

Installation Operation Maintenance (IOM) 900 Series Electric Pressure Reducing Valve

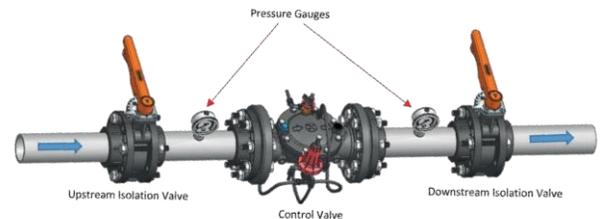
Description

The pressure reducing valve with electric control maintains a pre-set downstream pressure regardless of upstream pressure or flow fluctuations, controlled by a 3-way pilot valve. The spring-loaded membrane of the pilot is sensitive to downstream pressure and maintains desired downstream pressure by gradually opening, closing, or locking the hydraulic valve in a semi-open position. The valve opens to modulate when energized and shuts close when power is discontinued.



Installation

- 1) The valve can be installed both horizontally or vertically.
- 2) Ensure enough space nearby for installation and adjustment.
- 3) Flush pipeline before installing the valve, to ensure clean water flow.
- 4) Line flow direction should match arrow on valve.
- 5) Connect the wires from the controller to the solenoid on the valve.
- 6) Cross check solenoid specifications with design requirements and solenoid/coil label.
- 7) Inspect the valve post installation for any loose or damaged fittings.
- 8) Install a pressure gauge at downstream to set and check the desired pressure.
- 9) For maintenance, installation of isolation valves at upstream and downstream is recommended.



Initial Startup and Adjustment

- 1) At initial system start up, make sure the upstream and downstream isolation valves are closed (if installed)
- 2) Turn the 3-way manual selector to "CLOSE".
- 3) Keep the solenoid "Manual Override" pointer towards port 'AUTO'.
- 4) Slowly open the upstream isolation valve or start the pump and make sure there is no leakage from fittings. Tighten or replace if damaged during transport.
- 5) Turn the 3-way manual selector to "AUTO" position and energize the solenoid (AC supply for 3 W 24 VAC solenoid or pulse signal for latching solenoid, 3 W 12-24 VDCLatch).
- 6) Slowly open the downstream isolation valve (if fitted) making sure there is sufficient flow demand after the valve (consult technical data if needed).
- 7) The pilot has a pre-set factory pressure. For desired downstream pressure, unscrew the lock nut on pilot and slowly rotate the pressure adjusting screw:
 - a) Clockwise: To increase pressure.
 - b) Anti Clockwise: To decrease pressure.
- 8) Tighten the lock nut again to prevent any changes in set pressure
- 9) To close the valve, de-energize the solenoid (or send a pulse signal to a latching solenoid).
- 10) To test the valve and simulate electrical signal, turn the "Manual Override" on the solenoid to "OPEN" position
- 11) For manual operation, turn 3-way manual selector to:
 - a) "CLOSE" for closing the valve shut.
 - b) "OPEN" for opening the valve fully open.
 - c) "AUTO" for regulating mode with electric command.

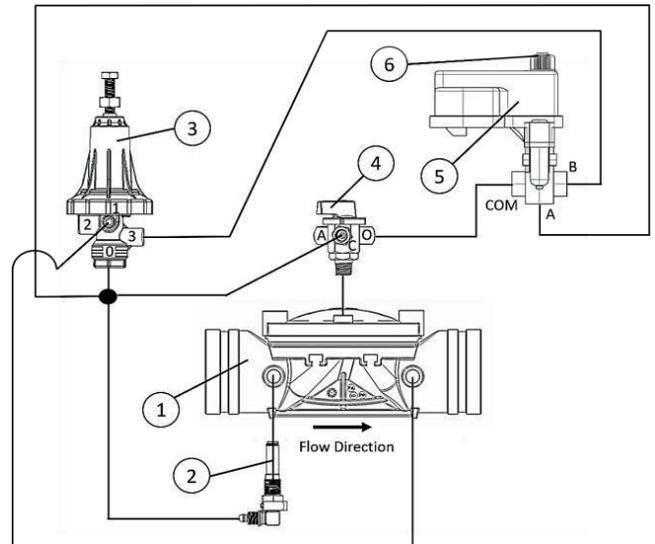
Maintenance

- 1) Periodic inspection of the valve should be done for any damage, loose fittings or leakage.
- 2) Inspect and clean the in-line finger filter as water quality dictates. This should be done once every few months.
- 3) Monitor valve performance by checking the downstream pressure gauge periodically, adjust if required.

900 Series Electric Pressure Reducing Valve

Control Loop

Number	Description
1	Main Valve
2	Inline Finger Filter
3	3 Way Multi-Purpose Pilot
4	3 Way Manual Selector
5	3 Way Solenoid Valve with Base
6	Solenoid Base Manual Override



Troubleshooting

Problem	Cause	Check	Solution
Valve does not open	The 3-way selector ("4") is set to close.	Verify knob position.	Turn selector to "AUTO".
	Inlet pressure is too low.	Check the inlet pressure.	Increase inlet pressure.
	Pilot's adjusting screw is completely open.	Check screw position.	Rotate clockwise, allow valve to respond. Continue until required pressure is reached.
	No current.	Damaged wires.	Repair or replace the wires.
	Faulty Solenoid	Voltage ok, but no click.	Change solenoid.
	Blocked Solenoid.	Check port blockage.	Dismantle and clean. Replace solenoid if problem not solved.
	Blocked pilot.	No water coming out of pilot port #2.	Dismantle and clean pilot ports. Replace pilot if problem not solved.
Valve does not close	3-way selector is in the "OPEN" position.	Verify knob position.	Turn selector to "AUTO" or "CLOSE" position.
	Solenoid base "Manual Override" not pointing towards port 'AUTO'.	Check "Manual Override" position.	Turn "Manual Override" of solenoid base towards port 'AUTO'.
	Power is still "ON".	Check power source.	Make sure power is "OFF" when valve commanded to close.
	No pulse (Latch Solenoid)	Damaged wires or bad batteries.	Repair or replace the wires (or replace batteries).
	Blocked Solenoid.	Check port blockage.	Dismantle and clean. Replace solenoid if problem not solved.
	Faulty Solenoid	Voltage ok, but no click.	Change solenoid.
	Blocked inline finger filter (2).	Disconnect upstream tube. No firm water stream.	Clean or replace the filter.
	Debris on the sealing seat.	Valve is constantly discharging a small amount of water.	Turn the 3-way selector (4) to "OPEN" for some time and then to "CLOSE". If the problem persists, dismantle, clean and check that parts are not damaged.
Damaged diaphragm.	Continuous water discharge.	Replace the diaphragm.	
Unstable downstream pressure	Blocked or damaged pilot.	Unstable pressure downstream of the valve.	Dismantle and clean. Replace pilot if problem persists.
Incorrect but stable downstream pressure	Wrong set pressure.		Readjust the downstream pressure as described.

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