

## TUBULAR GAGE GLASS INSTALLATION WITH RELIANCE® BRONZE TYPE WATER GAGE VALVES



This manual covers Tubular Glass Gages when used with BG200 Series, BG400 Series, BG500 Series, and TG600 Series Bronze Water Gage Valves

**Reliance®**

A PRODUCT OF CLARK-RELIANCE

## **STORAGE and HANDLING**

The Reliance® Water Gage Valves and Gage Glasses meet or exceeds all applicable specifications when shipped from the factory. The equipment should be stored in an area protected from the elements and corrosive fumes, in a secure manner where they can neither fall, nor be struck by other objects. Avoid placing any objects on the valves, gage glass, or Boil-out Kit (if furnished) at any time. The temperature of the storage area should not exceed 150 degrees F. (65.5 degrees C) or drop below 32 degrees F (0 degrees C).

### **Unpacking and inspection**

Upon receipt of the Boiler Drum Level instruments, examine the contents of the container(s) for damage. Care should be exercised as the items are uncrated. The shipment may contain fragile glass components. Report any faulty conditions as soon as possible to your carrier to avoid acceptance of damaged goods. Clark-Reliance will not be responsible for goods damaged in shipping or storage, or subsequent loss or damage due to improper storage or exposure as a result of damage to shipping containers. Submit a digital photo of any damaged equipment and container to Clark-Reliance, if possible.

Verify that all materials are present as recorded on the Packing List provided with each shipment. Report any discrepancies to Clark-Reliance immediately. Have the Clark-Reliance order number and shipping waybill available at the time of your call.

### **Handling**

Your Clark-Reliance shipment has been carefully packed. However, the shipment may include spare parts, temporary water gages for "Boil-out" purposes, maintenance instructions, and engineering drawings. Upon receipt of the order, the equipment and above items should be identified and verified against the packing list. Any documentation that has been provided should be directed to the appropriate personnel.

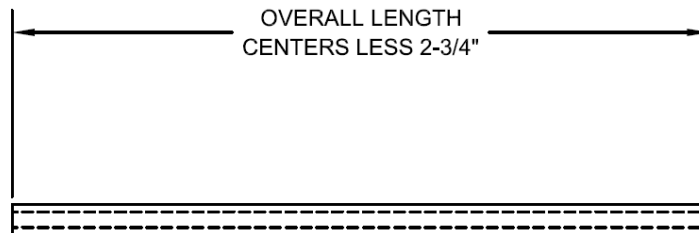
### **Important:**

Before proceeding, follow any and all plant lock out - tag out procedures required. If under pressure, the equipment should be isolated, or the boiler should be shut down before proceeding with the installation. Open drain valve to eliminate any trapped pressure. All inspection and installation steps should be performed by a qualified technician and should be executed in accordance with all applicable national and local codes.

When mounting Water Gage Valves, make sure they are mounted in exact alignment, especially when tubular glass is used, including during Boil-out procedures. Any angular or offset misalignment of the valves will strain the tubular glass and may cause early failure. When mounting the tubular gage glass or tubular glass in vertical mounting applications, the overall length of the Tubular Glass Gage should be  $2\frac{3}{4}$ " less than the valve centers. When being used with a Tiltview Assembly, refer to the applicable drawing for the correct length.

**Make sure all lock-out/tag-out procedures are followed, and the water gage valves are completely closed, and the drain valve is opened to relieve any trapped pressure.**

- Note: When Red-Line Tubular Glass is being used, the red line should be oriented on the back side when being observed by the operator.



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## Gage Glass Installation:

- 1) Using a 1  $\frac{3}{4}$ " wrench, remove the packing Glass Packing Nut (P/N BG403R-2) from the upper and lower valves.



- 2) Carefully remove the old nipple packing (P/N BG403R-12) and packing washer (P/N SG454-10) from the valve body chamber. You can use a small flat screwdriver or pointed tool to remove the packing. Discard the old packing but save the packing washer. Use caution that the packing chamber does not get damaged.
- 3) Clean the cavity to remove any residue from the old packing, making sure that all residual material is clean from the wall of the cavity. Inspect the packing chamber for scratches and steam cut. If the chamber is damaged, the valve must be replaced.
- 4) To install the gage glass, lubricate the threads on the gage valves with a high temperature lubricant, such as a Teflon® based lubricant, rated at 500°F. (260°C.) or higher. Place the Glass Packing Nut on the tubular glass.
- 5) Slide the packing washer and nipple packing on to the tubular glass as shown below.



- 6) Repeat on opposite side.
- 7) Insert the tubular glass into the packing chamber of the upper valve as far as it will go.



- 8) Swing the tubular gage glass over the bottom valve and carefully lower it into the valve.
- 9) Carefully slide the nipple packing washer and the nipple packing fully into the packing chamber in both the upper and lower valves.
- 10) Tighten the upper and lower packing nuts on the water gage valve.
- 11) Evenly tighten both nuts until the packing compresses around the tubular gage glass on both top and bottom valves.
- 12) Close the drain valve and carefully open the valves. If a leak is observed, close the valves open the drain to relieve any trapped pressure and tighten the bolts. Close the drain and repeat opening the valves. If no leaks are observed, continue to open the valves.
- 13) If no further leaks are observed, the installation is complete.

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**REPLACEMENT PARTS WARNING**

THE USE OF NON-ORIGINAL EQUIPMENT MANUFACTURER PARTS (SUCH AS GLASS, GASKETS, PROBES, MODULES, ETC.) WILL VOID THE AGENCY APPROVAL (FM, UL, CAS, CRN, ABS, ETC.) PRESSURE/TEMPERATURE RATING, AND WARRANTY OF THE EQUIPMENT. CLARK-RELIANCE REQUIRES THE USE OF OEM PARTS FOR ALL REPAIRS IN ON THIS PRODUCT IN ORDER TO MAINTAIN PLANT AND PERSONNEL SAFETY, AND RELIABLE OPERATION.

Consult the factory or your local Clark-Reliance Representative with any questions. Please have the model numbers and/or reference drawing numbers available when calling. You can also contact us at our website [www.relianceboilertrim.com](http://www.relianceboilertrim.com) or [RelianceAppEng@clark-reliance.com](mailto:RelianceAppEng@clark-reliance.com).

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