

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

---

ORGANIZATIONAL MAINTENANCE  
MANUAL

MOTOR GENERATORS PU-1261U,  
PU-126A/U, AND PUJ-126B/U

This copy is a reprint which includes current  
pages from Change 1.

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HEADQUARTERS, DEPARTMENT OF THE ARMY

*10 May 1966*

### **WARNING**

Be careful when working on this equipment. Do not touch the wye-delta change board or the output terminals of the motor generator set while it is in operation.

**EXTREMELY DANGEROUS VOLTAGES ARE PRESENT IN THE CONTROL BOX WHEN THE EQUIPMENT IS IN OPERATION. NEVER OPERATE THE MOTOR GENERATOR SET WITH THE CONTROL BOX COVER REMOVED.**

**CHANGE**

**No. 1**

**HEADQUARTER  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 27 February 1974**

**Organizational Maintenance Manual  
MOTOR GENERATORS PUI-26UI, PU-126A/U,  
AND PU-126B/U**

TM 11-6125-210-12, 10 May 1966, is changed as follows:

1. A vertical bar appears opposite changed material.
2. Remove and insert pages as indicated in the page list below:

<i>Remove</i>	<i>Insert</i>
i and ii.....	i through ii.1
1-1 and 1-2.....	1-1 through 1-2.1
2-1 and 2-2.....	2-1 and
A2-1 and A2-2 .....	None

3. File this change sheet in the front of the manual for reference purposes.

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USAADS (2)	USAERDAA (1)	44-235

NG: State AG (3)

USAR: None

For explanation of abbreviations used, see AR 310-50.

## TECHNICAL MANUAL

No. 11-6125210-12

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 10 May 1966

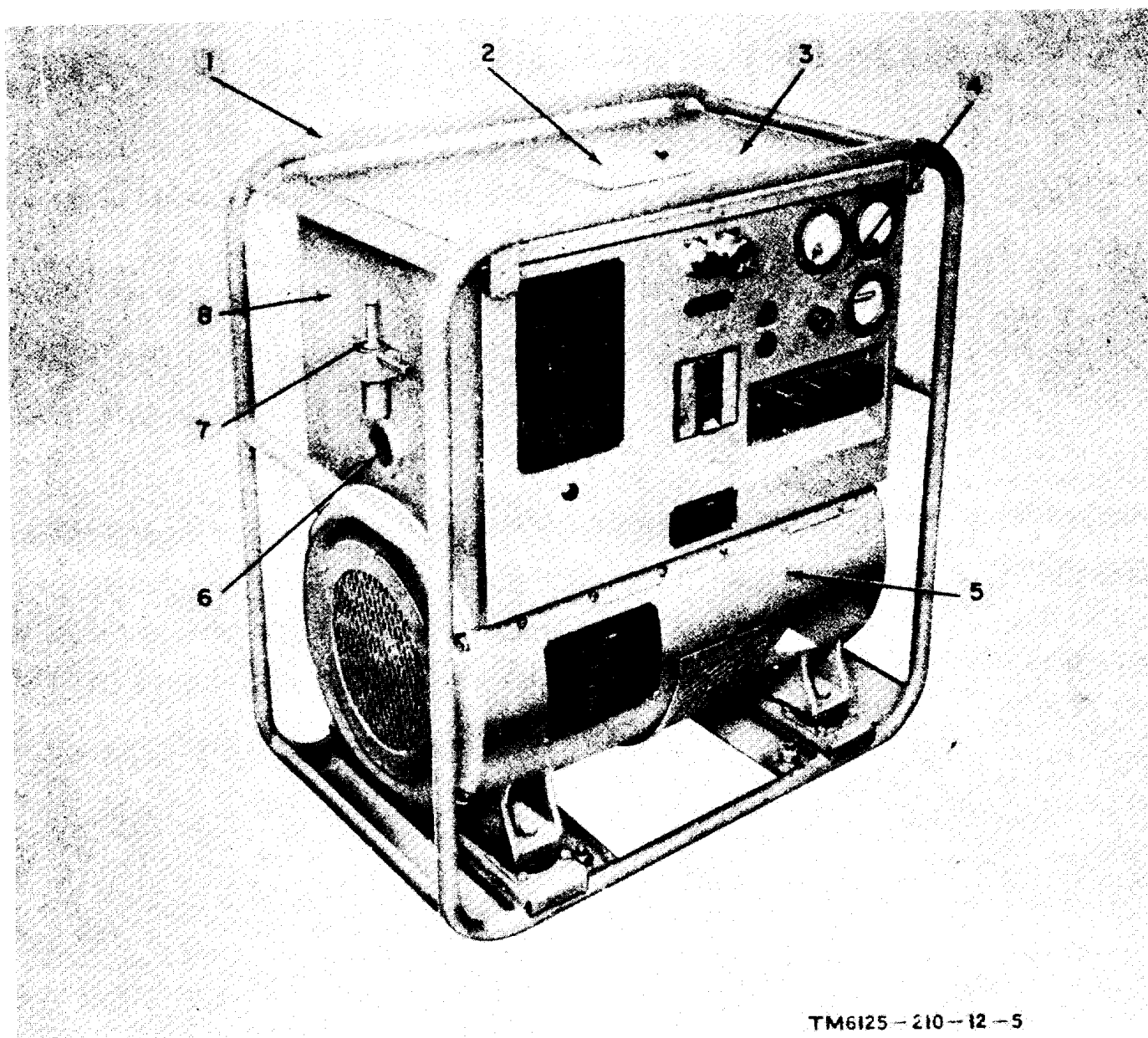
## MOTOR GENERATORS PU-126/U, PU-126A/U, AND PU-126B/U

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\* This manual supersedes so much of TM 11-910, 8 January 1957, and C 1, 5 February 1960, as pertains to operator and organizational maintenance; C2, 2 September 1960; so much of C3, 3 April 1963, as pertains to operator and organizational maintenance; and C4, 31 January 1964.

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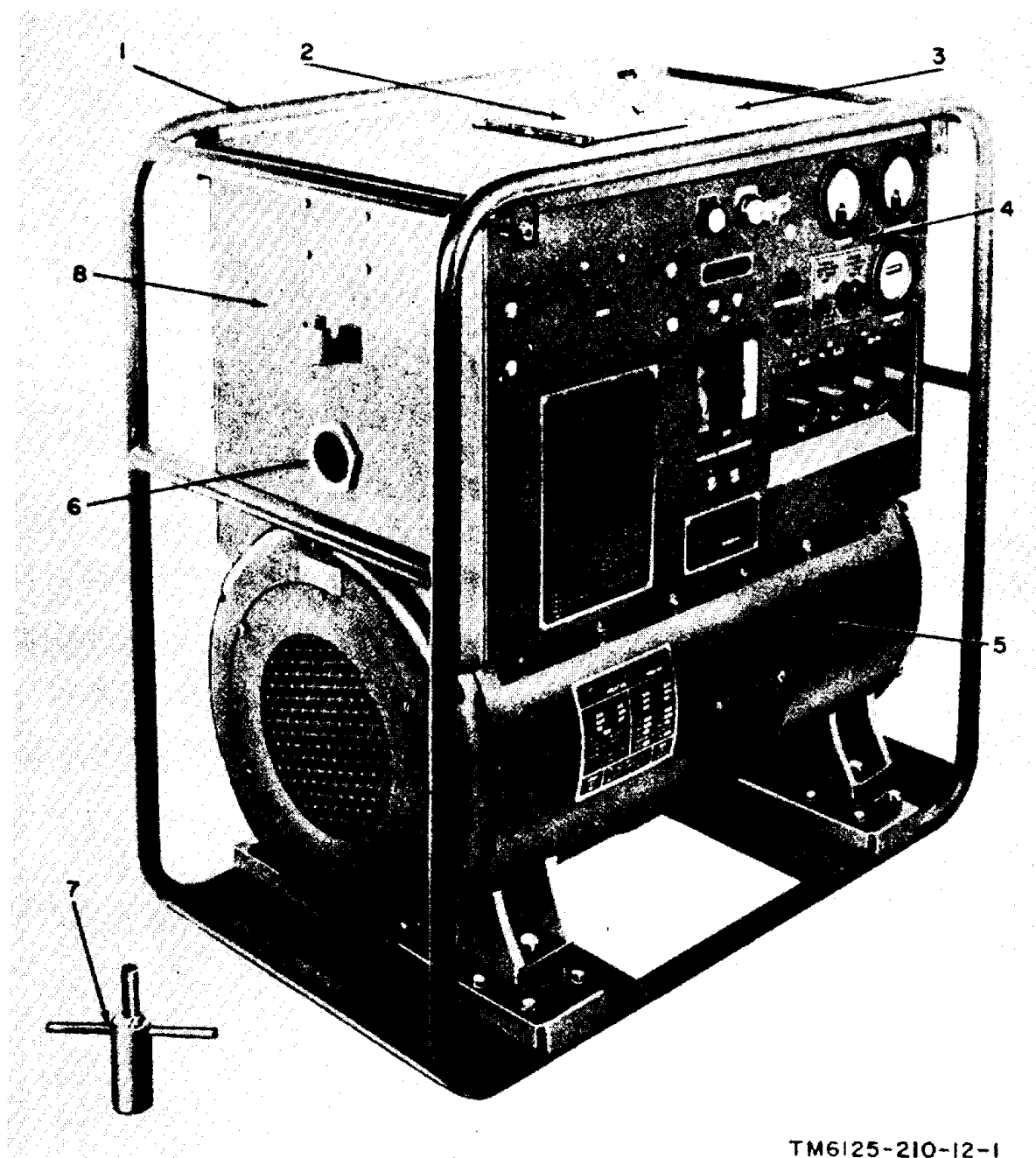


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- |   |                         |   |                 |
|---|-------------------------|---|-----------------|
| 1 | Frame                   | 5 | Motor generator |
| 2 | Lifting eye access door | 6 | Input bushing   |
| 3 | Control box cover       | 7 | Socket wrench   |
| 4 | Front panel             | 8 | Control box     |

Figure 1-1. Motor Generator PU-126/U, less technical manuals and running spares.

Change 1 ii.1



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- |   |                         |   |                 |
|---|-------------------------|---|-----------------|
| 1 | Frame                   | 5 | Motor generator |
| 2 | Lifting eye access door | 6 | Input bushing   |
| 3 | Control box cover       | 7 | Socket wrench   |
| 4 | Front panel             | 8 | Control box     |

Figure 1-2. Motor Generators PU-126A/U and PU-126B/U, less technical manuals and running spares.

## CHAPTER 1 INTRODUCTION

### Section I. GENERAL

#### 1-1. Scope

This manual describes Motor Generator PU-126/U (fig. 1-1) and Motor Generators PU-126A/U and PU-126B/U (fig. 1-2) and provides instruction for installation, operation, and operator and organizational maintenance. It includes instructions for cleaning and inspection of the equipment and replacement of parts available to the operator and organizational repairman. Motor Generators PU-126/U, PU-126A/U, and PU-126B/U are each referred to as motor generator set in this manual.

#### 1-2. Indexes of Publications

a. *DA Pam 310-4.* Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7.* Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

#### 1-3. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment.* Maintenance forms, records, and reports which are to be used by maintenance personnel at all

maintenance levels are listed in and prescribed by TM 38-750.

b. *Report of Packaging and Handling Deficiencies.* Fill out and forward DD Form 6 (report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUG 378 (Navy)/AFR 71-4 (Air Force) MCO P4030.29 (Marine Corps, and DSAR 4145.8.

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 (Army)NAVSUPINST 4610.33/AFM 75-181MCO P4610.19A (Marine Corps), and DSAR 4500.15.

#### 1-3.1. Reporting of Errors

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C Fort Monmouth, NJ 07703.

### Section II. DESCRIPTION AND DATA

#### 1-4. Purpose and Use

The motor generator set is a general purpose power source used to provide 120-volt, 400cycles per second (cps), single-phase or 208-volt, 400-cps three phase alternating current (ac) power. In addition, it may be used as a source of power for the operation of radar equipment installed at sites where suitable ac input power (208-volt, 60cps, three-phase) is available.

#### 1-5. Technical Characteristics

Input:

Voltage ..... 208  $\pm$ 10%.  
Frequency ..... 60 cps  $\pm$ 3%.  
Phase ..... Three.

Output (Wye connection):

Voltage ..... 120 at single phase (phase to neutral, balanced operation and 208 at three phase

Frequency ..... 400 cps  $\pm$ 3%.

Maximum power ..... 12.5 kilowatts (kw)

Power factor ..... 80 percent

Output (Delta connection):

Voltage ..... 120.

Frequency ..... 400 cps  $\pm$ 3%.

Phase ..... Single.

Maximum power ..... 10 kw.

Power factor ..... 80 percent



Operating speed (full ..... 1,735 revolutions  
per load) .....minute (rpm)  
Weight for PU- 126/ ..... 800 pounds

Weight for PU-126A/U  
and PU-126B/U ..... 710 pounds.

### 1-5.1. Items Comprising Operable Motor Generators PU-126/U, PU-126A/U, and PU-1 26BN/U

#### NOTE

The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 70842 and used to identify manufacturer, distributor, or Government agency, etc.

#### NOTE

The number 1 refers to PU-126/U; the number 2 refers to PU-126A/U; the number 3 refers to PU-126B/U.

FSN	QTY	Nomenclature, part No. And mfr.	Usable on code
6125-509-5605		Motor Generator PU-126RU; PU-126A/U; PU-126B/U; including:	
5120-521-5605	1	Wrench, Socket: 126A109, 36024	1,2,3
5120-240-5300	1	Wrench, Socket, Head Screw: Allen type Hexagonal 3/16 in. across flats	1

### 1-6. Output Power Performance Characteristics

provides the conversion values required to determine the output power for single-phase 120-volt operation.

a. *Single-Phase, 120-Volt (Delta Connection) Output Power.* The following chart

% LOAD meter upper scale indication (percent of load)	Output current (amperes)	AC VOLTMETER indication (volts)	Output power 80% power factor (kilowatts)	FREQUENCY meter indication (CPS)
0	0	Between 120 and 125.	0	Between 418 and 420.
25	26	Between 118 and 122	2.5	Between 414 and 416.
50	52	Between 117 and 121.	5.0	Between 412 and 414.
75	78	Between 116 and 120.	7.5	Between 410 and 412.
100	104	Between 114 and 118.	10.0	Between 406 and 408.

b. *Three-Phase, 208-Volt (Wye Connection) Output Power.* The following chart provides the conversion

values required to determine the output power for three-phase, 208-volt operation.

% LOAD meter lower scale indication (percent of load)	Output current (amperes)	Phase-to-phase		FREQUENCY meter indication (cps)	Phase-to-neutral output (volts)
		AC VOLT-METER indication (volts)	Output power 80% power factor (kilowatts)		
	0	Between 208 and 216.	0	Between 418 and 420.	Between 120 and 125.
25	11	Between 206 and 214.	3.0	Between 414 and 416.	Between 118 and 122
50	22	Between 204 and 212.	6.25	Between 410 and 412.	Between 117 and 121.
75	33	Between 202 and 210.	9.5	Between 407 and 409.	Between 116 and 120.
100	44	Between 200 and 208.	12.5	Between 403 and 405.	Between 114 and 118.
125	55	Between 198 and 206.	15.7	Between 400 and 402.	Between 113 and 117.

**1-7. Description of Equipment**

(fig. 1-1 and 1-2)

The motor generator set is a transportable power supply that converts three-phase, 60cps, 208-volt input power to 400cps, 120/208-volt, single-phase or three-phase power. Motor Generators PU-126/U, PU-126A/U, and PU-126B/U consist of the following:

*a. Motor Generator.* The motor generator (5, fig. 1-1 and 1-2) consists of a permanent-magnetic type alternator and a three-phase induction motor enclosed in

a common housing. The generator rotor and the motor rotor are mounted on a common shaft.

*b. Control Box.* The control box (8, fig. 1-1 and 1-2) is mounted on the motor generator and contains the controls and indicators for regulation and operation of the motor generator set. A lifting eye access door (2, fig. 1-1 and 1-2) provides access to the telescoping lifting eyebolt (2, fig. 1-3) Louvers in the rear of the control box provide ventilation for the equipment contained in the control box.

**Change 1 1-2.1**

*c. Frame.* The motor generator set is shockmounted within a welded tubular-steel frame (1, fig. 1-1 and 1-2). The bottom of the frame forms a skid and has four bolt-down plates for bolting the motor generator set to a floor or foundation.

*d. Tools.* The following tools are supplied with the motor generator set: (1) Double-end socket wrench, 1/16-inch and 1-inch hexagonal openings (7, fig. 1-1 and 1-2).

(2) In addition to the double-end socket wrench (1) above, the PU-126/U is supplied with a 3/16-inch hexagonal wrench mounted on the motor starter bracket.

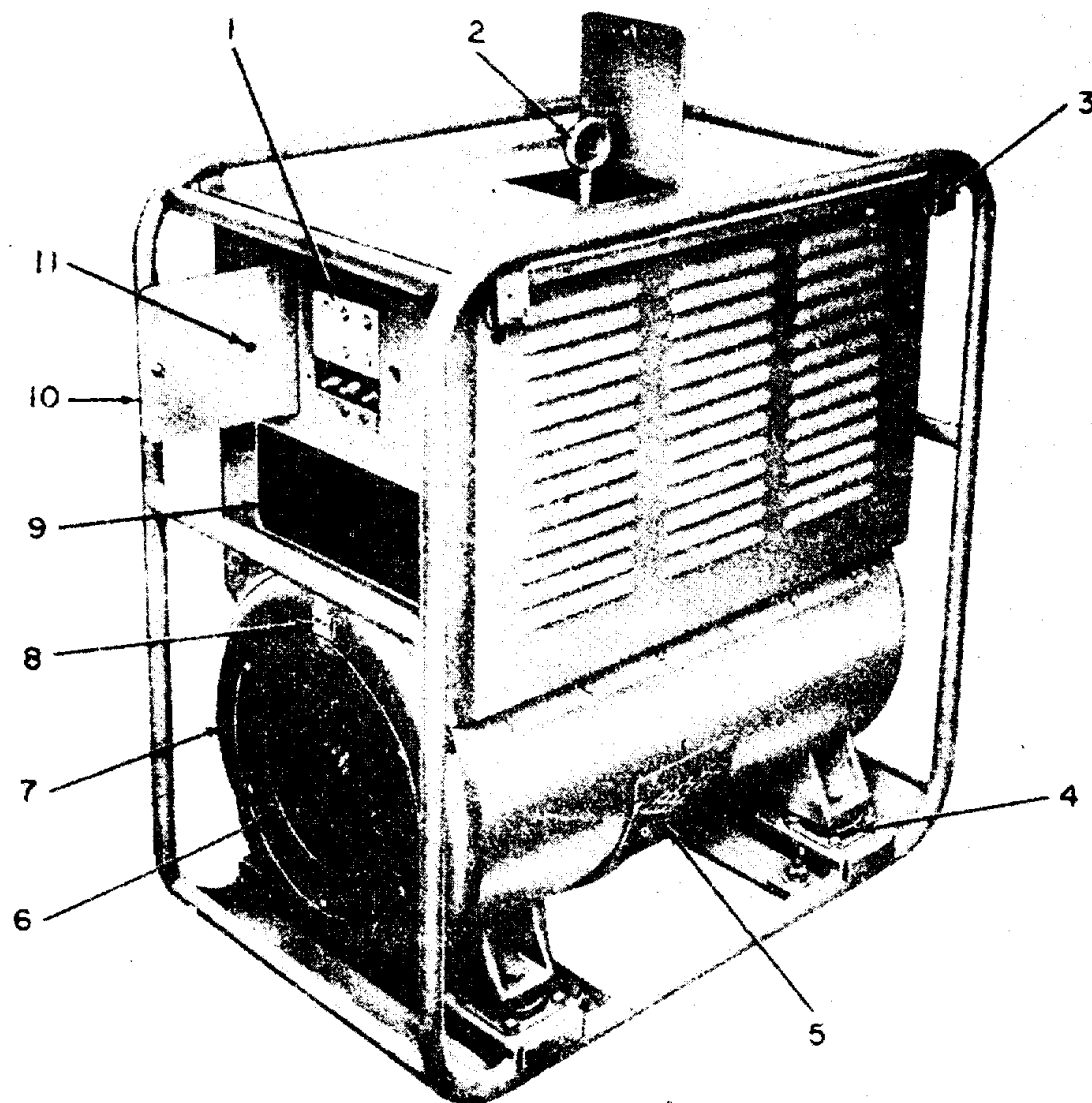
#### **1-8. External Differences in Models**

Motor Generators PU-126A/U and PU126B/U differ from Motor Generator PU-126 U in the following details:

*a.* The DIRECTION OF ROTATION nameplate (8, fig. 1-3) is mounted on the opposite end of the motor generator on the PU-126A/U; however, the direction of rotation is the same for both models.

*b.* The positions of the OPERATING INSTRUCTIONS plate and the RESET button (12, fig. 3-1) are interchanged on the PU126A/U and PU-126B/U.

*c.* The STOP button latch on the PU-126A/ U and PU-126B/U (fig. 3-3) consists of a press-type mechanism rather than a twist-type mechanism as provided on the PU-126/U (fig. 3-2).



TM 6125-210-12-2

- |                          |                                   |
|--------------------------|-----------------------------------|
| 1 Wye-delta change board | 7 End-bell                        |
| 2 Lifting eyebolt        | 8 DIRECTION OF ROTATION nameplate |
| 3 Vibration bumper       | 9 Wye-delta circuit label         |
| 4 Shock mount            | 10 Wye-delta access door          |
| 5 Air outlet grill       | 11 Wye-delta peep hole            |
| 6 Air inlet grill        |                                   |

Figure 1-3. Motor Generators PU-126/U, PU/1126A/U, and PU-126B/U, rear view.

## CHAPTER 2 INSTALLATION

### 2-1. Unpacking

(fig. 2-1)

a. *Packaging Data.* The motor generator set is shipped in a crate that is 43 1/2 inches high, 35 3/4 inches wide, and 25 1/4 inches deep. The crated equipment has a volume of 23 cubic feet and a gross weight for PU-126/U of 980 pounds and 890 pounds for PU-126A/U and PU-126B/U. Before unpacking the motor generator set, move it to the approximate location where it will be installed. The bottom of the crate is constructed to form a skid that may be used to slide the motor generator set short distances.

b. *Removing Contents.*

(1) With a nail puller, remove the nails that hold the top and sides of the crate. Remove the top and sides and both ends of the wooden packing crate.

(2) Remove the technical manual located on the top of the motor generator set.

(3) Remove the nuts and bolts that secure the crate base to the motor generator set. Lift the motor generator set from the wooden packing crate skid base.

### 2-2. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form

b. See that the equipment is complete as listed on the packing list. Report all discrepancies in accordance with TM 38-750 (para 1-3). Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

c. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the front panel near the nomenclature plate. If modified, see that any operational instruction changes resulting from the

modification have been entered in the equipment manual.

#### NOTE

**Current MWO's applicable to the equipment' are listed in DA Pam 3104.**

### 2-3. Placement of Equipment

a. *Relation to Load Equipment.* Locate the motor generator set as near as possible to the load equipment. Long cables between the motor generator set and the load equipment increase line resistance and cause excessive voltage drop.

b. *Relation to Power Source.* Locate the motor generator set as close as possible to a source of 208-volt, three-phase, 60cps power.

c. *Clearance.* Allow not less than 2 feet on all sides of the motor generator set to provide ample air circulation and to permit necessary servicing and adjustment.

d. *Foundation.* The motor generator set may be installed on any surface that will support a weight of at least 800 pounds. The area must be dry and as level as possible. Never operate the motor generator set more than 150 off level in any plane.

e. *Shelter.* Unless the motor generator set is installed in a building, provide some form of shelter to protect it from the weather.

### 2-4. Installation of Equipment

Fasten the motor generator set to the floor or foundation with bolts or lag screws. Pass the fastenings through the four bolt-down plates, one in each bottom corner of the frame. When lag screws are used to fasten the motor generator set to a concrete floor or foundation, use suitable lead anchor inserts in the screw holes. If the motor generator set is installed

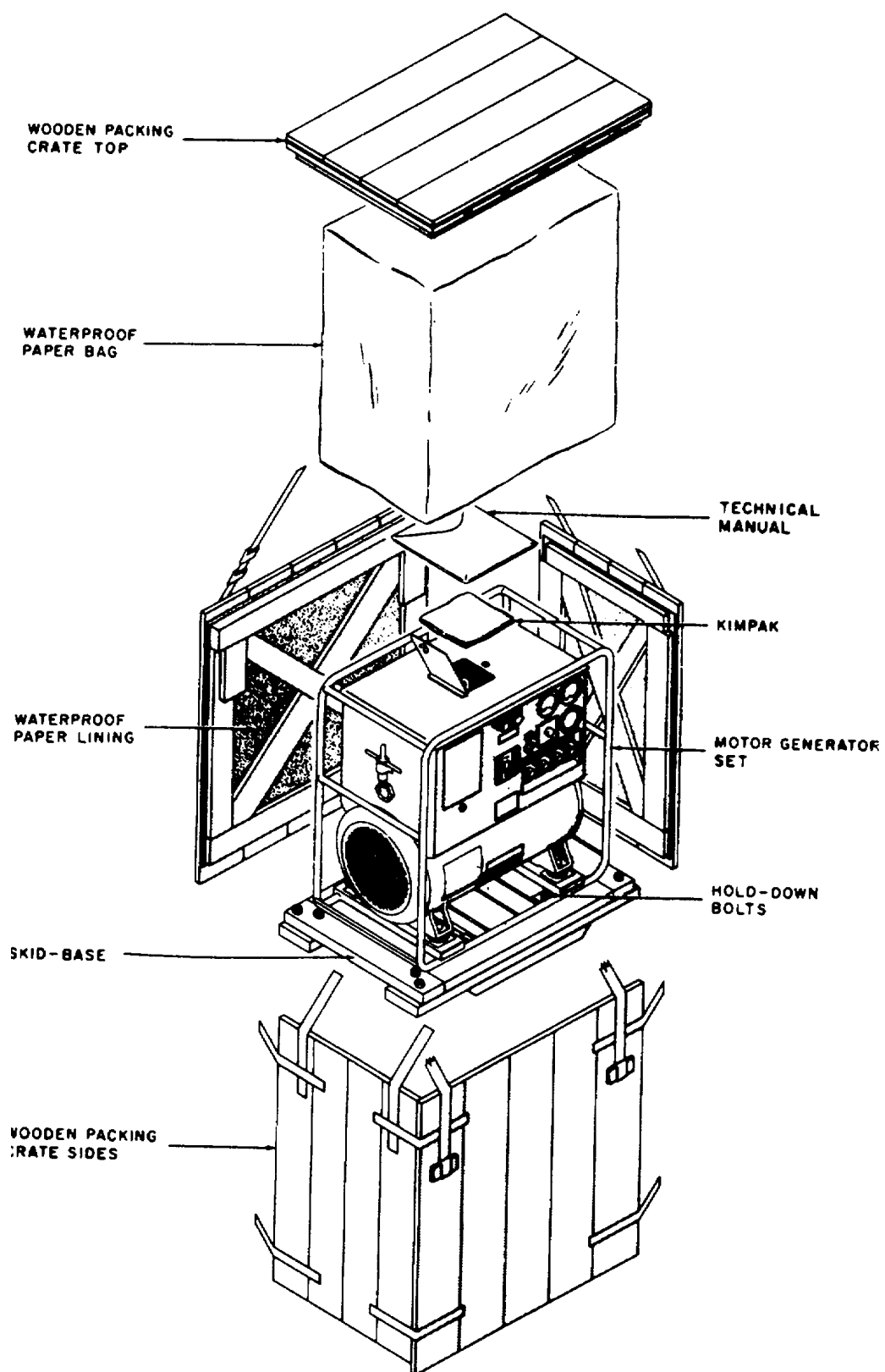


Figure 2-1. Packaging diagram TM 24

Change 1 2-2

near sensitive electronic equipment, install vibration damping material between the motor generator set and the surface on which it is mounted. For the PU-126/U, remove the cardboard stop from the movable arm (17, fig. 2-2) of the motor starter.

## 2-5. Connections

*Note:* Input ac power connections described in a below will be made only by authorized installation personnel.

a. *Input Connections.* Before making the input connections described below, be sure that the ac power source is turned off. Motor starter TM 1 1-6125-210-12

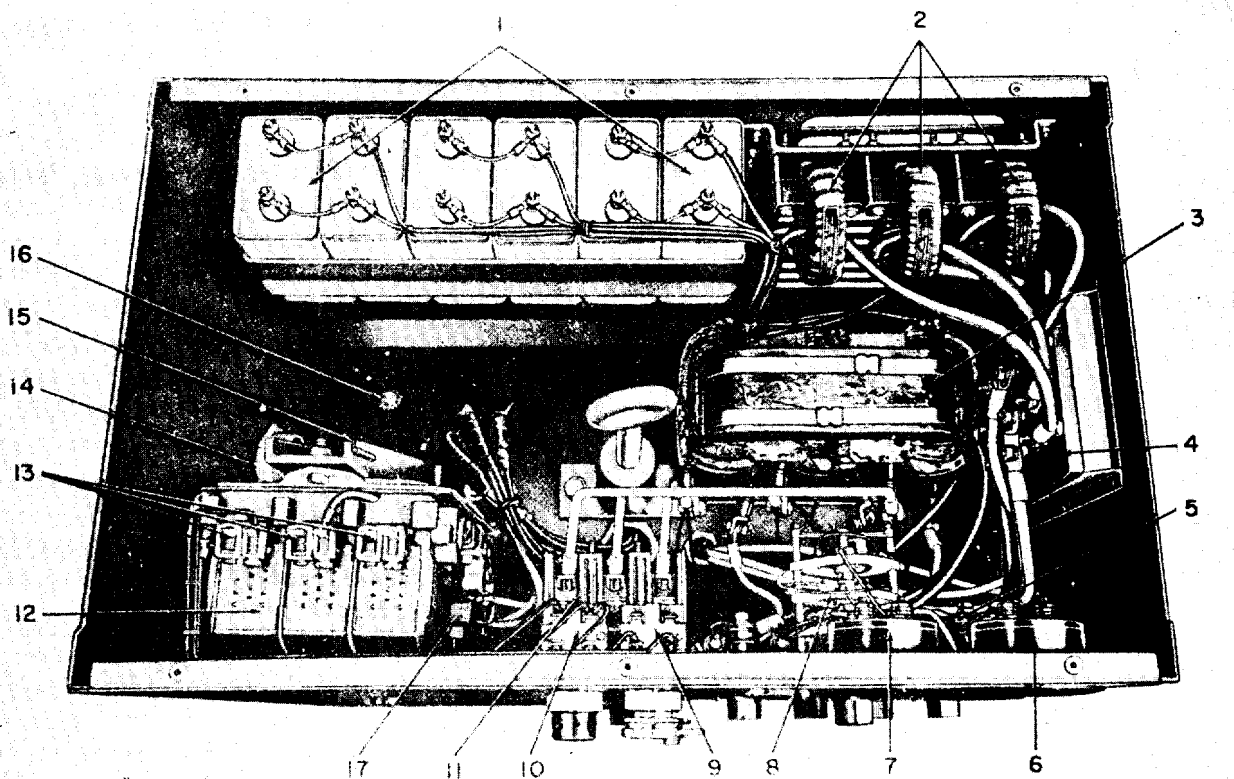
input terminals are located under the control box cover in the left front corner.

(1) Set the STOP button (3, fig. 3-1) to its locked position (fig. 3-2 or 3-3) and set the 400 CPS CIRCUIT BREAKER to OFF (1, fig. 3-1).

(2) Remove the control box cover (3, fig. 1-1 and 1-2) by removing the six slot-head screws and lifting the cover off.

(3) Insert the input cables through the input bushing (6, fig. 1-1 and 1-2).

(4) On the PU-126/U, remove the Allen wrench which is mounted on the Figure 2-2. PU-126/U control box, top view, cover removed.



TM6125-210-12-6

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| 1 Capacitor assembly (C101)           | 10 START switch (S103)             |
| 2 Current transformer assembly (T101) | 11 400-CPS CIRCUIT BREAKER (CB101) |
| 3 Compensator transformer (T105)      | 12 Motor starter (S101)            |
| 4 Wye-delta change board (TB101)      | 13 Motor starter input terminals   |
| 5 FREQUENCY meter (M103)              | 14 Input bushing (H128)            |
| 6 AC VOLTMETER (M101)                 | 15 Allen wrench                    |
| 7 Percent LOAD meter (M102)           | 16 Ground stud                     |
| 8 Meter transfer switch (S102)        | 17 Movable arm                     |
| 9 STOP switch (S104)                  |                                    |

Figure 2-2. PU-126/U control box, top view, cover removed.

motor starter bracket, and use it to loosen the motor starter input terminals. On the PU-126A/U and PU126B/U, loosen the motor starter input terminals by using a standard screwdriver inserted through the holes in the control box directly behind the input terminals.

(5) Connect the input cables in phase to the motor starter input terminals as follows: (a) Connect the phase A input cable to the terminal marked L1.

(b) Connect the phase B input cable to the terminal marked L2.

(c) Connect the phase C input cable to the terminal marked L3.

(6) On the PU-126/U, tighten the connections with the Allen wrench and replace it in its holder. On the PU126A/U and PU -126B/U, tighten the connections with a standard screwdriver.

(7) If a ground cable is used, attach the ground leg of the input cables to the ground stud located at the bottom of the control box. Tighten the ground stud securely.

(8) Before replacing the control box cover, inspect all connections within the control box and check the direction of rotation of the rotor in the following manner.

(a) Set the STOP button to its unlocked position.

(b) Recheck that the 400 CPS CIRCUIT BREAKER is in the OFF position.

(c) Press the START button (2, fig. 3-1) momentarily and release.

(d) If the motor does not start, press and release the RESET button (12, fig. 3-1). Repeat step (c) above.

(e) As soon as the motor has started, press the STOP button, look through the air inlet grill (6, fig. 1-3), and observe the direction of rotation of the rotor. The direction of rotation must be counterclockwise (as

indicated by the DIRECTION OF ROTATION plate (8, fig. 1-3) on the PU-126/U, and clockwise (as indicated on the DIRECTION OF ROTATION plate) on the PU-126A/U and PU-126B/U.

The direction of rotation of the two motor generators is the same but the DIRECTION OF ROTATION plates are mounted on opposite ends of the equipment.

(f) If the direction of rotation is not correct, turn off the ac power source, reverse the connections of any two input leads to the motor starter input terminals, and retighten the connections.

*b. Output Connection for Single-Phase, 120Volt (Delta).*

**Warning:** Never attempt to change the output connections or shift the wye-delta change board while the motor generator set is in operation. Always lock the STOP button in stop position before making or changing connections.

Look through the wye-delta peep hole (11, fig. 1-3) in the wye-delta access door. If the  $\Delta$  (delta) symbol shows, no change will be necessary. If the  $\Delta$  symbol does not show, proceed as follows:

(1) Open the wye-delta access door (10, fig. 1-3) and remove the nuts and washers that secure the wye-delta change board.

(2) Move the wye-delta change board to the  $\Delta$  (delta) position (fig. 2-3) and replace the washers and nuts securely. Use the special socket wrench (7, fig. 1-1 and 1-2) that is provided for tightening the change board nuts.

(3) Close and secure the wye-delta access door.

(4) Connect the output cables from the load to terminals I,1 (phase A) and L3 (phase C) (fig. 2--3). Tighten the connections securely with the special socket wrench (7, fig. 1-1 and 1-2).



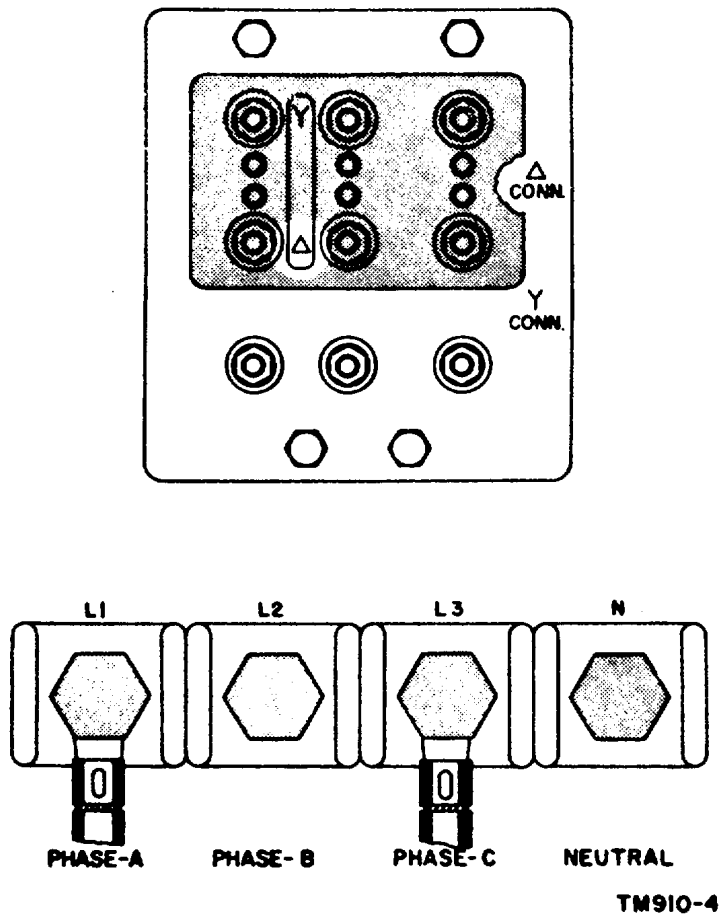


Figure 2-3. Single-phase, 120-volt (delta) connections.

c. *Output Connection for Three-Phase 208-Volt (Wye).* Look through the wye-delta peep hole (11, fig. 1-3) in the wye-delta access door. If the Y (wye) symbol shows, no change will be necessary. If the Y symbol does not show, proceed as follows:

- (1) Open the wye-delta access door (10, fig. 1-3) and remove the nuts and washers that secure the wye-delta change board.
- (2) Move the wye-delta change board to the Y (wye) position (fig. 2-4) and replace the washers and nuts securely.
- (3) Close and secure the wye-delta access door.
- (4) Connect the cables from the load to terminals L1 (phase A) L2 (phase B) and L3 (phase C). Connect N (neutral) if required (fig. 2-4). Tighten the connections securely with the special socket wrench.

2-6. Recommended Wire Sizes

The following charts list the wire lengths and sizes recommended for input and output connections:

a. *Input.*

Length of connection (ft)	Size wire, AWG
Under 25.....	4
25 to 100 .....	2
100 and over .....	1/0

b. *Input*

Length of connection (ft)	Size wire, AWG	
	Wye	Delta
Under 25.....	4	1/0
25 to 100 .....	2	2/0
100 and over .....	1/0	3/0

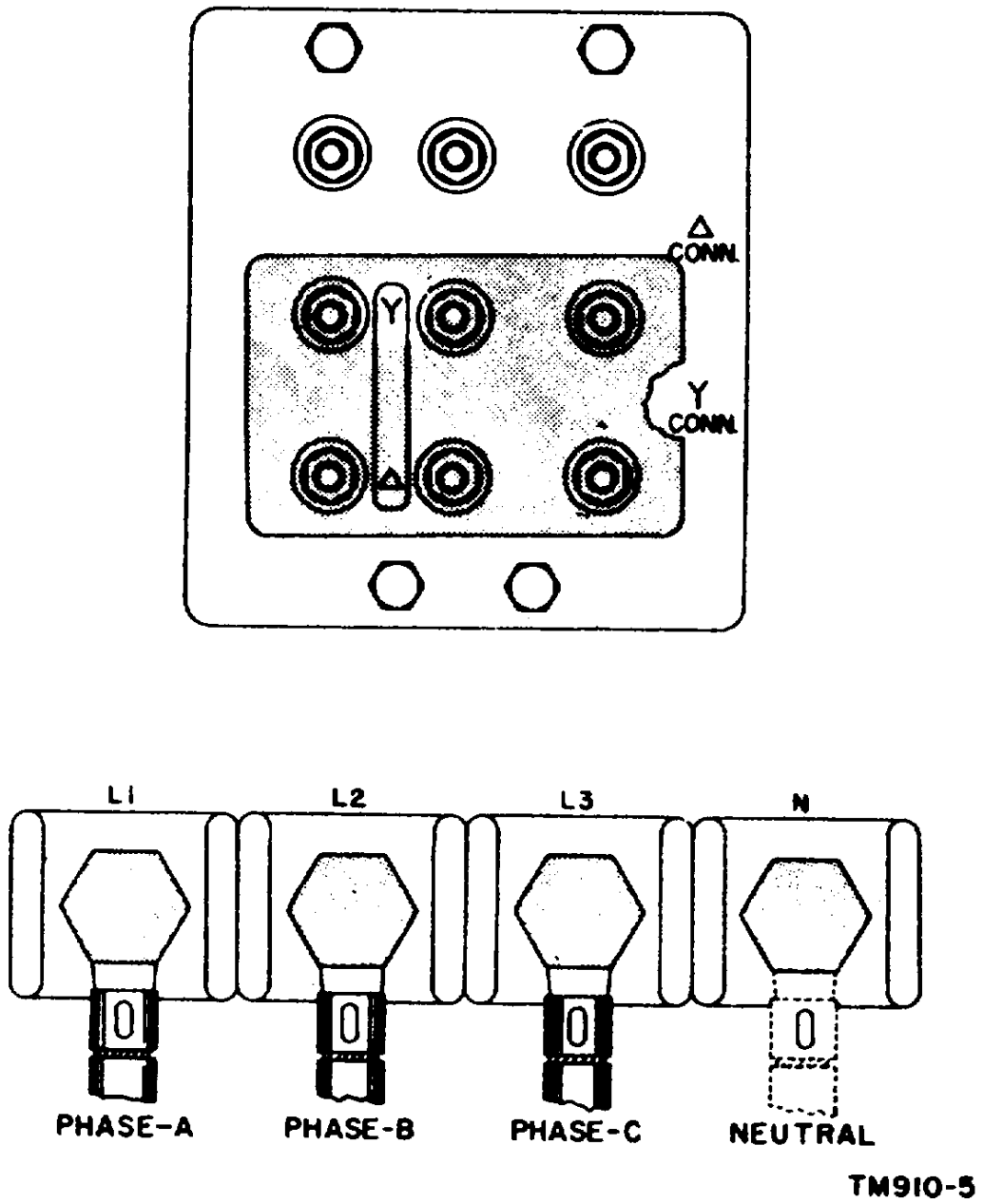


Figure 2-4. Three-phase, 208-volt (wye) connections.

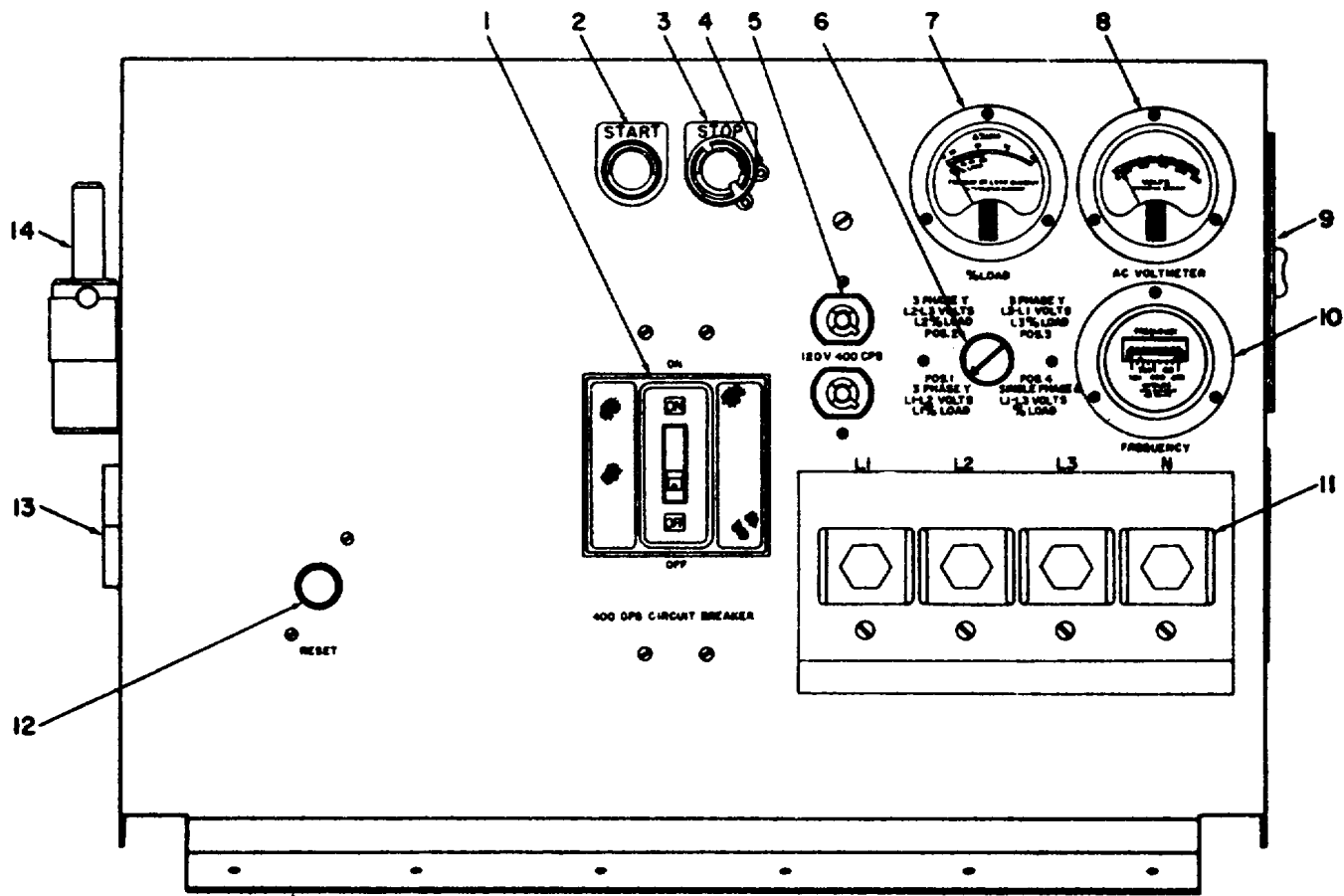
## CHAPTER 3 OPERATING INSTRUCTIONS

### 3-1. Controls and Indicators

(fig. 3-1)

The following chart lists the front panel controls and indicators and their functions:

Control or indicator	Function
START button .....	When depressed, the motor generator set goes on (STOP button must be in unlocked position).
STOP button.....	When depressed or in locked position, removes input power from the motor generator set.
400 CPS CIRCUIT BREAKER switch (2-position toggle)	<p><i>sw po</i> <i>Function</i></p> <p>ON Connects the output power to the load connected to the output terminals. Provides overload protection by automatically disconnecting the output power .</p> <p>OFF Disconnects the output power from the load connected to the output terminals.</p>
RESET button .....	When depressed, resets motor starter thermal overload switches. The terminal overload switches open in the event of excessive current flow, and must be reset to restart the motor.
% LOAD meter .....	Indicates output current in percent of maximum rated load being drawn by the load connected to the output terminals.
Meter transfer switch (four-position rotary switch).	<p><i>sw po</i> <i>Function</i></p> <p>POS. 1 Connects AC VOLTMETER meter to 3 indicate ac voltage across output L1-L2 terminals L1 and L2 and connects % L1 % LOAD LOAD meter to indicate a percent of current flow at output terminal L1</p> <p>POS. 2 Connects AC VOLTMETER meter to 3 indicate ac voltage across output L2-L3 terminals L2 and L3 and connects % L2 % LOAD LOAD meter to indicate a percent of current flow at output terminal L2.</p> <p>POS. 3 Connects AC VOLTMETER meter to 3 indicate ac voltage across output L3-L1 terminals L1 and L3 and connects % L3 % LOAD LOAD meter to indicate a percent of current flow at output terminal L3.</p> <p>POS. 4 Connects AC VOLTMETER meter to indicate ac voltage across output terminals L1 and L3 and connects % L1-L3 VOLTS LOAD meter to indicate a percent of % LOAD current flow at output terminal L3.</p>
120 V 400 CPS duplex receptacles.....	Provide connection to 120-volt 400-cps, single-phase power.



**NOTE**  
ON THE PU-126/U, THE **RESET** BUTTON IS POSITIONED AS SHOWN.  
ON THE PU-126A/U, THE **RESET** BUTTON IS POSITIONED SEVERAL INCHES HIGHER.

TM6125-210-12-4

- |                           |                         |
|---------------------------|-------------------------|
| 1 400 CPS CIRCUIT BREAKER | 8 AC VOLTMETER          |
| 2 START button            | 9 Wye-delta access door |
| 3 STOP button             | 10 FREQUENCY meter      |
| 4 STOP button latch       | 11 Output terminals     |
| 5 Duplex receptacle       | 12 RESET button         |
| 6 Meter transfer switch   | 13 Input bushing        |
| 7 % LOAD meter            | 14 Socket wrench        |

Figure 3-1. Motor Generators PU-1r6/U, PU-126A/U, and PU-1S6B/U, front panel.

### 3-2. Starting Procedure

- a. See that the 400 CPS CIRCUIT BREAKER is in the OFF position.
- b. Place the STOP button latch (fig. 3-2 and 3-3) in the unlocked position.
- c. Push the START button (2, fig. 3-1) momentarily and release.
- d. If the motor generator set does not start, push and then release the RESET button (12, (fig. 3-1). Repeat step c above.
- e. If the motor generator set starts and then stops, wait a sufficient length of time (depending on the ambient temperature) for the thermal overload switches to cool and then push and release the RESET button. Repeat step c above.

### 3-3. Operating Procedure

(fig. 3-1)

**Warning:** Never touch the wye-delta change board or the output terminals while the motor generator set is in operation.

After the motor generator set has been operating, without load, for approximately one-half hour, check the AC VOLTMETER (8), the %o LOAD meter (7), and the FREQUENCY meter (10) for no-load readings as follows:

*a. Single-Phase, 120-Volt (Delta) Operation.* Rotate the meter transfer switch (6) to POS. 4 SINGLE PHASE A L1-L3 VOLTS c/ LOAD. With the switch in this position, the AC VOLTMETER should read between 120 and 125 volts; the percent LOAD meter should read 0; and the FREQUENCY meter should read between 418 and 420 cps.

*b. Three-Phase, 208-Volt (Wye) Operation.* Rotate the meter transfer switch (6) to POS. 1 3 PHASE L1-L2 VOLTS L1 %/c LOAD, POS. 2 3 PHASE Y L2-L3 VOLTS L2 C% LOAD, and POS. 3 3 PHASE Y L3-L1 VOLTS. With the switch in these positions, the AC VOLTMETER should read 212 volts; the percent LOAD meter should read 0; and the FREQUENCY meter should read 418 to 420 cps.

*Note:* If the motor generator set has not warmed up sufficiently to become stabilized, the AC VOLTMETER no-load reading may be slightly higher than stated in a and b above. If necessary, allow an additional warm-up period of between 1/2 and 2 hours and recheck for proper voltage indications.

*c. Applying Load Caution:* Never manually hold the 400 CPS CIRCUIT BREAKER in the ON position.

(1) Place the 400 CPS CIRCUIT BREAKER in the ON position.

(2) If the 400 CPS CIRCUIT BREAKER automatically trips to the OFF position, after applying

load, stop the TM 11-6125-210-12 motor generator set and check for an overload or incorrect connections to the output terminals.

(3) Before setting the 400 CPS CIRCUIT BREAKER to the ON position again, allow the equipment to cool for 3 to 5 minutes. At the end of this period, press the 400 CPS CIRCUIT BREAKER down as far as it will go in the OFF position and then move the handle back to ON.

*d. Precautions During Operation.*

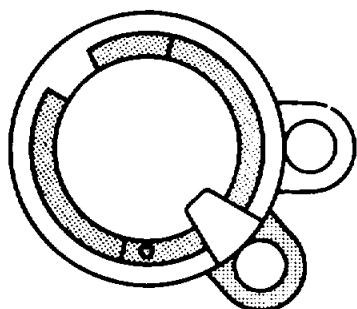
(1) Read the AC VOLTMETER, %o LOAD meter, and FREQUENCY meter every 1/2 hour during the first 2 hours of operation. Compare the meter readings with those given in paragraph 1-6.

(2) Whenever the load is changed or load is connected to the 120 V 400 CPS duplex receptacle, take meter readings to guard against overload conditions.

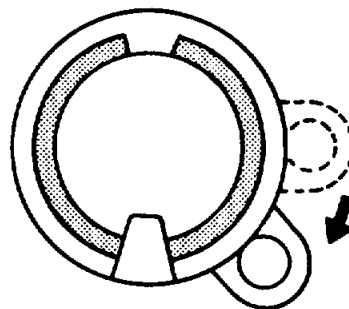
(3) While the motor generator set is operating, be alert for scraping or grinding noises, excessive heating of the two ends of the motor generator, and the smell of burning insulation. If any of these trouble symptoms are noticed, stop the motor generator set immediately.

### 3-4. Stopping Procedure

To stop the motor generator set, place the 400 CPS CIRCUIT BREAKER in the OFF position. On the PU-126/U, depress the red STOP button and then lock it by turning the STOP button latch rings to the locked position (fig. 3-2). On the PU-126A/U and PU126B/U, depress the STOP button and lock it by pressing the latch lever to the locked position (fig. 3-3).



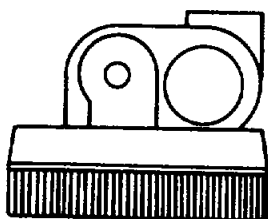
**UNLOCKED  
POSITION**



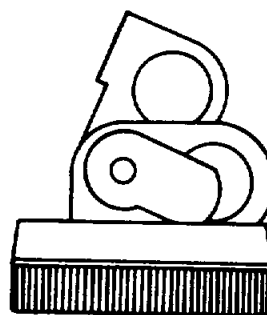
**LOCKED  
POSITION**

**TM910-6**

*Figure 3-2. STOP latch, locked and unlocked positions for Motor Generator P&-126/U.*



**LOCKED  
POSITION**



**UNLOCKED  
POSITION**

**TM 910-C1-4**

*Figure 3-3. STOP button latch, locked and unlocked positions for Motor Generators PU-126A/U and PU-126B/U.*

## CHAPTER 4 MAINTENANCE

### 4-1. Scope of Maintenance

The maintenance duties assigned to the operator of the equipment and the organizational repairman are listed below, together with a reference to the paragraphs covering the specific maintenance function. The tools and test equipment required for maintenance are listed in appendix III.

- a. Operator's daily preventive maintenance checks and services (para 4-4)
- b. Organizational weekly preventive maintenance checks and services (para 4-5).
- c. Organizational monthly preventive maintenance checks and services (para 4-6).
- d. Organizational quarterly preventive maintenance checks and services (para 4-7).
- e. Cleaning (para 4-8).
- f. Troubleshooting (para 4-11).
- g. Repairs (para 4-12).

### 4-2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, reduce downtime, and assure that the equipment is serviceable.

a. *Systematic Care.* The procedures given in paragraphs 4-4 through 4-8 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services charts

(para 4-4 through 4-7) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and the normal indications. The References column lists the paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by performing the corrective actions listed, higher category of maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

### 4-3. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the equipment are required daily, weekly, monthly, and quarterly.

a. Paragraph 4-4 specifies checks and services that must be accomplished daily (or at least once each week if the equipment is maintained in standby condition).

b. Paragraphs 4-5, 4-6, and 4-7 specify *additional* checks and services that must be performed on a weekly, monthly, and quarterly basis, respectively.

### 4-4. Operator's Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Completeness .....	See that the equipment is complete.	Appendix II.
2	Exterior surfaces .....	Clean the exterior surfaces, including the panel and meter glasses (para 4-8). Check all meter glasses for cracks.	
3	Connectors .....	Check the tightness of all connectors.	
4	Ventilation .....	Check that the air inlet and outlet grills (5 and 6, fig. 1-3) and the louvers on the back of the control box are clear and free of obstructions.	

Sequence No.	Item to be inspected	Procedure	References
5	Controls and .....	While making the operating checks (items through 10), indicators. observe that the mechanical action of each knob and switch is smooth and free of external or internal binding, and that there is no excessive looseness. Also, check the meters for sticking or bent pointers.	Paragraph 2-5.  Paragraph 3-3.
6	Connections .....	See that the proper connections are made on the equipment.	
7	START button .....	Depress to start equipment. Note that motor starts.	
8	Operation .....	Operate the equipment. The % LOAD, AC VOLT METER, and FREQUENCY meters should indicate output current in percent of rated load, voltage and frequency, respectively.	Paragraph 1-6.
9	Duplex receptacles .....	The voltage across each receptacle should be between 120 and 125 volts.	
10	400 CPS CIRCUIT BREAKER.	Set to OFF. The % LOAD, AC VOLTMETER, and FREQUENCY meters should indicate 0, between 208 and 216 volts (between 120 and 125 volts for single phase, 120-volt operation), and between 418 and 420 cps, respectively.	
11	STOP button .....	Depress and lock. Note that rotation stops and the meters indicate 0.	

#### 4-5. Organizational Weekly Preventive Maintenance Checks and Service Chart

Sequence No.	Item to be inspected	Procedure	References
1	Cables .....	Inspect cables for chafed, cracked, or frayed insulation. Replace connector that is broken, arced, stripped, or worn excessively.	Paragraphs 4-8 and 4-9.
2	Metal surfaces .....	Inspect exposed metal surfaces for rust and corrosion. Clean and touch up paint as required.	

#### 4-6. Organizational Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Terminals .....	Inspect all terminals. All nuts must be tight. There should be no evidence of dirt or corrosion.	
2	Terminal blocks .....	Inspect terminal blocks for loose connections and cracked or broken insulation.	
3	Capacitors.....	Inspect capacitors for cracks, blistering, or other detrimental defects.	
4	Gaskets and insulators.	Inspect gaskets, insulators, bushings, and sleeves for cracks, chipping, and excessive wear	
5	Interior .....	Clean interior of chassis and cabinet.	

#### 4-7. Organizational Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Publications .....	See that all publications are complete, serviceable, and current.	DA Pam 310-4.
2	Modifications .....	Check DA Pam 3104 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM38-760 and DA Pam 310-4
3	Spare parts .....	Check spare parts for general condition and method of storage. No overstock should be evident, and all shortages must be on valid requisitions.	Appx II.



**4-8. Cleaning**

Inspect the exterior of the equipment. The exterior surfaces should be free of dust, dirt, grease, and fungus.

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

*Warning:* Prolonged breathing of cleaning compound is dangerous. Make sure adequate ventilation is provided. Cleaning compound is flammable; do not use near a flame.. Avoid contact with the skin; wash off any that spills on your hands.

b. Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with Cleaning Compound (FSN 79308399542).

c. Remove dust or dirt from the connection box terminals with a brush.

*Caution:* Do not press on the meter faces (glasses) when cleaning; the meters may become damaged.

d. Clean the front panel, meters, and control knob; use a soft clean cloth. If necessary, dampen the cloth with water; mild soap may be used for more effective cleaning.

**4-9. Touchup Painting Instructions.**

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TB SIG 364.

**4-10. General Troubleshooting Information**

Troubleshooting the motor generator set is based on the operational check contained in the daily preventive maintenance checks and services chart (para 4-4). To troubleshoot the motor generator set, perform all functions starting with item No. 7 in the operator's daily preventive maintenance checks and services chart (para 4-4) and proceed through the items until an abnormal indication or result is observed. If the corrective measures indicated in the troubleshooting chart (para 4-11) do not result in correction of the trouble, higher category of maintenance is required.

**4-11. Troubleshooting Chart**

Sequence No.	Trouble symptom	Probable cause	Checks and corrective measures
1	Motor does not start	Defective START button.	Remove and replace START button (para 4-12).
2	a. % LOAD meter indicates no output current with 400 CPS CIRCUIT BREAKER in the ON position and load connected.	a. Defective % LOAD meter, open circuit in current transformer assembly or open circuit in 400 CPS CIRCUIT BREAKER.	a. Higher category of maintenance required.
	b. Abnormally high reading on % LOAD meter.	b. (1) Equipment overloaded. (2) Wye-delta change board in wrong position. (3) Unbalanced load in three-phase Y operation.	b. (1) Reduce load. (2) Correct position of change board. (3) Balance load.
	c. No reading on AC VOLT-METER on one or all phases; no load applied	c. Open circuit in meter transfer circuit or in AC VOLTMETER	c. Higher category of maintenance required.

Sequence No.	Trouble symptom	Probable cause	Checks and corrective measures
	d. Low or zero reading on AC VOLTMETER; load applied.	d. (1) Open circuit or short circuit in voltage regulating circuit. (2) AC VOLTMETER DEFECTIVE. (3) Short across phases.	d. Higher category of maintenance required.
	e. Low or zero reading on one phase; normal or high voltage readings on other phases.	e. (1) Open circuit in meter transfer circuit. (2) Open circuit or short circuit in meter transfer circuit.	e. Higher category of maintenance required.
	f. High reading on AC VOLT METER.	f. (1) Unbalanced load in Three-phase Y operation. (2) Open circuit in 400 CPS CIRCUIT BREAKER. (3) Defective AC VOLTMETER. required.	f. (1) Balance load.  (2) Higher category of maintenance required. (3) Higher category of Maintenance
3	Voltage reading across duplex receptacle is zero or too high.	Open circuit or short circuit in duplex receptacle.	Remove and replace duplex receptacle (para 4-12).
4	a. % LOAD meter indicates output with 400 CPS CIRCUIT BREAKER set to OFF. b. Improper readings on AC VOLTMETER or FREQUENCY meter.	a. Short circuit in 400 CPS CIRCUIT BREAKER, or defective meter. b. Defect-in meters or meter transfer circuit.	a. Higher category of maintenance required. b. Higher category of maintenance required.
5	a. STOP button will not lock. b. Rotation does not stop when STOP button is depressed.	a. Defective lock mechanism. b. Short circuit in STOP button.	a. Remove and replace STOP button (para 4-12). b. Remove and replace STOP button (para 4-12).

#### 4-12. Repairs

##### a. Removal and Replacement of METER TRANSFER Switch Knob (6, fig. 3-1).

- (1) Note the position of the arrow or dot on the end of the knob.
- (2) Loosen the two set screws in the knob with a 3/32-inch Allen wrench.
- (3) Remove the knob from the shaft.
- (4) Install the new knob with the arrow in the same position as noted in (1) above and tighten the set screws.

##### b. Removal and Replacement of START Button and Switch (2, fig. 3-1).

- (1) Remove the lid of the control box by removing the six slotted screws and lifting the lid off.
- (2) Mark the leads at the back of the switch and disconnect.
- (3) Remove the START button mounting ring and identification plate from the front panel.
- (4) Remove the START button and switch from the rear of the control panel.
- (5) Install the new START button and connect the leads as marked in (2) above.

- (6) Replace the identification plate and the mounting ring and tighten handtight.
- (7) Replace the lid of the control box.
- c. Removal and Replacement of STOP Button and Switch (3, fig. 3-1).

- (1) Remove the lid of the control box by removing the six slotted screws and lifting the lid off.
- (2) Mark the leads at the back of the switch and disconnect
- (3) On the PU-126/U, remove the STOP button latch by loosening the two slotted set screws in the groove of the stationary ring and pull the STOP button latch forward.
- (4) Remove the STOP button mounting ring and identification plate from the front of the control panel.
- (5) Remove the STOP button and switch from the rear of the control panel.
- (6) Install the new STOP button and connect the leads as marked in (2) above.
- (7) Replace the identification plate and the mounting ring and tighten the mounting ring hand tight.
- (8) On the PU-126/U, replace STOP button latch.
- (9) Replace the lid of the control box.

- d. Removal and Replacement of Duplex Receptacle (5, fig. 3-1).

- (1) Remove the lid of the control box by removing the six slotted screws and lifting the lid off.
- (2) Mark the leads at the back of the duplex receptacle and disconnect.
- (3) Remove the two bolts, nuts and washers attaching the duplex receptacle to the control panel and remove the receptacle from the rear of the control panel.
- (4) Install the new duplex receptacle and connect the leads as marked in (2) above.
- (5) Replace the control box lid.

- e. Removal and Replacement of Output Terminal Studs (11, fig. 3-1).

- (1) Remove the lid of the control box by removing the six slotted screws and lifting the lid off.
- (2) Mark the leads at the back of the terminal stud to be replaced and disconnect.
- (3) Remove the black plastic thumb nut and washers from the terminal stud to be replaced.
- (4) Remove the nuts and washers at the rear of the terminal and remove the terminal stud and spacer sleeve from the rear of the terminal and replace the stud.
- (5) Replace the spacer sleeve nuts and washers at the rear of the terminal and connect the leads as marked in (2) above.
- (6) Replace the control box lid.

- f. Removal and Replacement of Output Terminal Boards and Spacer Sleeves (11, fig. 3-1).

- (1) Remove the control box lid by removing the six slotted screws and lifting the lid off.
- (2) Remove the terminal stud as described in e above.
- (3) If the terminal board is to be replaced, remove it from the front of the control panel and replace with a new board.
- (4) If the spacer sleeve is defective remove it from the terminal stud and replace it with a new sleeve.
- (5) Replace the terminal stud and leads at the rear of the control panel.
- (6) Replace the control box lid.

- g. Removal and Replacement of Wye-Delta Change Board and Terminal Studs (1, fig. 1-3).

- (1) Remove the control box cover (3, fig. 1-1 or fig. 1-2) by removing the six slotted screws and lifting the cover off.
- (2) Mark the leads at the rear of the wye delta change board ((TB101) 4, fig. 2-2) and disconnect.
- (3) Open the wye-delta access door (11, fig. 1-3). Remove the screws and nuts that fasten the wye-delta change

board to the control box and remove the board.

- (4) If the wye-delta change board is to be replaced, remove all the terminal studs and install them in a new board.
  - (5) If only a terminal stud is to be replaced remove that stud.
  - (6) Replace the wye-delta change board and the screws, washers and nuts attaching it to the control box.
  - (7) Connect the leads at the rear of the wye-delta change board as marked in (2) above.
  - (8) Replace the control box lid and close the wye-delta access door.
- h. Removal and Replacement of Bearing Plugs.
- (1) Remove the air inlet grill (6, fig 1-3) from the end bell by removing the six slotted screws and lock washers and pulling the grill off.
  - (2) Pull out the rubber plug from the center of the bearing cover and replace with a new plug.
  - (3) Replace the air inlet grill.

i. Removal and Replacement of Resilient Mounts.

- (1) To replace the rubber vibration bumpers: (a) Remove the bolts attaching the vibration bumper to the frame and remove the bumpers.  
(b) Replace the vibration bumper with a new one and replace the bolt.
- (2) To replace the rubber shock mounts: (a) Remove the bolt and washer attaching the shock mount (4, fig. 1-3) to the motor generator set.  
(b) Hook an overhead hoist to the lifting eyebolt (2, fig. 1-3) and lift the motor generator set off the rubber shock mount.  
(c) Remove the rubber shock mount by removing the bolts and washers attaching it to the frame and replace with a new shock mount.  
(d) Lower the motor generator set onto the new shock mount and replace the bolt and washer attaching the motor generator set to the shock mount.

## CHAPTER 5 SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

### Section I. SHIPMENT AND LIMITED STORAGE

#### 5-1. 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. Adapt the procedure outlined below whenever circumstances permit. The information concerning the original packaging (para 2-1) will also be helpful.

*a. Material Requirements.* The following materials are required for packaging the power supply. For stock numbers of materials, refer to SB 38100.

Material	Quantity
Waterproof paper .....	60 sq ft.
Metal strapping .....	38 ft.
Gummed paper tape .....	30 ft.
Wooden packing crate 43-1/2 by 35-3/4 by 25-1/2 in.	1.

*b. Packaging* (fig. 2-1). Package the items of the motor generator set as outlined below.

- (1) *Main unit.* Wrap the main unit on all sides with the waterproof paper bag. Secure the

waterproof paper bag with gummed paper tape.

- (2) *Technical manual.* Wrap the technical manual in waterproof paper and seal the package with gummed paper tape. Fasten the package containing the technical manual to the top of the motor generator set with gummed paper tape.

#### 5-2. Packing

Pack the equipment as follows:

- a.* Disconnect all leads and the power cable.
- b.* Insert a cardboard stop between the movable arm and the base of the motor starter (fig. 2-2).
- c.* For the PU-126/U, tape the 3/16-inch hexagonal wrench to the motor starter bracket inside the control box.
- d.* Replace the double-end socket wrench in the bracket on one end of the control box (7, fig. 1-1).
- e.* Repack the motor generator set in its original crate (or equivalent) as shown in packaging diagram (fig. 2-1).

### Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

#### 5-3. Authority for Demolition

The demolition procedures given in paragraph 5-4 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon the order of the commander.

#### 5-4. Methods of Destruction

The tactical situation and time available will determine the method to be used when destruction of equipment is ordered. In most cases, it is preferable to demolish completely some portions of the equipment

rather than partially destroy all the equipment components.

*a. Smash.* Smash the cabinet, meters, and controls. Smash the internal components.

*b. Cut.* Cut the wiring of the power supply.

Warning: Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

*c. Burn.* Burn the technical manual first. Burn as much of the equipment as is flammable.

*d. Dispose.* Bury or scatter destroyed parts.

**APPENDIX I  
REFERENCES**

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Following is a list of references available to the operator and organizational repairman of the equipment.

DA Pam 310.	Index of Technical Manuals, Technical. Bulletins, Supply Manuals (Types. 7, 8, and 9), Supply Bulletins.. Lubrication Orders, and Modification Work Orders.
SE 3>8100	Preservation, Packaging, and Packing Materials, Supplies, and El4unllieniUsed by the Army.
TM 9-213	Painting Instructions for Field Use.
TM 11-6625-203-12	Operator and Organizational Maintenance: Multimeter AN ;RM-11:5, Including Multimeter ME-77/U.
TM 38-750	Army Equipment Record Procedures.

## APPENDIX II BASIC ISSUE ITEMS LIST

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### Section I. INTRODUCTION

#### A2-1. General

This appendix lists items supplied for initial operation. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

#### A2-2. Columns

Columns are as follows:

- a. Federal Stock Number.* This column lists the 11-digit Federal stock number.
- b. Designation by Model.* The dagger indicates the model in which the part is used.

*c. Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

*d. Unit of Issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

*e. Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

*f. Quantity Authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment.

*g. Illustration.* Not used.

## SECTION II. OPERATOR'S FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
										FIGURE NO.	ITEM NO.
6125-509-5605						MOTOR GENERATOR PU-J-6/U; PU-126A/U; FU-126B/U		NX			
						NOTE: Model Column 1 refers to PU-126/U; Model Column 2 refers to PU-126A/U; Model Column 3 refers to Pu-126B/U					
						ITEM COMPRISING AN OPERABLE EQUIPMENT					
						MOTOR GENERATOR PU-126/U; PU-126A/U; PU-126B/U: (Basic Component)		NX	1		
ORD0 THRU AC	/	/	/			TECHNICAL MANUAL TM 11-61-5-210-1 1					
						NOTE: A quantity of one technical manual is packed with each equipment. Where a valid need exists, additional copies may be requisitioned and kept on hand.					
						ACCESSORY ITEMS					
5120-523-6193	/	/	/			WRENCH, SOCKET: L. W. part no. 126A1093			1		
5120-240-5300	/	/	/			WRENCH, SOCKET, HEAD SCREW: Allen type Hexagonal 3/16 in. across flats			1		
						RUNNING SPARE ITEM					
						NO PARTS AUTHORIZED AT OPERATOR'S LEVEL					



## APPENDIX III MAINTENANCE ALLOCATION

### Section I. INTRODUCTION

#### A3-1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance category.

b. Columns in the maintenance allocation chart are as follows:

- (1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) are listed in disassembly order or alphabetical order.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the categories.
  - (a) *Service.* To clean, to preserve, and to replenish lubricants.
  - (b) *Adjust.* To regulate periodically to prevent malfunction.
  - (c) *Inspect.* To verify serviceability and detect incipient electrical or mechanical failure by scrutiny.
  - (d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
  - (e) *Replace.* To substitute serviceable components, assemblies or subassemblies, for unserviceable components, assemblies, or subassemblies.
  - (f) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to

welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

- (g) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.
- (h) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.
- (i) *Overhaul.* To restore an item to completely serviceable condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.
- (j) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn

or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

- (3) Operator, organizational, direct support, general support, and depot. The symbol X indicates the categories responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Categories higher than those marked by X are authorized to perform the indicated operation.
- (4) Tools required. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

- (5) Remarks. Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.

c. Columns in the allocation of tools for maintenance functions are as follows:

- (1) Tools required for maintenance function. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) Operator, organizational, direct support, general support, and depot. The dagger (†) symbol indicates the categories normally allocated the facility
- (3) Tool code. This column lists the tool code assigned.

### A3-2. Maintenance by Using Organizations

When this equipment is used by electronics services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including general support are authorized to the organization operating this equipment.

### Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

PART OR COMPONENT	MAINTENANCE FUNCTION	MAINTENANCE CATEGORY					TOOLS REQUIRED	REMARKS
		O/C	O	DS	GS	D		
MOTOR GENERATOR PU-126/U, PU-126A/U AND PU-126B/U	service	X	X				12	Exterior
	adjust			X			11, 12	Meters, Auxiliary holding switch, and clearance on reset and start button assemblies
	inspect	X						Exterior
	test		X				12	
			X	X			3	Continuity of circuits and output voltage
							4, 5, 11	Component voltage and resistance-insulation resistance panel meters, output voltage, current and frequency.
					X		1, 2, 4, 5, 6, 10, 13	All tests except efficiency and phase rotation
	repair		X			X	1, 2, 4, 5, 6, 7, 10, 13, 14, 15, 8, 12, 15	All tests Replace receptacle connector, knob, start and stop switches, spacer sleeves, terminal boards and studs, bearing plug, resilient mounts
				X			9, 12, 15	Replace suppression capacitors circuit break- er contacts, meters, thermal relay, relay solenoid, rotary switches, current transformer and bearings
					X		9, 12, 15	All repairs except motor generator staters & rotors replacement
						X	1, 11, 12, 15	All repairs
		A3-3						

### Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	MAINTENANCE CATEGORY					TOOL CODE	REMARKS
	O/C	O	DS	GS	D		
PU-126 (continued) *AMMETER ME-65A/U				/	/	1	Associated Research Inc. Model 44, or equal
FREQUENCY METER AN/TSM-16				/	/	2	
MULTIMETER AN/URM-105		/				3	
MULTIMETER AN/JSM-33			/	/	/	4	
MULTIMETER TS-352/U			/	/	/	5	
OHMMETER ZM-21A/U				/	/	6	
PHASE SEQUENCE INDICATOR					/	7	
PULLER, BEARING FSN 5120-356-4537			/	/	/	8	
SOLDERING IRON TL-117 FSN 3439-965-0089			/	/	/	9	
TEST SET, CAPACITANCE-INDUCTANCE-RESISTANCE AN/URM-90				/	/	10	
TEST SET, ELECTRICAL POWER AN/U-93A			/			11	
TOOL KIT, AUTOMOTIVE MECHANICS FSN 5180-754-0641		/	/	/	/	12	
VOLTMETER, ELECTRONIC E-202/U				/	/	13	
WATTMETER TS-430/U					/	14	
KEY SET, SOCKET HEAD SCREW F8N 5120-595-9244		/	/	/	/	15	
* A Model Required - 400 cycle generator output							Two required

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USACSS (5)  
USASCS (40)  
USAAMS (30)  
USATC AD (2)  
USATC Armor (2)  
USATC Engr (2)

USATC Inf (2)  
USASTC (2)  
WRAMC (1)  
Army Pic Cen (2)  
USACDCEC (10)  
Instl (2) except  
Ft Monmouth (70)  
Ft Hancock (4)  
Ft Gordon (10)  
Ft Huachuca (10)  
WSMR (5)  
Ft Carson (25)  
Ft Knox (12)  
Army Dep (2) except  
LBAD (14)  
SAAD (30)  
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NAAD (5)  
SVAD (5)  
CHAD (3)  
ATAD (10)  
GENDEP (OS) (2)  
Sig Sec, GENDEP (OS) (5)  
Sig Dep (OS) (12)  
Sig Fld Maint Shops (2)  
AMS (1)  
USAERDAA (2)  
USAERDAW (13)  
USACRREL (2)  
1st GM Bde (5)  
Units org under fol TOE:  
11-57 (2)  
11-97 (2)  
11-98 (2)  
11-117 (2)  
11-127 (2)  
11-155 (2)  
11-157 (2)  
11-158 (2)  
11-500 AA-AC (2)  
11-587 (2)  
11-592 (2)  
11-597 (2)

44-102 (2)  
44-112 (2)  
44-635 (2)  
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*NG*: State AG (3); Units-Same as Active Army except allowance is one copy to each unit.

*USAR*: None.

For explanation of abbreviations used see AR 320-50.

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