JOHNSON CONTROLS

Johnson Controls, Inc.
Systems Products Division
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Series V46, V47, V48 and V49 Replacement Sensing Element for Pressure and Temperature Actuated Water Valves

Installation

For V46 and V48 Pressure Actuated Valves

1. Remove refrigerant pressure and disconnect the element capillary from system.

2. Reduce the range spring tension by turning the adjusting screw CW until it will turn no further.

3. Shut off water supply to the valve.

4. Remove the four screws that hold the element to the valve body and remove the old element.

5. Replace the rubber diaphragms on the element end of the valve body as follows:

   a. Unscrew and remove the bellows push rod.

   b. Remove the old diaphragms and install the new ones.

   c. Screw the bellows push rod tightly in place while holding the diaphragms in position. Refer to the following table for the correct tightening torque.

Assembly Torque Table

Valve Size	Torque In.-lb
3/8"	6 + 2/-0
1/2"	8 + 2/-0
3/4"	10 + 2/-0
1"	55 + 5/-0
1 1/4"	60 + 5/-0
1 1/2"	60 + 5/-0

6. Replace element:

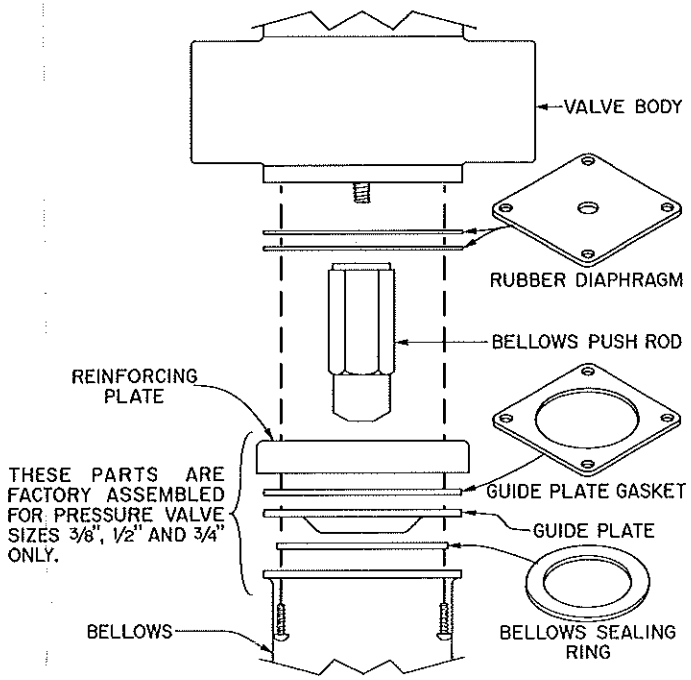

Fig. 1 — Drawing showing sequence of installation.

   a. On 3/8", 1/2" and 3/4" valves, replace the old element with the replacement element.

   b. On 1" valves and larger, the guide plate gasket and sealing ring must be replaced before the element is installed. See Fig. 1 for sequence of installation.

7. Secure the replacement element to the valve body and connect the capillary to the system.

CAUTION: When the capillary extension kit is used be sure the extension is correct for the size valve being repaired. See carton label or the following table.

V46 and V48 Capillary Kits

Capillary Extension Kit Number	Length	ID	OD	Use on These Valves Only	
				Series	Size
SEC37A-600R	48"	.062"	.125"	V46, V48	1", 1 1/4", 1 1/2"
SEC37A-601R	60"	.034"	.093"	V46	3/8"
SEC37A-602R	30"	.040"	.093"	V46, V48	1/2", 3/4"
SEC37A-603R	60"	.040"	.093"	V46, V48	1/2", 3/4"

For V47 and V49 Temperature Actuated Valves

1. Reduce the range spring tension by turning the adjusting screw CW until it will turn no further.

2. Shut off the liquid supply to valve.

3. Remove the sensing bulb from media being sensed.

CAUTION: Cool the sensing element bulb in ice water before removal. This is not necessary if the bulb or capillary has broken or cracked allowing the sensing charge in the element to escape to the atmosphere.

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4. Remove the four screws that hold the element to the valve body and remove the old element.

5. Replace rubber diaphragms on the element end of the valve body as follows:

   a. Unscrew and remove bellows push rod.

   b. Remove the old diaphragms and install the new ones.

   c. Screw the bellows push rod tightly in place while holding the diaphragms in position. Refer to the table following Step 4.c. under V46 and V48 installation for the correct tightening torque.

CAUTION: Immerse the replacement sensing element bulb in ice water before removing the shipping plate. Do not remove the bulb from the ice water until installation to the valve is completed.

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6. Replace the guide plate gasket and sealing ring before the element is installed. See Fig. 1 for the sequence of installation.

7. Secure the new element to the valve body.

8. Remove the bulb from the ice water and install the bulb in the media being sensed.

9. Adjust the valve to the desired operating point.

CAUTION: Avoid sharp bends or kinks in the capillary. Coil and secure excess capillary at the valve end to avoid vibration breakage but allow some slack in capillary to avoid "violin string" vibration which can also cause the tubing to break. Do not permit the tubing to rub against metal surfaces where friction can damage capillary.

Checkout Procedure

Before leaving the installation, observe at least three complete operating cycles to be sure that all components are functioning correctly.

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