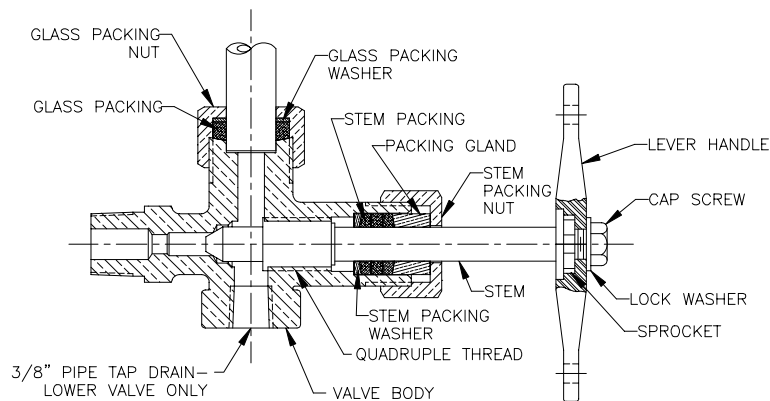


# Maintenance Instructions for Clark-Reliance Bronze Water Gage Valves



Design variations in bronze water gage valves necessitate “typical” illustrations, but basic elements are similar in function and appearance. Some valves used in vertical mounting are also used in Tiltview Water Gage Valves, and operating precautions likewise apply.

## Installation

When mounting bronze water gage valves, make sure they are mounted in exact alignment, especially when tubular glass is used. Any angular or offset misalignment of the valves will strain the tubular glass and may cause early failure. When installing the armored type gage glass or tubular glass in vertical mounting applications, the overall length of the gage should be  $2 \frac{3}{4}$ " less than the valve centers. With Tiltview applications, please consult drawing number B-7535 to determine the correct gage length.

Note that each bronze water gage valve set includes one upper and one lower valve. The lower valve will have a 3/8" FNPT drain connection. The valves must be installed in the correct orientation to ensure proper function.

## Operating Levers

Tools required:  $\frac{1}{2}$ " wrench

To set operating levers in the correct position, close the valve stems tight. Loosen the levers by removing the cap screws. Pull levers forward and turn, with right hand end down, until they are positioned  $45^\circ$  to horizontal centerline of valve. Push the lever back to engage the sprocket teeth at the nearest point to the  $45^\circ$  setting. If the levers do not line up, additional adjustment can be obtained by rotating the sprocket wheel  $180^\circ$  on the valve stem.

## Operating Chain and Pull Handles

Tools required:  $\frac{1}{4}$ " wrench, pliers

Attach the chain to each side of the upper valve with the “S” hooks, which are included in the chain package. At this stage the levers should be parallel with each other. Attach the chain on the left side of the valve lever to the “S” hook on the lower valve. Insert the chain on the right hand side of the lever into the bronze locking fixture. Pull the chain tight between the two valves and tighten the locking screw. This is important in order to obtain full closure of both valves. If there is some slack in the chain on the left side of the valves, it has no adverse effect on the actuation of the valves for opening. Both chains should extend to a safe elevation below the water gage, usually one platform or 10 feet below. Be sure to have water gage valve-operating chains of equal length.

Each pull handle comes equipped with “S” hooks. Insert the free end of each “S” hook in the bottom link of the correct chain. The handle marked ‘Open’ is to be installed on the left-hand chain. The handle marked ‘Closed’ is to be installed on the right-hand chain. Close each hook onto the chain with pliers.

## Replacing Stem Packing

Tools required: 1 ¾" wrench, ½" wrench, ¼" wrench

- 1) Isolate valves from pressure.
- 2) Open the drain valve to eliminate any potentially trapped pressure.
- 3) Unhook operating chains from operating levers.
- 4) Remove operating handle and sprocket from valve stem.
- 5) Loosen stem packing nut with 1 ¾" wrench.
- 6) Turn stem counter-clockwise to remove stem/packing assembly.
- 7) Remove stem packing nut, packing gland, stem packing, and stem packing washer. Discard old stem packing material.
- 8) Inspect valve stem and packing cavity in the valve body for steam cut and damage. Replace if necessary.
- 9) Replace stem packing washer, stem packing (set of three), packing gland (concave side toward stem packing), and stem packing nut.
- 10) Turn stem/packing assembly into valve body.
- 11) Thread stem packing nut onto the valve body and tighten with wrench. Ensure that the valve stem, while being tightly sealed, will still open and close.
- 12) Replace sprocket and operating handle, making sure the handle is properly aligned (see instructions for Operating Levers).
- 13) Replace operating chain onto operating levers.
- 14) Slowly open isolation valves and inspect for leakage. Isolate the valve, relieve pressure, and tighten stem-packing nut if necessary.

## Replacing Glass Packing

Tools required: 1 ¾" wrench, ½" wrench, ¼" wrench

- 1) Isolate valves from pressure.
- 2) Open the drain valve to eliminate any potentially trapped pressure.
- 3) Unhook operating chains from operating levers.
- 4) Remove operating handle and sprocket from valve stem.
- 5) Loosen top and bottom glass packing nuts with 1 ¾" wrench.
- 6) Remove tubular glass gage or armored gage from valves.
- 7) Remove nipple/glass packing, glass packing washer, and glass packing nut. Discard old packing material.
- 8) Inspect the ends and bore of the tubular glass or gage nipples for erosion or steam cutting. Replace any deteriorated or damaged items.
- 9) To reinstall, slip a glass packing nut onto each end of the tubular glass or ¾" O.D. gage nipple. Follow this with a glass-packing washer and a nipple/glass packing ring.
- 10) Insert the top of the tubular glass or upper gage nipple into the top valve body. Insert far enough to allow the lower end of the tubular glass or lower gage nipple to be placed into the lower valve body. Slide packing rings, glass packing washers, and glass packing nuts to each valve body and tighten.
- 11) Replace operating chain onto operating levers.
- 12) Slowly open isolation valves and inspect for leakage. Isolate the valve, relieve pressure, and tighten glass-packing nut if necessary.

**NOTE:** Always use only genuine Clark-Reliance replacement parts.

Any additional questions should be directed to your local Clark-Reliance Representative, Plant-Op Center, or to the Factory (440) 572-1500.



## Notice to Plant Operators

The use of non-Original Equipment Manufacturer parts (such as glass, gaskets, probes, modules, etc.) will void the Agency Approval (FM, UL, CSA, CRN, ABS, etc.), pressure/temperature rating, and warranty of this equipment. Clark-Reliance requires the use of OEM parts for all repairs on this product in order to maintain plant and personnel safety, and reliable operation.

**"PARTS-PLUS"**  
Critical spare parts for overnight  
delivery, direct from the manufacturer.

[clark-reliance.com/parts](http://clark-reliance.com/parts)



Steel Valve Repair Kit



Replacement Probes



Gage Glass Repair Kit



Simpliport Module



Simpliport Packing Nut



Replacement Relays



Probe Repair Kit



Replacement EA100 Ass'y



Replacement Micro-switch



Bronze Valve Repair Kit



Valve Packing



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