tekmar® - Data Brochure

Brass 3-way Valve with Actuating Motor 124

D 124

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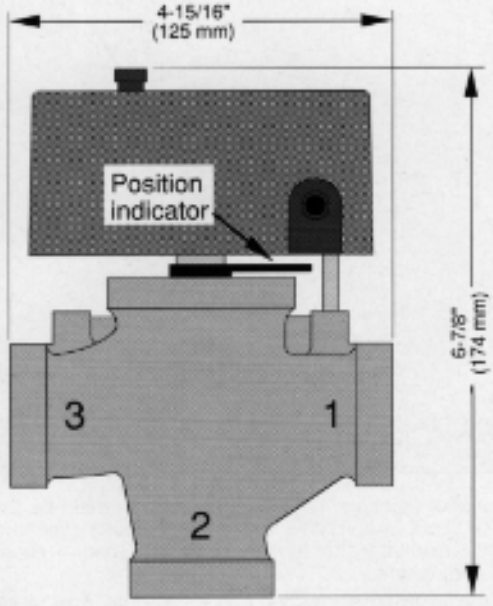
This high quality valve can be installed in 'open' as well as 'closed' hydronic systems because the valve is made of corrosion resistant parts: a yellow brass (61% Cu, 37% Zn) body, a ceramic valve mechanism, and a stainless steel shaft. Double O-ring seals on the valve shaft permit operation at water 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. The ceramic valve mechanism provides 100% shut-off of water flow when closing ports 1 or 2.

The compact 24 Vac, 60 Hz, 1VA 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

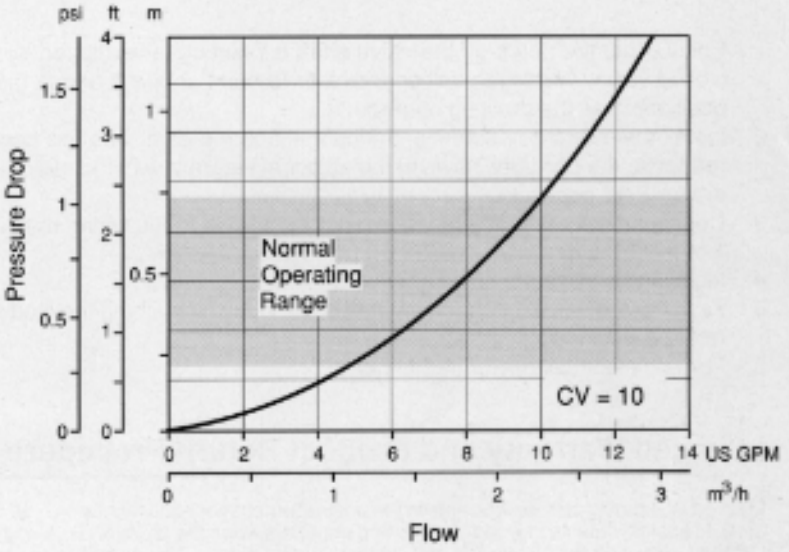


Position indicator shown with the valve mechanism in the fully closed position. It points at port 3 when the valve is in the fully open position.

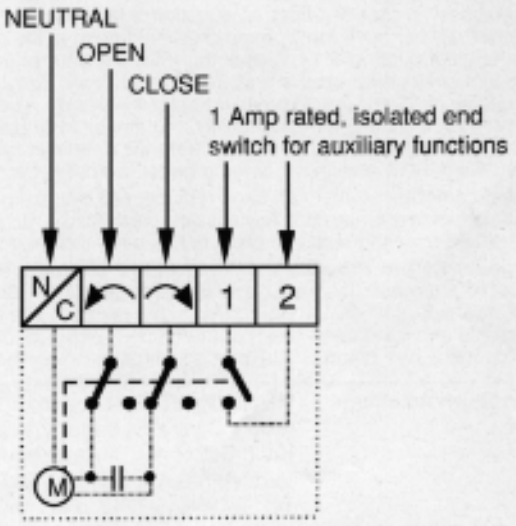
As a mixing valve:
port 1 = hot supply in
port 2 = cooler return in
port 3 = mixed out

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

Performance Curve



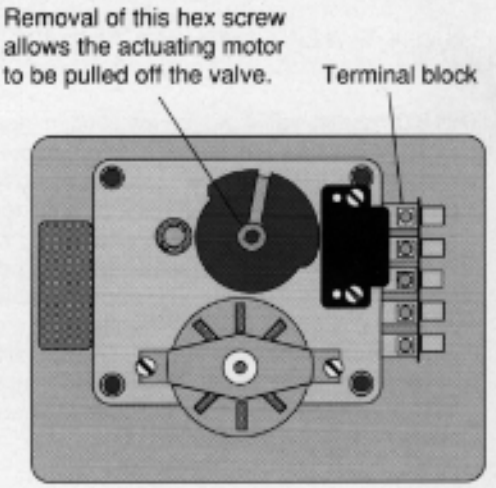
Electrical



Actuating motor removal and replacement

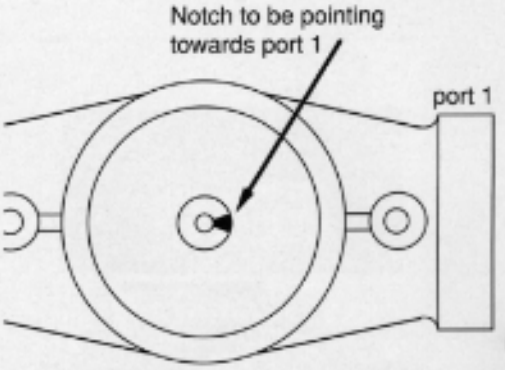
Removing the motor:

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.



Top view of the valve showing the notch

Limited Warranty and Product Return Procedure

Limited Warranty: tekmar warrants to the original purchaser each tekmar product against defects in workmanship and materials when the product is installed and used in compliance with tekmar's instructions. This limited warranty covers the cost of parts and labour provided by tekmar to correct defects in materials and/or workmanship. Returned products that are fully operational are not considered a warranty case. tekmar also does not cover parts or labour to remove, transport or reinstall a 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 will, for a warranty period of 24 months from the date of invoice to the original purchaser or 12 months from the date of installation of the product, whichever occurs first, repair, exchange or give credit for the defective product. 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 of the product, whichever occurs first.

Replacements: tekmar can send replacement products if requested. All replacements are invoiced. Any possible credit for the replacement will only be issued once the replaced product has been returned to tekmar.

Product Return Procedure: Products that are believed to have failed must be returned to tekmar Control Systems Ltd. 4611-23rd Street, Vernon B.C. Canada V1T 4K7 when agreed to by tekmar. The installer or other qualified service person must, at the owner's expense, determine which component has failed. The product must be returned complete with all of its components (sensors, base, etc.). Products must be returned together with the proof of purchase to the original purchaser who then returns the product to tekmar after receiving a Return Goods Authorization (RGA) number from tekmar.

Please include the following information with the product. The full address of the original purchaser, the RGA number and a description of the problem.

From the U.S.A., in order to avoid customs charges, products must be returned via US Post with the package clearly marked with the RGA number, product type and the statement "Canadian Product returned for repair". For shipping purposes the product can be valued at one half list price.

1) If returned during the warranty period and the product is defective, tekmar will issue full credit for the returned product less cost of missing parts.
2) If returned during the warranty period and the product is fully operational, tekmar will return the product to the original purchaser for a testing cost of $30.00 plus postage.
3) If returned during the warranty period and the product is not damaged and is fully operational, tekmar can take back the product for a return charge of 40% of the product's net value. This request has to be specified otherwise the product will be returned with a testing cost of $30.00 plus postage.
4) If returned after the warranty period and the product needs repair, tekmar will repair and return the product. Repair and postage costs will be invoiced. tekmar's repair costs are calculated at $30.00 / hour plus the cost of parts. If the repair costs will be more than $60.00 a repair estimate will be sent to the original purchaser.

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