



## Installation and Maintenance Instructions FOR TRERICE PRESSURE GAUGES

Trerice Pressure Gauges are offered in a variety of styles, sizes, and materials of construction. Gauges should be carefully selected to meet the demands of the application and, in particular, the range should be selected so that the working pressure is approximately 50% of the total range. For further information on the correct use and application of pressure gauges, please refer to: Pressure Gauge Standard ASME B40.100

### Principles of Operation

Most Trerice Pressure Gauges are constructed with a bourdon tube sensing element. When the sensing element is subjected to pressure, it flexes and the resulting motion is transmitted as a measurement through a precision mechanical movement to the dial face pointer.

### Installation

When installing a Trerice Pressure Gauge care should be taken not to use the instrument case as a means to wrench-in the pressure connection. Doing so may disturb the alignment of the movement resulting in permanent damage to the gauge. A wrench properly fitted to the flats on the gauge socket should always be used to install a pressure gauge. The instrument should always be mounted as close as possible to a vertical plane; however, the instrument will read correctly when mounted within 15° of vertical.

The gauge may be installed either rigidly on the line, flush/panel mounted or surface mounted. When mounting the instrument on a wall or in a panel, make sure the instrument is connected free from any piping strains or stresses. To insure a stable installation make sure the mounting surface is flat and all (3) mounting holes are utilized. For gauges mounted to diaphragm seals, a spanner wrench should be used on the diaphragm seal body to install the assembly onto the process pipe (Never use the wrench flats of a gauge mounted to a seal or otherwise torque the gauge relative to the diaphragm seal.)

Care should be exercised in selecting a location that is as free from vibration as possible. Vibration will tend to wear out the fine gear sections within the precision movement of the gauge. If there is vibration in the pipeline the gauge can be remotely located. This can be accomplished by wall mounting the gauge and attaching a small section of flexible tubing between the gauge and the line to absorb the vibration.

When a gauge is used on a media where pressure pulsations may exist, it is recommended to use either: (1) a choke screw, (2) pressure snubber, (3) pressure impulse dampener, or (4) an isolation valve such as a needle valve on "clean" media or a full port gate or ball valve on thicker "sludge type" media. Any of the aforementioned will reduce wear on the gauge.

For initial system start-up an isolation valve should be used. The isolation valve should be opened slowly to allow the pressure sensitive bourdon tube to adjust to any initial high pressures or serious pulsations that may be present in the system. Opening the isolation valve after system start-up protects the bourdon tube from any water hammer that may be caused during system start-up. The use of an isolation valve also facilitates easy removal of the gauge from the process if necessary.

When a gauge is installed on a diaphragm seal, the isolation valve should be installed on the process side of the diaphragm seal assembly.

When a gauge is used on steam service, it is advisable to use a coil siphon (that has been primed with water) between the gauge and the pressure media. Process temperatures can affect the function of a pressure gauge and as such the method of construction must be considered; that is, braze, silver-solder or welded construction. Any isolation valves that may be used with a coil siphon should be installed at the top of the siphon, immediately before the gauge or gauge seal combination.

When the gauge is located in a corrosive atmosphere, care should be taken to select an instrument with a weatherproofed case to restrict the entry of these corrosive fumes into the case. When measuring the pressure of corrosive materials, the gauge should be selected with wetted parts (socket and bourdon tube) that are suitable to resist these corrosive media.

**Maintenance**

Pressure gauges should be kept clean by replacing glass, rings, etc, to keep internal parts from outside elements. The precision movement or linkage of a pressure gauge should never be oiled as oil attracts dirt and causes the movement to become "gummy". This will cause the gauge to act sluggish. If a gauge requires attention due to sluggishness, usually cleaning the movement with carbon tetrachloride or some similar solvent will correct the problem.