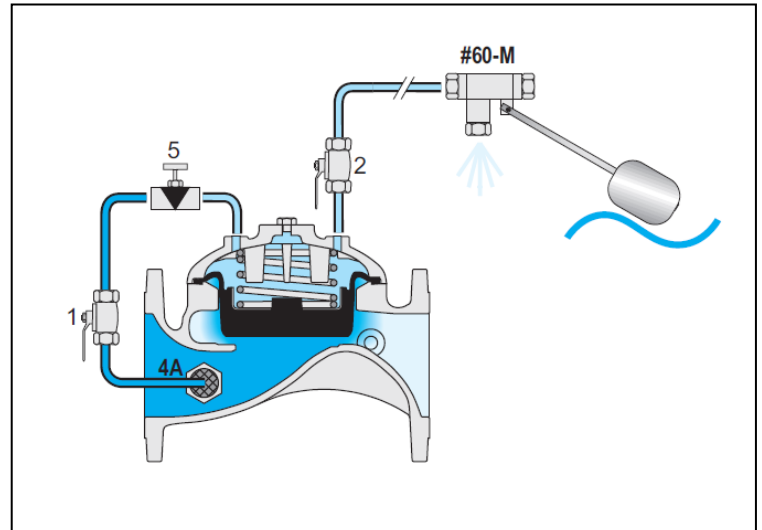


Level Control Valve with Modulating Horizontal Float

(Sizes 6"- 16"; DN150-400)

Description:

The BERMAD Model IR-450-60-R Level Control Valve with Modulating Horizontal Float is a hydraulically operated, Diaphragm actuated control valve. The valve hydraulically Controls reservoir filling to maintain constant water level Regardless of fluctuating demand.



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. It is highly recommended to install strainer Bermad model 70F upstream from the level control valve, to prevent debris from damaging valve operation.
7. Install the float pilot assembly near the reservoir manhole, at a still place or at an internal stilling tank.
8. Determine the desired float location at the reservoir desired level and up-to 20 Cm above it.
9. Fix the float to the reservoir wall, or other stable element, ensuring the float will remain in its original orientation.
10. Anchor the float arm position by tightening the arm base screws, using 7/16" spanners.
11. Thread-in the float ball on to the arm and lock it near the edge of the arm, using a 7/16" spanner. Tighten the lock nut.
12. Pull a ½" or ¾" control tube, from the valve to the float.
13. Connect the valve and to the float, by use ¾" copper tube or reinforced plastic tube, according to control drawing.

Commissioning & Calibration:

1. Confirm that cock valves [1] and [2] are open (handle parallel to cock-valve body).
2. Confirm that the supply pressure is typical.
3. Adjust the water level by setting the float arm angle: Hold the float arm at its upper position & set the angle to 100 mm below desired upper level (but not higher than 150 mm below over-flow level).
4. Open upstream and downstream isolating valves. Allow the IR-450-60-R to open (ensuring the float ball is at its lower position) and fill-up the reservoir.
5. Vent air from the valve control loop:
During filling the reservoir move the float arm manually to its upper position, forcing the valve to close, then to its lower position, forcing the valve to open. At each position, vent air from the valve control loop by loosening tube fitting at the highest point on the valve & at pilot float inlet port, allowing the air to bleed. Retighten the fittings eyebolts.
6. Calibrating reservoir level:
Ensure that the IR-450-60-R closes as the water level reaches the set-level. If the IR-450-60-R has not closed, change the float arm angle down, to lower level setting or up to raise it, until the valve closes **automatically** at the desired upper-level. Allow the water level to drop by consuming from the reservoir or by draining it. This will cause the valve to open.
7. The needle valve [5] enables the 2-Way control and controls valve closing speed. It should be set between 1 to 2 turns open, according to valve size, float distance & elevation and the desired closing speed.
8. Cock valve [2] enables manual closing.

Trouble-Shooting:

Symptoms	Cause	Remedy
Valve fails to open	<ol style="list-style-type: none"> 1. Cock valve (2) position. 2. Float Setting. 3. Not sufficient inlet pressure. 	<ol style="list-style-type: none"> 1. Confirm Cock valve (1) is open. 2. Confirm float setting. 3. Check for sufficient inlet pressure.
Valve fails to close	<ol style="list-style-type: none"> 1. Cock valve (1) is close. 2. Control circuit is clogged. 3. Float setting. 4. Debris- 5. Diaphragm- 	<ol style="list-style-type: none"> 1. Confirm Cock valve (1) is open. 2. Check for any debris trapped in the valve control circuit 3. Confirm float setting. 4. Check for any debris trapped in the valve body. 5. Check diaphragm is not leaking.

Preventive Maintenance:

1. System operating conditions that effect on the valve should 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
 - 2.1.3. Visual inspection to locate leaks and external damages
 - 2.2. Functional inspection including closing, opening and regulation.
 - 2.3. Close upstream and downstream isolating valves (and external operating pressure when used)
 - 2.4. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
 - 2.5. Open the screw nuts and remove the cover unit from the valve body. Disassemble necessary control tubs.
 - 2.6. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work.
Disassemble the cover and examine the inside parts carefully for signs of wear, corrosion, or any other abnormal conditions.
 - 2.7. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
 - 2.8. Winterizing /freezing prevention: drain the valve & the valve accessories (pilot, solenoid) on time.

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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