

## Level Control and Pressure Sustaining Valve with Bi-Level Electric Float

- Reservoir level control
- Prioritizing consumers over reservoir filling
- Backup for reservoir supply valves

The Model 753-65 Level Control and Pressure Sustaining Valve with Bi-Level Electric Float is a hydraulically operated diaphragm actuated control valve that controls reservoir filling in response to an electric signal. The valve opens at pre-set low level and shuts off at pre-set high level.

During filling, it sustains minimum upstream pressure, regardless of fluctuating flow or reservoir level.



### Features and Benefits

- **Line pressure driven** – Independent operation
- **Bi-Level electric float switch**
  - On/off service
  - Low cavitation damage
  - No hydraulic sensing tubes
  - Simplified float installation and setting
  - Reservoir inherent refreshing
- **Solenoid controlled**
  - Low power consumption
  - Normally Open or Normally Closed main valve
- **Double chamber**
  - Moderated valve reaction
  - Protected diaphragm
- **In-line serviceable** – Easy maintenance
- **Flexible design** – Easy addition of features
- **Balanced seal disk** – High relief flow capacity

### Major Additional Features

- Hydraulic float backup – **753-65-66**
- Altitude pilot backup – **753-65-80**
- Closing surge prevention – **753-65-49**
- Electrically selected multi-level settings – **753-65-45**

See relevant BERMAD publications.



### Operation

The Model 753-65 is a pilot controlled valve equipped with an adjustable, 2-Way pressure sustaining pilot, a solenoid pilot\* and an electric float switch.\*\*

The float switch [1] closes at pre-set low level to energize the solenoid [2] and opens at pre-set high level to de-energize the solenoid. The needle valve [3] continuously allows flow from the valve inlet into the upper control chamber [4]. The pressure sustaining pilot [5], set to minimum allowed system pressure, senses upstream pressure, and together with the solenoid pilot [2], controls outflow from the upper control chamber.

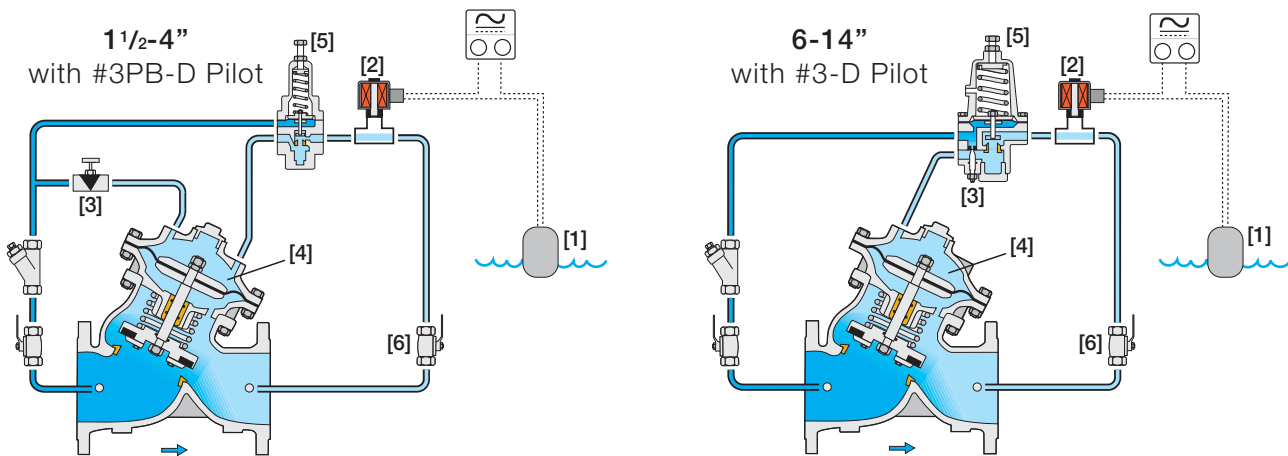
At high level, the solenoid closes causing the main valve to shut off.

At low level, the solenoid opens leaving the pressure sustaining pilot to modulate the main valve open while sustaining minimum upstream pre-set pressure.

The needle valve controls the closing speed. The downstream cock valve [6] enables manual closing.

\* Normally Closed, Normally Open and Last Position main valves are available.

\*\* Other switching means are available.



**Note:** For 16" and larger valves, see "Pilot Valve Selection" table at the last page of Model 730.

### Engineer Specifications

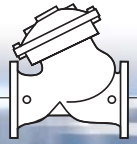
The Level Control and Pressure Sustaining Valve shall control reservoir filling in response to an electric signal, opening at pre-set low level and shutting off at pre-set high level. During filling, it shall sustain minimum upstream pressure, regardless of fluctuating flow or reservoir level.

**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 solenoid pilot, a needle valve, isolating cock valves, a filter, and an electric float switch. 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

### Level Control and Pressure Sustaining

In this elevated reservoir system, pressure to consumers is prioritized over reservoir filling by adding the pressure sustaining feature to the Model 750-65 Level Control Valve, thereby modifying it to become the Model 753-65 Level Control and Pressure Sustaining Valve.



## Typical Installation

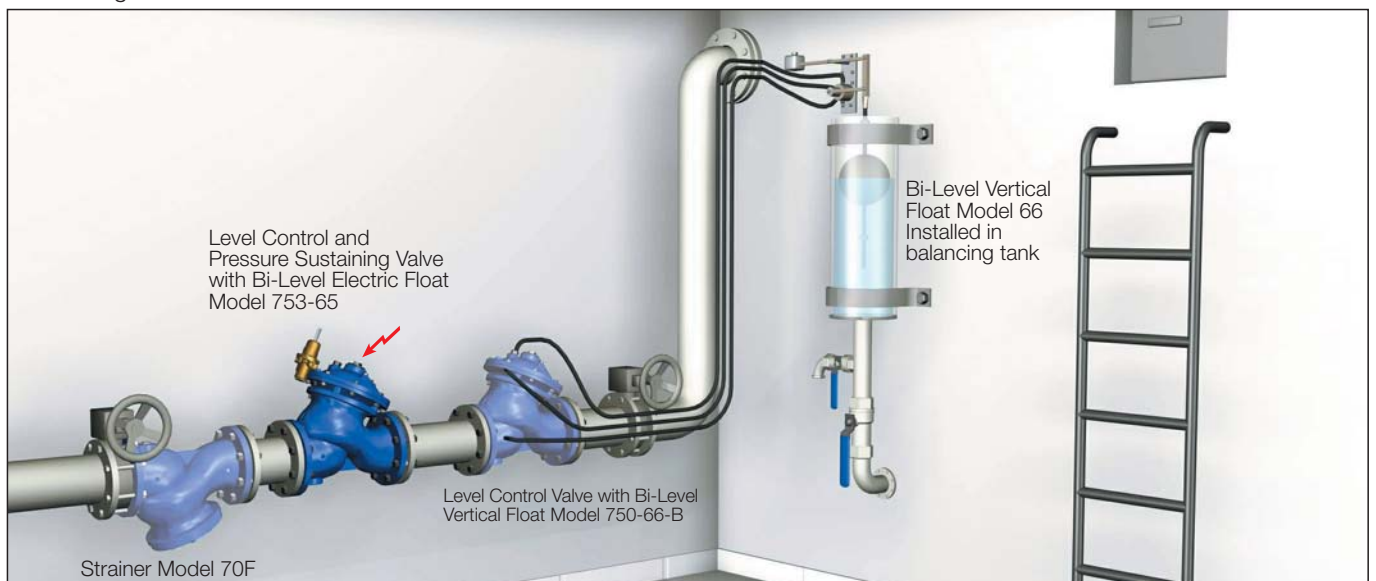
### Basement reservoirs in high-rise building

Excellent reservoir level control is achieved by installing BERMAD's Model 750-66-B due to these features:

- On/off service
- Full powered opening & closing
- Low throttling noise
- Non-slam closing characteristic

When prioritizing consumers over reservoir filling is required, rather than adding the pressure sustaining feature to the Model 750-66-B, BERMAD recommends installing a Model 753-65, Normally Open, Level Control and Pressure Sustaining Valve with Bi-Level Electric Float. This enables:

- Adding the required pressure sustaining feature
- Ensuring full backup by a "second line" of protection
- Retaining all the benefits of the Model 750-66-B

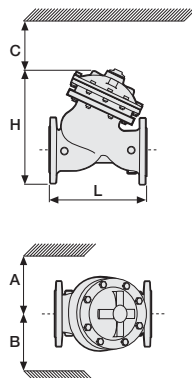




### Technical Data

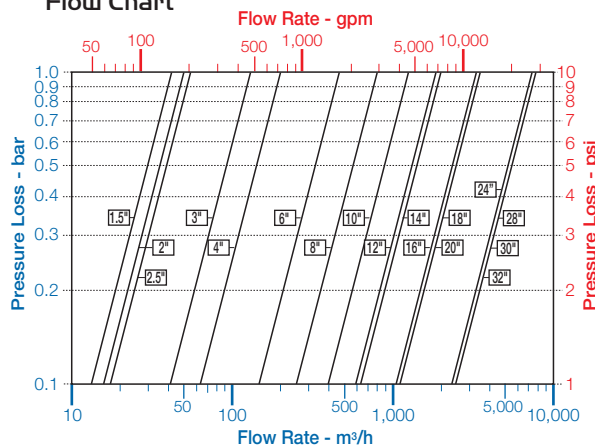
#### Dimensions and Weights

Size	A, B		C		L		H		Weight		
	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
- Solenoid Standard Materials:**  
**Body:** Brass or Stainless Steel  
**Elastomers:** NBR, EPDM 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

#### Sustaining Pilot Standard Materials:

- Body:** Brass, Bronze or Stainless Steel
- Elastomers:** NBR
- Springs:** Galvanized Steel or Stainless Steel
- Internals:** Stainless Steel
- Float switch**
- Max. Current:** 16A@250V
- Fluid specific weight:** 0.95-1.10
- Working temperature:** Water up to 60°C (140°F)
- Dimensions:** Length – 124 mm (4.9")  
 Width – 90 mm (3.5")  
 Cable length – 4.9 m (16 ft.)

### 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"	753	65	Y	C	16	EB	4AC	CB	I
Waterworks	1 1/2" - 32"	Level Control and Pressure 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	
		Closing Surge Prevention Modulating Horizontal Float Bi-Level Electric Float Bi-Level Vertical Float Modulating Vertical Float Altitude Pilot Modulating Altitude Pilot Sustaining Altitude Pilot Bi-Level Altitude Control	49 60 65 66 67 80 82 83 86		Ductile Iron Standard Cast Steel St. Steel 316 Nickel Alumin. Bronze			Double Chambered Valve Position Indicator Large Control Filter V-Port Throttling Plug Orifice Assembly Electric Limit Switch 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	B I F V U S N T D R E	
		2-14 Meter Setting Altitude Pilot 5-22 Meter Setting Altitude Pilot 15-35 Meter Setting Altitude Pilot 25-70 Meter Setting Altitude Pilot	M6 M5 M4 M8		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		

Multiple choices permitted

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