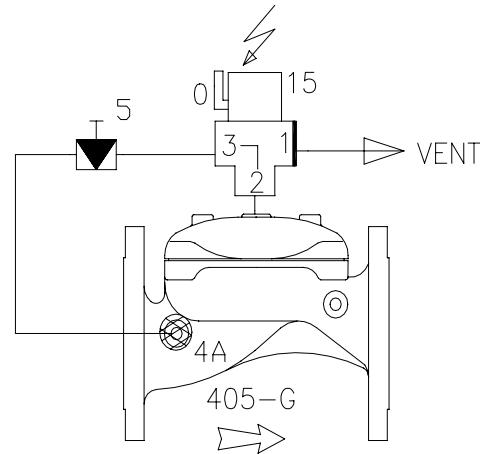




Electric Remote Control Valve w/ Closing Speed Needle & 3-Way Solenoid- N.C Main Valve

PARTS LIST

- | | |
|-----|---------------------------------------|
| 1. | Black Manual Operator knob |
| 5. | Closing Speed Control |
| 4A. | In-line Filter |
| 15. | 3-way N.O. Solenoid w/Manual Override |
| 405 | Main Valve |



DESCRIPTION

Model 410-01-3NC-200 Electrical Remote Control Valve is designed to open and close drip-tight in response to an electrical signal. The valve operates via upper control chamber on a 3-way control principle. When the 3-way normally open solenoid 15 is energized, the solenoid vents pressure from the control chamber to atmosphere to open the main valve wide. When solenoid 15 is de-energized, the solenoid applies upstream pressure to the control chamber, via closing speed needle 5, to close the main valve drip-tight. In addition, the valve comes with a manual operator to manually open or close the main valve regardless of solenoid position.

INSTALLATION

1. Allow enough room around the valve assembly for making adjustments and for future maintenance and disassembly work.
2. Thoroughly flush the pipeline to remove dirt, scale, and debris. Failure to perform this operation may render the valve inoperable.
3. It is recommended that isolation gate valves be installed upstream and downstream of the Bermad control valve to allow for future maintenance operations.
4. Install the valve in the pipeline with the valve flow arrow on the body casting in the proper direction. Use the lifting eye provided on the main valve cover for raising and lower the valve. Install the valve horizontally with the cover up for best performance. Make certain the valve is positioned so the actuator assembly can be easily removed for future maintenance requirements.
5. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings. Tighten all fittings.

IN LINE STATIC TEST PROCEDURES

OPEN VALVE STATIC TEST

1. Energize solenoid 15. If power supply is not available to energize solenoid 15, turn manual operator 0 (black handle) on solenoid base fully clockwise towards the "O" CW marked on the solenoid base.
2. Caution: This will allow the valve to fully open. Make sure this condition will not cause system damage!
3. Check for leaks at the flange connection, fittings, etc.

CLOSED VALVE STATIC TEST (OPEN NEEDLE 5 OUT CCW)

1. De-energize Solenoid 15 or turn manual operator 0 (black handle) on solenoid base fully counter-clockwise towards the "O" marked on the solenoid base.
2. Open upstream gate valve (if applicable), allowing the valve to close tightly.
3. Check the valve cover and diaphragm area for leaks. Tighten cover bolts/nuts/fittings if necessary.

START-UP OPERATION

WIRING: Check the solenoid markings on the side of the coil to verify proper voltage/wattage of coil (i.e 24 AC 3.5 Watt). This is to prevent coil burn-out/inoperative solenoid. Verify solenoid connections. There are 2 wires. One wire is power or 'hot' and the other wire is common (negative on DC systems). Polarity is not important. Solenoid voltage at splice (not controller) must be at least 85% of the stamped voltage to function properly. Use safety precautions.

NOTE: There **must** be flow through the valve and system to check and adjust the valve. Insure that a downstream demand is created.

Verify solenoid electrical connections and voltage requirements.

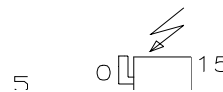
Manual override knob 0 must be in the middle detent position and neither turned CW or CCW for automatic clock/controller command operation. Needle valve 5 must be open at least 1-2 turns out counter-clockwise -CCW from the closed position.

1. Open system gate valves if applicable.
2. Make sure manual operator 0 (black toggle on solenoid base) is set in its middle detent position.
3. Energize solenoid 15 and valve will open. De-energize solenoid 15 and valve will shut drip-tight.
4. Adjust needle 5 in clockwise to increase closing time or counter-clockwise to decrease closing time.

INSTALLATION - OPERATION - MAINTENANCE

PARTS LIST

- 1. Black Manual Operator knob
- 5. Closing Speed Control
- 4A. In-line Filter
- 15. 3-way N.O. Solenoid w/Manual Override
- 405 Main Valve



TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
Valve Fails to Open	Insufficient inlet pressure/flow.	Check/create inlet pressure/flow.
	Solenoid 15 is De-energized.	Energize solenoid 15.
	Solenoid 15 Plunger Stuck.	Check and clean plunger in coil and base.
	Manual override 0 black toggle is turned CCW towards C mark on base.	Turn manual override 0 to its middle detent position for automatic mode.
Valve Fails to Close	Manual override 0 black toggle is turned CW towards O mark on base.	Turn manual override 0 to its middle detent position for automatic mode.
	Needle 5 is closed/clogged. No flow /Differential across valve.	Clean/Open Needle 5 out CCW. Create demand downstream/Create 3-5 psi differential across the valve-higher upstream pressure.
	Solenoid 15 Plunger Stuck.	Check and clean plunger in solenoid base and inside of the coil. Clean vent tube-hose.
	Solenoid 15 is energized.	De-energize solenoid 15-See Wiring.
	Filter 4A blocked. (1-1/2in & Up only)	Remove inlet filter fitting and clean screen/fitting/hose & inlet port hole.
	Debris trapped in main valve/Diaphragm in main valve leaking.	De-pressurize the system and remove the four nuts/bolts from the cover assembly. Inspec seat area/remove debris/Replace diaphragm.

