

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**CALIBRATION PROCEDURE FOR
TESTER, STARTER TORQUE
GO-POWER CORP., MODEL GP-1500M**

Headquarters, Department of the Army, Washington, D.C.
3 December 1970

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Section I. GENERAL

1. Purpose and Scope. This bulletin provides information for the periodic calibration of the Tester, Starter Torque, Go-Power Model GP-1500M, (type B-I). It is to be used by personnel trained and qualified in the use of calibration equipment.

2. Report of Equipment Publication Improvements. Reports of errors, omissions and recommendations for improving this publication by the user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA publications) and forwarded direct to Commanding General, U. S. Army Aviation Systems Command, ATTN: AMSAV-R-EGC, P. O. Box 209, St. Louis, Missouri 63166.

3. Descriptive Data.

a. Identification

Nomenclature TESTER, STARTER
 TORQUE
 Manufacturer Go -Power Corp.
 Manufacturer's Model Number GP-1500M (Type B-I)
 FSN 4920-933-7346
 Reference Manufacturer's manual

b. Specifications

Torque range 0-200 ft-lb
 0-600 ft-lb
 0-1500 ft-lb

Accuracy.....+ 3% full scale
 Tachometer range>0-150 RPM
0-1500 RPM
 Accuracy.....+ 2% full scale

c. Calibration

Time required3 hrs (approximate)
 Technique.....Physical and Low
Frequency

4. General Instructions

a. DA Form 2416 (Calibration Data Card). During the performance of this procedure annotate DA Form 2416 in accordance with TM 38-750. Annotate only the parameters with the annotation note in performance checks.

b. Unit Under Test. Tester, Starter Torque, Go-Power Model GP-1500M, figure 1, will be referred to as the UUT (unit under test).

c. Equipment and Accessory Identification. The equipment and accessories referred to throughout this bulletin are identified in Tables 1 and 2 and Section III.

d. Equipment Setup. Disconnect instructions are not contained in this bulletin.

5. Differences Among Models. None.

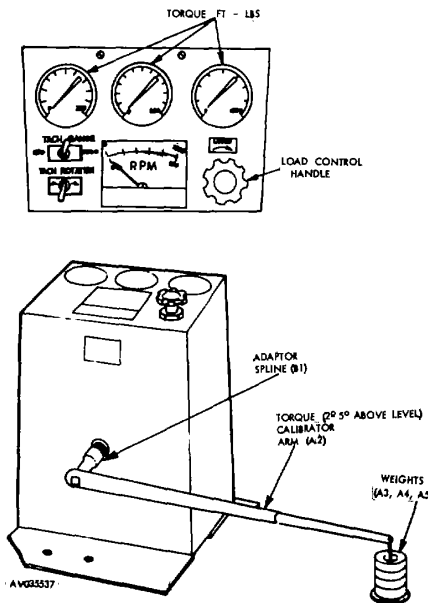


Figure 1. Tester, starter torque

Section II. CALIBRATION

6. Equipment and Accessories Required. Table 1 lists minimum use specifications of equipment required for calibration performances checks and adjustments. Table 2

lists required accessories. Tables 1 and 2 are provided to assist in the selection of required equipment and accessories. For specific item identification refer to Section III.

Table 1. Minimum specifications of equipment required

Item No.	Common name	Minimum use specifications
A1	TACHOMETER, TEST SET	RANGE: 0-1500 RPM ACCURACY: \pm .5%
A2	TORQUE, CALIBRATOR	RANGE: 10-230 lb @ 5 ft ACCURACY: + 2%
A3	BALANCE, WEIGHT SET	RANGE: 5-150 Lb, class C.
A4	STANDARD, WEIGHT SET	RANGE: 140 Lb, class C.
A5	FRACTIONAL, WEIGHT SET	Class C,

Table 2. Accessories required

Item No	Common name	Description
B1	SPLINE ADAPTER	To be fabricated as shown in figure 2
B2	LEVEL	Bench type

7. Preliminary Procedure.

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

a. Visually inspect UUT for any physical signs of damage.

b. Fabricate spline adapter as shown in figure 2.

Note. When the UUT is not within tolerance, perform the specified adjustments and continue performance check. When the UUT is not within tolerance and no adjustment is specified, the deficiency must be corrected before continuing with the procedure.

8. Torque Indicator.

a. *Performance Check.*

(1) Connect spline end of spline adapter (B1) onto splined output shaft of UUT as shown in figure 1.

(2) Connect torque calibrator (A2) to spline adapter. The horizontal plane of the arm on the torque calibrator should be from 20 to 5° above level as shown in figure 1.

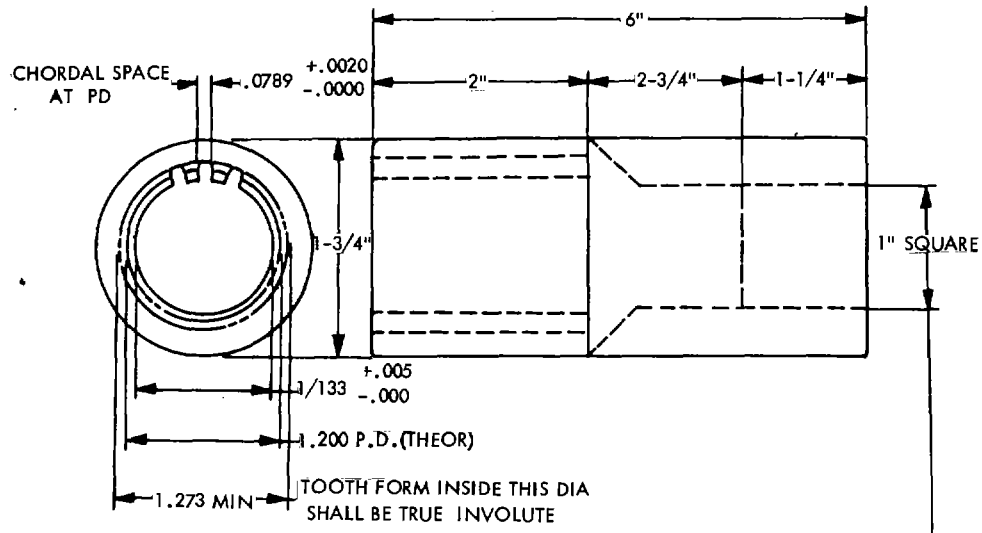
(3) Lock brake on UUT by turning LOAD control handle clockwise (in toward control panel).

(4) Add weights from weight sets (A3, A4, AS) to weight carrier until the indications listed in Table 3 are obtained.

(5) The indications observed on the UUT should not exceed the limits specified in Table 3.

Note. If an out-of-tolerance condition was observed during the preceding performance check, annotate DA Form 2416 in accordance with TM 38-750.

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



1.000 + .002 CENTRAL TO SPLINE .01
1/64 + 1/64R. PERMITTED IN FOUR CORNERS

SPLINE DATA

24 TEETH
20/400 PITCH
300 PRESSURE ANGLE
SURFACE HARDNESS
ROCKWELL C5.8 MIN.
MIN DEPTH OF EFFECTIVE CASE .010

AV035538

Figure 2. Adapter spline.

Table 3. Torque indications

UUT Indication	Weight On Weight Carrier (A2) Pounds	
	Minimum	Maximum
(0-200)		
100	9.9	10.9
140	17.9	18.9
(0-600)		
300	47	5s
480	83	89
(0-1500)		
500	81	99
800	141	159
1200	221	239

9. Tachometer.

a. Performance Check.

(1) Set TACH RANGE switch on UUT to 150 RPM

(2) Open control panel of UUT by removing the top two screws.

(3) Connect test set, tachometer (A1) to UUT tachometer.

(4) Adjust test set (A1) until the indications listed in Table 4 are obtained.

(5) Utilizing TACH ROTATION switch for each reading, the indications observed on the UUT should not exceed the limits specified in Table 4.

Note. If an out-of-tolerance condition was observed during the preceding check, annotate DA Form 2416 in accordance with TM 38-750.

b. Adjustments. No adjustments can be made.

10. Final Procedure.

a. Deenergize and disconnect all equipment and reinstall protective covers of UUT if necessary.

Note. If no out-of-tolerance condition was noted during the preceding performance checks, annotate DA Form 2416 in accordance with TM 38-750.

b. In accordance with TM 38-750, annotate and affix DA Label 80 (U. S. Army Calibration System). When the UUT cannot be adjusted within tolerance, annotate and affix DA Form 2417 (Unserviceable Test Instrument or Standard) (red tag).

Table 4. Tachometer indications

UUT Range and RPM indication	Test Set (A1) Indication RPM	
	Minimum	Maximum
(150)		
90	87	93
135	132	138
(1500)		
450	420	480
900	870	930
1350	1320	1380

Section III. SPECIFIC ITEM IDENTIFICATION

11. Identification. This section identifies specific equipment and accessories as issued with specific calibration standards sets, or specific maintenance equipment groups.

a. Equipment Identification. Table 5 lists the equipment which meets the minimum use specifications shown in Table 1. When any equipment listed in Table 5 is not avail-

able, equivalent items may be substituted provided they meet the minimum use specifications listed in Table 1.

b. Accessories Identification. Table 6 lists the equipment which meet the minimum use specifications. Equivalent items may be substituted unless specifically prohibited.

Table 5. Equipment identification

Item No.	Nomenclature	Identifying No.	Manufacturer and model no.
A1	TEST SET, TACHOMETER INDICATOR GENERATOR	6625-621-2427	Consolidated Airborne Systems, TTU/27/E
A2	TORQUE CALIBRATOR	4931-071-5378	B. K. Sweeney Model 7065631
A3	WEIGHT SET BALANCE	4931-071-5344	B. K. Sweeney Type 2
A4	WEIGHT SET STANDARD	6685-873-1910	B. K. Sweeney Type 1
A5	WEIGHT SET FRACTIONAL	7910419 4931-072-0767	B. K. Sweeney Class C

Table 6. Accessories identification

Item No.	Nomenclature	Identifying No.	Description
B1	ADAPTER SPLINE	NA	To be fabricated as shown in figure 2
B2	LEVEL BENCH	5210-241-2623	Starrett, Model 98

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