# TB 9-5210-201-50

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

# CALIBRATION PROCEDURE FOR: GAGES, SPRING TENSION (5210-356-4645)

Headquarters, Department of the Army, Washington, DC
14 December 1965

**REPORTING OF ERRORS**

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## SECTION I
## GENERAL

### 1. Purpose and Scope

**a**. This bulletin provides information for the periodic calibration of spring tension gages 5210-356-4645 (fig. 1) and is to be used by calibration personnel. Since the calibration personnel are trained and qualified in the usage of calibration standards, detailed instructions concerning operation and use of the standards are not contained in this bulletin.

**b**. This bulletin contains an illustration of a typical spring tension gage, as well as a diagram showing equipment setup.

**2. Description.** Spring tension gages 5210-356-4645 are lever type gages intended for measuring tension of relay springs. Additional data is listed in **a** through **c** below.

#### a. Identification

| | |
|---|---|
| Nomenclature | SPRING TENSION GAGES. |
| Federal stock No. | 5210-356-4645. |
| Manufacturer | Western Electric Co., Inc. |
| Manufacturer's model No. | 70 D, D, G, H, J. |
| Size | 5 7/32 x 1 5/16 x 17/32 in. |
| Weight | 1 lb (approx.) |
| Reference | Manufacturing Instructions. |

#### b. Specifications

| Graduation (grams) | Type 70D<br>5 | Type 70F<br>1 | Type 70G<br>5 | Type 70H<br>2 | Type 70J<br>5 |
|---|---|---|---|---|---|
| Range (grams) | 50-0-50 | 10-0-10 | 50-0-50 | 0-20 | 0-150 |
| Accuracy (±grams) | 2.5 | 0.5 | 2.5 | 1.0 | 2.5 |

#### c. Program Data

| | |
|---|---|
| Calibration interval | 90 days |
| Time required for calibration | 1/2 hr (approx.) |
| Calibration level | Secondary transfer. |
| Calibration technique | Physical. |

### 3. General Instructions

**a. Calibration Data Card**. During the performance of this procedure, annotate DA Form 2416 in-accordance with TM 38-750.

**b. Unit Under Test**. Spring tension gages 5210-356-4645 will be referred to as "unit under test."

**c**. **Removal.** Do not remove the unit under test from it; protective case unless necessitated by equipment connections and/or components to be adjusted which are not accessible from external ports provided on the unit under test.

**4. Difference Among Models.** Types D, F, and G are bi-directional, and types H and J are mono-directional.

## SECTION II
## CALIBRATION

**5. Equipment Required.** Equipment required for calibration performance checks and adjustments is listed in table 1. When any of the equipment listed in table 1 is not available, equivalent calibrated items m be used.

Table 1. Equipment Required for Calibration Performance Checks and Adjustments

A-AUTHORIZED STANDARD

| Nomenclature | Federal Stock No. | Description |
|---|---|---|
| WEIGHT SET, GRAM. | 4931-787-3635 (7907394) | FIG 2-301-5 (1 to 500 gr). |

B-AUTHORIZED ACCESSORY

| Nomenclature | Identifying No. | Description |
|---|---|---|
| LINE | N/A | 1 lb test min |

**NOTE**

Personnel should familiarize themselves with the entire procedure prior to performing calibration.

**6. Preliminary Procedure**

**a**. Fold back handle (fig. 1) of unit under test.

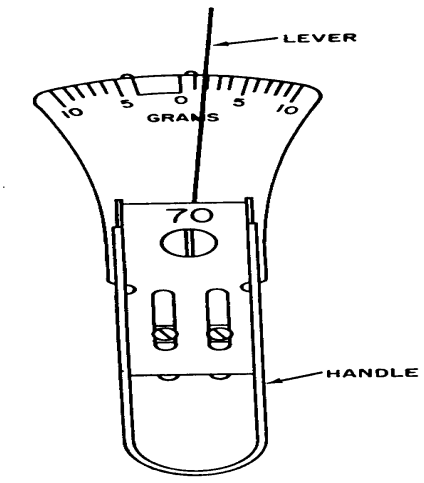


Figure 1. Spring tension gages 5210-366-4645-typical view.

**b**. Remove adjustable tension attachment.

**c.** Check unit under test for zero setting. If necessary, adjust screws on top of unit under test. Depress lever (fig. 1) of unit under test through its full range. Check for binding or interference. Check that lever returns to zero when released.

**NOTE**

The following paragraph is divided into subparagraph **a**, performance check, and subparagraph **b**, adjustment. When the performance check is not within tolerance and no adjustment is specified, the deficiency must be corrected before continuing with the procedure.

## 7. Accuracy

### a. Performance Check

(1) Suspend a gram weight or combination of gram weights from the extreme tip of arm of unit under test (fig. 2). Check at full scale, 1/2 scale, and 1/5 scale, right hand and left hand as required.

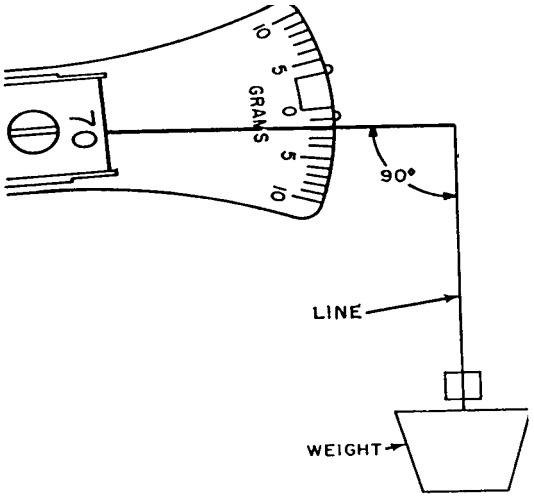


Figure 2. Spring tension gages 5210-865-4645 - equipment setup

(2) Reading on scale of unit under test should coincide with weights suspended in (1) above within 1/2 graduation of unit under test.

(3) Make a check at all cardinal points (numbered division) of unit under test.

**NOTE**

For accurate results, measuring lever must be held at right angle to line with suspended weight.

(4) For bi-directional gages, rotate unit under test 180° and repeat performance check.

(5) Annotate block 11, AB, on DA Form 2416.

**b. Adjustment**. No adjustment can be made.

**8. Final Procedure.** In accordance with TM 38-750, annotate and affix calibration DA Label 80. When the unit under test cannot be adjusted to within tolerance, annotate and affix DA Form 2417 (red tag).

**TB 9-5210-201-50**

By Order of the Secretary of the Army:

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Units organized under following:
TOE: 9-107 (12)

NG: None
USAR: None

For explanation of abbreviations used, see AR 320-50

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