

Solenoid Controlled Valve

- Network management optimizing
- Pressure zone isolating
- Burst excess flow shut-off
- Reservoir overflow safety backup
- Switching between "on-duty" valves
- Automatic refreshing of reservoirs

The Model 710 Solenoid Controlled Valve is a hydraulically operated, diaphragm actuated control valve that either opens fully or shuts off in response to electric signals.

For very low pressure applications, refer to the Full Powered Opening and Closing Model 710-B.



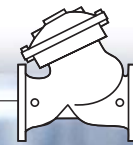
Features and Benefits

- **Line pressure driven**
 - Independent operation
 - No motor required
 - Long term drip tight sealing
- **Solenoid controlled**
 - Low power consumption
 - Low cost wiring
 - Wide ranges of pressures and voltages
 - Normally Open, Normally Closed or Last Position
- **In-line serviceable** – Easy maintenance
- **Double chamber**
 - Full powered opening (option "B") & closing
 - Non-slam closing characteristic
 - Protected diaphragm
- **Semi-straight flow** – Smooth flow characteristics
- **"Y" or angle, wide body** – Minimized pressure loss
- **Flexible design** – Easy addition of features

Major Additional Features

- Full powered opening & closing – **710-B**
- Check feature – **710-20**
- Opening & closing speed control – **710-03**
- Relief override – **710-3Q**
- Flow over the seat (fail-safe close) – **710-O**
- Closing surge prevention – **710-49**

See relevant BERMAD publications.



Operation

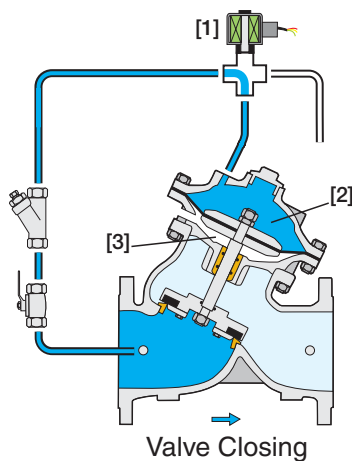
The Model 710 is a solenoid controlled valve equipped with a 3-Way solenoid pilot.

The normally open solenoid [1] applies pressure to the upper control chamber [2], harnessing valve differential pressure to power the diaphragm actuator, closing the main valve. Energizing the solenoid vents control chamber pressure, causing the main valve to open fully. The lower control chamber [3] is open to the atmosphere.

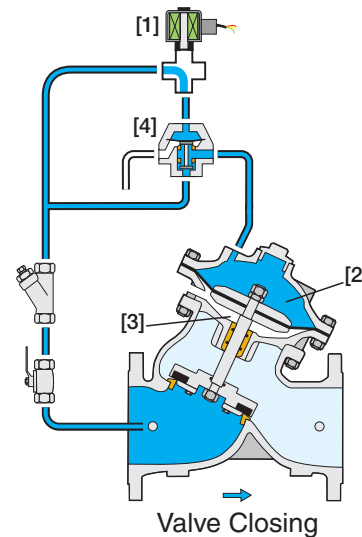
In cases where pipeline water is contaminated (corrosive, debris laden) external control fluid is often used.

For 10" and larger valves, an accelerator [4] quickens valve response.

Size Range 1 1/2-8"



Size Range 10-20"



Engineer Specifications

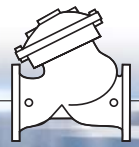
The Solenoid Controlled Valve shall either open fully or shut off in response to electric signals.

Main Valve: The main valve shall be a center guided, diaphragm actuated globe valve of either oblique (Y) or angle pattern design. The body shall have a replaceable, raised, stainless steel seat ring. The valve shall have an unobstructed flow path, with no stem guides, bearings, or supporting ribs. The body and cover shall be ductile iron. All external bolts, nuts, and studs shall be Duplex® coated. All valve components shall be accessible and serviceable without removing the valve from the pipeline.

Actuator: The actuator assembly shall be double chambered with an inherent separating partition between the lower surface of the diaphragm and the main valve. The actuator assembly shall not consist of any closing spring nor spring-like device. The entire actuator assembly (seal disk to top cover) shall be removable from the valve as an integral unit. The stainless steel valve shaft shall be center guided by a bearing in the separating partition. The replaceable radial seal disk shall include a resilient seal and shall be capable of accepting a V-Port Throttling Plug by bolting.

Control System: The control system shall consist of a 3-Way solenoid pilot valve (for 10" and larger valves, an accelerator shall be added to the solenoid), an isolating cock valve, and a filter. The assembled valve shall be hydraulically tested.

Quality Assurance: The valve manufacturer shall be certified according to the ISO 9001 Quality Assurance Standard. The main valve shall be certified as a complete drinking water valve according to NSF, WRAS, and other recognized standards.



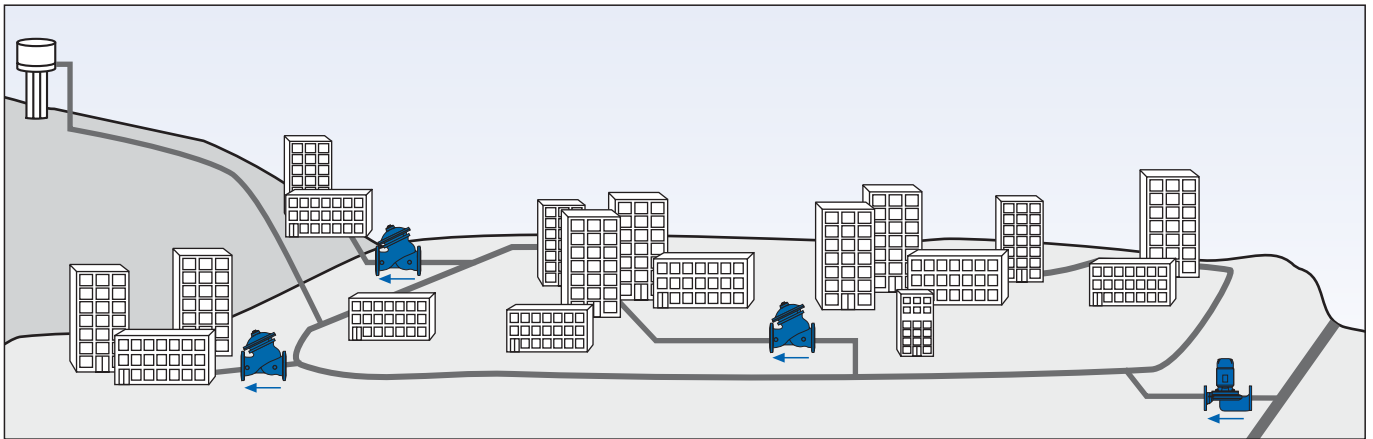
Typical Applications

Complex Distribution Networks

In complex distribution networks, management optimization of sources and consumers is essential:

- Sources are of various qualities and costs
- Source quality varies throughout the year
- Consumers demand various qualities
- Zones require isolation for maintenance
- Burst occurrence requires management
- Reservoirs call for systematic refreshing

The Model 710 is well suited to meet all the above needs and more. It should be included for placement in multiple locations during the design stage or with changing needs.



Filtration Systems

In a filter battery installed as part of a water treatment system, each filter requires periodic back flushing. This process entails reversing the direction of flow through each filter. Two Model 710 valves [V1] & [V3], installed upstream from each filter, enable this reversal. The "untreated water valve" [V1] is Normally Open and the "back flushing inlet valve" [V3] is Normally Closed.

