



Solenoid Controlled Valve

Model: WW-410

- 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 WW-410 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
- **Solenoid controlled**
 - Low power consumption
 - Wide ranges of pressures and voltages
 - Normally Open, Normally Closed or Latch
- **Flexible design** – Easy addition of features
- **Advanced globe or angle hydro-efficient design**
 - Unobstructed flow path
 - Single moving part
 - Non-turbulent flow
 - High flow capacity
- **Fully supported & balanced diaphragm**
 - Low actuation pressure
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- **In-line serviceable**
 - Easy maintenance
 - Minimal down time

Major Additional Features

- Opening & closing speed control – **WW-410-03**
- Relief override – **WW-410-3Q**
- Closing surge prevention – **WW-410-49**

See relevant BERMAD publications.



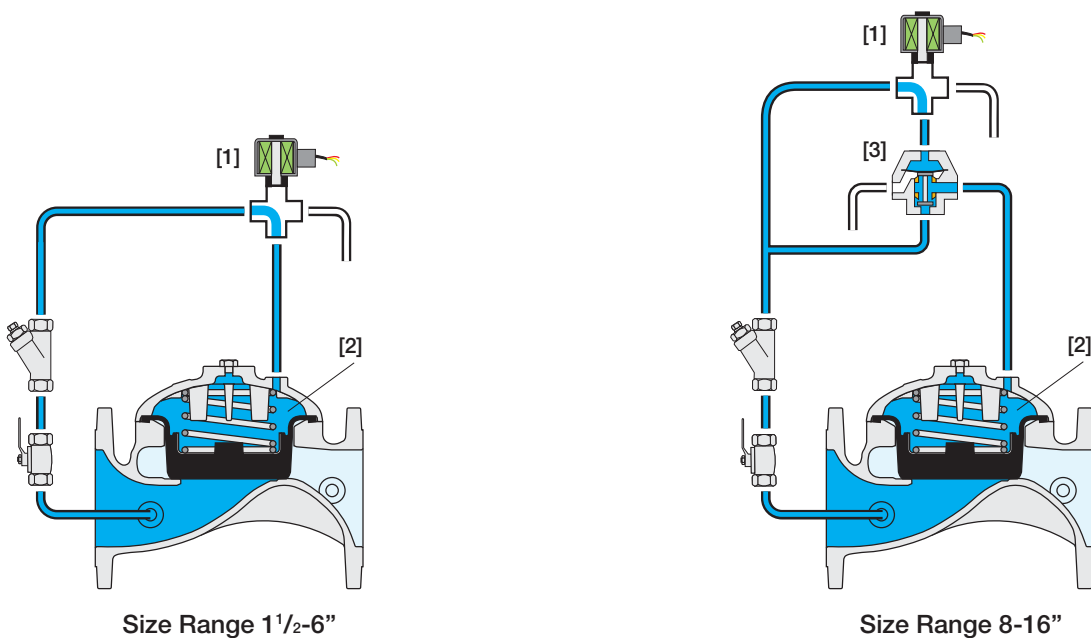
Operation

The Model WW-410 is a solenoid controlled valve equipped with a 3-Way solenoid pilot.

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

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

For 8" and larger valves, an accelerator [3] quickens valve response.



Engineer Specifications

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

Main Valve: The valve shall be hydraulically controlled, elastomeric type globe valve with a rolling-diaphragm. The valve shall have an unobstructed flow path with no stem guide or supporting ribs. Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal disk. The diaphragm assembly shall be the only moving part. The valve shall have a removable cover for quick in-line service enabling all necessary inspection and servicing. Valve pressure rating shall be PN16. Valve construction materials shall be: Epoxy FB coated Ductile Iron body and cover, NR diaphragm & Stainless Steel spring.

The valve shall be supplied as an assembly, hydraulically tested and factory adjusted to customer requirements at an ISO 9000 and 9001 certified hydraulic laboratory.

Control System: The control system shall consist of a 3-Way solenoid pilot valve (for 8" and larger valves, an accelerator shall be added to the solenoid), an isolating cock valve, and a filter. Washing the filter shall not require isolating the main valve. All tubing and fittings shall be Stainless Steel. 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 WRAS, and other recognized standards.



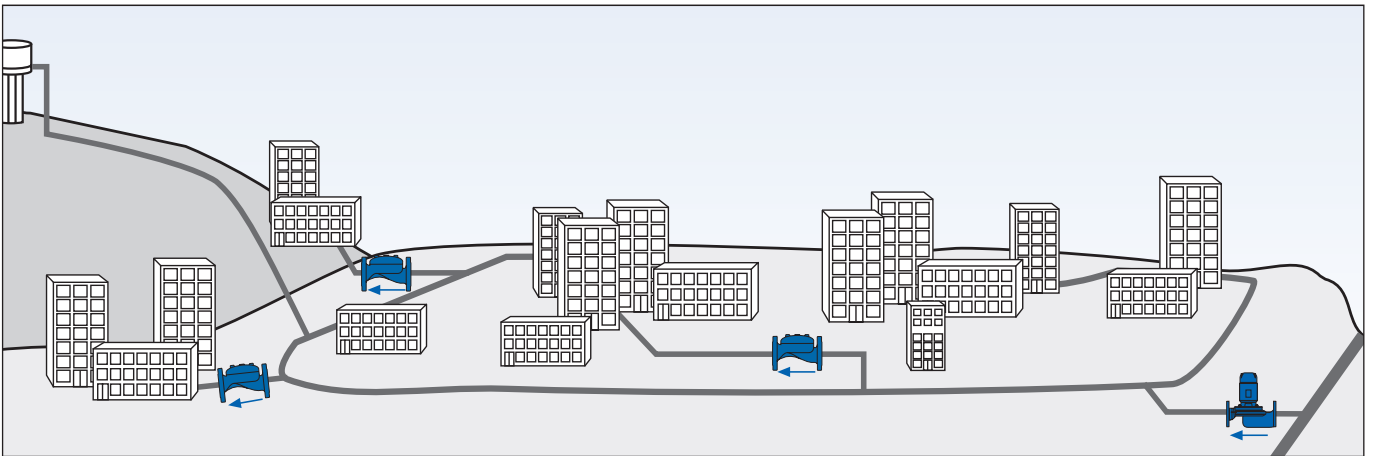
Typical Applications

Complex Distribution Networks

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

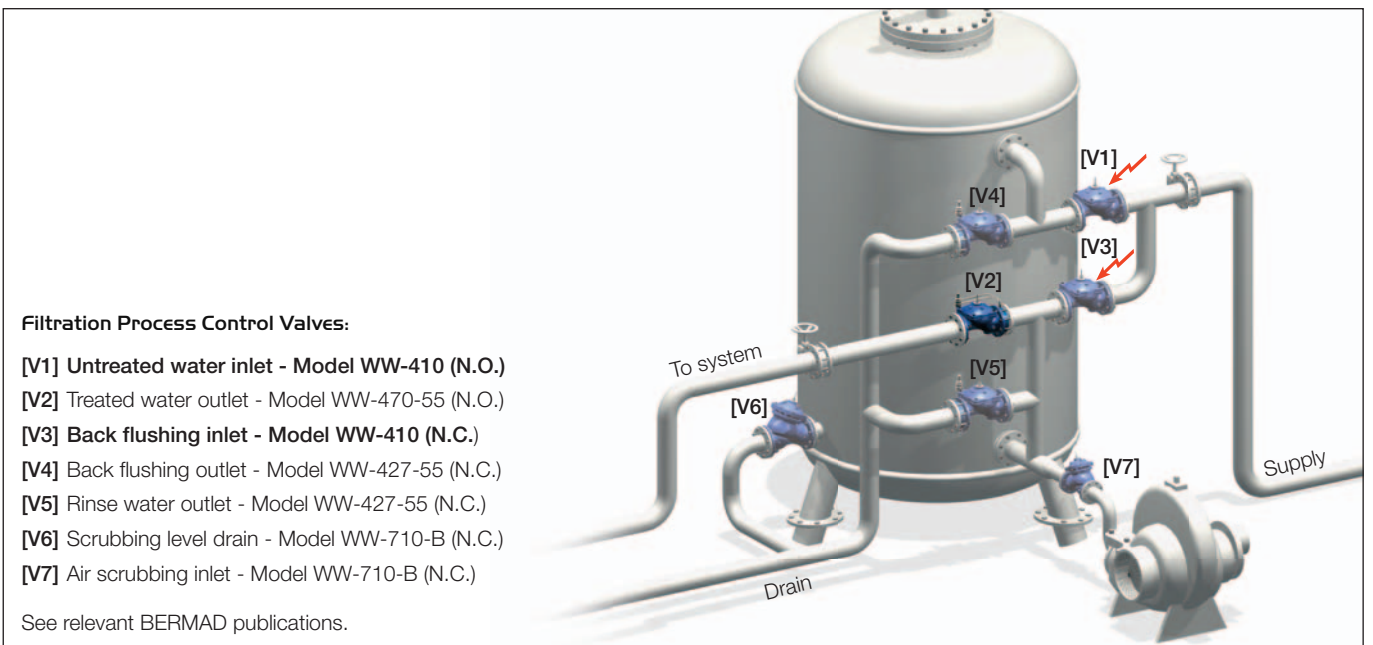
- Sources are of various qualities and costs
- Source quality varies throughout the year
- Consumers demand various qualities
- Zones require isolation for maintenance
- Burst occurrence requires management
- Reservoirs call for systematic refreshing

The Model WW-410 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 WW-410 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.



Filtration Process Control Valves:

- [V1] Untreated water inlet - Model WW-410 (N.O.)
- [V2] Treated water outlet - Model WW-470-55 (N.O.)
- [V3] Back flushing inlet - Model WW-410 (N.C.)
- [V4] Back flushing outlet - Model WW-427-55 (N.C.)
- [V5] Rinse water outlet - Model WW-427-55 (N.C.)
- [V6] Scrubbing level drain - Model WW-710-B (N.C.)
- [V7] Air scrubbing inlet - Model WW-710-B (N.C.)

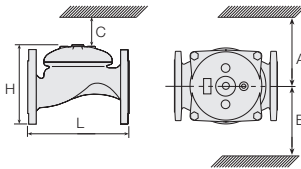
See relevant BERMAD publications.



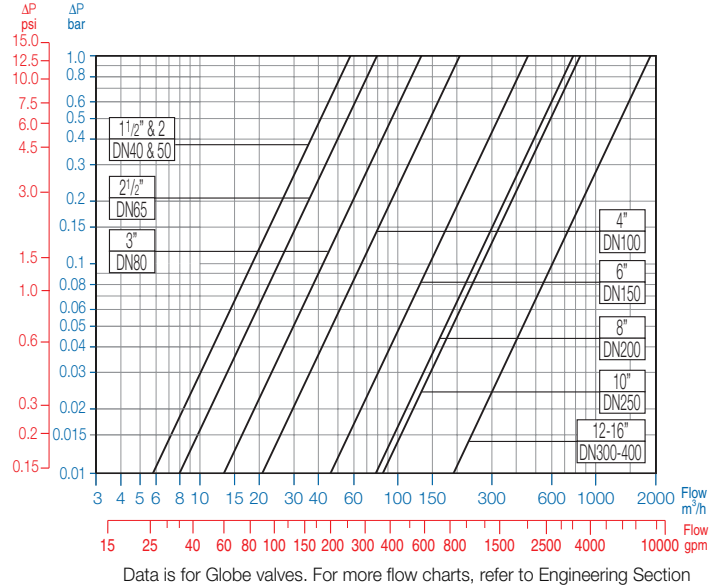
Technical Specifications

Dimensions and Weights

	Size		A, B		C		L		H		Weight	
	DN	inch	DN	inch	DN	inch	DN	inch	DN	inch	kg	lbs
Flange	40	1½	330	13	68	2.7	205	8.1	152	6	8	17.6
	50	2	330	13	68	2.7	205	8.1	155	6.1	9	19.8
	65	2½	340	13	110	4.3	205	8.1	178	7	11	23.1
	80	3	350	14	125	4.9	250	9.8	210	8.3	19	41.9
	100	4	360	14	145	5.7	320	12.6	242	9.5	28	61.7
	150	6	400	16	205	8.1	415	16.3	345	13.6	68	149.9
	200	8	430	17	260	10	500	19.7	430	16.9	125	275.6
	250	10	450	18	275	11	605	23.8	460	18.1	140	308.6
	300	12	515	20	380	15	725	28.5	635	25.0	290	639.3
Groove	50	2	310	12	65	2.6	205	8.1	108	4.3	5	11
	80	3	335	13	125	4.9	250	9.8	155	6.1	11	23.4
	100	4	350	14	145	5.7	320	12.6	191	7.5	16	35.7
	150	6	400	16	205	8.1	415	16.3	302	11.9	49	108



Flow Chart



Main valve

Connections Standard:

Flanged: ISO 7005-2 (PN10 & 16); ANSI B16.42 (#150)

Grooved: ANSI C606

Threaded: Rp ISO 7/1 (BSP.P) or NPT

Others: Available on request

Pressure Ratings: 16 bar; 232 psi

Operating Pressure Range: 0.5-16 bar; 7-232 psi
For lower pressure requirements, consult factory

Working Temperature: Water up to 50°C (122°F)

Standard Materials:

Body and Cover:

Electrostatic Polyester Powder, RAL 5010 (Blue)

Coated Ductile Iron

Spring: Stainless Steel 302

Diaphragm:

Nylon fabric Reinforced NR with rugged insert

Bolts, Studs and Nuts: Zinc-Cobalt plated Steel

Control System

Solenoid Electrical Data:

Voltages:

(ac): 24, 110-120, 220-240, (50-60Hz)

(dc): 12, 24, 110, 220

Power Consumption:

(ac): 30 VA, inrush; 15 VA (8W), holding or 70 VA, inrush; 40 VA (17.1W), holding

(dc): 8-11.6W

Values might vary according to specific solenoid model

Solenoid Standard Materials:

Body: Brass or Stainless Steel

Elastomers: NBR or FPM

Enclosure: Molded epoxy

Accelerator Standard Materials:

Body: Brass or Stainless Steel

Internals: Stainless Steel & Brass

Elastomers: NBR or FPM

Control Accessories:

Bronze, Brass, Stainless Steel & NBR

Tubing and Fittings:

Stainless Steel

How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

Sector	Size	Primary Feature	Additional Feature	Pattern	Body Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Additional Attributes
WW	6"	410	00	G	C	16	EB	4AC	NN	I
Waterworks	1½ - 16" DN40-400	Solenoid Controlled	Globe Angle (up to 4") Ductile Iron (Standard) Cast Steel St. Steel 316 Nickel Alumin. Bronze	G A	C S N U	Epoxy FB Blue Polyester Green Polyester Blue Uncoated	EB PG PB UC	St. St. 316 Tubing & Fittings Copper Tubing & Brass Fittings Plastic Tubing & Brass Fittings	NN CB PB	
No Additional Feature			ISO-16 ANSI-150 JIS-10		16 A5 J1	24VAC/50Hz - N.C. 24VAC/50Hz - N.O. 24VDC - N.C. 24VDC - N.O. 24VDC - L.P.	4AC 4AO 4DC 4DO 4DP	Valve Position Indicator Large Control Filter Electric Limit Switch	I F S	
Closing and Opening Speed Control			BSP.P (1½-3") NPT (1½-3")		BP NP	220VAC/50Hz - N.C. 220VAC/50Hz - N.O.	2AC 2AO	St. St. 316 Control Accessories Pressure Gauge	N 6	
Relief Override			Other end connections available on request			Use when additional electric control feature is selected		Multiple choices permitted		
Closing Surge Prevention										
Multiple choices permitted										

