Solenoid Controlled Valve

(Sizes 1.5"-16"; DN40-400)

Description

Hydraulically operated, solenoid controlled valve that either opens fully or shuts off in response to an electric signal. It is available in several models including Normally Open (NO), Normally Closed (NC) or Last Position (LP).

Installation

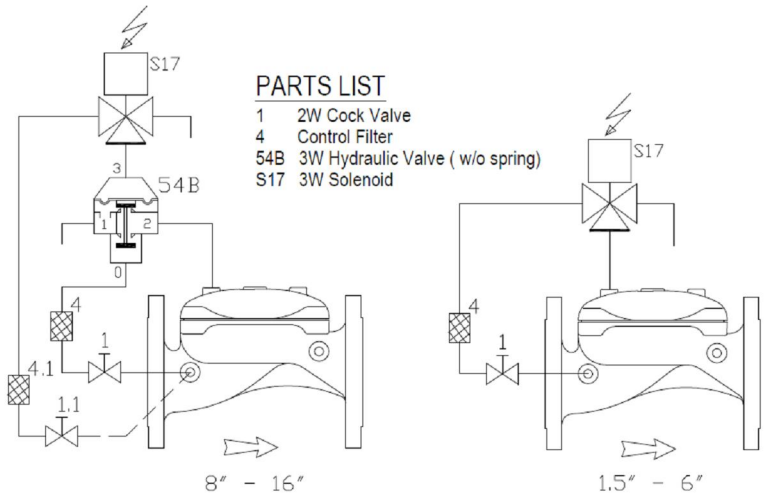
1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to ensure a flow of clean fluid through the valve.
3. For future maintenance, install Isolation Valves upstream and downstream of the control valve
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction. When applicable use the lifting ring provided on the main valve cover for installing the valve
5. For best performance, it is recommended to install the valve horizontally and upright. For different valve positions – consult Bermad.
6. It is highly recommended to install a Bermad strainer (model 70F) upstream of the control valve, to prevent debris from damaging the valve's operation.
7. Cross-Check solenoid specifications and cable with design requirements. Confirm that the cable data meets the solenoid specifications.
8. Pull and connect a cable (2 or 3 wire) for each solenoid, from the control panel to the valve, for the solenoid actuation. Ensure approved cable protection.

Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.

Commissioning & Calibration

1. Confirm that cock valves [1] & [1.1] are open (handle parallel to cock-valve body).
2. Allow the valve to open by using the solenoid manual override or by: Energizing the solenoid for a Normally Closed Valve, De-Energizing it for a Normally Open Valve & Latching it for a Last Position Valve.
3. Open fully the upstream isolating valve and partially open the downstream isolating valve, so as to fill, in a slow and controlled manner, the line downstream from the valve.
4. Confirm that the supply pressure and the flow through the system are typical.
5. Vent air from the valve's control loop by loosening a tube fitting at the highest point, allowing all air to bleed. Retighten the tube fitting.
6. The 3W hydraulic relay valve [54] on the larger valves quickens the valve's response.
7. The Model 410 has three modes of operation:
   - Normally Closed Valve,(NC) with a Normally Open Solenoid. Energizing the solenoid will cause the valve to open.
   - Normally Open Valve,(NO) with a Normally Closed Solenoid. Energizing the solenoid will cause the valve to Close.
   - Last Position Valve, with a Latch Solenoid. Each electric command will cause the valve to alternate between fully open and closed.

Control Drawing



Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, check cock valve position and confirm electric supply to (NC) solenoid.
2. **Valve fails to Close:** Check for sufficient inlet pressure, check cock valve position, clean control filter & check for clogged ports or fittings, check debris trapped in the main valve, confirm that the diaphragm is not worn or damaged, confirm electric supply to (NO) solenoid.

Preventative Maintenance

1. System operating conditions that affect the valve should be checked periodically to determine the required preventative maintenance schedule.
2. Maintenance instructions:
   - 2.1. Tools required:
     - Metric and imperial wrenches
     - Anti seize grease
   - 2.2. Periodical maintenance
     - Visual inspection to locate leaks and external damage
     - Functional inspection including: closing, opening and regulation
   - 2.3. 5 yearly scheduled maintenance
     - Close upstream and downstream isolating valves (also close any external sensing pressure when used)
     - Once the valve is fully isolated, vent residual pressure by loosening a plug or fitting
     - Disassemble necessary control hubs, unscrew the cover fastening bolts and remove the cover.
     - Inspect the diaphragm and sealing area on the valve body
     - Replace the diaphragm if worn or damaged
     - Lubricate all threads with Anti seize grease and replace the cover

Spare parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components at http://www.bermad.com/downloads For solenoid valves refer to model and S/N on solenoid tags

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