

Pressure Relief/Sustaining Valve

with Solenoid Control

WW-730-55

- Prioritizing pressure zones
- Pump overload & cavitation protection
- Backup for reservoir supply valves
- Safeguarding pump minimum flow
- Switching between pressure regimes

The Model 730-55 Pressure Relief/Sustaining Valve with Solenoid Control is a hydraulically operated, diaphragm actuated control valve that sustains minimum pre-set, upstream (back) pressure regardless of fluctuating flow or varying downstream pressure. It also either opens or closes in response to an electric signal. When installed as a circulation valve, the Model 730-55 relieves excessive line pressure when above maximum pre-set.

Features and Benefits

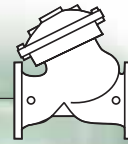
- **Line pressure driven** – Independent operation
- **Solenoid controlled**
 - Low power consumption
 - Wide ranges of pressures and voltages
 - Normally Open, Normally Closed, or Last Position
- **Balanced seal disk** – High relief flow capacity
- **In-line serviceable** – Easy maintenance
- **Double chamber design**
 - Moderated valve reaction
 - Protected diaphragm
- **Flexible design** – Easy addition of features
- **Variety of accessories** – Perfect mission matching
- **"Y" or angle, wide body** – Minimized pressure loss
- **Semi-straight flow** – Non-turbulent flow
- **Stainless Steel raised seat** – Cavitation damage resistant
- **Obstacle free, full bore** – Uncompromising reliability
- **V-Port Throttling Plug** – Low flow stability



Major Additional Features

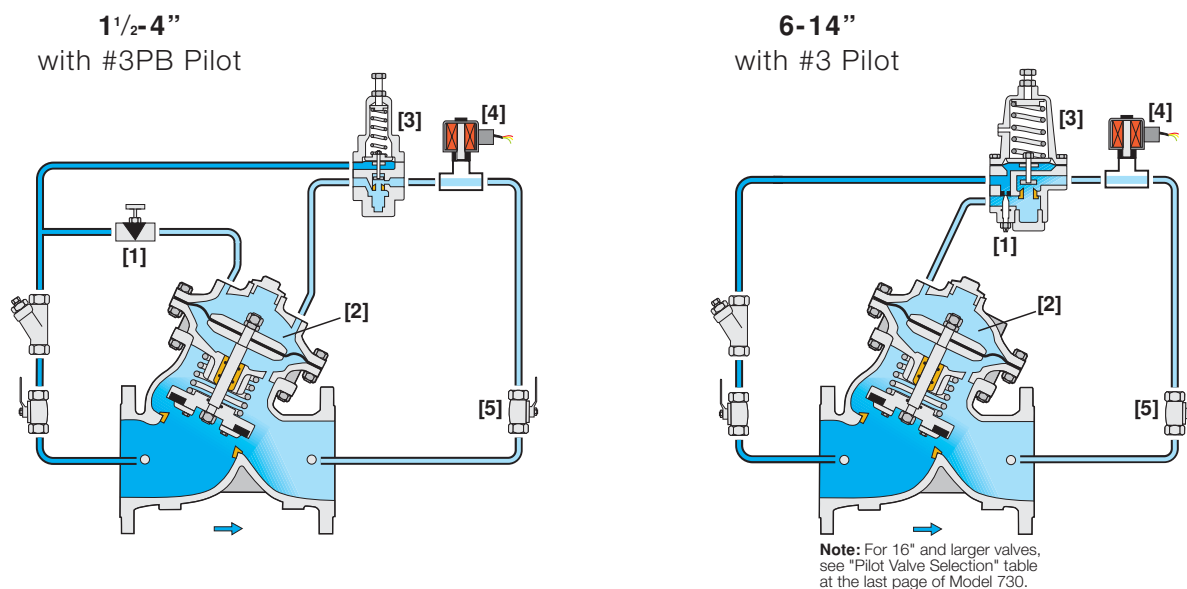
- Pressure sustaining and reducing with solenoid control – **723-55**
- Electrically selected multi-level settings – **730-45**
- High sensitivity pilot – **730-55-12**
- Electric override for fire protection – **FP-730-59**
- Level-control & pressure sustaining with bi-level electric float – **753-65**
- Pump circulation & pressure sustaining valve – **748**
- Electronic pressure sustaining valve – **738-03**

See relevant BERMAD publications.



Operation

The Model 730-55 is a pilot controlled valve equipped with an adjustable, 2-Way, pressure sustaining pilot and a solenoid pilot. The needle valve [1] continuously allows flow from the main valve inlet into the upper control chamber [2]. The pilot [3] senses upstream pressure, and the solenoid [4] together control outflow from the upper control chamber. Should this pressure fall below pilot setting, the pilot closes, enabling pressure to accumulate in the upper control chamber, and causing the main valve to throttle thereby sustaining upstream pressure at pilot setting. Should upstream pressure rise above pilot setting, the pilot releases accumulated pressure and the main valve modulates open. Should the solenoid pilot close, pressure in the upper control-chamber accumulates causing the main valve to shut off. The needle valve controls the closing speed. The downstream cock valve [5] enables manual closing. Normally closed, normally open and last position models are available.



Engineer Specifications

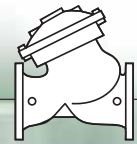
The Pressure Relief/Sustaining Valve with Solenoid Control shall sustain minimum pre-set, upstream pressure regardless of fluctuating flow or varying downstream pressure; and it shall either open or close in response to an electric signal. When installed as a circulation valve, the Model 730-55 relieves excessive line pressure when above maximum pre-set.

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 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 2-way adjustable, direct acting pressure sustaining pilot valve, a needle valve, isolating cock valves, a filter, and a 2-Way solenoid pilot. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested and factory adjusted to customer requirements.

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.

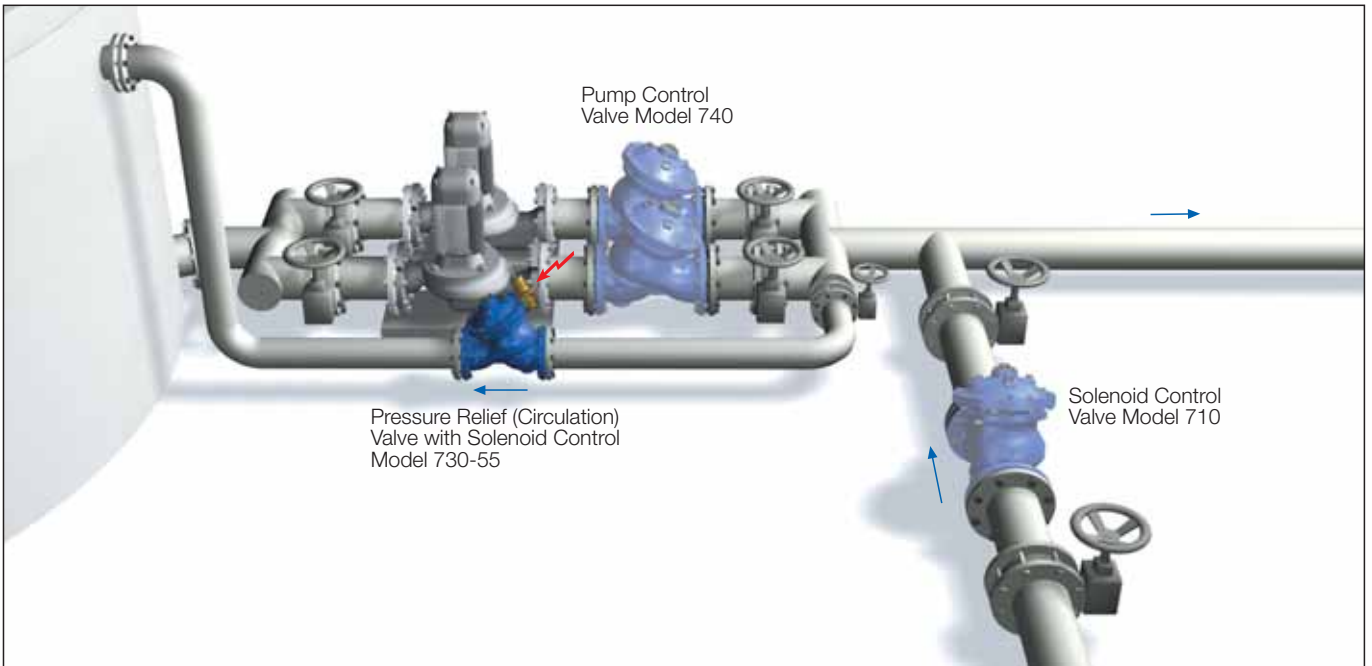


Typical Applications

Circulating Valve with Reservoir Overflow Protection

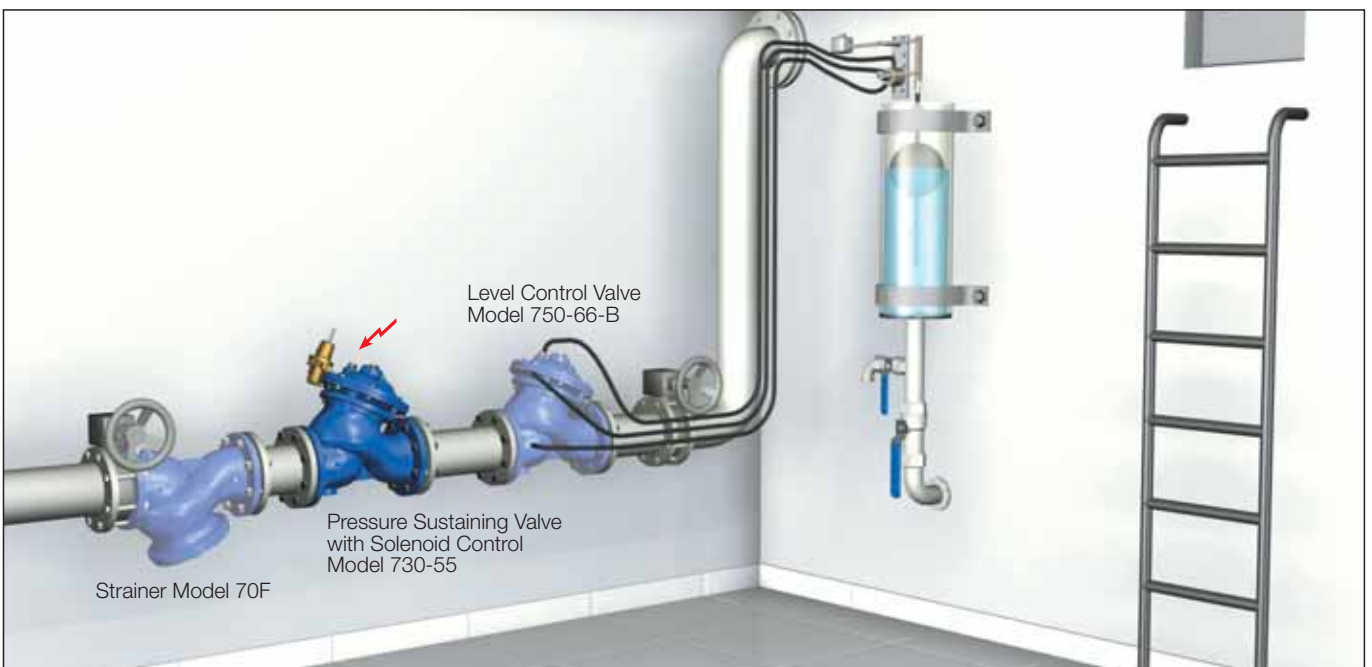
Water is supplied to the consumer network from the reservoir or directly from the major supply network:

- During pumping from the reservoir, the Normally Closed Model 730-55, with energized solenoid, serves as a circulation valve.
- During direct supply, pressure might be higher than pilot setting, possibly causing reservoir overflow. The de-energized solenoid keeps the Model 730-55 closed, preventing reservoir filling from this source.



Reservoir Level Control Backup

To sustain minimum network pressure, the Normally Open Model 730-55 prioritizes consumers before supply to the reservoir. In addition, this valve provides electric control backup protection (solenoid & float switch) should the hydraulic level control fail.



BERMAD Irrigation



WW-730-55

For full technical details, refer to Engineering Section.

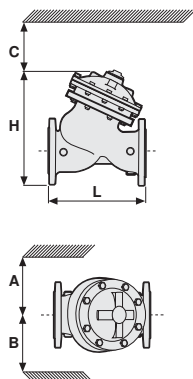
WW-700 Series

Pressure Relief/Sustaining

Technical Data

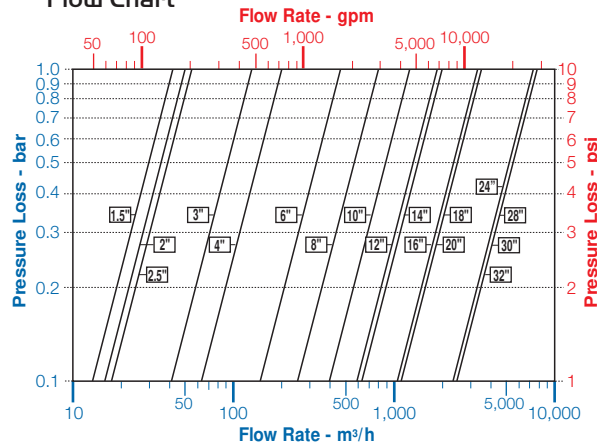
Dimensions and Weights

Size	A, B	C	L	H	Weight	
mm inch	mm inch	mm inch	mm inch	mm inch	kg lbs	
40	1 1/2"	350 14	180 7	205 8.1	239 9.4	9.1 20
50	2"	350 14	180 7	210 8.3	244 9.6	10.6 23
65	2 1/2"	350 14	180 7	222 8.7	257 10.1	13 29
80	3"	370 15	230 9	250 9.8	305 12.0	22 49
100	4"	395 16	275 11	320 12.6	366 14.4	37 82
150	6"	430 17	385 15	415 16.3	492 19.4	75 165
200	8"	475 19	460 18	500 19.7	584 23.0	125 276
250	10"	520 21	580 23	605 23.8	724 28.5	217 478
300	12"	545 22	685 27	725 28.5	840 33.1	370 816
350	14"	545 22	685 27	733 28.9	866 34.1	381 840
400	16"	645 26	965 38	990 39.0	1108 43.6	846 1865
450	18"	645 26	965 38	1000 39.4	1127 44.4	945 2083
500	20"	645 26	965 38	1100 43.3	1167 45.9	962 2121



Data is for Y-pattern, flanged, PN16 valves
 Weight is for PN16 basic valves
 "C" enables removing the actuator in one unit
 "L", ISO standard lengths available
 For more dimensions and weights tables, refer to engineering Section

Flow Chart



Data is for Y-pattern, flat disk valves
 For more flow charts, refer to Engineering Section

Main Valve

Valve Patterns: "Y" (globe) & angle
Size Range: 1 1/2"-32" (40-800 mm)
End Connections (Pressure Ratings):
Flanged: ISO PN16, PN25 (ANSI Class 150, 300)
Threaded: BSP or NPT
Others: Available on request
Working Temperature:
 Water up to 80°C (180°F)

Standard Materials:
Body & Actuator: Ductile Iron
Internals:

Stainless Steel, Bronze & coated Steel

Diaphragm:

NBR Nylon fabric-reinforced

Seals: NBR

Coating:

Fusion Bonded Epoxy, RAL 5005 (Blue)
 NSF & WRAS approved or Electrostatic Polyester Powder, RAL 6017 (Green)

Control System

Standard Materials:

Accessories:

Bronze, Brass, Stainless Steel & NBR
Tubing: Copper or Stainless Steel
Fittings: Forged Brass or Stainless Steel

Pilot Standard Materials:

Body: Brass, Bronze or Stainless Steel
Elastomers: NBR
Springs: Galvanized Steel or Stainless Steel
Internals: Stainless Steel

Pilot Valve Selection

Valve Size	Pilot Setting (bar)	Pilot Type		
		#3PB	#3	#3HC
1 1/2-4"	<15	■	●	
40-250 mm	>15		●	
6-14"	<15		■	
150-350 mm	>15		●	
16-32"	<15			■
400-800 mm	>15			●

■ Standard model ● with high pressure setting kit

Solenoid Standard Materials:

Body: Brass or Stainless Steel

Elastomers: NBR or FPM

Enclosure: Molded epoxy

Solenoid Electrical Data:

Voltages:

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

(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.

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 Material	End Connections	Coating	Voltage & Position	Tubing & Fittings	Additional Attributes
WW	6"	730	55	Y	C	16	EB	4AC	CB	I
Waterworks	1 1/2" - 32"	Pressure Relief/Sustaining		Oblique (up to 20") Angle (up to 18") Globe (24-32" only)	Y A G	Epoxy FB Blue Polyester Green Polyester Blue Uncoated	EB PG PB UC	Copper Tubing & Brass Fittings Plastic Tubing & Brass Fittings St. St. 316 Tubing & Fittings	CB PB NN	
No Additional Feature			00		Ductile Iron Standard Cast Steel St. Steel 316 Nickel Alumin. Bronze					
High sensitivity pilot			12							
Check Valve			20							
Solenoid Controlled & Check Valve			25							
Multi-Setting Levels - Electrically Selected			45							
Closing Surge Prevention			49							
Hydraulic Control			50							
Solenoid Controlled			55							
Electric Override			59							
					ISO-16 ISO-25 ANSI-150 ANSI-300 JIS-16 JIS-20	16 25 A5 A3 J6 J2	24VAC/50Hz - N.C. 24VAC/50Hz - N.O. 24VDC - N.C. 24VDC - N.O. 24VDC - L.P. 220VAC/50-60Hz N.C. 220VAC/50-60Hz N.O.	4AC 4AO 4DC 4DO 4DP 2AC 2AO	Valve Position Indicator Large Control Filter V-Port Throttling Plug Electric Limit Switch 3-Way Control Loop Valve Position Transmitter St. St. 316 Control Accessories St. St. 316 Internal Trim (Closure & Seat) St. St. 316 Actuator Internal Assembly Delrin Bearing Viton Elastomers for Seals & Diaphragm Pressure Gauge	I V F S X Q N T D R E 6

Multiple choices permitted

Multiple choices permitted



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