

OPERATING & MAINTENANCE INSTRUCTIONS

EQUILIBRIUM (BALL) FLOAT VALVE - FIG. 501 WRAS APPROVED PRODUCT

Introduction

The buoyancy force of a nylon coated hollow cylindrical steel float, resting approximately half submerged at a predetermined level on the surface of liquid in a tank, is transmitted via a lever and fulcrum to close a valve in the feed line against the mains pressure which will open the valve when the lever drops, admitting liquid to the tank. The mains pressure acts on the differential area between the seat bore and an "Equilibrium" piston tending to OPEN the valve. This balance prevents closure shock while allowing reasonably proportioned floats and levers to be used. Unlike normal valves liquid enters ABOVE the disc to the underside of the piston which can be seen when looking into the INLET port.

Installation & Operation

To maintain Lever/Float geometry the valve must be installed with the spindle and lever working in a plane perpendicular to the liquid surface and with the horizontal centre line at a height suitable to provide the required liquid level. Due to the high lever ratio, normal manufacturing tolerances in the valve give rise to variation of this height which should be checked before finalising.

Special arrangements (needing larger floats) can be made where standard lever lengths are precluded or where "stilling" (anti wave motion) is required.

If the tank is likely to be drained frequently, arrangements should be made to support the float.

The valve cover may be repositioned to allow the lever to project sideways but note that this subjects the valve/pipe to torque loading.

The valve is fully automatic and no facility (other than removal of the float) is provided for manual operation. Correct installation is therefore essential.

Should any site modifications be made to this equipment this will invalidate the LPCB approval of the product

Maintenance

This design has proved very reliable but due to its usually unfavourable position adjacent to an open water surface the valve should be inspected for corrosion at least twice a year. It is advisable to dismantle and check for lime deposits every 2-3 years.

Dismantling - Valve not removed from line

- 1) After isolating, unbolt and remove extension arm with float from the lever.
- 2) Withdraw clevis pin and slide lever from engagement with spindle eye.
- 3) Loosen and remove all nuts from cover plate, lift off fulcrum bracket and, keeping it level, lift cover vertically until clear of spindle.
- 4) Lift the cylinder to withdraw the Piston/Disc unit together with the bronze cylinder.

IMPORTANT DO NOT ALLOW THE SPINDLE TO TILT OVER AS THIS WILL BEND THE GUIDE PINTLE AND/OR DISTORT THE SEAT.

- 5) Unscrew the single BSF self-locking nut below the disc to dismantle the Piston/Disc unit and enable 'U' seal and bonded rubber disc replacement. (If not being replaced the unit can be cleaned without dismantling).
- 6) **DO NOT** unscrew the bronze seat ring unless severe actual damage necessitates its replacement.

Re-Building

- 1) Assemble Piston/Disc unit (Note: disc is correctly clamped when the nut is fully tightened), and carefully lower into valve to engage pintle in seat guide hole.
- 2) Fit new gasket and insert cylinder (over piston) into its locating register.
- 3) Carefully locate cover plate on spindle, lower to engage studs in holes and spigot into top of cylinder.
- 4) Fit fulcrum bracket over longest studs using valve lever to obtain correct location and alignment.
- 5) Fit all nuts finger tight and ensure cover is absolutely level before tightening opposite nuts in rotation no more than 1/4 turn at a time.
- 6) Refit fulcrum bolt, nut and extension arm.

Additional installation requirements & notes

To ensure that this valve is installed in accordance with the requirements of the Water Regulation Advisory Scheme (WRAS), a servicing valve shall be installed at the inlet to the valve.

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