*TB 9-6670-251-35

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR RESILIENCY TESTERS (GENERAL)

Headquarters, Department of the Army, Washington, DC
14 February 1984

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*This bulletin supersedes TB 9-6670-251-50, 29 July 1977.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Resiliency Testers (General) (figure 1). 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. DA Form 2416 (Calibration Data Card)

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25-1. DA Form 2416 must be annotated in accordance with TB 750-25-1 for each calibration performed.

b. Adjustments to be reported on DA Form 2416 are designated (R) at the end of the sentence in which they appear. When adjustments are in tables, the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

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
Weight	Range: 0 to 300 lbs, 0 to 1000 grams Accuracy: ±1 graduation

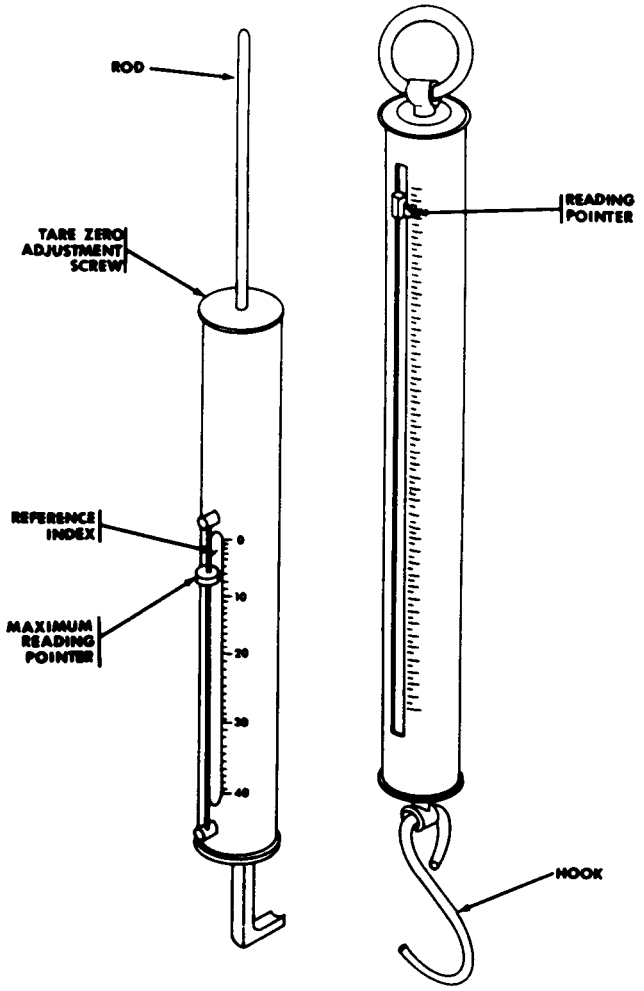

Figure 1. Typical resiliency testers.

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 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 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

Item	Common name	Minimum use specifications	Manufacturer and model (part number)
A1	HOOK ROD ASSEMBLY[1]	Range: 5 lbs Accuracy: Class T	(7916812)
A2	STANDARD WEIGHT	Range: 5 to 180 lbs Accuracy: Class C	Part of pressure gage tester, Mansfield and Green, Model 10-10525 (8598963)
A3	WEIGHT SET	Range: 5 to 150 lbs Accuracy: Class T	(7910346)
A4	WEIGHT SET	Range: 1 to 40 lbs Accuracy: +5 grams	(7909056)
A5	WEIGHT SET	Range: 1 to 1000 grams Accuracy: Class C	(7910419)

[1]Fabricated locally (fig. 2).

Table 3. Accessories Required

Item	Name	Description (part number)
B1	WEIGHT CARRIER ASSEMBLY	Part of torque calibrator (7910652)
B2	WEIGHT CARRIER ASSEMBLY[1]	Part of torque calibrator (7910971)

[1]Fabricated locally.

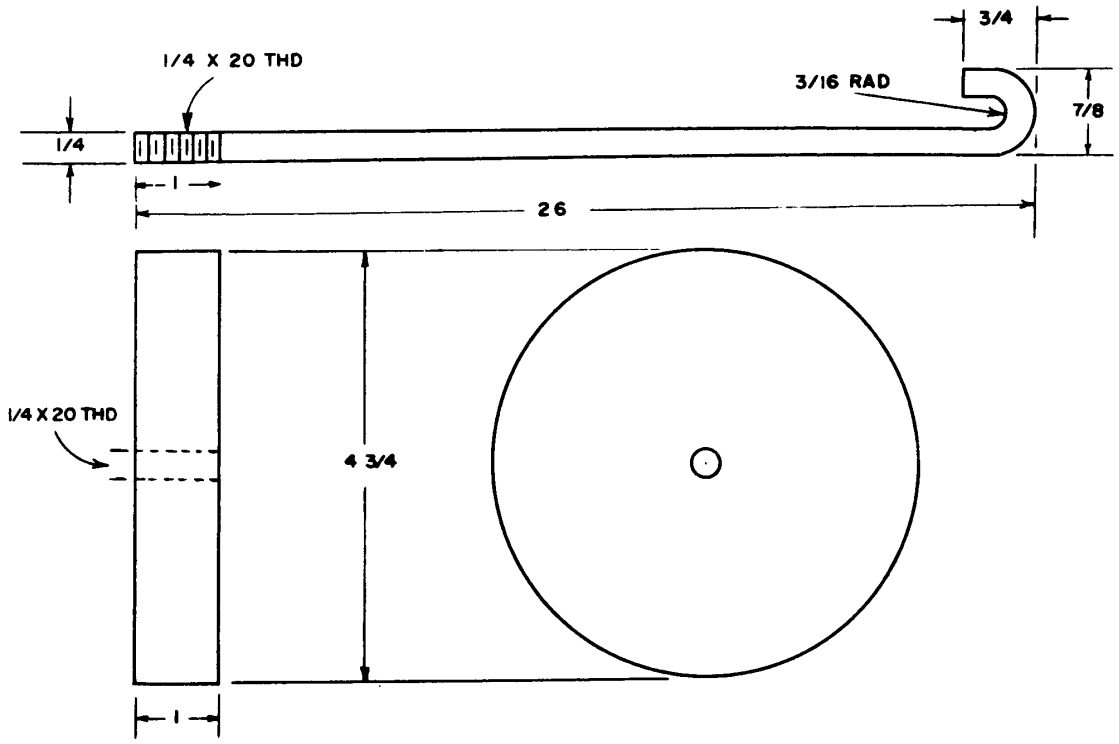

Figure 2. Hook rod assembly (7916812)

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 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.

NOTE

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. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturer's manual for this TI.

NOTE

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

7. Equipment Setup

a. 0 to 150 Pound Check

NOTE

This adjustment compensates for varying load of rod when using the TI in different positions.

(1) Adjust tare zero adjustment screw (fig. 1) for a zero indication on TI.

(2) Remove pin from torque calibrator (B1) for weights up to 20 pounds, or (B2) for weights between 20 and 150 pounds) and separate weight carrier assembly from the torque calibrator. Only the weight carrier will be required.

(3) Note weight of carrier.

(4) Obtain a 6-inch length of line or wire capable of supporting total weight to be used in calibrating TI.

b. 150 to 300 Pound Check

(1) Adjust tare zero adjustment screw (fig. 1) for a zero indication on TI.

WARNING

One person should not attempt to lift or carry the sets of weights any distance. Each set weighs approximately 100 pounds.

(2) Assemble appropriate standard weights (A2) on hook rod assembly (A1) (fig. 2) and install end plate.

(3) Raise hook rod assembly to a vertical position.

NOTE

Additional weights from weight sets (A3) and (A5) will be added to make up the desired total test weight when required in paragraphs 8 and 9 below.

NOTE

The adjusted weight of the hook rod assembly (fig. 2) is 5 pounds (Class T tolerance). This weight must be considered when making up the total test weight

NOTE

Since the (standard) weights are designated in pounds or ounces, conversion to grams will be necessary. Conversion factors are: 1 ounce = 28.35 grams, and 1 pound = 453.600 grams.

8. Push-Pull Type Resiliency Testers

a. Performance Check

(1) Hold TI in position in which it is to be used.

(2) Fasten weight carrier (fig. 3) or hook rod assembly (A1) to TI.

(3) Allow weight carrier or hook rod assembly to rest on bench top and assemble appropriate weight.

(4) With TI in a vertical position, raise TI until all weight is supported by the hook. Maximum reading pointer should indicate amount of weight used plus weight of weight carrier or hook rod assembly ±1 graduation.

NOTE

Raise gradually, avoiding sudden or jerking motions.

(5) Lower TI until weight is supported by bench top.

(6) Repeat (3) through (5) above for several cardinal points over entire range of TI.

b. Adjustments. No adjustments can be made.

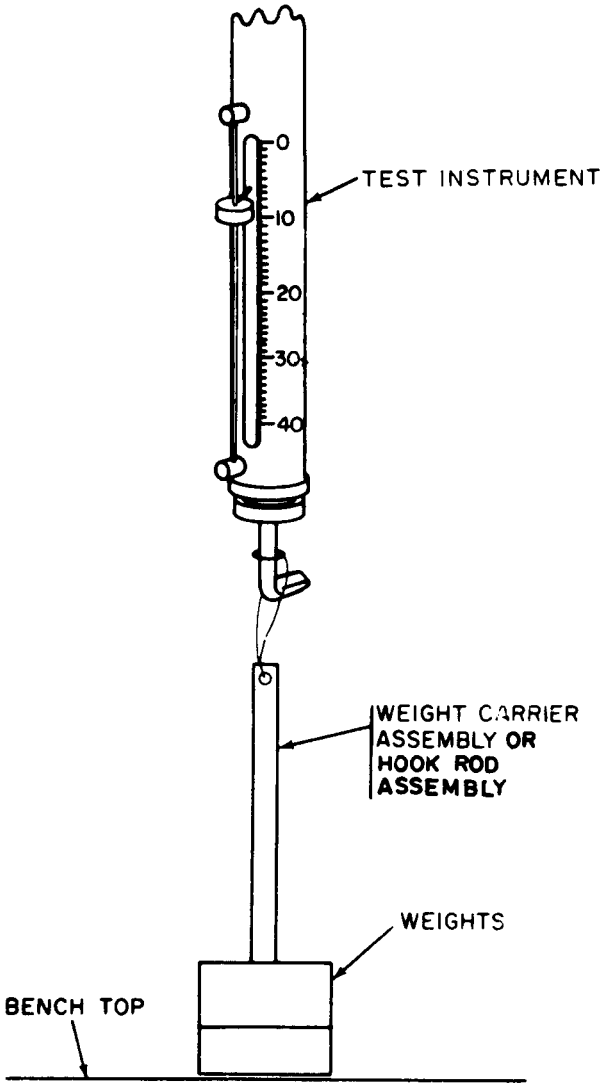

Figure 3. Tension check - equipment setup.

9. Suspended Type Resiliency Testers

a. Performance Check

(1) Select a convenient area to suspend TI to a height as near to eye level as possible.

(2) Fasten weight carrier or hook rod assembly (A1) to TI.

NOTE

Avoid sudden or jerky motions when applying weights. Allow weight to be suspended gradually.

(3) Carefully place appropriate weight on weight carrier or hook rod assembly. Pointer should indicate weight used plus weight of the carrier or hook rod assembly ±1 graduation.

(4) Repeat (3) above for several cardinal points over entire range of TI.

b. Adjustments. No adjustments can be made.

10. Final Procedure

a. Reassemble torque calibrators (B1) or (B2) disassembled in paragraph 7a above.

b. When all parameters are within tolerance, annotate and affix DA Label 80 (US Army Calibrated Instrument). When the TI receives limited or special calibration, annotate and affix DA Label 163 (US Army Limited or Special Calibration). When the TI cannot be adjusted within tolerance, repair the TI in accordance with the maintenance manual. When repair is delayed for any reason or the TI cannot be repaired with local resources, annotate and affix DA Form 2417 (US Army Calibration System Rejected Instrument) and inform the owner/user accordingly in accordance with TB 750-25-1.

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