TB 9-6625-2357-50

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR DIAL INDICATOR CALIBRATOR L. S. STARRETT CO., MODEL 716 (13589315)

Headquarters, Department of the Army, Washington, DC
8 March 2005

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual. For the World Wide Web, use https://amcom2028.redstone.army.mil.

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SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Dial Indicator Calibrator L.S., Starrett, Model 716 (13589315). DA form 3758-R (Calibration and Repair Requirements Worksheet) 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 dimensional 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
Linear Displacement	Range: 0 to 1.0 in. Accuracy: < 0.00005 in. over entire range

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. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment is shown in parenthesis.

5. Accessories Required. The accessories required for the calibration are common usage accessories, issued as indicated in paragraph **4** above, and are not listed in this calibration procedure. The following peculiar accessory is also required for this calibration: Shaft diameter adaptor, Split Bushing, Starrett (EDP56007).

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
ELECTRONIC LINEAR TRANSDUCER	Range: 0 to 1.0 in. Resolution: 0.000001 in.	Heidenheim, Model MT 2501
GAGE BLOCK SET	Range: 0.1001 to 4.000 in. (rectangular, no center hole) Accuracy: Class III	(13534021)

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. Adjustments required to calibrate the TI are included in this procedure.

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

e. Carefully inspect TI anvil for burrs, protrusions, and other defects. If necessary, replace TI micrometer head.

7. Equipment Setup

a. Clean TI anvil and electronic linear transducer probe tip with alcohol.

b. Mount electronic linear transducer in TI dial indicator mount using shaft diameter adapter.

c. Set electronic linear transducer indicator for 0.000001 resolution.

d. Clean 0.108", 0.120", 0.300", 0.600" and 1.000" gage blocks with alcohol; cover with lint free towel and set aside.

e. Allow 1 hour equipment stabilization time.

8. Pitch Accuracy

a. Performance Check

(1) Set TI to zero position (fully down).

(2) Zero electronic linear transducer indicator.

(3) Insert 0.300” gage block between TI anvil and electronic linear transducer probe tip and ring gage block.

(4) Wait for the electronic linear transducer indicator to stabilized; record the indication.

(5) Remove 0.300” gage block.

(6) Zero electronic linear transducer indicator.

(7) Adjust TI for an electronic linear transducer indication equal to indication recorded (4) above and let stabilize.

(8) TI will be within ± 1 minor division of 0.300”.

(9) Repeat techniques of (1) through (8) above using the 0.600" and 1.000" gage blocks.

b. Adjustments. No adjustments can be made.

9. Backlash Check

(1) Return TI to zero position (fully down).

(2) Electronic linear transducer indication will be 0” ± 0.00005”.

b. Adjustments. No adjustments can be made.

10. Single Thread Linearity Accuracy

a. Performance Check

(1) Set TI to zero position (fully down).

(2) Zero electronic linear transducer indicator.

(3) Insert 0.108” gage block between TI anvil and electronic linear transducer probe tip and ring gage block.

(4) Wait for the electronic linear transducer indicator to stabilized; record the indication.

(5) Remove 0.108” gage block.

(6) Adjust TI for an electronic linear transducer indication equal to indication recorded in (4) above.

(7) TI will be within ± 1 minor division of 0.108”.

(8) Set TI to zero position (fully down).

(9) Zero electronic linear transducer indicator.

(11) Insert 0.120” gage block between TI anvil and electronic linear transducer probe tip and ring gage block.

(12) Wait for the electronic linear transducer indicator to stabilized; record the indication.

(13) Remove 0.120” gage block.

(14) Zero electronic linear transducer indicator.

(15) Adjust TI for an electronic linear transducer indication equal to indication recorded in (12) above.

(16) TI will be within ± 1 minor division of 0.120”.

b. Adjustments. No adjustments can be made.

11. 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:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official

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0501001

Distribution:

To be distributed in accordance with STD IDS No. RLC-1500, 2 January 2003, requirements for calibration procedure TB 9-6625-2357-50.

Instructions for Submitting an Electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" whomever@redstone.army.milT
To: <2028@redstone.army.mil

Subject: DA Form 2028

1. **From**: Joe Smith
2. Unit: home
3. **Address**: 4300 Park
4. **City**: Hometown
5. **St**: MO
6. **Zip**: 77777
7. **Date Sent**: 19-OCT –93
8. **Pub no:** 55-2840-229-23
9. **Pub Title**: TM
10. **Publication Date**: 04-JUL-85
11. Change Number: 7
12. Submitter Rank: MSG
13. **Submitter FName**: Joe
14. Submitter MName: T
15. **Submitter LName**: Smith
16. **Submitter Phone**: 123-123-1234
17. **Problem**: 1
18. Page: 2
19. Paragraph: 3
20. Line: 4
21. NSN: 5
22. Reference: 6
23. Figure: 7
24. Table: 8
25. Item: 9
26. Total: 123
27. **Text**

This is the text for the problem below line 27.