PRESSURE GAUGE PRODUCT SELECTION

APPLICATION INFORMATION

WARNING: All gauge components should be selected after consideration of the pressure, temperature, and media characteristics, to prevent mis-application problems. Mis-application or improper installation can cause gauge damage or failure, which can result in damage to other equipment or personal injury. We suggest that users of pressure gauges become familiar with ANSI-B40.1 entitled "Gauges, Pressure and Vacuum indicating Dial Type - Elastic Element." This specification is available from American Society of Mechanical Engineers, website: www.americansocietyofmechanicalengineers.com.

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

Pressure Ranges: Reotemp Bourdon tube pressure gauges can measure pressures from full vacuum to 40,000 psi. Generally, a range of twice the working pressure is recommended, with maximum working pressure not exceeding 75% of the range. If pulsation occurs, working pressure should not exceed 65% of the range. Never use a gauge at pressure greater than the maximum range on the dial. Pounds per square inch (psi) ranges are standard, and several alternate single and dual ranges are available (see Ranges, p.14).

Pressurized Fluid Properties Composition: All pressure gauge components should be selected to suit the characteristics of the fluid being measured. For steam service, a siphon is required. For corrosive chemicals, stainless steel (or monel) wetted parts, or a diaphragm seal should be considered (monel wetted parts are available on special order). For fluids that solidify or leave deposits, a diaphragm seal should be considered. For oxidizing fluids, no oil should be present .

Process Temperature: Gauges with stainless steel wetted parts have welded tube and socket, and will withstand 750°F (400°C). Gauges with soldered copper alloy joints will withstand 150°F (65°C); with silver brazed joints, 250°F (120°C). Maximum process temperatures should only be reached intermittently to avoid rupture, and may result in loss of calibration or damage to other parts of the gauge.

Ambient Temperature: Normal ambient temperature limits for Reotemp pressure gauges are -30°F to 150°F (-35°C to +65°C) for dry gauges, and 23°F to 140°F (-5°C to +60°C) for glycerine filled gauges. Reotemp gauges are calibrated at 70°F (20°C). Change in ambient temperature causes +/–0.3% error per 18°F (10°C) rise/fall, respectively. Ambient error for Reotemp test gauges is +/–0.05% per +/–18°F (10°C), respectively.

> **In very hot ambient conditions**, a gauge can be remotely mounted using a diaphragm seal and/or capillary, to place the gauge in a cooler spot.

Moisture and Weather Effects: Case material should be chosen with atmospheric conditions in mind. For outdoor use, stainless steel or plastic cases are recommended. Case filling with glycerine can prevent condensation in case.

Severe Conditions: In applications involving severe pulsation, the use of snubbers and/or restrictors is recommended. Also, for vibrating or pulsating applications, liquid filling will help prevent wear and extend the service life of the gauge. Glycerine is the standard fill material. Also available (with special gasketing) are silicone and Halocarbon. Halocarbon, though quite costly, is recommended for service with oxidizing agents such as oxygen, hydrogen peroxide, chlorine, nitric acid, etc.

Mounting Method: NPT connections are located in the center back (), lower back (), or bottom () of the case in most models. Rear flanges (also known as "back flanges" or "wall flanges") are available for surface mounting. For panel mounting, front flanges or "U" or "O" clamps are available. Special threads (BSP, Metric, SAE) are also available; consult Reotemp Customer Service. All Reotemp pressure gauges should be mounted in the upright position.

Accuracy: Gauges are available with accuracies from +/–0.25% (ASME grade 3A) to +/–3/2/3% (ASME grade B). Percent accuracies are expressed as percent of full scale. As a rule, higher accuracies are found in larger gauges, and/or reflect more costly components.

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