

Level Control Valve with Bi-Level Vertical Float

(Sizes 1.5"-16"; DN40-400)

Description

Hydraulically operated control valve that sustains reservoir level.

Reservoir filling is in response to a hydraulically controlled Non-modulating Bi-level vertical float that opens at a pre-set reservoir low level and shuts off drip-tight at a pre-set high level.

Installation

1. Ensure enough space around the valve assembly for future maintenance and adjustments
2. Prior to valve installation, flush the pipeline to ensure a flow of clean fluid through the valve
3. For future maintenance, install Isolation Valves upstream and downstream of the control valve
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction. When applicable 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 a Bermad strainer (model70F)upstream of the control valve, to prevent debris from damaging the valve's operation
7. Install the float pilot assembly either in an external balancing tank or in an internal stilling tank (refer to the "Float #66" catalog page)
8. Pull two parallel ½" or ¾" control tubes, from the valve to the float. Mark each of the tubes at both ends for identification.
9. Determine the desired rod length according to level differential between the float assembly and reservoir's lowest level
10. Assemble the extension rods to the upper rod and to one another. Apply glue ("Loctite 200" or equivalent) and screw tight take care not to damage the rod
11. Install the upper & lower stoppers on the rod without the float ball. Use 3/16" Allen-Key to lock the stoppers on the rod
12. Screw the upper rod to its place at the bottom of the lever system & tighten the lock nut using a ½" spanner
13. Balance the float assembly by moving the weight against the rod and stoppers (without the float ball). After reaching equilibrium, tighten the balancing-weight screw and its lock-nut using a 7/16" spanner
14. Remove the lower stopper to enable threading-in of the float ball. Reassemble the lower stopper & lock it in its place
15. **Note:** You may have to pull out the whole rod in order to reach the lower stopper. If so release the rod lock-nut, unscrew the installed rod (with its extensions & the stoppers) and pull it up from the stilling tank. After threading-in the float ball and locking the lower stopper back in its place, reassemble the installed rod
16. Connect the control tubes ends, using ¾" copper or reinforced plastic tube, to the valve and to the float assembly according to control drawing below
 - Tube from valve inlet control branch, downstream from filter [4] to float assembly port [P]
 - Tube from float assembly port [C1] to the 2W hydraulic pilot valve cover or relay valve cover [3] on valves 8" and above.
 - Plug float port [C2]

Commissioning & Calibration

1. Confirm that cock valve [1] is open (handle parallel to cock-valve body) and 3W cock valve [6] is open to allow upstream feed to the valve control chamber.
2. Confirm that the supply pressure is typical.
3. Adjust the water levels by setting the stoppers:
 - Hold the lever system at its upper position & set the upper stopper to 100 mm below desired upper level (but not higher than 150 mm below over-flow level).
 - Hold the lever system at its lower position & set the lower-stopper to 100 mm above desired lower level.
4. Open upstream and downstream isolating valves. Allow the valve to open (ensuring the lever system is at its lower position) and fill-up the reservoir.
5. Vent air from the valve control loop:
During filling the reservoir move the lever-system 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 a tube fitting at the highest points (pilot float ports [P], [C1] & [C2]), allowing the air to bleed. For 8" valves & larger, air venting is required also from the port [2] of the 3W hydraulic Relay valve [54B].
Retighten the fittings eyebolts.
6. Calibrating shutting upper-level:
Ensure that the valve closes as the water level reaches the upper set-level. If the valve has not closed, move the lever-system manually to its upper position, forcing the valve to close. Change the upper stopper location down, to a lower level setting or up to raise it, until the valve closes automatically at the desired upper-level.
7. Calibrating opening lower-level:
Allow the water level to drop by consuming from the reservoir or by draining it. Ensure the valve remains closed until water level reaches the desired lower-level, the pilot switches at that point and fully opens the valve. Change the lower stopper location down, to lower the level setting or up, to raise it, until the valve opens at the desired lower-level
Note: For changing valve position from closing to opening and vice versa, manually move the lever system position up to close and down to open.
8. The 3W hydraulic relay valve [54B] installed in valves 8' and larger, quickens valve response.

