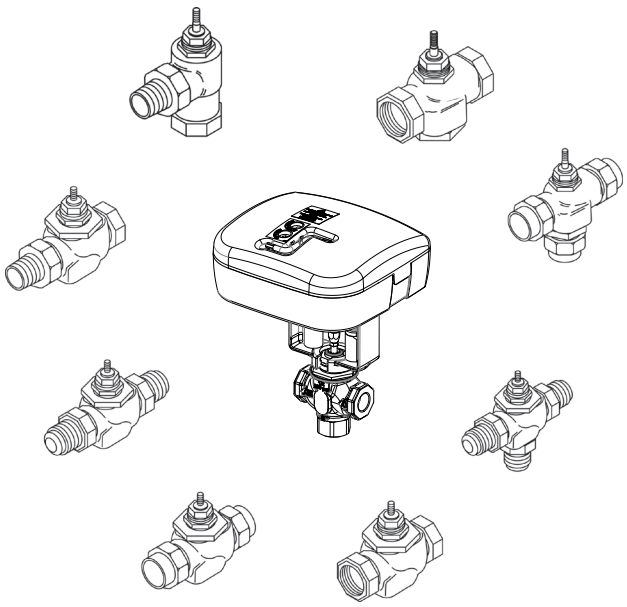
# VB-7000 Series 1/2” to 2” Globe Valves

## with **SpaceLogic** M900Axx (-VB) Series Spring Return Actuators



## Applications

Schneider Electric Spring Return **SpaceLogic** M900Axx-VB series linear actuators mount directly onto ½” to 2” VB-7xxx series two-way and three-way globe valve bodies. Applications include chilled or hot water and steam NEMA 1 or 2 (M900Ax-VB) or NEMA 4 (M900AxW-VB) models. Field selectable input signals include reverse and direct-acting, floating or proportional 0…10 Vdc, 2…10 Vdc, or 4…20 mAdc, and proportional sequencing input signal ranges.

## Valve and Actuator Selection Procedure

1. **Determine the required flow coefficient (Cv/kvs).** Using the required flow and pressure drop for the application, determine the required flow coefficient (consult CA28, F-13755 if necessary).
2. **Determine valve body part number.** Select a two-way valve body from Table 1, or a three-way mixing or diverting valve body from Table 2 having the required flow coefficient, size, body pattern, end connection, and temperature/pressure ratings appropriate for the application. Determine the desired loss of power position of the valve, consult Table 10 for assistance.
3. **Select the M900 actuator and appropriate spring return action.** Using the required close-off pressure for the application and the appropriate spring return action, consult Table 6 and select a M900A actuator having sufficient close-off pressure on the valve body selected in step 2.
4. Additional M900A actuator specifications may be found in Table 3 or in the M900A Installation Instructions sheets shown in Applicable Literature.
5. **Determine assembly part number.** If a complete factory valve and actuator assembly is required, consult Table 7, Table 8 or Table 9 for the actuator code of the M900A actuator selected in Step 3. For the complete assembly part number:
   a. Change the valve body part number prefix from VB to VU.
   b. Insert the actuator code in the third field of the part number.
   c. Confirm the factory assembly is available in Table 7 (two-way valves), Table 8 (three-way mixing valves), or Table 9 (three-way diverting valves).

Example

Valve body: VB-7213-0-4-4

Actuator: M900AR-VB (actuator code 650 from Table 3)

Complete assembly: VU-7213-650-4-4

M900A actuators are field configured for the desired control signal type and range plus the desired action. Consult the appropriate M900A Installation Instructions document.

## Applicable Literature

**SpaceLogic** M900A Datasheet F-27682

**SpaceLogic** M900A Installation Instructions F-27683

AV-821 Installation Instructions F-27701

Valves and Actuators Catalog F-27855

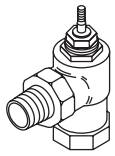
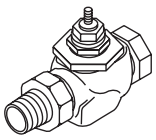
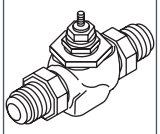
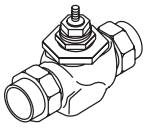
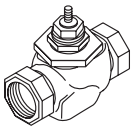
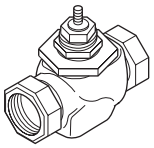
CA-28 Control Valve Sizing F-13755



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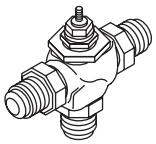
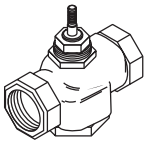
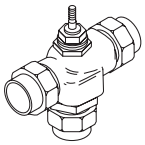
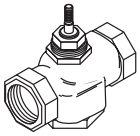
## Table 1: VB-72xx Series Two-Way Valve Bodies

| Two-Way Valves<br>• Stem Up Open or Stem Up Closed<br>• ½"…1¼" Union Angle Straightway<br>• 5/8" OD SAE Flared<br>• ½" to 2" Union Sweat<br>• ½" to 2" NPT Threaded | | Application: Chilled, Hot Water, or Steam | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | |  |  |  |  |  |  | |
| | | **Union Angle** | **Union Straightway** | **SAE Flared** | **Union Sweat** | **NPT Threaded Rp Threaded** | **NPT Threaded** | |
| **Size** | | ½" to 1¼" | ½" to 1¼" | 5/8" OD | ½" to 2" | ½" to 2" (15…50 mm) | ½" to 2" | |
| **Valve Body Part Number, Stem Up Open** | | VB-7211-0-3-P | VB-7211-0-4-P | VB-7212-0-4-P | VB-7214-0-4-P | VB-7213-0-4-P | VB-7253-0-4-P | VB-7273-0-4-P |
| **Valve Body Part Number, Stem Up Closed** | | — | VB-7221-0-4-P | VB-7222-0-4-P | VB-7224-0-4-P | VB-7223-0-4-P | VB-7263-0-4-P | VB-7283-0-4-P |
| **ANSI Seat Leakage** | | ANSI IV | ANSI V/ANSI IV* | ANSI IV | ANSI V/ANSI IV* | | | |
| | | * Designed to ANSI V with ANSI IV above 35 psi (241 kPa) close off. Long term seat leakage dependent on proper water conditioning maintenance of the system. | | | | | | |
| **Flow Type** | | Modified Equal Percentage | | | | | Modified Linear | |
| **Material** | Body | Bronze | | | | | Bronze | |
| | Seat | Bronze | | | | | Stainless Steel | |
| | Stem | Stainless Steel | | | | | Stainless Steel | |
| | Plug | Brass | | | | | Stainless Steel | |
| | Packing | Spring Loaded TFE/EPDM | | | | | Spring Loaded TFE | |
| | Disc | EPDM | | | | | Teflon | None |
| **Pressure Class** | | ANSI 250 Up to 400°F (204°C) below 150°F (65°C), ISO PN16 | | | | | | |
| **Maximum Inlet Pressure, Steam** | | 35 PSIG (241 kPa) | | | | | 100 PSIG (690 kPa) | 150 PSIG (1034 kPa) |
| **Control Media Temperature Range** | | 20°F…281°F (-7°C…138°C) | | | | | 20 to 340°F (-7…171°C) | 20 to 400°F (-7…205°C) |
| **Maximum Allowable Differential Pressure, Water** [b] | | 35 PSI (241 kPa) for Normal Life | | | | | 35 PSIG (241 kPa) | 35 PSIG (241 kPa) |
| **Maximum Allowable Differential Pressure, Steam**[b] | | 20 PSI (138 kPa) | | | | | 35 PSI (241 kPa) | 50 PSI (345 kPa) |
| **To Select a Port Code (P)** | | | | | | | | |
| **P Code** | **Valve Size** | **Cv (kvs) Rating** | | | | | | |
| **01** | ½" (15 mm) | 0.4 (0.34) | 0.4 (0.34) | 0.4 (0.34) | 0.4 (0.34) | 0.4 (0.34) | 0.4 (0.34) | 0.4 (0.34) |
| **02** | | 1.3 (1.1) | 1.3 (1.1) | 1.3 (1.1) | 1.3 (1.1) | 1.3 (1.1) | 1.3 (1.1) | 1.3 (1.1) |
| **03** | | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) |
| **04** | | 5.0 (4.3) | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) |
| **05** | ¾" (19 mm) | 5.5 (4.7) | 5.5 (4.7) | — | 5.5 (4.7) | 5.5 (4.7) | 5.5 (4.7) | 5.5 (4.7) |
| **06** | | 8.5 (7.4) | 7.5 (6.5) | — | 7.5 (6.5) | 7.5 (6.5) | 7.5 (6.5) | 7.5 (6.5) |
| **07** | 1" (25 mm) | 14 (12) | 10 (8.6) | — | 10 (8.6) | 10 (8.6) | 10 (8.6) | 10 (8.6) |
| **08** | | 16 (14) | 14 (12) | — | 14 (12) | 14 (12) | 12 (10.4) | 12 (10.4) |
| **09** | 1¼" (32 mm) | 22 (19) | 20 (17.3) | — | 20 (17.3) | 20 (17.3) | 20 (17.3) | 20 (17.3) |
| **10** | 1½" (40 mm) | — | — | — | 28 (21.2) | 28 (21.2) | 28 (21.2) | 28 (21.2) |
| **11** | 2" (50 mm) | — | — | — | 40 (34.6) | 40 (34.6) | 40 (34.6) | 40 (34.6) |

a. 15 to 50 mm valves with metric thread Rp ½ to Rp 2.
b. Maximum recommended differential in full open position. Do not exceed recommended differential pressure (pressure drop) or integrity of parts may be affected.

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## Table 2: VB-73xx Series Three-Way Valve Bodies

| Three-Way Valves<br>• Mixing or Diverting<br>• 5/8" OD SAE Flared<br>• ½" to 2" NPT Threaded<br>• ½" to 2" Union Sweat | | Application: Chilled or Hot Water | | | |
|---|---|---|---|---|---|
| | |  |  |  |  |
| | | **SAE Flared** | **NPT Threaded<br>Rp Threaded** | **Union Sweat** | **NPT Threaded** |
| **Size** | | 5/8" OD | ½"…2"<br>(15…50 mm) | ½"…2"<br>(15…50 mm) | ½"…2"<br>(15…50 mm) |
| **Valve Body Part Number, Mixing[a]** | | VB-7312-0-4-P | VB-7313-0-4-P | VB-7314-0-4-P | — |
| **Valve Body Part Number, Diverting [c]** | | — | — | — | VB-7323-0-4-P |
| **ANSI Seat Leakage** | | ANSI III | ANSI V/ANSI IV* | | ANSI Class III |
| | | * Designed to ANSI V with ANSI IV above 35 psi (241 kPa) close off. Long term seat leakage dependent on proper water conditioning maintenance of the system | | | |
| **Flow Type** | | Modified Equal Percentage | | | |
| Material | Body | Bronze | | | |
| | Seat | Bronze | | | |
| | Stem | Stainless Steel | | | |
| | Plug | Brass | | | |
| | Packing | Spring Loaded TFE/EPDM | | | |
| | Disc | None | | | |
| **Pressure Class** | | ANSI 250 up to 400°F (204°C) below 150°F (65°C), ISO PN16 | | | |
| **Control Media Temperature Range** | | 20°F to 281 °F (-7°C to 138°C) | | | |
| **Maximum Differential Pressure, Water[d]** | | 35 PSI (241 kPa) for Normal Life | | | |
| **To Select a Port Code (P)** | | | | | |
| **P Code** | **Valve Size** | **Cv (kvs) Rating** | | | |
| **02** | ½" (15 mm) | 2.2 (1.9) | 2.2 (1.9) | 2.2 (1.9) | — |
| **04** | | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) | 4.4 (3.8) |
| **06** | ¾" (19 mm) | — | 7.5 (6.5) | 7.5 (6.5) | 7.5 (6.5) |
| **08** | 1" (25 mm) | — | 14 (12) | 14 (12) | 15 (13) |
| **09** | 1¼" (32 mm) | — | 20 (17.3) | 20 (17.3) | 20 (17.3) |
| **10** | 1½" (40 mm) | — | 28 (21.2) | 28 (21.2) | 28 (21.2) |
| **11** | 2" (50 mm) | — | 41 (36) | 40 (34.6) | 40 (34.6) |

a. On VB-7313 and VB-7315 mixing valves, port AB is the common port (located on the side) and ports A and B are inlets. Flow is from B to AB when the valve stem is in up position (port A closed). Flow is from A to AB when valve stem is in down position (port B closed).

b. 15 to 50 mm valves with metric thread Rp 1/2 to Rp 2.

c. On VB-7323 diverting valves, inlet port B is the common port (located on the bottom) and ports AB and A are outlets. When the valve stem is in the up position, flow is from B to AB (port A closed). When the valve stem is in the down position, flow is from port B to A (port AB closed).

d. Maximum recommended differential in full open position. Do not exceed recommended differential pressure (pressure drop) or integrity of parts may be affected.

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## Table 3 Schneider Electric Spring Return M900A Factory Assemblies Model Chart

| Model | Act Code | Force | Power | Running Watts | Transformer Size | Floating Control[a] | Proportional Control[b] | Feedback Voltage[a] | (2) SPDT Aux Switches[c] | Spring Return Action | IP Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M900AR-VB** | 650 | 202 lbf (900 N) | 24 Vac 50/60 Hz 20–30 Vdc 1.5 A | 21 | 50 Va | Yes | 0…10 Vdc, 2…10 Vdc, 4…20 Ma | 2…10 Vdc or 0…5 Vdc | No | Retract | NEMA 2 |
| **M900ARW-VB** | 660 | | | | | | | | | | NEMA 4 |

a. Dip switch selectable.
b. 0…5, 2-6 or 5…10, 6…10 also selectable by dip switch.
c. S2 auxiliary switches may be added in the field order 880 0104 000.

## Table 4 Schneider Electric Spring Return M900A Actuators for Field Assembly

| Model | Mounting Kit Required | Force | Power | Running Watts | Transformer Size | Floating Control[a] | Proportional Control[b] | Feedback Voltage[a] | (2) PDT Aux Switches[c] | Spring Return Action | IP Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M900AR** | AV-821 | 202 lbf (900 N) | 24 Vac 50/60 Hz 20–30 Vdc 1.5 A | 21 | 50 Va | Yes | 0…10 Vdc, 2…10 Vdc, 4…20 Ma | 2…10 Vdc or 0…5 Vdc | No | Retract | NEMA 2 |
| **M900AE** | | | | | | | | | | Extend | |
| **M900AR-VB** | None | | | | | | | | | Retract | NEMA 4 |
| **M900ARW** | AV-821 | | | | | | | | | | |
| **M900ARW-VB** | None | | | | | | | | | | |
| **M900ARW-S2** | AV-821 | | | | | | | | Yes | | |
| **M900AEW-S2** | | | | | | | | | | Extend | |

a. Dip switch selectable.
b. 0…5, 2-6 or 5…10, 6…10 also selectable by dip switch.
c. S2 auxiliary switches may be added in the field. Order 880 0104 000.

## Table 5 Ambient Temperature Restrictions for M900A Valve Actuators

| Fluid Temperature in Valve Body | Maximum Allowable Ambient Temperature[a] |
|---|---|
| Chilled Water | 122°F (50°C) |
| 281°F (138°C) | 113°F (45°C) |
| 300°F (149°C) | 107°F (42°C) |
| 340°F (171°C) | 100°F (38°C) |
| 366°F (186°C) | 90°F (32°C) |

a. Minimum allowable ambient operating temperature 14°F (-10°C).
Note: When installing valve and actuator assemblies, observe the minimum and maximum fluid and ambient temperature limits shown in Table 1, Table 2 and Table 4.

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## Table 6 Select VB-7xxx Valve/ M900Axx(-VB)[a] Spring Return Actuator Having Sufficient Close-off for Application

| Valve Body | Valve Action | P-Code | Size | Close-off Ratings PSI - M900Axx[a] |
|---|---|---|---|---|
| VB-7211-0-3-P<br>VB-7211-0-4-P<br>VB-7212-0-4-P<br>VB-7214-0-4-P<br>VB-7213-0-4-P<br>VB-7253-0-4-P<br>VB-7273-0-4-P | Stem up Open | 1, 2, 3, 4 | ½" | 250 |
| | | 5, 6 | ¾" | 250 |
| | | 7, 8 | 1" | 220 |
| | | 9 | 1 1/4" | 135 |
| | | 10 | 1 ½" | 90 |
| | | 11 | 2" | 50 |
| VB-7221-0-4-P<br>VB-7222-0-4-P<br>VB-7224-0-4-P<br>VB-7223-0-4-P<br>VB-7263-0-4-P<br>VB-7283-0-4-P | Stem up Closed | 1, 2, 3, 4 | ½" | 250 |
| | | 5, 6 | ¾" | 250 |
| | | 7, 8 | 1" | 220 |
| | | 9 | 1 1/4" | 135 |
| | | 10 | 1 ½" | 90 |
| | | 11 | 2" | 50 |
| VB-7312-0-4-P<br>VB-7313-0-4-P<br>VB-7314-0-4-P | 3 Way Mixing | 2, 4 | ½" | 250 |
| | | 6 | ¾" | 250 |
| | | 8 | 1" | 220 |
| | | 9 | 1 1/4" | 135 |
| | | 10 | 1 ½" | 90 |
| | | 11 | 2" | 50 |
| VB-7323-0-5-P | 3 Way Diverting | 4 | ½" | 250 |
| | | 6 | ¾" | 250 |
| | | 8 | 1" | 250 |
| | | 9 | 1 1/4" | 250 |
| | | 10 | 1 ½" | 250 |
| | | 11 | 2" | 250 |

a. M900Axx-VB or M900Axx Styles

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# Factory Assemblies

## Table 7 Factory Valve and Actuator Assemblies - Two-Way Valves

| Valve Assembly Part Number[c] | P Code | Size | Actuator M900ARx (-VB)[a] Close Off |
|---|---|---|---|
| VU-7213-6x0-4-P<br>VU-7223-6x0-4-P<br>VU-7253-6x0-4-P<br>VU-7263-6x0-4-P | 1, 2, 3, 4 | ½" | 250 |
| | 5, 6 | ¾" | 250 |
| | 7, 8 | 1" | 220 |
| | 9 | 1¼" | 135 |
| | 10 | 1½" | 90 |
| | 11 | 2" | 50 |

## Table 8 Factory Valve and Actuator Assemblies - Three-Way Valves Mixing

| Valve Assembly Part Number[c] | P Code | Size | Actuator M900ARx (-VB)[a] |
|---|---|---|---|
| VU-7313-6x0-4-P | 2, 4 | ½" | 250 |
| | 6 | ¾" | 250 |
| | 8 | 1" | 220 |
| | 9 | 1¼" | 135 |
| | 10 | 1½" | 90 |
| | 11 | 2" | 50 |

## Table 9 Factory Valve and Actuator Assemblies - Three-Way Valves Diverting

| Valve Assembly Part Number[c] | P Code | Size | Actuator M900ARx (-VB)[a] Close Off |
|---|---|---|---|
| VU-7323-6x0-4-P | 4 | ½" | 250 |
| | 6 | ¾" | 250 |
| | 8 | 1" | 250 |
| | 9 | 1¼" | 250 |
| | 10 | 1½" | 250 |
| | 11 | 2" | 250 |

## Table 10 VB-7xxx and M900Axx Spring Return Actions

| Valve Body Part Number | Valve Body Description | Valve Body Stem Up Water Flow | M900ARx (-VB)[a] | | | M900AEx[b] | | |
|---|---|---|---|---|---|---|---|---|
| | | | Unpowered Valve Assembly Water Flow | Switch 7 off, Loss of Control Signal Only | Switch 7 on, Loss of Control Signal Only | Unpowered Valve Assembly Water Flow | Switch 7 off, Loss of Control Signal Only | Switch 7 on, Loss of Control Signal Only |
| VB-7213<br>VB-7253 | Two Way Stem Up Open | Open | Full Flow | Full Flow | No Flow | No Flow | No Flow | Full Flow |
| VB-7223<br>VB-7263 | Two Way Stem Up Closed | Closed | No Flow | No Flow | Full Flow | Full Flow | Full Flow | No Flow |
| VB-7313 | Three Way Mixing | Flow B to AB | Flow B to AB | Flow B to AB | Flow A to AB | Flow A to AB | Flow A to AB | Flow B to AB |
| VB-7323 | Three Way Diverting | Flow B to AB | Flow B to AB | Flow B to AB | Flow B to A | Flow B to A | Flow B to A | Flow B to AB |

a. M900AR Actuator spring pulls stem up on power loss.
b. M900AE Actuator spring pushes stem down on power loss.
c. 650= M900AR-VB, 660= M900ARW-VB

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# Dimensions

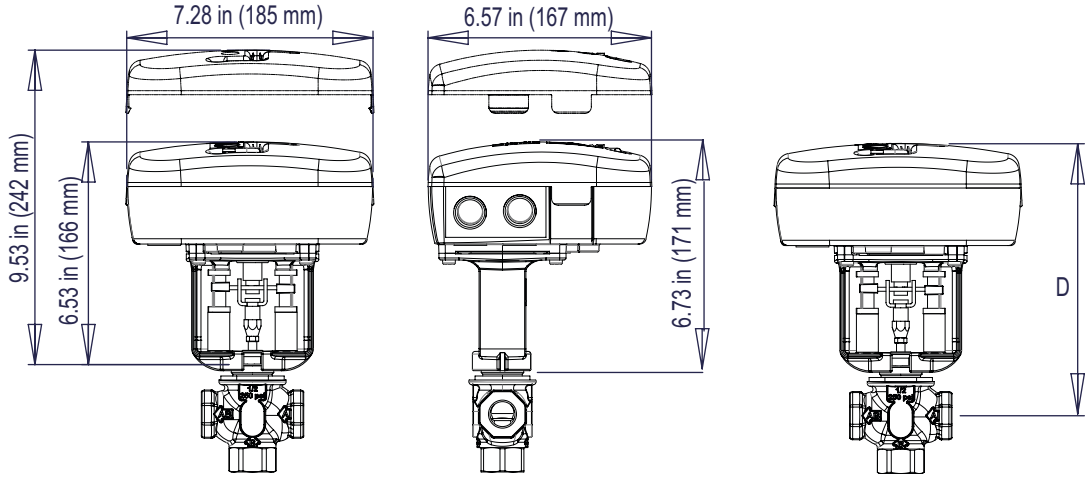



Figure-1 **SpaceLogic** M900Axx-VB Style Dimensions [a]

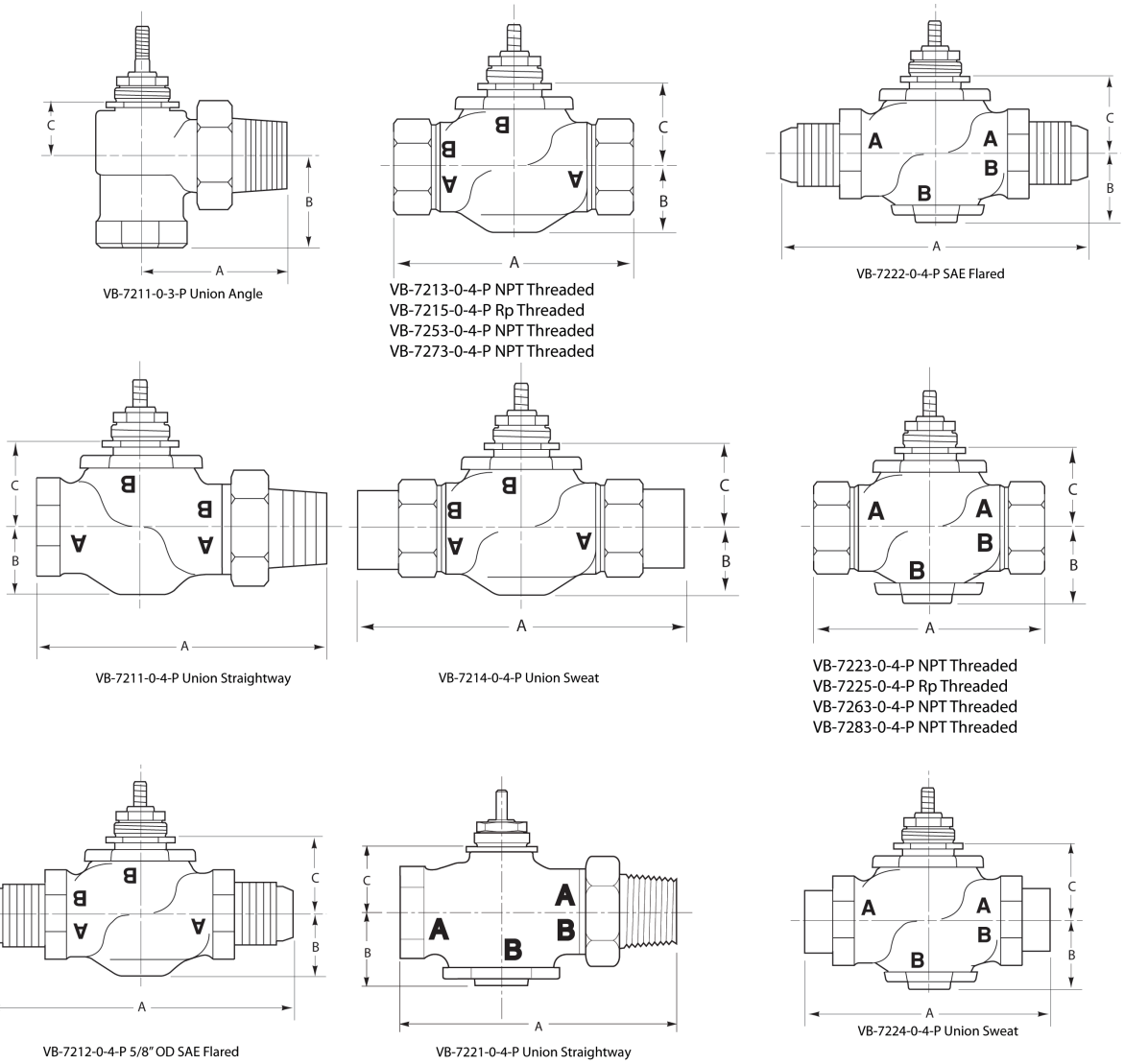



Figure-2 Two-Way VB-7xxx Valve Body Dimensions

a. M900Axx-VB (NEMA ½) model shown. The recommended clearance above the actuator to remove M900Ax actuator cover is 3" (76 mm) and M900AxW actuator cover is 5 " (127 mm).

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## Table 11 Dimensions — Two-Way Valves (see Figure-1 and Figure-2)

| Valve Body Part Number | Size | Dimensions in Inches (mm) | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D - M900Axx U-Bolt Style[a b] | D - M900Axx-VB Screw Mount Style[a] |
| VB-7211-0-3-P | ½” | 3-1/8 (79) | 1-5/8 (41) | ¾ (19) | 10-9/32 (261) | 7-13/32 (188) |
| | ¾” | 3-5/8 (92) | 1-11/16 (43) | 15/16 (24) | 10-15/32 (266) | 7-19/32 (193) |
| | 1” | 4-1/16 (103) | 1-15/16 (49) | 1¼ (32) | 10-25/32 (274) | 7-29/32 (201) |
| | 1¼” | 4-5/16 (110) | 2-3/16 (56) | 1-11/16 (43) | 11-7/32 (285) | 8-11/32 (212) |
| VB-7211-0-4-P | ½” | 4-3/16 (106) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” | 4-15/16 (125) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1” | 6 (152) | 1-1/8 (29) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼” | 6¼ (159) | 1-3/8 (35) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| VB-7212-0-4-P | 5/8” O.D. | 4 (102) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| VB-7213-0-4-P VB-7253-0-4-P VB-7273-0-4-P | ½” (15 mm) | 3 (76) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” (20 mm) | 3-5/8 (92) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1” (25 mm) | 4-5/8 (117) | 1-1/8 (29) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼” (32 mm) | 4-5/8 (117) | 1-3/8 (35) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½” (40 mm) | 5-3/8 (137) | 1½ (38) | 1-7/8 (48) | 11-13/32 (290) | 8-17/32 (217) |
| | 2” (50 mm) | 6-1/8 (156) | 1-9/16 (40) | 2-1/8 (54) | 11-21/32 (296) | 8-25/32 (223) |
| VB-7214-0-4-P | ½” | 4-3/16 (106) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” | 5-7/16 (138) | 1-1/16 (27) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1” | 6-5/8 (168) | 1-1/8 (29) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼” | 6-13/16 (173) | 1-3/8 (35) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½” | 8-5/16 (211) | 1½ (38) | 1-7/8 (48) | 11-13/32 (290) | 8-17/32 (217) |
| | 2” | 9-3/16 (233) | 1-9/16 (40) | 2-1/8 (54) | 11-21/32 (296) | 8-25/32 (223) |
| VB-7221-0-4-P | ½” | 4-3/16 (106) | 1¼ (32) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” | 4-15/16 (125) | 1¼ (32) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1” | 6 (152) | 1¾ (45) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼” | 6¼ (159) | 1¾ (45) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| VB-7222-0-4-P | 5/8” O.D. | 4 (102) | 1¼ (32) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| VB-7223-0-4-P VB-7263-0-4-P VB-7283-0-4-P | ½” (15 mm) | 3-1/16 (78) | 1-3/16 (30) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” (20 mm) | 3-5/8 (92) | 1-3/16 (30) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1“ (25 mm) | 4-5/8 (117) | 1¾ (44) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼“ (32 mm) | 4-5/8 (117) | 1¾ (44) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½” (40 mm) | 5-3/8 (137) | 1-13/16 (46) | 1-9/16 (40) | 11-3/32 (282) | 8-7/32 (209) |
| | 2” (50 mm) | 6-1/8 (156) | 2¼ (57) | 1-5/8 (42) | 11-5/32 (283) | 8-9/32 (210) |
| VB-7224-0-4-P | ½” | 4-3/16 (106) | 1¼ (32) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾” | 5-7/16 (138) | 1¼ (32) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1” | 6-5/8 (168) | 1¾ (45) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼” | 6-13/16 (173) | 1¾ (45) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½” | 8-5/16 (211) | 1-13/16 (45) | 1-9/16 (40) | 11-3/32 (282) | 8-7/32 (209) |
| | 2” | 9-3/16 (233) | 2-1/16 (53) | 1-5/8 (42) | 11-5/32 (283) | 8-9/32 (210) |

a. Assembly height, centerline of valve body to top of actuator (see Figure-1). For M900Axx-xx, leave an additional 3” (76 mm) and for M900AxW-xx leave additional 5” (127 mm) clearance for cover removal.
b. U-Bolt Style requires an AV-821 Adapter Kit (Order Separately).

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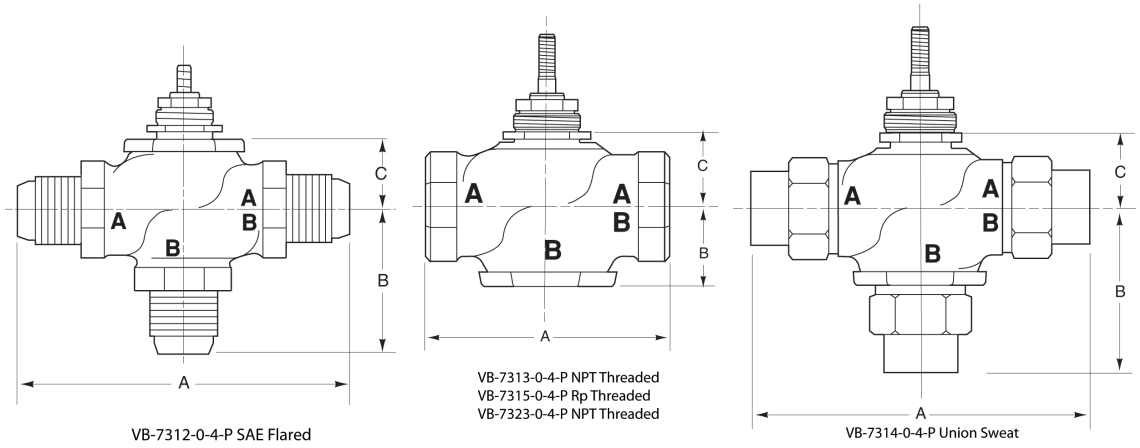



Figure-3 Three-Way VB-73xx Valve Body Dimensions

## Table 12 Dimensions — Three-Way Valves (see Figure-3)

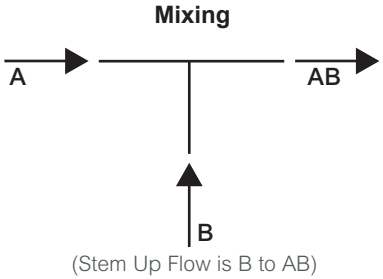
| Valve Body Part Number | Size | Dimensions in Inches (mm) | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D - M900Axx U-Bolt Style[a b] | D - M900Axx-VB Screw Mount Style[a] |
| **VB-7312-0-4-P** | 5/8" OD | 4 (102) | 2¼ (57) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| **VB-7313-0-4-P** | ½" (15 mm) | 3-1/16 (76) | 1¾ (44) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾" (20 mm) | 3-5/8 (92) | 1-13/16 (46) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1" (25 mm) | 4-5/8 (118) | 1¾ (44) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼" (32 mm) | 4-5/8 (118) | 1¾ (44) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½" (40 mm) | 5-3/8 (137) | 1-13/16 (46) | 1-9/16 (40) | 11-3/32 (282) | 8-7/32 (209) |
| | 2" (50 mm) | 6-1/8 (156) | 2¼ (57) | 1-5/8 (42) | 11-5/32 (283) | 8-9/32 (210) |
| **VB-7314-0-4-P** | ½" | 4-3/16 (106) | 2-5/16 (59) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾" | 5-7/16 (138) | 2-5/8 (67) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1" | 6-5/8 (168) | 3-3/16 (81) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼" | 6-13/16 (173) | 3-7/16 (87) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½" | 8-5/16 (211) | 3¾ (95) | 1-9/16 (40) | 11-3/32 (282) | 8-7/32 (209) |
| | 2" | 9-3/16 (233) | 4-3/16 (106) | 1-5/8 (42) | 11-5/32 (283) | 8-9/32 (210) |
| **VB-7323-0-4-P** | ½" | 3-1/16 (76) | 1-3/8 (35) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | ¾" | 3-5/8 (92) | 1-11/16 (43) | 1-1/8 (29) | 10-21/32 (271) | 7-25/32 (198) |
| | 1" | 4-5/8 (118) | 1-9/16 (40) | 1-3/16 (30) | 10-23/32 (272) | 7-27/32 (199) |
| | 1¼" | 4-5/8 (118) | 1-5/8 (41) | 1-7/16 (37) | 10-31/32 (279) | 8-3/32 (206) |
| | 1½" | 5-3/8 (137) | 1-11/16 (43) | 1-9/16 (40) | 11-3/32 (282) | 8-7/32 (209) |
| | 2" | 6-1/8 (156) | 1-7/8 (48) | 1-5/8 (42) | 11-5/32 (283) | 8-9/32 (210) |

a. Assembly height, centerline of valve body to top of actuator (see Figure-1). For M900Ax-xx, leave an additional 3" (76 mm) and for M900AxW-xx leave additional 5" (127 mm) clearance for cover removal.
b. U-Bolt Style requires an AV-821 Adapter Kit (Order Separately).

# Valve Flow Patterns

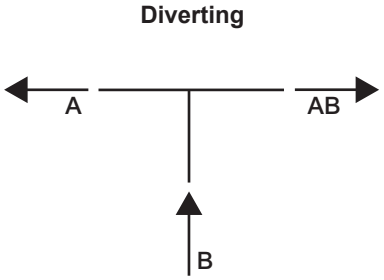



Figure-4 VB-72xx Two-Way Valve Flow




(Stem Up Flow is B to AB)

Figure-5 VB-7313 Three-Way Mixing Valve Flow




(Stem Up Flow is B to AB)

Figure-6 VB-7323 Three-Way Diverting Valve Flow

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