

OPERATION AND MAINTENANCE OF A PRESSURE GAUGE

Inspection Frequency

The frequency of inspection is dependent on the severity of service and how critical the accuracy of the indicating pressure. The inspection frequency can range from monthly to annual basis. To ensure the accuracy of your pressure readings, it is strongly recommended that all pressure gauges be recalibrated and certified at least annually. Pitanco Instruments/Pitanco Precision can provide test certification that are traceable to the National Institute of Standards and Technology (NIST).

Isolating Valves

It is recommended that isolating valves be fitted with the gauge. This enables the gauge to be removed at any time for checking, recalibration or replacing without interruption to the process. The valves should be opened or closed slowly to avoid sudden changes to pressure being applied to the gauge. It is recommended for systems that have an abrupt pressure surge at start-up to close the valves during initial start-up. Pitanco Precision carries various types of valves. Materials Brass wetted parts are suitable for use on the following types of media: air, oil, water and other non-corrosive fluids. For corrosive fluids, consulting Pitanco Precision for special applications is recommended as diaphragm seals may also be considered.

Pulsations

If pressures are expected to pulsate violently, oscillate with high frequency or occur with sudden shocks, a snubber should be considered. Pitanco Precision snubbers incorporate a sintered porous 316 stainless steel snubbing element with a large surface area to ensure long term effectiveness on most pressure media. Snubbers are available in three viscosity classifications: Heavy Oil (O), Water (W) and/or Air (A).

Temperatures

Normal ambient temperature is -40°F to 150°F for dry gauges. Medium temperature for -40°F to 200°F for dry gauges, -4°F to 150°F for glycerin filled ones and -40°F to 200°F for Silicone ones. Processes with temperature exceeding 200°F can be accommodated with the use of some kind of external cooling such as pig tails or cooling towers. In situations where the process temperature is extreme, the use of diaphragm seals with or without capillaries may be necessary. In general, a gauge is unduly hot if it cannot be grasped by hand without discomfort. It should be noted that gauges used on water might burst if exposed to frost.

Vibrations

Vibration can affect the dial reading of pressure gauges so must be avoided as much as possible. Vibration effects can be minimized with the use of a dampening liquid such as glycerin or silicone. If vibration is extreme, a flexible capillary connected to a diaphragm seal may be considered.

Mounting

A suitable thread sealant is required for NPT threads such as pipe dope or PTFE tape. The gauge should only be installed by hand only until the first 2 threads engage. This will allow the gauge socket thread to be seated correctly. The use of 2 open-ended wrench should be used on the socket flats to tighten the gauge and ensure no damages to the gauge.

IMPORTANT

- 1) **DO NOT tighten the gauge completely by hand, you will severely damage it!**
- 2) **The use of a swivel coupling is required in order for the gauge reading to face you!**

Venting Procedures

Due to pressure build-up, some gauges (usually lower pressure ranges such as vacuum, up to 100 psi) may reflect a reading that is slightly "off zero". To properly "vent" the pressure gauge, cut off the tip of the fill plug after you have installed the instrument. This allows the gauge to be equal to the atmospheric pressure. Venting can also be achieved by lifting the vent plug for a moment, squeezing the window and back and re-seat (closing) it.

In either case, the gauge should be installed in an upright position to avoid the liquid from leaking.