

# KENCO ENGINEERING COMPANY

## **INSTALLATION AND MAINTENANCE INSTRUCTIONS** **FOR KENCO “KTV” TUBULAR GAUGE GLASS VALVES**

### **INSTALLATION**

Only qualified personnel who are familiar with gauge glass valves and their operation should undertake installation of this product. Failure to properly install could result in serious injury and property damage.

**WARNING: UNDER NO CIRCUMSTANCES SHOULD THE KTV TUBULAR GAUGE GLASS VALVES BE USED FOR STEAM-WATER APPLICATIONS UNLESS THE BALL CHECKS HAVE BEEN REMOVED FROM THE LOWER AND UPPER VALVES.**

Prior to installation, turn hand wheel of each valve clockwise to closed position. Install upper valve (valve with deep glass insertion hole) and lower valve to vessel using Teflon tape or equivalent thread sealing compound. Tighten valves making certain that the gauge glass connections are aligned vertically. To install the tubular level gauge, turn the upper valve approximately 1/8 of a turn, and loosen glass packing nut to insure there is no compression on the glass packing. Insert the tubular level gauge into the upper valve sight glass connection. Tighten the upper valve to its original position while holding the tubular level gauge in position to insure it clears the lower valve sight glass connection. Loosen glass packing nut on the lower valve and lower the tubular level gauge down into the lower sight glass connection to a positive stop. Tighten upper and lower glass packing nuts.

### **OPERATION**

Make sure all connections are pressure tight. Correct any leakage before proceeding. Valves should be opened slightly to avoid excessive thermal shock or mechanical stress on the tubular level gauge. After gauge temperature and pressure has slowly been allowed to equalize with the vessel, valves equipped with automatic ball checks must be opened completely to permit proper ball check operation in the event of a gauge failure.

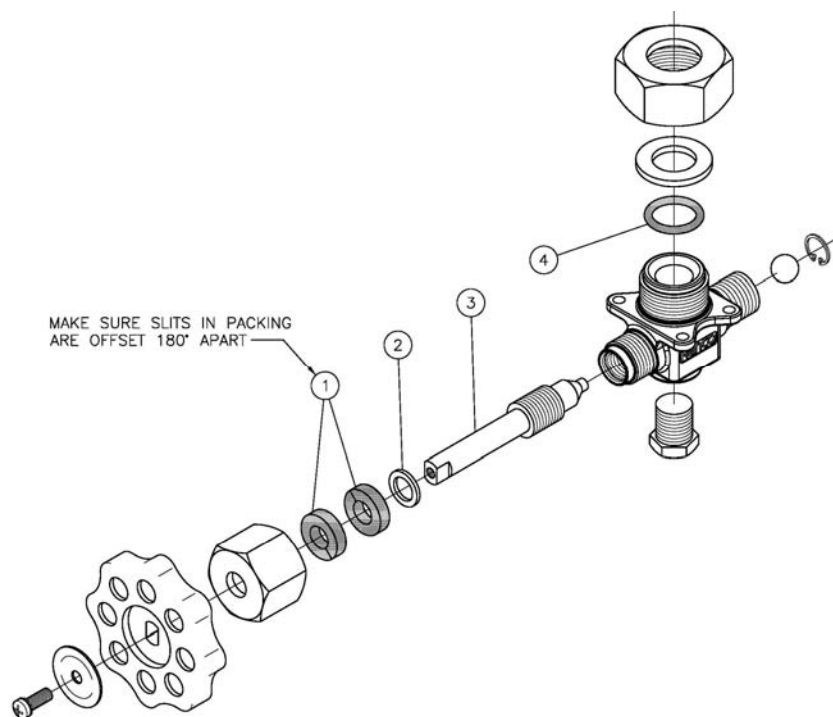
### **MAINTENANCE**

The user should make maintenance schedules, safety manuals, and inspection criteria for each installation of gauge valve sets. The user should set up a regular inspection of the following areas: signs of leakage around the stem area, around the glass area, and signs of internal or external corrosion. Stem packing leakage can often be corrected by tightening the stem packing nut. If leakage persists, follow the steps detailed in disassembly of the valve. Signs of leakage around the gauge glass indicate worn out glass packing or improper compression of the glass packing. If tightening the glass packing nut does not stop the leakage then the glass packing must be replaced. To replace the glass packing, follow the steps detailed in disassembly of the valve. Signs of internal or external corrosion could be an indication of misapplication. An investigation should be carried out immediately to determine the cause. It is the responsibility of the user to choose the gauge valve material compatible with the internal and external environment. For broken sight glass replacement, review valve disassembly procedures.

## DISASSEMBLY AND ASSEMBLY PROCEDURE

**CAUTION:** Do not proceed with disassembly unless the valve has been relieved of all pressure, has been allowed to reach ambient temperature, and has been drained of all liquids. To disassemble the valve, close upper and lower valves, remove upper and lower pipe plugs, and allow valves to drain. Remove hand wheel screw and hand wheel from stems, loosen and remove stem packing nut and remove stem by turning counterclockwise. Once the stem has been removed, slip stem packing retainer washer from stem. To replace glass packing, loosen both upper and lower glass packing nuts. Slide tubular level gauge upward into the upper valve until the bottom of the tubular level gauge clears the sight glass connection of the lower valve. While holding the tubular level gauge in this upward position, rotate upper valve approximately 1/8 turn to allow clearance to remove tubular level gauge from upper valve. Once tubular level gauge has been removed, remove glass packing nuts, glass packing, and glass packing retainer washers.

To reassemble valves, clean all packing areas and glands. Install new stem packing into stem packing nuts. Ensure that slits in packing are offset 180° from each other to ensure a proper seal. Slip stem packing retainer washer and stem packing nut onto stem. Assemble hand wheel onto stem and secure with screw. Thread stem assembly into valve by turning clockwise until stem seats and then back off one turn. Assemble and tighten stem packing nut. Install new glass packing, glass packing retainer washer, and glass packing nut onto valves. Once these steps have been followed, reinstall the tubular level gauge into the gauge valve set as previously detailed.



## RECOMMENDED SPARE PARTS

<u>ITEM NO.:</u>	<u>DESCRIPTION:</u>	<u>PART NO.:</u>
1-----	STEM PACKING (2 PER VALVE) -----	15179
2-----	STEM PACKING RETAINER WASHER (1 PER VALVE) -----	15085
3-----	VALVE STEM (1 PER VALVE) -----	21764
4-----	GLASS PACKING FOR 5/8" GLASS (1 PER VALVE) -----	13208
	<b>OR</b>	
	GLASS PACKING FOR 3/4" GLASS (1 PER VALVE) -----	13210

**MAXIMUM PRESSURE:** 500 PSIG AT 400°F USING TEFLON PACKING