

TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT
AND DEPOT MAINTENANCE MANUAL

MOTOR-GENERATOR PU-724/G
(NSN 6125-00-617-1435)

This copy is a reprint which includes current pages from Changes 1 and 2. Title was changed by Change 1 as shown above.

HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1971

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Do not remove covers or expose live parts until dc input is disconnected.

CHANGE }
NO. 2 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 12 December 1983

**OPERATOR, ORGANIZATIONAL, DIRECT
SUPPORT, GENERAL SUPPORT, AND DEPOT
MAINTENANCE MANUAL
MOTOR GENERATOR PU-724/G
(NSN 6125-00-617-1435)**

TM 11-6125-2125, 7 July 1971, is changed as follows:

1. New or added material is indicated by a vertical bar in the margin of the page.
2. Added or revised illustrations are indicated by a vertical bar adjacent to the illustration identification number.
3. Remove old pages and insert new pages as indicated below.

Remove Pages

i
1-1
3-1 and 3-2
4-1 through 4-3
7-1 and 7-2
A-1

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3-1 and 3-2
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4. File this change sheet in front of the publication for reference purposes.

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To be distributed in accordance with DA Form 12-51, Operators
Maintenance requirements for PU-724/G.

TECHNICAL MANUAL

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OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT,
GENERAL SUPPORT, AND DEPOT MAINTENANCE MANUAL

MOTOR GENERATOR PU-724/G (NSN 6125-00-617-1435)

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CHAPTER 1

INTRODUCTION

Section 1. GENERAL

1-1. Scope

This manual describes Motor Generator PU-724G (fig. 1-1), and contains procedures for installing and operating it. The manual also contains operator, organizational, direct support, general support, and depot maintenance procedures. These include inspection, testing, and parts replacement authorized for operator maintenance level and higher.

1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55 /NAVMATINST 4355 .73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-3.1. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes or if you know of a way to improve

the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. In either case, a reply will be furnished direct to you.

1-3.2. Reporting Equipment Improvement Recommendations (EIR)

If your Motor-Generator PU-724/G needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth. ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

1-3.3 Administrative Storage

Administrative Storage of Equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in paragraphs 7-1 and 7-2, and TM 740-90-1, Administrative Storage of Equipment.

1-3.4. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

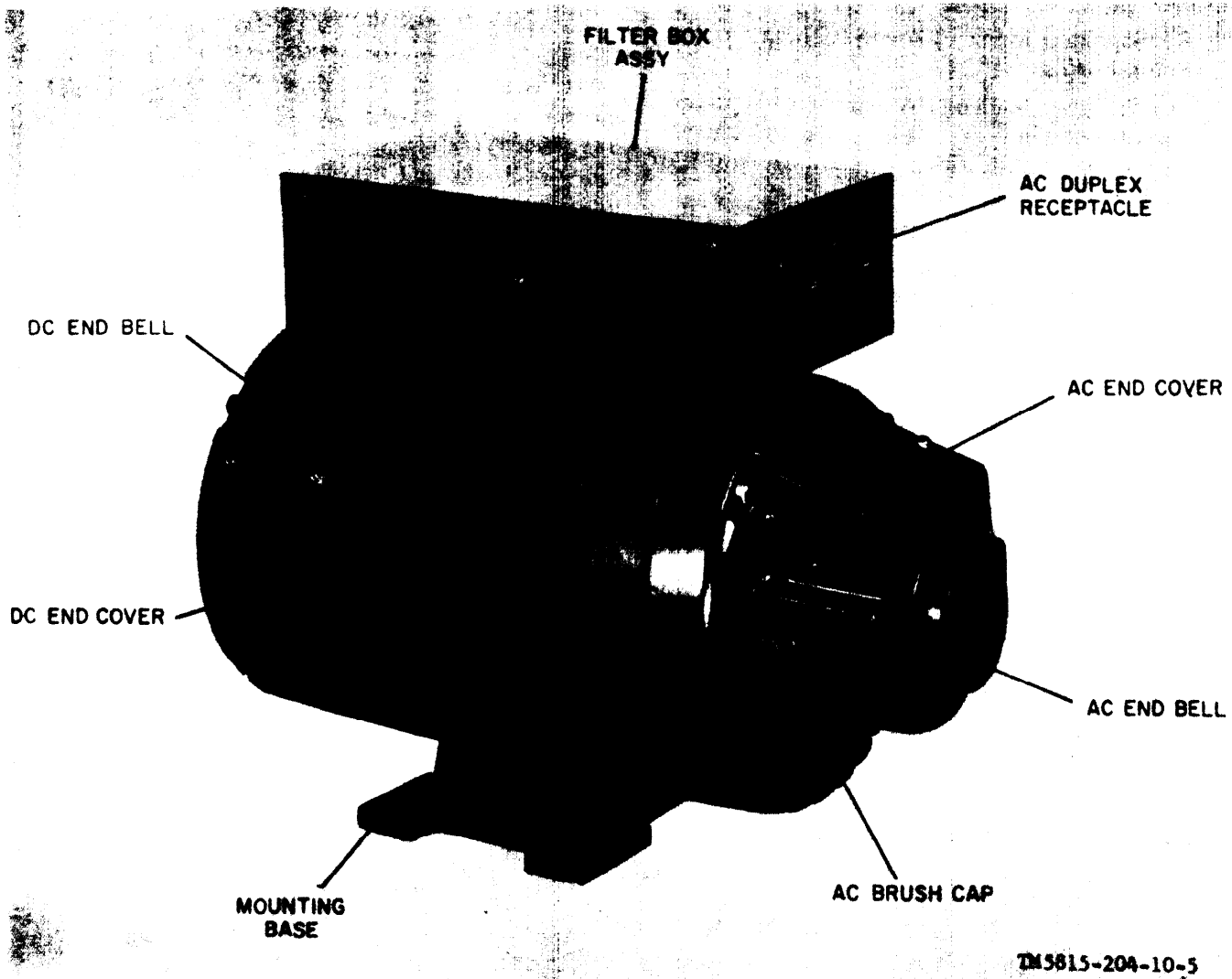


Figure 1-1. Motor generator PU-724/G.

CHAPTER 2

INSTALLATION AND OPERATION

Section I. INSTALLATION

2-1. General

The motor generator is designed for easy installation. It requires only placement and connection of the input and output cables in order to be ready for service.

2-2. Unpacking

a. The motor generator is mounted on a 3/8-inch piece of plywood 7 1/2 inches by 15 inches and shipped in a sealed, corrugated paper container 11 inches high, 17 inches wide, and 8 inches deep, having a volume of 0.86 cubic feet and a gross weight of 48 pounds (fig. 2-1).

b. Unpack carefully and remove the unit from the mounting board. Retain the two copies of the instruction book packed in the carton.

2-3. Checking Unpacked Equipment

a. Inspect the equipment for damage that may have occurred during shipment. If the equipment

has been damaged, fill out and forward DD Form C (para 1-2 *b*).

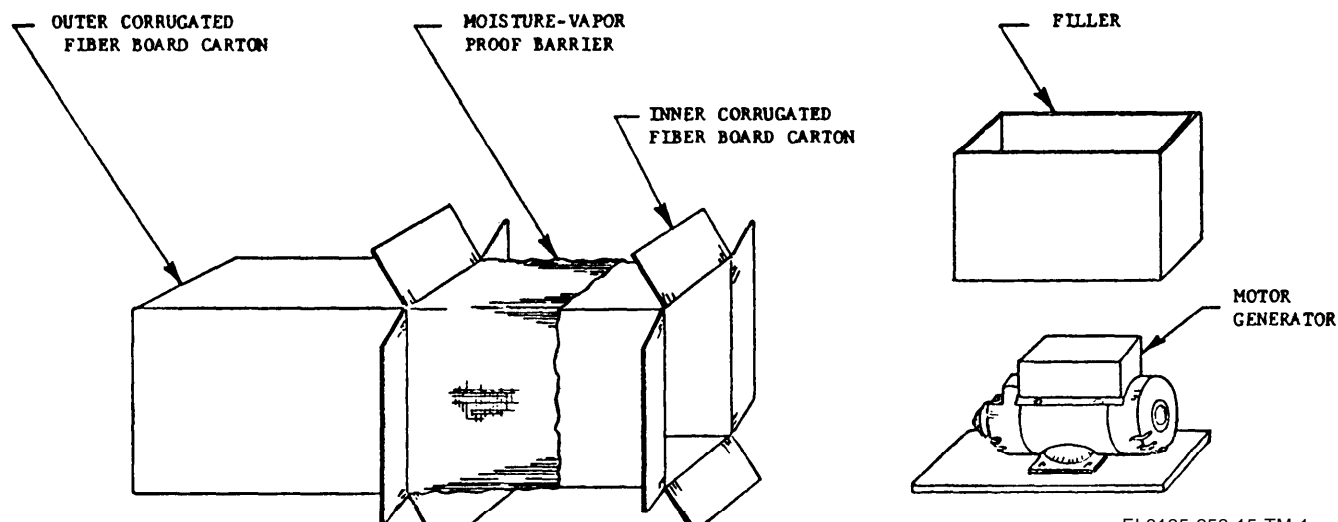
b. The motor generator comes packed as a single unit without additional components or accessories and is complete within itself.

c. Check to see whether the equipment has been modified. If the equipment has been modified, the MWO number will appear near the nomenclature plate. Check also to see whether all MWOs current at the time the equipment is placed in use have been applied.

NOTE

Current MWOs applicable to the equipment are listed in DA PAM 310-7.

d. Check the latest issue of DA Pam 310-4 (never more than 1 year old) and its latest changes (never more than 6 months old) to see whether you have the latest editions of all applicable maintenance literature. (Equipment issued by depots may have been in stock for some time and may contain superseded manuals.)



EL6125-252-15-TM-1

Figure 2-1. Packaging motor generator.

2-4. Installation

a. Mounting. The motor generator can be mounted by means of four hexagon head 5/16 bolts with a flat washer under the heads. Use the four slots in the stamped steel base. The unit should be mounted on a level surface with the axis of the armature horizontal.

b. Moisture. All electrical equipment should be protected against excessive moisture. Failure to do so can result in deterioration of the insulation and could result in short circuits and grounds.

c. Dirt. Foreign materials such as dust, sand, lint, and abrasives can cause excessive bearing and brush wear. It is therefore important that the unit be installed in a reasonably clean location for best results.

d. Connection. Remove the filter box cover (fig. 5-1). Insert the dc input cable through the cable clamp in the cover and connect the leads to the proper polarity terminals on the input terminal strip. Replace the cover and tighten the cable clamp. Plug the load cable into the ac receptacle in the filter box cover.

Section II. OPERATION

2-5. Stop

This section covers the operation of the motor generator and the operators maintenance instructions.

2-6. Operation

a. Starting. Turn on the dc power supply to the motor generator. Ac power is available at the duplex receptacle.

b. Running. Air circulation through the ventilating openings must not be blocked. Avoid the circulation of dirt and foreign materials in the ventilating air.

c. Stopping. Turn off the dc power supply.

d. Adjustments. No adjustments need be made on the motor generator.

CHAPTER 3

OPERATOR'S MAINTENANCE INSTRUCTIONS

3-1. Scope of Maintenance

The following is a list of maintenance duties normally performed by the operator of the motor generator. These procedures do not require special tools or test equipment.

- a. Preventive maintenance (para 3-2).
- b. Cleaning (para 3-3).
- c. Deleted.
- d. Operational checks (para 3-4).

3-2. Preventive Maintenance

NOTE

Refer to TM 750-244-2 for proper procedures for destruction of this equipment to prevent enemy use.

a. Operator/crew preventive maintenance is the systematic care, servicing and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to maintain equipment in serviceable condition. To be sure that your motor generator is always ready for your mission, you must do scheduled preventive maintenance checks and services (PMCS).

(1) BEFORE OPERATION, perform your B PMCS to be sure that your equipment is ready to go.

(2) When an item of equipment is reinstalled after removal, for any reason, perform the necessary B PMCS (para 3-2.1) to be sure the item meets the readiness reporting criteria.

(3) Use the ITEM NO. column in the PMCS table to get the number to be used in the TM ITEM NO. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

b. Routine checks like CLEANING, DUSTING, WASHING, CHECKING FOR FRAYED CABLES, STOWING ITEMS NOT IN USE, COVERING UNUSED RECEPTACLES, CHECKING FOR

LOOSE NUTS AND BOLTS, AND CHECKING FOR COMPLETENESS are not listed as PMCS checks. They are things that you should do any time you see they must be done. If you find a routine check like one of those listed in your PMCS, it is because other operators reported problems with this item.

NOTE

When you are doing any PMCS or routine checks, keep in mind the warnings and cautions.

WARNINGS

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel. Goggles must be worn at all times while cleaning with compressed air. Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch gage (psig) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used.

NOTES

The PROCEDURES column in your PMCS charts instruct how to perform the required checks and services. Carefully follow these instructions and, if tools are needed or the chart so instructs, get organizational maintenance to do the necessary work.

If your equipment must be in operation all the time, check those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be

shut down.

c. Deficiencies that cannot be corrected must be reported to higher category maintenance personnel. Records and reports of preventive maintenance must be made in accordance with procedures given in TM 38-750.

NOTE

The checks in the interval column are to be performed in the order listed.

3-2.1. Operator/Crew Preventive Maintenance Checks and Services Chart

B — Before

Item No.	Interval	Items to be Inspected	Procedures - Check for and have repaired or adjusted as necessary	Equipment is not Ready/Available If:
	B			
1	*	Motor Generator PU-724/G Mission Essential Equipment	Perform operational check as described in paragraph 3-4. Check for completeness and satisfactory condition of the equipment. Report missing items.	Unit does not run or produce ac. Available equipment is insufficient to support the combat mission.
2	*			

***Do this check before each deployment to a mission location. This will permit any existing problems to be corrected before the mission starts. The check does not need to be done again until redeployment.**

3-3. Cleaning

Inspect the motor generator for cleanliness. It should be free of dirt, dust, grease, and fungus. Ventilating openings should be clean so that the internal fan can circulate cooling air while operating.

a. Remove dust and loose dirt with a clean, soft cloth.

b. Remove dust and dirt from plugs, receptacles, and ventilating openings with a brush.

3-4. Operational Checks

a. The motor generator should run freely when the dc power is turned-on. The receptacle should

have 110 volts, 60 Hz available. If unit does not run, first check dc power supply and then the dc brushes. If unit runs but does not produce ac, check ac brushes. If severe arcing is observed on dc commutator, the motor generator should be sent to higher level of maintenance for commutator service.

b. There are no adjustments for the motor generator. If it does not operate after performing a above, remove and replace (para 4-9).

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

4-1. Scope of Organizational Maintenance

a. Paragraphs 4-2 through 4-10 cover organizational maintenance of the motor generator. Refer to paragraphs 2-1 through 2-4 for installation of this equipment; and to paragraphs 2-6 and 2-6 for its operation.

b. Organizational maintenance for the motor generator PU-724/G consists of the following:

- (1) Preventive maintenance (para 4-3).
- paragraph 4-1 b 2) deleted.
- (3) Preventive maintenance checks and services chart (para 4-4).
- Paragraph 4-1 b (4) deleted.
- Paragraph 4-1 b (5) deleted.
- (6) Checking brushes (para 4-7).
- (7) Removal and replacement of brushes (para 4-8).
- (8) Removal and replacement of motor generator (para 4-9).
- (9) Troubleshooting (para 4-10).

4-2. Tools, Materials, and Test Equipment Required

a. The only tools required to perform maintenance at this level are included in TE-50B, NSN 5180-00-356-4602.

b. Materials.

- (1) Trichlorotrifluoroethane (NSN 6850-00-105-3084).

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

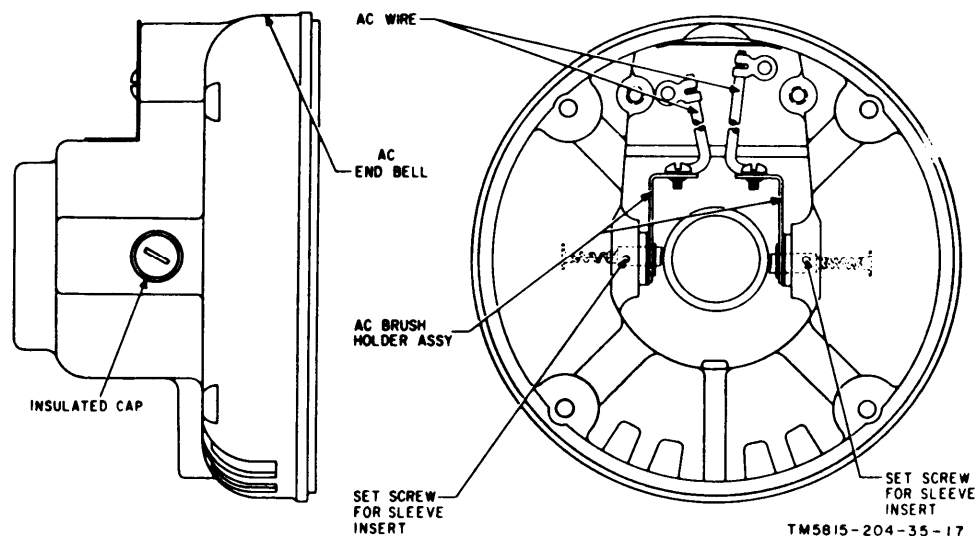


Figure 4-1. Motor generator, ac endbell.

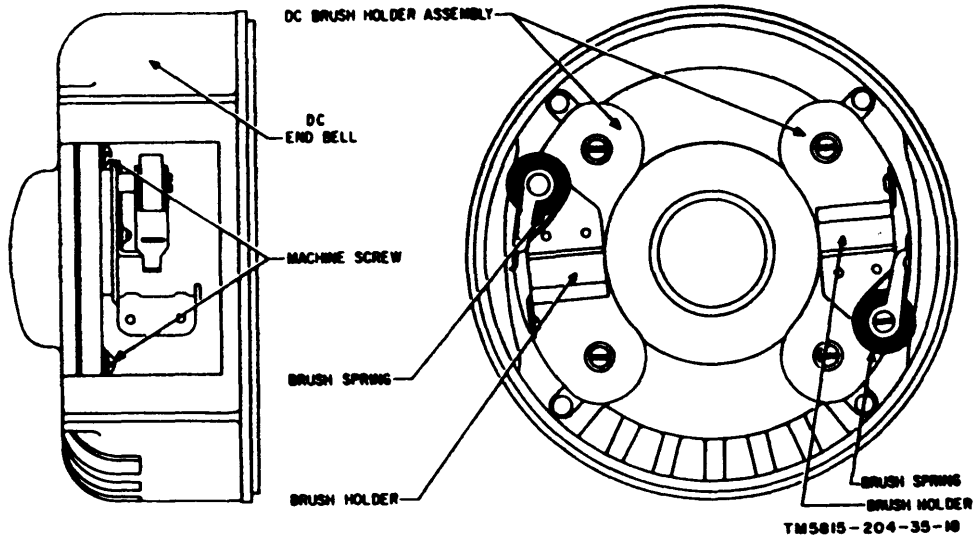


Figure 4-2. Motor generator, dc endbell.

(2) Cleaning cloths.

4-3. Preventive Maintenance

NOTE

Refer to TM 750-244-2 for proper procedures for destruction of this equipment to prevent enemy use.

a. Organizational preventive maintenance procedures are designed to help maintain equipment in serviceable condition. They include items to be checked and how to check them. These checks and services, described in paragraph 4-4, outline inspections that are to be made at specific quarterly (Q) intervals.

(1) Quarterly PMCS are important checks to keep serious problems from suddenly happening.

(2) Use the ITEM NO. column in the PMCS table to get the number to be used in the TM ITEM NO. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

b. Routine checks like CLEANING, DUSTING, WASHING, CHECKING FOR FRAYED CABLES, STOWING ITEMS NOT IN USE, COVERING UNUSED RECEPTACLES, CHECKING FOR LOOSE NUTS AND BOLTS, AND CHECKING FOR COMPLETENESS are not listed as PMCS checks. They are things that you should do any time you see they must be done. If you find a routine check like one of those listed in your PMCS, it is because other operators reported problems with this item.

NOTE

When you are doing any PMCS or routine checks, keep in mind the warnings and cautions.

WARNINGS

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel. Goggles must be worn at all times while cleaning with compressed air. Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch gage (psig) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used.

NOTES

The PROCEDURES column in your PMCS charts instruct how to perform the required checks and services. Carefully follow these instructions and, if tools are needed or the chart so instructs, get higher category maintenance to do the necessary work.

If your equipment must be in operation all the time, check those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

c. Deficiencies that cannot be corrected must be reported to higher category maintenance personnel. Records and reports of preventive maintenance must be made in accordance with procedures given in TM 38-750.

NOTE

The checks in the interval column are to be performed in the order listed.

4-4. Organizational Preventive Maintenance Checks and Services Chart

Q - Quarterly

Item No.	Interval	Item to be Inspected	Procedures
	Q		
1	●	Motor Generator PU-724/G	Perform operational check as described in paragraph 3-5.

Paragraph 4-5 deleted.

Paragraph 4-6 deleted.

4-7. Checking Brushes

a. After initial installation or after new brushes are installed, check the ac brushes after 1000 hours of operation and every 200 hours thereafter. Remove the cap of each ac brush (fig. 4-1) and lift out the brush. If the working face is worn down to the end of the wear line, it should be replaced (para 4-8). Replace the brush exactly as it was removed until a new brush is installed. Do not interchange brushes.

CAUTION

When removing the dc brushes, mark the brushes in a manner which will insure your replacing them in exactly the same position they were in the brush holders before you removed them. Incorrect replacement of dc brushes will cause arcing on commutator segments and thus create noise interference to equipment and excessive commutator wear due to the arcing.

b. After initial installation or after new dc brushes are installed, check the brushes after 1000 hours of operation and every 200 hours thereafter. Remove the cover plates over the dc brushes (figs. 4-2 and 5-1). Lift the finger over the brush and lift out the brush. If the working face is worn down to the end of the wear line, it should be replaced (para 4-8). Replace the brush exactly as it was removed until a new brush is installed.

4-8. Removal and Replacement of Brushes

Replacement of brushes is required when inspection (para 4-7) shows that they are worn down to the wear line. A full set of spare brushes is shipped with the motor generator.

a. Ac Brushes. See paragraph 4-7 a for brush checking procedure. When replacing with new brushes, the curvature must be observed to insure proper seating and contact with the sliprings.

b. Dc Brushes. See paragraph 4-7 b for brush checking procedure. Remove the machine screws that secure the brush leads to the brush holders. Place the new brush in the holder, observing the curvature and polarity marking. Place the terminal under the machine screw in the holder and tighten. See that spring and finger move freely and press down on top of brush in holder.

c. Brushes will reseal to the curvature of the sliprings and commutator after several hours of operation.

4-9. Removal and Replacement of Motor Generator

a. Removal.

(1) Remove the dc power cable plug from its termination point.

(2) Remove any plugs that may have been

plugged into the output receptacle on the motor generator.

(3) Remove the four capscrews, lockwashers, and plain washers that secure the motor generator to the shelter frames, and remove the motor generator.

b. Replacement. Refer to paragraphs 2-1 through 2-4 for installation.

4-10. Troubleshooting

a. General. Troubleshooting the motor generator consists of isolation of the trouble. If the defect is within the scope of operator or organizational maintenance, the repair will be accom-

plished by that category of maintenance. Defects beyond the scope of organisational maintenance will be referred to higher category of maintenance. However, troubleshooting performed at the organizational maintenance category can determine which part of the generator is defective.

b. Procedure. Perform the preventive maintenance checks and services (para 4-4) to determine if there is any cause for failure to operate. If no cause for failure to operate can be found and corrected, remove faulty unit and replace (pars 4-9) with a motor generator which is in good operating condition. ■

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

5-1. General

a. The direct support maintenance procedures in this paragraph and paragraphs 5-2 through 5-7 supplement the procedures described in chapters 3 and 4. The systematic troubleshooting procedures, which began at the operator's and organizational maintenance level, are carried to a higher level in this chapter.

b. A thorough visual check of the equipment should be made when trouble occurs. Check for broken or disconnected cables. Check for damaged or broken enclosures on the motor generator or filter box.

a. Test Equipment.

Nomenclature	Federal stock no.	Technical reference
Multimeter TS-352B/U	6625-553-0142	TM 11-6625-366-15
Electrical Power Test Set TS-914/U	6625-542-1289	TM 11-6625-303-12

b. Tools.

Nomenclature	Federal stock no.	Technical reference
Toolkit, Electronic Equipment TK-105/G	5180-610-8177	SC 5180-91-CL-R07
Bearing Puller, Owatonna Tool Company No. 950 or equal.		

c. Other Equipment.

Nomenclature	Federal stock no.	Technical reference
Cable, power, electrical ^a (or any 2 conductor #10 AWG cable).	6145-161-0798	fig. 6-1
Cord, power CX-237(*)/U. ^b		fig. 6-1

^a Five feet long.

^b Indicates CX-237/U and CX-237A/U.

5-4. Troubleshooting Motor Generator

Whenever difficulty is experienced with a motor generator, a visual inspection (*a* below) may locate the fault. If visual inspection does not locate the fault, proceed with the electrical tests (*b* below). The troubleshooting chart (para 5-5) provides additional assistance in locating trouble.

5-2. Troubleshooting Procedures

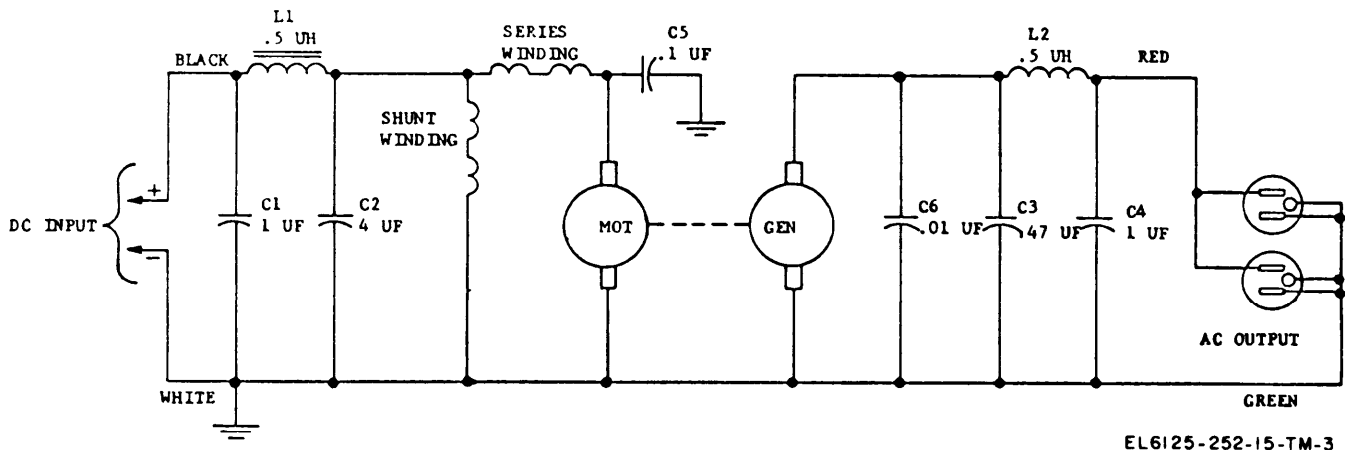
The first procedures of troubleshooting are done at the operator's and organizational maintenance categories (paras 3-4 and 4-10). The troubleshooting procedures given in this chapter further isolate the trouble and give repair information as applicable at this category of maintenance.

5-3. Test Equipment, Tools, and Other Equipment Required

All test equipment, tools, and other equipment required to perform the testing procedures given in this section are listed in the following charts:

a. Make a visual inspection of the unit. This will frequently disclose a loose or broken wire or other obvious cause for faulty operation or failure.

b. Make the following electrical tests in order to locate electrical faults. Before making any tests on the motor generator (except operational



EL6125-252-15-TM-3

Figure 5-2. Motor generator, schematic diagram.

tests), disconnect the dc power supply. Multimeter TS-352B/U may be used for making continuity tests and checking dc voltage and current.

(1) Armature Test.

(a) Test for ground. First lift the brushes from both the commutator and sliprings and block them in the raised position. With Multimeter TS-352B/U, test between the armature shaft and each slipring. Test between the armature shaft and each segment of the commutator. A closed circuit reading indicates that the part under test is shorted to ground. Check for worn or dirty insulation or foreign metallic materials.

(b) Test for open circuit. Place one of the test prods of the multimeter on one of the segments of the commutator. Place the other test prod on the adjoining segment. Keep the first prod in contact with the one segment and move the second prod from segment to segment, completely around the commutator, until a check of all commutator segments has been made. No reading indicates an open circuit. If an open circuit is indicated, inspect the soldered connection on the end of the segment. To test the ac circuit, place one test prod on each of the sliprings. No reading indicates that the circuit is open.

(2) Capacitor tests. Before testing a capacitor, disconnect one end. Make a continuity test between the two terminals of the capacitor. If continuity is indicated, the capacitor is short

circuited and must be replaced. The best test for a capacitor is to substitute a good capacitor for the one suspected of being faulty. To be safe, replace any capacitor suspected of causing trouble.

(3) Field test.

(a) Lift the brushes from the armature commutator and block them in the raised position. With Multimeter TS-352B/U, test the shunt field coil circuit for continuity. If circuit is complete, check resistance of the total field circuit. The resistance should be from 17 to 19 ohms at 20° C. If circuit is open or resistance is incorrect, field shell assembly must be replaced unless broken wire is located.

(b) Check series field for continuity between A+ terminal, located on the dc input terminal strip in the filter box, and positive brush holder.

5-5. Troubleshooting Charts for Motor Generator

The troubleshooting charts that follow list various troubles and trouble symptoms that may be readily detected. When the type of trouble has been determined, check the various points listed under possible causes and then correct the difficulty in accordance with instructions listed under remedy. Where disassembly is required, refer to paragraph 5-6 for procedures.

a. Unit Fails to Start.

<i>Possible causes</i>	<i>What to check</i>	<i>Remedy</i>
No dc input; open in dc circuit ---	Inspect dc wiring inside of filter box. Test dc components in filter box. See figures 5-1 and 5-2.	Correct faulty wiring inside filter box. Replace faulty dc filter components. See figures 5-1 and 5-2.
Dc brush not making contact ----	Check for weak or broken brush spring. Measure brush length for worn brushes. Check brushes for free movement in holders.	Replace faulty brush spring. Replace any brush worn below 1/2 inch, Refer to paragraph 4-8 b.
Armature jammed -----	Remove inspection cover and try to turn it by hand. Check the bearings. Check for foreign material or broken brush causing jamming.	Refer to paragraph 5-6. Replace broken brush causing jamming. Remove foreign material around armature. Check bearing alignment. Refer to depot category for replacement of bearings.

b. Unit Runs but Does not Deliver Current.

<i>Possible causes</i>	<i>What to check</i>	<i>Remedy</i>
Open ac circuit -----	Inspect ac wiring and connections. Test filter coils.	Repair or replace faulty part.
Ac brushes not making good contact.	Inspect for weak or broken brush spring (fig. 4-1). See that brushes move freely in holders. Check brush length against wear line.	Replace broken spring. Clean brushes and brush holders. Replace worn brushes.
Partial short in ac circuit ----	Test wiring. Test filter capacitors under load.	Repair or replace faulty wiring. Replace capacitors.

c. Low Ac Output Voltage.

<i>Possible causes</i>	<i>What to check</i>	<i>Remedy</i>
Low dc input voltage -----	Test dc input voltage -----	Correct cause of low dc input voltage.
Partial short in ac circuit ----	See <i>b</i> above -----	See <i>b</i> above.

d. Speed or Frequency Above or Below Normal.

<i>Possible causes</i>	<i>What to check</i>	<i>Remedy</i>
High or low dc input voltage ----	Test dc input voltage -----	Correct cause of high or low input voltage.

e. Excessive Sparking at Brushes.

<i>Probable cause</i>	<i>What to check</i>	<i>Remedy</i>
Brushes out of position -----	Check position of brush holder ----- Check for broken brush spring ----- Check for broken or cracked brushes.	Adjust brush holder. Replace broken spring.
Brush sticking in holder -----	Check for free brush movement -----	Clean brush and brush holder.
Overload on unit -----	Check load for shorts -----	Reduce load.

f. Unit Overheats.

<i>Possible Causes</i>	<i>What to check</i>	<i>Remedy</i>
Unit overloaded -----	See <i>e</i> above -----	See <i>e</i> above.
Poor ventilation -----	Inspect ventilating air intake and outlet.	Clean ventilating air screens.

g. Bearings Overheated.

<i>Possible cause</i>	<i>What to check</i>	<i>Remedy</i>
Bearings misaligned -----	Check fit of endbells -----	Adjust seating of endbells.

h. Noisy Operation.

<i>Possible cause</i>	<i>What to check</i>	<i>Remedy</i>
Unit is loose -----	Inspect mounting bolts -----	Tighten mounting bolts.

i. Unit Causes Radio Interference.

<i>Possible cause</i>	<i>What to check</i>	<i>Remedy</i>
Faulty capacitor. Defective coil	Test capacitors -----	Replace faulty capacitor.
Sparkling at commutator or slip-rings.	Test coils for continuity and to ground Inspect commutator, sliprings, and brushes.	Repair or replace faulty part. Clean commutator or sliprings; replace brushes.

5-6. Repair

When the troubleshooting procedure locates a fault in the motor generator requiring disassembly and reassembly in order to make the repair, follow the procedures below, Refer to figure 5-1 for an exploded view of the motor generator and to figure 5-2 for the schematic wiring diagram.

a. Disassembly is accomplished by proceeding with the following steps:

- (1) Remove the ac brushes (A128).
- (2) Remove the dc brushes (A111).
- (3) Remove the inspection plate (A120) above the ac brushes.
- (4) Remove the .01 μ f mica capacitor (A163) (fig. 5-1) and the ac wires (fig. 4-1) from the ac brush holder assemblies.
- (5) Remove the four hexagonal nuts and split lockwashers from the thru bolts of the frame. Remove the thru bolts.

(6) Remove the ac endbell (A193) from the field frame.

(7) Carefully remove the armature (A195) while holding the baffle plate (A198). Armature shaft bearings (A196 and A197) will remain on the shaft. After the armature is removed, the baffle plate (A198) will fall free; remove.

NOTE

If the armature shaft bearings have to be removed for replacement, proceed with (8) below. If not, omit this Step.

(8) Remove the armature shaft bearings from the shaft, using a bearing puller.

(9) Remove the two dc leads to the dc brush holders (fig. 4-2).

(10) Remove the dc endbell (A161) from the field frame.

(11) Loosen the machine screws on the cable clamp (A008) that holds the input power cable to the filter box cover. Remove the four machine screws that hold the filter box cover (A017) to the filter box base (A095); lift the cover.

(12) Remove the two machine screws, hex-

agonal nuts, and lockwashers that hold the ac output receptacle (A010) in the filter box cover; remove the receptacle from the cover.

(13) Remove the dc input power wires from the dc input terminal block (A082), noting the terminals from which they were removed; remove the input cable and filter box cover from the rotary converter.

(14) Remove the heavy black and white field coil wires from the terminal block, noting the terminals from which they were removed. Remove the ac wires from the ground lug and choke coil L2 (A041). Remove the field coil wire from the terminal post connected to choke coil L1 (A036).

(15) Remove the four machine screws and lockwashers that secure the filter base assembly to the rotary converter; carefully remove the filter base assembly from the rotary converter frame, noting where the respective field coil wires come through the rubber grommets on the base.

NOTE

If the ac or dc brush holder assemblies have to be removed for replacement, proceed with (16) and (17) below. If not, omit these steps.

(16) Remove the setscrews that secure the ac brush holder assemblies in the ac endbell; remove the ac brush assemblies.

(17) Remove the four machine screws and lockwashers that secure the dc brush holder assemblies to the dc endbell; remove the two brush holder assemblies (A146).

b. Reassembly is accomplished by proceeding with the following steps. Replace worn or damaged parts with new parts.

(1) Guide the field coil wires through their respective grommets in the filter base assembly and position the filter base assembly on the rotary converter; secure the filter base to the converter with the four lockwashers and machine screws.

(2) Connect one ac wire to the ground lug and the other to choke coil L2 (A041).

(3) Connect the heavy black and white field

coil wires to the proper terminals on the terminal block from which they were removed.

(4) Connect field coil wire to the terminal post connected to choke coil L1.

NOTE

If the ac or dc brush holder assemblies were removed, proceed with (5) and (6) below. If not, omit these steps.

(5) Position the dc brush holder assemblies into the dc endbell, and secure the assemblies with the four machine screws and lockwashers which were removed.

(6) Position the ac brush holder assemblies into the ac endbell and secure the assemblies with the setscrews which were removed.

(7) Position the dc endbell onto the field frame and connect the two dc leads, which were removed, to the dc brush holders.

(8) Place the armature shaft bearings on each end of the shaft, if these were removed or replaced and carefully press them onto the shaft.

(9) Place the baffle plate into position and, while holding the plate, carefully insert the armature through the plate and field frame to the dc endbell. Be sure the armature shaft bearing (A197) seats properly in the dc endbell.

(10) Place the four thru bolts into the dc endbell through the field frame (A210) and baffle plate (A198).

(11) Position the ac endbell into place; use the four through bolts as guides, while carefully seating the armature shaft bearing in the ac endbell.

(12) Place the four hexagonal nuts and split lockwashers onto the through bolts. Carefully tighten them and, at the same time, turn the armature by hand to check for freedom of rotation.

(13) Connect the ac wires and mica capacitor (A163) to the ac brush holder assemblies.

(14) Replace the ac brushes (para 4-8 *a*).

(15) Replace the dc brushes (para 4-8 *b*).

(16) Connect the input power wires to the terminal block.

(17) Assemble the output receptacle in the filter box cover with two machine screws, lockwashers, and hexagonal nuts.

(18) Attach the cover to the filter box with four lockwashers and machine screws.

(19) Tighten the machine screws on the input power cable clamp.

(20) After testing (para 5-7), position the inspection plate above the ac brushes and secure. Position the metal inspection and filter covers on the dc endbell and secure.

5-7. Testing Motor Generator

a. After repair (para 5-6), plug the power cable into a 27.5-volt dc source. If test cables are needed, provide as shown in figure 6-1. Check both the ac and dc brushes for nonarcing operation, which indicates proper seating. If brushes are not seated, run unit for several hours and check for a minimum of three fourths of the face to be seated.

b. Measure the ac voltage and frequency, using Electrical Power Test Set TS-914/U.

CHAPTER 6

GENERAL SUPPORT AND DEPOT MAINTENANCE

6-1. General

General support and depot maintenance procedures in this paragraph and 6-2 through 6-5 supplement the procedures described in paragraphs 5-1 through 5-6. Tools and test equipment required to test and repair the motor generator are also listed. Applicable tests must be performed after the unit has been repaired,

6-2. Troubleshooting Procedures

The troubleshooting procedures for this category

a. Test Equipment.

Nomenclature	Federal stock no.	Technical reference
Multimeter ME-26A/U	6625-646-9409	TM 11-6625-200-12
Multimeter TS-352B/U	6625-553-0142	TM 11-6625-366-15
Power Supply PP-1104B/G	6130-635-4900	TM-11-5126
Electrical Power Test Set TS-914/U	6625-542-1289	TM 11-6625-303-12

b. Tools.

Nomenclature	Federal stock no.	Technical reference
Toolkit, Electronic Equipment TK-105/G Bearing Puller, Owatonna Tool Company No. 950 or equal.	5180-610-8177	SC 5180-91-CL-R07

c. Other Equipment.

Nomenclature	Federal stock no.	Technical reference
Cable, power, electrical* (or any two conductor #10AWG cable).	6145-161-0768	Fig. 6-1
Cord, power CX-237(*)/U. ^b -----	-----	Fig. 6-1
Resistor, 120 ohms 140 watts fixed, wirewound (3 ea).	5905-263-4099	None.
Clip, electrical: alligator style (3 ea) I	5940-186-9833	None.

* Five feet long.

^bIndicates CX-237/U and CX-237A/U.

6-4. Repair of Motor Generator

Follow the procedures for repair of the motor generator given in paragraph 5-6.

6-5. Testing Procedures

a. *General.* Testing procedures are prepared

of maintenance are identical to those given in paragraphs 3-4, 4-10 and 5-4. Use the troubleshooting chart in paragraph 5-5.

6-3. Test Equipment, Tools, and Materials Required

The following chart lists the test equipment cables, connectors, and special tools required for general support and depot maintenance of the motor generator.

for use by Signal field maintenance shops and Signal service Organizations responsible for general support maintenance to determine the acceptability of repaired signal equipment. These procedures set forth specific requirements that repaired signal equipment must meet before it

is returned to the using organization. The testing procedures may also be used as a guide for testing equipment repaired at direct support maintenance if the proper tools and test equipment are available. See paragraph 1-5 *a* and *b* for performance standards.

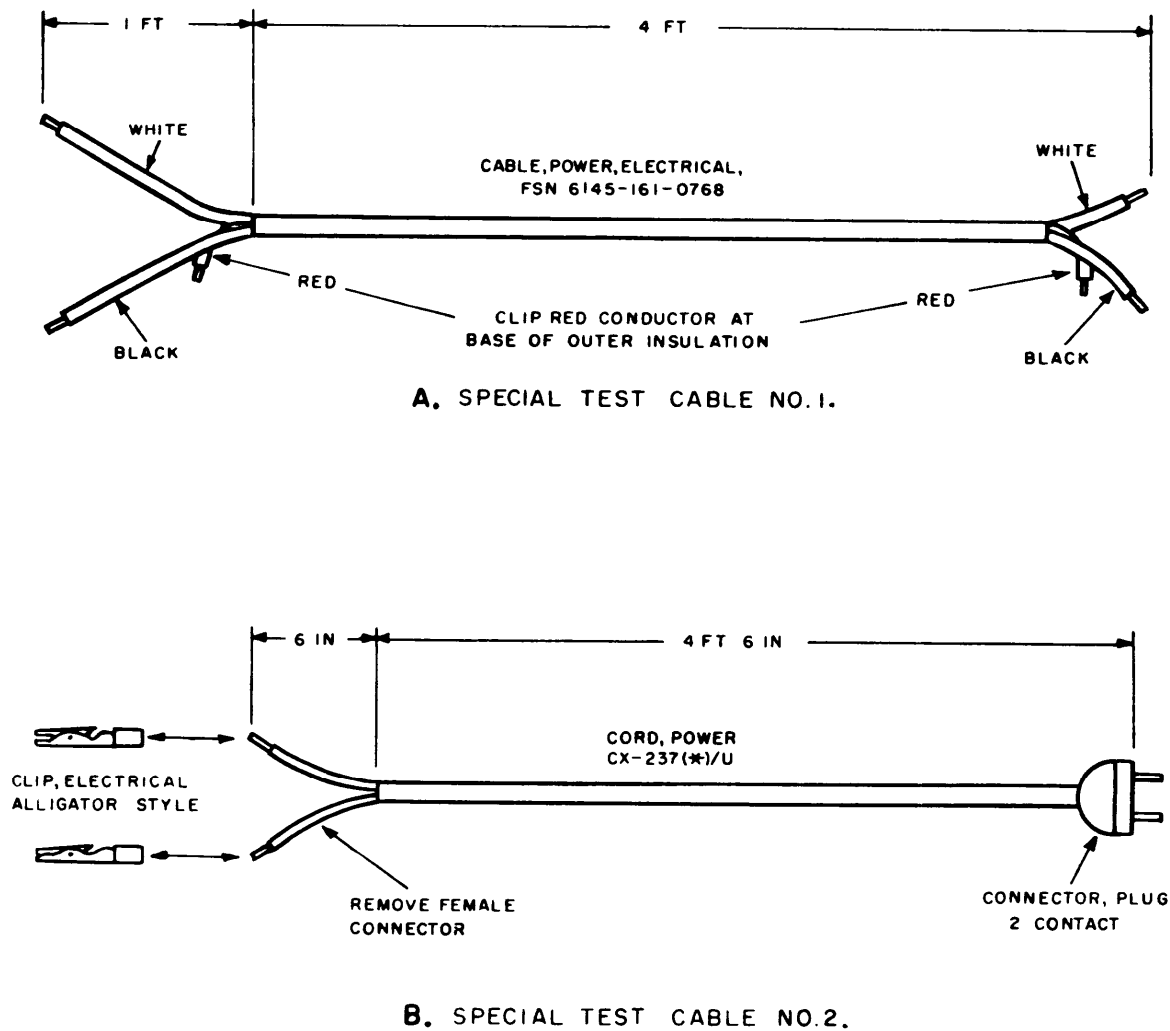
b. Each test depends on the preceding one for certain operating procedures and, where applicable, for test equipment calibrations. Comply with the instructions preceding the body of each chart before proceeding to the chart. Perform each test in sequence. Do not vary the sequence. For each step, perform all the actions required in the *Test equipment control setting* and *Equip-*

ment under test control setting columns; then perform each specific test procedure and verify it against its performance standard.

c. Special requirements. The following must be performed in preparation for the motor generator test (para 6-7).

(1) Loosen the motor generator filter box cover as much as necessary to remove Cable Assembly, Power CX-4541/U. Note the location of the black and white conductors.

(2) Fabricate special test cable No. 1 (fig. 6-1) and connect it in place of the CX-4541/U. Connect the black and white conductors at their proper terminals.



EL6125-252-15-TM-4

Figure 6-1. Special test cables.

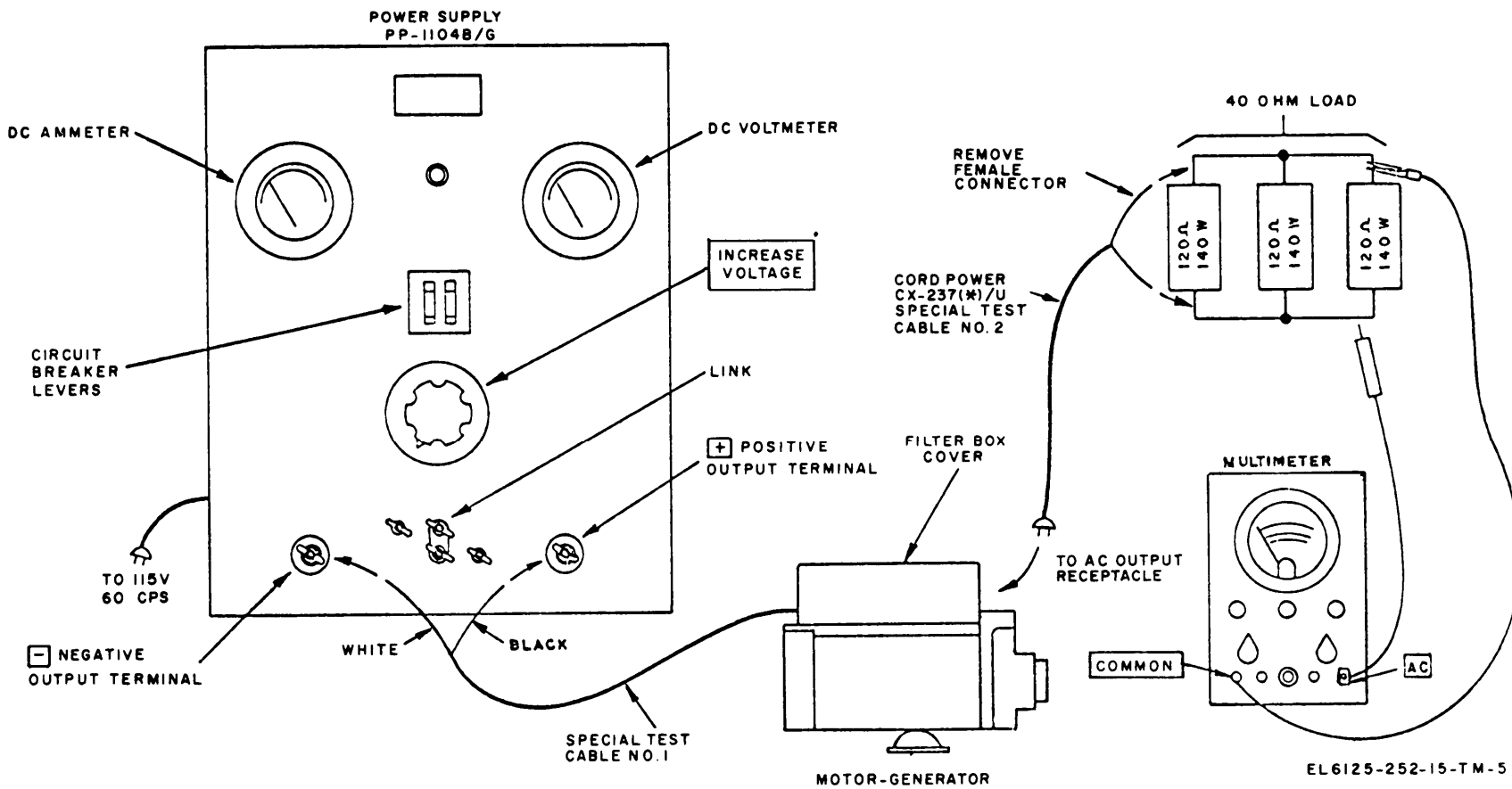


Figure 6-2. Motor generator, electrical tests.

EL 6125-252-15-TM-5

6-6. Motor Generator, physical Tests and Inspection

- a. *Test Equipment and Materials. None.*
- b. *Test Connections and/or Conditions. None.*
- c. *Test Procedure.*

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	None	None	<ul style="list-style-type: none"> a. Check the rotary converter power cable insulation. b. Check air vents for accumulation of dirt or dust. c. Check ac output receptacles and brush caps for physical damage. d. Check unit for condition of finish ---- Note. Touchup painting is recommended whenever practical. Screw heads and receptacles will not be painted or polished with brasures. 	<ul style="list-style-type: none"> a. Cable insulation should not be cracked or worn. b. Air vents should be clean and free from matter which could impair ventilation. c. Items mentioned should not be damaged. d. Only surfaces intended to be painted should be painted. Name plate should be clearly marked.

6-7. Motor Generator, Electrical Tests

- a. *Test Equipment and Materials.*
 Multimeter ME-26 (*) /U.
 Special test cable No. 1 (fig. 6-1)
 Power Supply PP-1104 (*) /G.
 Cord, Power CX-237 (*) /U. Test cable No. 2 (fig. 6-1).
 Resistor, fixed, wirewound (3 each) 120 ohms, 140 watts.

b. *Test Connections and/or Conditions. Connect equipment as illustrated in figure 6-2. Connect special test cable No. 1 as instructed in paragraph 6-5 c.*

c. *Test Procedure.*

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	<i>PP-1104(*)/G</i> INCREASE VOLTAGE : fully counterclockwise. Link: arranged as shown in figure. Circuit breaker lever: ON <i>ME-26(*)/U</i> FUNCTION switch: AC. RANGE switch: 300V.	None	<ul style="list-style-type: none"> a. Rotate PP-1104(*)/G INCREASE VOLTAGE clockwise, until dc voltmeter indicates 27.5 volts. b. Observe PP-1104(*)/G dc ammeter indication. c. Observe ME-26 (*)/U meter indication. 	<ul style="list-style-type: none"> a. None. b. Indication should not be greater than 24 amperes. c. Should indicate 115 ± 5 volts.

CHAPTER 7

PREPARATION OF EQUIPMENT FOR RESHIPMENT

Section I. PREPARATION OF EQUIPMENT FOR RESHIPMENT

7-1. General

The motor generator is normally shipped in a lined, corrugated paper carton. The preparations for local shipment and for limited storage are the same.

7-2. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Secure all loose items and cables. Adapt the procedures outlined below whenever possible. The information contained in the original packaging (para 2-1) will also be helpful.

a. Material Requirements. The following materials are required for packing Motor Generator

PU-724/G. For stock numbers of materials, consult SB 38-100.

<i>Material</i>	<i>Quantity</i>
Waterproof paper -----	10 Sq ft
Waterproof tape -----	15 ft
Corrugated cardboard -----	30 sq ft
Gummed paper tape -----	30 ft
Plywood, 3/8 in. -----	7 1/2 in. x 15in.

b. Packaging. The motor generator is to be packaged as follows:

- (1) Mount unit on plywood base.
- (2) Make inside carton to accept unit.
- (3) Make filler and place filler and motor generator in inside carton.
- (4) Wrap with waterproof paper and seal.
- (5) Make outside carton to accept package in (4) above.
- (6) Secure the wrap with gummed tape.

Section II deleted.

APPENDIX A

REFERENCES

Following is a list of applicable references available to the personnel concerned with Motor Generator PU-724/G.

DA Pam 310-1	Consolidated Index of Army publications and Blank Forms.
SB 38-100	Preservation, Packaging and Packing Materials, Supplies and Equipment Used by the Army.
TM 11-5815-204-10	Operator Manual: Radio Teletypewriter Sets AN/GRC-46, AN/GRC-46A (NSN 5815-00-543-1760), AN/GRC-46B (5815-00-570-5488), AN/GRC-46C (5815-00-082-4205) and AN/VRC-29 (5815-00-543-1758).
TM 11-5815-204-20	Organizational Maintenance Manual: Radio Teletypewriter Sets, and AN/GRC-46, AN/GRC-46A (NSN 5815-00-543-1760, AN/GRC-46B (5815-00-570-5488), AN/GRC-46C (5815-00-082-4205) and AN/VRC-29 (5815-00-543-1758).
TM 11-5815-204-35	Field and Depot Maintenance Manual Radio Teletypewriter Sets, AN/GRC-46, AN/GRC-46A and AN/GRC-46B and AN/VRC-29t
TM 38-750	The Army Maintenance Management Systems (TAMMS),
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use.

APPENDIX B MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations for Motor-Generator PU-724/G. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition; i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Replace. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding,

grinding, riveting, straightening, facing, re-machining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i. e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

B-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The

number of task hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a servicable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

- C — Operator/Crew
- O — Organizational
- F — Direct Support
- H — General Support
- D — Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

B-4. Tool and Test Equipment Requirements (Sec III).

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

B-5. Remarks (Sec IV).

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

SECTION II MAINTENANCE ALLOCATION CHART
FOR

TM 11-6125-252-15

MOTOR GENERATOR

PU-724/G

(1) GROUP NUMBER	(2) COMPONENT /ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	Motor Generator PU-724/G	Inspect	0.2						A
		Test		0.2				1	
		Test			0.3			2, 3	
		Test				0.3		2, 3, 4,5	
		Service			0.3			6	
		Adjust			0.3			6	
		Replace		0.3				1	
		Repair		0.3				1	B
		Repair			1.0			6, 7	
		Rebuild					4.0	6, 7	

SECTION III TOOL AND TEST EQUIPMENT REQUIREMENT,
FOR

TM 11-6125-252-15

MOTOR - GENERATOR

PU-724/G

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL NATO STOCK NUMBER	TOOL NUMBER
1	0	Tool Equipment TE-50B	5180-00-356-4602	
2	F, H, D	Multimeter TS - 352 B/U	6625-00-553-0142	
3	F, H, D	Electrical Power Tester AN/UPM - 100 (see note 1)	6625-00-542-1290	
4	H, D	Multimeter ME - 26 () /U	6625-00-646-9409	
5	H, D	Power Supply PP-1104B/G or equiv	6130-00-635-4900	
6	F, H, D	Tool Kit, Electronic equipment TK-105/G	5180-00-610-8177	
7	F, H, D	Bearing puller	*	
* THE NATIONAL STOCK NUMBER THAT IS MISSING FROM THIS LIST HAS BEEN REQUESTED AND WILL BE ADDED BY A CHANGE TO THE LIST UPON RECEIPT.				
Note 1: Contains electrical power test set TS-914/U.				

REFERENCE CODE	REMARKS
A	Exterior and brushes
B	Repair by replacement of brushes

APPENDIX C

ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOL LISTS

Section I. INTRODUCTION

C-1. Scope

This appendix lists repair parts and special tools required for the performance of organizational, direct support, general support, and depot maintenance of the PU-724/G.

C-2. General

This repair parts and special tools list is divided into the following sections:

a. Prescribed Load Allowance (PLA) - Section II. Not applicable.

b. Repair Parts for Organizational Maintenance—Section III. A list of repair parts authorized for the performance of maintenance at the organizational level.

c. Special Tools, Test, and Support Equipment for Organizational Maintenance Section IV. Not applicable.

d. Repair Parts for Direct Support, General Support, and Depot Maintenance—Section V. A list of repair parts authorized for the performance of maintenance at the direct support, general support, and depot level.

e. Special Tools, Test, and Support Equipment for Direct Support, General Support, and Depot Maintenance—Section VI. Not applicable.

f. Index-Federal Stock Number or Reference Number Cross-Reference to Figure and Item Number or Reference Designation—Section VII. A list of Federal stock numbers in ascending numerical sequence (sec. VII.1), followed by a list of reference numbers appearing in ascending alphanumeric sequence (sec. VII.2), cross-referenced to the figure number and reference designation.

g. Index—Reference Designation Cross-Refer-

ence to Page Number—Section VIII. A list of reference designations cross-referenced to page numbers.

C-3. Explanation of Columns

The following provides an explanation of columns in the tabular lists:

a. Source, Maintenance, and Recoverability Codes (SMR).

(1) Source codes indicate the selection status and source for the list item. Source codes are -

<i>Code</i>	<i>Explanation</i>
P	Repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system and authorized for use at indicated maintenance categories.
P2	Repair parts which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.
P9	Assigned to items which are NSA design controlled: unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC logistic system, and which are not subject to the provisions of AR 380-41.
P10	Assigned to items which are NSA design controlled: special tools, test, measuring and diagnostic equipment for COMSEC support, which are accountable under the provisions of AR 380-41, and which are stocked and supplied by the Army COMSEC logistic system.
M	Repair parts which are not procured or

<i>Code</i>	<i>Explanation</i>
	stocked, but are to be manufactured in indicated maintenance levels.
A	Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the required assembly at indicated maintenance categories.
X	Parts and assemblies which are not procured or stocked and the mortality of which normally is below that of the applicable end item or component. The failure of such part or assembly should result in retirement of the end item from the supply system,
X1	Repair parts which are not procured or stocked. The requirement for such items will be filled by use of the next higher assembly or component.
X2	Repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain same through cannibalization. Where such repair parts are not obtainable through cannibalization, requirements will be requisitioned, with accompanying justification, through normal supply channels.
G	Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DS and GS level or returned to depot supply level.

(2) Maintenance codes indicate the lowest category of maintenance authorized to install the listed item. The maintenance level codes are—

<i>Code</i>	<i>Explanation</i>
C ---	Operator/crew
O ---	Organizational maintenance
F ---	Direct support maintenance
H ---	General support maintenance
D ---	Depot maintenance

(3) Recoverability codes indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are---

<i>Code</i>	<i>Explanation</i>
R	Repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.
S	Repair parts and assemblies which are economically repairable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by GSU to be uneconomically repairable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T	High-dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U	Repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, or high-dollar value reusable casings or castings.

b. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description. Indicates the Federal item name and any additional description of the item required. The index number has been included as part of the description to aid in the location of "SAME AS" items. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses.

d. Unit of Measure (U/M). A two-character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

e. Quantity Incorporated in Unit. Indicates the quantity of the item used in the PU-724/G. Subsequent appearances of the same item in the same assembly are indicated by the letters "REF".

f. 15-Day Organizational Maintenance Allowances.

(1) The allowance columns are divided into four subcolumns. Indicated in each subcolumn opposite the first appearance of each item is the total quantity of items authorized for the number of equipments supported. Subsequent appearances of the same item will have the letters

“REF” in the allowance columns. Items authorized for use as required, but not for initial stockage, are identified with an asterisk in the allowance column.

(2) The quantitative allowances for organizational level of maintenance represents one initial prescribed load for a 15-day period for the number of equipments supported. Units and organizations authorized additional prescribed loads will multiply the number of prescribed loads authorized by the quantity of repair parts reflected in the appropriate density column to obtain the total quantity of repair parts authorized.

(3) Organizational units providing maintenance for more than 100 of these equipments shall determine the total quantity of parts required by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized in the 51–100 allowance column. *Example*, authorized allowance for 51–100 equipments is 12; for 140 equipments multiply 12 by 1.40 or 16.80 rounded off to 17 parts required.

g. 30 Day DS/GS Maintenance Allowances.

NOTE

Allowances in GS column are for GS maintenance only.

(1) The allowance columns are divided into three subcolumns. Indicated in each subcolumn, opposite the first appearance of each item, is the total quantity of items authorized for the number of equipments supported. Subsequent appearances of the same item will have the letters “REF” in the applicable allowance columns. Items authorized for use as required, but not for initial stockage, are identified with an asterisk in the allowance column.

(2) The quantitative allowances for DS/GS levels of maintenance will represent initial stockage for a 30-day period for the number of equipments supported.

(3) Determination of the total quantity of parts required for maintenance of more than 100 of these equipments can be accomplished by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized in the 51–100 allowance column. *Example*, authorized allowance for 51–100

equipments is 40; for 150 equipments multiply 40 by 1.50 or 60 parts required.

h. One-Year Allowances per 100 Equipments/Contingency Planning Purposes. Indicates opposite the first appearance of each item the total quantity required for distribution and contingency planning purposes. The range of items indicates total quantities of all authorized items required to provide for adequate support of 100 equipments for 1 year.

i. Depot Maintenance Allowance per 100 Equipments. Indicates opposite the first appearance of each item the total quantity authorized for depot maintenance of 100 equipments. Subsequent appearances of the same item will have the letters “REF” in the allowance column. Items authorized for use as required, but not for initial stockage, are identified with as asterisk in the allowance column.

j. Illustrations.

(1) *Figure number.* Indicates the figure number in which the item is shown.

(2) *Item number or reference designation.* Indicates the reference designation used to identify the item in the illustration.

C-4. Special Information

Repair parts mortality is computed from failure rates derived from experience factors with the individual parts in a variety of equipments. Variations in the specific application and periods of use of electronics equipment, the fragility of electronic piece parts, plus intangible material and quality factors intrinsic to the manufacture of electronic parts, do not permit mortality to be based on hours of end item use. However, long periods of continuous use under adverse conditions are likely to increase repair parts mortality.

C-5. Location of Repair Parts

a. This appendix contains two cross-reference indexes (sees. VII and VIIX) to be used to locate a repair part when either the Federal stock number, reference number (manufacturer’s part number), or reference designation is known. The first column in each index is prepared in numerical and or alphanumerical sequence in ascending order. Where a Federal stock number is listed, refer to section VII.1. Where a Federal stock number is not listed, refer to section VII.2.

b. When the Federal stock number is known,

follow the procedures given in (1) and (2) below.

(1) Refer to section VII.1 (index of Federal stock numbers) or section VII.2 (index of reference numbers) and note the applicable figure and reference designation.

(2) When the reference designation is determined, refer to the reference designation index (sec. VIII). The reference designations are listed in numericalalpha ascending order and are cross-referenced to the page number on which they appear in the repair parts list (secs. III and Y). Refer to the page number noted in the index and locate the reference designation in the repair parts list (col. 7b, or col. 10b). If the description column indicates that it is a "Same as" item, locate the first appearance of the item by the index number (sequence number) referenced.

c. When the reference designation is known, follow the procedures given in *b* (2) above.

d. When neither the FSN, reference number, nor reference designation is known, identify the part in the illustration and follow directions given in *c* above, or scrutinize column 3 of the repair parts lists (secs. III and V).

C-6. Federal Supply Code for Manufacturers

<i>Code</i>	<i>Manufacturer</i>
30887 ----	Dyna Technology, Inc.
43334 ----	New Departure-Hyatt Bearings Division, General Motors Corp.
59730 ----	Thomas and Betts Co., The
70485 ----	Atlantic India Rubber Works, Inc.
75382 ----	Kulka Electric Corp.
76473 ----	Midwest Moulding and Mfg. Co.
96906 ----	Military Standards

(Next page is C-4)

SECTION III. REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE

(1) SAR CODE	(2) FEDERAL STOCK NUMBER	DESCRIPTION	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN INIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALU				(a) FIC NO	(b) ITEM NO. OR REFERENCE DESIGNATION
						(a) 1-5	(b) 3-20	(c) 1-5	(d) 1-10X		
	5125-617-1435	A001 MOTOR GENERATOR PU-724/G: (This item is nonexpendable)									
P-0	5977-617-1255	A109 BRUSH SET ELECTRICAL CONTACT : A27997 (30887		SET	1						A109
P-0	5975	A125 CAP ELECTRICAL: A25099 (76473)		EA	1						A125
P-0	5975	A126 CAP ELECTRICAL : SAME AS A125		REF	REF	REF	REF	REF			A126
P-0	5977-617-1954	A127 BRUSH SET ELECTRICAL CONTACT : A27996 (30887		SET	1						A127

SECTION REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE

(1) S&P CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE	(4) UNIT OF MEAS	(5) QTY NC IN UNIT	(6) 30-DAY DS MAINT ALLOWANCE			(7) 30-DAY GS MAINT ALLOWANCE			(8) 1 YR LW PE EQUILI NTGCI	(9) DEPOT MAINT LW PE 100 QUIP	ILLUSTRATIONS	
					(a) 1-20	(b) 1-50	(c) 1-10	(a) 1-20	(b) 1-50	(c) 1-10			(a) FIG NO	(b) ITEM NO. OR REFERENCE DESIGNATION
		A 100	EA	1									1A1M0	
		A 101	EA	1									1A1M1	
		A 102	EA	1									1A1M2	
		A 103	EA	1									1A1M3	
		A 104	EA	1									1A1M4	
		A 105	EA	1									1A1M5	
		A 106	EA	1									1A1M6	
		A 107	EA	1									1A1M7	
		A 108	EA	1									1A1M8	
		A 109	EA	1									1A1M9	
		A 110	EA	1									1A1N0	
		A 111	EA	1									1A1N1	
		A 112	EA	1									1A1N2	
		A 113	EA	1									1A1N3	
		A 114	EA	1									1A1N4	
		A 115	EA	1									1A1N5	
		A 116	EA	1									1A1N6	
		A 117	EA	1									1A1N7	
		A 118	EA	1									1A1N8	
		A 119	EA	1									1A1N9	
		A 120	EA	1									1A2M0	
		A 121	EA	1									1A2M1	
		A 122	EA	1									1A2M2	
		A 123	EA	1									1A2M3	
		A 124	EA	1									1A2M4	
		A 125	EA	1									1A2M5	
		A 126	EA	1									1A2M6	
		A 127	EA	1									1A2M7	
		A 128	EA	1									1A2M8	
		A 129	EA	1									1A2M9	
		A 130	EA	1									1A3M0	
		A 131	EA	1									1A3M1	
		A 132	EA	1									1A3M2	
		A 133	EA	1									1A3M3	
		A 134	EA	1									1A3M4	
		A 135	EA	1									1A3M5	
		A 136	EA	1									1A3M6	
		A 137	EA	1									1A3M7	
		A 138	EA	1									1A3M8	
		A 139	EA	1									1A3M9	
		A 140	EA	1									1A4M0	
		A 141	EA	1									1A4M1	
		A 142	EA	1									1A4M2	
		A 143	EA	1									1A4M3	
		A 144	EA	1									1A4M4	
		A 145	EA	1									1A4M5	
		A 146	EA	1									1A4M6	
		A 147	EA	1									1A4M7	
		A 148	EA	1									1A4M8	
		A 149	EA	1									1A4M9	
		A 150	EA	1									1A5M0	
		A 151	EA	1									1A5M1	
		A 152	EA	1									1A5M2	
		A 153	EA	1									1A5M3	
		A 154	EA	1									1A5M4	
		A 155	EA	1									1A5M5	
		A 156	EA	1									1A5M6	
		A 157	EA	1									1A5M7	
		A 158	EA	1									1A5M8	
		A 159	EA	1									1A5M9	
		A 160	EA	1									1A6M0	
		A 161	EA	1									1A6M1	
		A 162	EA	1									1A6M2	
		A 163	EA	1									1A6M3	
		A 164	EA	1									1A6M4	
		A 165	EA	1									1A6M5	
		A 166	EA	1									1A6M6	
		A 167	EA	1									1A6M7	
		A 168	EA	1									1A6M8	
		A 169	EA	1									1A6M9	
		A 170	EA	1									1A7M0	
		A 171	EA	1									1A7M1	
		A 172	EA	1									1A7M2	
		A 173	EA	1									1A7M3	
		A 174	EA	1									1A7M4	
		A 175	EA	1									1A7M5	
		A 176	EA	1									1A7M6	
		A 177	EA	1									1A7M7	
		A 178	EA	1									1A7M8	
		A 179	EA	1									1A7M9	
		A 180	EA	1									1A8M0	
		A 181	EA	1									1A8M1	
		A 182	EA	1									1A8M2	
		A 183	EA	1									1A8M3	
		A 184	EA	1									1A8M4	
		A 185	EA	1									1A8M5	
		A 186	EA	1									1A8M6	
		A 187	EA	1									1A8M7	
		A 188	EA	1									1A8M8	
		A 189	EA	1									1A8M9	
		A 190	EA	1									1A9M0	
		A 191	EA	1									1A9M1	
		A 192	EA	1									1A9M2	
		A 193	EA	1									1A9M3	
		A 194	EA	1									1A9M4	
		A 195	EA	1									1A9M5	
		A 196	EA	1									1A9M6	
		A 197	EA	1									1A9M7	
		A 198	EA	1									1A9M8	
		A 199	EA	1									1A9M9	

SECTION V. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT AND DEPOT MAINTENANCE (CONTINUED)

(1) SIR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCR. PT. COM REFERENCE NUMBER & MFR. CODE	(4) UNIT OF EAS	(5) QTY C IN MIT	(6) 30-DAY DS MAINT ALLOWANCE			(7) 30-DAY GS ALLOWANCE			(8) T YR /PE DUIF TCY	(9) POT IN /PE 30 JIP	(10) ILLUSTRATIONS	
					a)	b)	c)	T	b)	c)			a) IG O.	(b) ITEM NO. OR REFERENCE DESIGNATION
					:20	:50	:100	1-20	-50	:100				
2-F	510-013-4530	A07 NUT PLAIN HEXAGON: SAME AS A037	EA	1										1A4H10
2-F	510	A034 SCREW MACHINE: SAME AS A031	EA	1										1A4H12
2-F	510	A035 WASHER LOCK: SAME AS A022	EA	1										1A4H13
2-F	550-656-2349	A036 COIL RADIO FREQUENCY: A27425 (30887)	EA	1	*	*	*	*	*	*	4	4	5-1	1A4H1
2-F	970-496-8548	A037 INSULATOR STANDOFF: A27346 (30887)	EA	5										1A4E1
2-F	305	A038 SCREW MACHINE: A27443 (30887)	EA	5										1A4H14
2-F	305	A039 WASHER FLAT: A27724 (30887)	EA	9										1A4H15
2-F	305	A040 WASHER LOCK: A5746 (30887)	EA	9										1A4H16
2-F	950-656-2350	A041 COIL RADIO FREQUENCY: A27412 (30887)	EA	1	*	*	*	*	*	*	4	4	5-1	1A4L2
2-F	970-496-8548	A042 INSULATOR STANDOFF: SAME AS A037	EA	1										1A4E2
2-F	970-496-8548	A043 INSULATOR STANDOFF: SAME AS A037	EA	1										1A4E3
2-F	970	A044 INSULATOR WASHER: A27441 (30887)	EA	4										1A4E4
2-F	970	A045 INSULATOR WASHER: SAME AS A044	EA	1										1A4E5
M-F		A046 LEAD ELECTRICAL: A27424 (30887)	EA	1										1A4W1
X2-F	5310	A047 NUT PLAIN HEXAGON: A5483 (30887)	EA	8										1A4H17
X2-F	5310	A048 NUT PLAIN HEXAGON: SAME AS A047	EA	1										1A4H18
X2-F	5310	A049 NUT PLAIN HEXAGON: SAME AS A047	EA	1										1A4H19
X2-F	5310	A050 NUT PLAIN HEXAGON: SAME AS A047	EA	1										1A4H20
X2-F	5305	A051 SCREW MACHINE: SAME AS A038	EA	1										1A4H21
X2-F	5305	A052 SCREW MACHINE: SAME AS A038	EA	1										1A4H22
X2-F	5305	A053 WASHER FLAT: SAME AS A039	EA	1										1A4H23
X2-F	5305	A054 WASHER FLAT: SAME AS A039	EA	1										1A4H24
X2-F	5305	A055 WASHER FLAT: SAME AS A039	EA	1										1A4H25
X2-F	5305	A056 WASHER FLAT: SAME AS A039	EA	1										1A4H26
X2-F	5305	A057 WASHER LOCK: SAME AS A040	EA	1										1A4H27
X2-F	5305	A058 WASHER LOCK: SAME AS A040	EA	1										1A4H28
X2-F	5305	A059 WASHER LOCK: SAME AS A040	EA	1										1A4H29
X2-F	5305	A060 WASHER LOCK: SAME AS A040	EA	1										1A4H30
X2-F	5325-290-4344	A061 GROMMET RUBBER: 1787 (70485)	EA	2										1A4B6
X2-F	5325-290-4344	A062 GROMMET RUBBER: SAME AS A061	EA	1										1A4E7
X2-F	5970-496-8548	A063 INSULATOR STANDOFF: SAME AS A037	EA	1										1A4E8
X2-F	5970	A064 INSULATOR WASHER: SAME AS A044	EA	1										1A4E9
X2-F	5310	A065 NUT PLAIN HEXAGON: SAME AS A047	EA	1										1A4H31

SECTION V. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) SHE COD	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE	(4) UNIT OF MEAS	(5) QUANTITY INC UNIT	(6)			(7)			(8) I Y I L W P I EQUI MTGC	(9) EPO WAF W P 100 QU I I	(10) ILLUSTRATIONS	
					30-DAY D: ALLOW	A I M T E	30- Y GS MAINT LOWANCE	Y GS MAINT LOWANCE	Y GS MAINT LOWANCE	(a) F I NG			(b) ITEM NO. OR REFERENCE SIGNATION	
					(a) 1-21	(b) 21-51	(c) 1-11	(a) 1-20	(b) 21-5					(c) 1-11
X2-I	5310	A006 NUT FLA IN HEXAGON: SAME AS A047	EA	REF										1A4H32
X2-I	5305	A067 SCREW MACHINE: SAME AS A038	EA	REF										1A4H33
X2-I	5305	A068 WASHER FLAT: SAME AS A039	EA	REF										1A4H34
X2-I	5305	A069 WASHER FLAT: SAME AS A039	EA	REF										1A4H35
X2-I	5305	A070 WASHER LOCK: SAME AS A040	EA	REF										1A4H36
X2-I	5305	A071 WASHER LOCK: SAME AS A040	EA	REF										1A4H37
X2-F	5970-496-854E	A072 INSULATOR STANDOFF: SAME AS A037	EA	REF										1A4E10
X2-F	5970	A073 INSULATOR WASHER: SAME AS A044	EA	REF										1A4E10
U-D		A074 LEAD ELECTRICAL: A27428 (30887)	EA	1										1A4H2
X2-F	5310	A075 NUT PLAIN HEXAGON: SAME AS A047	EA	REF										1A4H38
X2-F	5310	A076 NUT PLAIN HEXAGON: SAME AS A047	EA	REF										1A4H39
X2-F	5305	A077 SCREW MACHINE: SAME AS A038	EA	REF										1A4H40
X2-F	5305	A078 WASHER FLAT: SAME AS A039	EA	REF										1A4H41
X2-F	5305	A079 WASHER FLAT: SAME AS A039	EA	REF										1A4H42
X2-F	5305	A080 WASHER LOCK: SAME AS A040	EA	REF										1A4H43
X2-F	5305	A081 WASHER LOCK: SAME AS A040	EA	REF										1A4H44
P-F	5940.983.6043	A082 TERMINAL BOARD: 602M2P (75382)	EA	1	*	*	*	*	*	*	5	7	5-	1A4T81
X2-F	5305	A083 SCREW MACHINE: M335359-46 (96906)	EA	4										1A4H45
X2-F	5305	A084 SCREW MACHINE: SAME AS A083	EA	REF										1A4H46
X2-F	5305	A085 SCREW MACHINE: SAME AS A083	EA	REF										1A4H47
X2-F	5305	A086 SCREW MACHINE: SAME AS A083	EA	REF										1A4H48
X2-F	5310	A087 WASHER FLAT: A6631(30887)	EA	4										1A4H49
X2-F	5310	A088 WASHER FLAT: SAME AS A087	EA	REF										1A4H50
X2-F	5310	A089 WASHER FLAT: SAME AS A087	EA	REF										1A4H51
X2-F	5310	A090 WASHER FLAT: SAME AS A087	EA	REF										1A4H52
X2-F		A091 WASHER LOCK: SAME AS A007	EA	4										1A4H53
X2-F		A092 WASHER LOCK: SAME AS A007	EA	REF										1A4H54
X2-F		A093 WASHER LOCK: SAME AS A007	EA	REF										1A4H55
X2-F		A094 WASHER LOCK: SAME AS A007	EA	REF										1A4H56
M-D		A095 BRACKET MOUNTING FILTER: B27420 (30887)	EA	1										1A4M1
M-D		A096 MOTOR GENERATOR LESS FILTER: C27386 (30887)	EA	1										1A5M
M-D		A097 COVER ELEC CONT BRUSH ACCESS: A27375 (30887)	EA	2										1A5M1
M-D		A098 COVER ELEC CONT BRUSH ACCESS: SAME AS A097	EA	REF										1A5M2
X2-F	5970	A099 INSULATION SHEET ELECTRICAL: A27376 (30887)	EA	2										1A5E1
X2-F	597C	A100 INSULATION SHEET ELECTRICAL: SAME AS A099	EA	REF										1A5E2

SECTION V. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) S/R CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE	(4) UNIT OF MEAS	QTY INC IN UNIT	(6) 30-DAY DS MAINT ALLOWANCE			(7) 30-DAYGS MAINT ALLOWANCE			(8) 1 YR ALW PER EQUIP CNTGTY	(9) DEPOT MAINT ALW PER 100 EQUIP	(a) FIG NO.	(10) ILLUSTRATIONS	
					(a)	(b)	(c)	(a)	(b)	(c)				(b) ITEM NO. OR REFERENCE DESIGNATION	
					1-20	21-50	51-100	1-20	21-50	51-100					
X2-P	5305	A101 SCREW MACHINE: SAME AS A003	EA	4										1A5H1	
X2-P	5305	A102 SCREW MACHINE: SAME AS A003	EA	REP										1A5H2	
X2-P	5305	A103 SCREW MACHINE: SAME AS A003	EA	REP										1A5H3	
X2-P	5305	A104 SCREW MACHINE: SAME AS A003	EA	REP										1A5H4	
X2-P		A105 WASHER LOCK: SAME AS A004	EA	4										1A5H5	
X2-P		A106 WASHER LOCK: SAME AS A004	EA	REP										1A5H6	
X2-P		A107 WASHER LOCK: SAME AS A004	EA	REP										1A5H7	
X2-P		A108 WASHER LOCK: SAME AS A004	EA	REP										1A5H8	
P-o	5977-617-1259	A109 BRUSH SET ELECTRICAL CONTACT: A27997 (30887)	SET	1	*	*	*	*	*	*	5	20	5-1	1A5E3	
xl		A110 BRUSH ELECTRICAL CONTACT: A27243 (30887)	EA	1										1A5E4	
xl		A111 BRUSH ELECTRICAL CONTACT: A27243-1 (30887)	EA	1										1A5E5	
X2-P	5305	A112 SCREW MACHINE: SAME AS A003	EA	4										1A5H9	
X2-P	5305	A113 SCREW MACHINE: SAME AS A003	EA	REP										1A5H10	
X2-P	5305	A114 SCREW MACHINE: SAME AS A003	EA	REP										1A5H11	
X2-P	5305	A115 SCREW MACHINE: SAME AS A003	EA	REP										1A5H12	
X2-P		A116 WASHER LOCK: SAME AS A007	EA	4										1A5H13	
X2-P		A117 WASHER LOCK: SAME AS A007	EA	REP										1A5H14	
X2-P		A118 WASHER LOCK: SAME AS A007	EA	REP										1A5H15	
X2-P		A119 WASHER KICK: SAME AS A007	EA	REP										1A5H16	
U-D		A120 COVER PLATE ACCESS: A27377 (30887)	EA	1										1A5MP3	
X2-P	5305	A121 SCREW MACHINE ROUND HEAD: MS35357-77 (96%)	EA	2										1A5H17	
X2-P	5305	A122 SCREW MACHINE ROUND HEAD: SAME AS A121	EA	REP										1A5H18	
X2-P	5310-582-5965	A123 WASHER LOCK: MS35338-44 (96906)	EA	2										1A5H19	
X2-P	5310-582-5965	A124 WASHER LOCK: SAME AS A123	EA	REP										1A5H20	
P-0	5915	A125 CAP ELECTRICAL: A25099 (76473)	EA	2	*	*	1	*	*	1	10	7	5-1	1A5MP4	
P-0	5975	A126 CAP ELECTRICAL: SAME AS A125	EA	REP	REP	REP	REP	REP	REP	REP	REP	REP		1A5MP5	
P-o	5977-617-1954	A127 BRUSH SET ELECTRICAL CONTACT: A27996 (30887)	SET	1	*	*	1	*	*	1	8	20	5-1	1A5E6	
K1		A128 BRUSH ELECTRICAL CONTACT: A27339 (30887)	EA	2										1A5E6	
K1		A129 BRUSH ELECTRICAL CONTACT: SAME AS A128	EA	REP										1A5E7	
A-P-R		A130 END BELL ASSEMBLY - INPUT: C27353 (30887)	EA	1										1A6MP1	
X2-P		A131 NUT PLAIN HEXAGON: MS35650-102 (96906)	EA	4										1A5H4	
X2-P	5305	A132 SCREW MACHINE: A26965 (30887)	EA	4										1A5H4	
X2-P	5310-045-3296	A133 WASHER LOCK: MS35338-43 (96906)	EA	4										1A5H4	
X2-P	6125	A134 STRIP CONNECTING ELECTRICAL: A40941-1 (30887)	EA	1										1A6W1	

SECTION V. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) SMP CODE	(2) FEDERAL STOCK NUMBER	DESCRIPTION REFERENCE NUMBER & MFR. CODE	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC II UNIT	(6) 30-DAY DS MAINT ALLOWANCE			(7) 30- GS MAINT ALLOWANCE			(8) 1 YR LW PER EQUIP INTGCT	(9) DEPOT MAINT ALW PER 100 EQUIP	(a) FII No	(10) ILLUSTRATIONS	
						(a) 1-20	(b) 21-50	(c) 1-10	(a) 1-20	(b) 21-50	(c) 1-10				(b) ITEM NO. OR REFERENCE DESIGNATION	
P-F	310-577-4125	A135 CAPACITOR FIXED PAPER 11 ELEC : A40877 (30887)		EA	1	*	*	*	*	*	*	5	7	5-	1A6C1	
X2-F		A136 NUT F L A N HEXAGON : SAME AS A131		EA	1										1A6B1	
X2-F	305	A137 SCREW MACHINE: MS35359-04 (96906)		EA	1										1A6H2	
X2-F	310	A138 WASHER LOCK: MS35355-16 (96906)		EA	1										1A6H3	
P-F	977-409-0406	A139 HOLDER ELECTRICAL CONT BRUSH : A27357 (30887)		EA	1	*	*	*	*	*	*	4	2	5	1A6MP2	
X2-F	305	A140 SCREW MACHINE: A27390 (m)		EA	4										1A6H4	
X2-F	305	A141 SCREW MACHINE: SAME AS A140		EA	EP										1A6H5	
X2-F	310	A142 WASHER FLAT : -25551 (30887)		EA	4										1A6H6	
X2-F	310	A143 WASHER FLAT: SAME AS A142		EA	EP										1A6H7	
X2-F	310-045-3296	A144 WASHER LOCK : SAME AS A133		EA	4										1A6H8	
X2-F	310-045-3296	A145 WASHER LOCK : SAME AS A133		EA	EP										1A6H9	
P-F	977-409-0409	A146 HOLDER ELECTRICAL CONT BRUSH : A27381 (30887)		EA	1	*	*	*	*	*	*	4	2	5-	1A6MP3	
X2-F	305	A147 SCREW MACHINE : A27389 (30887)		EA	2										1A6H10	
X2-F	305	A148 SCREW MACHINE: SAME AS A147		EA	EP										1A6H11	
M-D		A149 PLATE MOUNTING: A8697 (30887)		EA											1A6MP4	
X2-F	305	A150 SCREW MACHINE : SAME AS A140		EA	EP										1A6H12	
X2-F	305	A151 SCREW MACHINE : SAME AS A140		EA	EP										1A6H13	
X2-F	310	A152 WASHER FLAT: SAME AS A142		EA	EP										1A6H14	
X2-F	310	A153 WASHER FLAT: SAME AS A142		EA	EP										1A6H15	
X2-F	310-045-3296	A154 WASHER LOCK : SAME AS A133		EA	EP										1A6H16	
X2-F	310-045-3296	A155 WASHER LOCK : SAME AS A133		EA	EP										1A6H17	
M-D		A156 SCREEN PROTECTIVE : B27368 (30887)		EA	1										1A6MP5	
X2-F	305	A157 SCREW MACHINE: MS35359-26 (96906)		EA	2										1A6H18	
X2-F	305	A158 SCREW MACHINE : SAME AS A157		EA	EP										1A6H19	
X2-F	310	A159 WASHER LOCK: MS35355-30 (96906)		EA	2										1A6H20	
X2-F	310	A160 WASHER KICK: SAME AS A159		EA	EP										1A6H21	
M-D		A161 END BELL-INPUT : B27380 (30887)		EA	1										1A6MP6	
M-D		A162 END BELL ASS EMBLY-OUTPUT : B27352 (30887)		EA	1										1A7MP1	
P-F		A163 CAPACITOR FILLED MICA DIELECTRIC: A27395 (30887)		EA		*	*	*	*	*	*	5	4	5-	1A7C1	
X2-F	995	A164 LEAD ELECTRICAL: A27396 (30887)		EA	1										1A7H1	
X2-F	995	A165 LEAD ELECTRICAL : A27398 (30887)		EA	1										1A7H2	
X2-F	305	A166 SCREW MACHINE : SAME AS A003		EA	2										1A7H1	
X2-F	305	A167 SCREW MACHINE: SAME AS A003		EA	EP										1A7H2	

SECTION V. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) SFR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE USABIFON CODE	(4) UNIT OF MEAS	(5) QTY REQD INIT	(6) 30-DAY DS MAINT ALLOWANCE			(8) 30-DAY GS IOWANT			(9) YR WSPR EQUIP NTGCV	(10) EPO AINT WPR 100 QUIP	(10) ILLUSTRATIONS	
					(a) 1-20	(b) 1-50	(c) 1-100	(a) -20	(b) -50	(c) -100			(a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
					X2-P		1168 WASHER LOCK: SAME AS A1007	EA	1					
X2-P		1169 WASHER LOCK: SAME AS A1007	EA	1									1A7H1	
X2-P	377	1170 HOLDER ELECTRICAL CONT BRUSH: A27359 (30887)	EA	1									1A7H1	
X2-P		1171 SET SCREW: MS51017-34 (90906)	EA	1									1A7H1	
X2-P	377	1172 HOLDER ELECTRICAL CONT BRUSH: A27373 (30887)	EA	1									1A7MP3	
X2-P		1173 SET SCREW: SAME AS A171	EA	1									1A7H1	
M-L		1174 SCREEN PROTECTIVE: A27370 (30887)	EA	2									1A7MP4	
X2-P	305	1175 SCREW MACHINE: SAME AS A157	EA	4									1A7H7	
X2-P	305	1176 SCREW MACHINE: MS35359-25 (90906)	EA	4									1A7H6	
X2-F	310	1177 WASHER LOCK: SAME AS A159	EA	6									1A7H5	
X2-P	310	1178 WASHER LOCK: SAME AS A159	EA	6									1A7H10	
M-D		1179 SCREEN PROTECTIVE: SAME AS A174	EA	6									1A7MP5	
X2-P	305	1180 SCREW MACHINE: SAME AS A157	EA	6									1A7H11	
X2-P	305	1181 SCREW MACHINE: SAME AS A176	EA	6									1A7H12	
X2-P	310	1182 WASHER LOCK: SAME AS A159	EA	6									1A7H13	
X2-P	310	1183 WASHER LOCK: SAME AS A159	EA	6									1A7H14	
M-D		1184 SCREEN PROTECTIVE: B27369 (30887)	EA	1									1A7MP6	
X2-F	305	1185 SCREW MACHINE: SAME AS A157	EA	6									1A7H15	
X2-P	305	1186 SCREW MACHINE: SAME AS A157	EA	6									1A7H16	
X2-P	305	1187 SCREW MACHINE: SAME AS A176	EA	6									1A7H17	
X2-P	305	1188 SCREW MACHINE: SAME AS A176	EA	6									1A7H18	
X2-P	310	1189 WASHER LOCK: SAME AS A159	EA	6									1A7H19	
X2-P	310	1190 WASHER LOCK: SAME AS A159	EA	6									1A7H20	
X2-P	310	1191 WASHER LOCK: SAME AS A159	EA	6									1A7H21	
X2-P	310	1192 WASHER LOCK: SAME AS A159	EA	6									1A7H22	
M-D		1193 END BELL-OUTPUT: B27669 (30887)	EA	1									1A7MP7	
A-D-F		1194 ARMATURE ASSEMBLY: C26962 (30887)	EA	1									1A8E1	
P-D	125-4 08-2615	1195 ARMATURE: C26962-1 (30887)	EA	1						4	2	5-1	1A8E2	
P-D	110-156-3471	1196 BEARING BALL ANNULAR: 88502 (43334)	EA	1						4	2	5-1	1A8MP1	
P-D	110-156-3502	1197 BEARING BALL ANNULAR: 88503 (43334)	EA	1						4	2	5-1	1A8MP2	
M-D		1198 BAPPLE FAN: B27363 (30887)	EA	1									1A8MP6	
A-D-i		1199 HOUSING ASS-Y: C27387 (30887)	EA	1									1A9MP	
X2-P	995	A200 LEAD ELECTRICAL: A27400 (30887)	EA	1									1A9M1	
X2-P	125	A201 HOLDER FIELD A27379 (30887)	EA	2									1A9MP1	
M-D		A202 INSULATION SHEET ELECTRICAL: A27378 (30887)	EA	4									1A9E2	

SECTION v. REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (CONTINUED)

(1) SIR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER L MFR. CODE	(4) UNIT OF MEAS.	(5) QTY NC II UNIT	(6)			(7)			(8) I YI W PE EQUI NTGC	(9) DEPO MAINT LW PI 100 QUIT	(10) ILLUSTRATIONS	
					30	4Y DS	41MT	30-	GS MAINT				(a)	(b)
					(a) 1-2C	(b) 21-5C	(c) 1-1C	(a) 1-20	(b) 1-5	(c) 1-1C				ITEM NO. OR REFERENCE DESIGNATION
M-D		1203 INSULATION SHEET ELECTRICAL SAME AS A202	EA										1A9E3	
X2-F	125	1204 HOLDER FIELD: SAME AS A201											1A9MP2	
M-D		1205 INSULATION SHEET ELECTRICAL: SAME AS A202	EA										1A9E4	
M-D		1206 INSULATION SHEET ELECTRICAL: SAME AS A202	EA											
X2-P	125-235-44,4	1207 WINDING FIELD: A203 (3068)	EA										1A9L1	
X2-F	340	1208 GROMMET RUBBER: 2513 (70485)	EA	2									1A9B6	
X2-F	340	1209 GROMMET RUBBER: SAME AS A208	EA										1A9E7	
M-D		1210 HOUSING: 520963 (3068)	EA	1									1A9MP3	

**SECTION VII.1 INDEX-FEDERAL STOCK NUMBER CROSS REFERENCE
TO FIGURE AND ITEM NUMBER OR REFERENCE DESIGNATION**

FEDERAL STOCK NUMBER	FIGURE NUMBER	ITEM NUMBER OR REF. DESIGNATION	FEDERAL STOCK NUMBER	FIGURE NUMBER	ITEM NUMBER OR REF. DESIGNATION
3110-156-3471	5-1	1A8MP1			
3110-156-3502	5-1	1A8MP2			
5310-013-4530		1A4H1			
5310-013-4530		1A4H8			
5310-013-4530		1A4H11			
5310-045-3296		1A5H4			
5310-045-3296		1A6H8			
5310-045-3296		1A6H9			
5310-045-3296		1A6H16			
5310-045-3296		1A6H17			
5310-582-5965		1A5H19			
5310-582-5965		1A5H20			
5325-290-4344		1A4E6			
5325-290-4344		1A4E7			
5910-171-2952	5-1	1A4C2			
5910-577-9125	5-1	1A6C1			
5910-577-9293	5-1	1A4C1			
5935-660-3825	5-1	1A3J1			
5940-983-6043	5-1	1A4TB1			
5950-656-2349	5-1	1A4L1			
5950-656-2350	5-1	1A4L2			
5970-496-8548		1A4E1			
5970-496-8548		1A4E2			
5970-496-8548		1A4E3			
5970-496-8548		1A4E8			
5970-496-8548		1A4E10			
5975-152-1144		1A3MP1			
5977-409-0908	5-1	1A6MP2			
5977-409-0909	5-1	1A6MP3			
5977-617-1259	5-1	1A5E3			
5977-617-1954	5-1	1A5E6			
6125-235-4494		1A9L1			
6125-408-2615	5-1	1A8E2			
6125-617-1435	1-1	1A1MG			

SECTION VII. INDEX-REFERENCE NUMBER CROSS REFERENCE
TO FIGURE NUMBER AND REFERENCE DESIGNATION ITEM NUMBER

REFERENCE NO.	MFGRS. CODE	FIG. NO.	REF. DESIGNATION OR ITEM NO.	REFERENCE NO.	MFGRS. CODE	FIG. NO.	REF. DESIGNATION OR ITEM NO.
A25099	76473		1A5MP4	A27724	30887		1A4H20
A25099	76473		1A5MP5	A27724	30887		1A4H20
A25551	30887		1A6H6	A27724	30887		1A4H24
A25551	30887		1A6H7	A27724	30887		1A4H30
A25551	30887		1A6HL4	A27724	30887		1A4H41
A25551	30887		1A6HL5	A27724	30887		1A4H40
A26965	30887		1A5H4	A40941-1	30887		1A6W1
A27243	30887		1A5E4	A5483	30887		1A4H17
A27243-1	30887		1A5E5	A5483	30887		1A4H18
A27339	30887		1A5E6	A5483	30887		1A4H19
A27339	30887		1A5E7	A5483	30887		1A4H20
A27356	30887		1A7MP2	A5483	30887		1A4H21
A27370	30887		1A7MP4	A5483	30887		1A4H30
A27370	30887		1A7MP5	A5483	30887		1A4H30
A27373	30887		1A7MP3	A5483	30887		1A4H39
A27375	30887		1A5MP1	A5746	30887		1A4H39
A27375	30887		1A5MP2	A5746	30887		1A4H20
A27376	30887		1A5E1	A5746	30887		1A4H27
A27376	30887		1A5E2	A5746	30887		1A4H28
A27377	30887		1A5MP3	A5746	30887		1A4H29
A27378	30887		1A9E2	A5746	30887		1A4H30
A27378	30887		1A9E3	A5746	30887		1A4H30
A27378	30887		1A9E4	A5746	30887		1A4H37
A27378	30887		1A9E5	A5746	30887		1A4H43
A27379	30887		1A9MP1	A6631	30887		1A4H44
A27379	30887		1A9MP2	A6631	30887		1A4H49
A27389	30887		1A6HL0	A6631	30887		1A4H50
A27389	30887		1A6HL1	A6631	30887		1A4H51
A27390	30887		1A6H4	A6631	30887		1A4H52
A27390	30887		1A6H5	A8697	30887		1A6MP4
A27390	30887		1A6HL2	B26963	30887		1A6MP3
A27390	30887		1A6HL3	B27352	30887		1A7MP1
A27395	30887	5-1	1A7C1	B27363	30887		1A9E10
A27396	30887		1A7W1	B27368	30887		1A6MP5
A27398	30887		1A7W2	B27369	30887		1A7MP6
A27400	30887		1A9W1	B27420	30887		1A4MP1
A27416	30887		1A3H2	B27669	30887		1A7MP7
A27424	30887		1A4W1	B27999	30887		1A2FL
A27428	30887		1A4W2	B28000	30887		1A3MP
A27438	30887	5-1	1A4C4	C26962	30887		1A6E1
A27441	30887		1A4E4	C27345	30887		1A3MP3
A27441	30887		1A4E5	C27353	30887		1A6MP1
A27441	30887		1A4E9	C27380	30887		1A6MP6
A27441	30887		1A4E10	C27386	30887		1A5MG
A27442	30887	5-1	1A4C3	C27387	30887		1A6MP
A27443	30887		1A4HL4	C27439	30887		1A4FL
A27443	30887		1A4H21	MS35335-16	96906		1A6H3
A27443	30887		1A4H22	MS35335-17	96906		1A1H4
A27443	30887		1A4H33	MS35335-17	96906		1A5H5
A27443	30887		1A4H40	MS35335-17	96906		1A5H6
A27724	30887		1A4H5	MS35335-17	96906		1A5H7
A27724	30887		1A4H23	MS35335-17	96906		1A5H8
A27724	30887		1A4H24	MS35335-30	96906		1A6H20
				MS35335-30	96906		1A6H21

SECTION VII.2 INDEX-REFERENCE NUMBER CROSS REFERENCE
TO FIGURE NUMBER AND REFERENCE DESIGNATION ITEM UMB

REFERENCE NO.	MFGRS. CODE	FIG. NO.	REF. DESIGNATION OR ITEM NO.	REFERENCE NO.	MFGRS. CODE	FIG. NO.	REF. DESIGNATION OR ITEM NO.
MS35335-30	96906		1A7H9	MS35359-43	96906		1A5H11
MS35335-30	96906		1A7H10	MS35359-43	96906		1A5H12
MS35335-30	96906		1A7H13	MS35359-43	96906		1A7H1
MS35335-30	96906		1A7H14	MS35359-43	96906		1A7H2
MS35335-30	96906		1A7H19	MS35359-46	96906		1A4H45
MS35335-30	96906		1A7H20	MS35359-46	96906		1A4H46
MS35335-30	96906		1A7H21	MS35359-46	96906		1A4H47
MS35335-30	96906		1A7H22	MS35359-46	96906		1A4H48
MS35338-23	96906		1A2H4	MS35359-64	96906		1A6H2
MS35338-23	96906		1A3H5	MS35649-82	96906		1A3H1
MS35338-23	96906		1A3H6	MS35649-82	96906		1A3H2
MS35338-23	96906		1A4H6	MS35650-102	96906		1A5H4
MS35338-23	96906		1A4H7	MS35650-102	96906		1A6H1
MS35338-23	96906		1A4H53	MS51017-34	96906		1A7H5
MS35338-23	96906		1A4H54	MS51017-34	96906		1A7H6
MS35338-23	96906		1A4H55	2533	70485		1A9E6
MS35338-23	96906		1A4H56	2533	70485		1A9E7
MS35338-23	96906		1A5H13				
MS35338-23	96906		1A5H14				
MS35338-23	96906		1A5H15				
MS35338-23	96906		1A5H16				
MS35338-23	96906		1A7H3				
MS35338-23	96906		1A7H4				
MS35357-28	96906		1A4H2				
MS35357-28	96906		1A4H9				
MS35357-28	96906		1A4H12				
MS35357-41	96906		1A4H4				
MS35357-41	96906		1A4H5				
MS35357-77	96906		1A5H17				
MS35357-77	96906		1A5H18				
MS35358-22	96906		1A4H3				
MS35358-22	96906		1A4H10				
MS35358-22	96906		1A4H13				
MS35359-25	96906		1A7H8				
MS35359-25	96906		1A7H12				
MS35359-25	96906		1A7H17				
MS35359-25	96906		1A7H18				
MS35359-26	96906		1A6H18				
MS35359-26	96906		1A6H19				
MS35359-26	96906		1A7H7				
MS35359-26	96906		1A7H11				
MS35359-26	96906		1A7H15				
MS35359-26	96906		1A7H16				
MS35359-43	96906		1A1H4				
MS35359-43	96906		1A2H4				
MS35359-43	96906		1A3H3				
MS35359-43	96906		1A3H4				
MS35359-43	96906		1A5H1				
MS35359-43	96906		1A5H2				
MS35359-43	96906		1A5H3				
MS35359-43	96906		1A5H4				
MS35359-43	96906		1A5H9				
MS35359-43	96906		1A5H10				

**SECTION VIII INDEX-REFERENCE DESIGNATION
CROSS REFERENCE TO PAGE NUMBER**

REFERENCE DESIGNATION	PAGE NUMBER	REFERENCE DESIGNATION	PAGE NUMBER	REFERENCE DESIGNATION	PAGE NUMBER
1A1H4	C-5	1A4H23	C-6	1A5H6	C-7
1A1MG	C-4, C-5	1A4H24	C-6	1A5H7	C-7
1A2FL	C-5	1A4H25	C-6	1A5H8	C-7
1A2H4	C-5	1A4H26	C-6	1A5H9	C-7
1A3H1	C-5	1A4H27	C-6	1A5H10	C-7
1A3H2	C-5	1A4H28	C-6	1A5H11	C-7
1A3H3	C-5	1A4H29	C-6	1A5H12	C-7
1A3H4	C-5	1A4H30	C-6	1A5H13	C-7
1A3H5	C-5	1A4H31	C-7	1A5H14	C-7
1A3H6	C-5	1A4H32	C-7	1A5H15	C-7
1A3J1	C-5	1A4H33	C-7	1A5H16	C-7
1A3MP	C-5	1A4H34	C-7	1A5H17	C-7
1A3MP1	C-5	1A4H35	C-7	1A5H18	C-7
1A3MP3	C-5	1A4H36	C-7	1A5H19	C-7
1A4C1	C-5	1A4H37	C-7	1A5H20	C-7
1A4C2	C-5	1A4H38	C-7	1A5MG	C-7
1A4C3	C-5	1A4H39	C-7	1A5MP1	C-7
1A4C4	C-5	1A4H40	C-7	1A5MP2	C-7
1A4E1	C-6	1A4H41	C-7	1A5MP3	C-7
1A4E2	C-6	1A4H42	C-7	1A5MP4	C-7
1A4E3	C-6	1A4H43	C-7	1A5MP5	C-7
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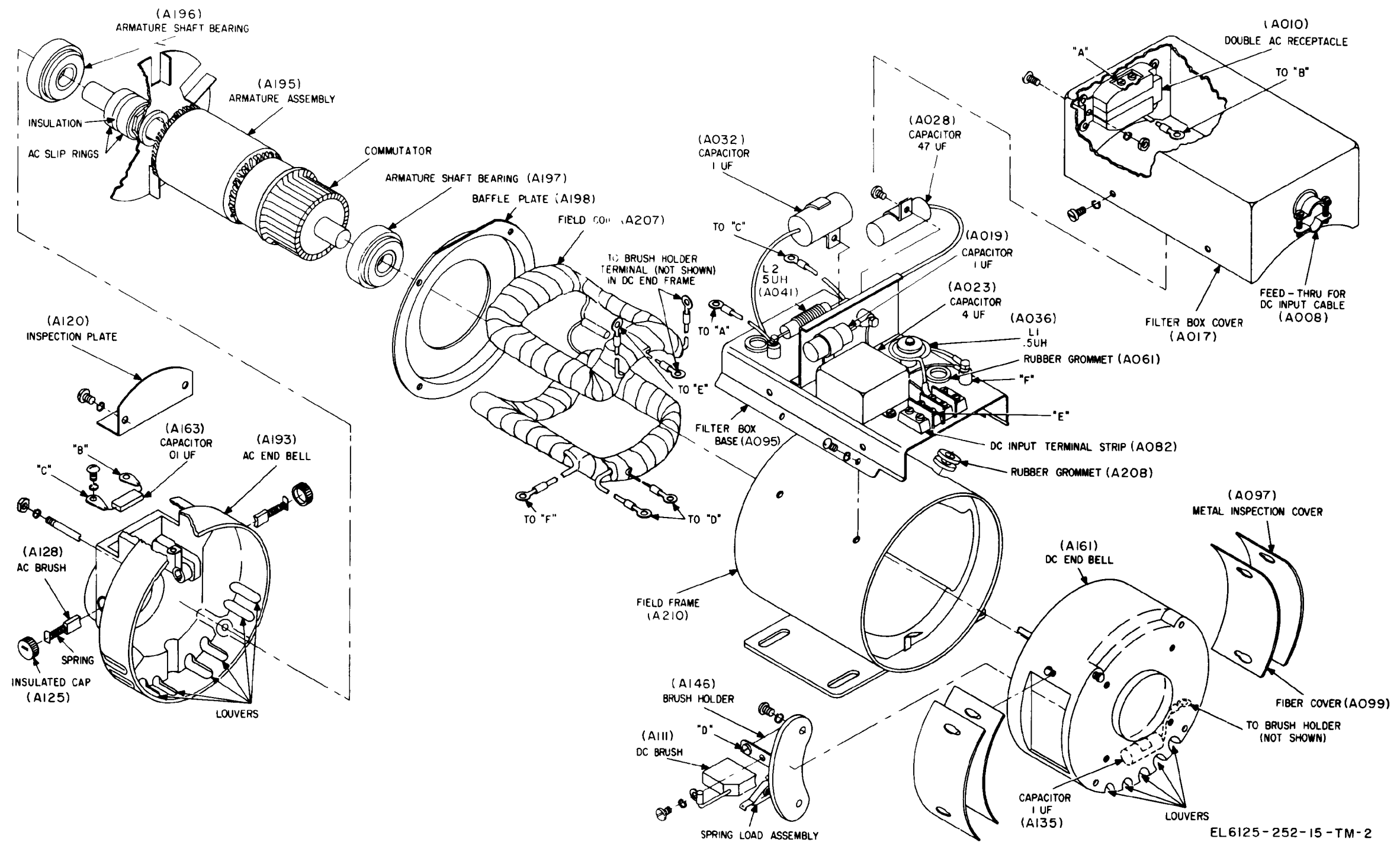
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Figure 5-1. Motor generator, exploded view.

