

Metal-Seated Flanged Ends Swing Check Valve

INSTALLATION OPERATION AND MAINTENANCE MANUAL



APPLICATION

Swing Check Valves are self-contained, free-swinging disc style. Valves conform to all standards as set forth in BS5153 & MSS SP71. Suitable for use in wastewater, water and sewage applications.

SAFETY MEASURES

“Warning” and “Caution” messages indicate procedures that must be followed exactly to avoid equipment /property damage, physical injury or possibly death. Safety labels on the product indicate hazards that can cause equipment/property damage, physical injury or possibly death.

INSTALLATION

Check that valve end joints conform to the mating pipe and verify that ends are clean and sound. Closing mechanism should be checked to ensure freedom of motion and proper operation. When handling valve, do not use outside mechanisms for lifting. It is necessary to install the valve in proper orientation with regard to flow direction as indicated by arrow on side of body. Prepare pipe ends per pipe manufacture’s instruction and install valve as per appropriate instructions for the specified joint. All piping should be properly supported to avoid line stress being transferred to valve. Do not use valve as a jack to force pipeline into position. Standard wrenches and/or sockets are to be used to tighten all nuts and bolts. Fasteners are to be tightened in a “star pattern” to ensure balanced loading of bolts.

STORAGE

All valves should be inspected at time of delivery for shipping damage, missing parts, and conformance with specifications.

Valves should be stored in a sheltered area, or covered with water-proof covering, to prevent contamination by weather or dirt. Valves should remain with original shipping containers or skids, or stored on a flat surface with weight support evenly by the flange face. Do not store valves on the shaft ends or bushing housing. Protect rubber seated valves from ozone and hydrocarbons (solvents, paints and oils, etc.)

OPERATION

Once in the pipeline, the swing check valve will open and close as flow conditions dictate. The valve will open as the pressure on the upstream side of the disc overcomes the downstream side. The valve will close as the situation reverses itself or the pressure equalized.

External shields and surrounding piping should not interfere with free operation of external apparatus of the valves

MAINTENANCE

! WARNING !

- 1. To prevent injury to operator or damage to valve and/or property, valve must be isolated and line pressure relieved from both sides of valve before opening valve cover or attempting any repairs to valve seals or mechanism. O-rings should not be changed or added on an active valve.**
- 2. Remove the cardboard placed between disc and sealing face for abrasion prevention before installation, otherwise it will affect the performance of the valve.**

The system is designed to be trouble-free with minimum care. Frequency of inspection should be based upon the operational characteristics of the system, i.e. systems of high cycles should be inspected more frequently. At minimum semi-annual inspections are recommended.

Points of inspection should be at a minimum:

- 1.All end joints, cover joints and packing boxes for leakage.
- 2.Bolts for tightness.
- 3.Inspection of valve during operation is recommended so that outside linkage can be inspected for proper operation.
- 4.O-rings: inspection of packing box is required to assure no leakage is evident. If leakage exists, replace O-rings- do not tighten end plug in an attempt to stop leakage.
- 5.Inspection of interior of valve is not necessary unless improper operation is witnessed or leakage beyond the allowable rate is experienced. The interior of the valve and the internal components can be inspected by removing the valve cover. Cover gasket should be replaced any time this joint is broken. Never reinstall a used cover gasket.

TROUBLESHOOTING		
Possible Malfunction	Symptoms/Cause	Corrective Action
Cover gasket leakage	Relaxed cover bolts tension	Tighten bolts in "star pattern." Should leakage continue, replace gasket.
Seat leakage	Seats dirty Disc Seat damaged	Remove inspection cover and flush Replace (also see below)
Leak by Hinge Pin	Cracked or broken O-rings	Replace O-ring(s)
Vibration/Noise	Flow rate too high Loose disc mounting Loose Lever	Correct application Tighten Stud/Nut
End Gasket leakage	Pipe misalignment Unsupported pipe load Improper Gasket or installation Uneven tightening torque	Realign pipe Support pipe Replace/reinstall Retighten using "star pattern"

REPAIRS

Seat leakage--Seats may be "fluid cut" requiring seat replacement. Check for debris caught in valve, pits or irregularities on seat mating surfaces. Also check for pipe deflection which could result in valve seat distortion.

Disc Repairs-Inspect disc for scratches, pits or damage. Replace rubber disc seats if worn or torn. Minor scratches on bronze disc seats can sometimes be removed by rubbing the disassembled seat against very fine emery cloth on a perfectly flat surface.

REASSEMBLY

- 1.Remove rust and dirt from parts using a wire brush, emery cloth or other suitable means (on epoxy coated valves, avoid scratching or gamaging coating). Remove oil and grease ussing a suitable solvent (if rubber seated, avoid solvent contact).
- 2.Check all replacement parts for proper size, especially gaskets and O-rings.
- 3.Refer to illustrations in catalog to aid in reassembling disc, hinge and stuffing boxes, according to the year date and style of valve being repaired.
- 4.Check rotation of disc on clapper and alignment of disc on body seat. When properly installed, movement should be free and unobstructed.
- 5.Install new cover gasket.
- 6.Tighten cover bolts using "star pattern."



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