*TB 9-4931-530-50

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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR DIFFERENTIAL ELECTRONIC LEVEL FEDERAL PRODUCTS CORP., MODEL 232P-68

Headquarters, Department of the Army, Washington, DC
22 May 1992

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*This bulletin supersedes TB 9-4931-530-50, dated 6 April 1983.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Differential Electronic Level Federal Products Corp., Model 232P-68. The manufacturer's manual was used as the prime data source in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) 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. 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
Scale magnification	Range: 0 to ±1000 arc s Accuracy: ±4/5 of dial division (40% 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 Secondary Reference Calibration Standards Set NSN 4931-00-621-7878. Alternate items may be used by the calibrating activity. 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 listed in table 3 are issued as indicated in paragraph 4 above and are used in this calibration procedure. When necessary, these items may be substituted by equivalent items, unless specifically prohibited.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
GAGE BLOCK[1]	Range: 0.101 in. 0.125 in.[1] 0.149 in. Accuracy:[2]	(7900612 and 7901267)
SINE PLATE	Range: 5 in. Accuracy:[2]	GGG-B-121 (GGG-B-121)

[1]Two required

[2]Combined accuracy is ±0.00024 in.

Table 3. Accessories Required

Common name	Description (part number)
C CLAMP[1]	GGG-C-406 (GGG-C-406)
SURFACE PLATE	GGG-P-463B (GGG-P-463B)
STEEL PARALLEL[1]	GGG-P-61 (GGG-P-61)

[1]Two required. Limited deployed item.

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 results of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturer's manual for this TI.

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

7. Equipment Setup

a. Connect TI SENSING HEADS A and B (fig. 1) to GAGE HEAD input A and B on TI rear panel.

b. Assemble equipment as shown in figure 1.

c. Set TI switches as listed in (1) through (3) below:

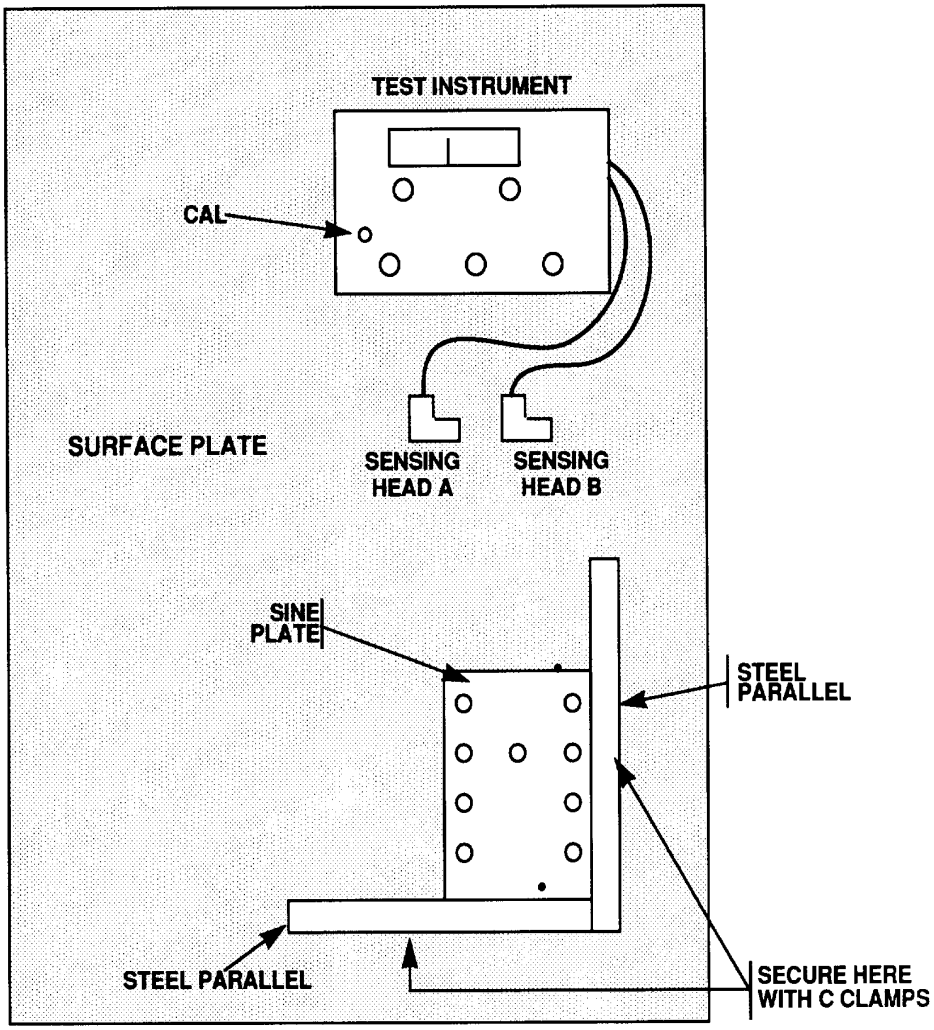

Figure 1. Scale magnification accuracy - equipment setup.

(1) Both **NORM/REV** switches to **NORM**.

(2) Range selector to **1000**.

(3) **GAGE HEAD** selector to **A**.

d. Connect TI to a 115 V ac source.

e. Set mode switch to MTR and allow 30 minutes for warmup.

8. Scale Magnification Accuracy

a. Performance Check

(1) Place a 0.125 inch gage block under both ends of sine plate rolls.

(2) Place SENSING HEAD A (fig. l) on SINE PLATE (fig. 1) and adjust **ZERO HEAD A** control for a 0 (mid-scale) indication on TI meter.

NOTE
0.024 inch is equal to 990 arc seconds.

(3) Replace a 0.125 inch gage block at one end of sine plate roll with 0.149 inch gage block. If TI meter does not indicate +990 ±40 (right deflection), perform **b** below.

(4) Replace 0.149 inch gage block with 0.101 inch gage block. If TI meter does not indicate -990 ±40 (left deflection), perform **b** below.

(5) Set **GAGE HEAD** selector switch to **B** and repeat technique of (1) through (4) above for SENSING HEAD B (fig. 1). If TI meter indications are not within limits, perform **b** below.

b. Adjustments

(1) Set **GAGE HEAD** selector switch to **B**.

(2) Replace 0.149 or 0.101 inch gage block with 0.125 inch gage block at end of sine plate roll.

(3) Place SENSING HEAD B (fig. 1) on SINE PLATE (fig. 1) and adjust **ZERO H HEAD B (ZERO HEAD A)** control for a 0 (mid-scale) indication on TI meter.

(4) Substitute 0.149 and 0.101 inch gage blocks in turn for a 0.125 inch gage block at the same end of sine plate roll and adjust gain control (recessed in hole in center of range selector switch) for best compromise or balance of + (right deflection) and - (left deflection) indications on TI meter.

(5) Repeat (2) through (4) above until no further adjustments are required.

(6) Set **GAGE HEAD** selector switch to **A** and repeat technique of (2) through (5) above for SENSING HEAD A (fig. 1) except adjust CAL control (fig. 1) in (4) above.

9. Final Procedure

a. Deenergize and disconnect all equipment.

b. Annotate and affix DA Label/Form in accordance with TB 750-25.

By Order of the Secretary of the Army:

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