TM 9-4910-410-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS)

TESTER, ENGINE DISTRIBUTOR, BENCH-TYPE, 6, 12, AND 24-VOLT DISTRIBUTORS, SINGLE-PHASE. 60-CYCLE, 115-VOLT (SUN ELECTRIC CORPORATION MODEL PDT-5) (4910-392-2939)

HEADQUARTERS, DEPARTMENT OF THE ARMY

*13 **JANUARY** 1964*

TM 9-4910-410-12
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CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *5 July 1973*

Operator and Organizational Maintenance Manual

(INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS) TESTER, ENGINE DISTRIBUTOR, BENCH-TYPE, 6, 12, AND 24-VOLT DISTRIBUTORS, SINGLE-PHASE, 60-CYCLE, 115-VOLT (SUN ELECTRIC CORPORATION MODEL PDT-5) (4910-392-2939)

TM 9-4910-410-12, 13 January 1964, is changed as follows:

Page 2. Paragraph lf is superseded as follows. Add the following paragraphs:

Recommendations for Maintenance Publications Improvements

You can improve this manual by calling attention to errors and by recommending improvements using DA Form 2028 (Recommended Changes to Publications) or by a letter and mailing direct to Commander, US Army Weapons Command, ATTN: AMSWE-MAS-SP, Rock Island, IL 61201. A reply will be furnished direct to you.

Page 3. Add the following:

4.1. Components of the End Item

Parts included with the end item and considered as components of the end item configuration are listed in the following table:

Table 0. Components 0f the End Item

Components	Part No.	(FSCM)	Qty
ADAPTER, CHUCK:	3127-2	(82386)	1
ADAPTER, CONNECTOR:	GE4260	(41326)	1
ADAPTER, LEAD:	2546	(82386)	1
ADAPTER, VACUUM :	115-1	(82386)	1
ADAPTER, VACUUM:	115-2	(82386)	1
ADAPTER. VACUUM:	115-3	(82386)	1
ADAPTER, VACUUM:	115-4	(82386)	1
BUSHING, PIPE BR:	MS20826-16-12D	(96906)	1
BUSHING, SLEEVE:	1700	(82386)	1
BUSHING, SLEEVE:	3767	(82386)	1
TESTER, SPRING RESILIENCY:	MILT43560	(81349)	1
WRENCH, CHUCK:	1336	(82386)	1

Page 32. Appendix II is superseded as follows:

APPENDIX II

BASIC ISSUE ITEMS LIST

AND

ITEMS TROOP INSTALLED OR AUTHORIZED LIST

The basic issue items and items troop installed or authorized lists are not applicable.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
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Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

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To be distributed in accordance with DA Form 12-38 Organizational Maintenance requirements for Truck, Utility, 1/4 Ton, M151 and DA Form 12-40 Organizational Maintenance requirements for Rifle, 5.56MM, M16, M16A1.

NG: State AG (3).

*U.S. GOVERNMENT PRINTING OFFICE 1973 769620 1073

Technical Manual
No. 9-4910-410-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *13 January 1964*

TESTER, ENGINE DISTRIBUTOR, BENCH-TYPE, 6, 12, AND 24-VOLT DISTRIBUTORS, SINGLE-PHASE, 60-CYCLE, 115-VOLT (SUN ELECTRIC CORPORATION MODEL PDT-5) (4910-392-2939)

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This technical manual contains instructions on operation and maintenance of the distributor tester for the operator and instructions for organizational maintenance of the distributor tester by personnel of the using organization.

b. Appendix I contains a list of current references, including supp1y manuals, forms, technical manuals and other available publications applicable to the distributor tester.

c. Appendix II contains the basic issue items which are required by first-echelon maintenance and includes accessories, attachments, component assemblies, and subassemblies with quantities thereof, which constitute the major end item of equipment; and the first echelon maintenance accessories, tools, supplies, and spare assemblies and parts accompanying the equipment, all of which constitute the major end item of equipment; and the first echelon maintenance accessories, tools, supplies, and spare assemblies and parts accompanying the equipment, all of which constitute the major end item for issue to users.

d. Appendix III contains the maintenance allocation chart for the tester listing all maintenance and repair operations authorized for all maintenance echelons.

e. Appendix lV contains a list of repair parts which are required by the using organization for performing organizational maintenance on the distributor tester.

f. The direct reporting of errors, omissions and recommendations for improving this equipment manual by the individual user, is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed using pencil, pen or typewriter. DA Form 2028 will be completed in triplicate and forwarded by the individual using the manual. The original and one copy will be forwarded direct to:

Commanding General
Headquarters, U. S. Army Weapons Command
ATTN: AMSWE-SMM-TE
Rock Island Arsenal
Rock Island, Illinois 61202

One information copy will be provided to the individuals immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.)

2. Maintenance Allocation

a. Operator Maintenance Allocation. The prescribed maintenance to be performed by the operator will apply as reflected in the operator-maintenance (first echelon) column of the maintenance allocation chart (app. III). In all cases, where the nature of the repair, modification, or adjustment is beyond the scope or facilities of the operator, organizational-maintenance should be informed so that trained personnel with suitable tools and equipment may be provided or other instructions issued.

b. Organizational Maintenance Allocation. The prescribed maintenance to be performed by maintenance personnel of the using organization will apply as reflected in the organizational-maintenance (second echelon) co1umn of the maintenance allocation chart (app. III). In all cases, where the nature of the repair, modification, or adjustment is beyond the scope or facilities of the using organization, the supporting maintenance unit should be informed so that trained personnel with suitable tools and equipment may be provided or other instructions issued.

3. Forms, Records, and Reports

a. General. Responsibility for the proper execution of forms, records, and reports rests upon the officers of all units maintaining this equipment. However, the value of accurate records must be fully appreciated by all persons responsible for their compilation, maintenance, and use. Records, reports, and authorized forms are normally utilized to indicate the type, quantity, and condition of materiel to be inspected, to be repaired, or to be used in repairs. Properly executed forms convey authorization and serve as records for replacement of materiel in the hands of troops and for delivery of materiel requiring further repair to shops in arsenals, depots, etc. The forms, records, and reports establish the work required, the progress of the work within shops, and the status of the materiel upon completion of its repair.

b. Authorized Forms. The forms generally applicable to the units operating or maintaining this materiel are listed in appendix I. For a listing of all forms, refer to DA Pam 310-2.

c. Equipment Improvement Recommendations. Deficiencies detected in the equipment or materiels should be reported using the Equipment Improvement Recommendation section of DA Form 2407.

d. Field Report of Accidents. The reports necessary to comply with the requirements of the Army safety program are prescribed in detail in AR 385-40. These reports are required whenever accidents involving injury to personnel or damage to materiel occur.

Section II. DESCRIPTION AND DATA

4. Description

The distributor tester (fig. 1) is an electrically operated device for testing battery ignition distributor removed from the engine. It is used to determine whether a distributor meets specified tolerances required for satisfactory operation when installed on the engine. The distributor under test is driven by a 115-volt electric motor which drives a variable speed device consisting of a belt driven cone, movable idler, and disk. Manifold vacuum is simulated by the vacuum pump which is an integral part of the variable speed device. A stroboscope is provided for accurately checking cam angle, spark advance (vacuum and mechanical), and cam lobe accuracy of both single and dual breaker point distributors having either clockwise or counterclockwise rotation. A tachometer is provided to register revolutions per minute of the distributor shaft. A removable cover protects the controls and instruments of the tester.

5. Cautions and Identifying Markings

All cautions and identifying markings are printed directly on the panel or on dial faces, and are self-explanatory.

6. Data Plates

a. Tester Data Plate. The tester data plate (fig. 2) is located on the control panel above the stroboscope dial. The data plate indicates the manufacturers' name, model number, serial number, and electrical requirements.

b. Motor Data Plate. The motor data plate (3, fig. 11) is located on the top of the motor inside the tester. The data plate indicates the manufacturers name, model number, serial number, rated speed, horsepower, and electrical requirements.

7. Tabulated Data

Manufacturer	Sun Electric Corporation
Model number	PDT-5
Speed range	0-2500 rpm
Speed control	Manual
Drive motor	
Manufacturer	Marathon Electric Manufacturing Corp.
Current requirement	115-volt 60-cycle single-phase
Horsepower	1/4
Rated speed	1725 rpm
Vacuum Pump	
Vacuum rating	0-21 in. mercury
Weight	
Oversea pack	193 lbs
Unpacked	130 Ibs
Cube	6.4
Width	22 in.
Height	19 in.
Depth (front to rear)	20 in.

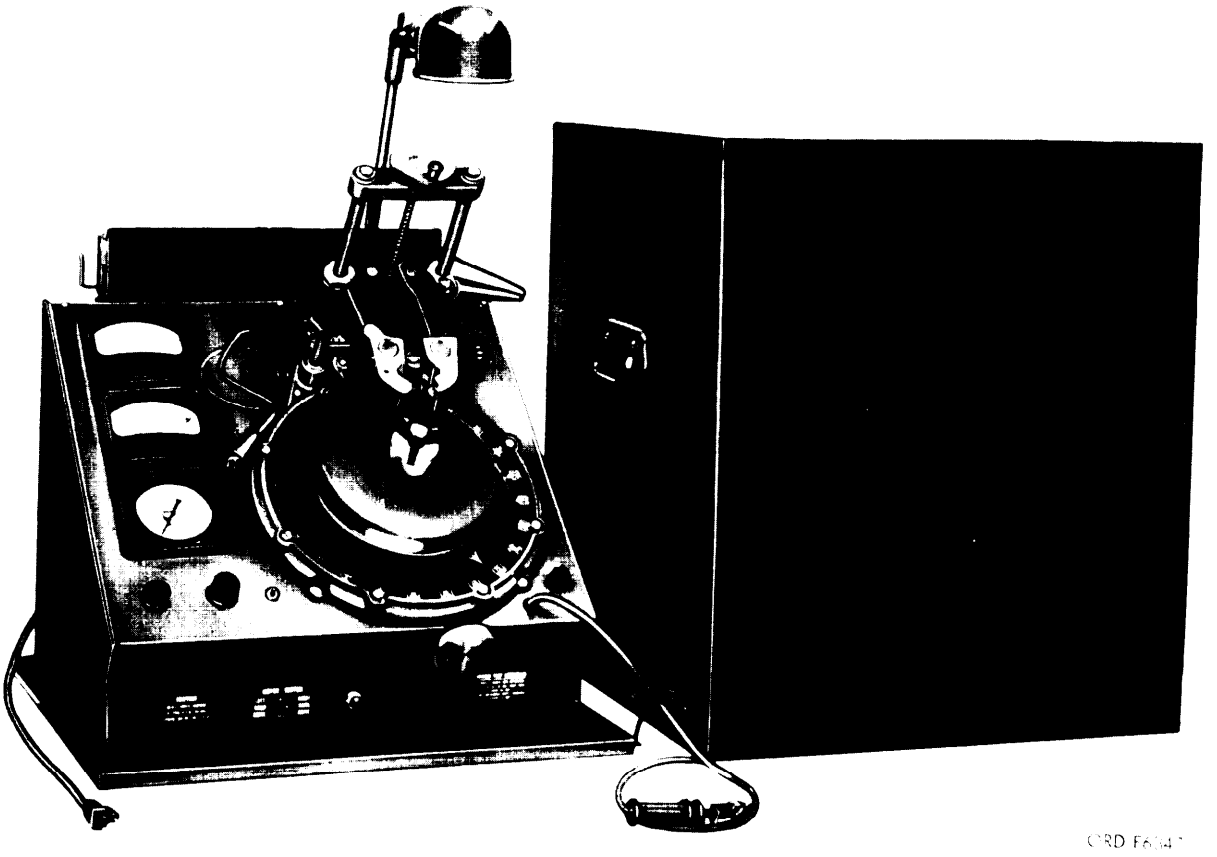

Figure 1. Distributor tester.

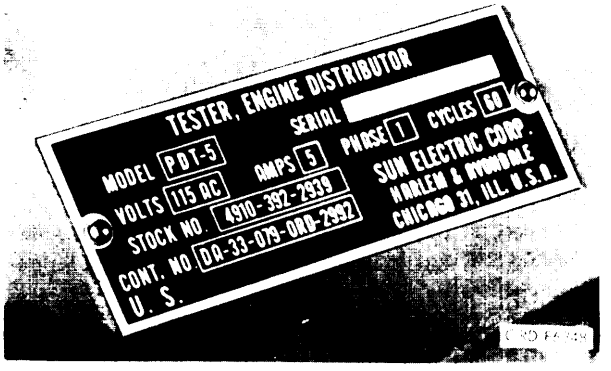

Figure 2. Tester data plate.

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF MATERIEL

8. Purpose

a. When a new or reconditioned tester is first received, it is the responsibility of the officer in charge to determine whether the materiel has been properly prepared for service by the supplying organization and to be sure it is in condition to perform its function. For this purpose, inspect all assemblies and parts to be sure they are properly assembled, secured, cleaned, adjusted, and/or lubricated.

b. Make a record of any missing or damaged parts, tools, and/or equipment, and of any malfunctions. Correct any deficiencies as quickly as possible.

9. Services

a. Unpacking and Checking. Remove the top and all four sides of the box. Remove all barrier materials. Unlatch and remove the cover from the tester. Tilt the tester or lay it on its side and remove the four 1/4-28 x 1-1/4 cap screws holding the tester to the bottom of the box and remove the tester. Unpack all tools and equipment from the tool box and check against the tools and equipment listed in appendix II.

Note. When unpacking, check all wrappings closely to he sure that no tools or equipment are discarded with the packing material.

b. Cleaning. Clean the tester and all tools and equipment as prescribed in paragraph 43.

c. Installation. Determine the position the tester is to be placed on the bench and screw four 1/4-28 headless or socket head setscrews reversed in the four tapped holes in the rails on the bottom of the tester. Place the tester in position on the bench allowing its weight to mark the bench at the setscrews. Lift the tester off the bench and drill four 5/16 holes through the bench at the spots made by the setscrews. Remove the four setscrews from the rails and secure the tester to the bench using four l/4-inch flat washers, four l/4-inch split lock washers, and four 1/4-28 hexagon head cap screws of the required length.

d. Lubrication. Lubricate the tester as prescribed in paragraph 53.

e. Inspection.

Note. The key numbers shown below in parentheses refer to figure 3.

(1) Turn the dwell meter adjustment screw (23) and the tachometer indicator adjustment screw (24) clockwise and counterclockwise to be sure they control the pointers and that the pointers are not binding. Set both pointers on zero. Set the vacuum gage (1) to its lowest point by turning the vacuum control (13) fully counterclockwise and adjust the pointer to zero (if required) by turning the vacuum gage adjustment screw (22) through the glass on the dial face. Turn the motor switch (17) off.

(2) Connect the power cable (21) to a 115-volt 60-cycle sing1e-phase source. Turn the motor switch (17) to the left hand rotation. Turn the speed range selector (18) to “2500” position. Reduce the speed of the stroboscope drive shaft to its lowest speed by turning the speed control handwheel (15) clockwise as far as possible. Slowly increase the speed by turning the speed control handwheel counterclockwise. Listen for unusual noises and watch tachometer indicator (3) to see if the speed increases at a steady rate as the speed control handwheel is turned. Reduce the speed to its minimum and turn the motor switch to the off position

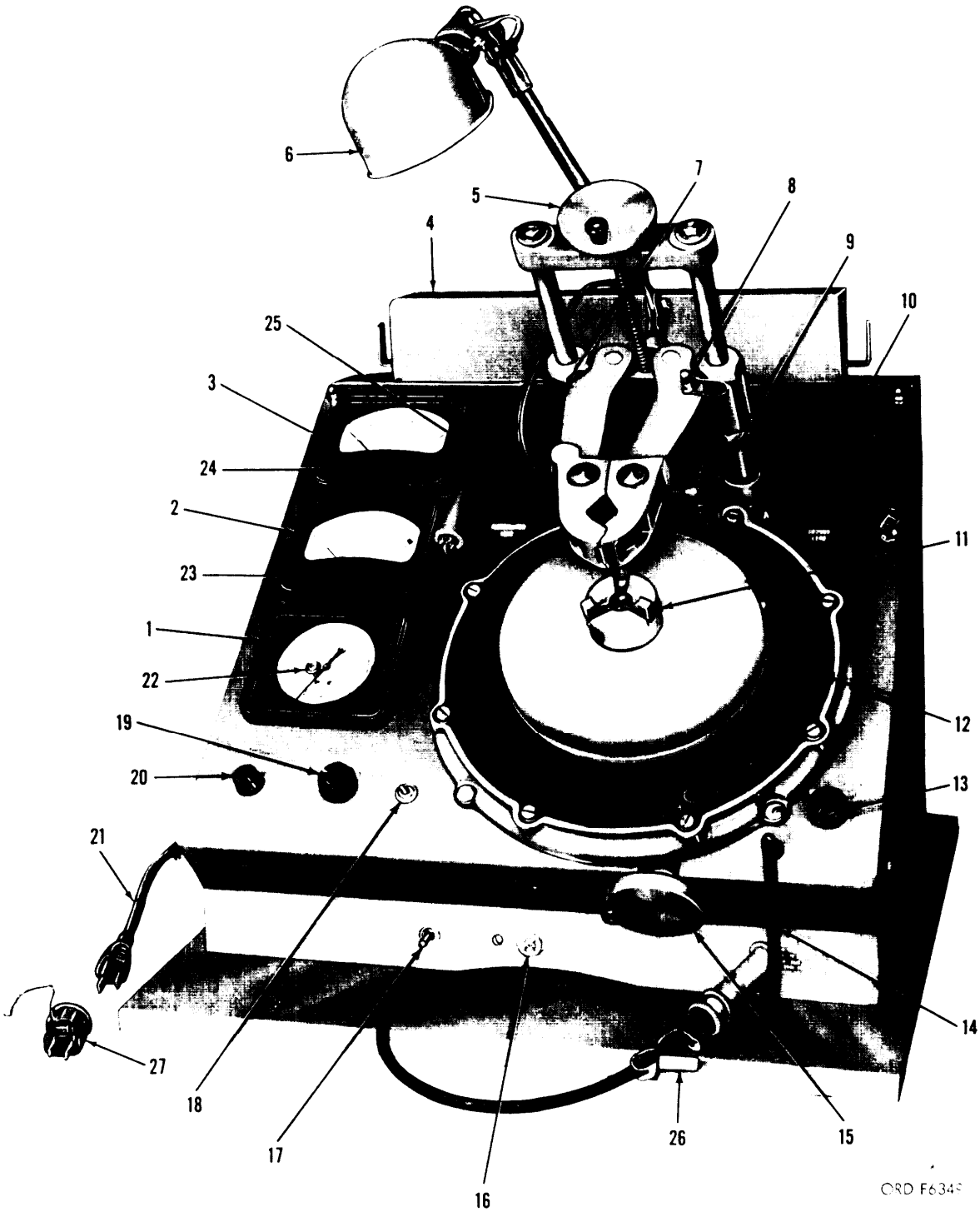

Figure 3. Controls and instruments.

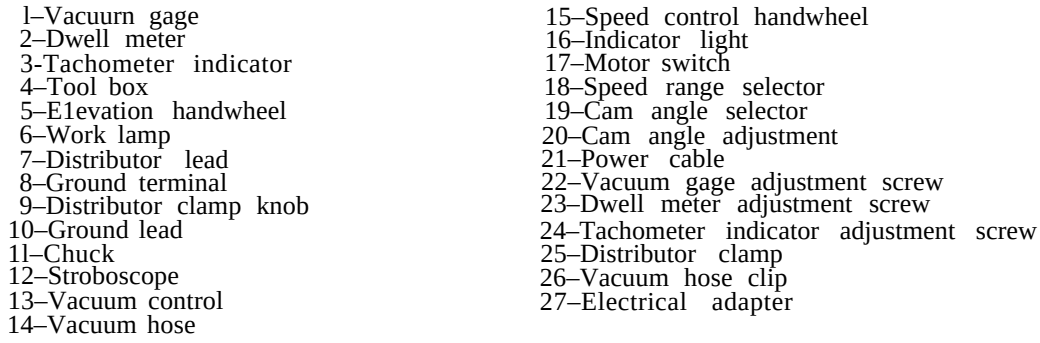

Figure 3–Continued.

until the drive motor stops. Turn the motor switch to right hand rotation and perform the checks as for left hand rotation. Turn the motor switch to the off position. Perform the above checks at 0 to 500 rpm with the speed range selector (18) in the "500" position.

(3) Turn the motor switch to either right or left hand position. Latch the vacuum hose clip (26) closing the vacuum hose (14). Decrease the vacuum to approximately 1 inch of mercury on the vacuum gage (1) by turning the vacuum control (13) counterclockwise. Then turn the control clockwise slowly and watch the pointer on the vacuum gage. The pointer indicates a maximum reading of 21 inches of mercury, See paragraph 15, for instructions on how to read the vacuum gage.

(4) Unlatch the vacuum hose clip, turn the vacuum control fully counterclockwise, and the rector switch to the off position. Disconnect the power cab1e from the power source.

Section II. CONTROLS AND INSTRUMENTS

Note. The key numbers shown below in parentheses refer to figure 3.

10. General

This section describes, locates, and illustrates the various controls and instruments and furnishes the operator with sufficient information for the proper operation of the distributor tester.

11. Distributor Lead

The distributor lead (7). is located on the control panel at the upper left of the stroboscope (12) and is used to connect the terminal of the distributor being tested to the dwell meter (2) through an electronic circuit.

12. Ground Lead

The ground lead (10) is located on the control panel at the upper right of the stroboscope (12) and is connected to a permanent ground terminal (8) on the terminal on the distributor clamp (25) during the distributor test.

13. Tachometer Indicator

The tachometer indicator (3) (identified as "DISTRIBUTOR RPM" on the dial) is located at the top and to the left on the control panel. It is actuated by a cam operated electrical relay and is calibrated

to indicate distributor shaft revolutions per minute. It has two scale ranges: 0-500 and 500-2500 rpm. A tachometer indicator adjustment button (24) located in the center of the dial at the bottom of the gage is used to zero the gage prior to operation of the tester.

14. Dwell Meter

The dwell meter (2) (identified as "DEGREES DWELL" on the dial face) is located directly below the tachometer indicator (par. 13 above) measures the degree of dwell of the distributor breaker points and is calibrated in degrees from 0 to 50, with each divisional marking indicating one degree of cam angle. A dwell meter adjustment button (23), located in the center of the dial at the bottom of the meter, is used to adjust the meter prior to operation of the tester.

15. Vacuum Gage

The vacuum gage (1) (identified as "INCHES VACUUM" on the dial face) is located directly below the dwell meter (par. 14 above). This gage is actuated by a vacuum pump (an integral part of the variable speed device) and registers the amount of vacuum applied to the distributor diaphragm. The gage is calibrated in inches of mercury from 0 to 21. The vacuum gage adjustment screw (22) is located on the dial face and is used to adjust the gage to zero before the tester is started. To adjust the pointer to zero, insert a screwdriver blade through the metal ring in the glass covering the dial and turn the vacuum gage adjustment screw clockwise or counterclockwise, as required.

16. Vacuum Control

The vacuum control (13), located at the lower right hand corner of the control panel, is used to control the amount of operational vacuum required by the distributor being tested. Turning the control counterclockwise to its fullest extent shuts off the vacuum. Adjust the vacuum gage to the desired position by turning the control clockwise.

17. Elevation Handwheel

The elevation handwheel (5), located above the distributor clamp (26), is used to elevate and lower the distributor to the required height for clamping the drive of the distributor in the chuck (11). The handwheel is turned clockwise to raise and counterclockwise to lower the distributor.

18. Speed Control Handwheel

The speed control handwheel (15), located to the right center and below the stroboscope (12), is used to vary the operation speed of the tester. Turning the wheel clockwise lowers the speed at which the distributor is being turned and counterclockwise increases the speed.

19. Indicator Light

The indicator light (16), located to the front panel below and to the left of the speed control handwheel (par. 18 above), has a metal protecting cage type cap and remains lit when the tester is in operation.

20. Motor Switch

The motor switch (17), located to the left of the indicator light (par. 19 above), is a three position toggle switch and is used to start the tester motor and control the direction in which it operates. Snapping the switch to the left operates the motor for left-drive distributors, to the right operates the motor for right-drive distributors and center position turns the drive motor off.

21. Speed Range Selector

The speed range selector (18), located to the left of the stroboscope near the bottom of the control panel, is a double throw toggle switch and is used to select the desired speed range of the distributor. Snapping the switch to its downward position operates the distributor from 0 to 500 rpm. When the switch is thrown in its upward position, the speed of the shaft of the distributor is operated from the 500 to 2000 rpm range.

22. Cam Angle Selector

The cam angle selector (19) is located near the bottom of the control panel to the left of the speed range selector (par. 21 above). This control is used to select the cam angle required for testing 4, 6, or 8 lobe position (identified as "CAL") and the selector is set to this position when adjusting the dwell meter (2) to the "set line".

23. Cam Angle Adjustment

The cam angle adjustment (20) (identified as "DWELL CALIBRATOR") is located near the bottom of the control panel to the extreme left and is used to set the dwell meter (2) on its "set line" when the dam angle selector (par. 26 above) is in "CAL" position.

24. Vacuum Hose

The vacuum hose (14) is located on the right side and near the bottom of the control panel near the vacuum control (13) and is applied to an adapter on the vacuum control of the distributors being tested. The hose is equipped with a vacuum hose clip (26) to close the hose for adjustment of the vacuum gage prior to application of the hose to the distributor (par. 32).

Section III. OPERATION

25. General

Note. The key numbers shown below in parentheses refer to figure 3.

This section contains instructions for the operation of the distributor testor under all conditions of temperature and humidity. Every organization equipped with this item must thoroughly train its personnel in the procedures for operating this item.

26. Preparation for Operation

Snap the motor switch (17) to its off position. Turn the vacuum control (13) counterclockwise to its fartherest position. If the power source does not have a three pronged receptacle, insert the prongs of the cable connector into the adapter (27) and connect the adapter to a 115-volt, single-phase, 60-cycle power source.

Note. Make sure the pigtail on the adapter is grounded to the outlet box, waterpipe, or other good ground

27. Operation

a. General. The seals on the waterproofed or sealed distributors are not to be broken prior to testing. A lead adapter (1, fig. 12) is furnished to allow the tests without removal of the distributor cap. A spring resiliency tester (11, fig. 12) is furnished for testing the tension of the breaker arm springs.

b. General Mounting Instructions. For the majority of gear driven distributors, it is quicker and easier to mount the distributor by direct use of the chuck, as shown in figure 4. However, for distributors not adaptable to the chuck, since they have a spade type drive, a chuck adapter (4, fig. 12) is provided. On those distributors requiring movement of the entire distributor for spark advance, special adapters and sleeves are furnished to allow the distributor to rotate while in the distributor clamp. Insert the machined portion of the shaft of the distributor to be tested in the distributor clamp and tighten the distributor clamp knob. Lower the shaft of the distributor into the jaws of the chuck and secure with the chuck wrench (5, fig. 12). The chuck jaws should not be tightened until *after* the distributor is clamped securely in the distributor clamp (26) and the distributor has been lowered into position. For mounting those distributors requiring the spade drive adapter, mount the adapter in the chuck and, as the distributor is lowered, turn the distributor shaft until the spade of the distributor drive engages the slot in the adapter. For those distributors requiring the use of shaft adapters,

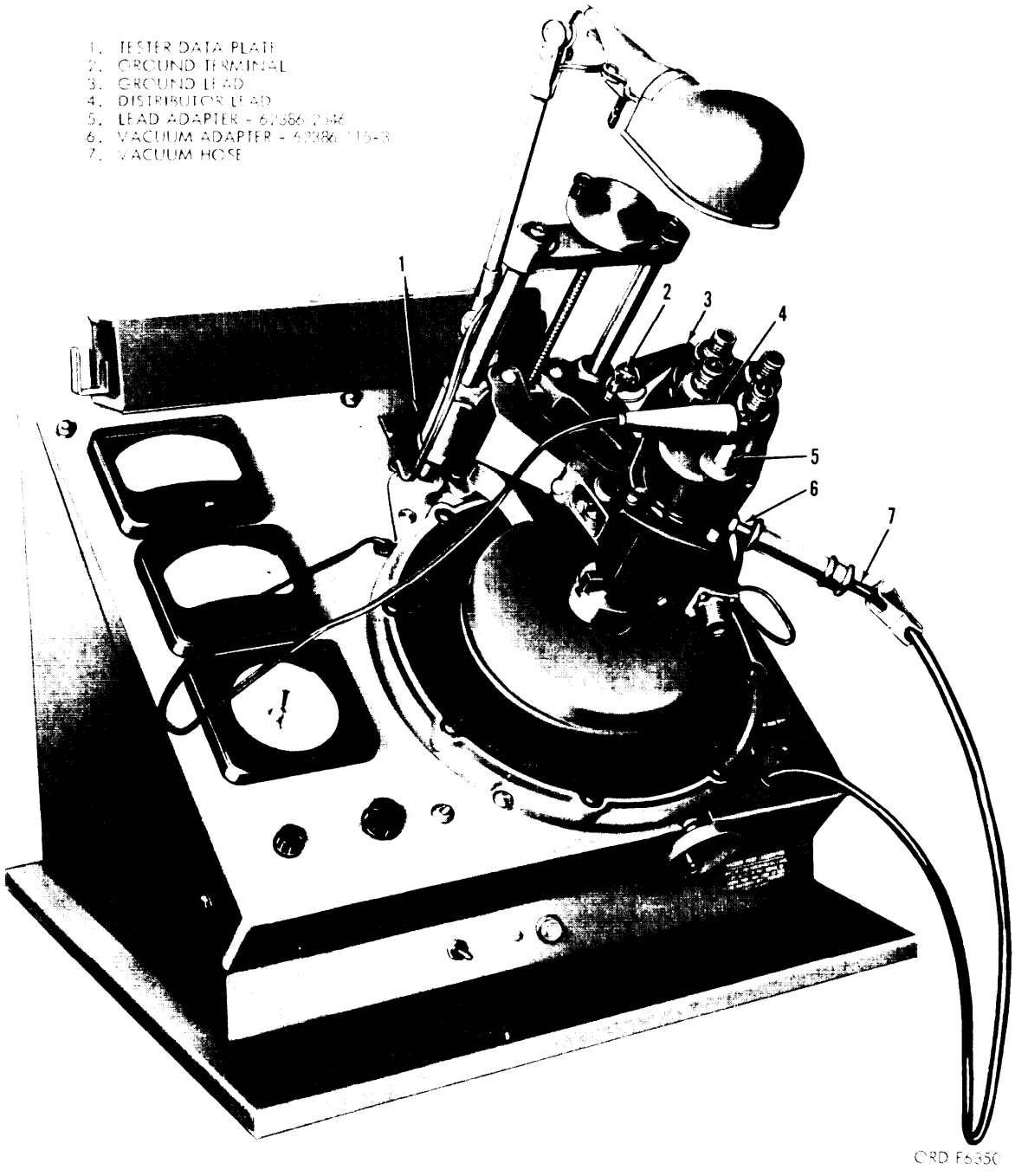

Figure 4. Mounting vacuum controlled–sealed distributor.

mount the adapter in the distributor clamp first then attach the distributor to the adapter. For waterproof sealed type distributors, mount the distributor in the same manner as those distributors without seals, screw the adapter (1, fig. 12) in the distributor, and attach the distributor lead (7) to the adapter, as shown in figure 4. If vibration is noted during operation. it may be eliminated by loosening the distributor clamp knob and, with the distributor tester speeded up, turn the distributor

slightly to the right or left as required for smoothest operation.

c. Mounting Governor Controlled Distributors (fig. 5) (with or without Vacuum Controlled Breaker Plate). Clamp the machined section of the distributor in the distributor clamp (26) and turn the elevation handwheel (5) counterclockwise until the distributor gear will engage the rubber jaws of the chuck (11). See paragraph *a* above for general mounting instructions. If the distributor has a vacuum control, install the correct vacuum adapter (fig. 12) in the vacuum control and connect the vacuum hose (14) to the adapter.

d. Mounting Vacuum Controlled Distributors Requiring Special Sleeves. Clamp the proper sleeve bushing (fig. 12) in the chuck (if Chevrolet sleeve bushing is being used, be sure the clamping nut is up). Insert the distributor shaft in the distributor clamp (26, fig. 3) so that the machined pertion of the distributor is in the distributor clamp as shown in figure 5. Secure the distributor with the clamp locking knob. Lower the mounted distributor with the elevation handwheel until the distributor gear or shaft engages the chuck (11). Tighten the chuck jaws using the chuck wrench (5, fig. 12). Install the correct adapter (fig. 12) in the vacuum control. Connect the vacuum hose (14) to the adapter after determining the correct vacuum application in accordance with the distributor specification (par. 32a). Mounting of distributors with the vacuum control attached directly to the distributor is accomplished the same as mounting distributors with no vacuum control with the exception of application of the vacuum hose. See paragraph *a* above for general mounting instructions.

28. Distributor Resistance Test

Performing the distributor resistance test will determine the resistance of the distributor's primary circuit from the distributor terminal through the breaker points to the distributor body. Excessive resistance will prevent the tester to operate at full efficiency. The procedure for making this test is as follows:

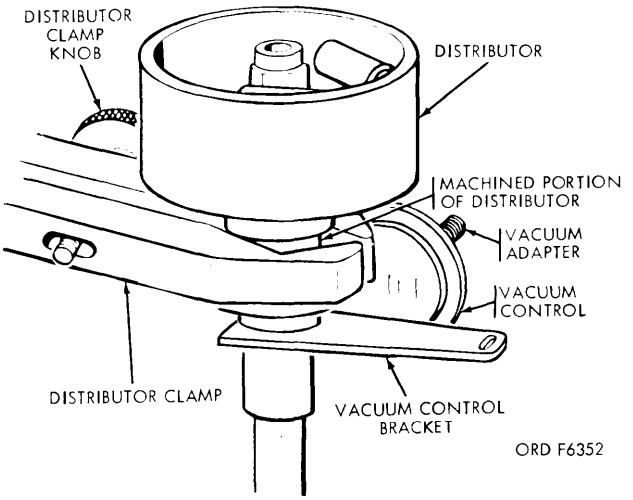

Figure 5. Mounting vacuum controlled distributors.

a. Mount the distributor as prescribed in paragraph 27.

b. Set the motor and directional switch (17) for the proper rotation of the distributor to be tested, snap the speed range selector (18) to 0-500 rpm position, and turn the speed control handwheel (15) until the tachometer indicator (3) registers zero rpm.

c. Clip the distributor lead (7) and ground lead (10) together and set the cam angle selector to "CAL" position.

d. Turn the cam angle adjustment (20) until the needle of the dwell meter (2) is on the "set line" as shown in "A", figure 6.

e. Separate the leads and connect the distributor lead (7) to the distributor and the ground lead (10) to the ground terminal (8).

f. When the distributor points are closed, the pointer on the dwell meter should read within the black bar at the right of the scale, as shown in "B" figure 6. If the pointer does not read within the black bar, excessive resistance is present and the distributor will require step by step checks with the distributor lead through the distributor electrical circuit from the primary circuit to the ground return. On distributors with two sets of points, each set must be tested separately while the other set is blocked open (par. 29g).

g. Controls. Instructions for connecting,

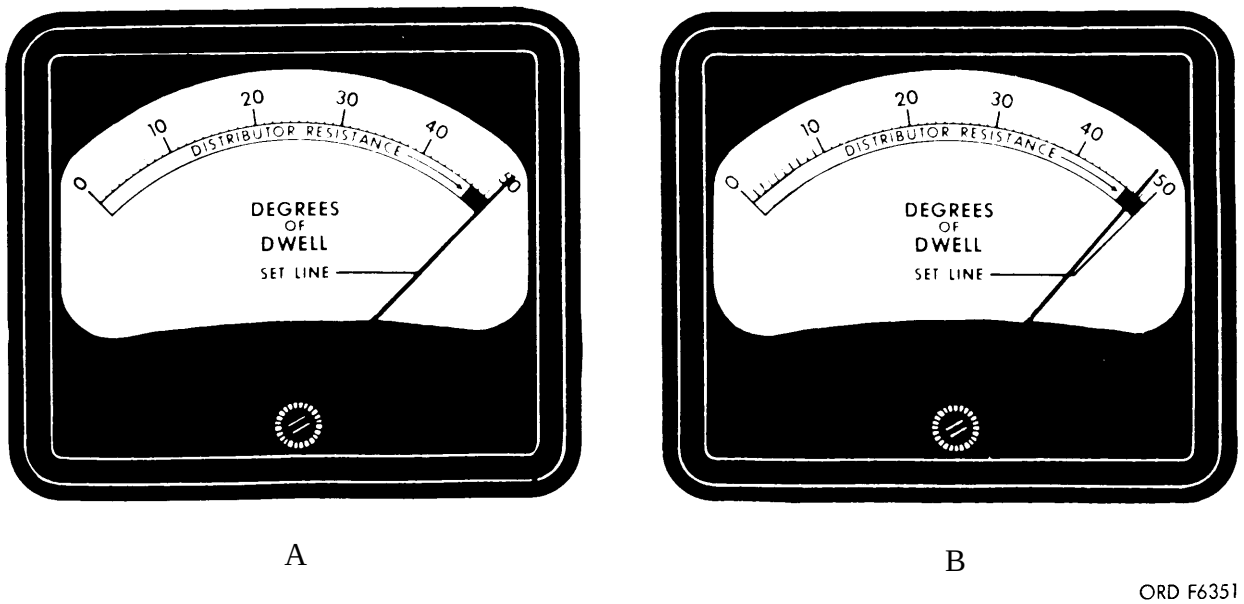

Figure 6. Dwell meter resistance readings.

starting, operating, and stopping the distributor tester are contained in paragraph 29 below.

29. Cam Angle Test

Mount the distributor (par. 27). Zero the dwell meter (2), tachometer indicator (3), and vacuum gage (1), as prescribed in paragraph 9e(l). Put the motor switch (17) in the "off" position.

b. Set the cam angle selector (19) to the "8 CYL" position and connect the distributor lead (7) to the distributor and the ground lead (10) to the ground terminal (8) on the distributor clamp (26). If there is no reading on the dwell meter (2), rotate the distributor shaft until the distributor points (fig. 7) are closed and the dwell meter shows a reading. Aline the meter pointer with the "set line" mark on the meter scale using the cam angle adjustment (20).

c. Turn the cam angle selector to either the "4 CYL", "6 CYL", or "8 CYL" position, whichever corresponds with the number of lobes on the distributor cam.

d. Set the motor switch (17), to the direction in which the distributor shaft is driven on the vehicle, and turn the speed range selector (18) to the 0-500 range.

e. Adjust the speed control handwheel (15) until the pointer reads 200 rpm on the tachometer indicator (3), read the cam angle degrees on the dwell meter, and check this reading against the cam angle of the distributor as specified by the applicable TM or by the manufacturer of the distributor.

f. Turn the speed range selector (18) to 0-2500 rpm and increase the speed to 2000 rpm. The reading on the dwell meter (2) should be within two degrees of that obtained in e above.

g. Figure 7 shows the various types of hook-up for distributors with vacuum controls, single condenser, two condensers with double breaker points, and distributors with double lead condensers. On distributors with double breaker points the cam angle on each set of points are checked separately and each must show the same reading on the dwell meter. To block one set of breaker points open while testing the other set, place a piece of fiber or any nonconducting material between the points.

h. Turn the speed control handwheel (15) clockwise and reduce the speed to its lowest point on the 0-2500 range, switch the speed range selector to 0-500 range and adjust the distributor speed to 200 rpm with the distributor still connected, and

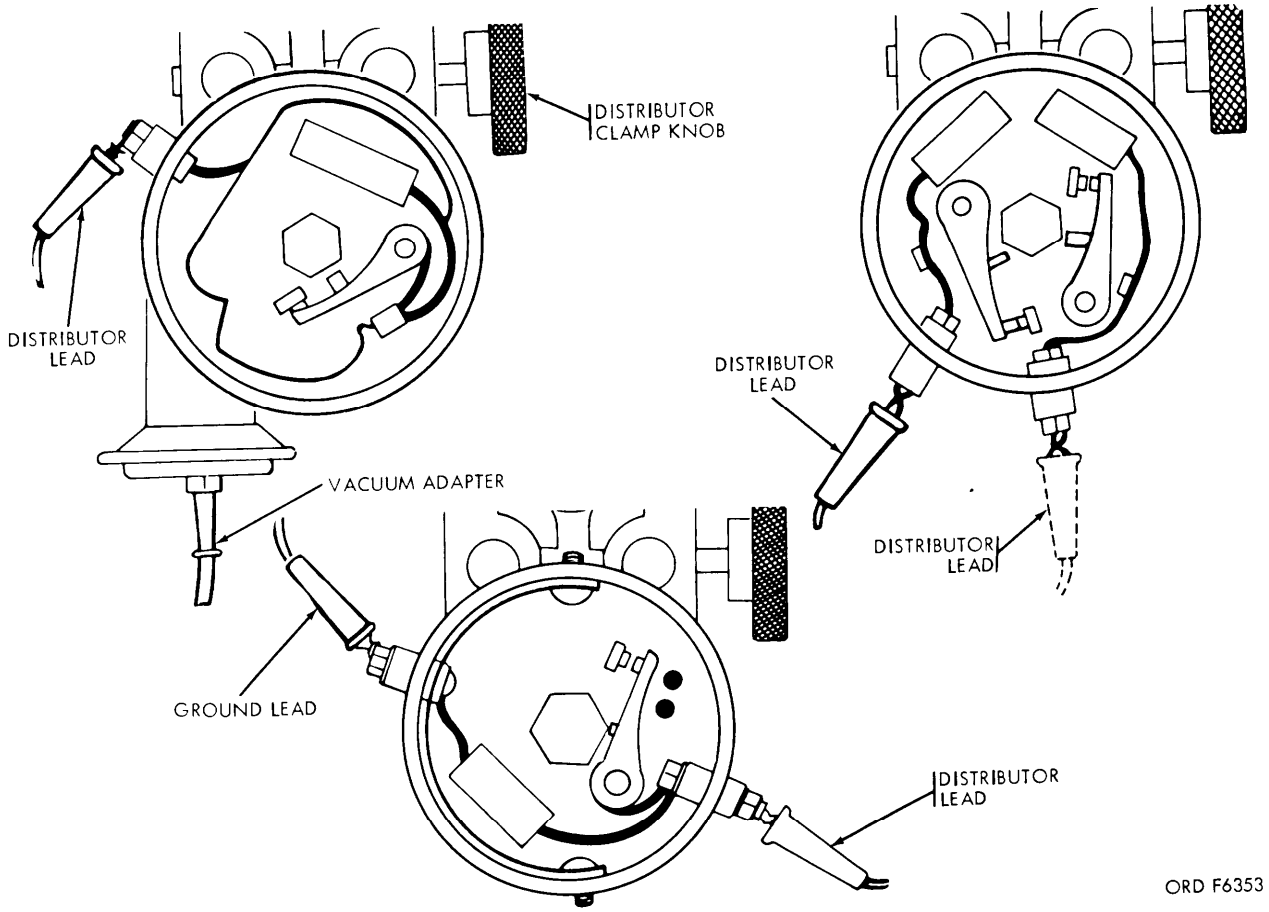

Figure 7. Cam angle test connections.

perform the cam lobe test in paragraph 30, 31, or 32, as applicable.

30. Cam Lobe Test for Distributors Without Automatic Spark Advance

a. Turn the motor switch (17) to the direction in which the distributor shaft is driven in the vehicle and with the distributor operating at 200 rpm (par. 29h above), observe the cam pattern on the stroboscope. Adjust the protractor disk with the protractor setting knob so a flashing cam lobe alines with "0" (4 - 6 - 8) mark, as shown in figure 8.

b. Check the pattern on both speed ranges from 200 to 2000 rpm. Image pattern should remain steady on the "0" mark. "Dancing" or misalignment of lines at high speed only, indicates bounding of points, poor contact, weak springs, or friction in breaker arm bearing.

c. Turn the speed control handwheel fully clockwise, set the motor and direc-

tion control switch in the "off" position and remove the distributor lead.

31. Cam Lobe Tests for Fly-ball Governor Spark Advance

a. Turn the motor switch (17) to the direction in which the distributor shaft is driven in the vehicle. Aline the "0" (4-6-8) mark on the protractor disk to coincide with one of the arrow flashes, as shown in figure 8.

b. Adjust the rpm as indicated in the applicable TM or manufacturer's specification and observe the arrow flashes opposite the tester protractor disk to determine the degree of spark advance. The arrow flashes should conform to the spark advance (distributor degrees) specified.

c. Turn the speed control handwheel fully clockwise and set the motor switch in the "off" position and remove the distributor lead.

32. Cam Lobe Tests for Vacuum Controlled Spark Advance

a. Turn the motor switch (17) to the direction in which the distributor shaft is driven in the vehicle. Adjust the speed of the distributor to the rpm called for in the applicable TM or manufacturer's specifications for the distributor. Clip the vacuum hose and adjust the vacuum in accordance with the applicable specification. Release the vacuum hose clip, connect the vacuum hose to the distributor at the adapter, and check the spark advance, as indicated in paragraph 31b above.

b. Turn the speed control handwheel (15) fully clockwise, set the motor switch in the "off" position, and remove the distributor lead and vacuum hose.

33. Synchronizing Points on Double Coil, Double Breaker Arm, and Vertical Type Distributors

a. The breaker points on double coil, double breaker distributors of the type shown in figure 9, may be synchronized by use of either primary terminals. Therefore, apply the distributor lead to one distributor terminal and set the stroboscope protractor ring for the proper distributor specification setting.

b. Turn the motor switch (17) in the direction in which the distributor shaft is driven in the vehicle and adjust the speed control handwheel until the speed meter indicates 200 rpm. Observe the pattern of disk on the stroboscope, and turn the synchronizing screw (fig. 9) so the closest set of lines may be alined or nearly so. Adjust the synchronizing screw until the best match of all lines are achieved. If there is still more than a one degree jog in any line, the cam is inaccurate. Check the manufacturer's specification or the applicable TM for proper synchronization.

Note. Be sure to lock breaker in position after completing adjustment.

c. Adjust the distributor speed to 2000 rpm Alternate the distributor lead and, if lines now dance and shift, this indicates bouncing points at high speed due to weak breaker arm springs or friction in breaker arm bearings.

d. Turn the speed control handwheel fully clockwise, set the motor and direction control switch in the "off" position and remove the distributor lead.

34. Shutting Down Tester After Use

a. Check to see that the speed control handwheel (15) and cam angle adjustment (20) are turned clockwise and counterclockwise respectively to their lowest points.

b. Check to see that the motor switch (17) is in its "off" position.

c. Disconnect the power cable (21) from the power source.

d. Wrap the power cable, leads, and vacuum hose on the hooks on the sides of the tool box (4) and stow the tools and equipment in the tool box (4).

e. Place the cover over the tester and secure with the latches.

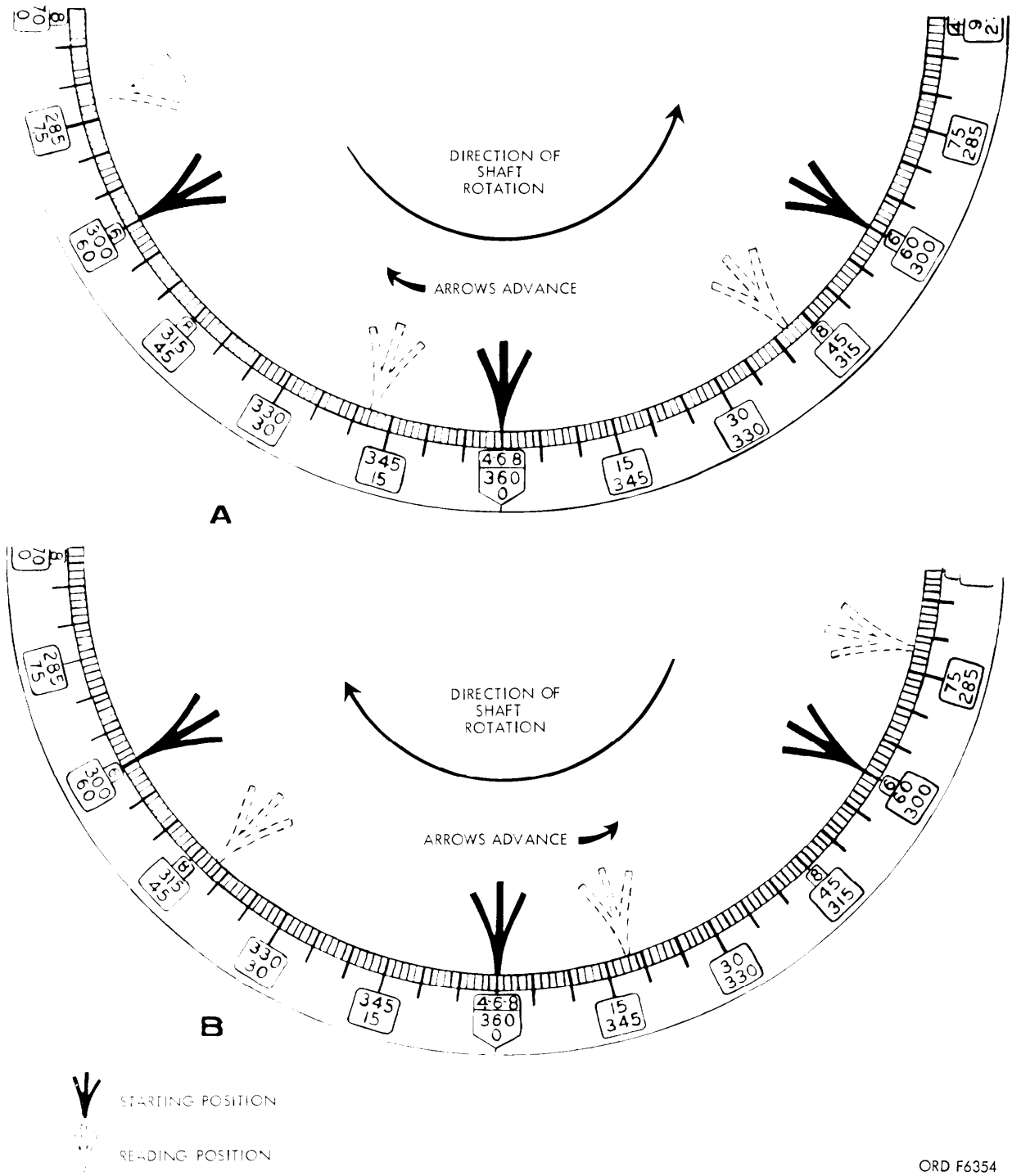

Figure 8. Setting cam lobe.

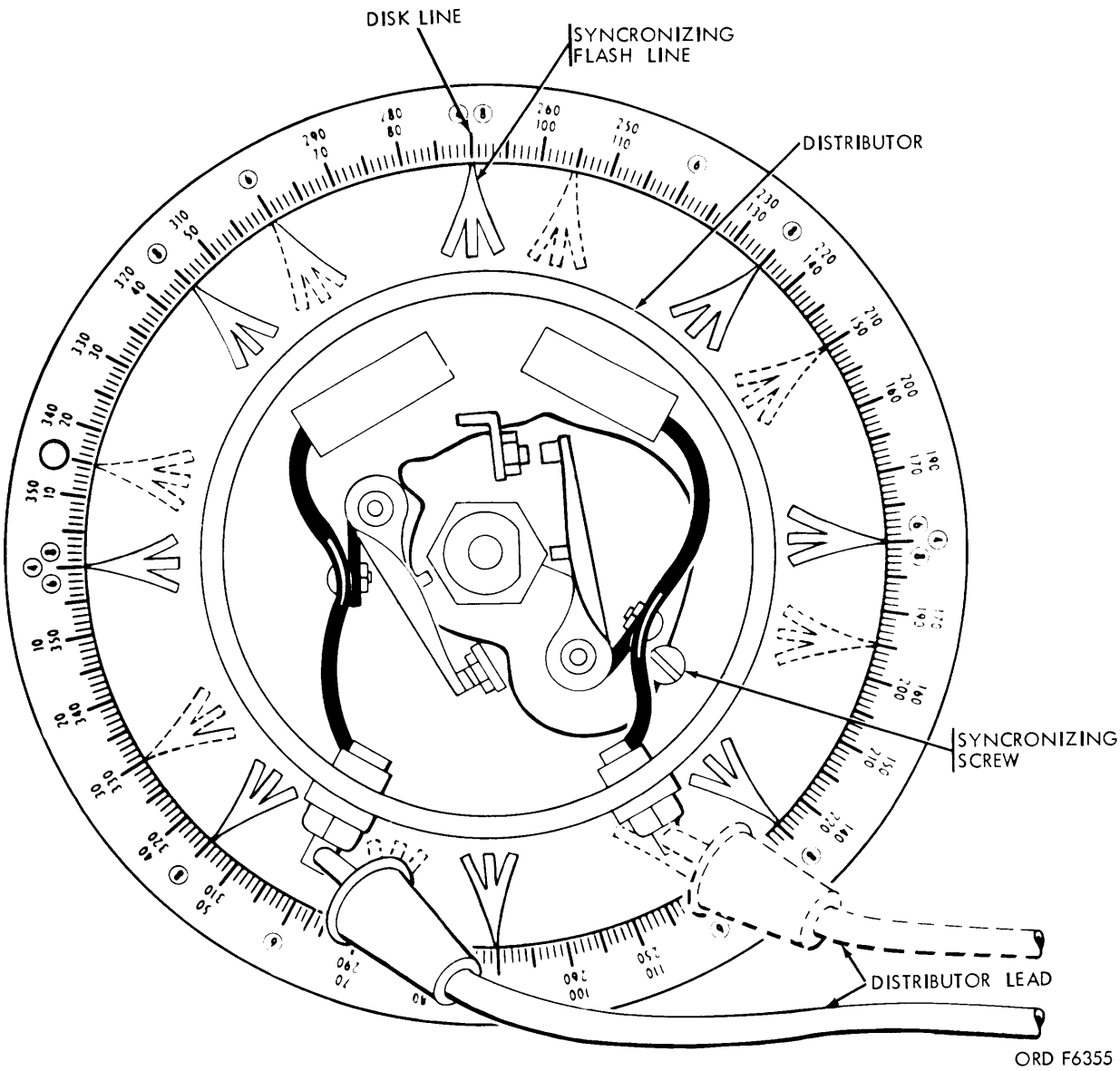

Figure 9. Synchronizing points on double coil, double point type distributors.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, TOOLS, AND EQUIPMENT

35. General

Repair parts, tools, and equipment are issued to the operator for operating and maintaining the tester. Tools and equipment should not be used for purposes other than prescribed and, when not in use, should be properly stored.

36. Repair Parts

No repair parts are supplied to the operator for replacement on the tester.

37. Common Tools and Equipment

Common tools and equipment having general application to this materiel are authorized by tables of allowances and tables of organization and equipment.

38. Special Tools and Equipment

Certain tools and equipment specially designed for operation and operator maintenance, repair, and general use with the materiel are listed in appendix II, which is the authority for requisitioning replacements.

Section II. PREVENTIVE-MAINTENANCE SERVICES

39. General

Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in a serviceable condition, prevent breakdowns, and assure maximum operational readiness. First echelon preventive maintenance is accomplished by the equipment operator. The operator's role in the performance of preventive-maintenance service is:

a. To perform the daily service each day the equipment is operated.

b. To assist the organizational maintenance mechanics in the performance of any other scheduled periodic services specified by pertinent technical manuals.

40. Responsibility

Operators and crew chiefs are personally responsible for assigned equipment. Squad, section, and platoon leaders are charged with supervisory responsibility for equipment pertaining to their commands. Unit and organization commanders are required to insure that equipment issued or assigned to their commands are properly maintained in a serviceable condition, and that they are properly cared for and used.

41. Recording Repairs

Repairs accomplished will be in accordance with procedures and standards prescribed in appropriate technical manuals. The equipment record system provides for recording repairs required and accomplished on specific items of equipment. This will include, but is not limited to, adjusting, cleaning, replacing. Deficiencies discovered before, during, and after operation that cannot be corrected by the operator will be entered on DA Form 2404. Deficiencies immediately corrected by the operator are not recorded, except when such corrections are made by replacing parts or which constitute repairs above first echelons. Such repairs will be recorded as organizational maintenance.

42. General Procedures for all Services and Inspections

a. The following general procedures apply to first-echelon preventive-maintenance services and all inspect ions, and are just as important as the specific procedures.

b. Inspection to see if items are in good condition, correctly assembled or stowed, secure, not excessively worn, not leaking, and adequately lubricated apply to most items in the preventive-maintenance and inspection procedures. Any or all of these checks that are pertinent to any item (including supporting, attaching, or connecting members) will be performed automatically, as general procedures, in addition to any specific procedures given.

(1) Inspection for "good condition" is usually an external visual inspection to determine whether the unit is damaged beyond safe or serviceable limits. Good condition is explained further as meaning: not bent, or twisted, n o t chafed or burred, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut, not deteriorated.

(2) Inspection of a unit to see that it is correctly assembled or stowed is usually a visual inspection to see if the unit is in its normal position in the vehicle, and if all its parts are present and in their correct relative position.

(3) Inspection of a unit to determine if it is "secure" is usually an external visua1 examination of a check by hand, wrench, or pry-bar for looseness. Such an inspection must include any brackets, lockwashers, locknuts, locking wires, or cotter pins as well as any connecting tubes, hoses, or wires.

(4) By "excessively worn" is meant worn beyond serviceable limits or to a point likely to result in failure if the unit is not replaced before the next scheduled inspection. Excessive wear of mating parts or linkage connection is usually evidenced by too much play (lash or lost motion). It includes illegibility as applied to markings, data and caution plates, and printed matter.

(5) Where the instruction "tighten" appears in the procedure, it means tighten with a wrench, even if the item appears to be secure.

(6) Such expressions as "adjust if necessary" or "replace if necessary" are not used in the specific procedures. *It is understood that whenever inspection reveals the need af adjustments repairs, or replacement the necessary action mull be taken.*

43. Cleaning

a. General. Any special cleaning instructions required for specific components or parts are contained in the pertinent section. General cleaning instructions are as outlined in (1) through (3) below.

(1) *Metal parts.*

(a) Use self-emulsifying decreasing solvent compound, mineral spirits paint thinner, or dry-c1eaning solvent (Stoddard) to clean or wash grease or oil from all metal parts of the tester.

(b) Use clean water or a solution of either 1/4 pound of soap chips or 6 ounces of painted-surface detergent to 1 gallon of hot water for all parts and overall general cleaning of painted surfaces.

(c) After parts are clean, dry them thoroughly. Apply a light film of special preservative lubricating oil to all parts having a polished surface to prevent misting.

(d) Before installing new parts, remove any rust-preventive compound, protective grease, etc.; prepare as required (oil seals, etc.); and for those parts requiring lubrication, apply the lubricant prescribed in the lubrication chart.

(2) Electrical parts. Use trichloroethane for c1eaning electrical parts. Do not use on material soluble in trichloroethane.

Warning: Repeated contact of trichloroethane with the skin or prolonged breathing of the times is dangerous. Make sure adequate ventilation is provided.

(3) *Rubber parts other than electrical.* Clean rubber parts with soap and warm water and dry thoroughly.

b. General Precautions in Cleaning.

(1) Provide adequate ventilation both during and after use of trichloroethane. Work rooms must not be closed in. Avoid prolonged inhalation of vapor; headache or nausea may result. In contact with skin, this cleaner may cause irritation.

(2) Self-emulsifying decreasing solvent compound, mineral spirits paint thinner, and dry-cleaning solvent are flammable and should not be used near an open flame. Fire extinguishers should be provided when these materials are used. Use only in well-ventilated places. These cleaners evaporate quickly and have a drying effect on the skin. If used without gloves, they may cause cracks in the skin and, in the case of some individuals, a mild irritation of inflammation.

(3) Avoid getting petroleum products, such as mineral spirits paint thinner, dry-cleaning solvent, engine fuels, or lubricants, on rubber parts, as they will deteriorate the rubber.

(4) The use of Diesel fuel oil, gasoline, or benzene (benzol) for cleaning is prohibited.

c. Rust Removal. Remove rust or corrosion from all parts of the materiel. To remove rust or corrosion from unfinished surfaces, use steel cleaning brushes or abrasive cloth. On finished surfaces, other than highly polished surfaces, remove rust or corrosion by buffing with a rotary wheel wire brush constructed of steel wire between 0.010 and 0.025 inch in diameter. Crocus cloth may be used manually toremove rust or corrosion from polished surfaces.

44. Preventive Maintenance by Operator

a. Purpose. To assure maximum operational readiness, it is necessary that the equipment be systematically inspected at intervals every day it is operated, so defects may be discovered and corrected before they result in serious damage or failure. Certain scheduled maintenance services will be performed at these designated intervals. Any deficiencies discovered that cannot be corrected by the operator, or corrected by replacing parts will be reported on DA Form 2404.

b. Daily Preventive-Maintenance Service. Each equipment will be inspected each day that it is operated. This service is divided into three parts, as indicated in (1) through (3) below.

(1) *Before-operation service.* This is brief service to ascertain that the equipment is ready for operation; it is mainly a check to see if conditions affecting the equipment's readiness have changed since the last after-operation service.

(2) During-operation service. This service consists of detecting unsatisfactory performance.

(3) After-operation service. This is the basic daily service for the equipment. It consists of Correcting, insofar as possible, any operating deficiencies. Thus, the equipment is prepared to operate upon a moments notice.

45. Specific Procedures for First Echelon

Table I gives the specific procedures to be performed on the equipment by the operator for each daily service.

Table 1. Preventive-Maintenance Checks and Services

1st Echelon *Daily Schedule*

Interval and Sequence			Item to be Inspected	Procedure	Paragraph reference
Before operation	During operation	After operation			
1	---	---	Cables and leads---	Inspect each cable and lead for frayed insulation and other damage.	
2	---	---	Switches ----------	Snap switches and check for positive action. After check make sure all switches are in the "off" position.	Par. 26 and figure 3.
3	---	---	Meters ----------	Zero all meters ----------	Pars. 13, 14, and 15.
	4	---	Unusual operational noises or vibration.	Loosen distributor jaws slightly and turn distributor right or left to center drive shaft.	Par. 27b.
		5	Distributor tester--	Wipe all grease and dirt from the tester. Remove equipment, store in its proper place and cover the tester.	Par. 34.

Section III. TROUBLESHOOTING

46. Purpose

Troubleshooting is a systematic determination of malfunctions and defective components by indications, symptoms, and tests. Close adherence to the procedures covered herein will materially reduce the time required to locate trouble and restore the materiel to normal operation.

Caution: Operation of materiel without a preliminary examination can cause further damage to a disabled component. Be carefu1 during inspection and troubleshooting so that damage can be avoided.

47. Scope

This section covers troubleshooting which is peculiar to the operator's (first echelon) maintenance operations.

48. Procedure

Malfunctions which may occur with the tester are listed in table II. Upon observing any one of these malfunctions, take immediate steps to locate and correct the cause. Causes are listed opposite each malfunction and are arranged according to the ease of correction.

Table 2. Troubleshooting

Malfunction	Probable cause	Corrective action
1. Distributor tester fails to start.	*a.* Power cable not connected -----	*a.* Insert plug of power cable into power source receptacle so it makes good contact (par. 9e(2) and 26).
	b. Other causes ----------	*b.* Refer other causes to organizational maintenance personnel for correction.
2. Work lamp fails to light -----	----- ------ ----- ----- ----- ---	Refer malfunction to organizational maintenance personnel for correction.
3. Tester chatters or vibrates under speed.	*a.* Shaft or distributor off center --	*a.* Loosen distributor clamp and center distributor shaft (par. 27b).

Table 2. Troubleshooting–Continued

Malfunction	Probable cause	Corrective action
	b. Rubber jaws on distributor chuck set *before* distributor clamp was tightened.	*b.* Loosen distributor clamp and distributor chuck, aline distributor and tighten distributor clamp and chuck jaws. Tighten clamp *before* chuck jaws are set (par. 27b).
	c. Other causes ----------	*c.* Refer other causes to organizational maintenance personnel for correction.
4. Vacuum pump fails to create desired vacuum control to distributor.	*a.* Vacuum hose not tight on adapter of vacuum control.	*a.* Secure vacuum hose tightly on adapter.
	b. Other causes ----------	*b.* Refer other causes to organizational maintenance personnel for correction.
5. Speed meter, cam dwell meter, and vacuum meter do not register same upon testing more than one distributor.	*a.* Meters not zeroed ----------	*a.* Zero each meter prior to testing each distributor (pars. 13, 14, and 15).
	b. Other causes ----------	*b.* Refer other causes to organizational maintenance personnel for correction.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, TOOLS, AND EQUIPMENT

49. General

Repair parts, tools, and equipment over and above those available to the operator are supplied to the using organization for maintaining the tester. Tools and equipment should not be used for purposes other than prescribed and, when not is use, should be properly stored.

50. Repair Parts

Repair parts are supplied to the using organization for replacement of those parts most likely to become worn, broken, or otherwise unserviceable, providing replacement of these parts is within the scope of organizational maintenance functions. Repair parts supplied for the tester are listed in appendix IV of this manual.

51. Common Tools and Equipment

Common tools and equipment having general application to this materiel are authorized by tables of allowances and tables of organization and equipment.

52. Special Tools and Equipment

No tools or equipment specially designed for organizational maintenance are supplied or required for the tester.

Section II. LUBRICATION AND PAINTING

53. Lubrication

a. Lubrication. Since all moving parts of the tester except the vacuum pump piston and valve are lifetime lubricated, the only lubrication service required is the application of six drops of OAI instrument oil 9150-257-5449 in the vacuum hose (while the vacuum pump is in operation) every sixty days. However, in the event that the tester is under constant use, the interval for application of the six drops of oil is reduced to thirty days.

b. Reports and Records.

(1) Report unsatisfactory performante of prescribed lubricants and preserving materials, using DA Form 2407, Maintenance Request.

(2) Maintain a record of the tester on DA Form 2408-2, Lubrication Record.

54. Painting

Instructions for preparation of materials for painting, methods of painting, and materials to be used are contained in TM 9-213. Materials for painting are listed in appendix IV of this manual.

Section III. PREVENTIVE-MAINTENANCE SERVICES

55. General

Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdown, and assure maximum operational readiness. Second echelon preventive maintenance is accomplished by the organizational mechanics. Their role in the performance of preventive-maintenance service is:

a. To perform the periodic services specified.

b. To lubricate the equipment in accordance with paragraph 53.

56. Recording Repairs

Repairs accomplished will be in accordance with the procedures and standards prescribed in appropriate technical manuals. The equipment record system provides for recording repairs required and accomplished on specific items of equipment. This will include, but is not limited to, adjusting, c1eaning, replacing, and straightening. Deficiencies and shortcomings not corrected by operators or crew, or those discovered during periodic inspections, will be corrected, insofar as possible, by second-echelon maintenance personnel. These repairs will be indicated on DA Form 2404 and recorded on the organizational maintenance record of the equipment log.

57. General Procedures

a. Automatically App1ied. All of the general procedures given in the operator's manual will be followed. Organizational mechanics must be so thoroughly trained in these procedures that they apply them automatically at all times in the performance of their duties.

b. First-echelon Participation. The operator usually accompanies the equipment and assists the organizational mechanics in the performance of second-echelon periodic services.

c. Services. Second-echelon services are defined by, and restricted to, the following general procedures unless approval has been given by the supporting ordnance organization.

(1) *Adjust.* Make all necessary adjustments in accordance with instructions contained in the pertinent section of this technical manual or technical bulletin.

(2) *Clean.* Clean the unit as outlined in paragraph 43 to remove old lubricant, dirt, and other foreign material.

(3) *Tighten.* All tightening operations should be performed with sufficient wrench torque to tighten the unit according to good mechanical practice. Do not over-tighten, as this may strip threads or cause distortion. Tightening will always be understood to include the correct installation of lockwasher, locknuts, locking wire, or cotter pins, to secure the tightened nut.

58. Specific Procedures for Second Echelon

Table III gives the specific procedures to be performed on the vehicle by second-echelon personnel for each monthly "M" service.

2nd Echclon *Table 3. Preventive-Maintenance Checks and Services* *Monthly Schedule*

Sequence number	Item to be inspected	Procedure	Reference paragraph
1	Work lamp ----	Check for damaged or frayed wire. Replace unserviceable incandescent lamp.	Par. 65d.
2	Electrical clips	Straighten bent electrical clips or replace as necessary -----	Par. 63.
3	Electrical cable nipples.	Replace cracked or damaged electrical cable nipples --------	Par. 63.
4	Vacuum pump --	Start the tester, clip the vacuum hose and check to see if vacuum will reach its maximum on vacuum gage.	Par. 24 and 32.
5	Tester case and control panel.	Check for dents and exposed surfaces. Straighten dents, tighten loose screws, and paint exposed surfaces.	See par. 54 for painting instructions.

Section IV. TROUBLESHOOTING

59. Purpose

Troubleshooting is a systematic determination of malfunctions and defective components by indications, symptoms, and tests. Close adherence to the procedures covered herein will materially reduce the

time required to locate trouble and restore the materiel to normal operation.

Caution: Operation of materiel without a preliminary examination can cause further damage to a disabled component, Be careful during inspection and troubleshooting so that damage can be avoided.

60. Scope

This section covers troubleshooting which is peculiar to organizational (second echelons) maintenance operations. For troubleshooting procedures by the operator, see section II, chapter 3.

61. Procedure

Malfunctions which may occur with the tester are listed in tables II and IV. In effect, table IV is a continuation of table II. Causes are listed opposite each malfunction and are arranged according to the ease of correction.

Table 4. Troubleshooting

Malfunction	Probable cause	Corrective action
1. Distributor ----------	*a.* Drive belt loose ----------	*a.* Remove back from tester and tighten or replace belt (par. 67).
	b. Other causes ----------	*b.* Refer other causes to field maintenance personnel.
2. Work lamp fails to light -----	*a.* Incandescent lamp burned out	*a.* Replace incandescent lamp (par. 65d).
	b. Other causes ----------	*b.* Refer other causes to field maintenance personnel.
3. Tester chatters or vibrates under speed.	*a.* Hold-down bolts loose --------	*a.* Check tester for looseness on the bench, tighten holddown bolts.
	b. Other causes ----------	*b.* Refer other causes to field maintenance personnel.
4. Vacuum pump fails to create desired vacuum control to distributor.	*a.* Pump piston or valve dry -----	*a.* Check lubrication record for dates of lubrication, apply oil in vacuum hose to lubricate pump parts.
	b. Other causes ----------	*b.* Refer other causes to field maintenance personnel.
5. Speed meter, cam dwell meter and vacuum meter do not register same when distributor is tested the second time.	----------	Refer malfunction to field maintenance personnel for correction.
6. Electrical clips do not make positive connection.	*a.* Electrical clips bent from rough usage.	*a.* Straighten electrical clips (par. 63d).
	b. Electrical clips burned.	*b.* Clean electrical clips (par. 63c).
	c. Electrical clips broken by rough usage.	*c.* Replace electrical clips (par. 63d).
7. Electrical cable nipples do not insulate electrical clips properly.	*a.* Electrical cable nipples crushed or cut.	*a.* Replace electrical cable nipples (par. 63e).
	b. Electrical cable nipples deteriorated.	*b.* Replace electrical cable nipples (par. 63e).

Section V. ELECTRICAL CLIPS AND ELECTRICAL CABLE NIPPLES

62. Description

There are three electrical clips (fig. 10) on the tester, one on each of the two coil leads and one on the cam angle lead. The clips are alligator type and are attached to the leads with a single screw terminal. The electrical cable nipples are insulators made of rubber or plastic, are 2-37/64

long overall, and completely cover the electrical clips. The nipples are easily slipped up the cable to allow access to the terminals on the electrical clips.

63. Maintenance

a. General. organizational maintenance is limited to repair or removal, installation, and replacement of the electrical clips and replacement of the electrical cable nipples.

b. Removal. Slide the electrical cable nipples (fig. 10) up the leads far enough to expose the entire electrical clips. Unscrew the terminal screws and remove the clips from the leads. Pull the electrical cable nipples off the leads.

c. *Cleaning and Inspection.*

(1) *Cleaning.* Using a stiff bristle brush remove the burns rust, and corrosion from the electrical clips. Clean the electrical cable nipples, as set forth in paragraph 43a(3).

(2) *Inspection.* Inspect the electrical clips for breaks, cracks, and distortion. Inspect the electrical cable nipples for cracks and deterioration.

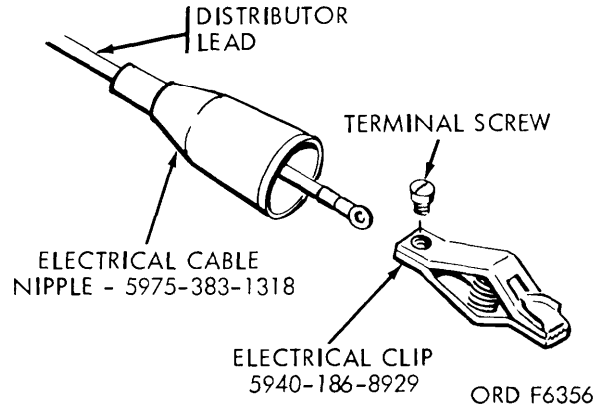

Figure 10. Electrical clips and electrical cable nipples–exploded.

d. Repair. Using pliers, straighten bent electrical clips and aline the serrated jaws so they will interlock.

e. Installation. Slide the electrical cable nipples (fig. 10) over the distributor leads (fig, 10) and up far enough to expose the lead for attaching the electrical clips (fig. 10). Attach the electrical clips and secure with the terminal screws (fig. 10). Slide the electrical cable nipples down over the electrical clips until only the jaws of the clips are exposed.

Section VI. WORK LAMP

64. Description

The fifty watt incandescent lamp used for illumination is covered by a shield to protect the operator's eyes from the glare and concentrate the light on the tester control panel.

65. Maintenance

a. General. Organizational maintenance is limited to inspection of the unit and replacement of the incandescent lamp.

b. Removal. Unscrew the incandescent lamp from the work lamp socket (4, fig. 3).

c. Inspection. Inspect the lamp lead for scuffed insulation and deterioration. Inspect the shield for dents, distortion, and other damage.

d. Installation. Install the incandescent lamp 6340-155-8634 in the lamp socket.

Section VII. DRIVE BELT

66. Description

The drive belt (2, fig. 11) is a V-type belt which transmits the drive of the motor to the variable drive unit (1, fig. 11) and the vacuum pump which is an intrical part of that unit.

67. Maintenance

a. General. Organizational maintenance is limited to the inspection, adjustment, and replacement of the drive belt.

b. Removal. Loosen the four plain hexagon nuts (5, fig. 11), slide the motor (4,

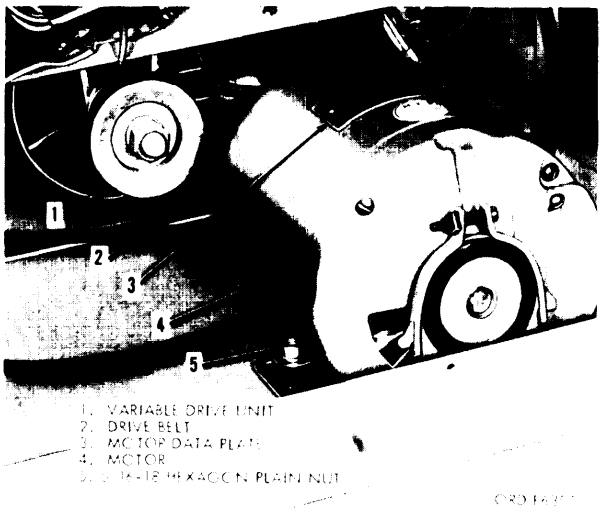

Figure 11. Drive belt, motor, and variable drive.

fig. 11) towards the variable drive unit (1, fig. 11) as far as it will go, and remove the drive belt (2, fig. 11) from the motor and variable drive unit pulleys.

c. Inspection. Inspect the be1t for cracks, breaks, excessive stretch, and deterioration.

d. Installation and Adjustment. install the drive belt *(2,* fig. 11) on pulleys of the motor (4, fig. 11) and variable drive unit (1, fig. 11). Slide the motor away from the variable drive unit until the belt is snug but not overly tight. Tighten the four hexagon plain nuts (5, fig. 11) and check the belt for proper tightness. The belt should have about 1/2 -inch deflection when squeezed half way between the motor pulley and the variable drive unit pulley.

CHAPTER 5

SHIPMENT AND ADMINISTRATIVE STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND ADMINISTRATIVE STORAGE SHIPPING INSTRUCTIONS

68. Purpose

a. Responsibility. When shipping the tester, the unit commander will be responsible for shipping the materiel, including all tools and equipment, adequately processed, packaged, and packed to protect it from damage until it reaches the echelon of maintenance for required repairs; or, in the case of troop movement, reaches its destination in a serviceable condition.

b. Army Shipping Documents. Prepare all army shipping documents in accordance with AR 725-50.

c. Preparation for Shipment. When the tester is removed from administrative storage for shipment it need not be reprocessed unless inspection reveals it to be inadequately preserved or when it is necessary because of anticipated in-transit weather or shipping conditions. Preservatives must not be removed or disturbed except as necessary to insure that the tester is complete and serviceable. If preservatives are removed, they must be restored prior to shipment.

69. Preservation, Packaging, Packing, and Marking Instructions

a. Preservation and Packaging. Preservation of the tester must be sufficient to protect it against deterioration and damage during shipment and administrative storage and/or the subsequent interval prior to use. Under no condition will tools and equipment with critical surfaces be packaged without benefit of sufficient preservation to assure adequate protection (TM 9-200). Preservation and packaging must be compatible with end use requirement.

b. Packing. Packed items must be acceptable to the carrier, while affording adequate protection to the items during shipment and administrative storage and/or the subsequent interval prior to use.

c. Marking. All materiel will be marked in accordance with TM 9-200.

70. Administrative Storage

a. General.

(1) Unit commanders may, with the approval of major commanders, place the tester in administrative storage or return to supply agencies equipment that is beyond the maintenance capability of the unit. Tester must be stored in the most favorable location available, preferably one which affords protection from exposure to elements and pilferage.

(2) All testers in administrative storage must be maintained so they will be ready for immediate use and/or ready for shipment.

(3) Administrative storage is restricted to a period of 90 days and must not be extended unless the tester is reprocessed.

b. Storage Procedures.

(1) Perform a quarterly preventive-maintenance (PM) service on the tester. This maintenance will consist of inspecting, cleaning, servicing, and preserving, as required, and will also include minor repair parts replacement (if required) *not requiring* highly technical skills, or expensive, complicated, or bulky test equipment or tools.

(2) Provide access to the tester to permit inspection, servicing, and removal from storage.

(3) Mark the tester "Administrative Storage" (by use of tags or other

convenient method). Testers so marked must not be operated while in this category.

c. Inspection in Administrative Storage. Visual inspection of the tester in administrative storage must be conducted at least once each month to detect corrosion and rust. When corrosion and rust are found, corrective action must be taken immediately. A record of these inspections must be maintained for each tester in administrative storage. The records must be attached to the tester in such a manner as to protect them from the elements.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

71. General

a. Destruction of the tester, when subject to capture or abandonment in the combat zone, will be undertaken by the using army only when, in the judgment of the unit commander concerned, such action is necessary in accordance with order of, or po1icy established by, the army commander. When in the hands of ordnance maintenance personnel or in storage, destruction will be in accordance with FM 9-5 and the information below, when applicable.

b. The information which follows is for guidance only. Certain phases of the procedures outlined require the use of explosives and incendiary grenades which normally may not be authorized items of issue to the using organization. The issue of these and related materials and the conditions under which destruction will be effected are command decisions in each case, according to the tactical situation. Of the several means of destruction, those most generally applicable are:

Mechanical - Requires axe, pick mattock, sledge, crowbar, or similar implement.

Burning - Requires gasoline, oil, incendiary grenades, or other flammables, or welding or cutting torch.

In general, destruction of essential parts, followed by burning, will usually be sufficient to render the materiel useless. However, selection of the particular method of destruction requires imagination and resourcefulness in the utilization of the facilities at hand under the existing condition, Time is critical.

c. If destruction to prevent enemy use is resorted to, the materiel must be so badly damaged that it cannot be restored to a usable condition in the combat zone either by repair or cannibalization. Adequate destruction requires that all parts essential to the operation of the materiel be destroyed or damaged beyond repair. However, when lack of time and personnel prevents destruction of all parts, priority is given to the destruction of those parts most difficult to replace. Equally important, the same essential parts must be destroyed on all like materiel, so that the enemy cannot construct one complete unit from several damaged ones.

d. If destruction by demolition or gunfire is directed, due consideration should be given to the observance of appropriate safety precautions.

72. Destruction of the Tester

a. Method No. 1 — Destruction by Mechanical Means.

(1) Disconnect the tester from its power source.

(2) Using an axe, pick mattox, sledge, or any other heavy implement, destroy the tester by smashing the meters, controls, and case.

(3) Destroy the cables and vacuum hose by cutting them into short lengths.

(4) Smash the work lamp, vacuum adapters, and other equipment. Elapsed time: about 2 minutes.

b. Method No. 2 – Destruction by Burning.

(1) Using a welding or cutting torch, burn through the case and control panel and into the electrical devices. Burn and fuse the meter parts.

(2) In absence of a welding or cutting

torch, r e m o v e the back of the tester, place piles of combustible material in and about the tester. Pour gasoline or oil over the combustible material and the tester, ignite by means of an incendiary grenade fired from a safe distance, by a combustible train of suitable length, or other appropriate means. Take cover immediately. A hot fire is required to render the materiel useless.

Elapsed time: about 3 minutes.

Warning: When igniting gasoline, due consideration should be given to the highly flammable nature of gasoline and its vapor. Carelessness in its use may result in fatal or painful burns.

APPENDIX I

REFERENCES

1. General

a. Military Publications. The packaging publications listed herein are available to activities requiring publications. Requisition technical manuals, technical bulletins, supply manuals, and supply bulletins indexed in 310 series, DA Pam in accordance with AR 310-1.

b. Commercial Publications. Commercial publications listed herein may be obtained from the following addresses: National Electrical Code; American Standards Association, 70 East 45th Street, New York 17, New York.

2. Army Regulations

Military Publications: General Policies . . . . . AR 310-1
Military Terms Abbreviations, and Symbols: Authorized . . . . . AR 320-50
Safety Accident Reports and Records . . . . . AR 385-40
Department of the Army Requisitioning Receipt and Issue System . . . . . AR 725-50
Maintenance of Supplies and Equipment . . . . . AR 750-5
Dictionary of United States Army Terms . . . . . AR 320-5-1

3. Publications Indexes

The following publication indexes should be consulted frequently for latest changes or revisions of references given in the appendix and for new publications relating to materiel covered in this manual.

Index of Army Motion Pictures, Television Recordings and Film Strips . . . . . DA Pam 108-l
Index of Blank Forms . . . . . DA Pam 310-2
Index of Training Publications . . . . . DA Pam 310-3

4. Field Manuals

Ordnance Direct Service Report . . . . . FM 9-3
Ordnance Service in the Field . . . . . FM 9-5
Military Training . . . . . FM 21-5
Techniques of Military Instruction . . . . . FM 21-6
Military Symbols . . . . . FM 21-30

5. Forms

The following forms pertain to this manual:

DD Form 6, Report of Damaged or Improper Shipment
DD Form 1348, DOD Single Line Item Requisition System Document (Manual)
DA Form 2028, Recommended Changes to DA Technical Manual Parts List of Supply Manuals 7, 8, or 9
DA Form 2404, Equipment Inspection and Maintenance Work Sheet
DA Form 2405, Maintenance Request Register
DA Form 2407, Maintenance Request
DA Form 2408-1, Equipment Daily or Monthly Log
DA Form 2408-2, Lubrication Record

6. Other Publications

a. General.

The Army Equipment Record System and Procedures . . . . . TM 38-750

b. Cleaning.

Trichloroethane, Technical (Methyl Chloroform) O-T-620

c. Painting.

Painting Instructions for Field Use . . . . . TM 9-213

d. Lubrication.

Lubrication of Ordnance Materiel . . . . . TM 9-273

e. Processing, Packging, and Packing.

General Packaging Instructions for Ordnance General Supplies . . . . . TM 9-200

f. Storage.

Protection of Ordnance General Supplies Open Storage . . . . . TB ORD 379

g. Shipping.

Department of the Army Requisitioning Receipt and Issue System . . . . . AR 725-50

APPENDIX II

BASIC ISSUE ITEMS LIST

Section I. PREFACE

1. General

This appendix is a list of basic issue list items. It is composed of those items which make up the major end items of equipment and the first echelon tools, supplies, assemblies, and repair parts that are issued with the equipment and are required for stockage.

2. Requisition Notes.

See appendix IV, paragraph 2.

3. Explanation of Columns

a. Source, Maintenance, and Recoverability Code (Col. 1).

(1) *Supply Activity (co1. 1a).* This column indicates the supplying activity assigned the supply responsibility for the listed item. Supplying activity responsible for supply of items in this list are:

Code	*Supplying Activity*
5	Engineer Materiel
9	Ordnance Materiel
10	Quartermaster Materiel

(2) Source (col. 1b). This column indicates the selection status and source for the listed item. Source codes used in this list are:

Code	*Explanation*
C	Applied to repair parts authorized for local procurement, If not obtainable from local procurement, such repair parts will be requisitioned through normal supply channels with a supporting statement of nonavailability from local procurement

(3) *Maintenance level (co1. 1c).* This column indicates the lowest maintenance echelon authorized to install the listed item. Maintenance level codes used in this list are:

Code	*Explanation*
O	Organizational maintenance (1st and 2d echelon)

(4) *Recoverability (col. 1d).* This column indicates whether unserviceable items should be returned for recovery or salvage. When no code is indicated, the item is expendable and not recoverable. Recoverability codes used in this list are:

CODE	*Explartation*
R	Items which are economically repairable at field maintenance activities (3d and 4th echelon) and are normally furnished by supply on an exchange basis.

b. Federal Stock Number (Col. 2). This column indicates the Federal stock number which has been assigned by the Cataloging Division, Defense Logistics Services Center.

c. Description (Col. 3). This column indicates the Federal item name (shown in capital letters) and any additional description required for supply operation. The manufacturer's code and part number is also included for reference.

Code	*Explanation*
82386	Sun Electric Corporation

d. Unit of Issue (Col. 4). This column indicates the quantity to be requisitioned.

e. Quantiy Authorized (Col. 5). This column indicates the quantity of the listed item authorized for stockage to constitute the prescribed load.

f. Illustration (Col. 6). This column indicates the figure number of the illustration that depicts the listed item. When more than one item appears on an illustration, the item number is also indicated.

4. Abbreviations

amp	ampheres
br	brass
c	cycle
fl	fiat
in	internal
lb	pound
NF	National fine (thread)
N P T	National taper pipe (thread)

oz . . . . . ounce
sgle-ph . . . . . single phase
tml . . . . . terminal
thd . . . . . thread
v . . . . . volt(s)

5. Suggestions and Recommendations

The direct reporting of errors, omissions and recommendations for improving this technical manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed using pencil, pen or typewriter. DA Form 2028 will be completed in triplicate and forwarded by the individual using the manual. The original and one copy will be forwarded direct to:

Commanding General
Headquarters, U.S. Army Weapons Command
ATTN: AMSWE-SMM-TE
Rock Island Arsenal
Rock Island, Illinois 61202

One information copy will be provided to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.)

Section II. BASIC ISSUE ITEMS LIST

(1) Source, maintenance, and recoverability code				(2)	(3)	(4)	(5)	(6) Illustration	
(a) Technical Service No.	(b) Source	(c) Maintenance level	(d) Recoverability	Federal stock No.	Description	Unit of issue	Quantity authorized	(a) Figure No.	(b) Item No.
					MAJOR COMBINATION				
---	---	---	R	4910-392-2939	TESTER, ENGINE DISTRIBUTOR: bench type, 6, 12, and 24v, distributors, sgle-ph 115v (82386:PDT-5).	1	1	1	---
					COMPONENTS OF MAJOR COMBINATION				
					None authorized.				
					TOOLS AND EQUIPMENT FOR:				
					TESTER, ENGINE, DISTRIBUTOR: (82386: PDT-5).				
9	C	O	---	---	ADAPTER, CHUCK: for Studebaker, IH, Cadillac, Corvair, and Renault (82386: 3127-2).	1	1	12	4
5	C	O	---	5935-545-3886	ADAPTER, CONNECTOR: plastic dielectric, 2 fl parallel male contacts and grounding lead w/tml one end, 2 fl parallel, and 1 U female contacts other end, ac/dc, 125-v, 15 amp.	1	1	3	28
9	C	O	---	---	ADAPTER, LEAD: for sealed distributors (62386:2546).	1	1	12	1
9	C	O	---	---	ADAPTER, VACUUM: 1/8-27NPT (82386: 115-1).	1	1	12	10
9	C	O	---	---	ADAPTER, VACUUM: 5/16-24NF2 (82386: 115-4).	1	1	12	9
9	C	O	---	---	ADAPTER, VACUUM: 3/8-24NF2 (82386: 115-3).	1	1	12	8
9	C	O	---	---	ADAPTER, VACUUM: 7/16-24NF2 (82386: 115-2).	1	1	12	7
5	C	O	---	4730-277-7051	BUSHING, PIPE: br, 1/4-18NPT ext thd, 1/8-27NPT int thd.	1	1	12	6
9	C	O	---	---	BUSHING, SLEEVE: for Cadillac and Studebaker (82386:3767).	1	1	12	2
9	C	O	---	---	BUSHING, SLEEVE: for Chevrolet (82386: 1700).	1	1	12	3
10	C	O	---	6635-449-3750	TESTER, SPRING, RESILIENCY: portable, designed to test tension type springs, weighing scale type, manually operated, hook load receiver, marked in oz, marked in lb, 0-5 lb range of graduation, 1/16 oz smallest increment.	1	1	12	11
9	C	O	---	---	WRENCH, CHUCK: screwdriver type (82386: 1336).	1	1	12	5

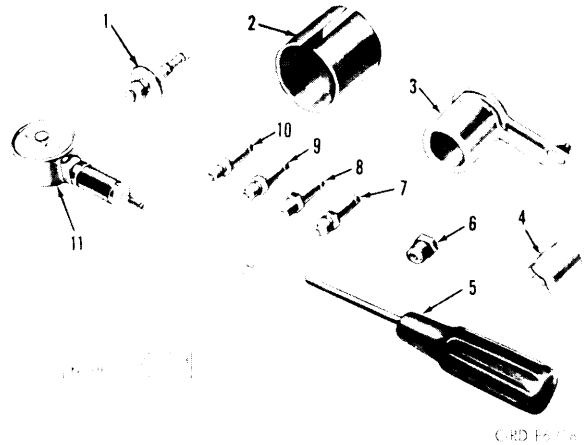

Figure 12. Tools and Equipment.

APPENDIX III

MAINTENANCE ALLOCATION CHART

1. Purpose

The maintenance allocation chart allocates specific maintenance operation to the proper level.

2. Basis

Allocation of maintenance operations is made on the basis of time, tools, and skills normally available to the various echelons in a combat situation and influenced by maintenance policy and sound maintenance practices, as outlined in AR 750-5.

3. Explanation and Definitions

The maintenance allocation chart designates overall responsibility for the maintenance function of an end item or assembly. Repair and/or rebui1d of major assemblies is designated by authority of the Army commander representative, except for the specific subfunctions listed in the maintenance allocation chart. Deviations from maintenance operations allocated in the maintenance allocation chart is authorized only upon approval by the Army commander representative.

SERVICE To clean, to preserve, and to replenish fuel and lubricants.

ADJUST To prevent or correct malfunction by maintaining prescribed 1imits or by bringing into proper or exact position.

INSPECT To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

TEST To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

REPLACE To substitute serviceable assemblies, and parts for unserviceable components.

REPAIR To restore to a serviceable condition by replacing unserviceable parts, or by any other action required; utilizing tools, equipment, and skills available to include we1ding, riveting, straightening, adjusting, etc.

REBUILD To restore to a condition comparable to new by disassembling the item to determine the condition of each of its component parts and reassembling it using serviceable, rebui1d, or new assemblies, subassemblies, and parts.

SYMBOL X The symbol X placed in the appropriate column indicates the echelon responsible for performing that particular maintenance operation but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelons marked by X are authorized to perform the indicated operation.

MAINTENANCE ALLOCATION CHART FOR
Tester, Engine Distributor (4910-292-2939)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gp No.	Component and Related Operation	1st	2nd	3rd	4th	5th
	Tester, Engine Distributor					
	Inspect ----	x				
	Service----	---	x			
	Adjust -----	x				
	Test ------	x				

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gp No.	Component and Related operation	1st	2nd	3rd	4th	5th
	Repair ----	---	---	x		
	Rebuild----	---	---	---	---	x
	Lead, Group					
	Inspect ----	x				
	Service----	x				
	Repair ----	---	---	x		
	Rebuild----	---	---	---	---	x
	Lead, Group					
	Inspect ----	x				
	Service----	x				
	Repair ----	---	x			
	Replace ---	---	---	x		
	Work Lamp					
	Inspect ----	x				
	Replace ---	---	x			
	Drive Belt					
	Inspect ----	---	x			
	Adjust -----	---	x			
	Replace ---	---	x			

APPENDIX IV

REPAIR PARTS AND SPECIAL TOOL LISTS

Section I. PREFACE

1. General

a. This appendix is a list of items which are required to be stocked by organizational maintenance units as their prescribed load. Also listed are additional repair parts which may be required for performing organizational maintenance but are to be requisitioned, as required, for immediate use only.

b. For prices of items of ordnance materiel, see the appropriate supply manual of the SM 9-2 series. Prices of items that are the responsibility of other commodity commands may be obtained from the appropriate type 2 supply manuals for those commands.

c. Additional application of items in this manual are listed in the supply manuals of the SM 9-3 series.

2. Requisition Notes

a. Repair Part Identified by Federal Stock Number.

(1) If the exact item requisitioned is not furnished, or if other action is necessary, the exact nature of the action taken by the supply agency will be indicated by standard symbols on prescribed forms.

(2) When requisitioning an item, the requesting agency will order the listed item. However, the supplying agencies will take necessary action to issue the exhaust stock item until stock is exhausted, whether it be an individual item, kit, set, or assembly.

b. Part to which FSN has not been assigned. When requisitioning a C source (local procurement) item identified only by a manufacturer's part number, it is mandatory that the following information be furnished the supply officer:

(1) Manufacturer's code number (5 digit number preceding the colon in the description column).

(2) Manufacturer's part number (the number, and sometimes letters, following the colon, (1) above). Dashes, commas, or other marks must be included exactly as listed.

(3) Noun name and dimensions, if necessary.

(4) Name of manufacturer of end item (from cover of TM or manufacturer's name plate).

(5) Federal stock number of end item (from TM).

(6) Manufacturer's mode 1 number (from TM or name/data p1ate, preferably name/data plate).

(7) Manufacturer's seria1 number (from name/data plate).

(8) Any other information such as type, frame number, and electrical characteristics, if applicable.

(9) If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field, in accordance with AR 750-50. Complete form as follows:

(a) In blocks 4, 5, and 6, list manufacturer's code and manufacturer's part number (as listed in description column).

(b) In Remarks field, list noun name (repair part), end item application (FSN of end item), manufacturer, model number (end item), serial number (end item), and any other pertinent information such as frame number, type, etc.

3. Explanation of Columns

a. Source, Maintenance, and Recoverability Code (Col. 1).

(1) *Materiel numerical codes (co1. la).* This column indicates the responsible commodity command for the

materiel. The commodity command responsible for supply of items in this list are:

Code	*Type Materiel*
3	Chemical Materiel
5	Engineers Materiel
9	Ordnance Materiel
10	Quartermaster Materiel
11	Signal Materiel

(2) *Source (col. 1b).* This column indicates the selection status and source for the listed item. Source codes used in this list are:

Code	*Explanation*
C	Obtain through local procurement. If not obtainable from local procurement, requisition through normal supply channels with a supporting statement of non-availability from local procurement.

(3) *Maintenance level (col. 1c).* This column indicates the lowest maintenance echelon authorized to install the listed item. Maintenance level codes used in this list are:

Code	*Explanation*
O	Organizational maintenance (lst and 2d echelon)

(4) *Recoverability (col. 1d).* This column indicates whether unserviceable items should be returned for recovery or salvage. When no code is indicated, the item will be considered expendable. Recoverability codes in this list are:

Code	*Explanation*
R	Items which are economically repairable at field maintenance activities (3d and 4th echelon) and are normally furnished by supply on an exchange basis.

b. Federal Stock Number (Col 2). This column indicates the Federal stock number which has been assigned by the Cataloging Division, Defense Logistics Services Center.

c. Description (Col. 3). This column indicates the Federal item name (shown in capital letters) and any additional descriptions required for supply operations. The manufacturer's code and part number is also included for reference.

Code	*Explanation*
82386	Sun Electric Corporation

d. Unit of Issue (Col. 4). This column indicates the quantity to be requisitioned.

e. Quantity Incorporated in Unit (Col. 5). This column indicates the total number of times the listed item is used in the end item (major item) or major combination. Where no quantity is shown, reference should be made to the first appearance of the item, as indicated in the "description" column.

f. 15-Day Maintenance Allowance (Col. 6). This column indicates the quantitative allowance for second echelon of the listed item. These allowances represent one prescribed load, for a 15-day period, for the number of major items supported. They must be on hand or on order at all times. Major commanders will determine the number of prescribed loads second echelon units will carry. Units and organizations authorized additional prescribed loads will multiply the number of equipments supported by the number of prescribed loads. Additional repair parts which may be required for performing authorized maintenance, but are not authorized for stockage in the prescribed load, are indicated by an asterisk (*). These items are to be requisitioned, as required, for immediate use only. Where no quantity is shown, reference should be made to the first appearance of the item, as indicated in the "description" column.

Note. The 15-day level is not applicable to special tools for organizational maintenance.

g. Illustrations (Col. 7). This column indicates the figure number of the illustration that depicts the listed item.

4. Abbreviations and Symbol

a. Abbreviations.

amp	ampere (s)
btry	battery
cd	cadmium
cntr	container
cop	copper
deg	degree (s)
dr	drum
ea	each
F	Fahrenheit
Fed	Federal
fil	filament
fin	finish
flex	flexible
GUI	gage
gal	gallon(s)

gr . . . . . grade
h . . . . . high (height)
hr . . . . . hour (s)
id . . . . . inside(diameter)
in. . . . . inch (es)
lb . . . . . pound
lg . . . . . length (long)
lt . . . . . light (weight)
max . . . . . maximum
med . . . . . medium
min . . . . . minimum
mtl . . . . . meta]
od. . . . . outside diameter(s)
opng . . . . . opening
oz . . . . . ounce
pltd . . . . . plated
pt . . . . . paint
ru . . . . . rubber
qt . . . . . quart(s)
ro . . . . . roll
s . . . . . steel
scr . . . . . screw
sq..... .... square
str . . . . . straight
term . . . . . terminal
thk . . . . . thick(ness)
v . . . . . volt(s)
w . . . . . wide, width
w/ . . . . . with
yd. . . . . yard(s)

b. Symbols.

≠ . . . . . as required

5. Suggestions and Recommendations

The direct reporting of errors, omissions and recommendations for improving this technical manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed using pencil, pen or typewriter. DA Form 2028 will be completed in triplicate and forwarded by the individual using this manual. The original and one copy will be forwarded direct to:

Commanding General
Headquarters, U.S.Army Weapons Command
ATTN: AMSWE-SMM-TE
Rock Island Arsenal
Rock Island, Illinois 61202

One information copy will be provided to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.)

Section II. REPAIR PARTS AND SPECIAL TOOL LISTS

(1) Source, maintenance, and recoverability code				(2)	(3)	(4)	(5)	(6)	(7) Illustration	
(a) Technical service No.	(b) Source	(c) Maintenance level	(d) Recoverability	Federal stock No.	Description	Unit of issue	Quantity incorporated in unit	15-Day maintenance allowance per 100 equipments	(a) Figure No.	(b) Item No.
					REPAIR PARTS FOR:					
9	---	---	R	4910-392-2939	TESTER, ENGINE DISTRIBUTOR: (82386:PDT-5).	---	---	---	---	
11	C	O	---	5975-383-1318	CABLE NIPPLE, ELECTRICAL: ru or plastic, flex., str-type, 13/64 max od cable, 2-37/64 lg, 41/64 id, black.	ea	2	*		
9	C	O	---	5940-521-3276	CLIP, ELECTRICAL: btry-style, 1/2 max jaw opng, S, cd-pltd fin., uninsulated, 1/16 h, 2-7/16 lg, 1/4 w, 20 amp, 1 scr type term.	ea	2	*		
5	C	O	---	6240-155-8634	LAMP, INCANDESCENT: 115-v, 50-watt, 1C-22 tungsten fil, rough service, med scr base, A19 bulb, inside frosted, white light, lamp, 50 A/RS.	ea	1	1	---	
9	C	O	---	---	BELT V: drive, motor to variable drive unit (82386:658-2).	ea	1	*		

(1) Source, maintenance, and recoverability code				(2)	(3)	(4)	(5)	(6)	(7) Illustration	
(a) Materiel code	(b) Source	(c) Maintenance level	(d) Recoverability	Federal stock No.	Description	Unit of issue	Quantity incorporated in unit	15-Day maintenance allowance per 1 to 5 equipments	(a) Figure No.	(b) Item No.
					CLEANING AND PRESERVING MATERIALS					
5	---	---	---	8020-597-4770	BRUSH, PAINT: fl, hog bristle, w/ sq-edge, 3 w, 7/8 thk, 3-1/8 min exposed lg, H-B-420, class 1, gr B, size 3 in.	ea	---	≠	---	---
					CLEANING COMPOUND, SOLVENT: alkali type, Fed P-C-436a.					
9	---	---	---	6850-598-3057	35 lb pail	lb	---	≠	---	---
9	---	---	---	6850-224-6661	100 lb dr	lb	---	≠	---	---
					CLEANING COMPOUND, SOLVENT: self-emulsifying, MIL-S-11090.					
9	---	---	---	6850-224-6665	5 gal cntr	gal	---	≠	---	---
9	---	---	---	6850-224-6666	55 gal dr	gal	---	≠	---	---
10	---	---	---	7930-249-8036	DETERGENT, PAINT SURFACE: powdered, used for general cleaning, Fed P-C-431a, type I, 5 lb pail.	lb	---	≠	---	---
					DRY CLEANING SOLVENT: liquid form, to remove soil from surfaces in dry cleaning process, petroleum distillate, 140 deg F flash pt, Fed P-S-661, type II.					
10	---	---	---	6850-281-1986	55 gal dr (16 ga)	gal	---	≠	---	---
10	---	---	---	6850-285-8011	55 gal dr (18 ga)	gal	---	≠	---	---
10	---	---	---	6850-637-6135	bulk	gal	---	≠	---	---
					ENAMEL: full gloss, 8 hr max air dry hard time, gray color no. 16187, Fed TT-E-489, class A.					
5	---	---	---	8010-298-2300	1 qt can	can	---	≠	---	---
5	---	---	---	8010-286-7731	1 gal can	gal	---	≠	---	---
5	---	---	---	8010-286-7749	5 gal pail	gal	---	≠	---	---
					LUBRICATING OIL: instrument MIL-L-6085, symbol OAI.					
10	---	---	---	9150-257-5449	4 oz spout can	oz	---	≠	---	---
					PRIMER, COATING: 30 min max air drying time for recoating, Fed TT-P-664.					
5	---	---	---	8010-161-7274	1 gal can	gal	---	≠	---	---
5	---	---	---	8010-161-7275	5 gal can	gal	---	≠	---	---
					RAG, WIPING: cotton, sterilized, unbleached, white, designed for general purpose use, Fed DDD-R-30, class II.					
10	---	---	---	7920-234-8462	5 lb bag	lb	---	≠	---	---
10	---	---	---	7920-205-1711	50 lb bale	lb	---	≠	---	---
					REMOVER, PAINT: alkali-organic solvent, nonflammable, liquid, 50 gal in a 55 gal agitator dr, MIL-R-12294.					
5	---	---	---	8010-283-0511	5 gal cntr	gal	---	≠	---	---
5	---	---	---	8010-283-7719	55 gal dr	gal	---	≠	---	---
5	---	---	---	8010-227-1693	REMOVER, PAINT: alkali (ferrous mtl) Fed TT-R-230, class I, 400 lb dr.	lb	---	≠	---	---
5	---	---	---	8010-227-1694	REMOVER, PAINT: alkali (nonferrous mtl) Fed TT-R-230, Class II, 400 lb dr.	gal	---	≠	---	---

(1) Source, maintenance, and recoverability code				(2)	(3)	(4)	(5)	(6)	(7) Illustration	
(a) Materiel code	(b) Source	(c) Maintenance level	(d) Recoverability	Federal stock No.	Description	Unit of issue	Quantity incorporated in unit	15-Day maintenance allowance per 1 to 5 equipments	(a) Figure No.	(b) Item No.
					CLEANING AND PRESERVING MATERIALS — Continued					
					TAPE, PRESSURE, SENSITIVE ADHESIVE: cellulose backing, transparent, 3 in. od of core, Fed PPP-T-60, type III, class 2, clear, 72 yd lb.					
10	---	---	---	8135-663-3732	1 in. w	ro	---	≠	---	---
10	---	---	---	8135-266-6715	2 in. w	ro	---	≠	---	---
10	---	---	---	8135-281-2700	3 in. w	ro	---	≠	---	---
5	---	---	---	8010-242-2089	THINNER, PAINT, MINERAL SPIRITS: 340 deg F to 485 deg F distillation range, Fed TT-T-291a, lt type thinner, 1 gal can.	gal	---	≠	---	---
					TRICHLOROETHANE, TECHNICAL: (methyl chloroform) (O-T-620).					
3	---	---	---	6810-664-0387	1 gal can	gal	---	≠	---	---
3	---	---	---	6810-664-0275	5 gal can	gal	---	≠	---	---

INDEX

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Ft Monmouth (2)
Ft Story (1)
USMA (2)
USA Ord Sch (2)
USAAMS (2)
USAQMS (2)
USAARMS (4)
Army Dep (1) except
  Mt Rainier (2)
  Letterkenny (2)
Arsenals (2) except
  Raritan (10)
  Detroit (5)
Springfield Armory (1)
Brooklyn Army Tml (1)
USAOCDA (1)
USA Avn & Sur Mat Comd (2)
USAEPG (1)
APG (1)
Dugway PG (1)
Yuma PG (1)
Engr Cen (2)
TC Tng Comd, Ft Eustis (2)
TC Stg Sta, Camp Kilmer (1)
TC Stg Sta, Ft Hamilton (1)
TC Stg Sta, Ft Dix (1)
TC Stg, Ft Devens (1)
TC Stg Sta, Camp Leroy Johnson
TC Stg Sta, Camp A. P. Hill (1)
TC Stg Sta, Ft Bragg (1)
TC Stg Sta, Camp Pickett (1)
TC Stg Sta, Ft Benning (1)
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NG: State AC (3).
USAR: Same as Active Army except allowance is one copy to each unit.
For explanation of abbreviations used, see AR 320-50

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