

## **Powered Opening Solenoid Controlled Valve**

(Sizes 1½-14"; DN40-350)

### **Description**

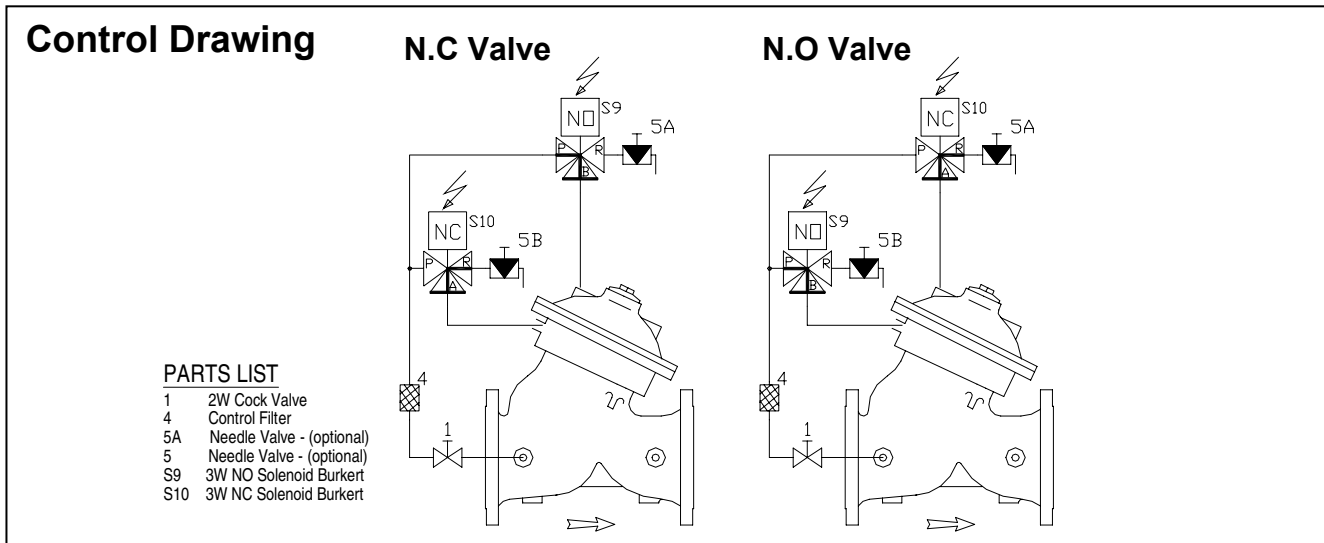
The Model 710-B Powered Opening Solenoid Controlled Valve is a double chambered, hydraulically operated, diaphragm actuated control valve that either opens fully, regardless of valve differential pressure, or shuts off in response to electric signals.

### **Installation**

1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to insure flow of clean fluid through the valve.
3. For future maintenance, install Isolation gate valves upstream and downstream from Bermad control valve.
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction. 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. Cross-Check solenoid specifications with design requirements and solenoid/coil label.
7. Electric design/wiring must be carried out by authorized electrical engineer/electrician and comply with Electrical Codes.
8. Pull and connect two 3-wired cable, from the control panel to the valve, for the solenoids actuation. Ensure approved cable protection. Confirm that the wires data meet solenoid specifications.  
Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.
9. It is highly recommended to install a strainer Bermad model 70F upstream from the level control valve, to prevent debris from damaging valve operation.
10. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

### **Commissioning & Calibration**

1. Confirm that cock valves [1] is open (handle parallel to cock-valve body).
2. Open fully the isolating valves.
3. For model 710-03-B - Confirm that speed control needle valve [5A] & [5B] are open two turns.
4. According to solenoid type - Confirm that solenoids manual override operator (if exists) are on automatic mode or confirm that solenoids by pass cock valves [3A] & [3B] (optional) are closed.
5. The model 710-B is available in Normally Closed (N.C.) and Normally Open (N.O.) configurations:
  - 5.1. N.C. – Normally Closed Configuration
    - 5.1.1. When both solenoids [S9 & S10] are de-energized the valve should close drip tight.
    - 5.1.2. When both solenoids are energized the valve should open fully.
  - 5.2. N.O. – Normally Open Configuration
    - 5.2.1. When both solenoids are de-energized the valve should open fully.
    - 5.2.2. When both solenoids are energized the valve should close drip tight.



## Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, create demand/flow, confirm pilot setting & check cock valves status, confirm power supply to solenoid & confirm solenoid coil is not burned (N.C. valves).
2. **Valve fails to Close:** Create demand/flow, confirm pilot setting, check needle & cock valves status, clean control filter & detect for clogged ports or fittings, confirm power supply to solenoid & confirm solenoid coil is not burned (N.O. valves), check if any debris trapped in the main valve, confirm diaphragm is not leaking.
3. **Valve fails to Regulate:** Check needle valves setting, release air trapped in the control chamber & check cock valves status.

## Preventative Maintenance

1. System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
2. Maintenance instructions:
  - 2.1. Tools required:
    - 2.1.1. Metric and imperial wrenches
    - 2.1.2. Anti seize grease
  - 2.2. Visual inspection to locate leaks and external damages
  - 2.3. Functional inspection including: closing, opening and regulation.
  - 2.4. Close upstream and downstream isolating valves (and external operating pressure when used).
  - 2.5. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
  - 2.6. Open the stud nuts and remove the actuator as one unit from the valve body. Disassemble necessary control tubs and wires.
  - 2.7. It is highly recommended to stock a reserve solenoid and an actuator assembly for each size. This allows disassemble the actuator and examine its parts carefully for signs of wear, corrosion, or any other abnormal conditions.
  - 2.8. Replace worn parts and all the Elastomers. Lubricate the bolts and studs threads with Anti seize grease.

## Spare parts

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

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