsmecorp.com