

# **\*TB 9-6685-327-35**

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## **DEPARTMENT OF THE ARMY TECHNICAL BULLETIN**

# **CALIBRATION PROCEDURE FOR VACUUM AND PRESSURE GAGES (0 TO 120 INCHES OF WATER)**

Headquarters, Department of the Army, Washington, DC  
3 April 1989

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\*This bulletin supersedes TB 9-6685-327-35, 17 May 1982, including all changes.

**SECTION I  
IDENTIFICATION AND DESCRIPTION**

**1. Test Instrument Identification.** This bulletin provides instructions for the calibration of Vacuum and Pressure Gages (0 to 120 inches of water). The manufacturer's manuals were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

**a. Model Variations.** None, except scale markings, ranges, and accuracies (see table 1).

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

**2. Forms, Records, and Reports.** Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

**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 and vacuum:	
Dwyer 200 and 2000 series	Range: 0 to 120 in. H <sub>2</sub> O pressure and vacuum Accuracy: ± 2% FS
Wika, part number 4010-0000	Range: 0 to 40 in. H <sub>2</sub> O vacuum Accuracy: ± 5% FS

**SECTION II  
EQUIPMENT REQUIREMENTS**

**4. Equipment Required.** Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with the Secondary Transfer Calibration Standards Set, AN/GSM-286. 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 ratio between the standard and TI.

**5. Accessories Required.** The accessories required for this calibration are common usage accessories issued as indicated in paragraph 4 above, and are not listed in this calibration procedure.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
PNEUMATIC PRESSURE STANDARD	Range: 0 to 120 in H <sub>2</sub> O Accuracy: ± 0.5% FS	Cybersystems, Inc., Model ZA00225A1 (MIS-30859)

**SECTION III  
CALIBRATION PROCESS**

**6. Preliminary Instructions**

**a.** The instructions outlined in paragraphs **6** and **7** 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 referenced within the text by common name as listed in table 2.

**c.** Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Additional maintenance information is contained in the manufacturer's manual for this TI.

**e.** Unless otherwise specified, all controls and control settings refer to the TI.

**7. Equipment Setup**

**a.** Visually inspect TI for signs of damage or deterioration.

**b.** If required, zero-adjust TI. On some models, remove plugs from high and low pressure ports on side as well as from back of gage.

**c.** Replace plugs in back ports of TI, if removed.

**8. Pressure and Vacuum**

**NOTE**

Do not remove plugs from back ports of TI

**a. Performance Check**

(1) Connect equipment as shown in figure 1. Connect for pressure or vacuum as desired.

(2) Close needle valve.

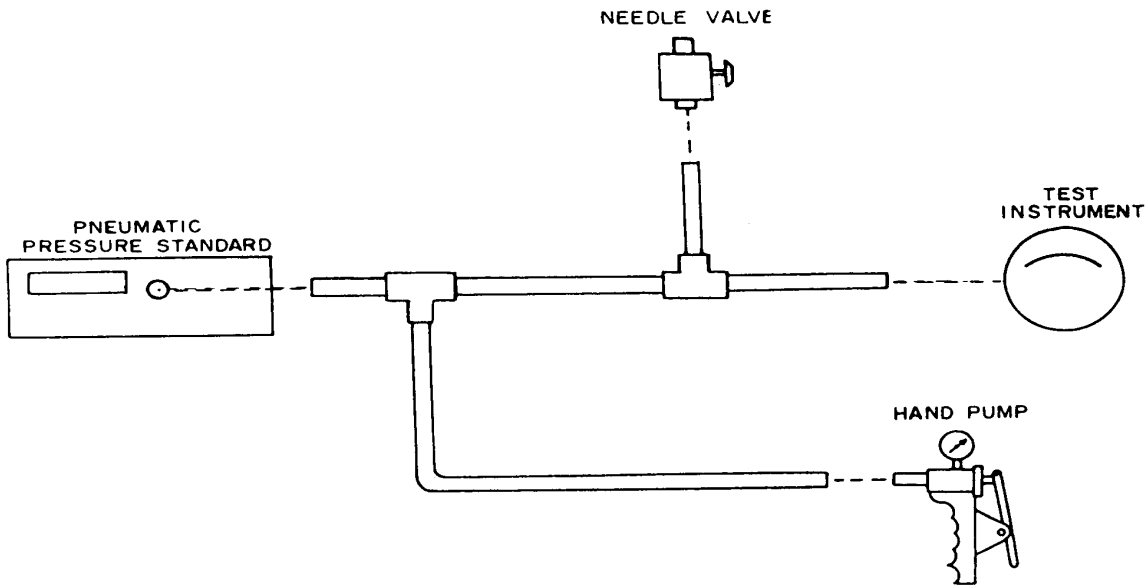


Figure 1. Pressure or vacuum - equipment setup.

**NOTE**

Insure that pneumatic pressure standard 0 to 120 inches of water transducer has been zeroed within the last 8 hours.

(3) Connect BNC cable from INCHES H<sub>2</sub>O Output connector on rear of pneumatic pressure standard to EXT INPUT connector on front panel of pneumatic pressure standard.

(4) Position controls on pneumatic pressure standard as listed in (a) through (e) below:

- (a) **POWER** switch to **ON**.
- (b) **SOURCE** pushbuttons to **EXT**.
- (c) **UNITS DISPLAYED** switch to **INCHES H<sub>2</sub>O**.
- (d) **SENSITIVITY** pushbutton to **HIGH**.
- (e) **RESET** pushbutton pressed.

(5) Calculate tolerance for TI being calibrated from specifications in table 1.

(6) Operate hand pump and needle valve (vent) until TI pointer indicates at the last major division (cardinal point ) on scale. If pneumatic pressure standard does not indicate

TI indication within plus or minus tolerance calculated in (5) above, refer to manufacturer's manual for repair.

(7) Repeat (6) above for remaining cardinal points on TI scale.

**CAUTION**

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

(8) Slowly open needle valve to return TI and pneumatic pressure standard to atmospheric pressure.

**b. Adjustments.** No adjustments can be made.

**9. Final Procedure**

**a.** Deenergize and disconnect all equipment.

**b.** Annotate and affix DA label/form in accordance with TB 750-25.

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By Order of -the Secretary of the Army:

**CARL E. VUONO**  
*General, United States Army*  
*Chief Of Staff*

Official:

**WILLIAM J. MEEHAN II**  
*Brigadier General, United States Army*  
*The Adjutant General*

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