

VB2, VB3 Ball Valve/Actuator Assemblies

INSTALLATION INSTRUCTIONS

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check ratings given in instructions and on the product to ensure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

Preparation



CAUTION

Equipment Damage Hazard.
Foreign particles like dirt and metal chips can damage the ball seals.
Clean upstream lines prior to installation.



CAUTION

Equipment Damage Hazard.
Improper chemicals can damage the valve.
Use neither aerosol products nor petroleum-based lubricants.

1. Clean the lines upstream of particles larger than 1/16 in. diameter (welding slag, pipe scale and other contaminants).
2. Proceed with installation once the system specifics (expansion/contraction of the system and its medium as well as operating pressures) are within tolerances.
3. Eliminate air from system.
4. Two-way valves are marked to show flow direction.

IMPORTANT

Flow arrows must point in the direction of the flow for proper operation.

NOTE: For three-way valve mounting, see Fig. 3 through 5.

5. Stem rotation:
 - a. For two-way valves:
 - (1) Clockwise to close.
 - (2) Counterclockwise to open.
 - b. For three-way valves:
 - (1) Clockwise to increase AB to B flow.
 - (2) Counterclockwise to increase AB to A flow.
6. Valve must be mounted with the actuator/bracket above the valve body. Do not install the valve with the stem below horizontal or upside down. (See Fig. 1 and 2.)

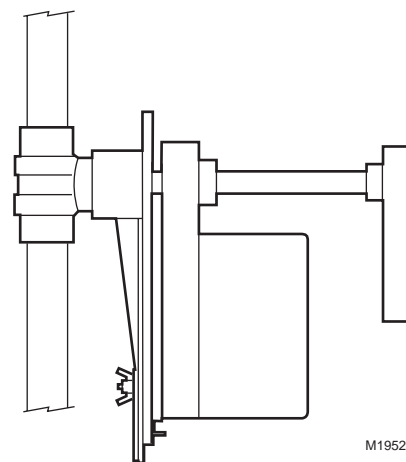


Fig. 1. Vertical valve installation.

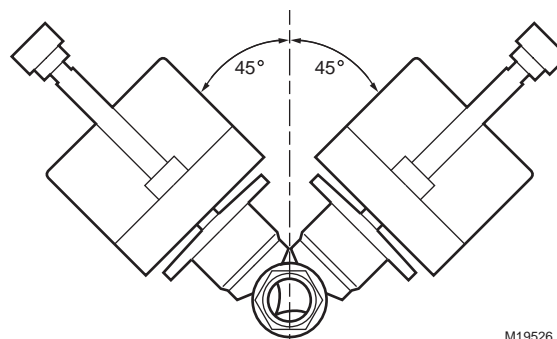


Fig. 2. Acceptable valve angle from vertical.



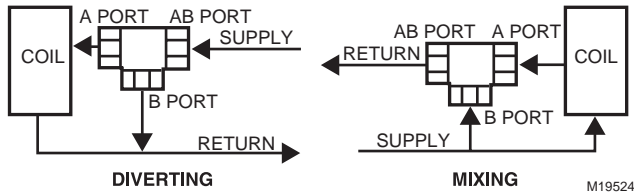


Fig. 3. Three-way ball valve flow orientation (not to scale).

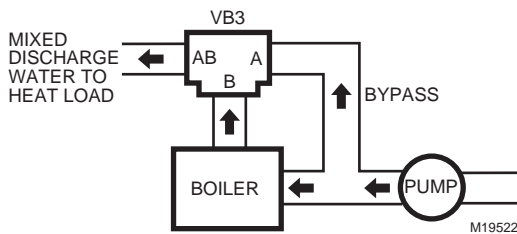


Fig. 4. Boiler bypass for reset control.

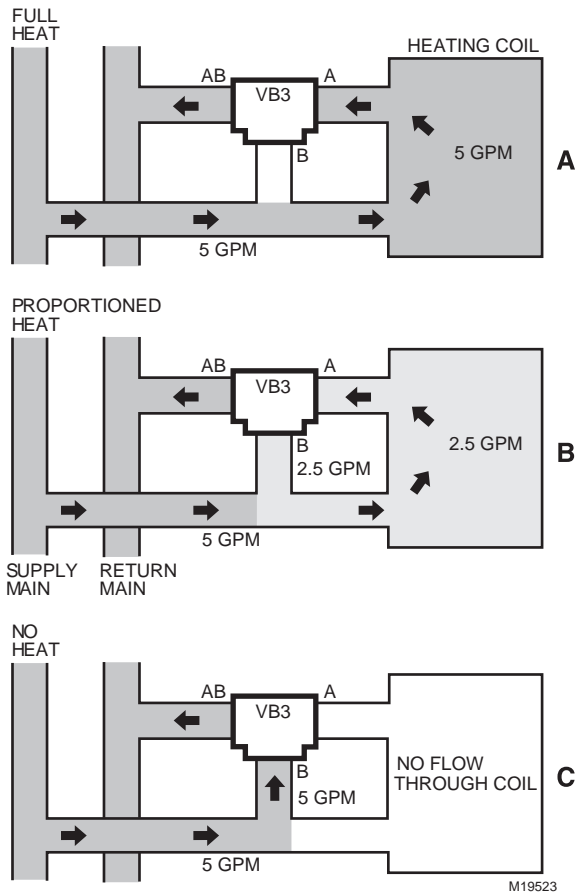


Fig. 5. Three-way mixing valve operation with coil bypass.

Mechanical Installation

The valves are tapped in NPT and should be sealed with an approved pipe sealant. Torque should not exceed 75 ft-lb.

See Fig. 7 and 8 for valve dimensions. Refer to actuator literature for actuator dimensions.

Mounting Plate Adjustment

The Actuator Mounting Plate can be rotated to a different position for installation in confined spaces. This is accomplished as follows:

1. Remove the handle from the shaft and set it aside.
2. Remove the two screws that hold the stem assembly to the mounting plate and set them aside.
3. Remove and set aside the stem assembly.
4. Remove and set aside the two screws that attach the mounting plate to the valve.
5. Remove and set aside hold-down ring from mounting plate.

NOTE: Take note of the screw hole positions on the valve. They limit the mounting plate positions.

6. Rotate mounting plate around valve top to the desired position.

IMPORTANT

Do not rotate the valve stem while the hold-down ring is removed. This can change the common port from AB to A.

7. Lower ring down to valve body and engage it in the new position relative to the mounting plate.
8. Tighten screws to valve body securing the mounting plate.
9. Reattach the stem assembly to the mounting plate.
10. If desired, replace the handle on the shaft.

NOTE: See Fig. 6 for valve exploded view.

IMPORTANT

After adjusting a three-way valve mounting plate, take note whether the AB or A port is the common port.

Electrical Installation

1. If necessary, remove actuator wiring cover.
2. Wire the actuator according to the appropriate diagram.
3. If applicable, position reverse/direct acting switch for desired operation.
4. Replace cover.

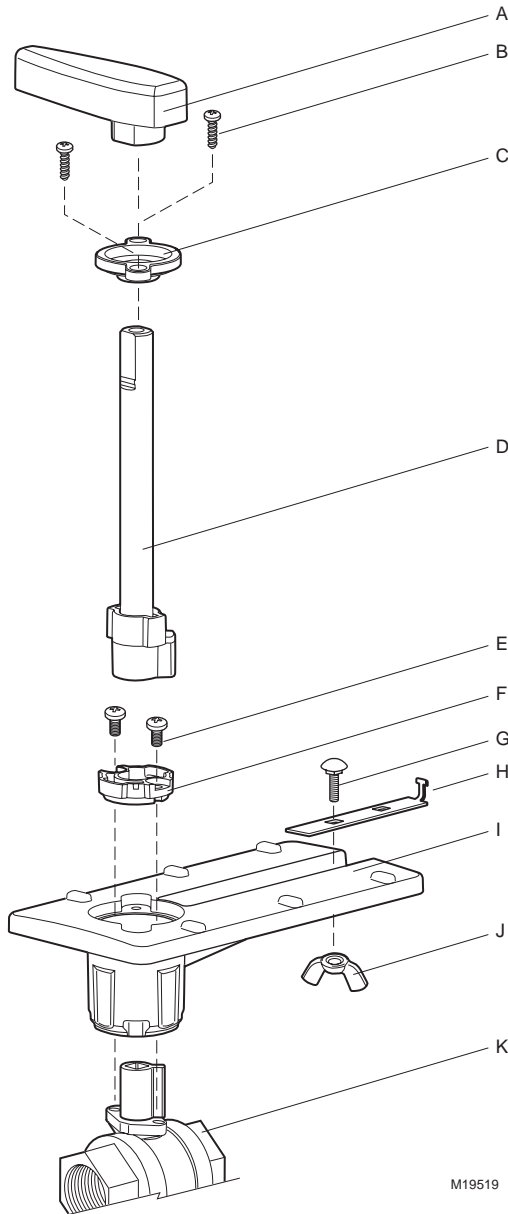
OPERATION AND CHECKOUT

Once both the mechanical and electrical installations are complete:

1. Cycle the actuator to verify that the direction of rotation suits the control sequence.
2. If the rotation direction is incorrect:
 - a. For 2-position control actuators: Remount actuator on the bracket.
 - b. For floating control actuators: Reverse two control signal wires (CW/CCW).
 - c. For analog control actuators either:
 - (1) Reposition reverse/direct acting switch, or
 - (2) Remount actuator on the bracket.
3. If the control scheme requires fail-safe operation, ensure that, upon removal of power, the fail position coincides with the control sequence.
4. If the fail-safe position is incorrect, adjust the actuator to fail in the correct position. (See actuator instructions for details.)

For detailed actuator information, see Honeywell forms:

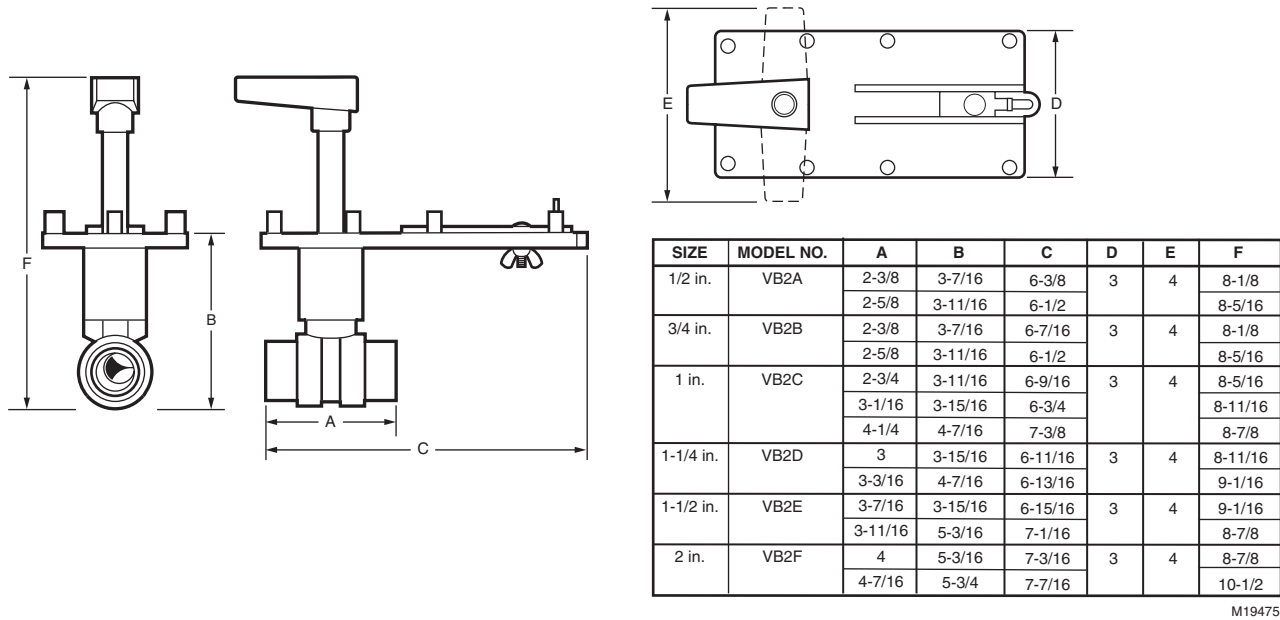
- 63-2209 ML6161,ML7161 Product Data Sheet
- 63-2607 S05,S10,S20 Series Actuator Product Data Sheet



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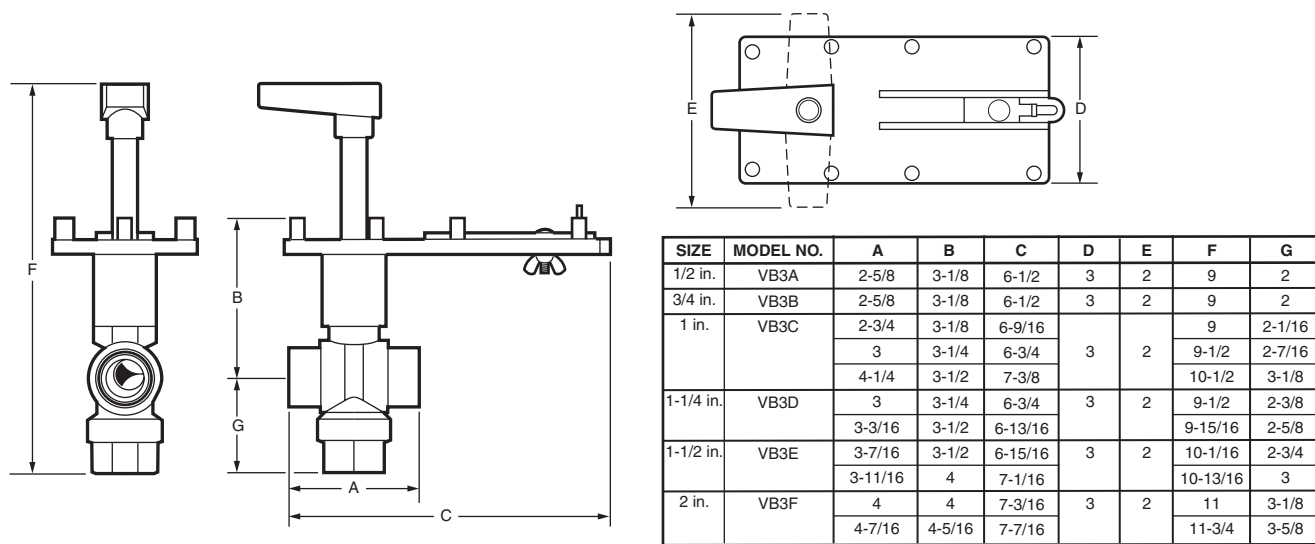
Part	Description
A	Handle (removable) for manually rotating shaft
B	Screws (2)
C	Stem assembly cover
D	Stem assembly
E	Screws (2)
F	Hold-down ring (to attach mounting plate to valve)
G	Bolt
H	Anti-rotation bracket
I	Mounting plate
J	Wing nut
K	Valve body

Fig. 6. Valve assembly exploded view.



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Fig. 7. VB2 dimensions in inches.



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Fig. 8. VB3 dimensions in inches.

Honeywell

Automation and Control Solutions

Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422

Honeywell Limited-Honeywell Limitée
35 Dynamic Drive
Scarborough, Ontario
M1V 4Z9

Honeywell International

Control Products
Honeywell Building
17 Changi Business Park Central 1
Singapore 486073

Honeywell Europe S.A.

3 Avenue du Bourget
1140 Brussels
Belgium

Honeywell Latin American Region

480 Sawgrass Corporate Parkway
Suite 200
Sunrise FL 33325

