Honeywell

# V4043 and V4044 Motorized Valves

**INSTALLATION INSTRUCTIONS**

## FEATURES

These valves consist of an actuator motor and valve assembly for controlling the flow of hot or cold water.

- The V4043 provides 2-position, straight through control of supply water.
- The V4044 provides 2-position, diverting control of supply water.
- Compact construction for easy installation.
- Manual opener for valve operation on power failure. Valve returns to automatic position when power is restored.
- Motor actuator may be replaced without removing the valve body or draining the system.
- Complete powerhead may be removed without breaking the line connections.
- Sweat fit models may be installed without disassembling the valve.
- Fits under the cover of most baseboards.

V4043

V4044

## SPECIFICATIONS

**Models:**
V4043 - line voltage, straight-through valves.
V4044 - line voltage, 2-position diverting valves.

**Electrical Ratings:**

| Voltage | Amperes |
|---|---|
| 110 | .084 |
| 120 | .080 |
| 220 | .042 |

**Maximum Temperature Rating:**

| | Class A Motor | | | Class F Motor | | | |
|---|---|---|---|---|---|---|---|
| Ambient (F) | 77 | 125 | 140 | 125 | 170 | 190 | 200 |
| Liquid (F) | 175 | 165 | 155 | 250 | 220 | 210 | 200 |
| Ambient (C) | 25 | 52 | 60 | 52 | 77 | 88 | 93 |
| Liquid (C) | 80 | 75 | 68 | 120 | 105 | 100 | 95 |

**Minimum Temperature Rating:**
Ambient: 40° F (4° C).
Liquid: 40° F (4° C).

**Humidity Rating:** 5-95% RH (non-condensing)

**Atmosphere:** non-corrosive, non-explosive

**For Models with End Switch:** End Switch Rating: 2.2 A @ 220/240 Vac 50 Hz.

**Timing:**
V4043 opens or closes in 15 seconds.
V4044 diverts flow in 30 seconds.

**Manual Opener:** Manual opener opens the valve in case of power failure. Valve returns to automatic position when power is restored.

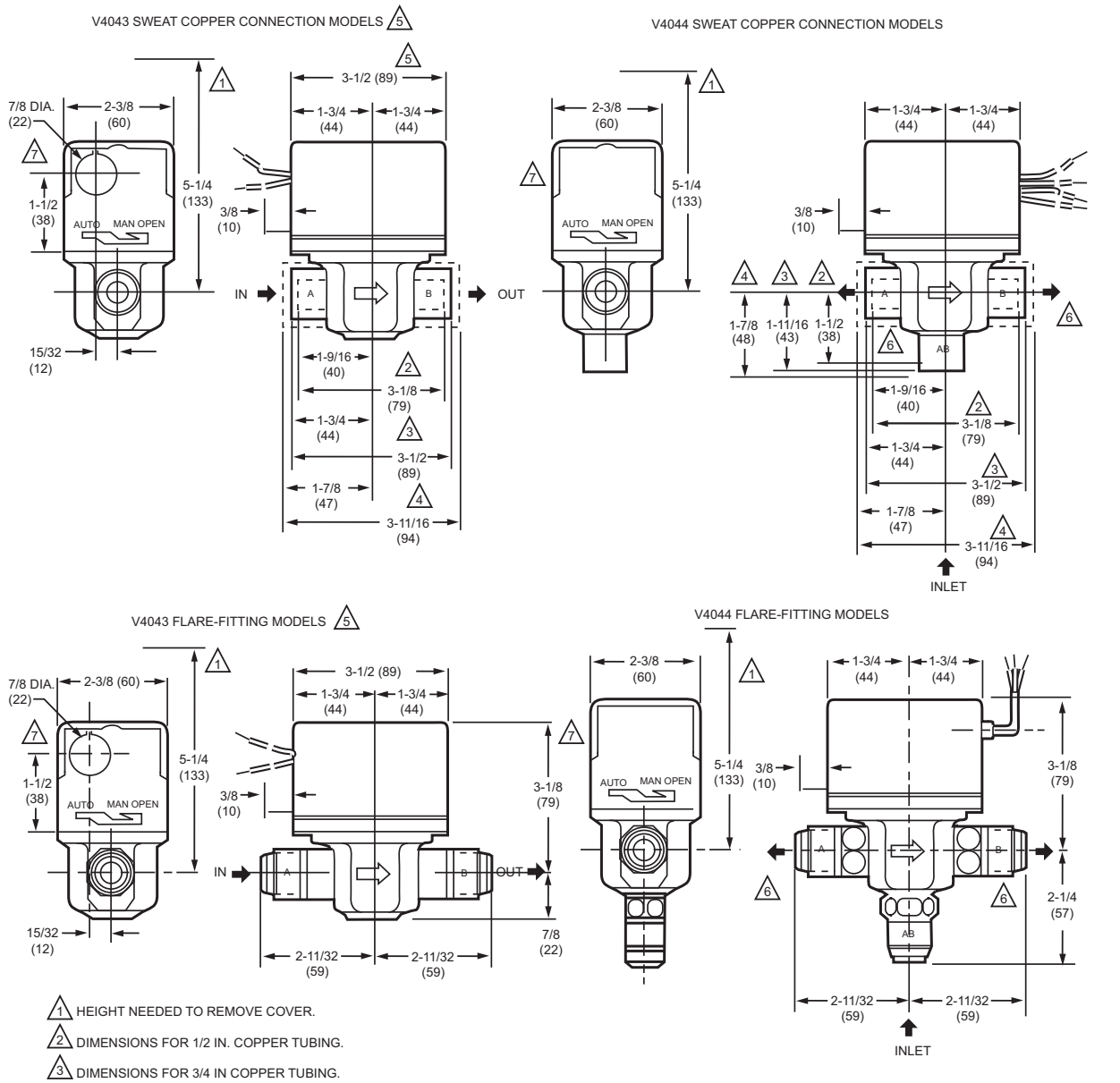
**Powerhead Replacement:** Includes motor housing, rubber plug, O-ring, 2 mounting screws, and 1 sheetmetal screw.

**Flow Ratings:**

| Valve Family | Capacity Rating | | Maximum Closeoff Pressure[a] | |
|---|---|---|---|---|
| | Cv | kV | PSI | kPa |
| V4043 | 1.0 | 0.9 | 50 | 345 |
| | 2.5 | 2.0 | 30 | 207 |
| | 3.5 | 3.0 | 20 | 138 |
| | 8.0 | 7.0 | 8 | 55 |
| V4044 | 4.0 | 3.5 | 10 | 69 |
| | 7.0 | 6.0 | 10 | 69 |

[a] *Static Pressure Ratings: Both 125 psi (860 kPa) and 300 psi (2070 kPa) models available.*

**Dimensions:** See Fig. 1.




1 HEIGHT NEEDED TO REMOVE COVER.

2 DIMENSIONS FOR 1/2 IN. COPPER TUBING.

3 DIMENSIONS FOR 3/4 IN COPPER TUBING.

4 DIMENSIONS FOR 1 IN. COPPER TUBING.

5 V4034B VALVES THAT ARE NORMALLY OPEN IN THE DE-ENERGIZED POSITION HAVE NO MANUAL LEVER. THE VALVES ALSO HAVE A REVERSED POWERHEAD ABOVE THE "B" (OUTLET) PORT RATHER THAN ABOVE THE "A" (INLET) PORT.

6 REFER TO MOUNTING INSTRUCTIONS.

7 OPENING FOR 1/2 IN. CONDUIT ON MANUAL LEVER SIDE FOR V4043. OPENING ON OPPOSITE SIDE FOR V4044

M16862

**Fig. 1. Installation dimension in inches (mm).**

**Flow Characteristics:**

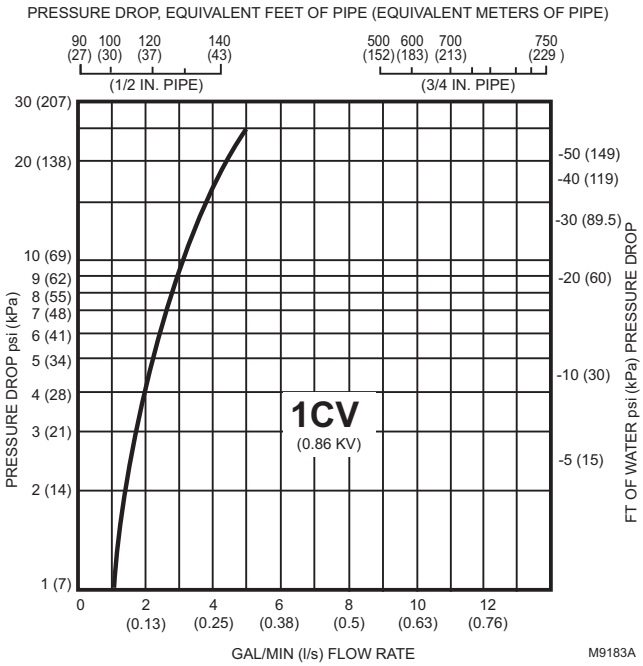



**Fig. 2. Flow Characteristics of 1 Cv (0.86 kv) flow.**

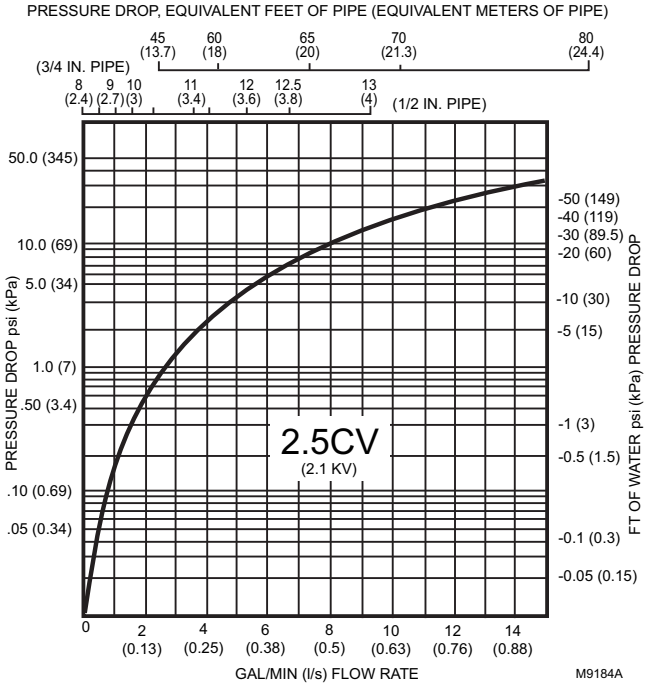



**Fig. 3. Flow Characteristics of V4043A Model with 2.5 Cv (2.1 kv) rating and V4044A bypass port (B) with 2.5 Cv (2.1 kv) (reduced) rating.**

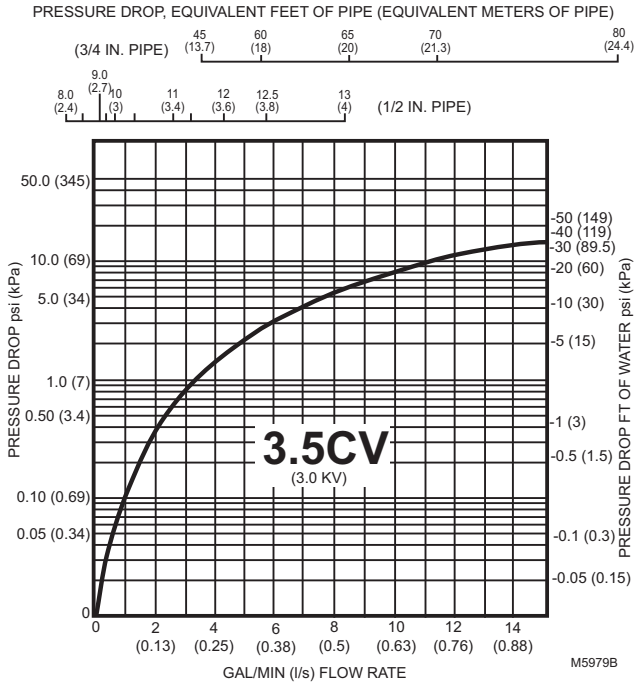



**Fig. 4. Flow characteristics of 3.5 Cv (3.0 kv) valve.**

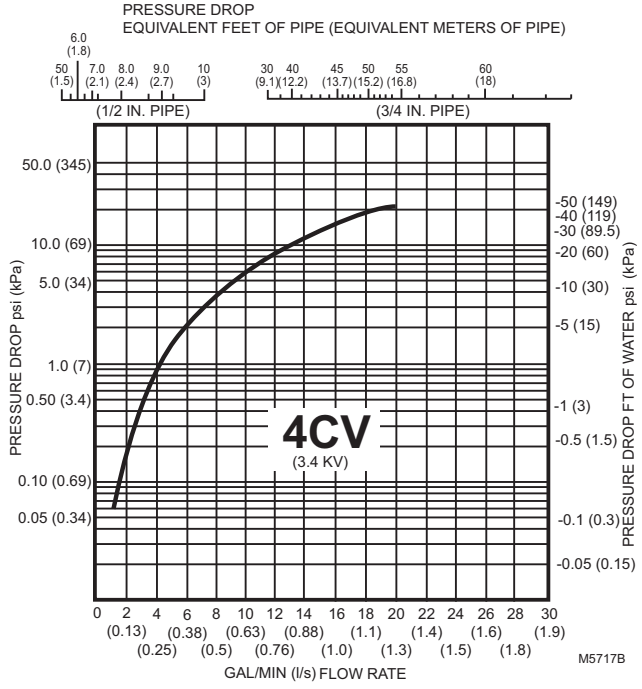



**Fig. 5. Flow Characteristics of 4.0 Cv (3.4 kv) valve.**

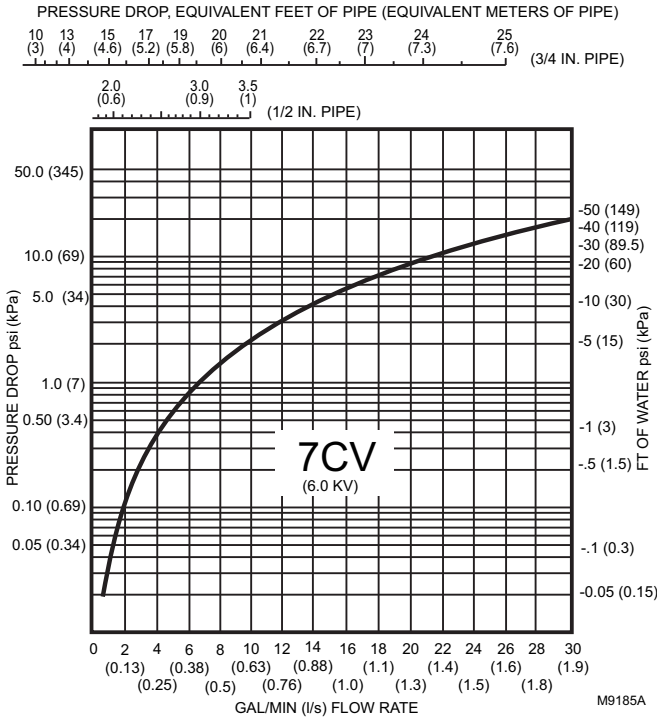



**Fig. 6. Flow Characteristics of 7 Cv (6 kv) valve.**

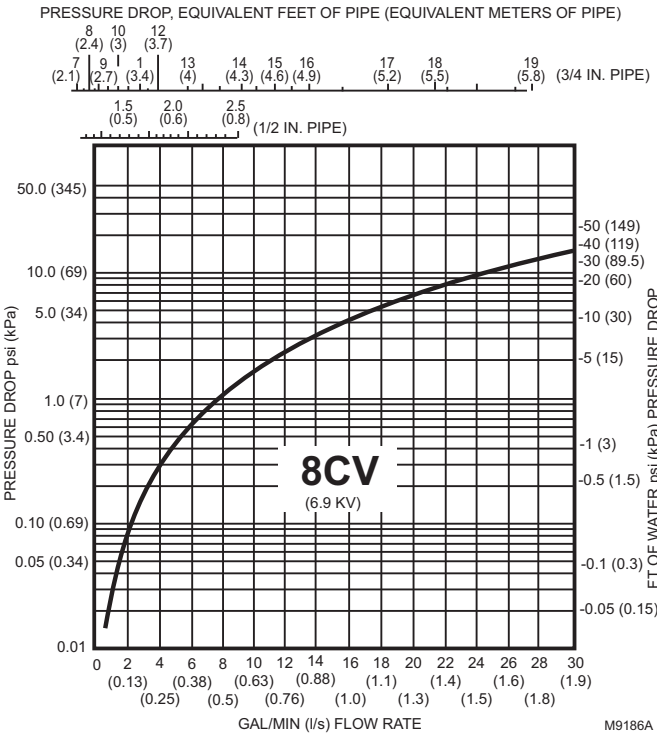



**Fig. 7. Flow Characteristics of 8 Cv (6.9 kv) valve.**

# INSTALLATION

## ⚠ CAUTION

1. Installer must be a trained, experienced service technician.
2. Disconnect power supply before connecting wiring to prevent electrical shock and equipment damage.
3. Normally it is not necessary to remove the powerhead from the valve body during installation. If the valve must be disassembled, be certain that it is reassembled with the water flow in the direction of the arrow. Reversal of the powerhead will result in damage to the gear train.
4. Always conduct a thorough checkout when installation is complete.

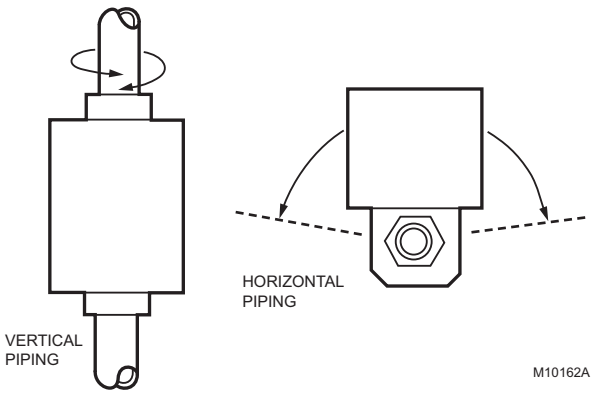



**Fig. 8. Mounting Positions.**

### MOUNTING

The valve may be mounted in any position on a vertical line. If valve is mounted horizontally, the powerhead must be even with or above the center line of the piping. Make sure that enough room is provided above the powerhead to remove the cover for servicing.

Mount the valve directly into the tube or pipe. Make sure that flow through the valve is in the direction indicated by the arrow stamped on the valve body.

On diverting valves, the 3 fittings or ports are labeled on the bottom of the valve body casting. In many applications, port A is connected to the coil unit and is closed when the valve is de-energized. Port B is connected to the coil bypass and is open when the valve is de-energized. Port AB is the inlet and is open at all times. Refer to equipment manufacturer's instructions for proper fitting of diverting valves.

### FLARE FITTING MODELS

Use new, properly reamed pipe, that is free from chips. The valve body is threaded for standard 1/2 in. OD copper, 45 degrees SAE flare fitting nuts. These nuts are not furnished with the valve and must be obtained separately.

**SWEAT COPPER MODELS**

1. Use new, properly reamed pipe, that is free from dents or corrosion.
2. Place valve onto pipe. Set the manual opener lever to MAN. OPEN before applying heat. This will protect the plug inside the valve by removing it from the heat.
3. *IMPORTANT: Take care not to burn plastic portion of composite adapter plate when soldering.*
4. Sweat joints, but keep the outer surface free from solder. DO NOT use silver solder because of the high melting temperatures it requires.

# TO INSTALL REPLACEMENT HEAD

**REMOVING REMOVABLE HEAD FROM REMOVABLE HEAD VALVE BODY ASSEMBLY**

NOTE: It is not necessary to drain the system if the removable head valve body assembly remains in the pipeline.

1. Switch power supplies OFF. Disconnect electrical leads, carefully noting the position and colour of each lead.
2. Place the manual operating lever in the MAN. OPEN position. See Fig. 9A.
3. Remove cover. See Fig. 9. Remove the two screws that secure the head to the valve body assembly. (Fig. 9B.)

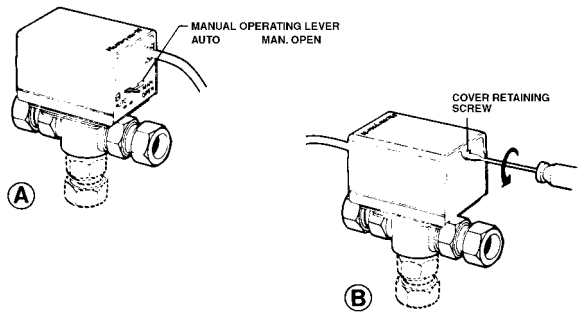



**Fig. 9. Removing Cover.**

**INSTALLING REMOVABLE HEAD ON REMOVABLE HEAD VALVE BODY ASSEMBLY**

1. Place manual operating lever on the replacement head in the MAN. OPEN position and fit the head onto the valve body, ensuring that the shaft seats correctly. See Fig. 10.
2. Secure the head to the valve body with the two screws provided.
3. Remake wiring connections.

Inspect the head installation and the valve body to ensure that all connections and adjustments have been correctly made. Adjust the thermostat or controller connected to the valve so that the valve runs through its cycle. Make sure the valve runs smoothly and positively from closed to open to closed again.

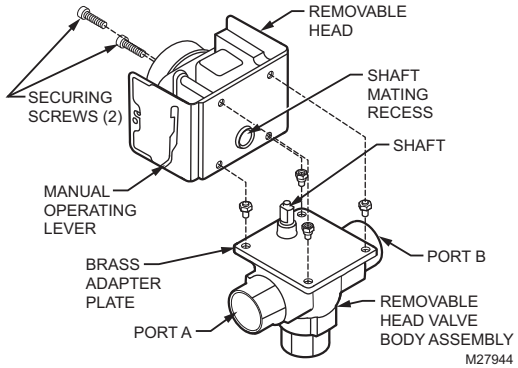



**Fig. 10. Installing Replacement Head.**

# WIRING

All wiring must agree with local codes and ordinances.

## ⚠ CAUTION

**Ensure that all wires are properly dressed and secured before replacing cover to avoid damage to the insulation.**

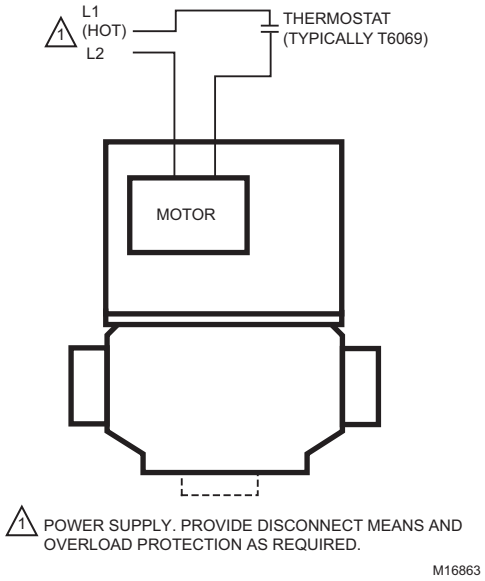



**Fig. 11. Typical Wiring for V4043A, V4044A.**

# OPERATION

**AUTOMATIC OPERATION**

On a call for heat by the zone thermostat, the valve opens. When the call for heat ends, the valve closes by integral spring return.

**MANUAL OPERATION**

The motorized valve can be opened manually by lifting the manual opener lever over the stop and pushing slowly and firmly to the MAN. OPEN position. The stop permits the valve to be locked in the open position. The valve will return to automatic position when the valve is energized.

# CHECKOUT

1. Raise the setpoint on the zone thermostat above room temperature to initiate a call for heat.
2. Observe all control devices - the valve should open and the auxiliary switch should make the circuit to the circulator or other valve at the end of the opening stroke.
3. Lower the setpoint on the zone thermostat below room temperature.
4. Observe the control devices. The valve should close and the auxiliary equipment should stop.

# SERVICE

This valve should be serviced by a trained, experienced service technician.

1. If the valve is leaking, check to see if the O-rings need to be replaced.
2. If the gear train is damaged or the motor is burned out, it is necessary to replace the entire powerhead assembly. See INSTALLATION Section.

NOTE: Honeywell zone valves are designed and tested for silent operation in properly designed and installed systems. However, water noises may occur as a result of excessive water velocity or piping noises may occur in high temperature (over 212° F [100° C]) systems with insufficient water pressure.

NOTE: These hydronic valves are not suitable for use in open loop systems where there is air exposure.

**Automation and Control Solutions**
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com

Honeywell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