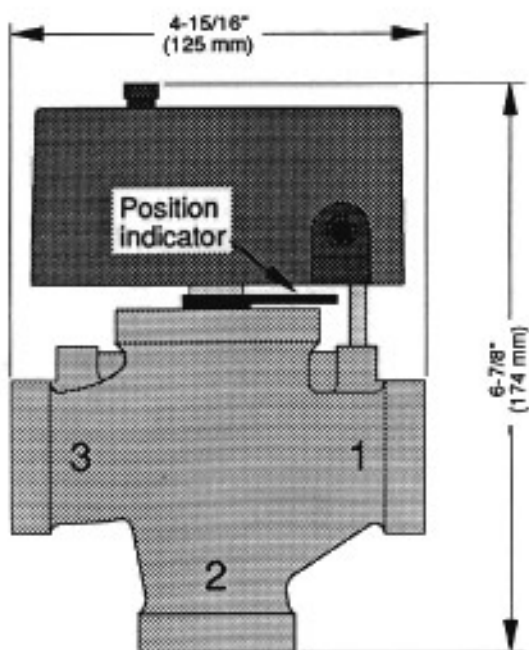


This high quality valve can be installed in 'open' as well as 'closed' hydronic systems because the valve is made of corrosion resistant parts: a yellow brass (61% Cu, 37% Zn) body, a ceramic valve mechanism, and a stainless steel shaft. Double O-ring seals on the valve shaft permit operation at water pressures up to 90 psi (600 kPa) and at water temperatures from 32°F (0°C) to 250°F (120°C). The valve body has 1" NPT threads for male pipe fittings.

The valve is normally configured as a mixing valve, but it can also be installed as a diverting valve. As a mixing valve the hot boiler supply enters port 1, the cooler return water enters port 2, and the mixed supply water exits port 3. As a diverting valve port 3 is the entrance and ports 1 and 2 are the exits. When port 1 or 2 is closed, the ceramic valve mechanism provides 100% shut-off of water flow.

The compact 24 Vac, 60 Hz actuating motor on this valve can provide 90 lb-in (10 N-m) torque, and will rotate the valve mechanism through its full range in 4 minutes. The actuating motor can only perform two operations—rotating the valve mechanism toward either its open or closed position at a constant rate; an electronic control with floating action must interrupt power to the motor if the valve is to mix supply and return water to a particular temperature. A 1 amp end-switch in the actuating motor is available to turn the boiler off when the valve is near its closed position.

Mechanical:



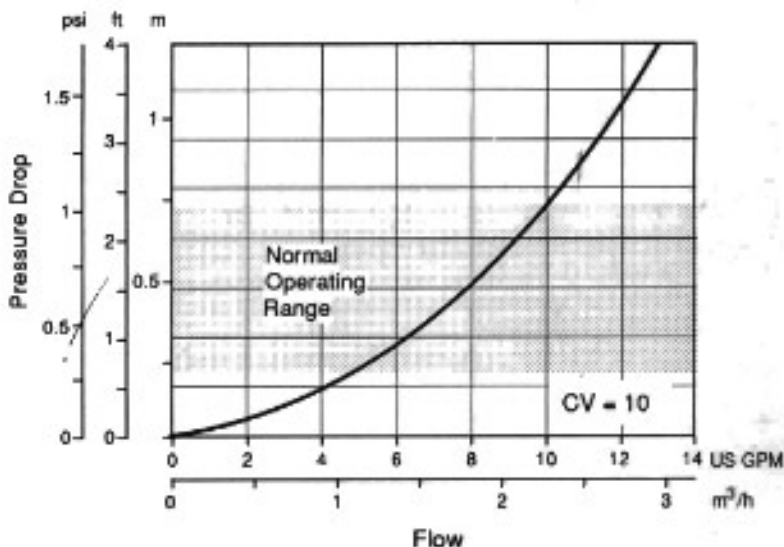
Position indicator shown with the valve mechanism in the fully closed position. It points at port 3 when the valve is in the fully open position.



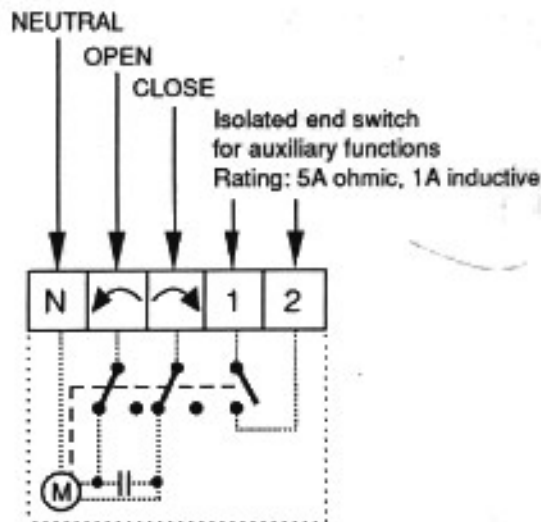
As a mixing valve:
port 1 = hot supply in
port 2 = cooler return in
port 3 = mixed out

As a diverting valve:
port 1 = 'open' out
port 2 = 'closed' out
port 3 = in

Performance Curve:



Electrical:



Actuating motor removal & replacement

Removing the motor

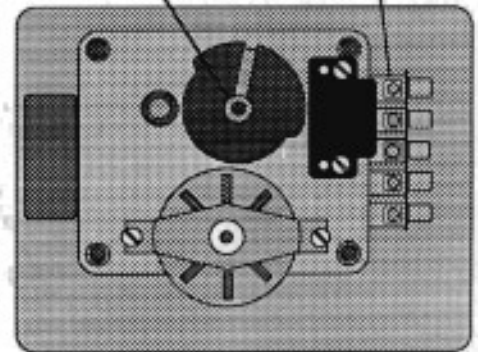
1. Turn off the electrical power to the motor.
2. Push and turn the slotted knob counter-clockwise until the position indicator points to port 1, i.e. the valve is fully closed.
3. Remove the blue plastic motor cover by removing the two screws.
4. Remove the 3 mm hex screw that is in the centre of the cams and the friction-fitting top cam.
5. Disconnect the wires from the terminal block by which the motor is connected to the control.
6. Pull the actuating motor off the valve.

Installing the motor

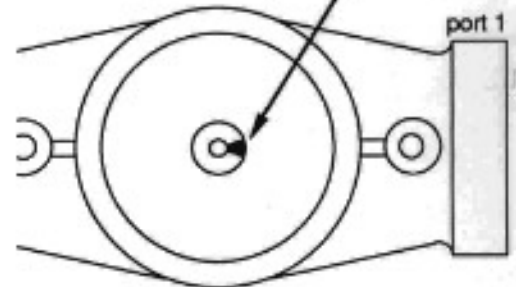
1. Ensure that the notch on the valve shaft is pointing towards port 1, indicating a closed valve. Align the position indicator to point at port 1 and fit the motor into position. (See the drawing on page 1).
2. Install the 3 mm hex screw and friction-fitting top cam. The top cam should be rotated to the position shown in the adjacent diagram with the motor and valve in the "closed" position.
3. Connect the wires to the terminal block according to the wiring diagram on page 1 of this brochure.
4. Install the blue motor cover.
5. Test that the valve mechanism rotates smoothly by pushing the slotted knob and rotate it clockwise a few turns.
6. Turn on electrical power to the motor.

Removal of this hex screw allows the actuating motor to be pulled off the valve.

Terminal block



Notch to be pointing towards port 1



Top view of the valve showing the notch

Limited Warranty

tekmar Control Systems (tekmar®) warrants to the original purchaser each tekmar product against defects in workmanship and materials when the product is installed by a qualified person and used in compliance with tekmar's instructions. This warranty covers the cost of parts and labor provided by tekmar to correct defects in materials and/or workmanship, but does not cover parts or labor to remove, transport or reinstall the defective product. tekmar will not be liable for any damage other than repair or replacement of the defective part or parts and such repair or replacement shall be deemed to be the sole remedy from tekmar. This warranty shall not apply to any defects caused or repairs required as a result of unreasonable or negligent use, neglect, accident, improper installation, or unauthorized repair or alterations.

In case of defect, malfunction or failure to conform to warranty, tekmar Control Systems will, for 24 months from the date of invoice or for 12 months from the date of installation of the product, whichever occurs first, repair or exchange, at tekmar's

option, the defective product. The warranty is not in effect until the warranty card has been filled out and returned to tekmar Control Systems. Any express or implied warranty which the purchaser may have, including merchantability and fitness for a particular purpose, shall not extend beyond 24 months from the date of invoice or 12 months from the date of installation, whichever occurs first.

Warranty Procedure

The installer or other qualified service person must, at the owner's expense, determine which component has failed. If an actuating motor, electronic control, mixing valve, pump, sensor, or other tekmar component requires repair, only that component, together with the proof of purchase of the tekmar equipment must be returned to the original purchaser who in turn returns the component to tekmar. In order for tekmar to process any warranty claim, the type number and fabrication number of the product and your name and address must be included with the defective component or product.

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