

## CALIBRATION VERIFICATION PROCEDURES

### Recommendations

Perma-Cal Industries, Inc. recommends that calibration for all pressure gauges be verified with the gauge in an upright position, unless an alternate position has been specified on the purchase order.

Use of an appropriate media for the pressure range is important. For gauges with a factory calibration certificate, the appropriate media is listed on the certificate.

For gauges without a calibration certificate to indicate the proper media:

1. a pneumatic system should be used on gauges of 200 psi and below,
2. water alcohol mixture (3:1) for gauges of 300-8,000 psi, and
3. a light hydraulic oil for 10,000-15,000 psi (unless cleaned for oxygen service).

All gauges should be checked using a standard at least four times more accurate than the unit being checked.

Before performing the accuracy test, remove the filter snubber. If an isolator has been installed, do not remove.

### Procedures

“Before conducting the accuracy test, subject the gauge to a pressure equal to the maximum scale pressure (or vacuum). Conduct the accuracy test within 10 minutes.”<sup>1</sup>

Be sure the gauge is indicating zero when upright with no pressure applied. Some Perma-Cal gauges can be zero adjusted using the external zero adjust pinion.

All gauges can be zeroed by removing the lens and manually adjusting the pointer:

1. Hold the pointer down to the dial using thumb and forefinger on each side of the pointer hub (thumb and finger about 1" apart).
2. Use a ¼" nut driver to turn the pointer hub a small amount in the appropriate direction.
3. Check zero setting with the gauge in an upright position.

“Known pressure shall be applied at each test point on increasing pressure (or vacuum) from one end to the other end of the scale. At each test point the gauge shall be read, lightly tapped, and then read again. The same sequence shall be repeated on decreasing pressure (or vacuum). The entire set of upscale and downscale readings shall then be repeated.”<sup>1</sup>

ASME B40.1 recommends checking at least five points throughout the pressure range.

<sup>1</sup> ASME B40.1-1998 6.2.4.1(b)  
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