



2-Piece Ball Valves

VB10 Series: Up to 10 000 psig (689 bar)

VBM10 Series: 10 000 psig (689 bar)

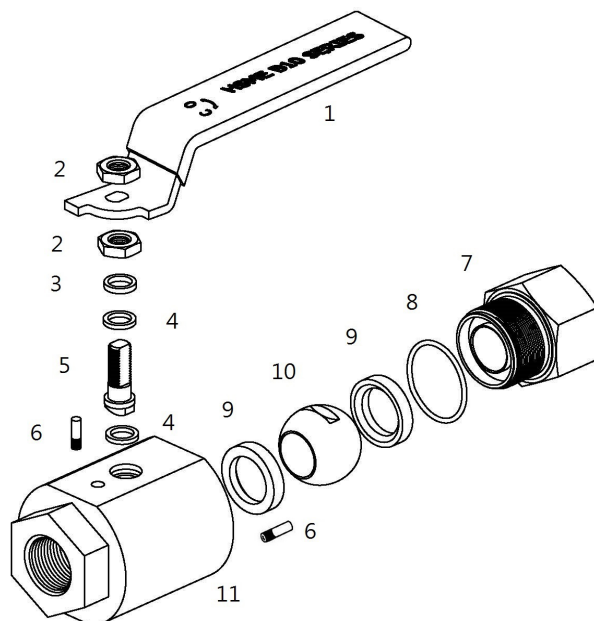
VB103 Series: 10 000 psig (689 bar)

Features

- 2-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 |
| 8-1 | End O-ring | FKM, not applicable to VB10A & VB10C Series |
| 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.

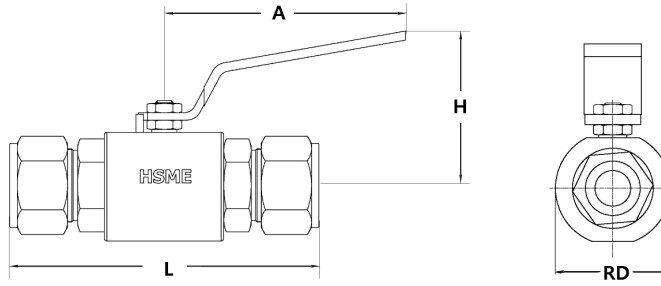
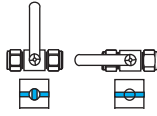
VB10 Series

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

90° Actuation
PEEK Seat

Working Pressure

VB10A, B, C, & D: 10 000 psig (689 bar)
VB10E Series: 6000 psig (413 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 | | | 82.0 (3.23) | | | |
| | F6N-SS | 3/8 in. Female NPT | | | 100.0 (3.94) | | | |
| | F8N-SS | 1/2 in. Female NPT | 6.4 | | | | | |
| | M4N-SS | 1/4 in. Male NPT | | 7.5 | | | | |
| M6N-SS | 3/8 in. Male NPT | 9.6 (0.38) | 7.5 | | 100.0 (3.94) | | | |
| M8N-SS | 1/2 in. Male NPT | 10.0 (0.39) | 8 | 109.4 (4.31) | | | | |
| VB10B | F8N-SS | 1/2 in. Female NPT | 12.7 (0.50) | 10.1 | 89.00 (3.50) | 65.7 (2.59) | 50.0 (1.99) | |
| | F12N-SS | 3/4 in. Female NPT | | | 90.00 (3.54) | | | |
| | A12M-SS | 12mm M Tube Fitting | | | 110.00 (4.33) | | | |
| | A16M-SS | 16mm M Tube Fitting | | | 116.00 (4.56) | | | |
| | A8T-SS | 1/2 in. M Tube Fitting | | | 110.00 (4.33) | | | |
| | A10T-SS | 5/8 in. M Tube Fitting | | | 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 | 175.3 (6.90) | 100.5 (3.95) | 80.0 (3.15) | |
| | A24T-SS | 1 1/2 in. OD M Tube Fitting | | | 190.0 (7.48) | | | |
| | A32M-SS | 32mm OD M Tube Fitting | | | 183.0 (7.21) | | | |
| | A38M-SS | 38mm OD M Tube Fitting | | | 190.0 (7.48) | | | |
| | F12N-SS | 3/4 in. Female NPT | 23.9 (0.94) | 45 | 114.0 (4.49) | | | |
| | F16N-SS | 1 in. Female NPT | 25.0 (0.98) | 50 | | | | |
| VB10E- | A32T-SS | 2 in. OD M Tube Fitting | 32.0 (1.26) | 90 | 242.0 (9.53) | 143.7 (5.66) | 283.0 (11.14) | 90.0 (3.54) |
| | A50M-SS | 50mm OD M Tube Fitting | | | 151.0 (5.95) | | | |
| | F24N-SS | 1 1/2 in. Female NPT | | | | | | |
| | F32N-SS | 2 in. Female NPT | | | | | | |

How to order

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

Fire Safe Valves

VB10C, D, & E Series are available for fire safe to API 607 standard.

Fire safe valves are supplied with graphite for packing and end connector seal.

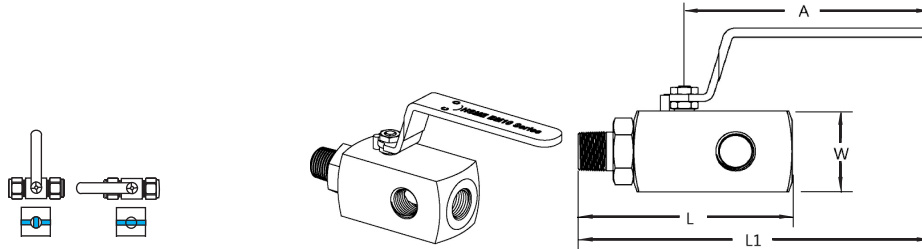
To order fire safe valve, insert "FS" in the ordering number. Example: VB10D-F16N-FS-SS

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) |

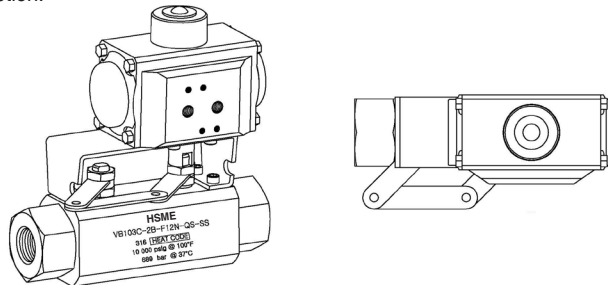
How to order: To order, select a valve complete ordering number. Example: VBM10A-MF8N-SS

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

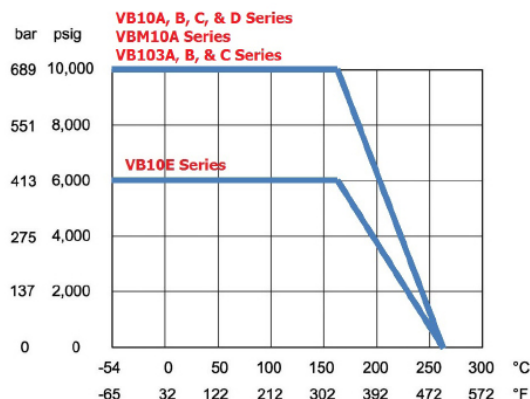
Peek Seats

Working pressures are based on PEEK Seat and S value of 20 000 psi (1378 bar) as per ASME B31.3 Process Piping Code.

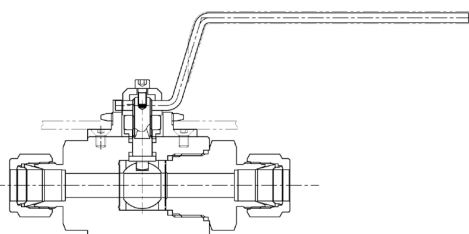
Options

Sour Gas Service

Valve 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



Panel Mounting



Panel mounting with locking nut is available. To order the valve with the option, insert "PM" designator into the valve ordering number. Example: VB10A-F8N-SG-PM-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 |