PROCEDURE FOR CALIBRATING, STANDARDIZING OR CHECKING EQUIPMENT

Original 03/98, Revised 3/00, 5/11, 12/20

PROCEDURE #72

Equipment Standardized:

AIR METER (Type B) T 152, SD 403

Purpose:

To provide instructions for standardizing the Type B (pressure type) meter.

Inspection Equipment Required:

1. Water source.
2. Rubber syringe.
3. Short straight tube.
4. Curved tube.
5. 5% external standardization vessel.

Tolerance:

The tolerance can be found in the test methods listed above.

Procedure:

1. Fill the measuring bowl with water.
2. Screw the short piece of straight tubing into the threaded petcock hole on the underside of the cover. Clamp the cover assembly onto the measuring bowl with the tube extending down into the water.
3. With both petcocks open, add water with a syringe through the petcock having the pipe extension below, until all the air is forced out the opposite petcock. Leave both petcocks open.
4. Pump the pressure to a little beyond the initial calibration pressure. This initial calibration pressure is read on the scale below "% Air" in the lower right-hand corner of the gauge. A good starting point for this initial calibration pressure is 3.0%. Wait a few seconds for compressed air to cool to normal temperature and then stabilize the gauge needle at the initial calibration pressure by pumping or bleeding off as needed. It will be necessary to tap the gauge lightly several times with your finger to stabilize the needle.
5. Close both petcocks and immediately press down on the thumb lever exhausting the air into the measuring bowl. Wait a few seconds until the hand is stabilized. Lightly tap the gauge with your finger to stabilize the needle. If all the air was eliminated and the initial calibration pressure was correctly selected, the gauge should read zero. If two or more tests show a consistent variation of ± 0.1% in the result, then change the initial calibration pressure to compensate for the variation. Use the newly established initial calibration pressure for subsequent tests.
6. Screw the curved tube into the outer end of the petcock and by pressing on the thumb lever and controlling the flow with the petcock lever, fill the 5% standardization vessel level full of water from the meter. The 5% of water may also be determined by weight.
7. Release the air at the free petcock. Open the other petcock and let the water in the curved pipe run back into the measuring bowl. There is now the equivalent of 5% air in the measuring bowl.
8. With the petcocks open, pump up the air pressure in the same manner as outlined in paragraph four. Close the petcocks and immediately press the thumb lever. Wait a few seconds for exhaust air to warm to normal temperature, and for the needle to stabilize.
   Tap the gauge lightly again with your finger to aid in stabilizing the needle. The dial should read 5.0%.

9. If two or more consecutive readings are more than 0.1% above or below 5%, remove the gauge glass and reset the needle to 5% by turning the re-calibration screw located on the needle assembly. If the re-calibration screw is adjusted, the initial pressure must be checked again. If the initial pressure changes, then the 5% reading should also be rechecked.
10. Once you have calibrated the meter at 5%, you may calibrate for higher air contents, if deemed necessary. This is accomplished by withdrawing additional water at 5% increments using the calibration vessel or at other values by weight and repeating the steps outlined in paragraphs 7., 8., and 9. above.