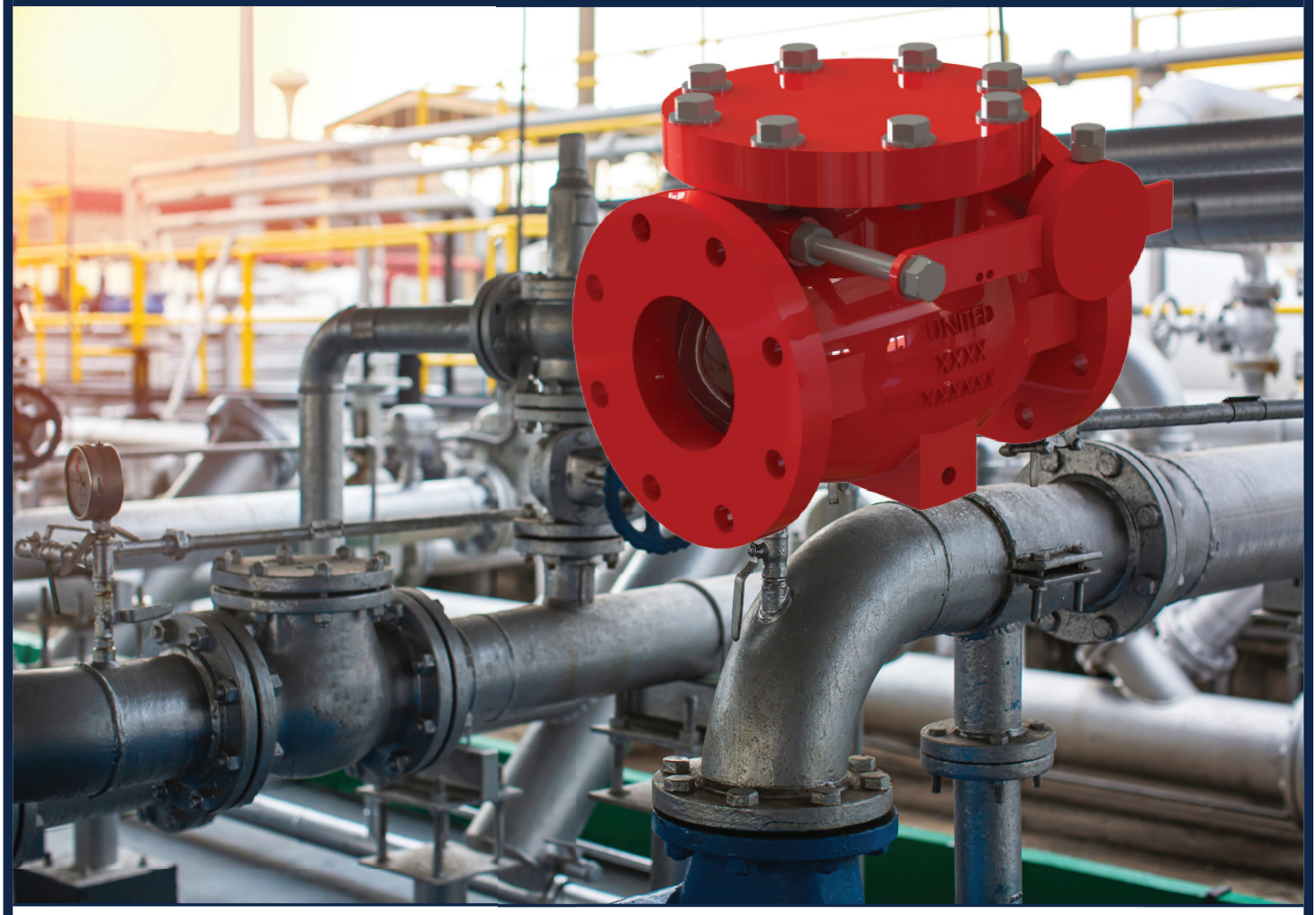
Installation and Maintenance Manual

Model 7700

Swing Check Valve

AWWA C508
Series 7700 (standard)
Series 7700-LW (with lever and weight)
Series 7700-LS (with lever & spring)



UNITED Water Products
A PUPCO Brand

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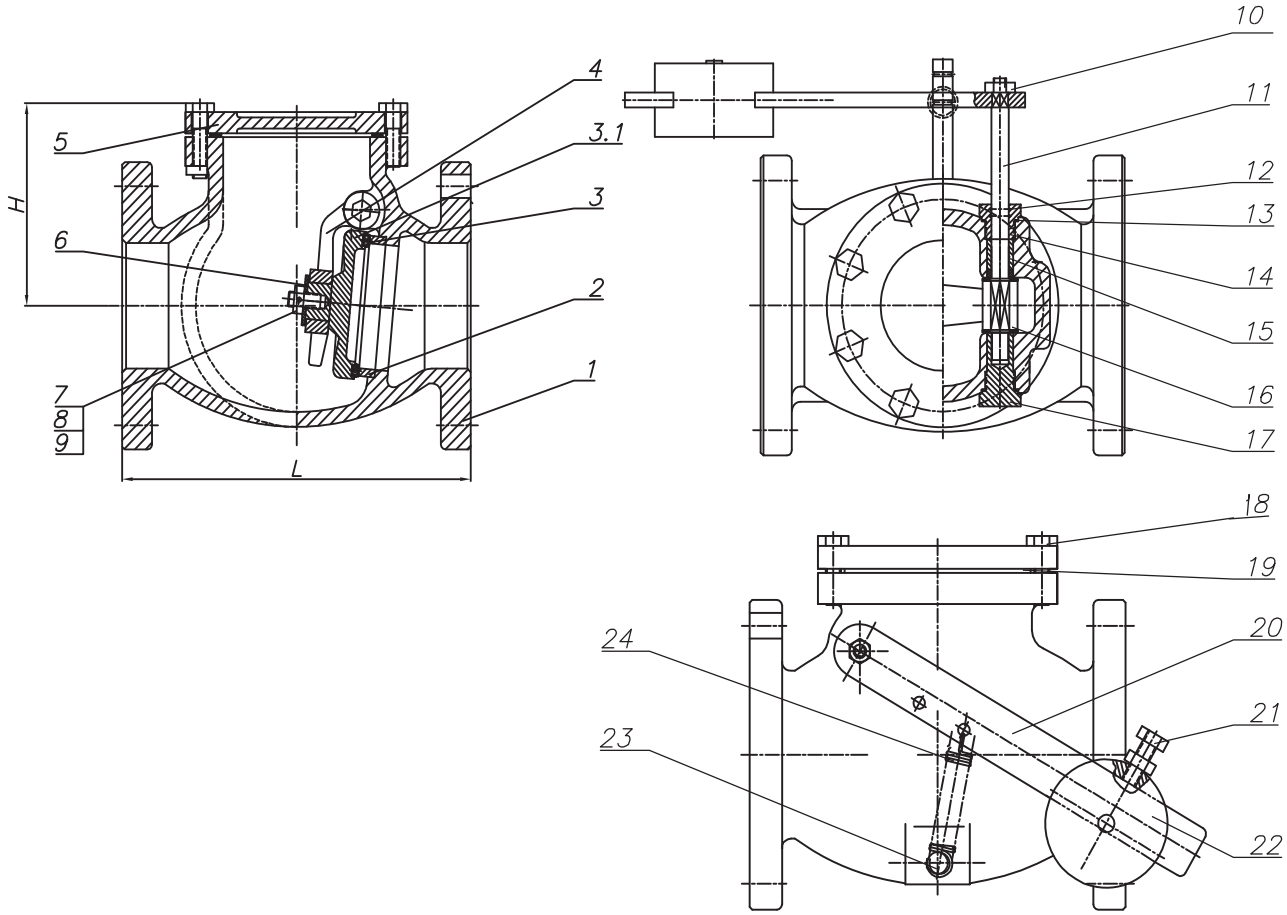
MODEL 7700 - Swing Check Valve



Item No.	Description	Material	Item No.	Description	Material
1	Body	C.I. ASTM A126, Class B	13	Spacer	PTFE
2	Body Trim	Bronze, C83600	14	Gland	Brass, C36000
3.1	Nut	Stainless Steel AISI 304	15	Bushing	Brass, C36000
3	Disc Trim	Rubber, NBR	16	Spacer	PTFE
4	Hanger	C.I. ASTM A126, Class B	17	Plug	Brass, C36000
5	Cover	C.I. ASTM A126, Class B	18	Bolt	Stainless Steel AISI 304
6	Disc Spacer	Carbon Steel	19	Gasket	Graphite
7	Hanger Pin	Stainless Steel AISI 304	20	Lever	Carbon Steel, AISI 1020
8	Hanger Nut	Stainless Steel AISI 304	21	Bolt	Stainless Steel AISI 304
9	Cotter Pin	Stainless Steel AISI 304	22	Weight	C.I. ASTM A126, Class B
10	Stem Nut	Stainless Steel AISI 304	23	Weight Pin	Carbon Steel
11	Stem	Stainless Steel AISI 304	24	Spring	Carbon Steel
12	O-Ring	Rubber, NBR	-	-	-

INSTALLATION, OPERATION AND INSPECTION

Series 7700-LW AWWA C508 Swing Check Valve for Waterworks Service

GENERAL

All valves should be inspected at time of delivery for shipping damage and to confirm compliance with specifications. Whenever possible the valves and all apparatus should be protected from the weather. Water and debris should not collect in the valve.

Note: These instructions are guidelines for use by experienced piping and mechanical personnel.

TOOLS AND EQUIPMENT

Warning: Valves are to be handled by experienced installers. They should never be used as structural members and should be appropriately rigged for lifting. Valves are heavy and include various accessories, which should be handled with caution.

Standard box wrenches
Packing puller
Pin drivers
Packing cutter
Ball peen hammer
Chain hoist
Rigging equipment

LAYOUT AND SITING

UNITED 7700 Swing Check Valves may be installed in horizontal pipe-work and vertical pipe-work if the flow is in an upwards direction. Valves must be provided with adequate support. Adjoining pipe-work must be supported to avoid the imposition of pipeline strains on the valve body. Heavy valves may need independent support or anchorage.

Note: Check valves must not be installed in vertical pipe-work with the flow in the downwards direction.

INSTALLATION

1. Check that valve end joints conform to the mating pipe and verify that ends are clean and sound. All 7700 series valves are supplied with flat face flanges with ANSI class 125 drilling. Do not mate these valves to pipe or fittings with raised face flanges.
2. Remove any material used to restrain the lever or pin during shipment and storage. Attach any outside closing mechanism in proper position manually.
3. Closing mechanism should be checked to insure freedom of motion and proper operation. Cover bolts shall be checked for any loose joints.
4. When handling the valve, do not use the outside mechanisms for lifting.
5. It is necessary to install the valve in proper orientation with regard to flow direction. Please note flow arrow on side of body.
6. Prepare pipe ends per pipe manufacturer's instructions, and install valve as per appropriate instructions for the specific joint. All piping should be properly supported to avoid line stress on the valve. Do not use valves as a jack to force a pipeline in position.
7. Standard wrenches and or sockets are to be used to tighten all nuts and bolts. Fasteners are to be tightened in a crisscrossed pattern to insure balance loading of bolts.

OPERATION

Once in the pipeline, the swing check valve will operate 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 equalizes.

These valves are self contained units. Outside levers, weights, springs or hinge pins should never be used to manually operate the valve or restrict its operation.

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

MAINTENANCE

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

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1. All end joints, cover joints and packing boxes should be inspected for leakage.

2. Bolts should be checked for tightness, a torque of 90 foot pounds is recommended for gasketed joints.

3. Inspection of the valve during operations is recommended so that the outside linkages can be inspected for proper operation.

4. Inspection of the packing box is required to assure no leakage is evident. If leakage exists replace o-rings. Do not tighten Packing Nut (#22) to stop the leak. Caution: O-rings should not be changed or added in an active valve. Valve should be isolated to prevent injury or damage to valve and operator.

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 re-install a used cover gasket.

RECOMMENDED SPARE PARTS QTY PER VALVE

Disc seat ring, Buna-N (NBR), 1
Cover gasket, Buna-N, 1
O-rings, Buna-N, 2
O-rings, Buna-N, 1

LUBRICATION

Under normal operation, lubrication is not required to maintain proper operation of components or assembled units. User should review Typical Maintenance Summary Form (below) for additional information and instructions.

TROUBLESHOOTING

Possible symptoms/ Cause/ Corrective action

End joint leakage: Tension on flange bolts is relaxed. Tighten flange bolts/nuts in a criss-crossed pattern.

Cover gasket leakage: Tension on cover bolts is relaxed. Tighten cover bolts in a criss-crossed pattern. Should leakage continue, replace cover gasket.

Valve slams while tension on spring is loose: Adjust spring tension.

Seat leakage: Seats are dirty. Remove inspection cover and flush disc. If seat is damaged, replace Buna-N (NBR) insert.

Leak by Hiinge Pin: Cracked or broken o-rings. Replace o-rings.

STANDARD RECOMMENDED MAINTENANCE

Lubricant: Mobilith AW 0
Maintenance frequency: Quarterly