PERMA-CAL® INDUSTRIES, INC.
DIRECT DRIVE PRESSURE GAUGES

CALIBRATION VERIFICATION PROCEDURES

Perma-Cal® recommends the following regarding verifying calibration.

Guidelines

1. Use appropriate media.
    a. For gauges with a factory calibration certificate, the appropriate media is listed on the certificate.
    b. For gauges without a calibration certificate to indicate the proper media, use:
        - a pneumatic system on gauges ≤200 psi
        - water alcohol mixture (3:1) on gauges 200<10,000 psi
        - a light hydraulic oil on gauges 10,000≤15,000 psi (unless oxygen cleaned)
2. All gauges should be checked using a standard at least four times more accurate than the unit being checked.
3. Remove filter snubber before testing. If an isolator has been installed, do not remove.
4. Before conducting the accuracy test, subject the gauge to a pressure equal to the maximum scale pressure or vacuum (if applicable). Conduct the accuracy test within 10 minutes.
5. Check the appropriate test points. ASME B40.1 as amended recommends checking at least five points throughout the pressure range.

Procedure

1. Mount gauge in an upright position unless an alternate position has been specified on the purchase order.
2. Confirm the gauge is indicating zero with no pressure applied.
    a. If external zero adjust, rotate pinion until gauge reads zero.
    b. If no external zero adjust,
        i. Remove retaining ring and lens.
        ii. On each side of the pointer hub using thumb and forefinger, hold pointer down on the dial (thumb and forefinger about 1" apart).
        iii. Use a .25" nut driver to turn the pointer hub a small amount in the appropriate direction.
        iv. Re-check zero setting with the gauge in an upright position.
        v. Adjust as necessary.
3. Apply known pressure at each test point on increasing pressure or vacuum (if applicable). At each test point the gauge shall be read, lightly tapped then read again.
4. The same sequence shall be repeated on decreasing pressure or vacuum (if applicable). At each test point the gauge shall be read, lightly tapped then read again.

Recertification

[1]Gauges used as standards shall be tested for accuracy regularly. The frequency of such testing will depend on their demonstrated ability to retain accuracy after a period of time and after repeated use. The date of the last test may be noted on the front of the gauge.

Under normal use, Perma-Cal recommends a 12 – 18 month cycle.

[1]ASME B40.1 section 6.1.1.3