To perform the test:

STEP 1 Isolate the pressure gauge from the process using valves, or by removing the gauge from the process.

STEP 2 Connect the gauge to the calibrator or reference gauge. For hydraulic pressure gauges it's important to remove any gas that might be trapped in the fluid in the gauge, calibrator, and connections by priming the system. When generating pressure allow a few moments for stability. Compare the reading of the gauge under test with the master gauge or calibrator.

STEP 3 For hydraulic pressure gauges it's important prime the system. This will remove any gas that might be trapped in the fluid in the gauge, calibrator or connections.

STEP 4 When generating pressure allow a few moments for the measurement to stabilize. When using a hydraulic hand pump as a source it can take several minutes for the pressure to stabilize due to the thermodynamic effect of fluids.

STEP 5 Compare the reading of the gauge under test with the master gauge or calibrator.

TECH TIPS

- Safety First! Check all fittings, adapters and connecting tubing ratings for pressures used.
- Remember to tap analog gauges at each point due to friction in mechanical parts.
- Gas is preferred for cleanliness requirements but use caution when generating pressures above 2,000 psi.
- Industry standards usually desire calibration equipment to be 4–10 times more accurate than the device under test.
- When in the field, connect pressure gauges through a manifold or "tee" connector.
- Use adapter fittings when workloads require calibrating a wide variety of gauges.
- Consider first, the in-use orientation of a device and use an angle adapter at the bench to achieve similar orientation.
- Use a liquid-to-liquid separator to prevent contamination in hydraulic applications.

Additional resources
For more in depth information about this application check out these videos and application notes from Fluke.

How to use a deadweight tester
Fluke 719 electric pressure calibrator demonstration

Transmitter Calibration with the Fluke 750 Series DPC
HART transmitter calibration