

PRESSURE GAUGES



Reotemp Pressure Gauges, manufactured under ISO 9001 quality standards, are offered in a wide variety of sizes, ranges, and configurations to meet the demands of any application. From the most rugged process gauges to the cost effective general purpose gauge, you can count on Reotemp pressure gauges for long and reliable service.

All pressure gauge components should be selected after consideration of the pressure, temperature, media characteristics, and environmental factors. Misapplication or improper installation can cause gauge failure, which can result in damage to other equipment or personal injury. We suggest that users of pressure gauges become familiar with ASME B40.100 which is available at www.asme.org.

To ensure safety, accuracy, and gauge life, good practice requires the consideration of the following factors when selecting a pressure gauge:

1. Pressure Range

Reotemp gauges can measure pressures from full vacuum to 30,000 psi and gauge and differential pressures as low as 10 inches of water column. Generally, a range of twice the working pressure is recommended with a maximum working pressure not to exceed 75% of scale. If pulsation occurs or media temperature is elevated, then working pressure should be at or below 50% of scale.

Most bourdon tube and capsule gauges can see momentary spikes of 130% of scale without permanent damage to the gauge (see data sheets for specific max working pressure). Information on gauge burst pressure is available under the “Resources” tab at reotemp.com

2. Process Media

All pressure gauge wetted components should be selected to suit the characteristics of the fluid being measured. Consider the following process media characteristics:

Temperature – Specific temperature limits are stated on the gauge data sheets. For media temperatures beyond the gauge limits a diaphragm seal or cooling element should be considered. For steam service a pigtail siphon should be used.

Corrosion – All wetted materials of the pressure gauge are noted on the data sheet. If the process fluid is not compatible with those materials then another gauge should be selected or a diaphragm seal should be installed.

Clogging – The pressure gauge socket and bourdon tube have small orifices that will clog in the presence of solids or high viscosity fluids. A diaphragm seal is recommended for these applications.

Pulsation – A mechanical pressure gauge is uniquely susceptible to the damaging effects of pulsation in a process. Most Reotemp pressure gauges have restrictor screws (throttle plugs) installed in order to dampen some pulsation. Snubbers can be used to further dampen some types of pulsation. A diaphragm seal with the PulsePlus™ feature is recommended for severe applications.

3. Environmental Factors

The case style, material, and design of the pressure gauge should be selected to suit the environment of the gauge installation. The environmental factors to consider include:

Vibration – Mechanical pressure gauge components are highly susceptible to vibration. Liquid filling of the case is recommended in most applications where vibration exists. In cases of severe vibration the gauge may need to be remotely mounted using flexible capillary tubing with or without a diaphragm seal.

Ambient Temperatures – Most Reotemp pressure gauges are rated for normal ambient temperatures for outdoor installations in most parts of the globe (-40 to 140°F). If the gauge is liquid filled, care should be taken in selecting the

right fill fluid for the ambient conditions.

Moisture and Corrosion – The presence of moisture, wash-down chemicals, salt water, and other environmental factors should be considered when selecting case style and material. In high humidity environments, liquid filling the case will avoid condensation buildup on the inside of the lens.

4. Accuracy

Reotemp pressure gauges are available in accuracies ranging from 0.25% (ASME Grade 3-A) to +/- 3/2/3% (ASME Grade B). As a general rule, 1% or better gauges are used in critical process and require more costly components and larger dial sizes. All Reotemp pressure gauges are calibrated to the stated accuracy at the time of manufacture; further certification and logging of point data can be provided on NIST traceable reference equipment.

5. Connection Size and Mounting

Most Reotemp gauges come standard with 1/4" or 1/2" Male NPT process connections. Many other connection types are available including BSP, coned high pressure fittings, SAE, tube stub, VCR, and more.

The following mounting methods are most common for pressure gauges:

-  **Bottom Mount** (stem mount)
-  **Rear Mount** (lower back or center back connection based on model)
-  **Wall Mount** (includes a back flange attached to the gauge)
-  **Panel Mount** (includes a front flange or u-clamp attached to the gauge)

6. Dial Selection

Reotemp pressure gauges are available in dial sizes ranging from 1.5" to 6". Typically, space consideration, accuracy, and readability are the driving factors behind dial size selection. For pressure gauges being installed into low-light or difficult to read environments, a Hi-Vis™ dial is recommended. Color bands, dual scales, tag numbers, and custom text are other options when selecting a pressure gauge for a specific application.