

# TB 9-5220-211-50

CHANGE 1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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## CALIBRATION PROCEDURE FOR SINE PLATE, TYPE II, GRADE A, CLASS 2, 5-INCH (GGG-B-121B)

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Headquarters, Department of the Army, Washington, DC  
29 September 2005

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*Distribution Statement A: Approved for public release; distribution is unlimited.*

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TB 9-5220-211-50, 6 January 2004, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page.

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1 and 2

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By Order of the Secretary of the Army:

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Distribution:

To be distributed in accordance with STD IDS No. RLC-1500, 2 January 2003, requirements for calibration procedure TB 9-5220-211-50.

# \*TB 9-5220-211-50

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## CALIBRATION PROCEDURE FOR SINE PLATE, TYPE II, GRADE A, CLASS 2, 5-INCH (GGG-B-121B)

Headquarters, Department of the Army, Washington, D.C.

6 January 2004

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### 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, U.S. Army Aviation and Missile Command, ATTN: 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](mailto: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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\*This technical bulletin supersedes TB 9-5220-211-50, dated 3 January 1974, including all changes.

## SECTION I IDENTIFICATION AND DESCRIPTION

**1. Test Instrument Identification.** This bulletin provides instructions for the calibration of Sine Plate, Type II, Grade A, Class 2, 5-Inch (GGG-B-121B). Specification GGG-B-121B was used as the prime data source in compiling these instructions. The sine plate 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.**

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

**b.** No adjustments to be reported.

**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
Length	5" ±0.00010 in.
Parallelism of rolls	±0.000050 in.
Parallelism of working surfaces	±0.00010 in.

## SECTION II EQUIPMENT REQUIREMENTS

**4. Equipment Required.** Table 2 identifies the specific equipment used in this calibration procedure. This equipment is issued with Secondary Reference Calibration Standards Set 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 accuracy ratio between the standard and TI. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.

5. **Accessories Required.** None.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
GAGE BLOCK SET	Range: 1.2 to 6.3 in Accuracy: $\pm 0.000012$ in	Grade 1, Class I (79010765)
HEIGHT GAGE	Range: 1.2 to 6.3 in Accuracy: $\pm 0.00001$ in	Federal Products Corp., Electro-Check, Model 230P-121 (7904823)
SURFACE PLATE	Accuracy: $\pm 0.000050$ in	DoAll Mfg. Co., 18 x 24-in. (7900123)

**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.

7. **Equipment Setup.** Place TI on surface plate with butt plate up. Set height gage and two stacks of gage blocks on surface plate. The two stacks of gage blocks must be the same height as the two rolls of the TI, within the measuring range of the height gage (fig 1). Allow all equipment to thermally stabilize for at least 12 hours.

**NOTE**

The approximate height of the gage block buildup can be determined prior to thermal stabilization by alternately moving the height gage stylus over the sine plate rolls and the corresponding gage block buildup. After the items have thermally stabilized, they must not be handled with the hands. Use forceps for handling the TI and gage blocks.

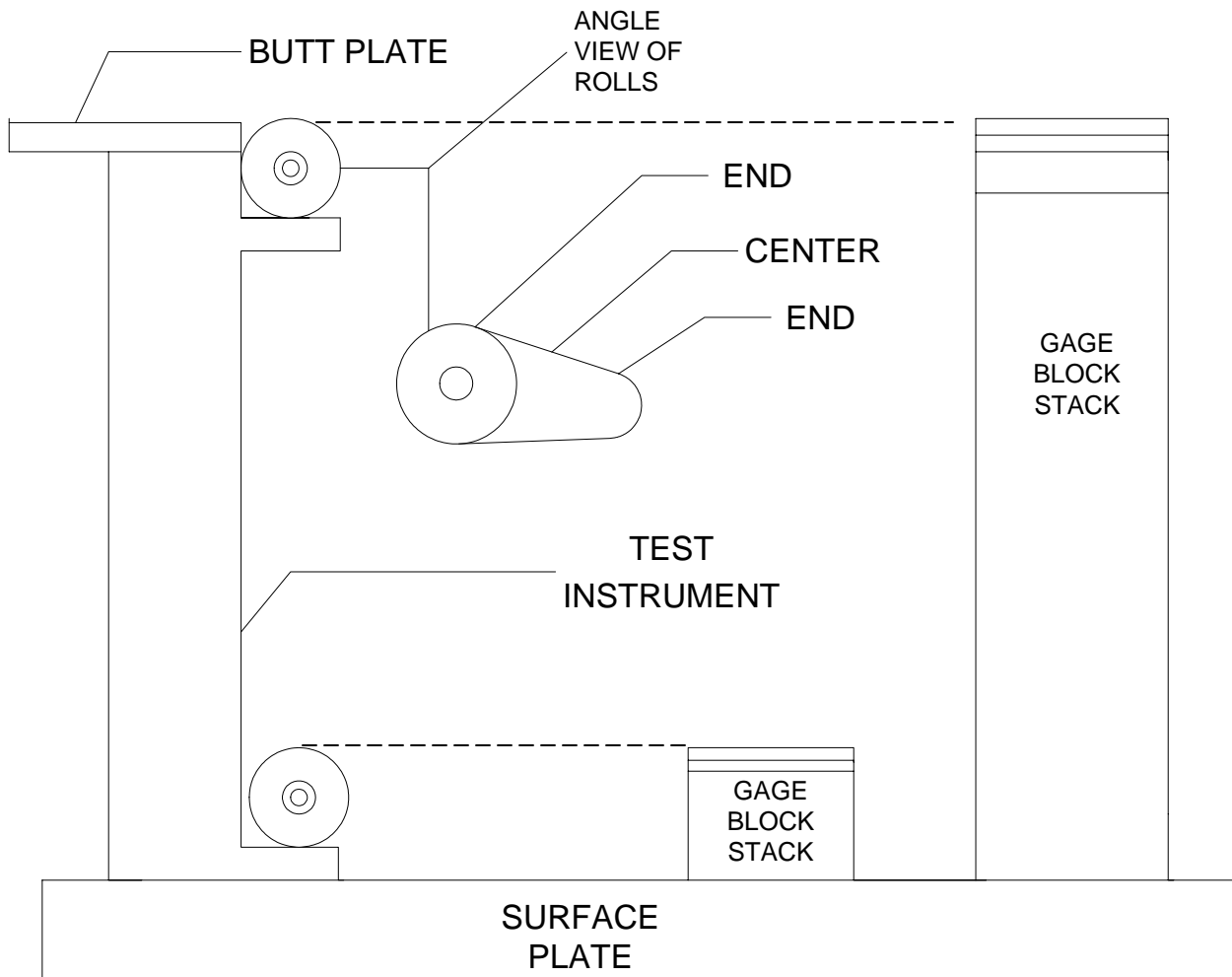


Figure 1. Equipment setup.

## 8. Length and Parallelism of Rolls

### a. Performance Check

(1) Using height gage and stacks of gage blocks setup in 7 above, measure the distance between the TI rolls at the center and at each end of the rolls (fig. 1).

(2) The distance between the two rolls and the parallelism of the rolls will be within the limits specified in table 1.

**b. Adjustments.** If the TI meets the parallelism of rolls specification in table 1, but exceeds the length specification, issue a calibration report specifying the length between the roll centers.

## 9. Parallelism of Working Surfaces

### a. Performance Check

- (1) Place the TI on surface plate and both rolls contacting the surface plate.
- (2) Position stylus of height gage in contact with top surface of TI and null the height gage.
- (3) Traverse the length of the surface of the TI at each side and the center with height gage stylus.
- (4) The high-to-low value for this measurement will be within the limits specified in table 1.

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

## 10. 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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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.mil](mailto:whomever@redstone.army.mil)  
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.

