D E P A R T M E N T O F T H E A R M Y T E C H N I C A L B U L L E T I N

CALIBRATION PROCEDURE FOR TESTER, LEAKAGE, VALVE ASSEMBLY, Q210 NSN 6665-01-029-7109

Headquarters, Department of the Army, Washington, DC
28 June 1977

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SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Tester, Leakage, Valve Assembly, Q210. The valve assembly leakage tester will be referred to as the "TI" or test equipment throughout this bulletin.

a. Model variations. None

b. Time and Technique. The time required for this calibration is approximately 1 hour, using the physical technique.

2. Calibration Data Card (DA Form 2416). Forms, records, and reports required for calibration personnel at all levels are prescribed by TM 38-750. DA Form 2416 must be annotated in accordance with TM 38-750 for each calibration performed.

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test Instrument Parameters	Performance Specifications
PRESSURE	Range: 0 to- 25 inches of water Accuracy: ±2% of full scale

SECTION II
EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment used in this calibration. The equipment is issued with secondary transfer standards calibration set, NSN 6695-00-621-7877. Alternate items may be used by the calibrating activity when the equipment listed in Table 2 is not available. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one accuracy ratio between the standard and TI. When the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.

5. Accessories Required. The accessories listed in table 3 are issued as indicated in paragraph 4 above except for one which is fabricated as shown in figure 1. All are to be used in this calibration procedure. When necessary, the items other than the one fabricated may be substituted by equivalent items.

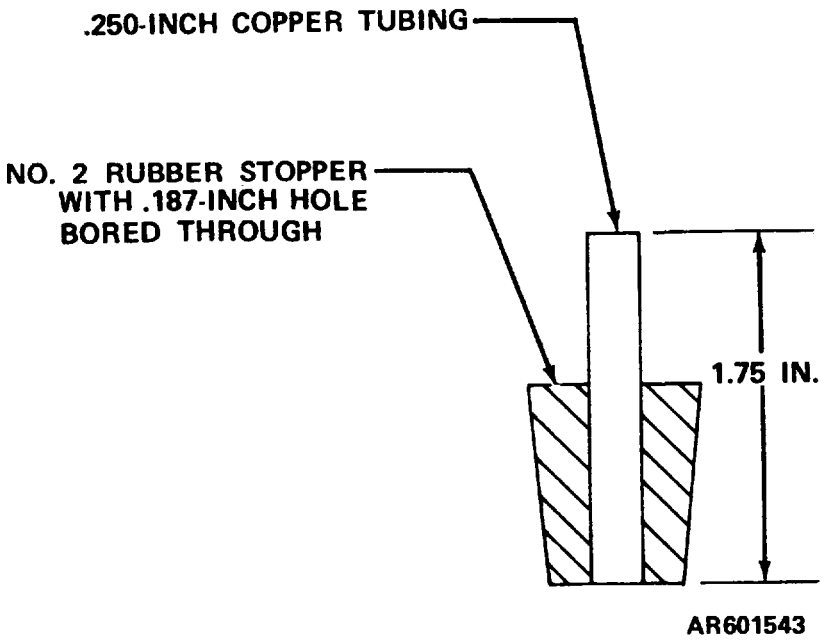

Figure 1. Fabrication instructions for connector (B3).

Table 2. Minimum Specifications of Equipment Required

Item	Common Name	Minimum Use Specifications	Manufacturer, Model and Part Number
A1	MANOMETER	Range: 0 to 25 inches of water Accuracy: ±0.5%	Wallace, and Tiernan, Model 65D-4C-0120X or Fa145600 (7912573)

Table 3. Accessories Required

Item	Common Name	Description and Part Number
B1	TUBING	Plastic, 1/4 -inch (R3603F), length as required.
B2	CONNECTOR *	Fabricate in accordance with figure 1.

* Also used to calibrate the following equipment:
Tester, Air Leakage (Dry Bubble), Q204 (TB 3-6665-313-50) Indicator, Resistance, Inhalation and Exhalation, Q213 (TB 3-6665-315-50).

SECTION III
CALIBRATION PROCESS

NOTE

Unless otherwise specified, verify the results of each test and take corrective action whenever the test requirement is not met before continuing with the calibration.

6. Preliminary Instructions. *a.* The instructions outlined in this section are preparatory to the calibration process. Personnel should become familiar with the entire bulletin before beginning the calibration.

b. Items of equipment used in this procedure are referred within the text by common name and item identification number as listed in tables 2 and 3. For the identification of equipment referenced by item numbers prefixed with A, see table 2, and for prefix B, see table 3.

7. Equipment Setup (fig. 2). *a.* Adjust mechanical zero-adjustment on the TI PRESSURE gage.

b. Set POWER switch to OFF.

c. Turn BLEED VALVE fully counterclockwise.

d. Connect power cable connector to 115-volt, 60 Hz receptacle.

e. Set POWER switch ON. Motor should operate.

f Allow TI to operate for at least 10 minutes.

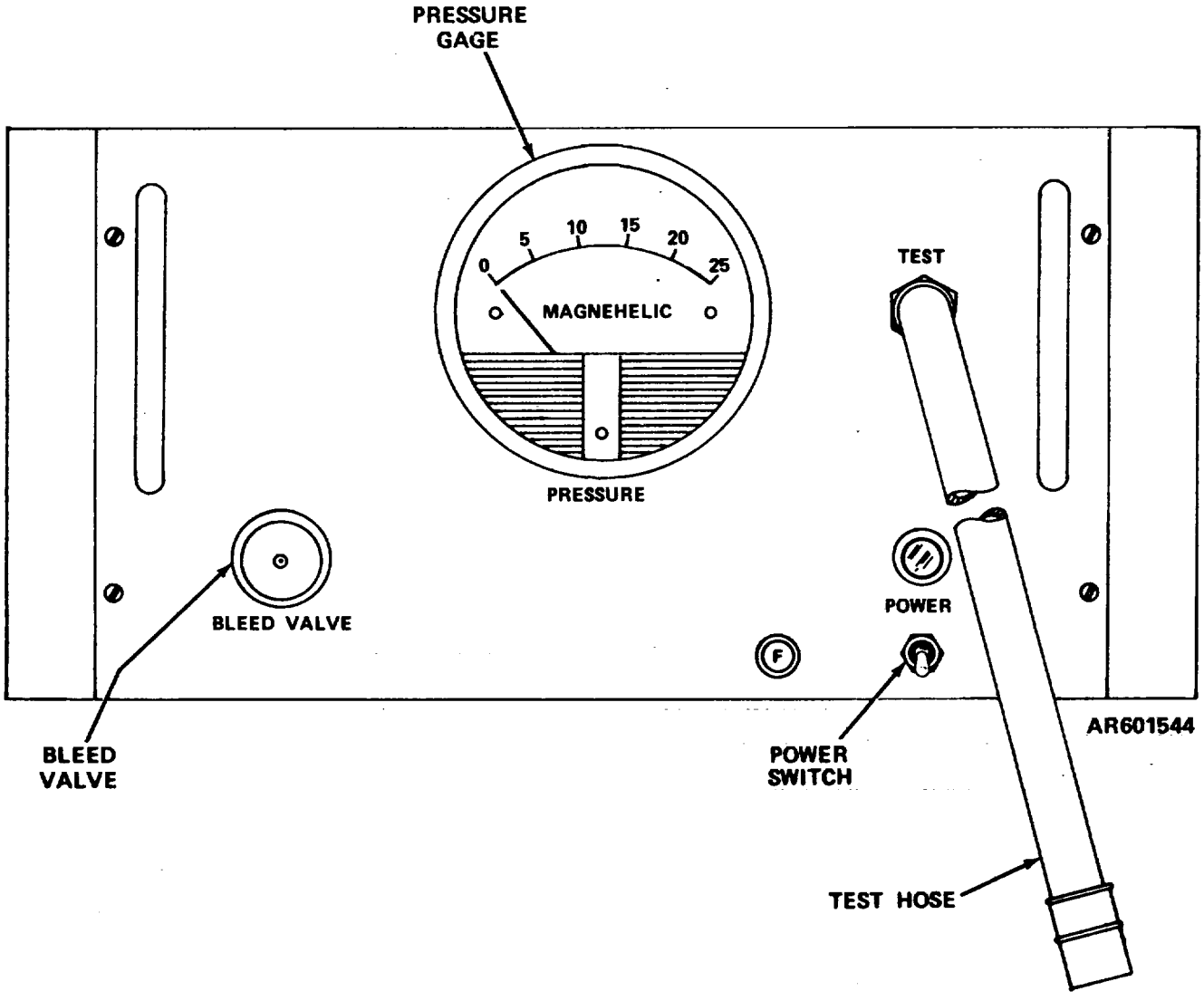

Figure 2. Locations of TI controls and instruments used during calibration.

Table 4. Pressure Gage Performance Limits

Scale major Division Indication	Acceptable Manometer Indications (inches of water	
	Min.	Max.
5	4.5	5.5
10	9.5	10.5
15	14.5	15.5
20	19.5	20.5
25	24.5	25.5

8. PRESSURE Gage. *a. Performance Check.*

(1) Connect the test equipment as shown in figure 3.

(2) Close valve (B1).

(3) Slowly turn BLEED VALVE clockwise until the PRESSURE gage pointer is at "5" on the scale. The manometer (Al) must indicate as shown in table 4.

(4) Repeat (3) above for each major division, (cardinal point) in the PRESSURE gage scale.

CAUTION

Since a sudden change in pressure could damage the TI, do not disconnect the equipment before returning the TI to atmospheric pressure.

(5) After the performance is completed, slowly open the BLEED VALVE to return the TI to atmospheric pressure.

b. Adjustments. No adjustments can be made.

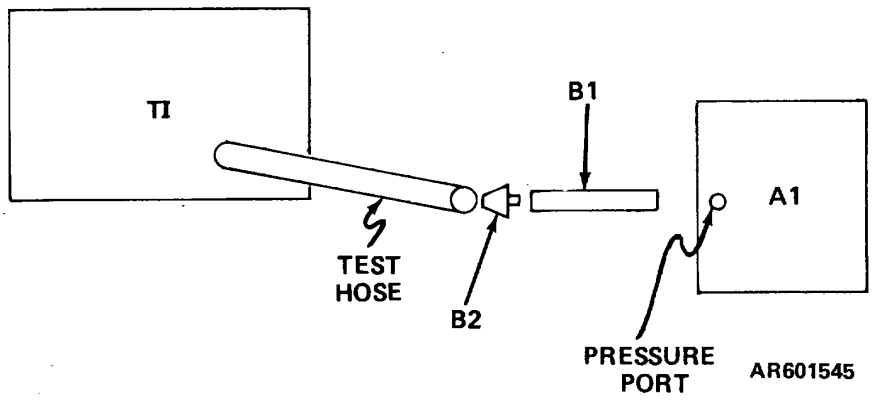

Figure 3. PRESSURE gage performance check, equipment setup.

9. Final Procedure. *a.* Deenergize and disconnect all equipment.

b. In accordance with TM 38-750, annotate and affix DA Label 80 (US Army Calibration System). When the TI does not indicate within the limits specified in Table 4, annotate and affix DA Form 2417 (Unserviceable or Limited Use) tag.

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