

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 the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service-person.
4. Always conduct a thorough check-out when installation is completed.
5. While not necessary to remove the actuator from the body, it can be removed for ease of installation. The actuator can be installed in any of the four orientations to suit the most convenient wiring direction. Actuator latching mechanism works only when the lengths of the actuator and the valve body are parallel to each other.
6. An extra 25 mm head clearance is required to remove the actuator.



CAUTION

1. Disconnect power supply before connecting wiring to prevent electrical shock and equipment damage.
2. Never jumper the supply wires or actuator terminals even temporarily. This may damage the thermostat.

PLUMBING

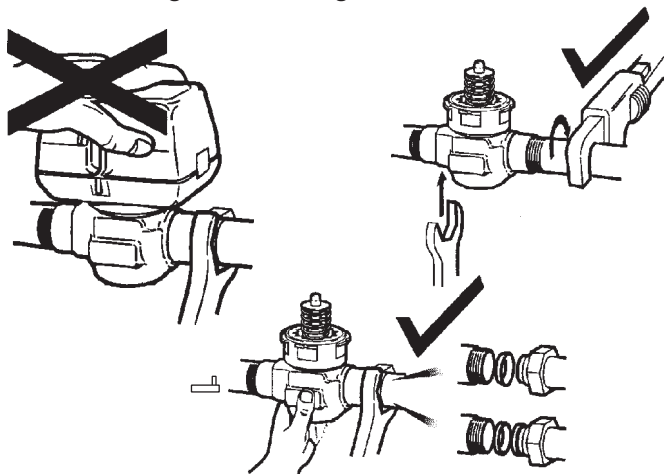
The valve may be plumbed in any angle but preferably not with the actuator below horizontal level of the body. Make sure there is enough room around the actuator for servicing or replacement.

For use in diverting applications, the valve is installed with the flow water entering through bottom port AB, and diverting through end ports A or B. In mixing applications the valve is installed with inlet to A or B and outlet through AB.

Mount the valve directly in the tube or pipe. Do not grip the actuator while making and tightening up plumbing connections. Either hold valve body in your hand or attach adjustable spanner (38 mm or 1-1/2") across hexagonal or flat faces on the valve body. (Figure 4).

NOTE: For trouble free operation of this product, **good installation practice** includes *initial system flushing* and the installation of *50 micron (or finer) system side stream filter(s)*.

Fig. 4 - Plumbing the VC Valve



COMPRESSION MODELS

For compression fitted models, tighten the compression nuts enough to make a watertight seal. **TAKE CARE NOT TO OVER TIGHTEN.** Maximum torque limit is 45 Nm (33 ft.-lb.) for the 22 mm compression fitting, and 65Nm(48 ft.-lb.) for the 28 mm compression fitting.

SWEAT MODELS

On sweat fitted valves, the cartridge is shipped loose to avoid being damaged during the solder operation.

1. Remove valve actuator from body and solder the connecting pipes in accordance with normal soldering practices.
2. After soldering and valve has cooled, remove cartridge assembly from plastic bag, insert into the valve body and tighten down with enclosed wrench(part# 40007029-002) until it bottoms out. **DO NOT OVER TIGHTEN** (maximum torque is 4.5 Nm (40 in.-lb.)). The top surface of the cartridge will be flush with the top edge of the body casting.
3. Replace valve actuator.

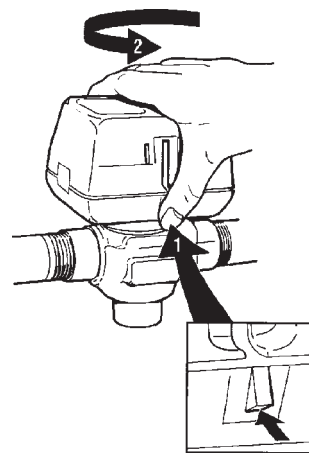
TO INSTALL REPLACEMENT ACTUATOR

IMPORTANT

Installation of a new actuator does not require draining the system, provided the valve body and valve cartridge assembly remain in the pipeline.

1. Check replacement part number and voltage ratings for match with old device.
2. Disconnect power supply before servicing to avoid electrical shock or equipment damage.
3. Disconnect leadwires to actuator, or depress tab on Molex™ connector and remove. Where appropriate, label wires for rewiring.
4. The actuator head is automatically latched to the valve. To remove, press up on the latch mechanism with your thumb. It is located directly below the white manual open lever (see figure 5 below). Simultaneously press the actuator down towards the body with moderate hand force and turn the actuator counter-clockwise by 1/8 turn (45 degrees). Lift the actuator off the valve body.

Fig. 5 - Latch Mechanism to detach Actuator



NOTE: The actuator can also be installed at right angles to the valve body but in this position the latch mechanism will not engage.

5. Install the new actuator by reversing the process in (4).
6. Reconnect leadwires or Molex™ connector.
7. Restore power, and check-out operation.

MANUAL OPENER

The manual opener can be manipulated only when in the up position. The "A" port can be manually opened by firmly pushing the white manual lever down to midway and in. In this position both the "A" and "B" ports are open, and with auxiliary switch models the switch is closed. This "manual open" position may be used for filling, venting and draining the system, or for opening the valve in case of power failure. The valve can be restored manually to the closed position by depressing the white manual lever lightly and then pulling the lever out. The valve and actuator will return to the automatic position when power is restored.

NOTE: If the valve is powered open, it cannot be manually closed, unless actuator is removed.

WIRING

See figures 6a and 6b for single unit wiring details. Multiple valves may be connected in parallel to a single controller and transformer, up to the current rating of the controller and transformer.

Fig. 6a - Connector Pin Configuration for Molex® Model and 0 / 2 – 10 Vdc Controllers (Series 70).

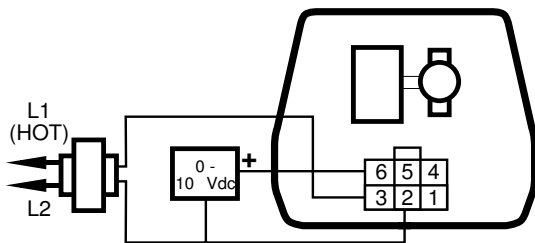
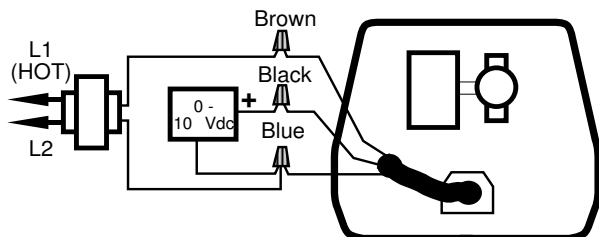


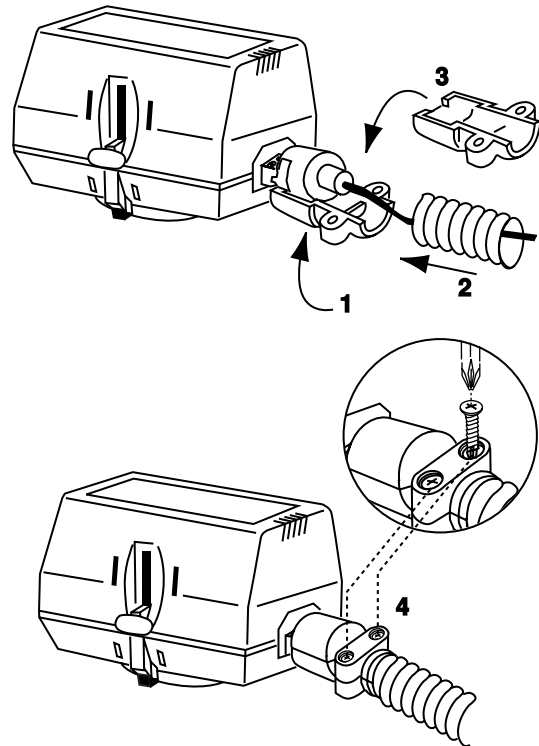
Fig. 6b - Wiring Colour Code for Cable Models and 0 / 2 – 10 Vdc Controllers (Series 70).



CONDUIT CONNECTION

VC7934 may be installed as a plenum-rated cable model. Where local codes require conduit, the conduit adapter may be used with empty 3/8" flexible conduit to provide mechanical protection for the wiring. All wiring connections must be made in an approved electrical junction box. Refer to figure 7.

Fig.7 - VC valve actuator electrical conduit installation



OPERATION

WITH SERIES 70, 0 / 2 - 10 VDC CONTROLLER

(refer to figure 8)

In the VC7900, an electronic circuit compares the voltage of the feedback potentiometer to the signal voltage. If they are different, then the circuit closes the appropriate triac and drives the motor in the direction that will bring the circuit back into balance. In addition, the standard limit switches maintain the travel to the normal operating range.

Fig. 8 - Wiring Schematic of the VC7900 Series Actuators

