

The following information has been gathered from various sources, including AMETEK's Pressure Gauge Handbook and ANSI B40. The descriptions and topics mentioned cover the particular gauges that are found in **PASCO's** catalog.

Commercial Gauges:

Gauges found on much of the equipment used in manufacturing plants, stores, garages, etc. are classified as commercial gauges or general purpose gauges. Typical equipment uses include refrigeration units, pumps, compressors and fire extinguishers. In such applications, although the gauges may be ruggedly built, service conditions are not expected to be severe. These gauges are of Grade B accuracy and could have metal or plastic cases and glass or plastic faces.

Commercial gauges are low in cost and designed without refinements to simplify maintenance or repair due to the fact that it is less expensive to replace them than to repair them. Not for use on oxygen systems.

Grade B Gauges

GRADE B Gauges are used in the above mentioned general purpose applications. These gauges are often referred to as 3-2-3 gauges. The reason is that they have a an accuracy of 2% of span over the middle half of the scale and 3% of span over the first and last quarters of the scale. Grade B gauges are not high accuracy gauges, but suitable for commercial installations.

Gauge Take Up

The average user believes that if the gauge pointer is not on zero, then the gauge must be faulty and will refuse to accept the gauge or try to reset the pointer, damaging the gauge. As shown above, a GRADE B gauge pointer could not be at zero and still be within spec because of the 3% accuracy at either end of the scale. A GRADE B gauge will begin more accurate measurement once the pointer goes past the first 3 graduations of the scale.

Frequency Of Graduations

The frequency of the graduation on a gauge should bear a relationship to the grade of accuracy. For example, it is somewhat misleading to divide the gauge into 100 increments if the gauge is made to GRADE B accuracy.

Pulsation Damper

Push checks or throttle plugs are the least expensive pulsation dampers. These checks are usually made from the same material as the pressure port of the gauge and they are easily installed by pushing into the gauge stem. The small hole in the check helps alleviate pressure surges or spikes which may cause gauge failure. In the event of gauge failure, due to fatigue or corrosion, the check may also limit the flow of pressure medium if the gauge develops a leak. The small diameter hole in the check may become clogged with debris preventing gauge operation. The gauge should be checked from time to time and this hole kept free of debris.

Gauge Valves or Cocks - IMPORTANT

Gauge valves or cocks are installed in the pipeline leading to the gauge. The valve provides a means of shutoff so that the gauge can be removed from the line without loss of pressure. The valve also allows the gauge to be completely closed off from the pressure source except when it is necessary to take a reading. Clogging of the gauge stem is minimized and the gauge will also be isolated from pressure surges or spikes. This arrangement will nearly prevent early or unexpected gauge failure and greatly extend the life of the gauge.

Siphons

The purpose of the siphon is to provide a heat exchanger where steam in the line can be condensed and the resulting condensate cooled prior to entering the pressure gauge. This prevents the melting of the soft soldered joints of the gauge which could cause gauge failure. A pigtail siphon is a coiled tube. This coil provides a large cooling surface and the trap created prevents the condensate from draining away. Incoming vapor must pass through this liquid seal and is cooled. This type of siphon is often referred to as a trap.

Installation

In all installations, ANSI B40. must be strictly followed. Always use the wrench flat on the gauge stem to tighten the gauge into the fitting. Never APPLY TORQUE TO THE GAUGE CASE. It is suggestion that a joint compound instead of thread sealing tape be used. Tape sheds can get into the pressure gauge port of the gauge causing blockage.