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**TECHNICAL MANUAL**

**OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT MAINTENANCE  
MANUAL**

**INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST**

**TEST SET, ELECTRICAL (LOAD BANK,) 0-30 KW,**

**AC; PORTABLE SKID-MOUNTED**

**(ESSEX ELECTRO ENGINEERS, INC. MODEL A427)**

**NSN 6625-00-730-4368**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**10 SEPTEMBER 1976**

**WARNING**  
**BEFORE OPERATION**

Ground the test set frame to avoid electrical shock hazard. A grounding stud is provided on the unit.

**DURING OPERATION**

Do not touch, disconnect or connect any electrical parts until unit is shut down.

When unusual vibration or noises occur turn off unit. Use CO<sub>2</sub> to put out electrical fires.

Do not remove panels while unit is connected to power source.

When excessive heat is produced by the motor or other components, stop test set at once.

If Selenium Rectifier has failed or is burning (accompanied by acrid stench), de-energize test set at once and remove to outside to dissipate fumes.

**AFTER OPERATION**

Do not store the unit on end or upside down.

**WARNING**

Dry cleaning solvent P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 F (38 C) - 138 F (60 C).

**WARNING**

Operation of this equipment presents a noise hazard to personnel in the area. The noise level exceeds the allowable limits for unprotected personnel. Wear ear muffs or ear plugs which were fitted by a trained professional.

CHANGE }  
No. 1 }

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D.C., 17 September 1982

Operator, Organizational and Direct Support  
Maintenance Manual

TEST SET, ELECTRICAL (LOAD BANK), 0-30KW,  
NSN 6625-00-730-4368 (MODEL A427)  
NSN 6625-01-106-9373 (MODEL A427B)

TM 5-6625-2691-13&P, 10 September 1976, is changed as follows:

1. Title is changed as shown above.
2. Remove and insert pages as indicated below.

	Remove pages	Insert pages
Table of Contents	i and ii iii	i and ii iii/iv
Chapter 1	1-1 and 1-2 1-5 thru 1-7	1-1 and 1-2 1-5 thru 1-10
Chapter 5	5-5 thru 5-11	5-5 thru 5-11/5-12
Appendix B	B-1 thru B-13	B-1 thru B-21/B-22
Appendix C	C-1 and C-2	C-1 and C-2
Index	I-1 thru I-7 Figure 1-4	I-1 thru 1-7/1-8 FO-1 and FO-2

3. New or changed text material is indicated by a vertical bar in the margin.  
An illustration change is indicated by a miniature pointing hand.

4. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

**E.C. MEYER**  
*General, United States Army*  
*Chief of Staff*

Official:

**ROBERT M. JOYCE**  
*Major General, United States Army*  
*The Adjutant General*

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25D, Operator Maintenance Requirements for Generator Test Equipment.



**OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT  
MAINTENANCE MANUAL  
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST**

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NSN 6625-00-730-4368 (MODEL A427)  
NSN 6625-01-106-9373 (MODEL A427B)**

**REPORTING OF 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, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MPSD, 4300 Goodfellow Blvd., St. Louis, MO 63120. A reply will be furnished directly to you.

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This manual supersedes TM 5-6115-453-12,7 March 1969, including all changes, TM 5-6115-453-23P, 20 February 1970 and TM. 5-6115-453-35, 15 May 1969.

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# CHAPTER 1 INTRODUCTION

## Section I. GENERAL

### 1-1. Scope

This manual is for your use in operating and maintaining the electrical test set (load bank).

### 1-2. Maintenance Forms and Records

Maintenance forms and records that you are required to use are as follows:

- a. DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
- b. DA Form 2407 (Maintenance Request Used for Requesting Support Maintenance).
- c. DA Form 2407-1 (Continuation Sheet Used for Requesting Support Maintenance).
- d. For further information, refer to TM 38-750, The Army Maintenance Management System (TAMMS).

### 1-3. Equipment Serviceability Criteria (ESC)

This equipment is not covered by an ESC.

### 1-4. Destruction of Army Material to Prevent Enemy Use

#### a. General

(1) When capture or abandonment of the test set to an enemy is imminent, the responsible unit commander must make the decision either to destroy the equipment or render it inoperative. Based on the decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all test sets and all corresponding spare parts.

(2) When the lack of time or personnel prevents complete destruction of the equipment, the following

priorities will be used in the destruction of essential parts.

- (a) Control panel assembly.
- (b) Power absorbers.
- (c) Variable transformer.
- (d) Contactor.
- (e) Rectifier.
- (j) Frame.

b. *Demolition to Render the Equipment Inoperative.* Use sledge hammers, crowbars, picks, axes or any other heavy tools which are available to destroy the unit.

#### c. *Demolition by Explosive or Weapons Fire.*

(1) *Explosives.* Place 3 one-pound (.45 kg) charges in the interior of the unit and detonate simultaneously.

(2) *Weapons fire.* Fire on the test set with the heaviest practical weapons available.

#### d. *Other Demolition Methods.*

(1) *Scattering and concealment.* Remove all easily accessible parts and scatter them through dense foliage, bury them in the ground or submerge them in a lake, stream, or other body of water.

(2) *Burning.* Pack rags, clothing, or canvas inside, under and around the test set. Saturate this packing with gasoline, oil or diesel fuel and ignite it.

(3) *Submersion.* Totally submerge the equipment in a deep body of water to provide water damage and concealment. Salt water does greater damage to metal parts than fresh water.

(4) For further information, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

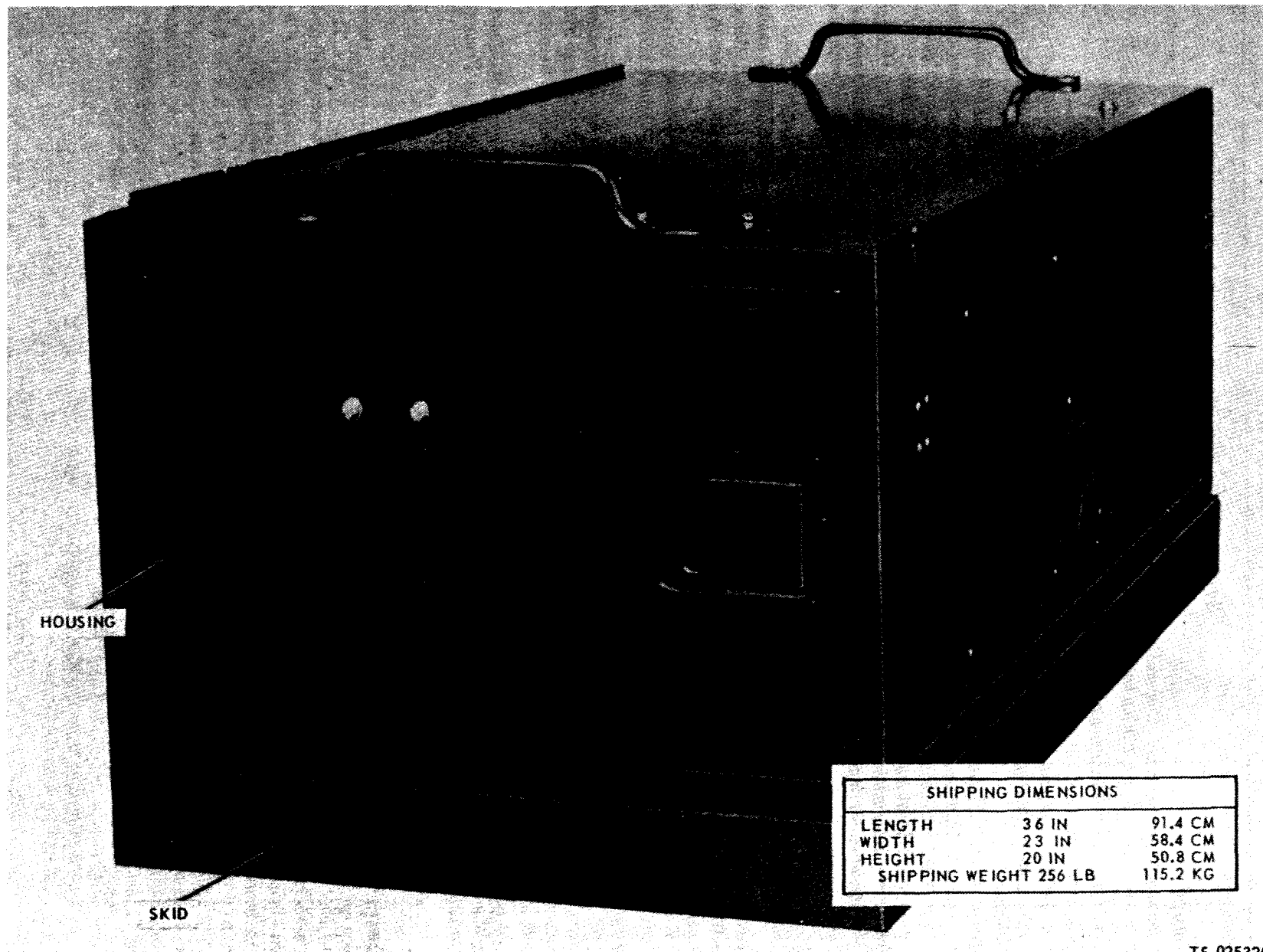
## Section II. DESCRIPTION AND DATA

### 1-5. Description

a. **General.** The electrical test set, either Model A427 or Model A427B, is a portable, skid mounted resistive load unit. It is a completely self-contained unit mounted within a weather resistant enclosure. Models A427 and A427B are electrically, operationally and functionally identical to each other. Physically, the overall envelop of the two models differ only to the extent that Model A427B is provided with specially designed skids and hand lifting bars. Model A427B stands 5" taller than Model A427 for this reason. Many of the internal components are different and not physically interchangeable.

b. **Capabilities.** The electrical test set, either Model A427 (fig. 1-1) or Model A427B, operates as a loading and testing device for electrical gener-

ating equipment. This is accomplished by applying various combinations of the resistive load increments to simulate any output load. The load bank is designed to test the output characteristics of generating plants rated at 120/208 and 240/416 volts, three phase, 4 wire; 120 or 240 volts single phase, 2 wire. The load bank can operate at frequencies between 50 and 100 cycles per second. Input power terminals are supplied for connection of power cables. Power cables are not supplied with the equipment. The load bank can apply 0.5 to 33 kilowatts variable load and 3, 6, 9, 12 KW fixed loads. When fixed and variable loads are applied in combination, the load bank can supply any load from 0.5 to 33 kilowatts on either single or balanced three phase operation.

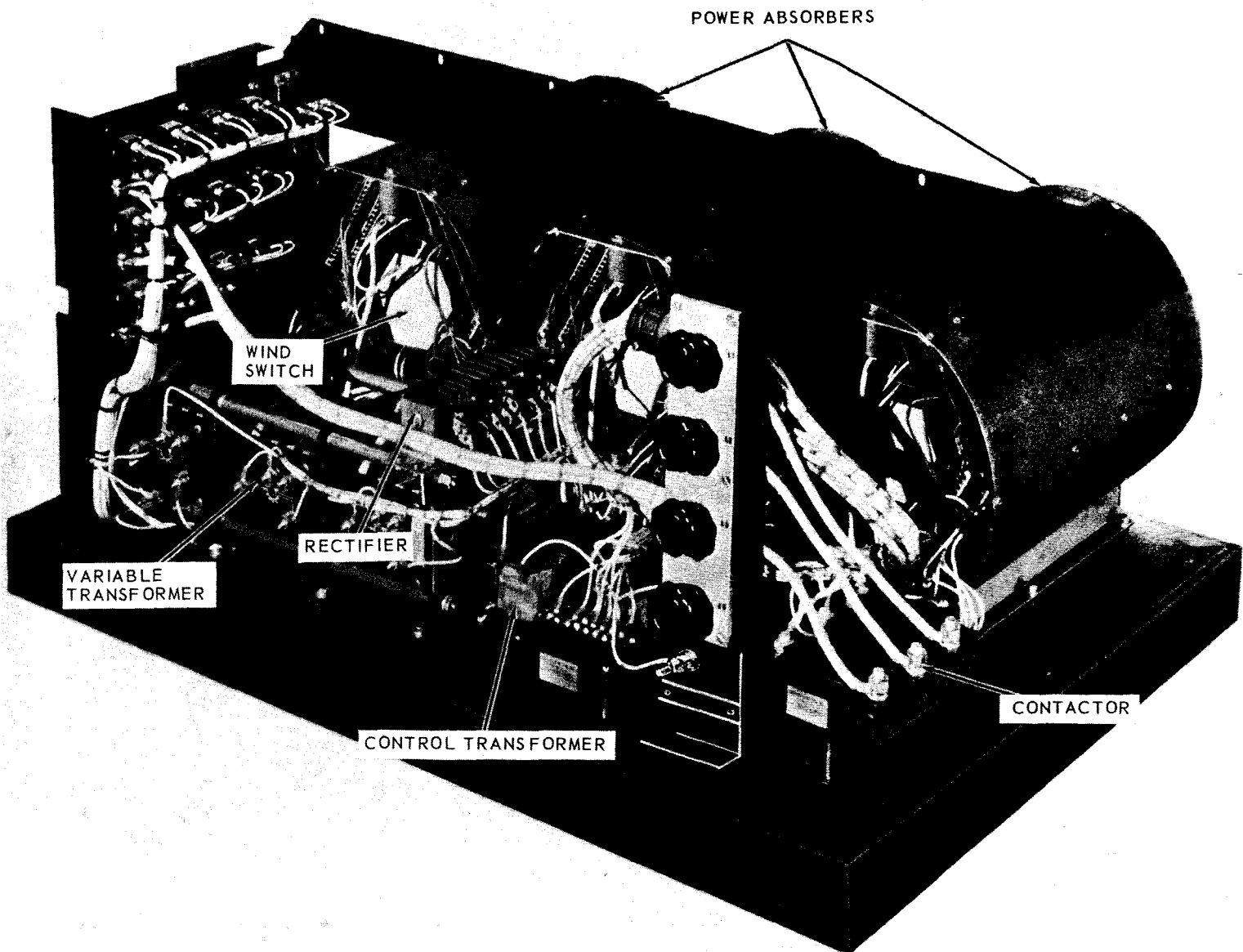


TS 025320

*Figure 1-1. Test set, right front, three quarter view with shipping dimensions.*

c. *Major Assemblies and Components.* The major assemblies and components of the test set include a housing, control panel assembly, 3 power absorbers, variable transformer, contactor, rectifier, output terminals,

and a voltage sensing module illustrated in figures 1-1 through 1-3. The maintenance paragraphs of this manual contain detailed descriptions of its components.



TS 025321

Figure 1-2. Test set, top view.

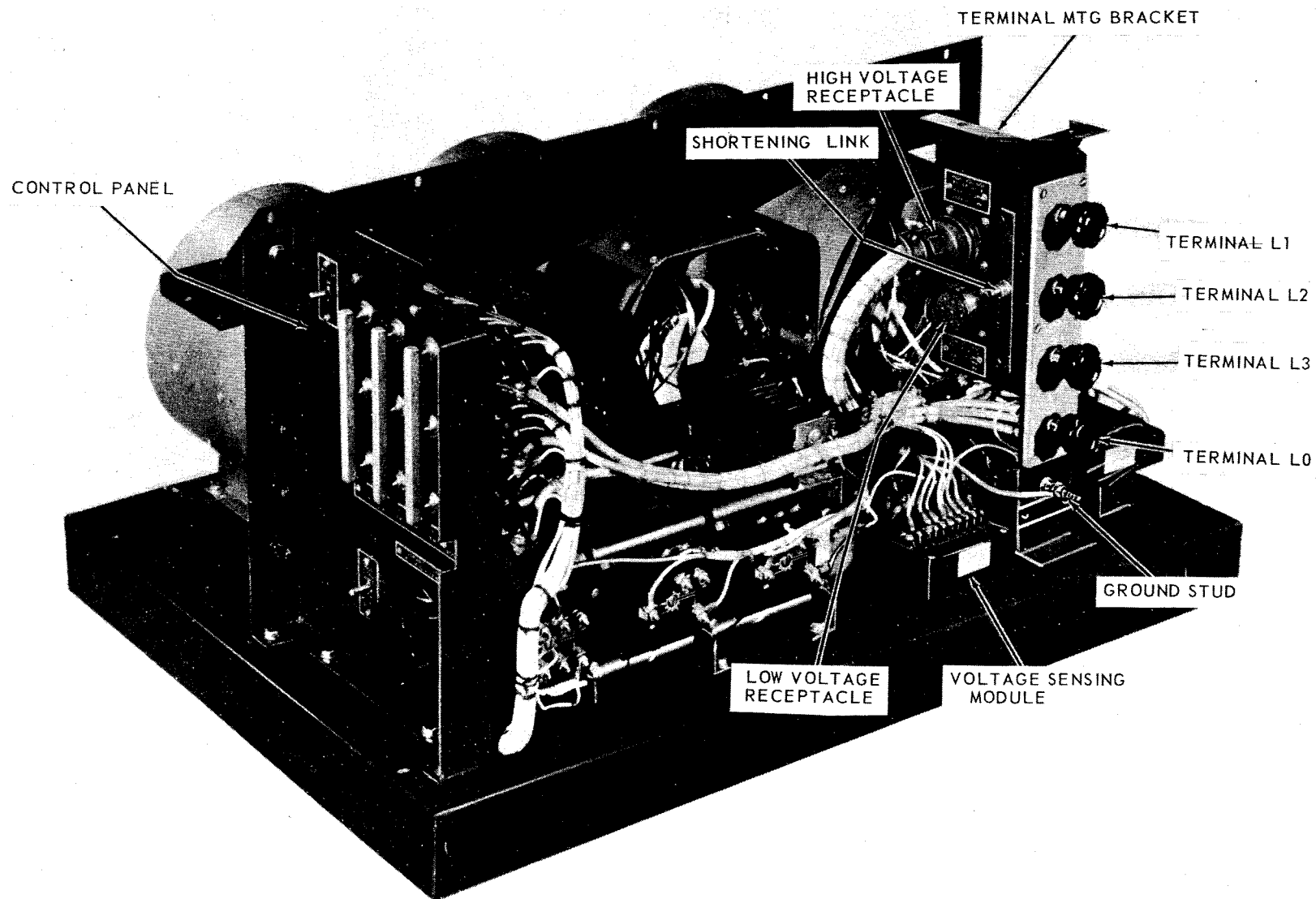


Figure 1-3. Test set, side view.

TS 025322

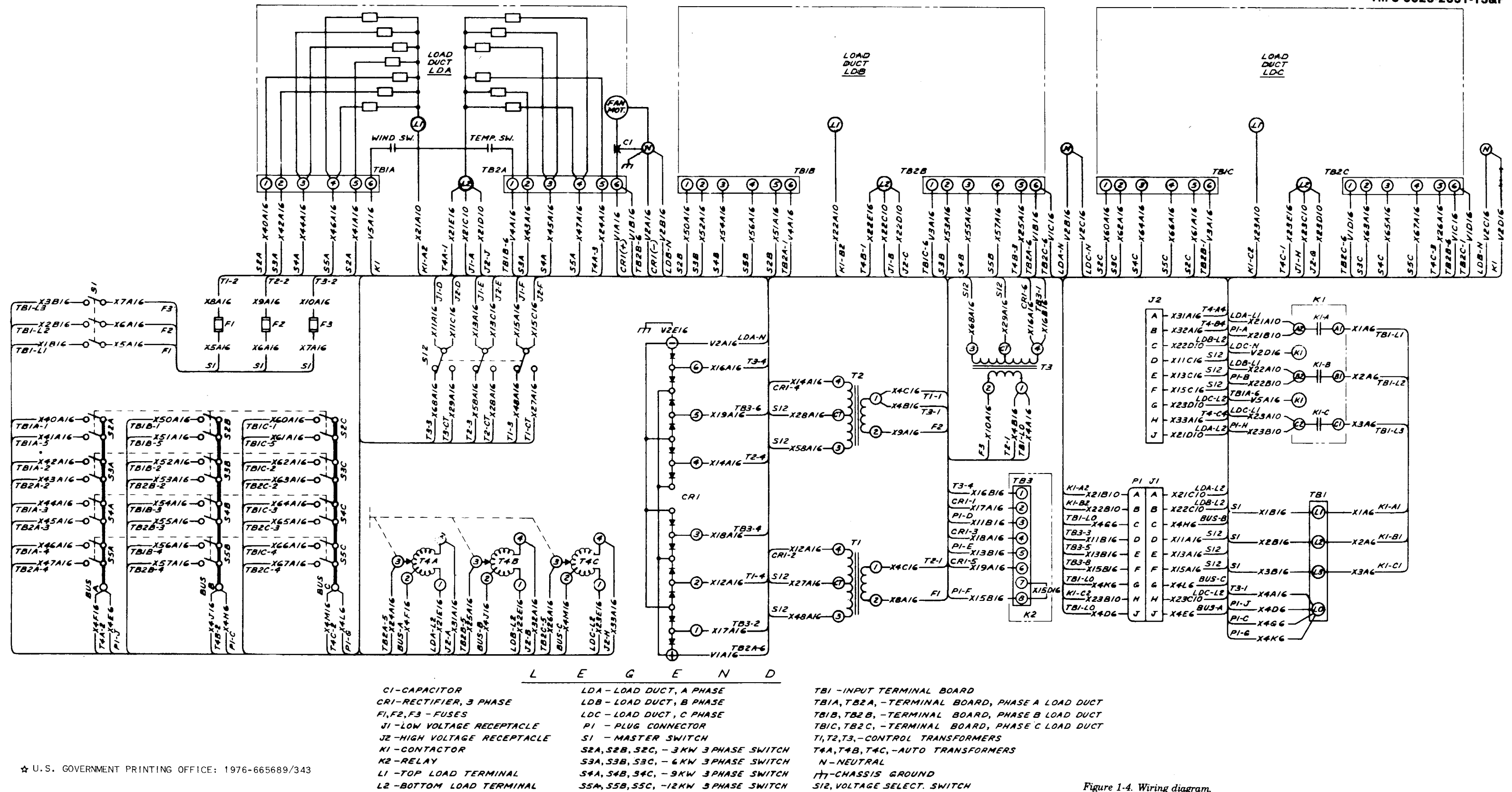


Figure 1-4. Wiring diagram.

## 1-6. Tabulated Data

*a. Identification.* The test set has 10 major identification plates. The information contained on these plates is listed below.

(1) *Identification plate.* The identification plate is attached to the left of the control panel door. It lists serial number, contract number, stock number, model number, shipping weight and other pertinent unit data.

(2) *Ground plate.* The plate is located on the load terminal post directly below the grounding bolt (fig. 1-3).

(3) *High voltage connector plate.* This plate is located on the load terminal post directly above the 240/416 volt receptacle (fig. 2-2).

(4) *Low voltage connector plate.* This plate is located on the load terminal post directly below the 120/208 volt receptacle (fig. 2-2).

(5) *Instruction plate.* This plate is attached to the inside of the left side door. It explains the operating procedure for the load bank.

(6) *Schematic plate and wiring plate.* The electrical schematic plate is located on the inside of the left side door. It illustrates the complete unit wiring.

(7) *Load switch plate.* The plate identifies the load switches it is attached on the control panel (fig. 2-1).

(8) *Master switch plate.* This plate identifies the master switch located on the control panel (fig. 2-1).

(9) *Variable load control plate.* This plate identifies the variable load control. An arrow indicates a clockwise turn of the control to increase the load. It is located on the control panel (fig. 2-1).

(10) *Voltage selector plate.* This plate identifies the voltage selector switch for a high voltage 240/416 V or a low voltage 120/208 V condition.

*b. Tabulated Data.* The following is a tabulated listing of major components of the Model A427 and Model A427B test sets. Although the physical description of all of these components is the same for both models, only the variable transformer is physically and electrically identical on both units that they may be interchanged.

### (1) Test set.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Model . . . . .	A427 & A427B
Type . . . . .	Portable skid mounted
Power . . . . .	From connected power unit

### (2) Power absorbers.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Type . . . . .	Circular, fan cooled
Rating per Absorber . . . . .	11 Kilowatts (KW)
Resistive Elements . . . . .	4 Elements: 9, 1, 4, ½ KW

### (3) Rectifier.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Type . . . . .	Selenium (Model A427)

### (4) Control transformer.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Dual Voltage . . . . .	120/240 primary; 26 secondary
Rating . . . . .	120 VAC input; 26 VAC output; 240 VAC input; 26 VAC output
Capacity . . . . .	100 volt amps
Phase . . . . .	Single

### (5) Variable transformer.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Type . . . . .	Stepless output, manually adjusted three gang 240/ 120 V input, 0-240 output
Rating . . . . .	0 to 3 KW, 3-gang, 3-phase; manually controlled 240/ 120 V

### (6) Contactor.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Rating . . . . .	3 pst, 200 amp, 240 V, AC, 24 VDC coil
Type . . . . .	3 pst (Pole, single throw) 24 VDC, 200 A

### (7) Fan motor.

Manufacturer . . . . .	Essex Electro Engineers, Inc.
Type . . . . .	24 VDC
Rating . . . . .	1/16 HP minimum at 2100 RPM
Type . . . . .	24 VDC
Duty . . . . .	Continuous
Degree enclosure . . . . .	Full
Mounting . . . . .	Within power absorber

### (8) Rectifier.

Rating . . . . .	6 AMP DC
Phase . . . . .	3

### (9) Voltage, sensing module.

Rating . . . . .	3 pole normally closed, E AMP contact will open with an applied input 31 to 39 AC
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### (10) Test set capacity.

Continuous rating . . . . .	120/208 or 240/416 volt, 3 phase, 4 wire, or 120 or 240 volt, 1 phase, 2 wire at 50-1000 cps
Fixed loads . . . . .	3, 6, 9, 12 or any combina- tion up to 30 KW in multi- ples of 3
Variable loads . . . . .	0 to 3 KW combined fixed and variable control of lost between 0.5 KW and 33 KW single phase or balanced phase operation with fixed and variable load switch in proper condition.
Temperature limits . . . . .	25 F. (-4 C.) to +125 F. (52 C.) at relative humidity up to 100%
Altitude range . . . . .	Sea level to 8,000 feet (240 meters)
Acceleration limits . . . . .	2.5 g momentarily applied to any 3 major axis; in both directions

(11) Dimensions and weights.

	Model A427	Model A427EB
Length...	36 inches (91.4 cm)	36 inches (91.4 cm)
Width...	23 inches (58.4 cm)	23 inches (58.4 cm)
Height...	20 inches (50.8 cm)	25 inches (63.5 cm)
Weight...	256 lbs (117.2 kg)	271 lbs (122.0 kg)

(12) Wiring diagram, A427-3401. Refer to

figure FO-1 for practical wiring diagram on Model A427. Refer to figure FO-2 for practical wiring diagram on Model A427B. FO-1 and FO-2 located in back of manual.

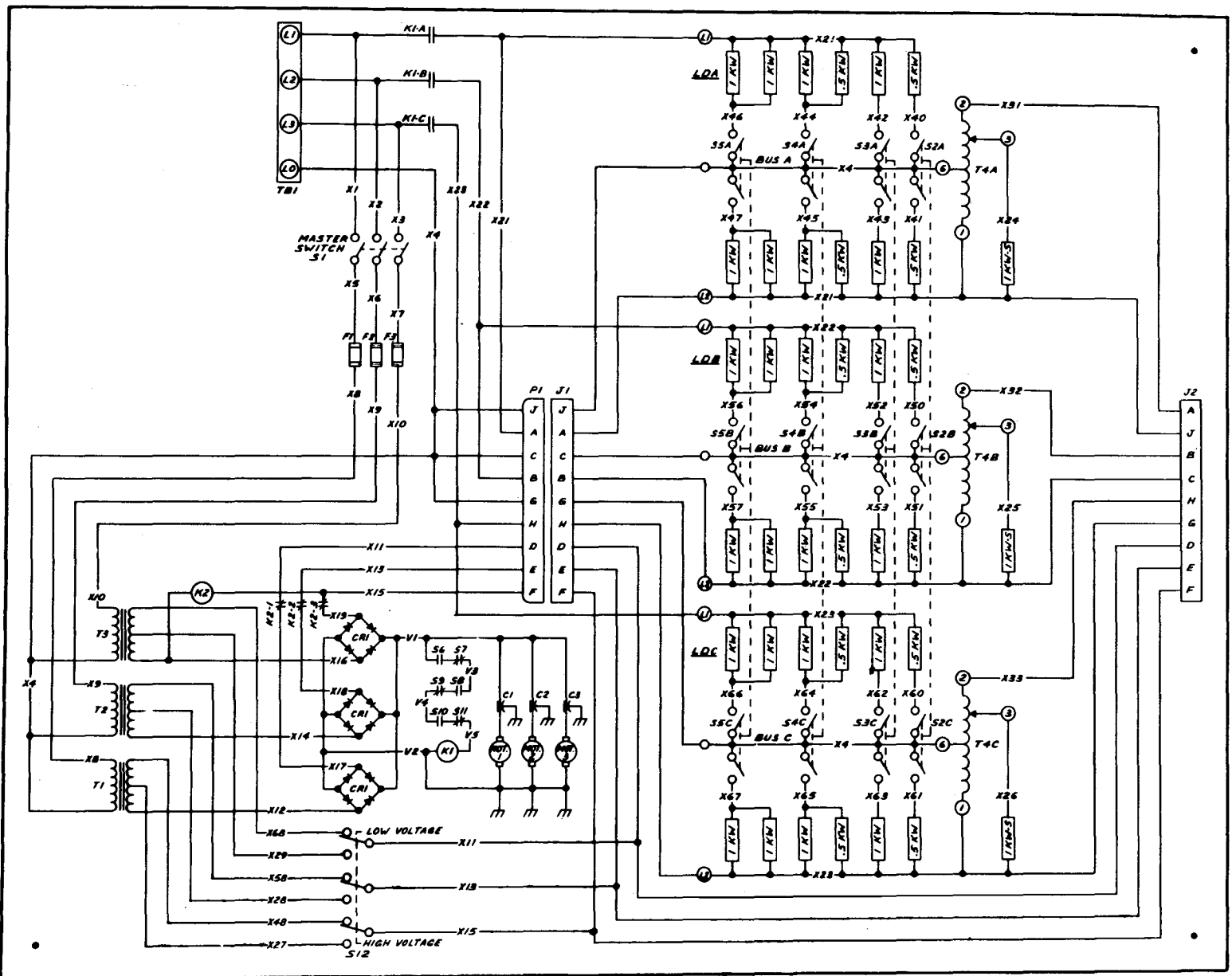


Figure 1-5. Schematic (Model A427).

TS 025324

(13) **Schematic diagram, A427-3405.** Refer to figure 1-5 for unit schematic for Model A427. Refer to figure 1-5.1 for unit schematic on Model A427B.

(14) **Base plan.** Refer to figure 1-6 for the plan for Model A427. Refer to figure 1-6.1 for the base plan on the Model A427B.

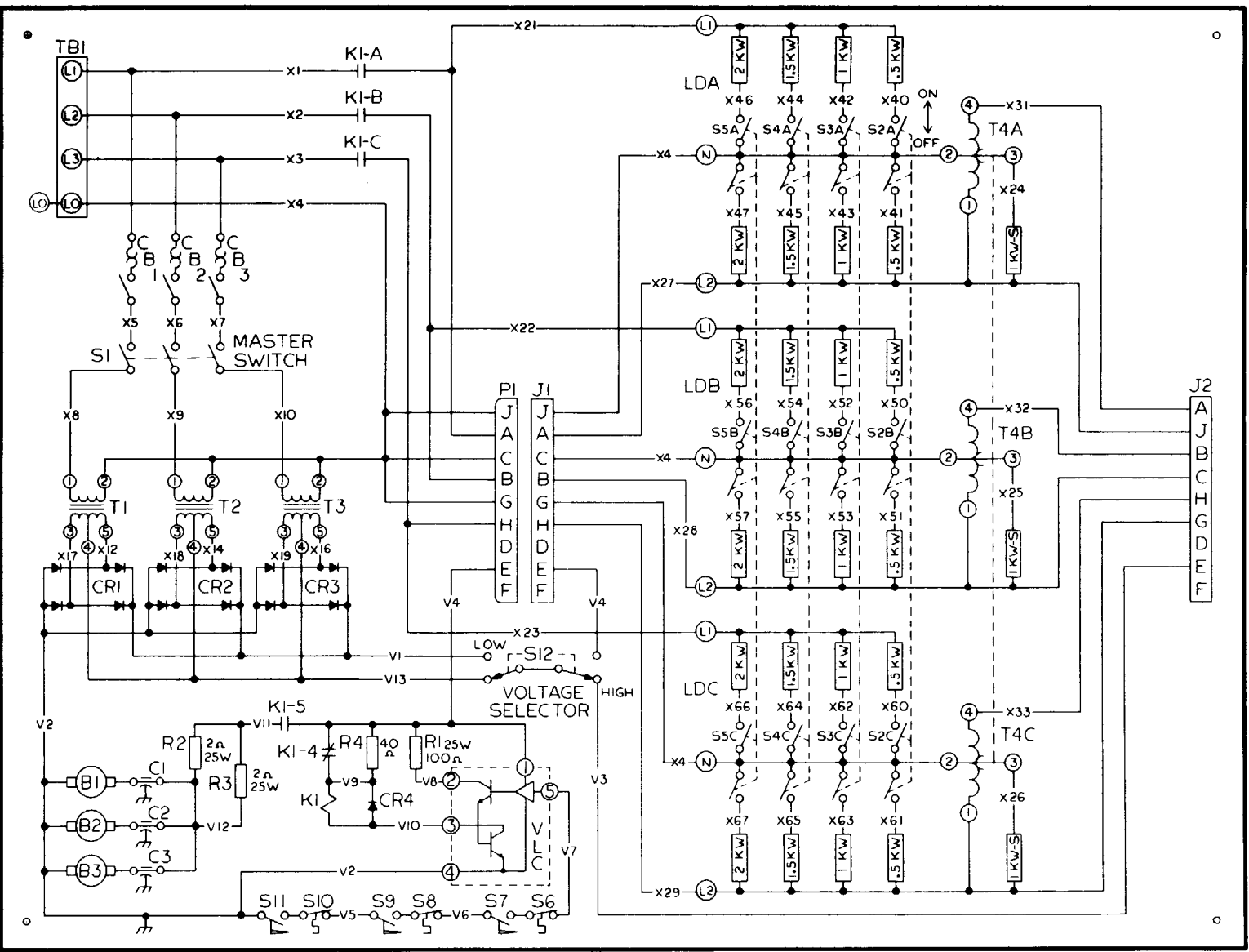


Figure 1-5.1. Schematic (Model A427B).



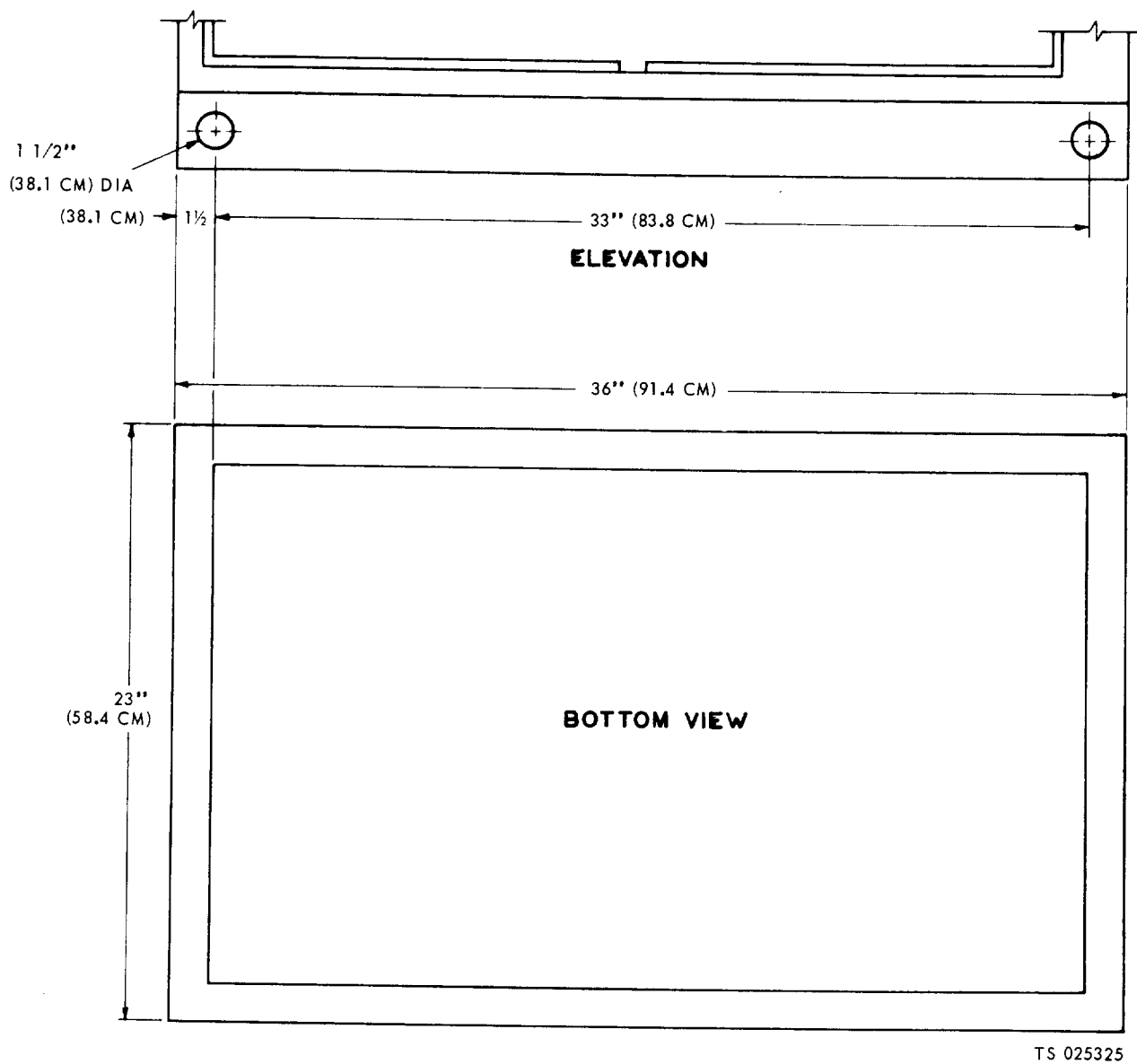


Figure 1-6. Base Plan (Model A427).

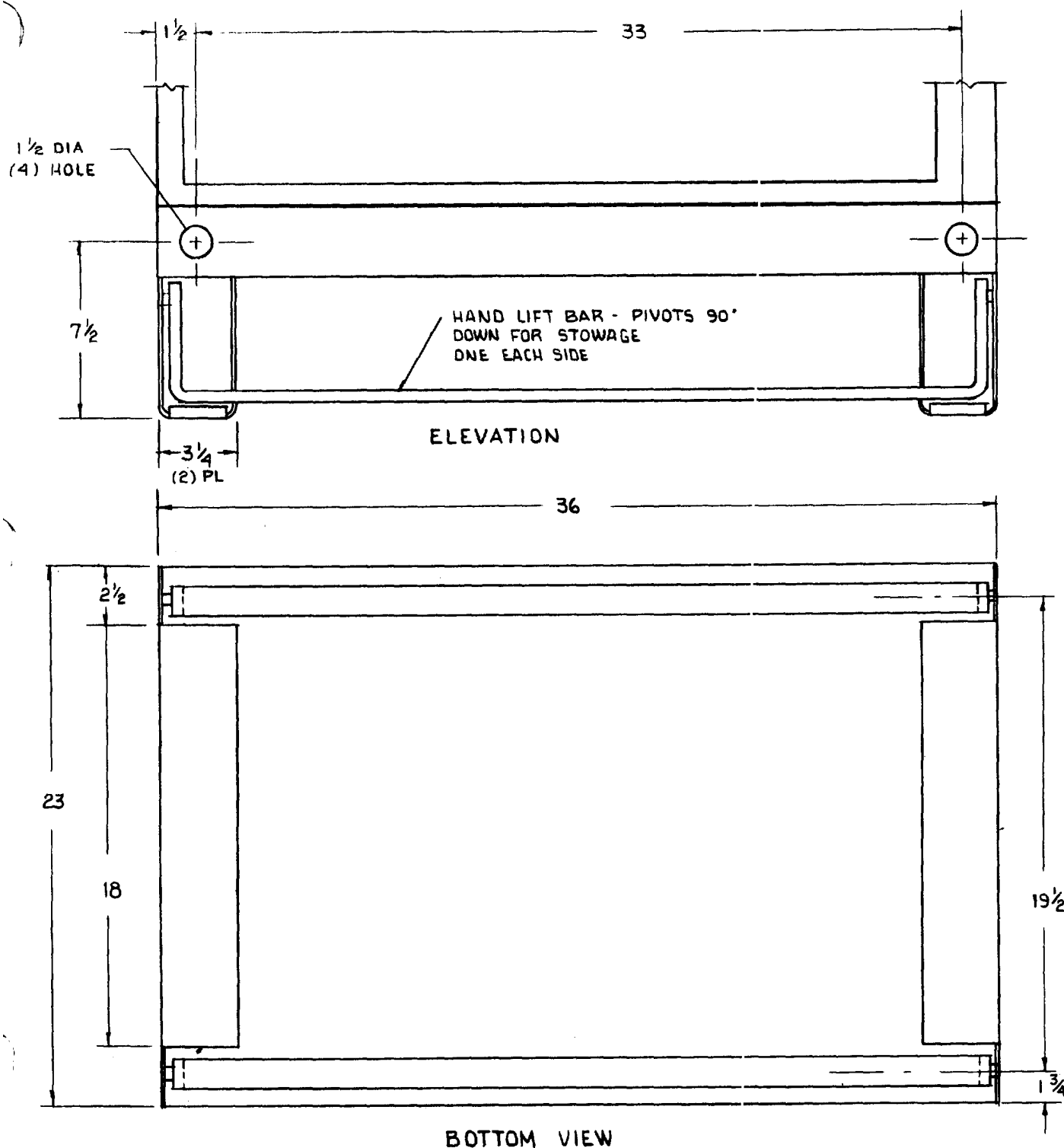


Figure 1-6.1. Base Plan (Model A427B).

### 1-7. Difference in Models

This manual describes the Military Standard Model A427 and Model 427B electrical test sets. The Model A427 and Model A427B test sets are identical in function, capacity and operation. However, there are numerous internal changes which makes most of the internal major assemblies non-interchangeable. The following is a tabulated listing of salient differences between the two models:

a. *Unit Enclosure.* Figure 1-6 and figure 1-6.1 are envelop line drawings of Model A427 and Model A427B which delineate the external package details. As illustrated the major difference is that skid runners were added to the bottom of Model A427B. This raises the base of the unit approximately 6 inches and facilitates fork lift truck handling of the test set. Also, swing-down handles were added to these skid runners to better facilitate hand lifting of the test set by four men. The hand lift handles were removed from the top of the housing as provided in Model A427. The housing assembly of the two units is interchangeable.

b. *Control Panel.* The control panel of Model A427 contains three (3) glass cartridge fuses for protection of the unit control circuit. On Model A427B these fuses were replaced with three (3) thermal lag automatic circuit breakers. All other controls and the method of operation of the two models are identical.

c. *Terminal Bracket Mounting.* On Model A427 the INPUT TERMINAL BOARD contains four (4) terminals which are .312 inch diameter studs with insulating screw-on type clamping nuts for hand tightening without tools. On Model A427B these studs are similar in form except they are .375 inch diameter, and two studs are provided for connection of lead LO or neutral. The ground stud on both models is identical. The input voltage selecting VOLTAGE RECEPTICAL is the same on both models. The operating procedures for connection of supply and selection of operating voltage is the same for both models.

d. *Contactor.* The INPUT POWER CONTACTOR (K1) is physically different on the two models; and is not physically interchangeable. The energizing coil electrical characteristics are different in the two models. Also Model A427B has two

auxiliary contacts used in the control circuit which are not present on the Model A427.

e. *Voltage Sensing Module.* The Voltage Sensing Module on the two models is physically different, and is not physically interchangeable. Model A427 uses an internal control relay within the module. Model A427B is all solid state. Also Model A427B incorporates a time delay feature in the wind switch control circuit which allows the test set to operate for about 5 seconds with the wind switch open.

f. *Rectifier Assembly.* The Model A427 test set uses a selenium rectifier stack to generate the 28 VDC control power required for fan operation. On Model A427B three separate silicon rectifier bridges are used. Also the Model A427B requires two 25 watt dropping resistors not used on Model A427. These dropping resistors are mounted with the silicon rectifiers on a single plate with a terminal strip,

g. *Control Transformer.* The Control Transformers on the two models are physically different; and not interchangeable. On Model A427B, a change in the control circuit reduced the VA capacity requirement of these transformers.

h. *Power Absorbers.* The construction of the individual load elements within each Power Absorber is different on the two model test sets. The electrical capacity and function of corresponding elements of the two models is the same. The physical size and shape of the two Power Absorber assemblies is also the same. However, differences in the method of electrical termination of the elements within the Power Absorber are different. For this reason, the Power Absorbers of Model A427 are not interchangeable with Model A427B Power Absorbers.

i. *Fan Motor.* The Fan Motors of Model A427 and Model A427B are identical, and interchangeable.

j. *Wind Switch.* The Wind Switch used on Model A427B is different than the switch used on Model A427. The wind switches are not physically interchangeable.

k. *Variable Transformer.* The Variable Transformer of Model A427 and Model A427B are identical, and interchangeable.

## CHAPTER 2

### OPERATING INSTRUCTIONS

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#### WARNING

If equipment fails to operate, refer to troubleshooting procedures in Chapter 3.

### Section I. OPERATING PROCEDURES

#### 2-1. General

*a.* The instructions in this section are published for the information and guidance of the personnel responsible for the operation of the test set.

*b.* The operator must know how to perform every operation of the test set. This section gives instructions on the various controls and instruments, starting and stopping the test set and detailed operating instructions. Installation or setting-up instructions are also included. Since nearly every job presents a different problem, the operator may have to vary the given procedures to fit the individual job.

#### 2-2. Installation of Separately Packed Components

There are no separately packed components with the test set; it is shipped complete.

#### 2-3. Installation or Setting-Up Instructions

*a. Location* The unit must be located in an area with sufficient air circulation and space so that proper ventilation can be achieved.

*b. Outdoor Installation.* Measures for weather protection should be taken by the operating agency, depending on the climate. It is recommended that all doors be closed when not in use.

*c. Indoor Installation.* It is recommended that the unit be set up in an area with sufficient ventilation which is free of oil contaminants or corrosive atmospheres. Keep clear of hazardous electrical connections or foreign wires. The test set should be set up in level position.

*d. Grounding*

#### WARNING

**Generator sets shall be grounded in order to prevent shock due to defective insulation, or external electrical faults. Poor grounding can endanger personnel, may damage equipment, and can create interference in communication or electronic circuits.**

(1) Install one of the following items as a grounding device:

(*a*) Drive a ground rod to depth of at least 8 feet

(2.4 meters). This is the preferred device which is available in the Army supply system.

(*b*) Drive aground pipe,  $\frac{3}{4}$  inch (1.9 centimeters), copper or steel, to a depth of at least 8 feet (2.4 m). An existing underground pipe may be used in an emergency.

(*c*) Bury a  $\frac{1}{4}$  inch thick (.6 cm) iron or steel plate, approximately 18 x 18 inch (45.7 x 45.7 cm) size, with ground cable attached, to a depth of at least 4 feet (1.2 m).

(*d*) Bury a  $\frac{1}{16}$  inch thick (.2 cm) aluminum or copper plate approximately 18x18 inch (45.7 x 45.7 cm) size, with ground cable attached, to a depth of at least 4 feet (1.2 m).

(*e*) Position a  $\frac{1}{4}$  inch thick (.6 cm) iron or steel plate, or  $\frac{1}{16}$  inch thick (.2 cm) aluminum or copper plate, approximately 18 x 18 inch size, on the hard ground or bedrock beneath the trailer stand, or roll the wheel of a trailer or truck until it comes to rest on top of the grounding plate.

(*f*) Saturate the area around the grounding device with water to increase conductivity.

(2) Ground cables should be copper. Braided cable is best, but No. 6 AWG gage (or larger) copper wire will suffice.

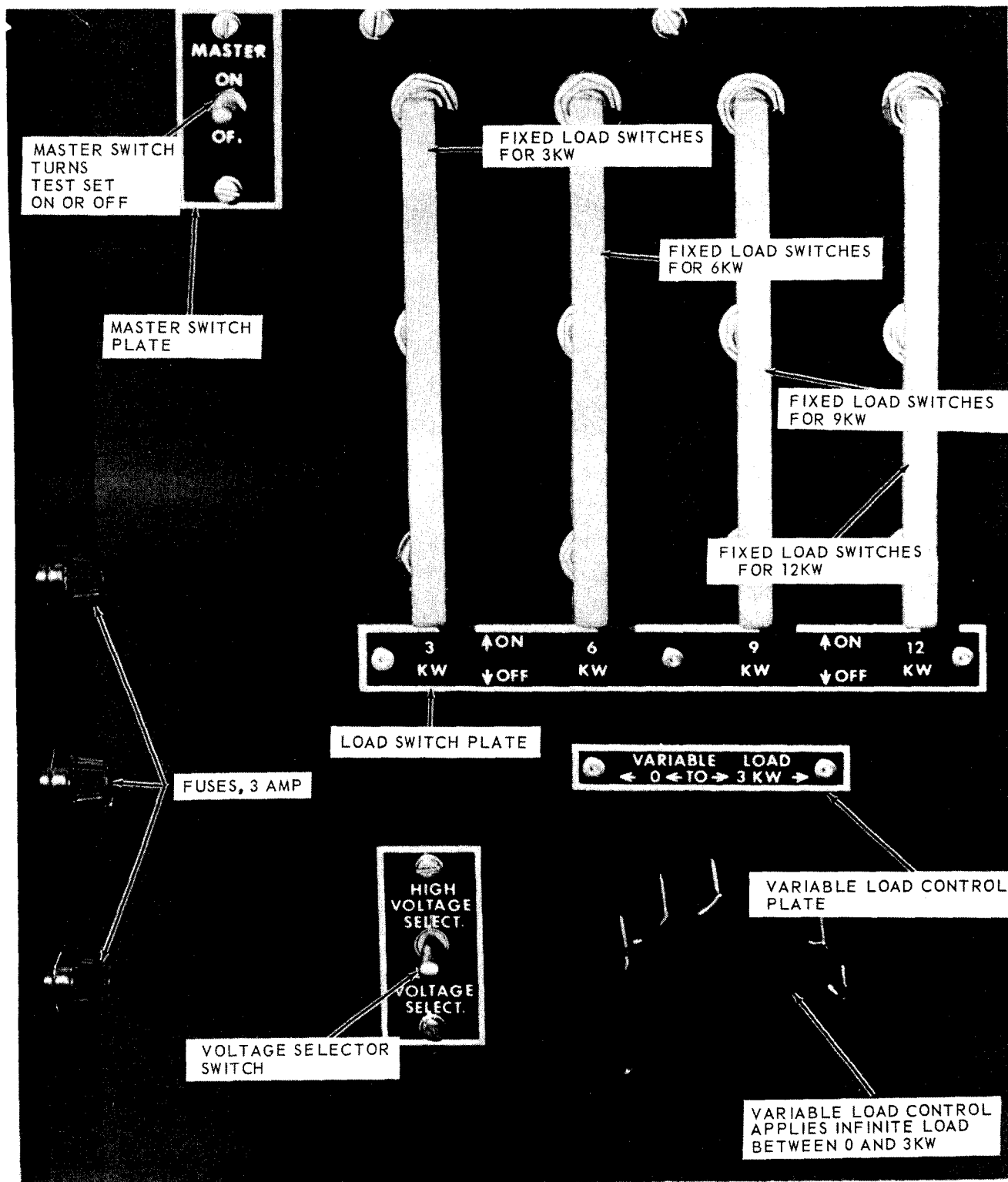
(3) Connect the ground cable from the grounding device to the generator set frame ground stud (fig. 1-3) and tighten the nut securely.

#### CAUTION

**Do not rely on ground or safety devices to prevent accidents. Electrical circuits and equipment are potentially hazardous. Personnel should always exercise caution to prevent injury or possible death due to electrical shock.**

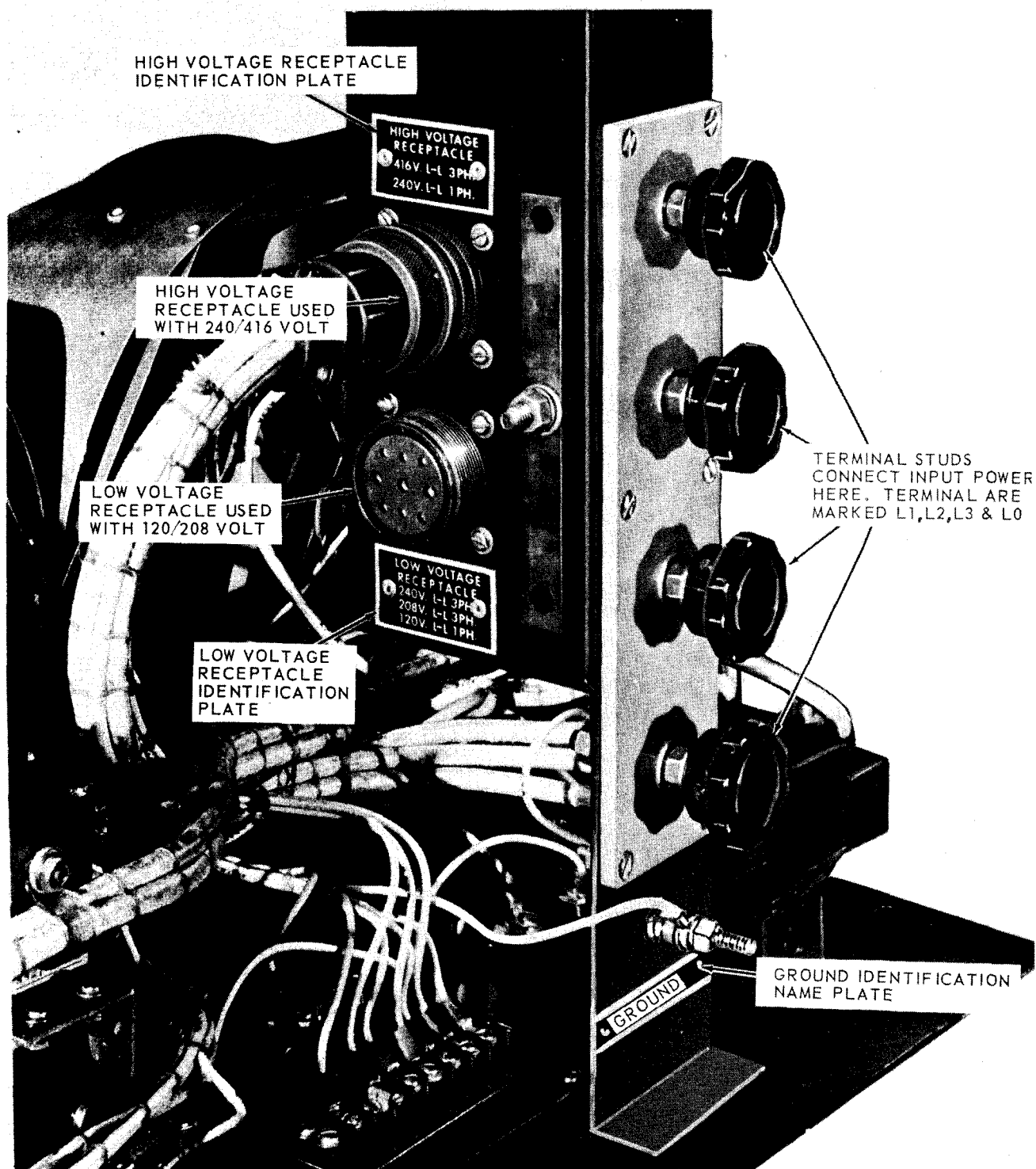
#### 2-4. Controls and Instruments

Located on the control panel (fig. 2-1) are a master switch, four load switches, voltage selector switch and a variable load control. They provide all the necessary controls for proper operation of the unit. The purpose of the controls and normal adjustments are illustrated in figures 2-1 and 2-2.



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Figure 2-1. Control panel



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Figure 2-2. Terminal bucket mounting.

2-5. Starting the Equipment

- a. Perform the necessary daily preventive maintenance checks and services (para 3-4).
- b. Check load requirements.
- c. Open all ventilating doors, clear away any obstructions blocking air inflow, turn all load switches in "OFF" position, and turn variable control adjust full counterclockwise.
- d. Connect voltage plug (fig. 2-2) to proper receptacle. For 120/208 volts, 3 phase, 4 wire, 120 volts, single phase, 2 wire or 240 volts, 3 phase, 3 wire, insert plug in low voltage receptacle (fig. 2-2); for 240 volts, 3 phase

- wye, 3 wire reconnect load in Delta. For 240/416 volts, 3 phase wye, 4 wire and 240 volts, single phase, 2 wire insert plug in high voltage receptacle (fig. 2-2). The voltage plug must be in the proper receptacle for the unit to function properly.
- e. Turn voltage selector switch (fig. 2-1) to "HIGH" position for 240/416 volts, 3 phase, 4 wire and 240 volts, 1 phase. Turn voltage selector switch to "LOW" position for 120/206 volts, 3 phase, 4 wire, 120 volts, 1 phase and 240 volts, 3 phase.
- f. Connect power leads to power terminals according to Table 2-1.

Table 2-1. Input Connections

Wiring	Connections
Single phase .....	Connect the L1, L2 and L3 using the copper shorting link. Connect leads for tested equipment securely to L1 and LO.
Three phase, three wire .....	Connect leads from tested equipment to L1, L2 and L3.
Three phase, four wire .....	Connect leads from tested equipment to L1, L2 and L3. Connect neutral line to LO.
Ground lead .....	Connect ground lead (fig. 2-2) to an adequate ground.

WARNING

Do not place hands or tools near the resistive elements or the fan motor while the bank is energized. High cur-

rents may be present and injure operating personnel.

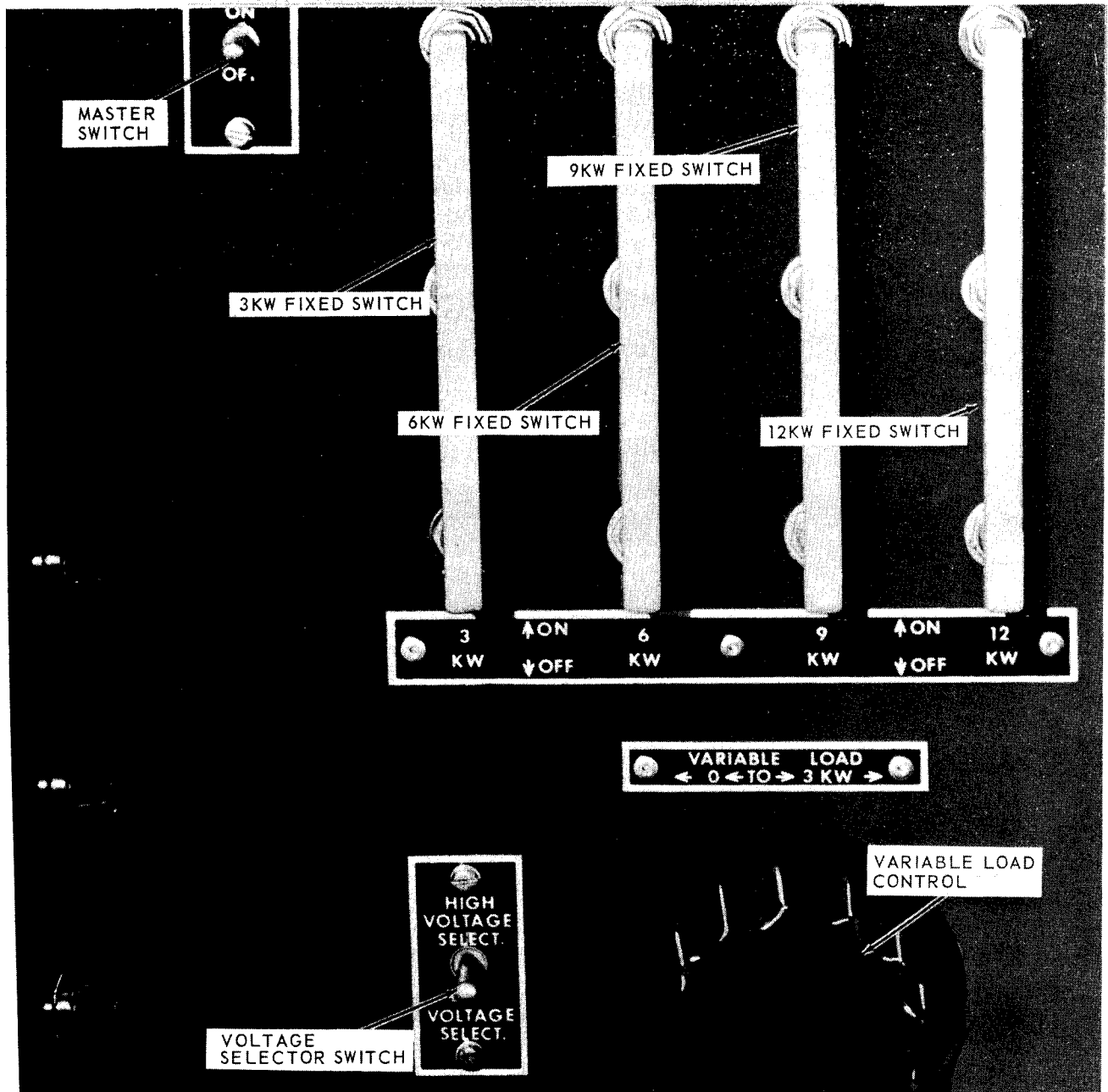
2-6. Starting

Refer to figure 2-3 and start the test set.

## OPERATING INSTRUCTIONS

## STARTING

1. OPEN BOTH SIDE DOORS.
2. CONNECT VOLTAGE PLUG TO DESIRED VOLTAGE RECEPTACLE.
3. WITH INPUT POWER "OFF" \*CONNECT INPUT POWER LEADS TO POWER TERMINALS AND GROUND TERMINAL.
4. TURN VOLTAGE SELECTOR SWITCH TO DESIRED POSITION.
5. CHECK VOLTAGE PLUG AND POWER TERMINAL CONNECTIONS TO CORRESPOND WITH INPUT VOLTAGE AND PHASING.
6. TURN "ON" INPUT POWER.
7. TURN "ON" MASTER SWITCH, FANS SHOULD OPERATE.
8. OPERATE LOAD SWITCHES FOR DESIRED LOAD.



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Figure 2-3. Starting instructions.

## 2-7. Stopping the Equipment

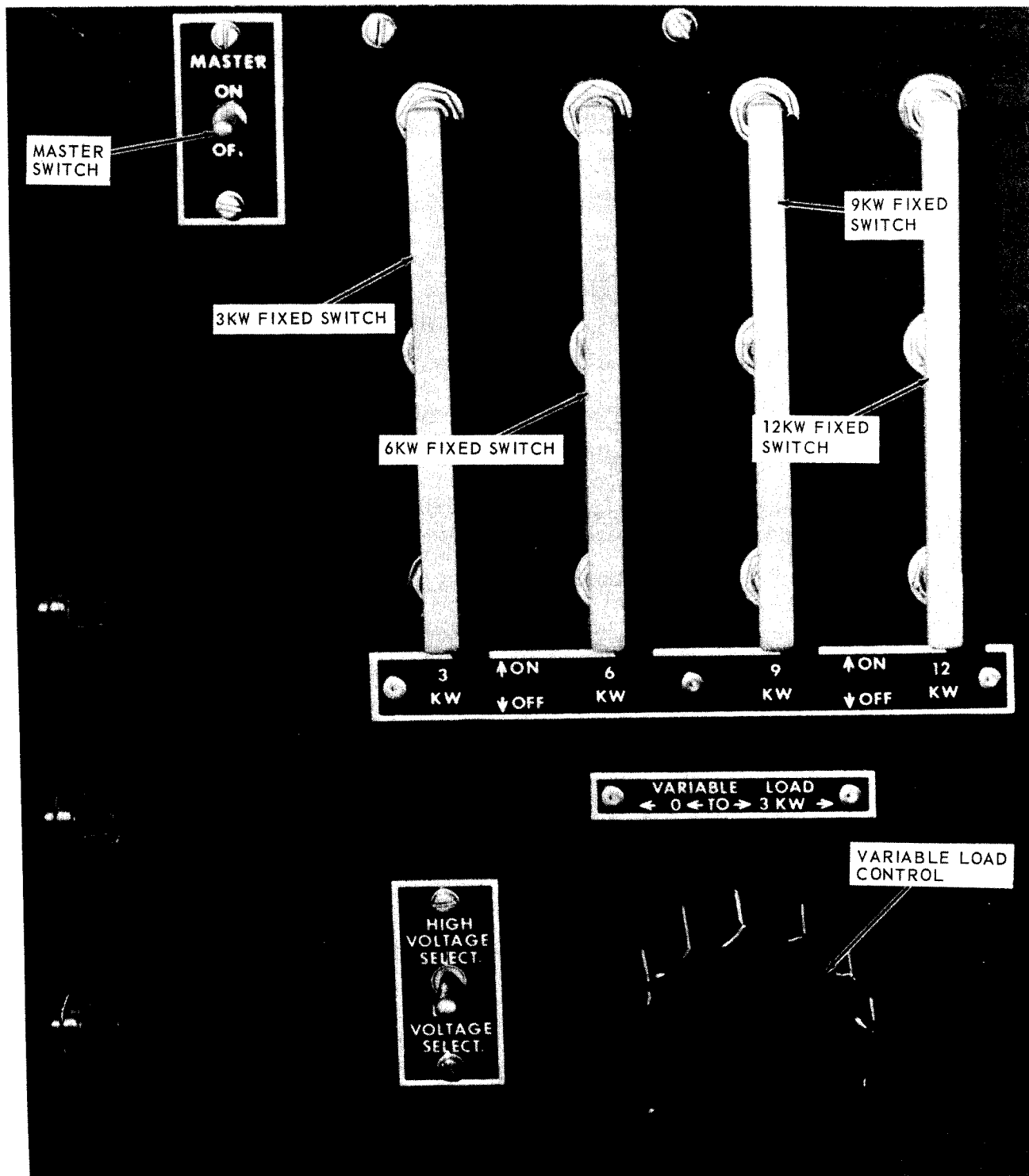
Refer to figure 2-4 and stop the test set.



STOPPING

1. TURN "OFF" ALL LOAD SWITCHES
2. TURN "OFF" MASTER SWITCH

3. TURN "OFF" INPUT POWER
4. DISCONNECT LEADS AND CLOSE ALL DOORS



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Figure 2-4. Stopping instructions

## 2-8. Operation of the Equipment

- a. Inspect the voltage plug (fig. 2-2) into the proper receptacle as in paragraph 2-5 d.
- b. Turn voltage selector switch (fig. 2-1) to proper

position as in paragraph 2-5 e.

- c. Combine fixed loads in increments of 3 KW, and variable loads of 0 to 3 KW to any desired KW from 0 to 30.

## Section II. OPERATION UNDER UNUSUAL CONDITIONS

### 2-9. Operation in Extreme Cold (Below 0 F. (-18C.))

The test set is designed to operate at temperatures above 25 F. (-4 C.), but not below that temperature. Protection against wind, snow and ice should be given the unit in sub-zero temperatures.

### 2-10. Operation in Extreme Heat

The test set is designed to operate at temperatures up to 125 F. (52 C.). Prolonged usage in high temperature and humidity areas requires treatment (see para 2-12).

### 2-11. Operation in Dusty or Sandy Areas

Accumulated sand and dust must be removed every 50 operating hours or each month. Clean the interior with low pressure jet of filtered dry air. Wipe electrical components with a dampened soft cloth. Do not wipe

insulation with solvents which may damage them.

### 2-12. Operation Under Rainy or Humid Conditions

Use desiccants to insure reduction of corrosion. In areas of high temperature and high humidity, coat components, such as the transformer, rectifier, variable transformer and fan motors with a fungus-proof varnish.

### 2-13. Operation in Salt Water Areas

Refer to paragraph 2-12.

### 2-14. Operation in High Altitudes

The test set is designed to operate at altitudes from sea level to 8,000 feet (2,440 m) at a temperature of 90 F. (32 C.). Due to electrical characteristics changes, it is not advisable to operate the unit above 8,000 feet (2,400 m).



## CHAPTER 3 OPERATOR/CREW MAINTENANCE INSTRUCTIONS

### Section I. LUBRICATION INSTRUCTIONS

#### 3-1. General Lubrication Information

No lubrication of the components in the test set is necessary. Fan motor bearings are factory sealed for the life of the motor.

#### 3-2. Detailed Lubrication Information

When required, an occasional drop of lubricating oil should be applied to the door hinges.

### Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

#### 3-3. General

a. To ensure that the test set is ready for operation at all times, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure.

h. The necessary preventive maintenance checks and services to be performed are listed and described in Table 3-1.

c. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if

a deficiency is noticed during operation which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded, together with the corrective action taken on DA Form 2404 (Equipment Inspection and Maintenance Worksheet), at the earliest opportunity.

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

Table 3-1 lists those things the operator must do before, during and after operation of the test set in order to keep it functioning properly.

*Table 3-1. Operator/Crew Preventive Maintenance Checks and Services*

B - Before Operation  
Time required: 0.7

D - During Operation

A - After Operation  
Time required: 0.4

Interval and sequence no.			Item to be inspected procedure	Work time (M/H)
B	D	A		
1		8	CONNECTIONS Inspect for damaged wires, insulation, loose connections and insecure mountings. Report any damage to higher maintenance personnel.	0.1
2		9	TERMINALS Inspect for loose, corroded or oxidized terminals. Report any damage to higher maintenance personnel.	0.1
3			ELECTRICAL COMPONENTS Blow dust off using compressed filtered air.	0.1
4	7		FAN MOTOR Inspect for overheating, excessive hum or loose mounting. Report any of these conditions to higher maintenance personnel.	0.1
5			SWITCHES Inspect for proper operation and secure mounting. Report any deficiencies to higher maintenance personnel.	0.1
6		10	GENERAL Clean away dirt, oil film, rust or any other foreign material from the unit. Repaint bare metal surfaces. Do not paint electrical components.	0.2

### Section III. TROUBLESHOOTING

#### 3-5. General

a. This section contains troubleshooting or malfunction information and tests for locating and correcting most of the troubles which may develop in the test set. Each malfunction or trouble symptom for an individual component, unit or system is followed by a list of tests or inspections necessary for you to determine probable causes and suggested corrective actions for you to

remedy the malfunction.

b. This manual cannot list all possible malfunctions that may occur or all tests or inspections and corrective actions. If a malfunction is not listed (except when malfunction and cause are obvious), or is not corrected by listed corrective actions, you should notify higher level maintenance.

3-6. Troubleshooting

Table 3-2 lists the common malfunctions that you may find during the operation or maintenance of the test set or its components. You should perform the tests/inspections and corrective actions in the order listed.

Table 3-2. Troubleshooting

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION	NOTE
Before you use this table, be sure you have performed all normal operational checks. If you have a malfunction which is not listed in this table, notify the next higher level of maintenance.			
1. TEST SET FAILS TO START			
Step 1. Inspect for a defective fuse by removing the three holder caps (fig. 3-1). Turn the caps counterclockwise, and pull the fuses out. Inspect the fuses for burns, cracks or breaks.			
Replace the fuse with a fuse of the same rating and size. Replace fuse holder cap by screwing full clockwise until snug. Do not overtighten.			

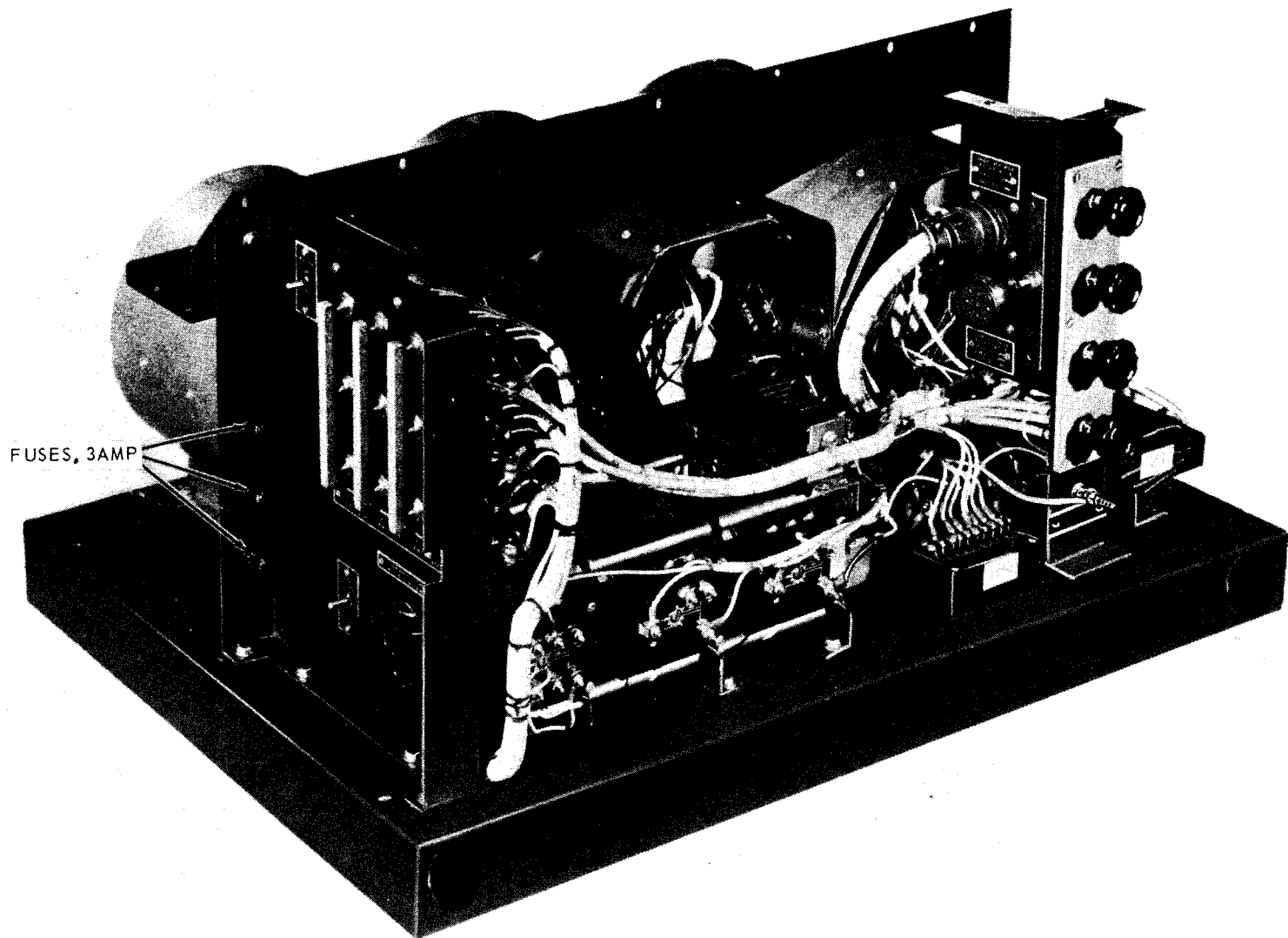


Figure 3-1. Fuse location.

Table 3-2. Troubleshooting(Cont'd)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

- |   |
|---|
| Step 2. Check to see if the voltage plug is in the wrong receptacle.<br>Insert the voltage plug into the correct receptacle (fig. 3-2). |
| Step 3. Check to see if the voltage selector switch is in the proper position.<br>Place switch in proper position.                      |

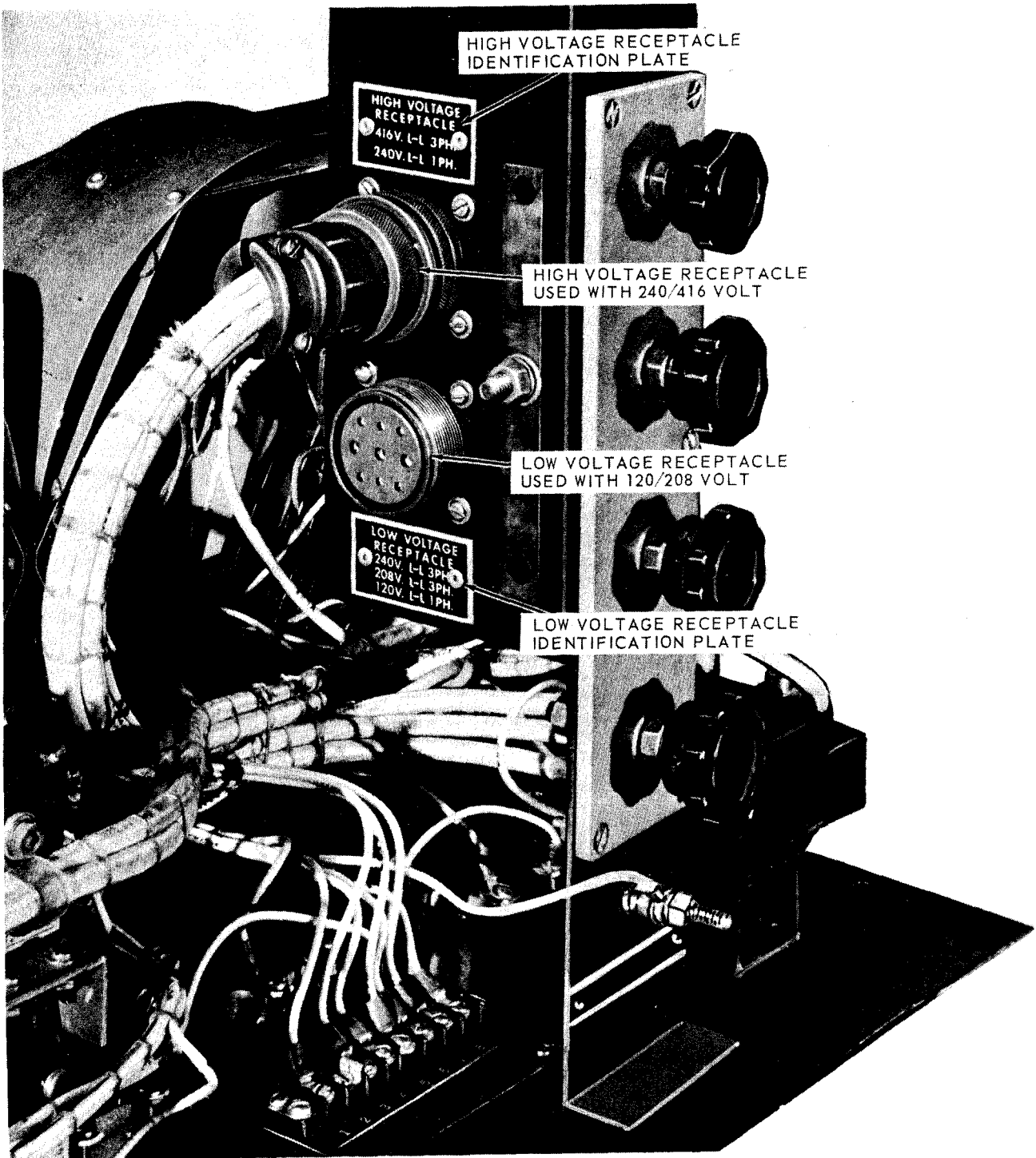


Figure 3-2. Voltage receptacles.

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Table 3-2. Troubleshooting (Cont'd)

**MALFUNCTION**

**TEST OR INSPECTION**

**CORRECTIVE ACTION**

**2. LOAD SWITCHES ARE ON BUT NO LOAD IS APPLIED**

*Step 1.* Check to see if the voltage plug is in the wrong receptacle.

**Insert the voltage plug into the correct receptacle (fig. 3-2).**

*Step 2.* Inspect the test set for loose connections.

**Tighten any loose connections.**

**3. POWER ABSORBER OVERHEATS**

*Step 1.* Inspect for proper ventilation.

**Remove any foreign objects blocking air flow.**

*Step 2.* Inspect fan for proper operation.

**Report any malfunction to higher maintenance personnel.**

**4. RADIO INTERFERENCE**

*Step 1.* Check the test set ground. Be sure the chassis and cabinet are grounded.

**Ground the test set (para 2-3d).**

*Step 2.* Inspect the filter capacitor for leakage and loose mounting or connections.

**Tighten any loose connections. If this does not correct the situation, refer to higher level maintenance.**

**5. LOAD DROPPAGE**

*Step 1.* Inspect for a defective fuse by removing the three holder caps (fig. 3-1). Turn the caps counterclockwise and pull the fuses out. Inspect the fuses for burns, cracks or breaks.

**Replace the fuse with a fuse of the same rating and size. Replace fuse holder cap by screwing full clockwise until snug. Do not overtighten.**

*Step 2.* Be aware of any strange odors.

**If acrid odor is present, do not operate the set; refer to higher level maintenance.**

**Section IV. MAINTENANCE PROCEDURES**

**3-7. General**

The instructions in this section apply only to the operator, to assist in maintaining the test set.

**3-8. Grills**

There are three grills: two located on the intake side of the unit and one on the exhaust side of the unit. Inspect for cracks or breaks in the screen welding. Notify organizational maintenance of replacement action.

**3-9. Doors**

*a. Inspection.* Inspect the doors for cracks, breaks or other damage. Notify direct support maintenance for replacement action.

**WARNING**

**Dry cleaning solvent P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 F. (38 C.) -138 F. (60 C.).**

*b. Cleaning.* Clean all parts with cleaning solvent P-D-680 and dry thoroughly.

**3-10. Wind Switch**

There is one wind switch (fig. 1-2) located in each power absorber. Inspect each switch for proper operation and connections. Notify organizational maintenance for test action.

**3-11. Toggle Switches**

There are six toggle switches located in the control panel (fig. 2-1). Inspect for proper operation and secure mounting. Refer test and replacement action to organizational maintenance.

**3-12. Rectifier**

**WARNING**

**Very toxic fumes of selenium dioxide are given off when selenium coated plates burn. Do not breathe the fumes. Keep fumes and compound away from the skin. Handle the burned plates with gloves and dispose.**

Inspect rectifier (fig. 1-2) for proper operation and mounting. If burned, notify direct support for replacement action.

**3-13. Terminal Studs**

*a. Inspection.* Inspect for cracks, breaks or other damage. Refer to organizational maintenance for replacement action.

**WARNING**

**Dry cleaning solvent P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 F. (38 C.) - 138 F. (60 C.).**



*b. Cleaning.* Clean all parts when unit is disconnected from the power source with P-D-680 (and dry thoroughly).

### **3-14. Filter Capacitors**

Make sure the capacitor is discharged before inspecting. Inspect for leakage and loose mounting or connec-

tions. Notify organizational maintenance for replacement action.

### **3-15. Voltage Plug**

Inspect plug visually for damaged threads, pins, or connections. Notify organizational maintenance for testing action.

## CHAPTER 4 ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

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### Section I. SERVICE UPON RECEIPT OF MATERIEL

#### 4-1. Unloading the Equipment

The test set is shipped fully assembled, crated and blocked.

#### 4-2. Unpacking the Equipment

*a. General.* For shipment, the test set is normally packed in a crate.

##### *b. Unpacking*

(1) Remove all crating and weather resistant wrapping.

(2) Remove internal cushioning and the dessicants used to remove moisture in transit.

#### **CAUTION**

**Exercise care while uncrating to avoid damaging the test set.**

(3) Check the equipment against the packing list and report all discrepancies to direct support maintenance personnel.

#### 4-3. Inspecting and Servicing

##### **WARNING**

**Do not connect the test set to power source until all initial inspection procedures have been carried out.**

*a.* After unpacking, the test set should be checked using the following inspections:

(1) Check chassis for possible damage.

(2) Inspect interior components for damage.

(3) Check for loose electrical or hardware connections.

(4) Clean the unit for any foreign material which may interfere with operation.

##### **NOTE**

Correct any deficiency when first noted.

*b.* Perform the quarterly preventive maintenance service table, 4-1.

#### 4-4. Installation

Refer to paragraph 2-3 for information on the installation of the equipment.

### Section II. MOVEMENT TO A NEW WORKSITE

#### 4-5. Dismantling for Movement

Disconnect the test set from its power source before removing parts or assemblies. Follow the following procedure for dismantling the test set in preparation for moving to a new worksite.

##### *a.* Disconnect the load as follows:

(1) Rotate the variable load control knob (fig. 4-1) full counterclockwise.

(2) Place all fixed load switches in "OFF" position.

(3) Stop tested equipment.

(4) Remove input leads. Secure copper shorting

link to storage position.

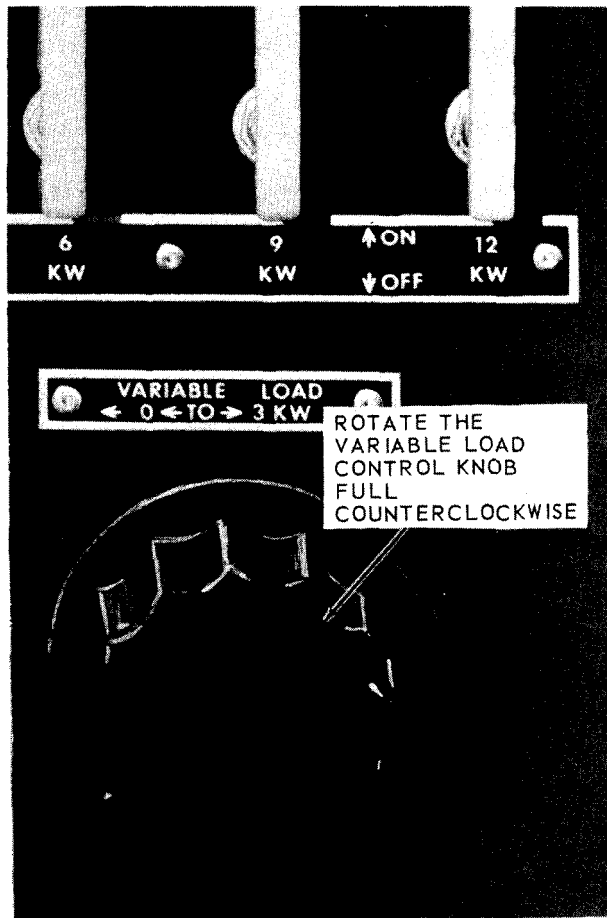
*b.* Inspect interior components for security mounting.

*c.* Close all doors and cover seams with pressure sensitive waterproof tape.

*d.* Remove mounting bolts or tie down rods, cables or lashings that fasten test set down.

*e.* Enclose the unit in a water resistant barrier and seal.

*f.* Encase the unit in a strong wooden crate or box. Block the unit to prevent shifting.



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Figure 4-1. Control panel

### Section III. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

#### 4-7. Tools and Equipment

Tools and/or equipment authorized for the test set are listed in the repair parts and special tools list, Appendix B of this manual.

#### 4-8. Special Tools and Equipment

No special tools or equipment are required.

#### 4-9. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in Appendix B of this manual.

### Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

#### 4-10. General

The necessary preventive maintenance checks and services to be performed by organizational maintenance personnel are listed and described in Table 4-1.

#### 4-11. Quarterly Preventive Maintenance Checks and Services

Table 4-1 lists those things that organizational maintenance personnel must do on a quarterly basis in order to keep the test set functioning properly.

#### 4-6. Reinstallation After Movement

Reinstall according to installation or setting-up instructions given in paragraph 2-3.

Table 4-1. Organizational Preventive Maintenance Checks and Services

Q – Quarterly

Total man-hours required: 1.6

Sequence number	Item to be inspected procedure	Work time (M/H)
1	CONNECTIONS Inspect for damaged wires, insulation, loose connections and insecure mountings. Replace damaged wires and insulation. Tighten loose connections and secure all mountings.	0.2
2	TERMINALS Inspect for loose, corroded or oxidized terminals. Inspect for cracks, breaks, or other damage. <b>WARNING</b> <b>Dry cleaning solvent, P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 F. (38 C) - 138 F. (60 C.).</b> Clean all parts when unit is disconnected from the power source with cleaning solvent P-D-680 and dry thoroughly. Replace parts as required.	0.3
3	ELECTRICAL COMPONENTS Blow dust off using compressed filtered air.	0.1
4	FAN MOTOR Inspect for overheating, excessive hum, or loose mounting. Tighten loose mounting and report any other damage to higher level maintenance.	0.1
5	SWITCHES Check for proper operation (para 4-24) and secure mountings. Replace a defective toggle switch (para 4-24) and refer a defective wind switch to direct support maintenance for replacement action.	0.7
6	GENERAL Clean away dirt, oil film, rust or any other foreign material from the unit. Repaint bare metal surfaces. Do not paint electrical components.	0.2

## Section V. TROUBLESHOOTING

### 4-12. General

This section contains information useful to organizational maintenance personnel in diagnosing and correcting an unsatisfactory condition that may exist in the equipment.

### 4-13. Troubleshooting

Table 4-2 lists malfunctions which may occur in this

equipment. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine probable causes and corrective actions to take. You should perform the tests and/or inspections in the order listed.

Table 4-2. Troubleshooting

## MALFUNCTION

### TEST OR INSPECTION

### CORRECTIVE ACTION

#### NOTE

Before you use this table, be sure you have performed all normal operational checks. If you have a malfunction which is not listed in this table, notify the next higher level of maintenance.

### 1. TEST SET FAILS TO START

Inspect for a defective fuse by removing the three holder caps. Turn the caps counterclockwise and pull the fuses out. Inspect the fuses for burns, cracks or breaks. Test the fuses for continuity using a multimeter (para 7-2).

**Replace a defective fuse with a fuse of the same rating and size. Replace fuse holder cap by screwing full clockwise until snug. Do not overtighten.**

### 2. LOAD SWITCHES ARE ON BUT NO LOAD IS APPLIED

Inspect the test set for a faulty lead.

**Replace any faulty leads.**

Table 4-2. Troubleshooting (Cont'd)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
<b>3. RADIO INTERFERENCE</b>		
	<b>CAUTION</b>	
	<b>Do not rely on ground or safety devices to prevent accidents. Electrical circuits and equipment are potentially hazardous. Personnel should always exercise caution to prevent injury or possible death due to electrical shock.</b>	
	Step 1. Test the filter capacitor for leaks and shorts using a multimeter (para 7-2).	<b>Replace defective capacitors. If test equipment is not available and interference is indicated, isolate the cause of interference by the trial-and-error method of replacing each capacitor in turn until the cause of interference is located and eliminated.</b>
	Step 2. Inspect and test selector switch (para 4-24).	<b>Replace faulty switch (para 4-24).</b>
<b>4. LOAD DROPPAGE</b>		
	Step 1. Inspect for a defective fuse by removing the three holder caps. Turn the caps counterclockwise and pull the fuses out. Inspect the fuses for burns, cracks or breaks. Test the fuses for continuity using a multimeter (para 7-2).	<b>Replace a defective fuse with a fuse of the same rating and size. Replace fuse holder cap by screwing full clockwise until snug. Do not overtighten.</b>
	Step 2. Inspect the selenium rectifier for bum marks, breaks or other damage. Test the rectifier for continuity using a multimeter (para 7-2).	Notify direct support maintenance personnel for replacement action.
	Step 3. Be aware of any strange odors.	<b>If acrid odor is present do not operate the set, refer to higher level maintenance for replacement of rectifiers.</b>

Section VI. RADIO INTERFERENCE

4-14. General Methods Used to Attain Proper Suppression

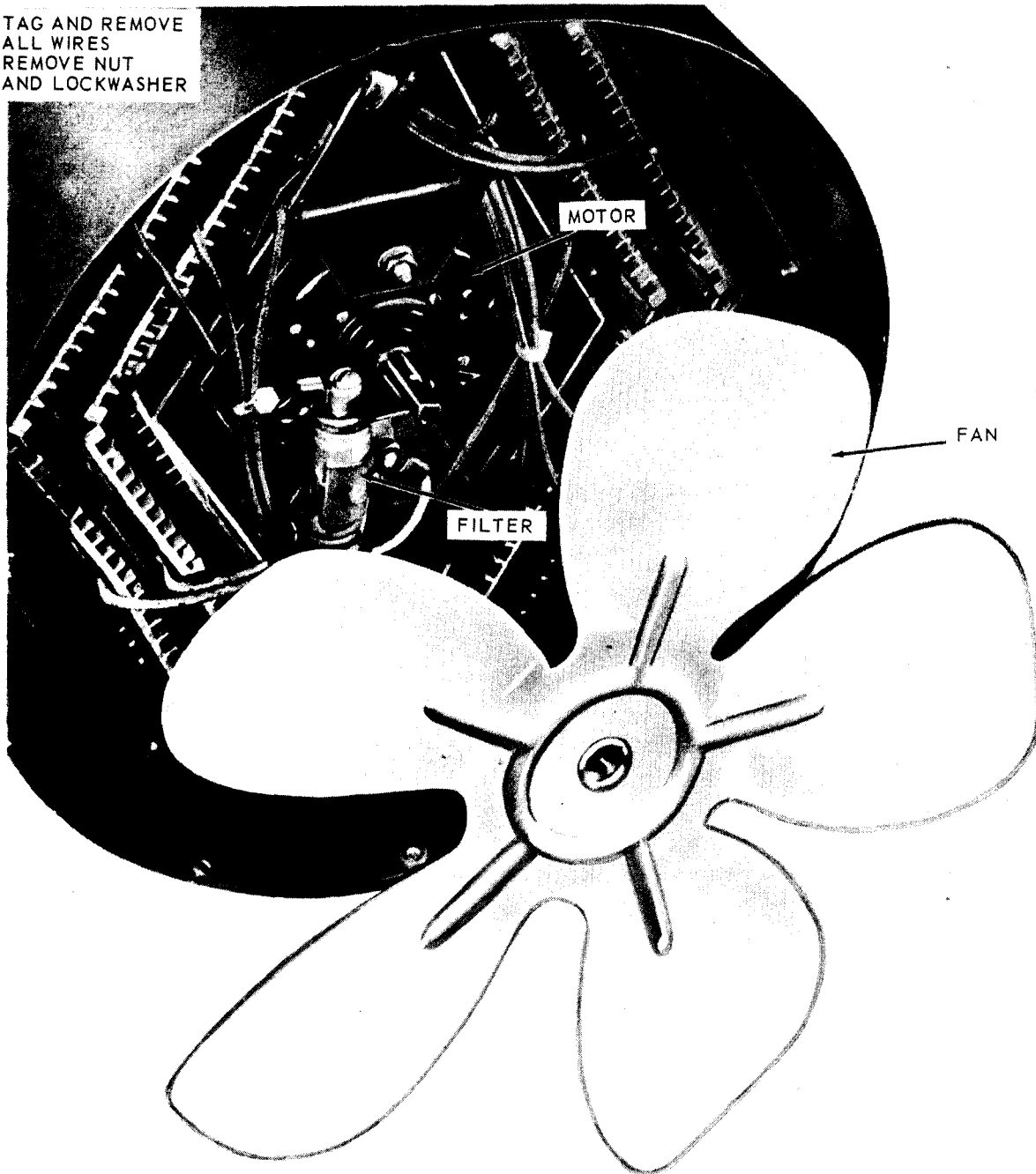
Essentially, suppression is attained by providing a low resistance path to ground for the stray currents. The methods used include grounding the motor frame and using filter capacitors. Refer to TM 11-483 for definitions, purpose, source and methods used to obtain

proper radio suppression.

4-15. Interference Suppression Components

Suppression is attained by grounding the motor frame and by using filter capacitors. Sparking and other electrical disturbances go through filter capacitors (fig. 4-2), and are quickly grounded and suppressed.

- (1) TAG AND REMOVE ALL WIRES
- (2) REMOVE NUT AND LOCKWASHER



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Figure 4-2. Suppression filter location removal and installation.

#### 4-16. Replacement of Suppression Components

Using figure 4-2 as a guide, replace radio interference suppression components.

#### 4-17. Testing of Radio Interference Suppression Components

Test the capacitors for leaks and shorts using a multimeter (para 7-2); replace defective capacitors. If

test equipment is not available and interference is indicated, isolate the cause of interference by the trial-and-

error method of replacing each capacitor in turn until the cause of interference is located and eliminated.

## Section VII. MAINTENANCE OF THE HOUSING, DOORS AND GRILLS

### 4-18. General

This section contains instructions for the removal and installation of the grills, both exhaust and inlet, handles, latches, braces and brackets.

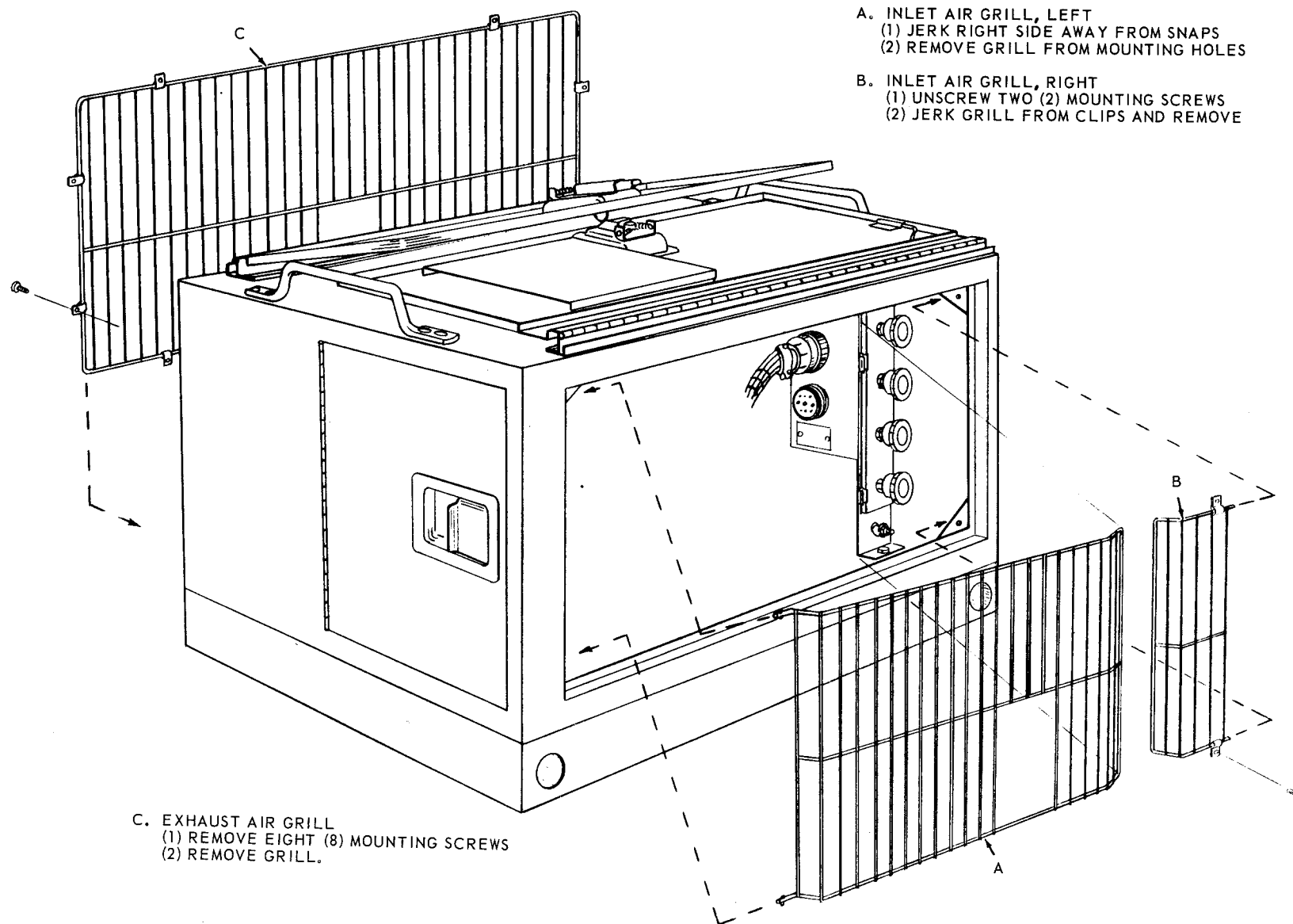
### 4-19. Grills

*a. Removal.* Using figure 4-3 as a guide, remove the

exhaust and inlet grills.

*b. Repair.* Repair grills by straightening any bends or dents and by welding any broken connections.

*c. Installation.* Using figure 4-3 as a guide, install the exhaust and inlet grills.



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Figure 4-3. Grills, removal and installation.



#### **4-20. Handles, Latches, Braces and Brackets**

*a. Removal.* Remove by taking off all mounting hardware.

*b. Repair.* Repair by straightening, removing dents or replacing damaged parts.

*c. Installation.* Install by aligning and replacing mounting hardware.

### **Section VIII. MAINTENANCE OF THE POWER ABSORBER**

#### **4-21. General**

This section contains instructions for testing the switches, rectifier, voltage sensing module, contactor, control transformer, filter capacitor and voltage plug. Instructions are also included for the removal and installation of the fuseholders, toggle switch, terminal stud, filter capacitor and the fan.

#### **4-22. Fuseholders**

*a. Removal.* Remove the fuseholder by removing all

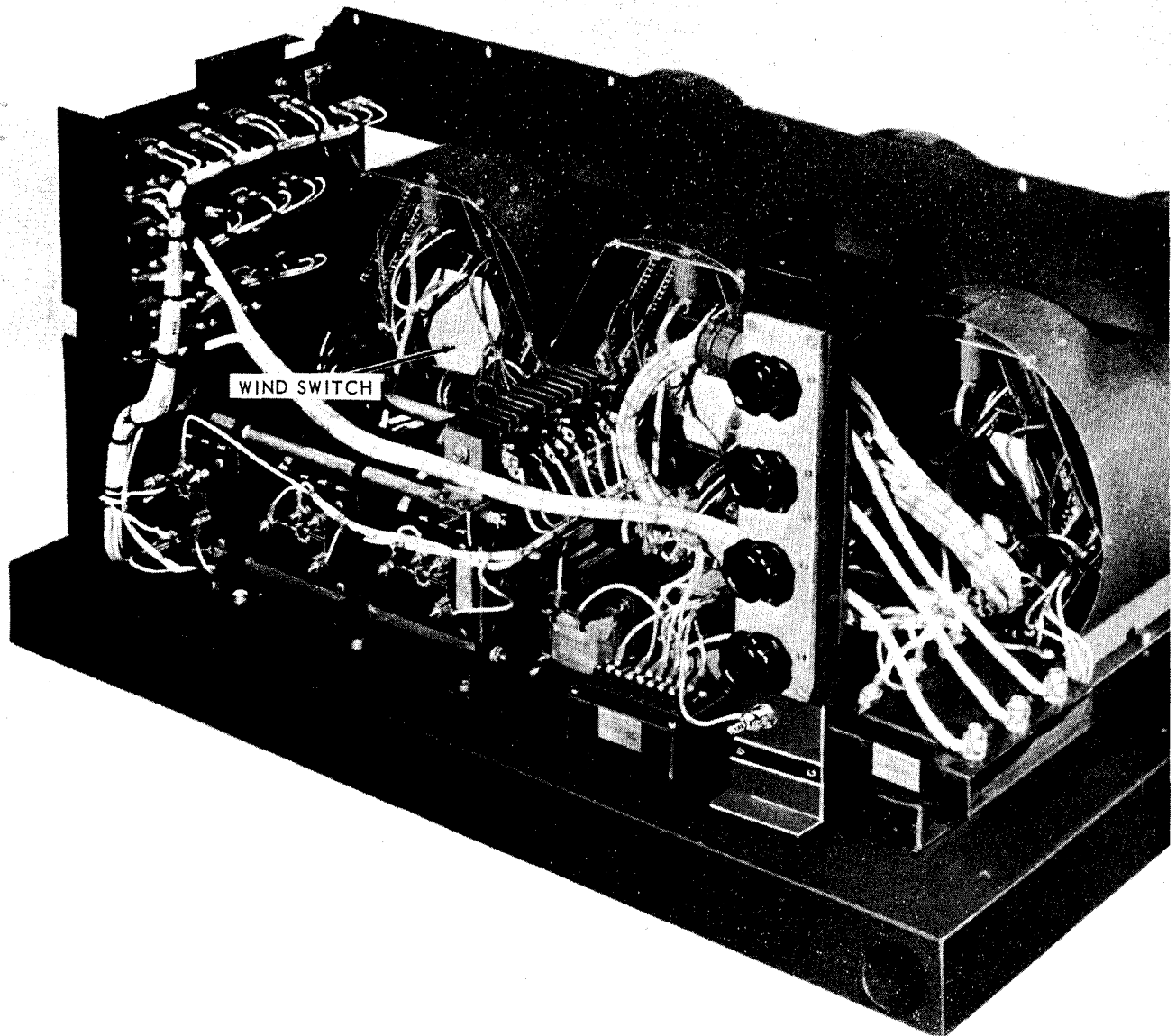
mounting hardware.

*b. Inspection.* Inspect the fuseholders for cracks, breaks or other damage.

*c. Installation.* Install by replacing all mounting hardware.

#### **4-23. Wind Switch**

Test the wind switch (fig. 4-4) for continuity using a multimeter (para 7-2). Check for proper operation. Notify direct support maintenance for replacement action.



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Figure 4-4. Wind switch location

#### 4-24. Toggle Switch

*a. Testing.* Test the toggle switches for continuity using a multimeter (para 7-2). Replace a defective switch.

*b. Removal.* Remove the toggle switches by removing all mounting hardware.

*c. Installation.* Install the toggle switches by replacing all mounting hardware.

#### 4-25. Rectifier

##### WARNING

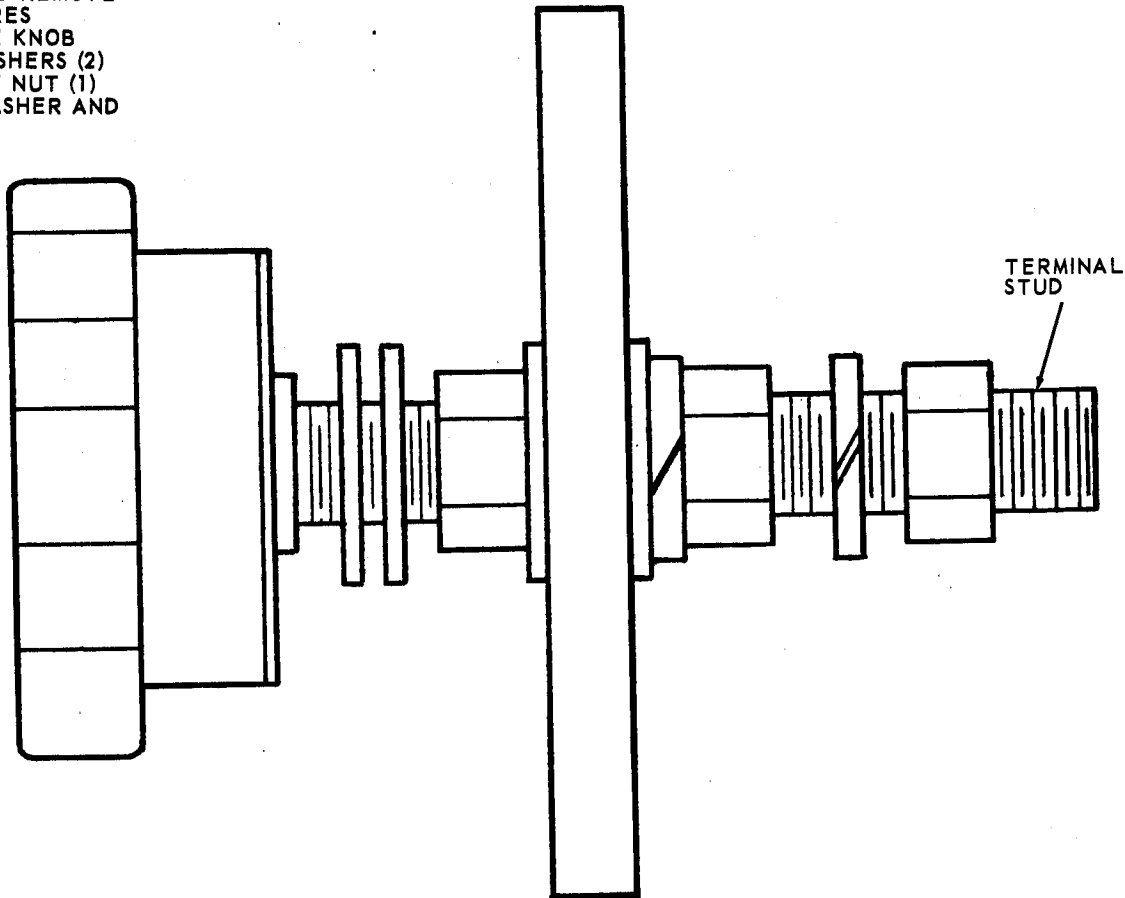
**Very toxic fumes of selenium dioxide are given off when selenium coated plates burn. Do not breathe the fumes. Keep fumes and compound away from the skin. Handle the burned plates with gloves and dispose.**

*a. Testing.* Test the rectifier (fig. 1-2) for continuity using a multimeter (para 7-2).

*b. Inspecting and Cleaning.* Inspect the rectifier for burn marks, breaks or other damage. Clean with filtered compressed air.

*c. Removal and Installation.* Notify direct support maintenance for replacement.

- (1) TAG AND REMOVE ALL WIRES
- (2) REMOVE KNOB AND WASHERS (2)
- (3) REMOVE NUT (1) LOCKWASHER AND WASHER



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Figure 4-7. Terminal studs, removal and installation.

#### 4-27. Variable Transformer

*a. Inspecting and Cleaning.* Inspect track and brush for burns, unit for cracks or other damage. Clean with filtered jet or air.

*b. Removal and Installation.* Notify direct support maintenance for replacement.

#### 4-28. Voltage Sensing Module

*a. General.* The voltage sensing module (fig. 1-3) is supplied to open the control circuit and prevent opera-

#### 4-26. Terminal Stud

*a. General.* Four stud type terminals (fig. 1-3) are supplied together with one copper shorting link which tie the studs together for single phase operation.

*b. Removal.* Using figure 4-5 as a guide, remove the terminal studs.

*c. Installation.* Using figure 4-5 as a guide, install the terminal studs.

tion if the incoming voltage does not conform to the voltage connection of the test set.

*b. Testing.* Test the voltage sensing module for continuity using a multimeter (para 7-2).

*c. Inspecting and Cleaning.* Inspect the module for visual signs of damage. Clean with compressed filtered air.

*d. Removal and Installation.* Notify direct support maintenance for replacement.

#### 4-29. Contactor

*a. General.* A three pole, single throw, 200 ampere, 240 volt AC, 28 volt DC coil contactor (fig. 1-2) is supplied for applying the loads to the generator.

*b. Testing.* Test the contactor for continuity using a multimeter (para 7-2).

*c. Inspecting and Cleaning.* Visually inspect for damage to case. Clean with compressed filtered air.

*d. Removal and Installation.* Notify direct support maintenance for replacement.

#### 4-30. Control Transformer

*a. General.* Three control transformers (fig. 1-2) are supplied to furnish the control power to the fan motor and contactor.

*b. Testing.* Test the transformer for continuity using a multimeter (para 7-2).

*c. Inspecting and Cleaning.* Inspect for burns, cracks or other damage. Clean with compressed filter air.

*d. Removal and Installation.* Notify direct support maintenance for replacement.

#### 4-31. Filter Capacitor

*a. Testing.* Make sure the capacitor is discharged before testing. For testing, use an ohmmeter set at RX10,000 scale. Placing one lead on the terminal and the other on the capacitor body, the reading should be infinite. Then place leads on capacitor in reverse of

above without touching the capacitor with your fingers. The needle should jump momentarily and then to infinite resistance (para 7-2).

*b. Removal.* Using figure 4-2 as a guide, remove the filter capacitor.

*c. Cleaning.* Clean with filtered compressed air.

*d. Installation.* Using figure 4-2 as a guide, install the filter capacitor.

#### 4-32. Voltage Plug

*a. General.* Two receptacles and a plug are provided & for changing the voltage connections of the test set.

*b. Testing.* Test the voltage plug for continuity using a multimeter (para 7-2).

*c. Cleaning.* Clean with filter compressed air.

*d. Removal and Installation.* Notify direct support maintenance for replacement action.

#### 4-33. Fan

*a. Inspecting.* Inspect for unbalance of blade by snapping the master switch "ON" and then "OFF". If the fan is off balance, broken or damaged, replace it.

*b. Removal.* To remove fan, loosen set screw on fan hub and pull off gently.

*c. Cleaning.* Clean blades with a damp cloth.

*d. Installation.* To replace fan, slip hub  $\frac{1}{8}$  inch in from the end of the shaft. Retighten set screw firmly.



CHAPTER 5  
DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

5-1. Tools and Equipment

There are no tools or equipment authorized other than those listed in Appendix B for direct support maintenance personnel.

5-2. Special Tools and Equipment

There are no special tools or equipment required by

maintenance personnel to maintain the test set.

5-3. Maintenance Repair Parts

Repair parts and equipment covering direct support maintenance are listed and illustrated in the repair parts and special tools list, Appendix B of this manual.

Section II. TROUBLESHOOTING

5-4. General

This section contains information useful to direct support maintenance personnel in diagnosing and correcting an unsatisfactory condition that may exist in the equipment. Refer to paragraphs 3-6 and 4-13 for additional troubleshooting information relative to this equipment.

5-5. Troubleshooting

Table 5-1 lists a malfunction which may occur in the test set. The malfunction is followed by a test and inspection which will help you to determine the cause and corrective action to take. You should perform the test and inspection in the order listed.

Table 5-1. Troubleshooting

**MALFUNCTION**  
**TEST OR INSPECTION**  
**CORRECTIVE ACTION**

NOTE

Before you use this table, be sure you have performed all normal operational checks. If you have a malfunction which is not listed, notify your supervisor.

**LOAD DROPPAGE**

**WARNING**

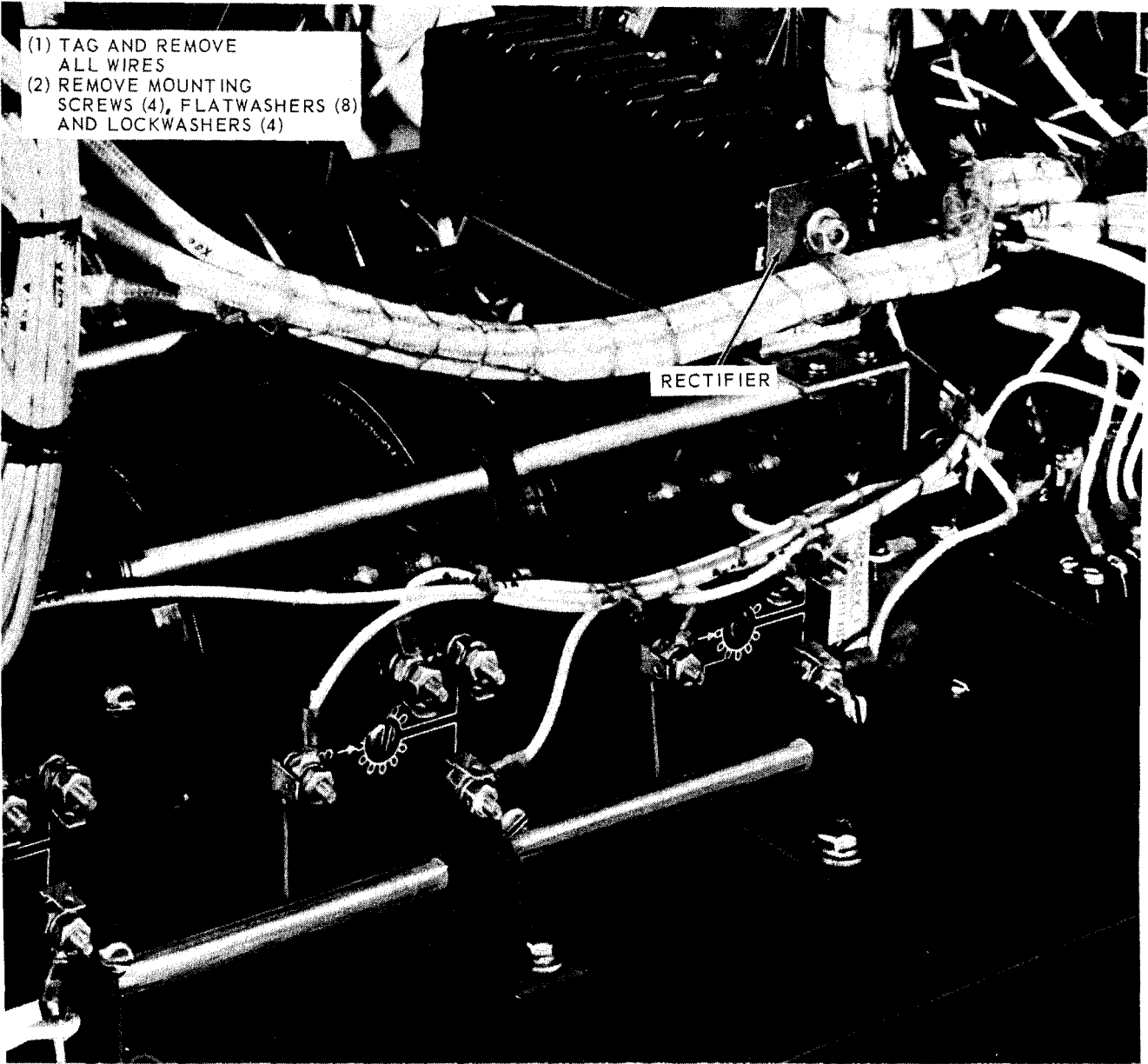
**Do not breathe fumes of burning selenium rectifier. Fumes are toxic and dangerous.**

Inspect the selenium rectifier for bum marks, breaks or other damage. Test the rectifier for continuity using a multimeter (para 7-2).

**De-energize test set and allow fumes to dissipate. Replace a damaged rectifier.**

**a. Removal. Using figure 6-1 as a guide, remove the rectifier as follows:**

- (1) Tag and remove all wires.
- (2) Remove mounting screws (4), flatwashers (8) and lockwashers (4).
- (3) Remove rectifier.



TS 025337

Figure 5-1. Rectifier removal and installation.  
Table 5-1. Troubleshooting (Cont'd).

MALFUNCTION		
TEST OR INSPECTION		
CORRECTIVE ACTION		
<i>b . Installation.</i> Using figure 5-1 as a guide, install the rectifier as follows: (1)Install the mounting screws (4), flatwashers (8) and lockwashers (4). (2)Connect all wires and remove tags.		

Section III. GENERAL MAINTENANCE

The maintenance to be performed by direct support maintenance personnel on this equipment is limited

repair of the housing which shall be accomplished by knocking out dents and straightening bends.

## Section IV. REMOVAL AND INSTALLATION OF MAJOR COMPONENTS AND ASSEMBLIES

### 5-6. Doors

*c. Removal.* Remove hinges and remove doors as required.

*b. Replacement.* Replace a damaged or unserviceable door.

*c. Installation.* Install by replacing hinges.

### 5-7. Housing

*a. Removal.* The housing completely encloses all components and controls. It is a one piece unit with

three hinged doors: two doors for ventilation and one for the control panel. The housing is easily removable for complete access to the interior for servicing. Latches are used to secure the door for storage and shipment.

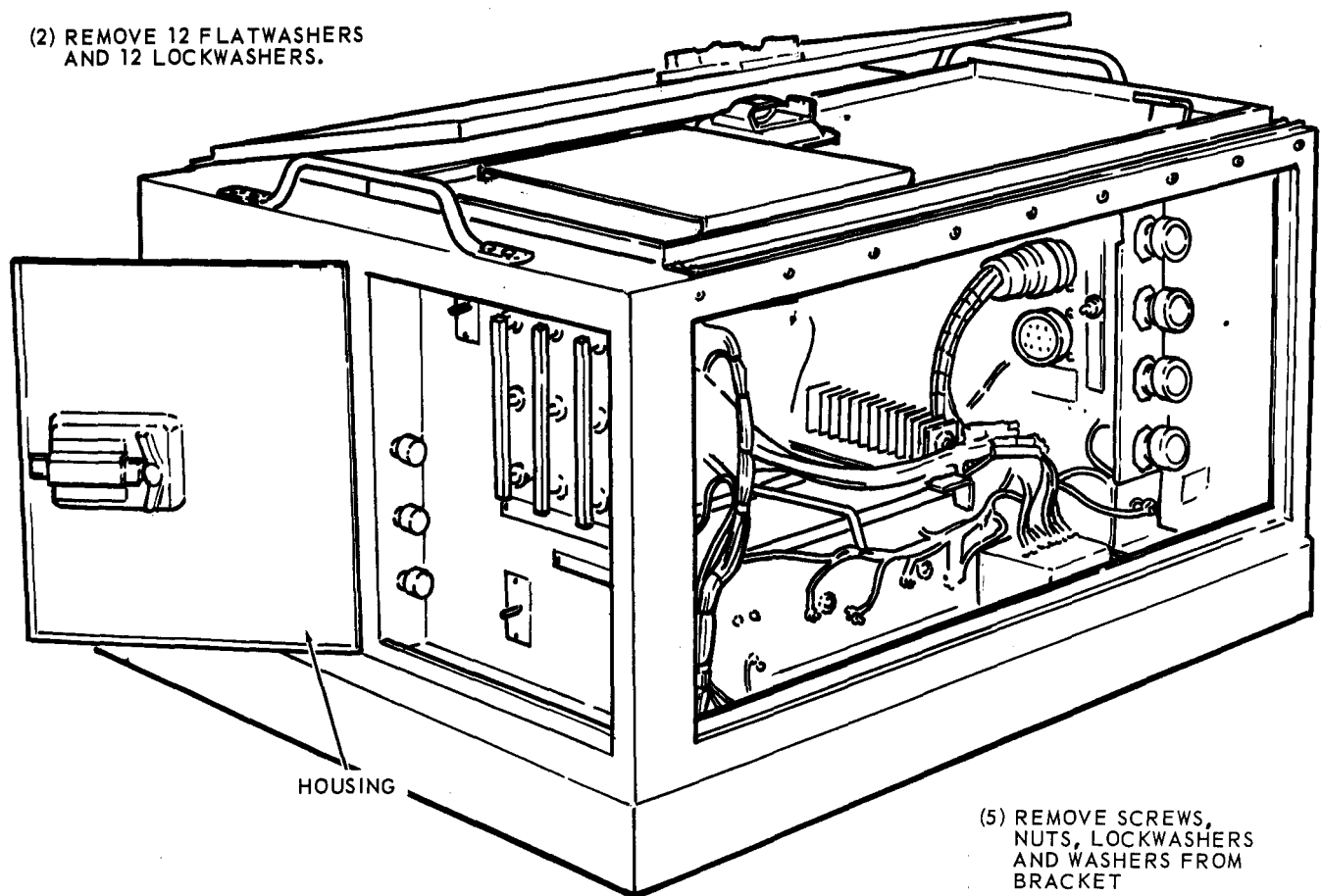
*b. Removal.* Refer to figure 5-2 and remove the housing.

*c. Installation.* Refer to figure 5-2 and align and install the housing.

(1) REMOVE 12 MOUNTING BOLTS, FROM UNDERNEATH SIDE OF SKID.

(4) REMOVE 2 SCREWS FROM TERMINAL MOUNTING BRACKET

(2) REMOVE 12 FLATWASHERS AND 12 LOCKWASHERS.



(3) REMOVE 2 SCREWS FROM CONTROL MOUNTING BRACKET

(5) REMOVE SCREWS, NUTS, LOCKWASHERS AND WASHERS FROM BRACKET

Figure 5-2. Housing, removal and installation.

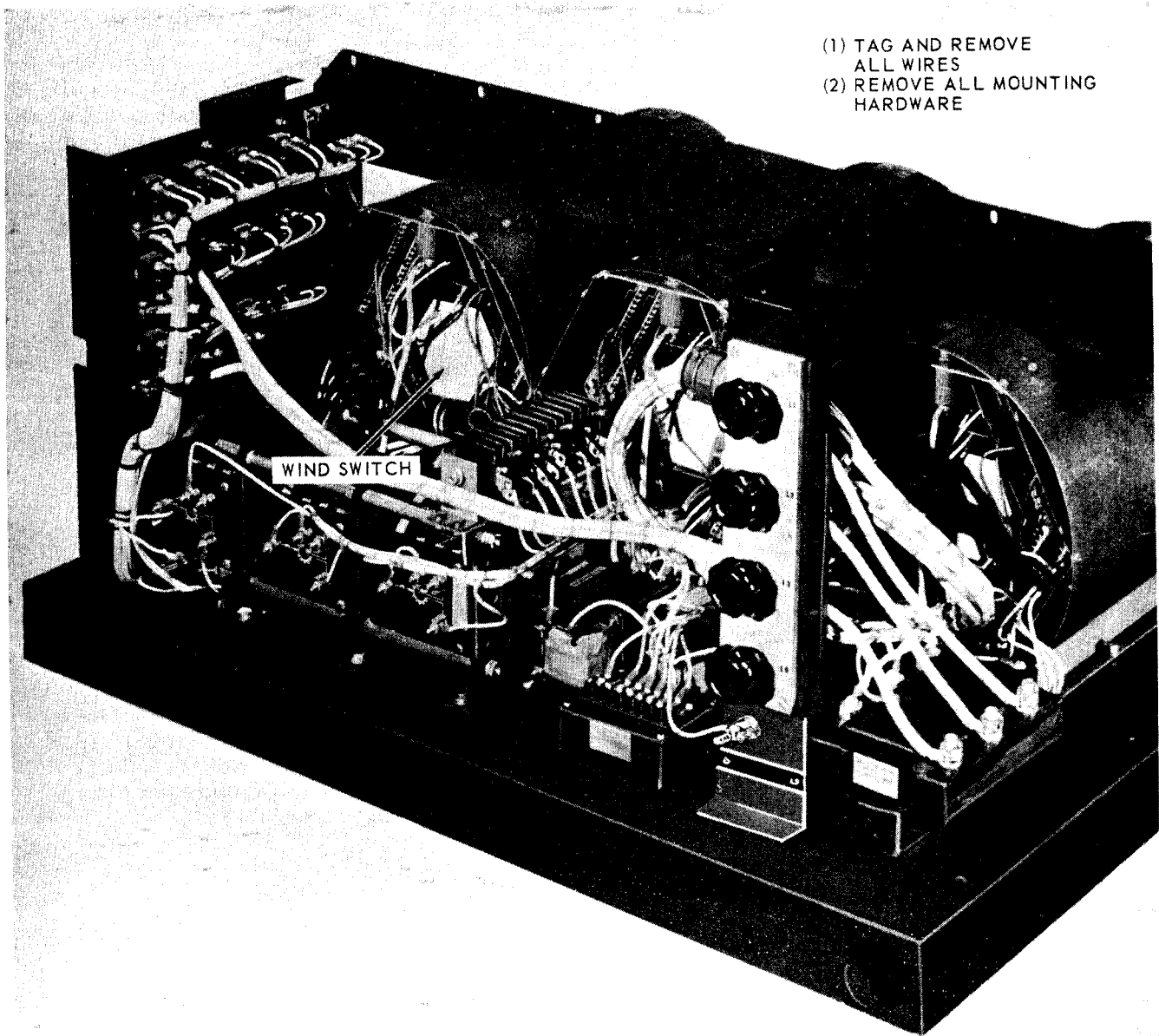
TS 025338

### 5-8. Wind Switch

*a. Removal.* Refer to figure 5-3 and remove the wind switch.

*b. Installation* Refer to figure 5-3 and install the wind switch.





- (1) TAG AND REMOVE ALL WIRES
- (2) REMOVE ALL MOUNTING HARDWARE

TS 025339

Figure 5-3. Wind switch removal and installation.

## 5-9. Rectifier

### WARNING

**Do not breathe fumes of burning selenium rectifier. Fumes are toxic and dangerous.**

*a. General.* The selenium rectifier stack is an assembly of twelve, triple density selenium single plate cells connected to form two three-phase full-wave bridges.

The combined output capacity of the rectifier is 6 AMPS DC with air flow of 300 LFPM (Linear Feet per Minute). Unit is especially designed to withstand in rush of three fan motors.

*b. Removal.* Refer to figure 5-4 and remove the rectifier.

*c. Installation.* Refer to figure 5-4 and install the rectifier.

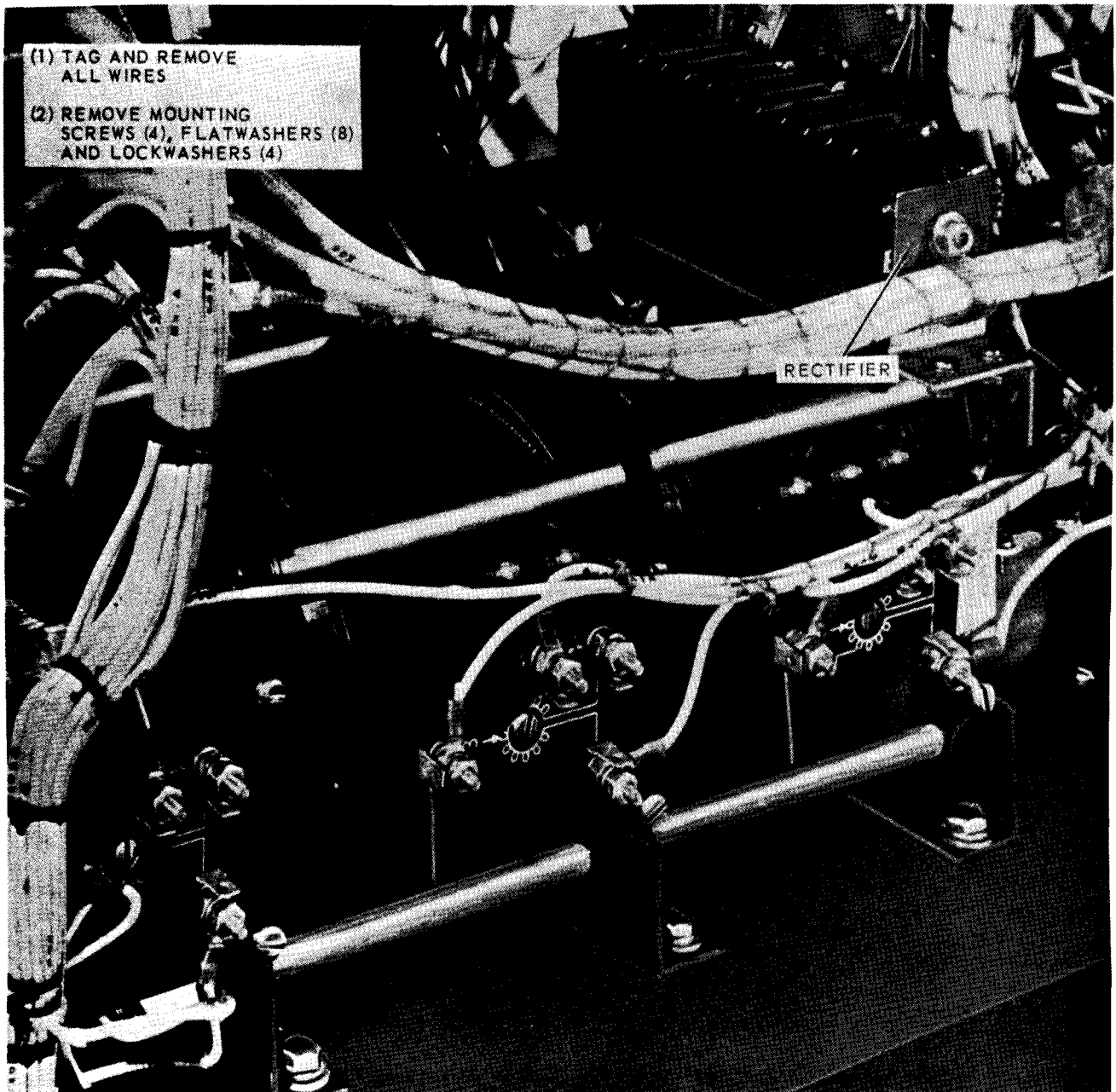


Figure 6-4. Rectifier, removal and installation.

## 5-10. Variable Transformer

*a. General.* A three gang 240/20 volt variable transformer is provided to control the load from 0 to 3 KW. The variable transformer is operated by control knob located on the control panel. Used in conjunction with various load settings, any kilowatt loading between 0.5 and 33 KW can be obtained.

*b. Testing.* Test the variable transformer (fig. 5-5) for

continuity using a multimeter (para 7-2). Check for proper operation. Replace a defective variable transformer.

*c. Removal.* Refer to figure 5-5 and remove the variable transformer.

*d. Installation.* Refer to figure 5-5 and install the variable transformer.

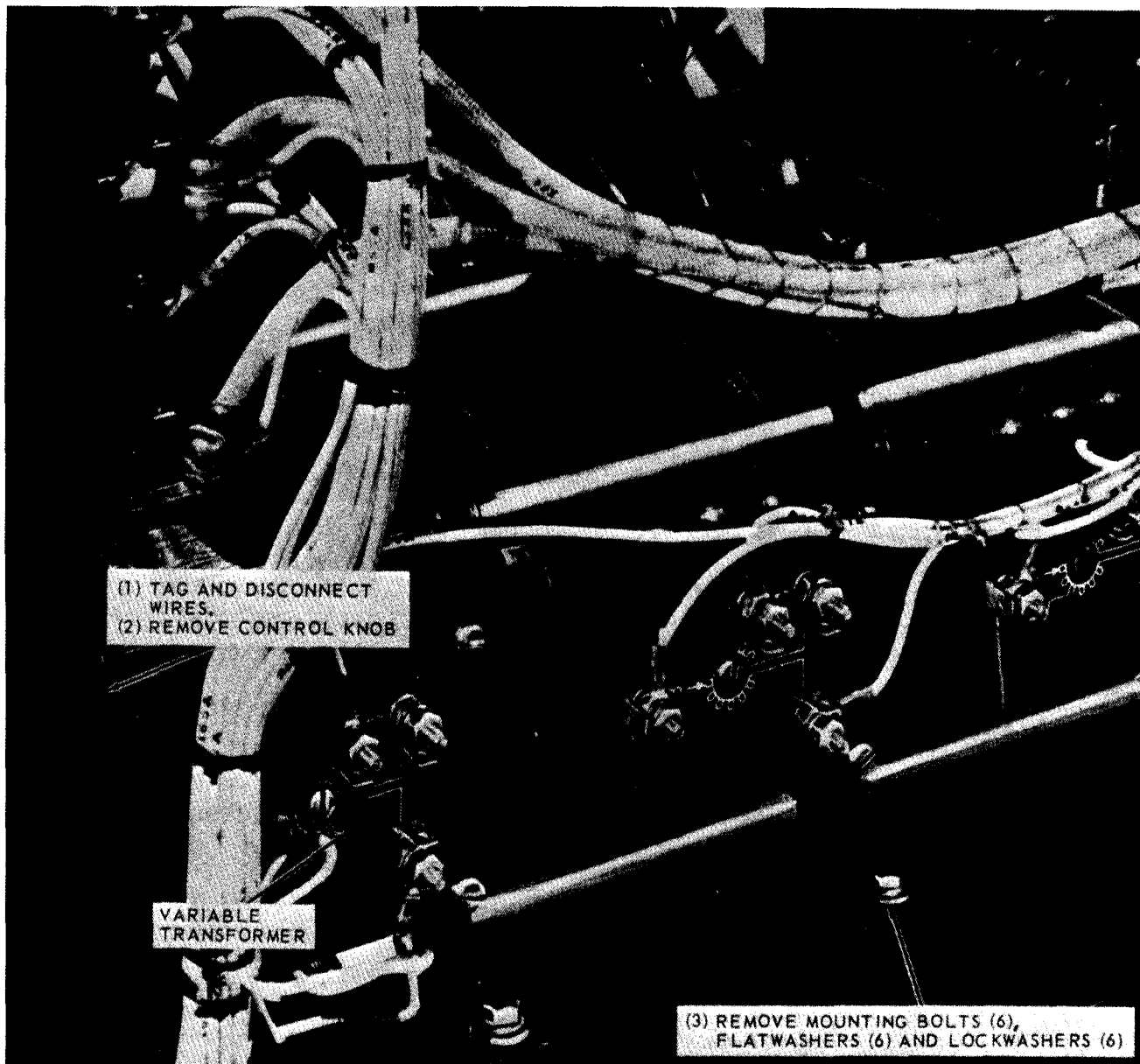


Figure 5-5. Variable transformer, removal and installation.

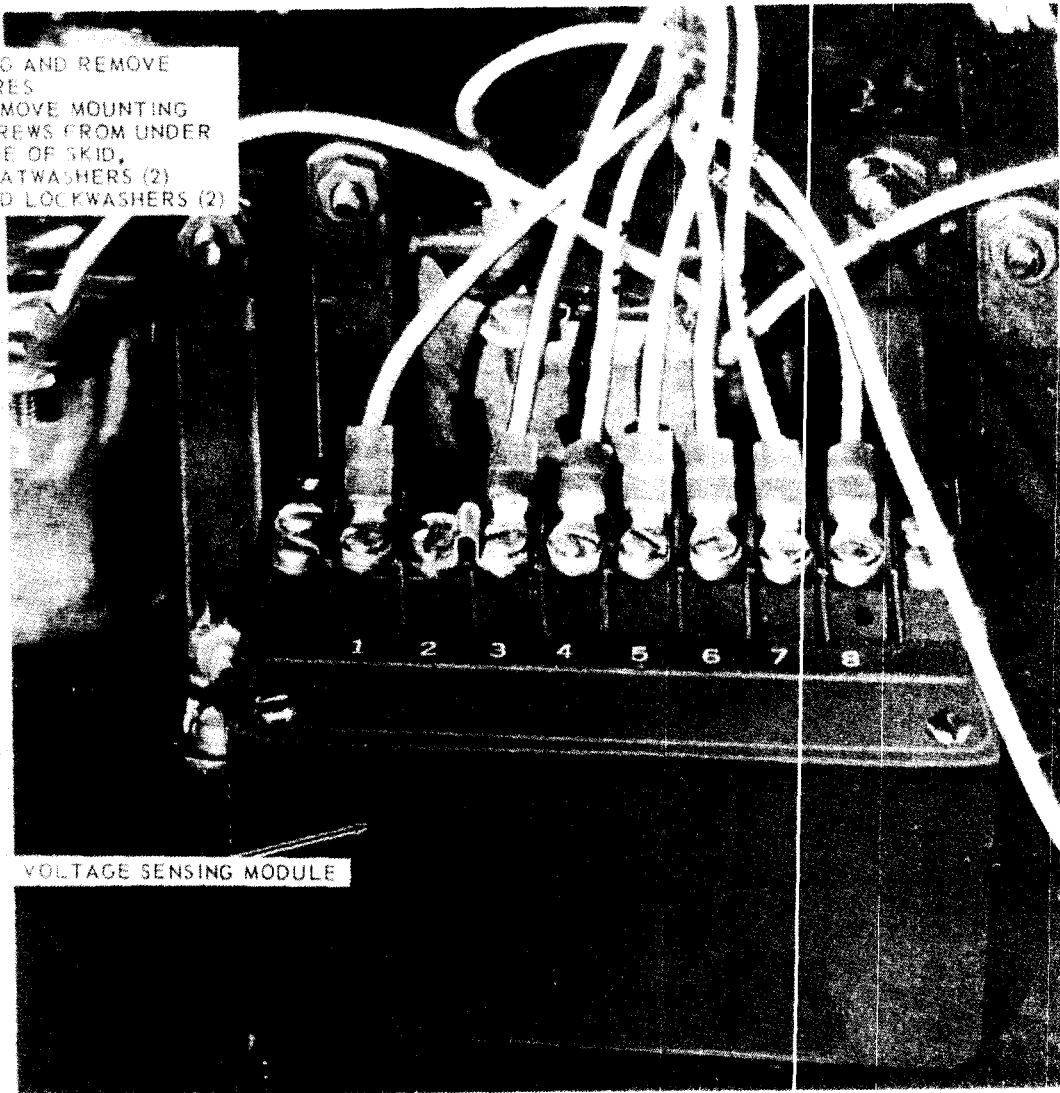
TS 025341

## 5-11. Voltage Sensing Module

*a. Model A427 Voltage Sensing Module.* The voltage sensing module consists of a three pole, normally closed, 5 AMP contact relay with a voltage sensing circuit encapsulated into a single unit. Unit function is to sense the level of control transformer secondary voltage. When control voltage exceeds 35 VRMS (Volts root mean square)  $\pm$  4 volts, relay is energized, opening the three normally closed contacts.

*b. Model A427B Voltage Sensing Module.* Referring to the electrical test set schematic diagram (fig. 1-5.1) shows that operation of the power contactor coil (K1) is controlled by a power transistor within the Voltage Sensing Module. This module senses the level of D.C. voltage applied to terminals 1 and 4. If the unit is correctly programmed for the applied a.c. test voltage, and the test voltage is at the nominal value, the control voltage at terminals 1 to 4 will be about 32 VDC for three phase input and 24 VDC for single phase input. In

- (1) TAG AND REMOVE WIRES
- (2) REMOVE MOUNTING SCREWS FROM UNDER SIDE OF SKID, FLATWASHERS (2) AND LOCKWASHERS (2)



**Figure 5-6. Voltage sensing module, removal and installation.**

TS 025342

In this situation, the sensing module will allow the power transistor to conduct; thus pulling-in the power contactor (K1). If the test set is incorrectly programmed for the level of a.c. input test voltage, the power transistor will not conduct and power contactor (K1) will not pick-up. The Model A427B Voltage Sensing Module also requires that all air flow switches and over heat switches are closed to sustain unit operation. All of these switches are series wired and connected across terminal 4 and 5

of this module. With all wind and heat switches closed, terminals 4 and 5 are connected together. If any of these switches open for a period greater than (5) seconds the power transistor will cease to conduct causing power (contactor (K1) to drop-out.

*c. Removal.* Refer to figure 5-6 and remove the voltage sensing unit.

*d. Installation.* Refer to figure 5-6 and install the voltage sensing unit.

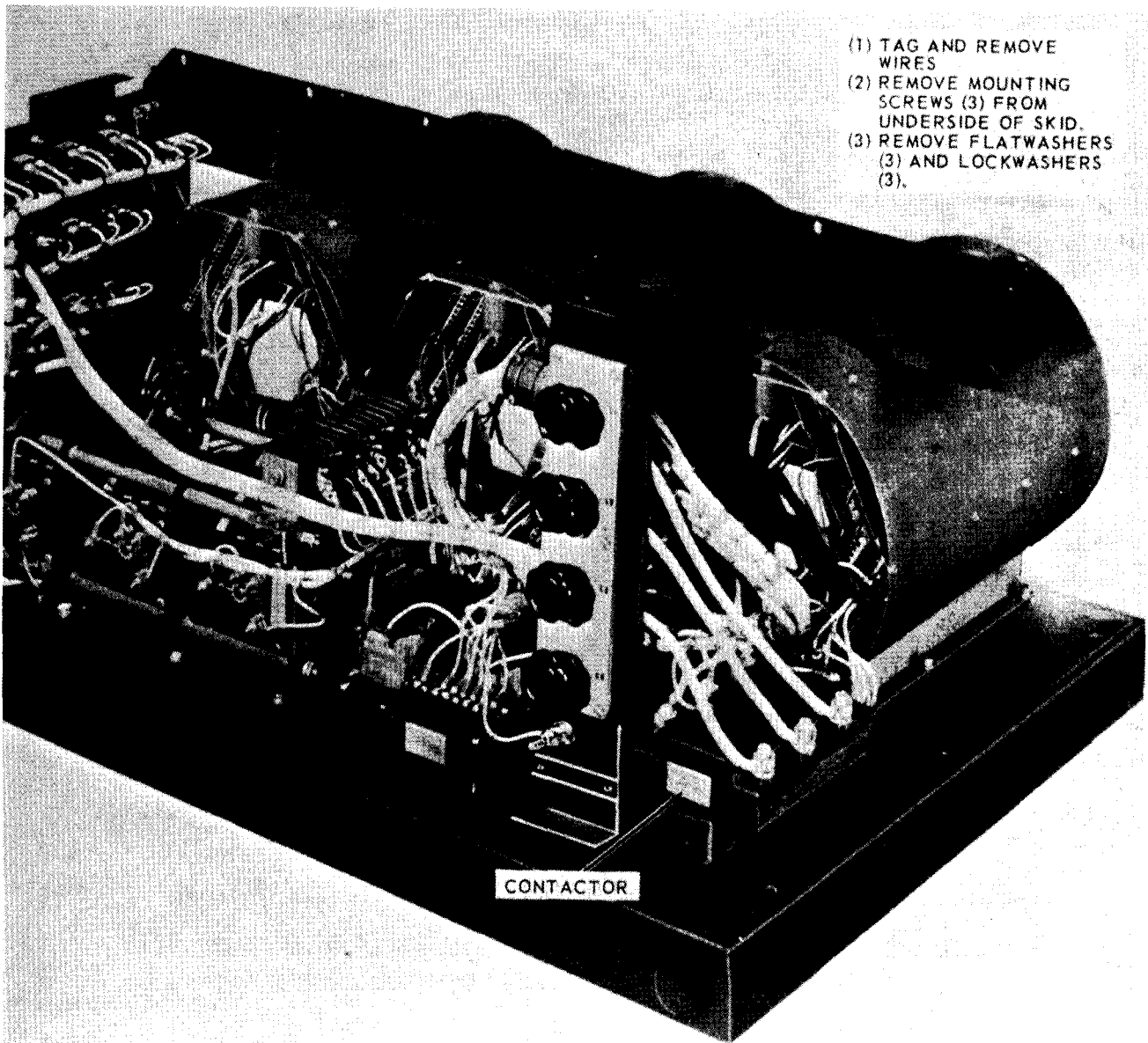


Figure 5-7. Contactor, removal and installation.

## 5-12. Contactor

*a. Model A427 Contactor.* This contactor, a three pole, normally open with 24 VDC coil. It is capable of switching and carrying the rated load of the test set. The nominal resistance of the coil is 12 OHMS.

*b. Model A427B Contactor.* This contactor has three normally open power poles and one each normally open and normally closed auxiliary control contacts. The contactor coil is nominal 24 VDC with approximately 2 OHMS resistance. The relay is designed so that the normally closed aux-

iliary contact (K1-4) will open as soon as the power poles all close. If this contact does not open, the coil will draw excessive current, and could burn-out. Also, if the auxiliary contact K1-4 opens before the power contacts close (or if K1-4 is always open), the power contactor will not close. In this situation, since the fans are not running, the unit will shut down, and lock-out after about (5) seconds.

*c. Removal.* Refer to figure 5-7 and remove the contactor.

*d. Installation.* Refer to figure 5-7 and install the contactor.

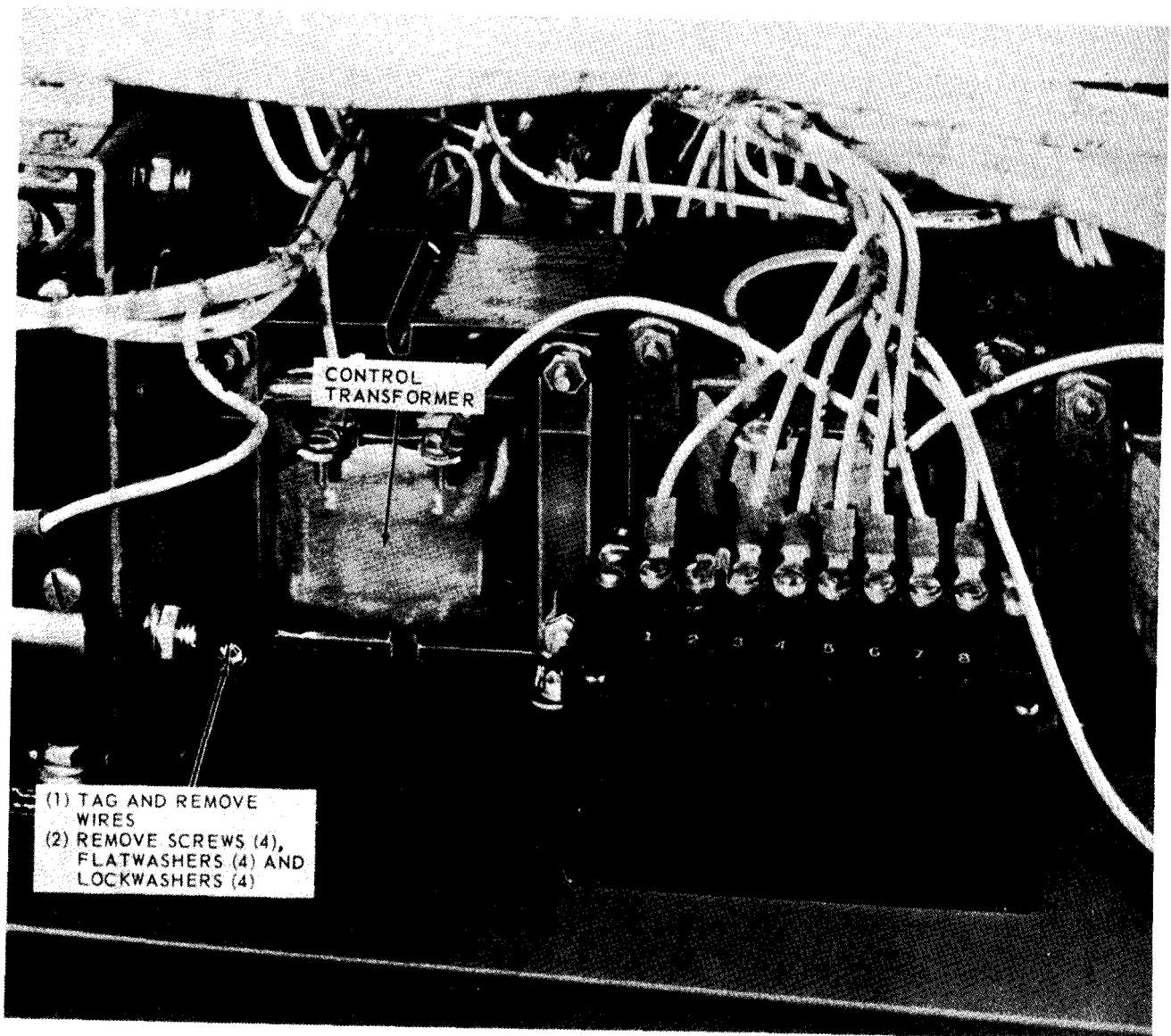


Figure 5-8. Control transformer, removal and installation.

TS 025344

### 5-13. Control Transformer

a. Both Model A427 and Model A427B use three each, single phase control transformers, designed to supply necessary power to operate the fan motors and the input contactor. Although the Model A427 and Model A427B control transformers supply a similar function, they are not interchangeable.

b. *Removal.* Refer to figure 5-8 and remove the control transformer.

c. *Installation.* Refer to figure 5-8 and install the control transformer.

### 5-14. Voltage Plug

a. *Removal.* Disconnect all wires from the voltage plug and tag them as necessary.

b. *Installation.* Connect all necessary wires to the voltage plug and remove all tags.

### 5-15. Power Absorber

a. *General.* Three duct-type 11 kilowatt power absorbers provide the resistive loads. Integral fans cool the absorbers by drawing air through the circular ducts. Air switches are provided to cut off the load if the air

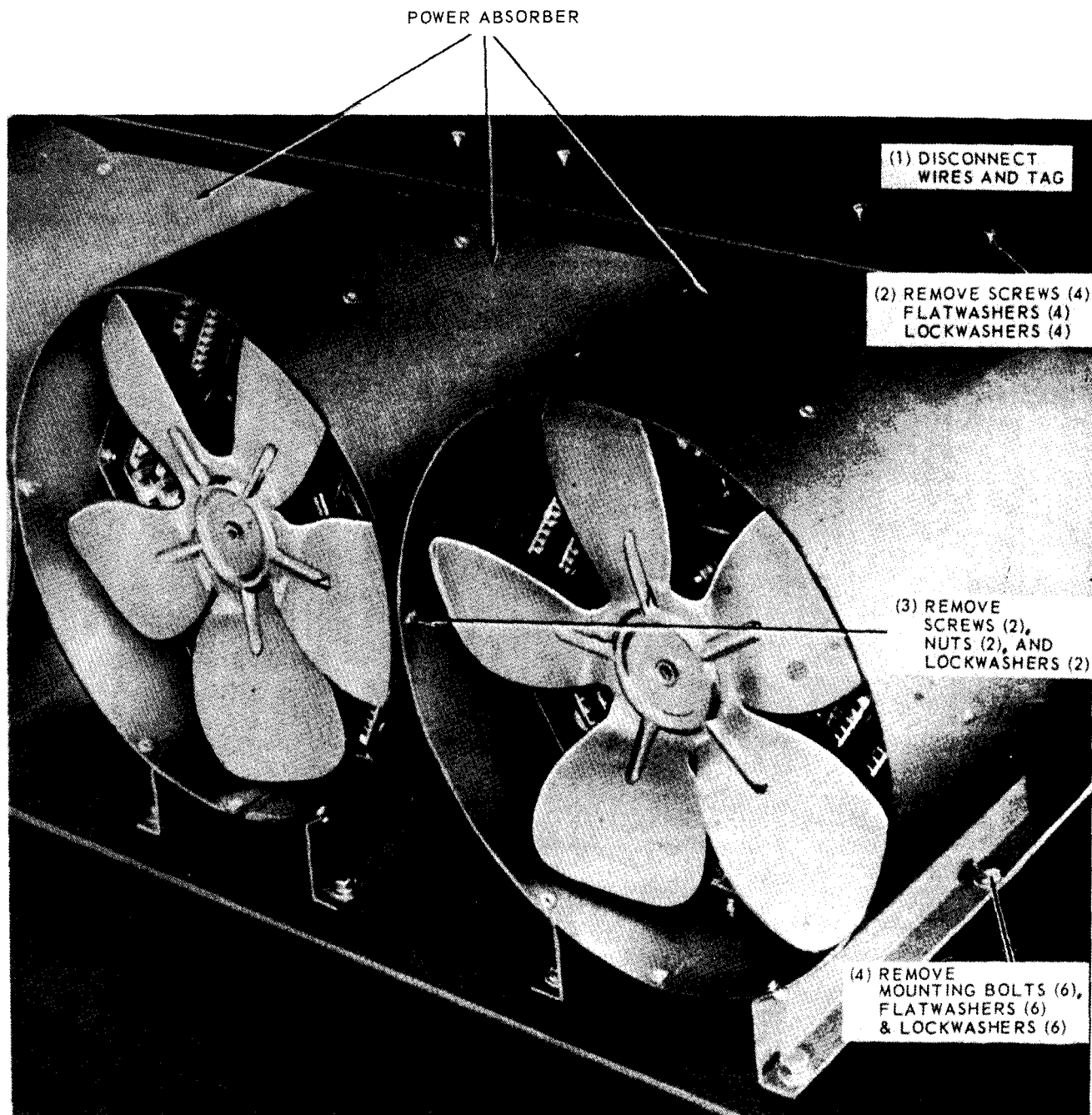


Figure 5-9. Power absorbers, removal and installation.

flow stops. Thermal sensing switches are provided to interrupt the load bus contractors in the event of overload. The power absorber consists of thirteen incremental resistive load elements inclosed in a cylindrical duct, and totaling eleven KW. Each load element consists of nichrome ribbon sandwiched between heat dissipating, finned plates. The unit is individually forced air cooled by an internally mounted fan and motor. The unit is protected by a wind switch and thermal switch.

*b. Removal.* Refer to figure 5-9 to remove the power absorbers.

*c. Cleaning and Inspection.* Clean the power absorbers with filtered compressed air. Inspect for cracks or other damage. Replace if inspection proves the unit faulty.

*d. Test.* With an OHM meter (para 7-2), check elements for continuity.

*e. Installation.* Refer to figure 5-9 and install the power absorber.



## 5-16. Fan Motor

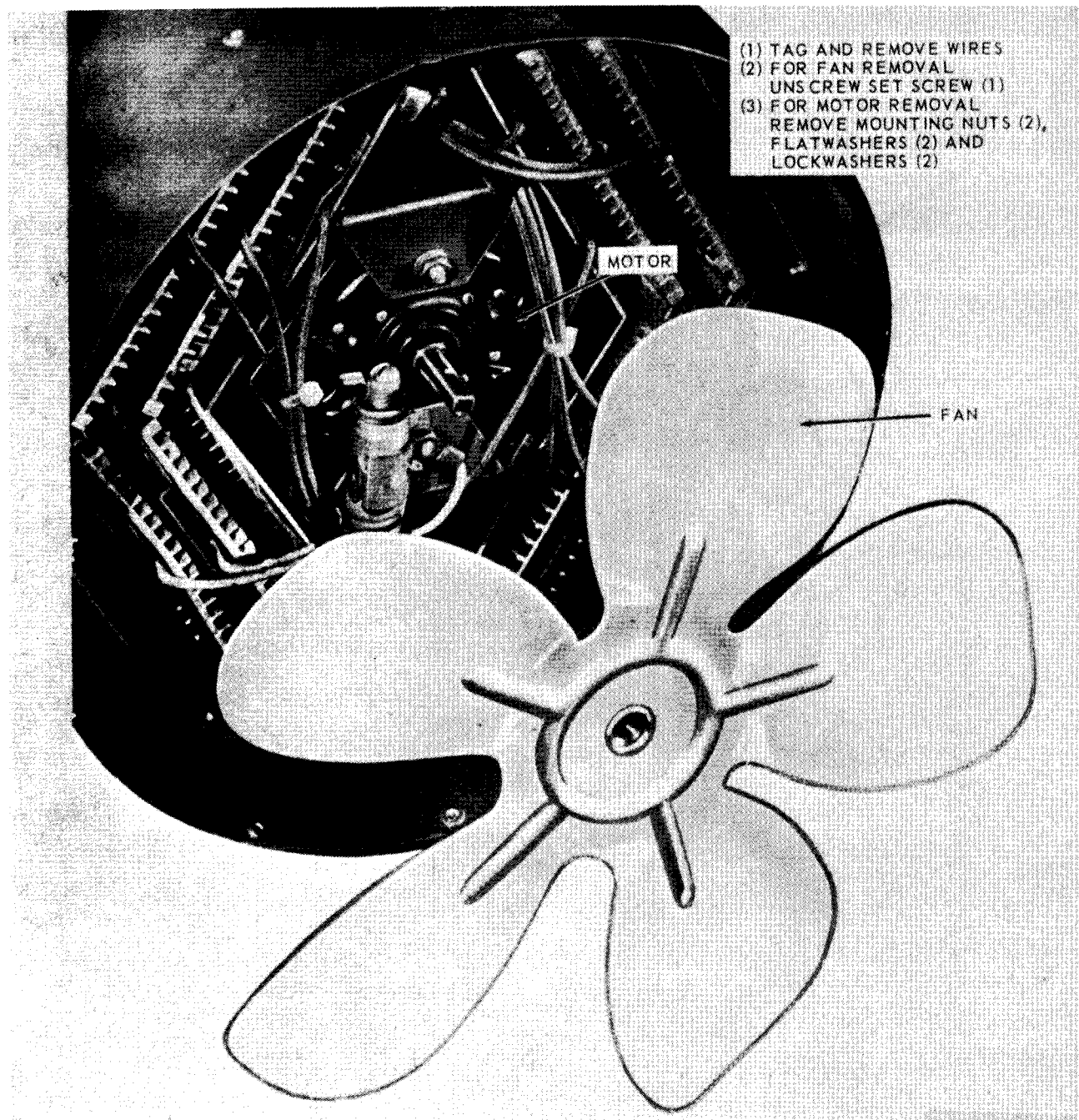
*a. General.* The fan motor is a nominally rated one-sixteenth horsepower, universal type motor designed to operate from a 24 volt direct current power source. The motor is especially wound to operate the axial blade fan of the load duct.

*b. Removal.* Refer to figure 5-10 and remove the fan

and fan motor.

*c. Cleaning and Inspection.* Clean the motor with filtered compressed air. Inspect motor for proper operation and replace if defective.

*d. Installation.* Refer to figure 5-10 and install fan and fan motor.



TS 025346

Figure 5-10. Fan and motor, removal and installation.





## CHAPTER 6

### REPAIR OF THE HOUSING

---

#### 6-1. General

The housing completely incloses all components and controls. It is a one piece unit with three hinged doors; two doors for ventilation and one for the control panel. The housing is easily removable.

#### 6-2. Housing

*a. Removal.* Refer to figure 5-2 and remove the housing.

*b. Cleaning and Inspection.* Clean away dirt, oil film, rust or any other foreign material from the unit. Inspect the housing for dents, bends or other damage.

*c. Repair.* Straighten bends, knock out dents and weld any breaks in the housing. Replace an unserviceable housing.

*d. Installation.* Refer to figure 5-2 and install the housing.



## CHAPTER 7

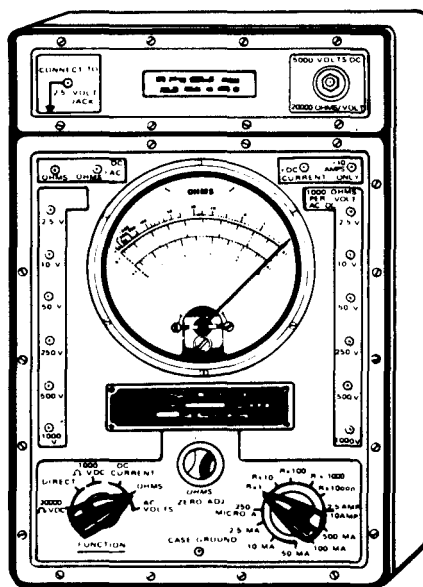
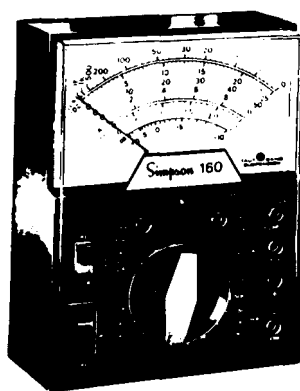
### MATERIEL USED IN CONJUNCTION WITH MAJOR ITEMS

#### 7-1. Introduction

In electrical troubleshooting, the Simpson 160, the TS-352B/U, and the AN/URM-105 will do the same job. Therefore, your shop sets may contain any one of these

multimeters (fig. 7-1). Any of these three multimeters can be used to troubleshoot the test set's electrical system.

**SIMPSON 160**  
NSN 6625-00-935-1333



**TS-352B/U**  
NSN 6625-00-553-0142

**AN/URM-105**  
NSN 6625-00-999-6282

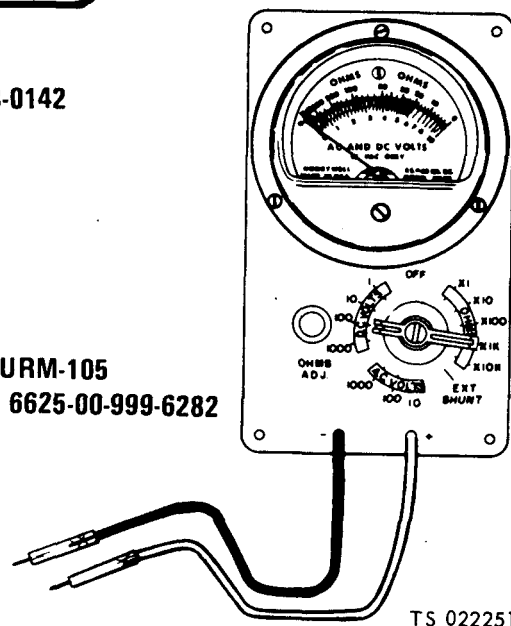


Figure 7-1. Types of multimeters.

#### NOTE

The Simpson 160 is only available in new shop sets as a substitute for the TS-352B/U or AN/URM-105.

#### 7-2. Using the Ohms Scale

The ohms scale is used to make tests for continuity,

shorts and resistance.

a. *“Zeroing” the Meter.* The multimeter must be set up and “Zeroed” before making these tests. Do the following steps that match the multimeter you have:

AN/URM-105

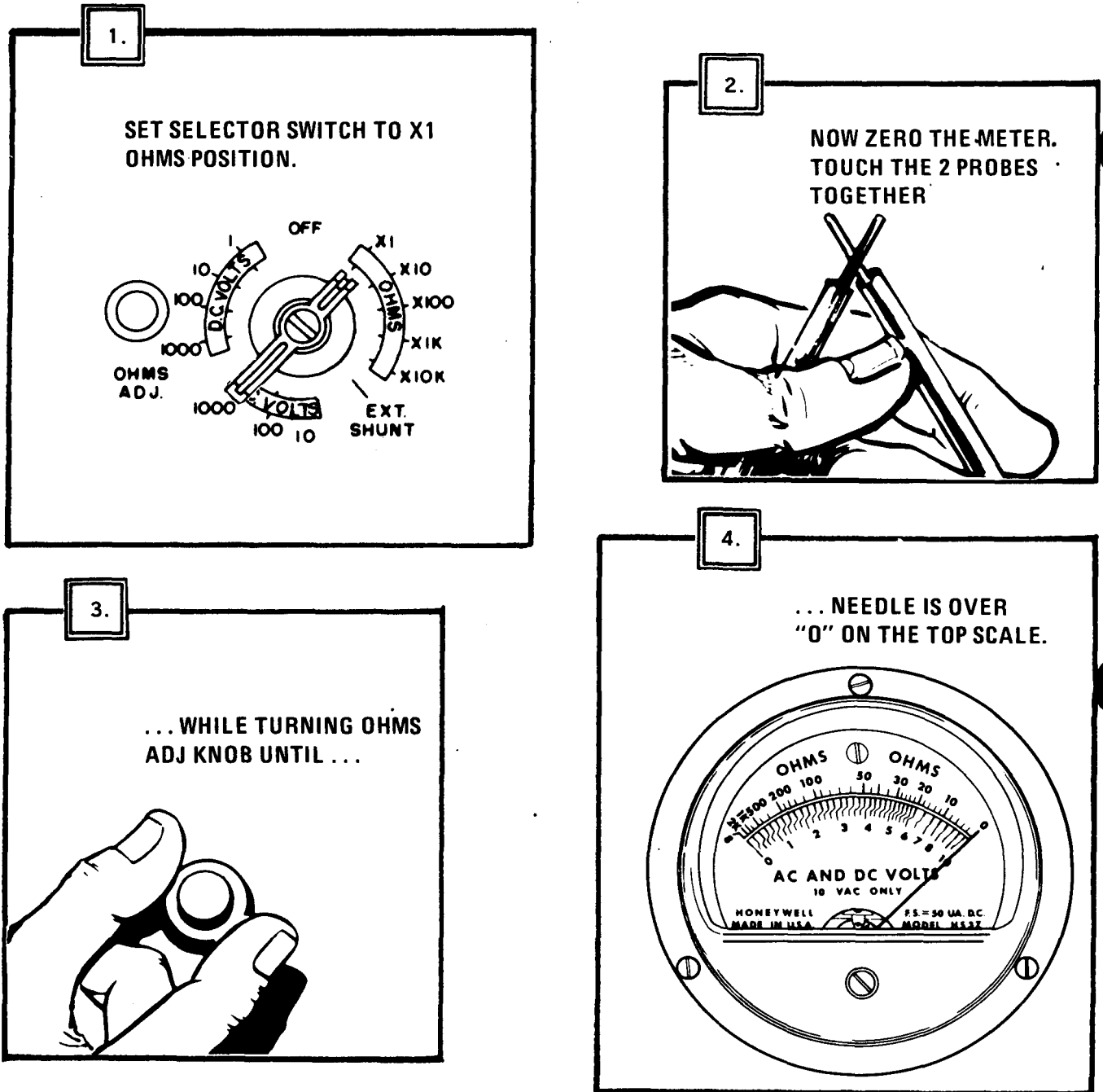
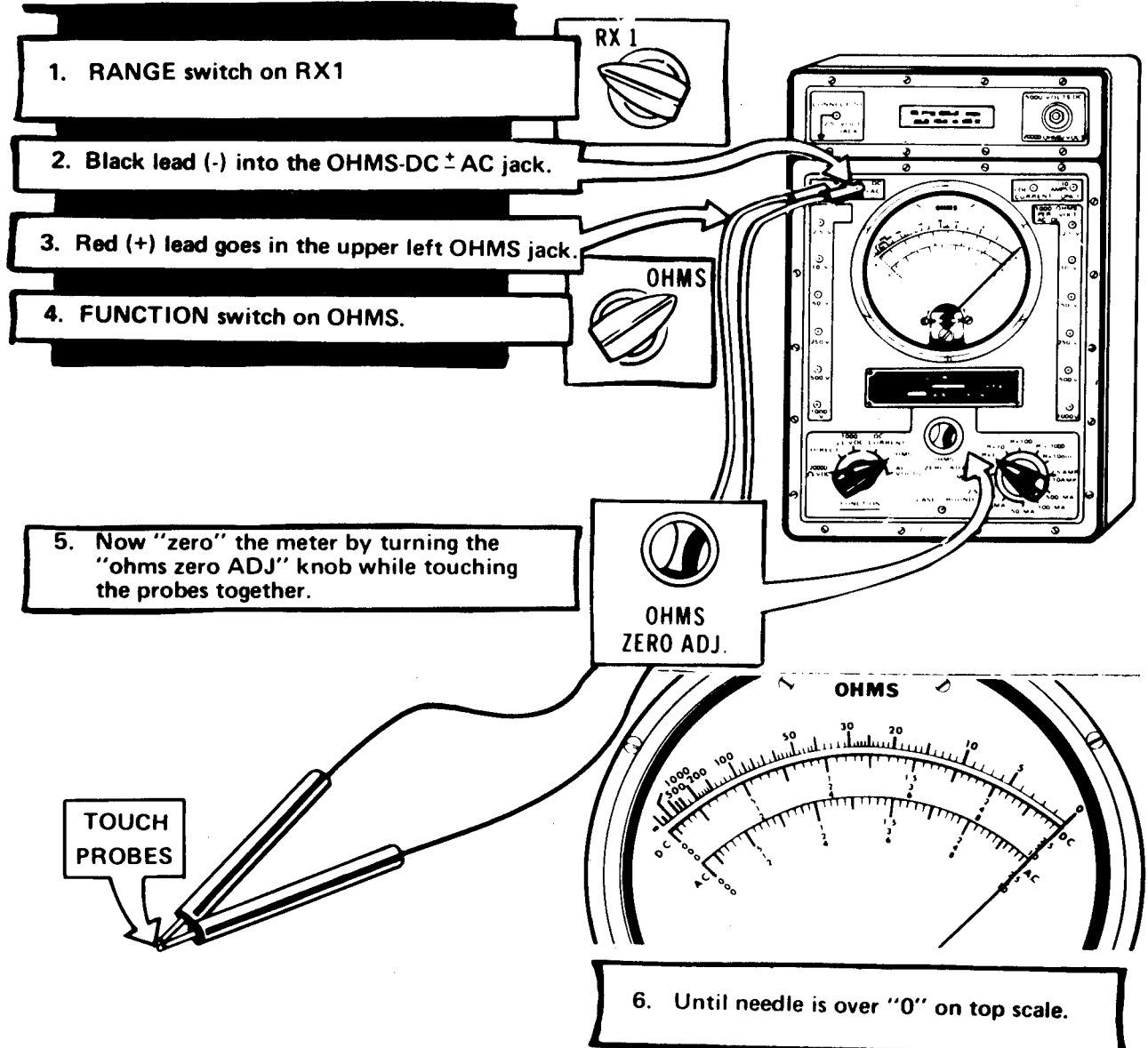


Figure 7-2. "Zeroing" the AN/URM-105 meter.

NOTE  
If the needle will not "zero", replace the batteries. If the needle still will not "zero" after replacing the batteries, turn the meter in for repair.

TS-352B/U



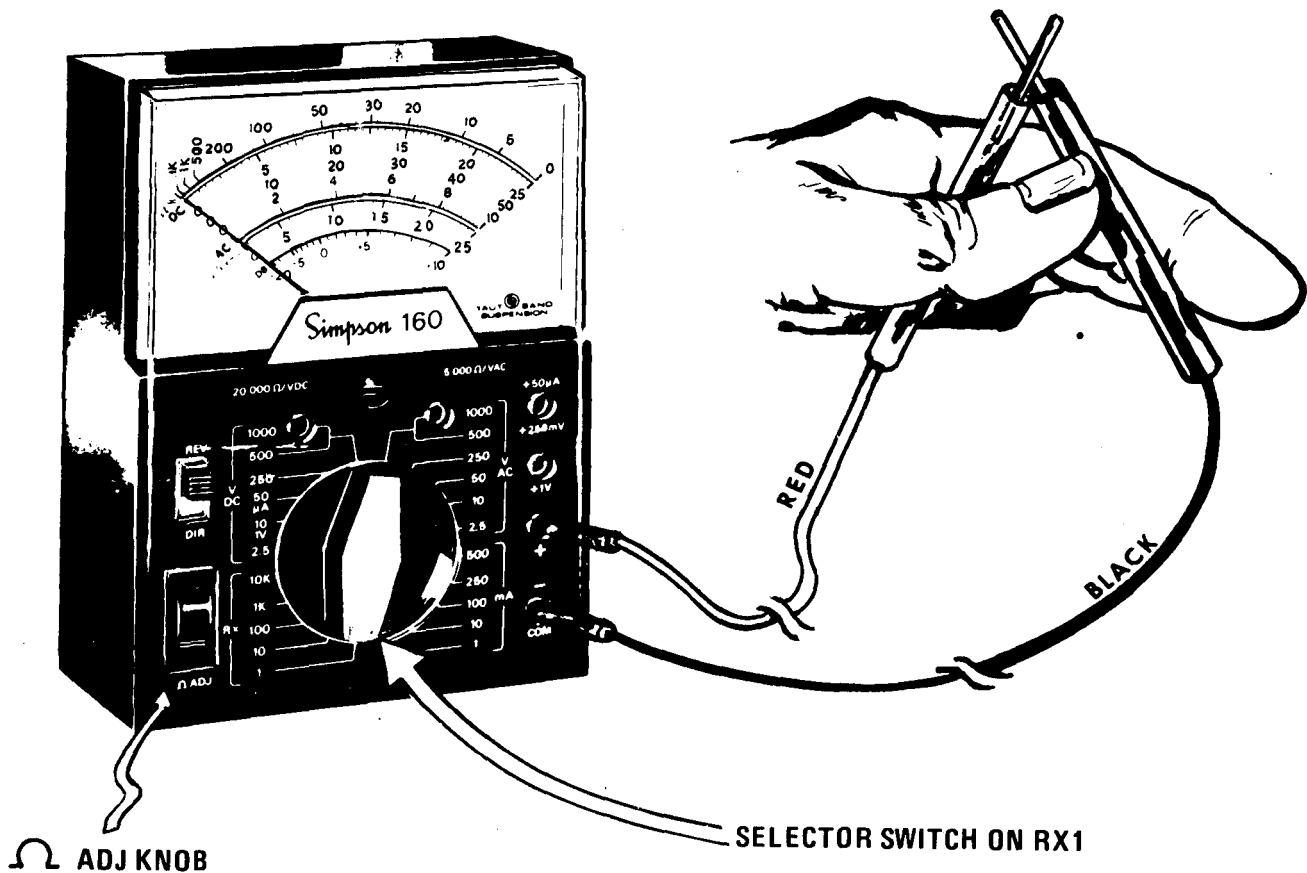
TS 022253

Figure 7-3. "Zeroing" the TS-352B/U meter.

NOTE

If the needle will not "zero", replace the batteries. If the needle still will not "zero" after replacing the batteries, turn the meter in for repair.

TOUCH THE 2 PROBES TOGETHER



1. SET SELECTOR SWITCH ON "RX1".
2. PUT BLACK PROBE IN "COM-" JACK.
3. PUT RED PROBE IN "+" JACK.
4. WHILE TOUCHING THE PROBES TOGETHER, TURN "Ω ADJ" KNOB UNTIL NEEDLE IS OVER THE "0" ON THE TOP SCALE.

TS 022254

Figure 7-4. "Zeroing" the Simpson 160 meter.

**NOTE**

If the needle will not "zero", replace the batteries. If the needle still will not "zero" after replacing the batteries, turn the meter in for repair.

*b. Continuity Tests.* Continuity tests are made to check for breaks in a circuit (such as the switch, light bulb, or electrical cable (fig. 7-5).) To make a continuity check, do the following steps:

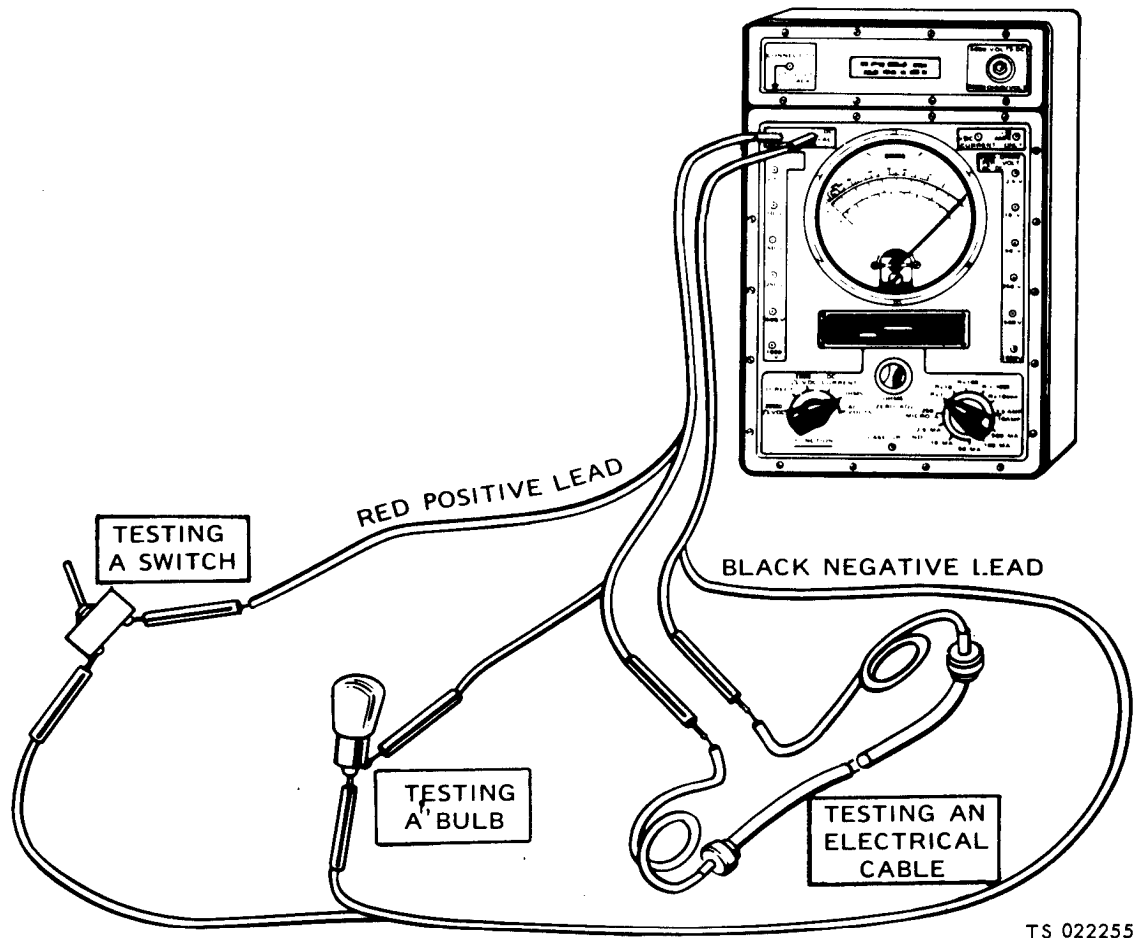
- (1) Set up and "zero" the multimeter (figs. 7-2,7-3

or 7-4).

**NOTE**

Failure to do the following steps can damage the multimeter.

- (2) Disconnect the circuit being tested.
- (3) Connect the meter probes to both terminals of the circuit being tested. (The TS-352B/U is illustrated (fig. 7-5), but the probes are connected to the circuit the same way with all three multimeters.)



TS 022255

Figure 7-5. TS-352 continuity test.

(4) Look at the meter needle.

(a) If the needle swings to the far right over the "0" on the top scale (on all three meters), the circuit has continuity.

(b) If the needle doesn't move, the circuit is open (broken).

(c) If the needle jumps or flickers there is a loose connection in the circuit being tested.

c. *Testing for Shorts.* A short (or short circuit) occurs when two circuits that should not be connected have metal to metal contact with each other. A short also occurs when a circuit that should not touch ground has metal to metal contact with ground. To check for

shorts, do the following steps:

(1) Set up and "zero" the multimeter (figs. 7-2, 7-3 or 7-4).

#### CAUTION

**Failure to do the following step can damage the multimeter.**

(2) Disconnect the circuit being tested.

(3) With all three multimeters, connect one probe to one circuit and the other probe to the other circuit or ground (if checking for a short to ground). The example below (fig. 7-6) shows a check to see if wire "A" is shorted to wire "B" in the wiring harness.



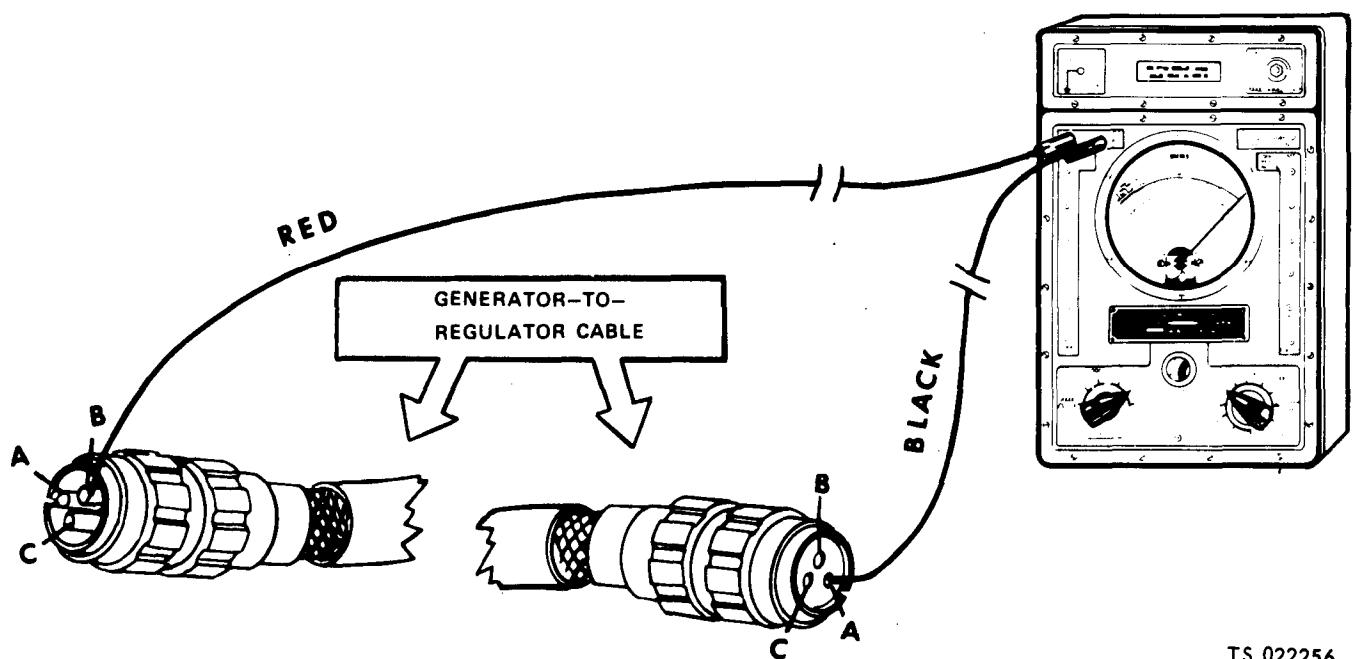


Figure 7-6. Testing for shorts.

(4) Look at the needle.

(a) If the needle swings to the far right over the "0" on the top scale (on all three meters), the circuits are shorted.

(b) If the needle doesn't move, the circuits are not shorted.

(c) If the needle jumps or flickers, the circuits are occasionally shorted.

d. **Testing Resistance.** To measure resistance in a circuit, do the following steps:

(1) Set up and "zero" the multimeter (figs. 7-2, 7-3 or 7-4).

#### CAUTION

**Failure to do the following step can damage the multimeter.**

(2) Disconnect the circuit being tested.

(3) If the test in this manual calls for an "ohms range" different than "RXI" or "XI", set the selector switch to that range (such as "RX10" or "X10").

#### NOTE

"Zero" the meter whenever you change ranges.

(4) With all three multimeters, connect the probes across the circuit or item to be measured. The example

below (fig. 7-7) shows measuring the resistance of a temperature sending unit,

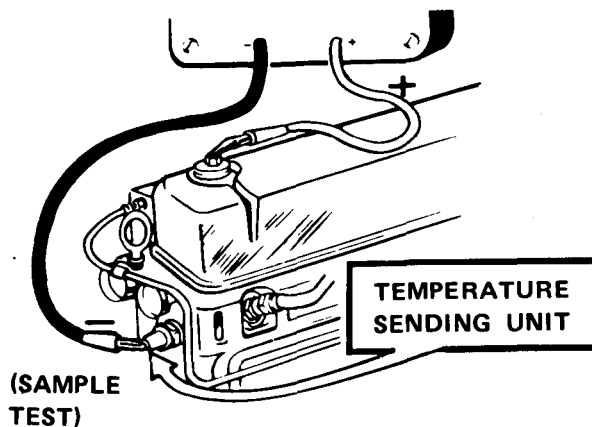


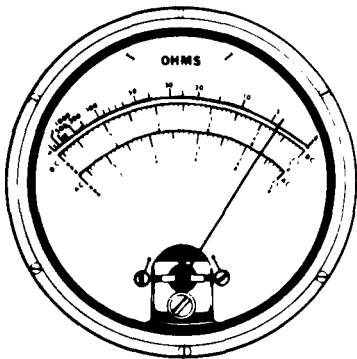
Figure 7-7. Testing resistance.

(5) *Read the meter.* If the meter switch is on the "RXI" or "XI" range, the reading is taken directly from the top scale. If the meter switch is on a different range, multiply the reading on the scale according to the table below.

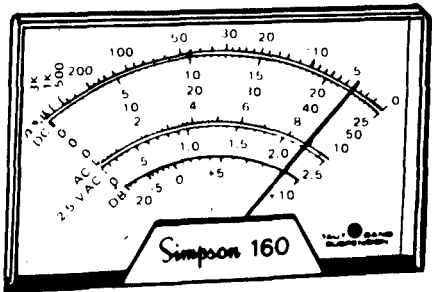
*Ohms Switch Setting*  
X1 or RX1  
X10 or RX10  
X100 or RX100  
X1K or RX1K  
X10 or RX10K

*You Do*  
Read number on scale  
Multiply reading by 10  
Multiply reading by 100  
Multiply reading by 1,000  
Multiply reading by 10,000

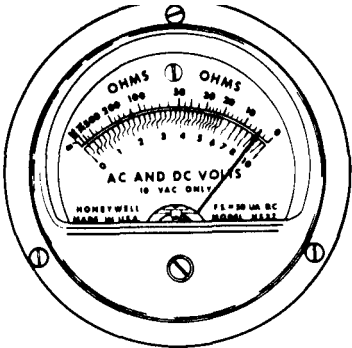
(Remember: K = 1,000)



TS-352 B/U



SIMPSON 160



AN/URM-105

<u>OHMS SWITCH SETTING</u>	<u>READING</u>
X1 OR RX1	4 OHMS
X10 OR RX10	40 OHMS
X100 OR RX100	400 OHMS

TS 022258

Figure 7-8. Reading the ohm scale.



## CHAPTER 8

### ADMINISTRATIVE STORAGE

---

#### 8-1. General

Detailed instructions for the preparation of the test set for limited storage are outlined below.

#### 8-2. Inspection

The test set should be inspected for any unusual condition such as damage, rusting, accumulation of water, or pilferage. Inspect in accordance with steps outlined in Table 3-1 for preventive maintenance checks and services. DA Form 2404 will be executed on the equipment.

#### 8-3. Cleaning

Thoroughly clean and dry the test set by the most ap-

plicable approved method according to TM 38-230, Preservation, Packaging, and Packing of Military Supplies and Equipment.

#### 8-4. Painting

Paint all surfaces when the paint has been removed or damaged. Do not paint terminals or any electrical components. Refer to TM 43-0139, Painting Instructions for Field Use, for detailed painting instructions.

#### 8-5. Weather Protection

Keep the test set protected from extreme temperatures, excessive humidity, sand and dust.



## APPENDIX A REFERENCES

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**A-1. Fire Protection**

TB 5-4200-200-10      Hand Portable Fire Extinguishers for Army Users

**A-2. Painting**

TM 43-0139      Painting Instructions for Field Use

**A-3. Radio Suppression**

TM 11-483      Radio Interference Suppression

**A-4. Maintenance**

TM 38-750      The Army Maintenance Management System (TAMMS)

TM 9-237      Welding Theory and Application

**A-5. Shipment and Storage**

TB 740-97-2      Preservation of USAMECOM Mechanical Equipment for Shipment and Storage

TM 750-90-1      Administrative Storage of Equipment

TM 38-230      Preservation, Packaging, and Packing of Military Supplies and Equipment.

**A-6. Demolition**

TM 750-244-3      Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)

**A-7. Safety**

TB MED 251      Noise and Conservation of Hearing



## APPENDIX B

### BASIC ISSUE ITEMS LIST, ITEMS TROOP INSTALLED OR AUTHORIZED LIST AND REPAIR PARTS AND SPECIAL TOOLS LIST

#### Section I. INTRODUCTION

##### B-1. Scope

This manual lists spares and repair parts special tool special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of operator, organizational, and direct support maintenance of the test set. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

##### B-2. General

This Repair Parts and Special Tools List is divided into the following sections:

*a. Section II. Repair Parts List.* A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence. Bulk materials are listed in NSN sequence.

*b. Section III, Special Tools List.* A list of special tools, special TMDE, and other special support equipment authorized for the performance of maintenance.

*c. Section IV, National Stock Number and Part Number Index.* A list, in National item identification number (NUN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphanumeric sequence of all parts numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. This index is followed by a cross-reference list of reference designators to figure and item numbers.

##### B-3. Explanation of Columns

*a. Illustration.* This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

*b. Source, Maintenance, and Recoverability (SMR) Codes.*

(1) *Source code.* Source codes indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	Definition
PA	Item procured and stocked for anticipated or known usage.

Code	Definition
PB	Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply system.
PC	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfitting. Not subject to automatic replenishment.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	An item of depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
KF	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at the direct support maintenance level.
MH	Item to be manufactured or fabricated at the general support maintenance level.
MD	Item to be manufactured or fabricated at the depot maintenance level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at direct support maintenance level.
AH	Item to be assembled at general support maintenance level.
AD	Item to be assembled at depot maintenance level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Item is not procured or stocked, If not available through salvage, requisition.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.

##### NOTE

Cannibalization or salvage maybe used as a source of supply for any items coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance



authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance.

Code	Application/Explanation
Z	Crew or operator maintenance performed within organizational maintenance.
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.
D	Support items that are removed, replaced, used at depot, mobile depot, or specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	Application/Explanation
0	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.
H	The lowest maintenance level capable of complete repair of the support item is the general support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level.
L	Repair restricted to (enter applicable designated specialized repair activity), Specialized Repair Activity.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. The item maybe reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability Codes	Definition
z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.
o	Reparable item. When uneconomically reparable, condemn and dispose at organizational level.
F	Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.
H	Reparable item. When uneconomically reparable, condemn and dispose at the general support level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Reparable item. Repair, condemnation, and disposal not authorized below depot/specialized repair activity level.

Recoverability Codes	Definition
A	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. *National Stock Number.* Indicates the National stock number assigned to the item and which will be used for requisitioning.

d. *Part Number.* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristic of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When a stock numbered item is requisitioned, the item received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. *Description.* Indicates the Federal item name and, if required, a minimum description to identify the item. The physical security classification of the item is indicated by the parenthetical entry (insert applicable physical security classification abbreviation, e.g., Phy Sec C1 (C) - Confidential, Phy Sec C1 (S)-Secret, Phy Sec C1 (T) - Top Secret). Items that are included in kits and sets are listed below the name of the kit or set with the quantity of each item in the kit or set indicated in the quantity incorporated in unit column. When the part to be used differs between serial numbers of the same model, the effective serial numbers are shown as the last line of the description. In the Special Tools List, the initial basis of issue (BOI) appears as the last line in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased accordingly.

g. *Usable on Code.* Indicates the letter “A” for those items used only on the Model A427. Indicates the letter “B” for those items used only on the Model A427B. Is left blank for those items used interchangeably for both Model A427 and A427B.

h. *Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

that no specific quantity is applicable (e.g., shims, spacers, etc.).

#### B-4. How to Locate Repair Parts

*a. When National Stock number or part Number is Unknown:*

(1) *First.* Using the table of contents, determine the (insert as applicable-functional group or subgroup) within which the item belongs. This is necessary since illustrations are prepared for (insert as applicable-functional groups or subgroups), and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the (insert as applicable-functional group or subgroup) to which the item belongs.

(3) *Third.* Identify the item on the illustration and note the illustration figure and item number of the item.

(4) *Fourth.* Using the Repair Parts Listing, find

the figure and item number noted on the illustration.

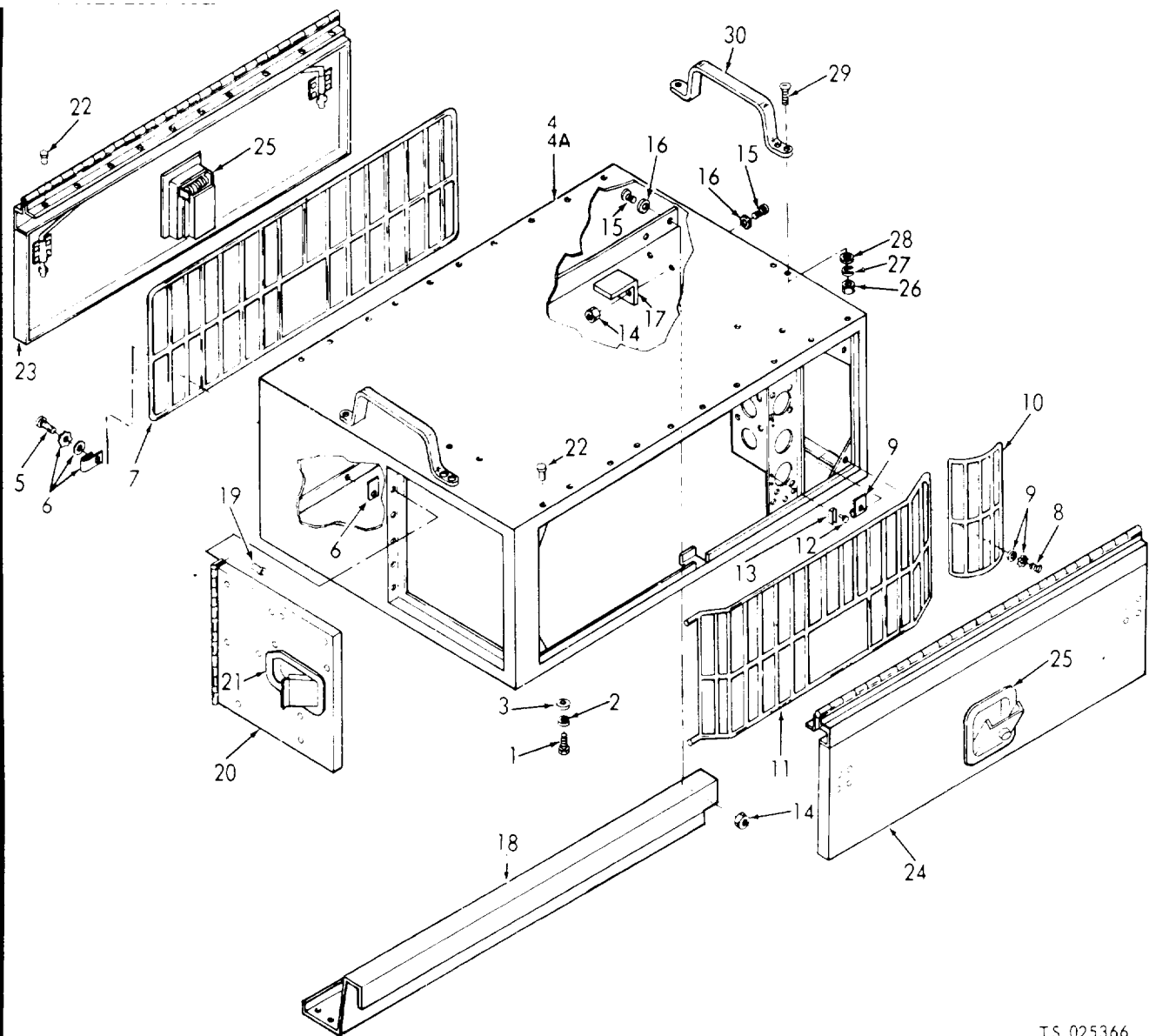
*b. When National Stock Number or Part Number is Known:*

(1) *First.* Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in NIIN sequence followed by a list of part numbers in alphanumeric sequence, cross-referenced to the illustration figure number and item number.

(2) *Second.* After finding the figure and item number, locate the figure and item number.

#### B-5. Abbreviations

Abbreviation	Definition
amp .....	ampere(s).
in .....	inch(es)
lg .....	length (long)
ink .....	mounting
No. ....	number
thd .....	thread(s)
v .....	Volta



TS 025366

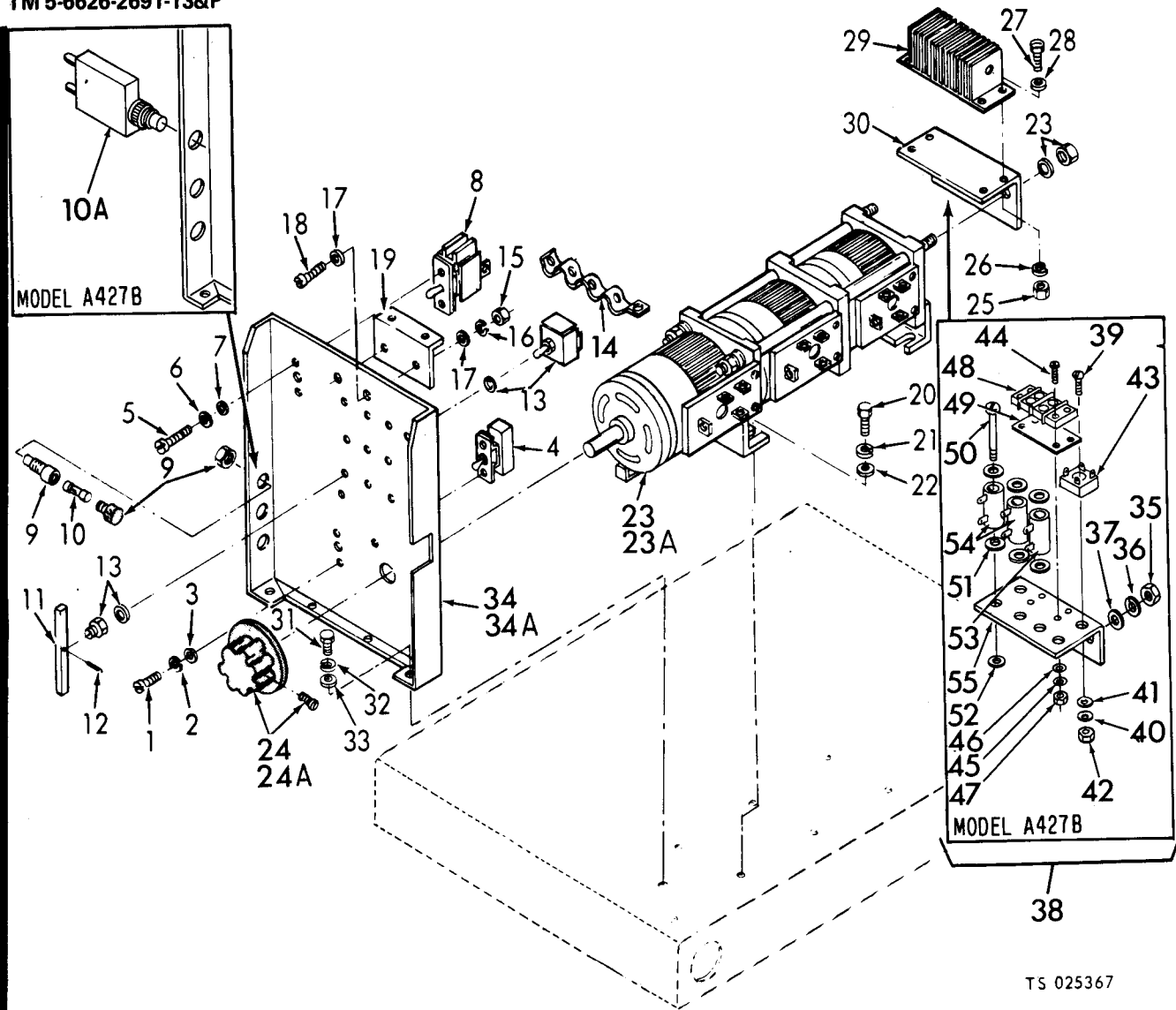
(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT

SECTION II – PARTS LIST  
GROUP 01  
HOUSING, DOORS, GRILLS

1	1	PAFZZ	5305-00-068-0501	MS90725-5	96906	SCREW, CAP, HEXAGON HEAD HOUSING TO SKID MTG, 1/4-20 THD SIZE, 5/8 IN. LG		EA	12
1	2	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER, LOCK HOUSING TO SKID MTG, 1/4 IN. SCREW SIZE		EA	12
1	3	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT HOUSING TO		EA	12

Figure B-1. Housing, doors, and grills.

(1) ILLUSTRATION (A) FIG NO.	(2) (B) ITEM NO.	(3) SMR CODE	(4) NATIONAL STOCK NUMBER	(5) PART NUMBER	(6) FSCM	TM5-6626-2691-13&P DESCRIPTION	(7) USABLE ON CODE	(8) U/M	(9) QTY INC IN UNIT
1	4	XBFZZ		A427-3400	21269	SKID MTG, 1/4 IN. SCREW SIZE	A		1
1	4A	XBFZZ		A807-3400	21269	HOUSING LOAD BANK	B	EA	1
1	5	PAOZZ		A427-1309	21269	SCREW TAPPING EXHAUST		EA	8
1	6	PAOZZ	5340-00-762-6096	A427-1306	21269	GRILL MTG		EA	8
1	7	PAOZZ	6115-00-450-9829	A427-2308	21269	CLIP, TINNEMAN EXHAUST		EA	1
1	8	PAOZZ		A427-1309	21269	GRILL MTG	A	EA	2
1	9	PAOZZ	5340-00-762-6096	A427-1306	21269	GRILL EXHAUST AIR		EA	2
1	10	PAOZZ	6115-00-458-8188	A427-2307-1	21269	CLIP, TINNEMAN INLET	A	EA	1
1	11	PAOZZ	6115-00-450-5828	A427-2307	21269	GRILL MTG		EA	1
1	12	XBOZZ		A427-1305	21269	GRILL, INLET AIR		EA	1
1	13	XBOZZ		100-200-2-0	01890	GRILL, AIR INLET		EA	4
1	14	XBOZZ		A427-1308	21269	RIVET, DRIVE CLIP MTG		EA	2
1	15	PAOZZ	5305-00-989-7434	MS35207-263	96906	CLIP INLET GRILL MTG	A	EA	15
1	16	PAOZZ	5310-00-809-8546	MS27183-8	96906	NUT, ASSEMBLED WASHER		EA	15
1	17	PAOZZ	5340-00-493-3996	A427-2313	21269	BRACKET AND ANGLE MTG,	A	EA	15
1	18	PAOZZ	5340-00-224-1138	A427-2314	21269	NO. 10-32 THD SIZE		EA	15
1	19	XBFZZ		AA444D	53507	SCREW, MACHINE BRACKET	A	EA	15
1	20	XBFZZ		A427-3310	21269	AND ANGLE MTG, NO. 10		EA	15
1	21	PAFZZ	5340-00-229-3643	13208E9232	97403	THD SIZE, 1/2 IN. LG	A	EA	15
1	22	XBFZZ		A427-1305	21269	WASHER, FLAT BRACKET		EA	15
1	23	XBFZZ		A427-3311	21269	AND ANGLE MTG, NO. 10		EA	15
1	24	XBFZZ		A427-3314	21269	SCREW SIZE	A	EA	15
1	25	PAFZZ	5340-00-229-3643	13208E9232	97403	BRACKET ROOF TO DUCT		EA	15
1	26	PAOZZ	5310-00-934-9751	MS35650-102	96906	ANGLE ROOF TO DUCT	A	EA	15
1	27	PAOZZ	5310-00-045-3296	MS35338-43	96906	BRACKET MTG		EA	15
1	28	PAOZZ	5310-00-809-8546	MS27183-8	96906	RIVET CONTROL PANEL		EA	15
1	29	PAOZZ	5305-00-984-7341	MS35191-273	96906	DOOR MTG		EA	15
1	30	PAOZZ	6115-00-228-1266	A427-1412	21269	DOOR CONTROL PANEL		EA	15



(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT
2	1	PA0ZZ	5305-00-889-3000	MS35206-230	96906	SCREW, MACHINE VOLTAGE SELECTOR SWITCH MTG, NO. 6-32 THD SIZE, 1/2 IN. LG		EA	2
2	2	PA0ZZ	5310-00-045-40007	MS35338-41	96906	WASHER, LOCK VOLTAGE SELECTOR SWITCH MTG, NO. 6 SCREW SIZE		EA	2
2	3	PA0ZZ	5310-00-082-1404	MS27183-6	96906	WASHER, FLAT VOLTAGE SELECTOR SWITCH MTG, NO. 6 SCREW SIZE		EA	2
2	4	PA0ZZ	5930-00-655-1574	MS25105-23	96906	SWITCH, TOGGLE VOLTAGE SELECTOR		EA	1
2	5	PA0ZZ	5305-00-889-3000	MS35206-230	96906	SCREW, MACHINE MASTER SWITCH MTG, NO. 6-32 THD SIZE, 1/2 IN. LG		EA	2

Figure B-2. Control panel, rectifier, and variable transformer.

TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			QTY
(A)	(B)					USABLE		INC
FIG	ITEM	SMR	NATIONAL	PART		ON	U/M	IN
NO.	NO.	CODE	STOCK	NUMBER	FSCM	CODE		UNIT
2	6	PAOZZ	5310-00-045-4007	MS35338-41	96906	WASHER, LOCK MASTER SWITCH MTG, NO.6 SCREW SIZE	EA	2
2	7	PAOZZ	5310-00-082-1404	MS27183-6	96906	WASHER, FLAT MASTER SWITCH MTG, NO.6 SCREW SIZE	EA	2
2	8	PAOZZ	5930-00-655-1576	MS25105-24	96906	SWITCH, TOGGLE MASTER	EA	1
2	9	PAOZZ	5920-00-892-9311	HKP	71400	HOLDER, FUSE	A	3
2	10	PAOZZ	5920-00-519-5723	3AG	71400	FUSE 250V, 3 AMP	A	3
2	10A	PAOZZ	A807-1500	A807-1500	21269	CIRCUIT BREAKER, PB	B	3
2	11	PAOZZ	5930-00-400-1789	A427-1406	21269	ACTUATOR, SWITCH		4
2	12	PAOZZ	5315-00-375-9150	A427-1411	21269	PIN ACTUATOR MTG		12
2	13	PAOZZ	5930-00-400-1792	A427-1414	21269	SWITCH, TOGGLE		12
2	14	XBZZ		A427-1402	21269	BAR, BUS		3
2	15	PAFZZ	5310-00-934-9757	MS35649-282	96906	NUT, PLAIN, HEXAGON CONTROL PANEL BRACKET MTG, NO. 8-32 THD SIZE	EA	2
2	16	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER, LOCK CONTROL PANEL BRACKET MTG, NO. 8 SCREW SIZE	EA	4
2	17	PACZZ	5310-00-765-3197	MS27183-41	96906	WASHER, FLAT CONTROL PANEL BRACKET MTG, NO. 8 SCREW SIZE	EA	6
2	18	PAFZZ	5305-00-984-6193	MS35206-245	96906	SCREW, MACHINE CONTROL PANEL BRACKET MTG, NO. 8-32 THD SIZE, 1/2 IN. LG	EA	4
2	19	XBZZ		A427-1302	21269	BRACKET CONTROL PANEL MTG TO ROOF	EA	1
2	20	PAFZZ	5305-00-068-0501	MS90725-5	96906	SCREW, CAP, HEXAGON HEAD VARIABLE TRANSFORMER MTG, 1/4-20 THD SIZE, 5/8 IN. LG	EA	6
2	21	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER, LOCK VARIABLE TRANSFORMER MTG, 1/4 IN. SCREW SIZE	EA	6
2	22	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT VARIABLE TRANSFORMER MTG, 1/4 IN. SCREW SIZE	EA	6
2	23	PAFZZ	5950-00-400-4669	A427-2403	21269	TRANSFORMER, VARIABLE	A	1
2	23A	PAFZZ		A807-2403	21269	TRANSFORMER, VARIABLE	B	1
2	24	PAOZZ	5355-00-229-0450	A427-1420	21269	KNOB, CONTROL VARIABLE TRANSFORMER	A	1
2	24A	PAOZZ		A510-1210	21269	KNOB, CONTROL VARIABLE TRANSFORMER	B	1
2	25	PAFZZ	5310-00-934-9747	MS35649-262	96906	NUT, PLAIN, HEXAGON RECTIFIER MTG, NO. 6-32 THD SIZE	A	4
2	26	PAFZZ	5310-00-045-4007	MS35338-41	96906	WASHER, LOCK RECTIFIER MTG, NO. 6 SCREW SIZE	A	4
2	27	PAFZZ	5305-00-984-4988	MS35206-228	96906	SCREW, MACHINE RECTIFIER MTG. NO. 6-32 THD SIZE, 3/8 IN. LG	A	4
2	28	PAFZZ	5310-00-983-8483	MS27183-5	96906	WASHER, FLAT RECTIFIER MTG, NO. 6 SCREW SIZE	A	8
2	29	PAFZZ		A427-2401	21269	RECTIFIER, SELENIUM	A	1
2	30	XBZZ		A427-2405	21269	BRACKET RECTIFIER MTG	A	1
2	31	PAFZZ	5305-00-068-0501	MS90725-5	96906	SCREW, CAP, HEXAGON HEAD CONTROL PANEL MTG, 1/4-20 THD SIZE, 5/8 IN. LG		4
2	32	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER, LOCK CONTROL PANEL MTG, 1/4 IN. SCREW SIZE	EA	4
2	33	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT CONTROL PANEL MTG, 1/4 IN. SCREW SIZE	EA	4

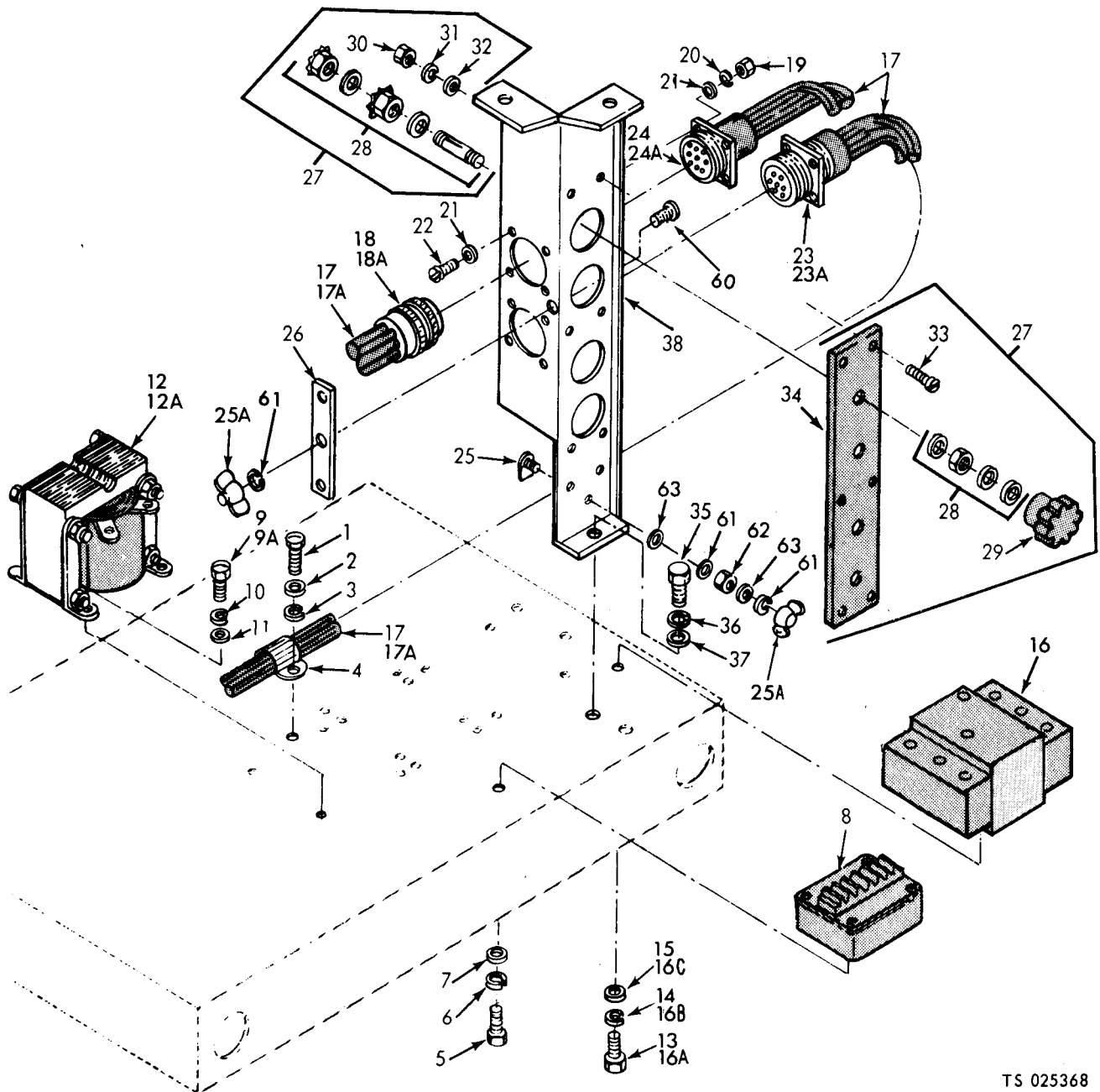
CHANGE 1

B-7

TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			QTY
(A)	(B)					USABLE		INC
FIG	ITEM	SMR	NATIONAL	PART		ON	U/M	IN
NO.	NO.	CODE	STOCK	NUMBER	FSCM	CODE		UNIT
2	34	XBZZ		A427-3308	21269	PANEL,CONTROL	A	EA 1
2	34A	XBZZ		A807-3308	21269	PANEL,CONTROL	B	EA 1
2	35	PAFZZ	5310-00-761-6882	MS51967-2	96906	NUT,HEX,RECTIFIER MTG, NO. 1/4-20 THD SIZE	B	EA 2
2	36	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER,LOCK,RECTIFIER MTG, 1/4 IN. SCREW SIZE	B	EA 2
2	37	PAFZZ	5310-00-809-4958	MS27183-10	96906	WASHER,FLAT,RECTIFIER MTG, 1/4 IN. SCREW SIZE	B	EA 2
2	38	XBZZ		A807-3401	21269	RECTIFIER ASSY	B	EA 1
2	39	PAFZZ	5305-00-984-6195	MS35206-247	96906	SCREW,PAN HD,RECTIFIER MTG, NO. 8-32 THD SIZE, 3/4 IN. LG	B	EA 3
2	40	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK,RECTIFIER MTG, NO. 8 SCREW SIZE	B	EA 3
2	41	PAFZZ	5310-00-715-3197	MS27183-41	96906	WASHER,FLAT,RECTIFIER MTG, NO. 8 SCREW SIZE	B	EA 3
2	42	PAFZZ	5310-00-934-9757	MS35649-282	96906	NUT,HEX,RECTIFIER MTG, NO. 8-32 SCREW SIZE	B	EA 3
2	43	PAFZZ		A700-1149	21269	RECTIFIER	B	EA 3
2	44	PAFZZ	5310-00-984-6195	MS35206-247	96906	SCREW,PAN HD,TERMINAL STRIP MTG, NO. 8-32 THD SIZE, 3/4 IN. LG	B	EA 4
2	45	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK,TERMINAL STRIP MTG, NO. 8 SCREW SIZE	B	EA 4
2	46	PAFZZ	5310-00-715-3197	MS27183-41	96906	WASHER,FLAT,TERMINAL STRIP MTG, NO. 8 SCREW SIZE	B	EA 4
2	47	PAFZZ	5310-00-934-9757	MS35649-282	96906	NUT,HEX,TERMINAL STRIP MTG, NO. 8-32 THD SIZE	B	EA 4
2	48	PAFZZ		141-2	86168	TERMINAL STRIP,2 POSITION	B	EA 1
2	49	XBZZ		MS141-2	86168	MARKER STRIP	B	EA 1
2	50	PAFZZ		7PA25	44655	KIT,RESISTOR MTG	B	EA 3
2	51	PAFZZ		2326F194	04713	WASHER,FIBRE	B	EA 6
2	52	PAFZZ	5310-00-014-5850	MS27183-42	96906	WASHER,FLAT,NO. 10 SCREW SIZE	B	EA 3
2	53	PAFZZ		0200F	44655	RESISTOR, 100 OHM, 25 WATT	B	EA 1
2	54	PAFZZ		0200K	44655	RESISTOR, 2 OHM, 25 WATT	B	EA 2
2	55	XBZZ		A807-3311-1	21269	HEAT SINK	B	EA 1

CHANGE 1

B-8



TS 025368

Figure B-3. Sensing module, control transformer, and terminal board (Sheet 1 of 2).



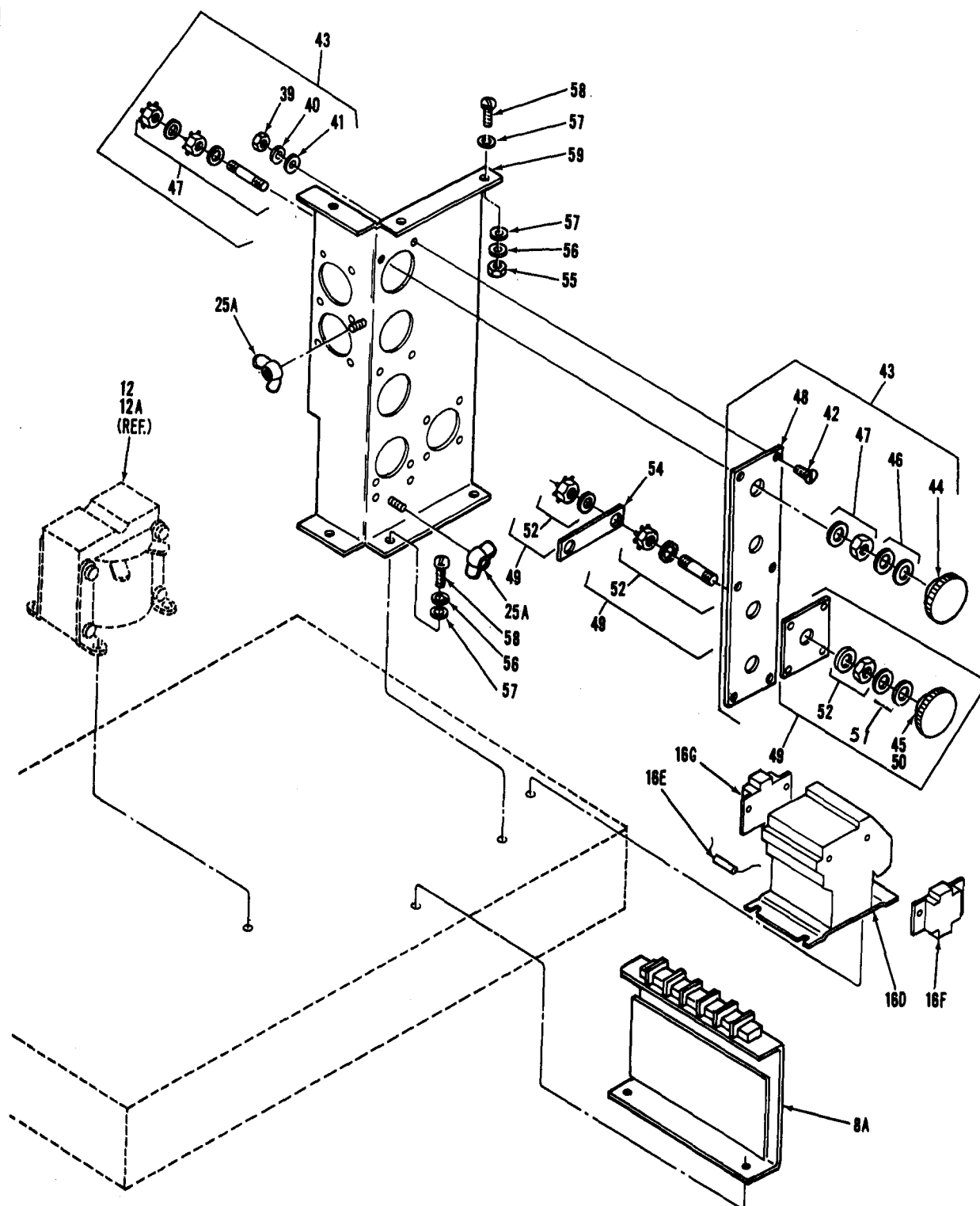


Figure B-3. Sensing module, control transformer, and terminal board (Sheet 2 of 2).

TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			
(A)	(B)	SMR	NATIONAL	PART		USABLE		QTY
FIG	ITEM	CODE	STOCK	NUMBER	FSCM	ON	U/M	INC
NO.	NO.		NUMBER	NUMBER		CODE		IN
3	1	PAOZZ	5305-00-638-3358	MS35223-45	96906	SCREW,MACHINE CLAMP MTG, NO. 8-32 THD SIZE, 1/2 IN. LG	EA	2
3	2	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER,FLAT CLAMP MTG, NO. 8 SCREW SIZE	EA	2
3	3	PAOZZ	5310-00-045-3299	MS35338-42	96906	WASHER, LOCK CLAMP MTG, NO. 8 SCREW SIZE	EA	2
3	4	XBOZZ		CCB7	92219	CLAMP,PLASTIC CONTROL LOOM MTG	EA	2
3	5	PAFZZ	5305-00-576-7519	MS35223-46	96906	SCREW,CAP,HEXAGON HEAD UOLTAGE MODULE MTG, NO. 8-32 THD SIZE, 5/8 IN. LG	EA	2
3	6	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK VOLTAGE MODULE MTG, NO. 8 SCREW SIZE	EA	2
3	7	PAFZZ	5310-00-765-3197	MS27183-41	96906	WASHER,FLAT VOLTAGE MODULE MTG, NO. 8 SCREW SIZE	EA	2
3	8	PAFZZ	6110-00-228-1275	A427-2408	21269	MODULE, VOLTAGE SENSING	A	1
3	8A		A807-3500		21269	MODULE,VOLTAGE LIMIT	B	1
3	9	PAFZZ	5305-00-622-1509	MS35224-63	96906	SCREW,MACHINE CONTROL TRANSFORMER MTG, NO. 8-32 THD SIZE, 3/8 IN. LG	A	12
3	9A	PAFZZ	5305-00-984-6194	MS35206-246	96906	SCREW,MACHINE CONTROL TRANSFOMER MTG, NO. 8-32 THD SIZE, 5/8 IN. LG	B	12
3	10	PAFZZ	5310-00-45-3299	MS35338-42	96906	WASHER,LOCK CONTROL TRANSFORMER MTG, NO. 8 SCREW SIZE	EA	12
3	11	PAFZZ	5310-00-765-3197	MS27183-41	96906	WASHER,FLAT CONTROL TRANSFORMER MTG, NO. 8 SCREW SIZE	EA	12
3	12	PAFZZ	5950-00-400-1788	A427-1401	21269	TRANSFORMER,CONTROL	A	3
3	12A	PAFZZ		A427-1401A	21269	TRANSFORMER,CONTROL	B	3
3	13	PAFZZ	5305-00-543-5743	MS35207-265	96906	SCREW,CAP,HEXAGON HEAD LOAD CIRCUIT CONTACTOR MTG, NO. 10-32 THD SIZE, 3/4 IN. LG	A	3
3	14	PAFZZ	5310-00-045-3296	MS35338-43	96906	WASHER,LOCK LOAD CIRCUIT CONTACTOR MTG, NO. 10 SCREW SIZE	A	3
3	15	PAFZZ	5310-00-809-8546	MS27183-8	96906	WASHER, FLAT LOAD CIRCUIT CONTACTOR MTG, NO. 10 SCREW SIZE	A	3
3	16	PAFZZ	5945-00-400-1787	A427-1400	21269	CONTACTOR LOAD CIRCUIT	A	1
3	16A	PAFZZ	5305-00-984-6194	MS35206-246	96906	SCREW,PAN HD,LOAD CIRCUIT CONTACTOR MTG, NO. 8-32 THD SIZE, 5/8 IN. LG	B	3
3	16B	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK,LOAD CIRCUIT CONTACTOR MTG, NO. 8 SCREW SIZE	B	3
3	16C	PAFZZ	5310-00-765-3197	MS27183-41	96906	WASHER,FLAT,LOAD CIRCUIT CONTACTOR MTG, NO. 8 SCREW SIZE	B	3
3	16D	PAFZZ		A807-1501	21269	CONTACTOR,LOAD CIRCUIT	B	1
3	16E	PAFZZ		1N4005	44655	DIODE	B	1
3	16F	PAFZZ		A807-1501-NO	21269	AUXILIARY CONTACT NORMALLY OPEN	B	1
3	16G	PAFZZ		A807-1501-NC	21269	AUXILIARY CONTACT, NORMALLY CLOSED	B	1

CHANGE 1

B-11

TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			
(A) (B)						USABLE		QTY
FIG ITEM		SMR	NATIONAL	PART		ON	U/M	INC
NO. NO.		CODE	STOCK	NUMBER	FSCM	CODE		IN
			NUMBER					UNIT
3	17	XDFZZ	6110-00-229-2834	A427-3407	21269	LOOM, CONTROL	A	EA 1
3	17A			A807-3407	21269	LOOM, CONTROL	B	EA 1
3	18	XDFZZ	5995-00-400-1794	A427-2409	21269	PLUG, POWER	A	EA 1
3	18A			A807-2409	21269	PLUG, POWER	B	EA 1
3	19	PAFZZ	5310-00-934-9747	MS35649-262	96906	NUT, PLAIN, HEXAGON ELECTRICAL RECEPTACLES MTG, NO. 6-32 THD SIZE		EA 8
3	20	PAFZZ	5310-00-045-4007	MS35338-41	96906	WASHER, LOCK ELECTRICAL RECEPTACLES MTG, NO. 6 SCREW SIZE		EA 8
3	21	PAFZZ	5310-00-983-8483	MS27183-6	96906	WASHER, FLAT ELECTRICAL RECEPTACLES MTG, NO. 6 SCREW SIZE		EA 16
3	22	PAFZZ	5305-00-638-3293	MS35223-31	96906	SCREW, MACHINE ELECTRICAL RECEPTACLES MTG, NO. 6-32 THD SIZE, 5/8 IN. LG		EA 8
3	23	PAFZZ	5995-00-251-2608	A427-2410	21269	RECEPTACLE, ELECTRICAL LOW VOLTAGE	A	EA 1
3	23A	PAFZZ		A807-2410	21269	RECEPTACLE, ELECTRICAL LOW VOLTAGE	B	EA 1
3	24	PAFZZ	5995-00-251-2607	A427-2411	21269	RECEPTACLE, ELECTRICAL HI VOLTAGE	A	EA 1
3	24A	PAFZZ		A807-2411	21269	RECEPTACLE, ELECTRICAL HI VOLTAGE	B	EA 1
3	25	PAOZZ	5306-00-225-8499	MS90725-34	96906	BOLT, GROUND	A	EA 1
3	25A	PAOZZ	5310-01-077-6817	MS35425-72	96906	NUT, WING	B	EA 2
3	26	PAOZZ	5940-00-229-6765	A427-1405	21269	LINK, SHORTING		EA 1
3	27	PAFZZ	5940-00-177-6740	A427-2407	21269	BOARD ASSEMBLY TERMINAL	A	EA 1
3	28	PAOZZ	5940-00-247-0470	A427-1418	21269	STUD, TERMINAL	A	EA 4
3	29	PAOZZ	5355-00-244-2944	A427-1417	21269	KNOB, TERMINAL	A	EA 4
3	30	PAFZZ	5310-00-934-9751	MS35650-302	96906	NUT, PLAIN, HEXAGON TERMINAL BOARD TO BRACKET MTG, NO. 10-32 THD SIZE	A	EA 5
3	31	PAFZZ	5310-00-045-3296	MS35338-43	96906	WASHER, LOCK TERMINAL BOARD TO BRACKET MTG, NO. 10 SCREW SIZE	A	EA 6
3	32	PAFZZ	5310-00-809-8546	MS27183-8	96906	WASHER, FLAT TERMINAL BOARD TO BRACKET MTG, NO. 10 SCREW SIZE	A	EA 6
3	33	PAFZZ	5305-00-984-7341	MS35191-273	96906	SCREW, MACHINE TERMINAL BOARD TO BRACKET MTG, NO. 10-32 THD SIZE, 1/2 IN. LG	A	EA 6
3	34	PAFZZ	5940-00-177-6765	A427-2200	21269	BOARD, TERMINAL	A	EA 4
3	35	PAFZZ	5305-00-068-0501	MS90725-5	96906	SCREW, CAP, HEXAGON TERMINAL BOARD BRACKET MTG, 1/4-20 THD SIZE, 5/8 IN. LG	A	EA 3
3	36	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER, LOCK TERMINAL BOARD BRACKET MTG, 1/4 IN. SCREW SIZE	A	EA 3
3	37	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT TERMINAL BOARD BRACKET MTG, 1/4 IN. SCREW SIZE	A	EA 3
3	38	XBZZ		A427-2306	21269	BRACKET TERMINAL MTG	A	EA 1
3	39	PAFZZ	5310-00-934-9751	MS35650-302	96906	NUT, HEX, TERMINAL BOARD ASSY MTG, NO. 10-32 THD SIZE	B	EA 10
3	40	PAFZZ	5310-00-045-3296	MS35338-43	96906	WASHER, LOCK, TERMINAL BOARD ASSY MTG, NO. 10 SCREW SIZE	B	EA 10

CHANGE 1

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TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			QTY
(A) (B)		NATIONAL	PART			USABLE		INC
FIG ITEM		STOCK	NUMBER	FSCM		ON	U/M	IN
NO. NO.	SMR	NUMBER	NUMBER			CODE		UNIT
3	41	PAFZZ	5310-00-014-5850	MS27183-42	96906 WASHER, FLAT, TERMINAL BOARD ASSY MTG, NO. 10	B	EA	10
3	42	PAFZZ	5305-00-984-7341	MS35191-273	96906 SCREW, FLAT HEAD, COUNTERSUNK, TERMINAL BOARD ASSY MTG, NO. 10-32 THD SIZE, 5/8 IN. LG	B	EA	10
3	43	XBFZZ		A807-2407	21269 TERMINAL BOARD ASSY	B	EA	1
3	44	PAOZZ		A510-1412B	21269 KNOB, TERMINAL, BLACK	B	EA	3
3	45	PAOZZ		A510-1412W	21269 KNOB, TERMINAL, WHITE	B	EA	1
3	46	PAOZZ	5310-01-077-1024	MS15795-913	96906 WASHER, FLAT, BRASS 3/8 IN. SCREW SIZE	B	EA	8
3	47	PAOZZ		A510-2202	21269 STUD, ASSY, BRASS	B	EA	4
3	48	PAOZZ		A807-2200	21269 BOARD, TERMINAL	B	EA	1
3	49	XBOZZ		A807-2407-1	21269 TERMINAL BOARD ASSY	B	EA	1
3	50	PAOZZ		A510-1412W	21269 KNOB, TERMINAL, WHITE	B	EA	1
3	51	PAOZZ	5310-01-077-1024	MS15795-913	96906 WASHER, FLAT, BRASS 3/8 IN. SCREW SIZE	B	EA	2
3	52	PAOZZ		A510-2202A	21269 STUD ASSY, BRASS	B	EA	1
3	53	PAOZZ		A807-2200-1	21269 BROAD, TERMINAL	B	EA	A
3	54	XBOZZ		A807-1000	21269 BAR, BUS, NEUTRAL	B	EA	1
3	55	PAOZZ	5310-00-761-6882	MS51967-2	96906 NUT, HEX, TERMINAL BOARD BRACKET MTG, 1/4-20 THD SIZE	B	EA	3
3	56	PAFZZ	5310-00-582-5965	MS35338-44	96906 WASHER, LOCK, TERMINAL BOARD BRACKET MTG, 1/4 IN. SCREW SIZE	B	EA	6
3	57	PAFZZ	5310-00-809-4058	MS27183-10	96906 WASHER, FLAT, TERMINAL BOARD BRACKET MTG, 1/4 IN. SCREW SIZE	B	EA	9
3	58	PAFZZ	5305-00-068-0501	MS90725-5	96906 SCREW, CAP, HEXAGON HEAD, TERMINAL BOARD BRACKET MTG, 1/4-20 THD SIZE, 5/8 IN. LG	B	EA	6
3	59	XBFZZ		A807-3310A	21269 TERMINAL BOARD MTG BRACKET	B	EA	1
3	60	PAOZZ	5306-00-225-8492	MS90725-27	96906 SCREW, CAP HEX 5/16 X 18.5 LG	A	EA	1
3	61	PAOZZ	5310-00-407-9566	MS35338-45	96906 WASHER, LOCK 5/16	A	EA	3
3	62	PAOZZ	5310-00-829-9981	MS35649-2312	96906 NUT, PLAIN 5/16-18	A	EA	1
3	63	PAOZZ	5310-00-209-3078	MS27183-11	96906 WASHER, FLAT 5/16	A	EA	2

CHANGE 1

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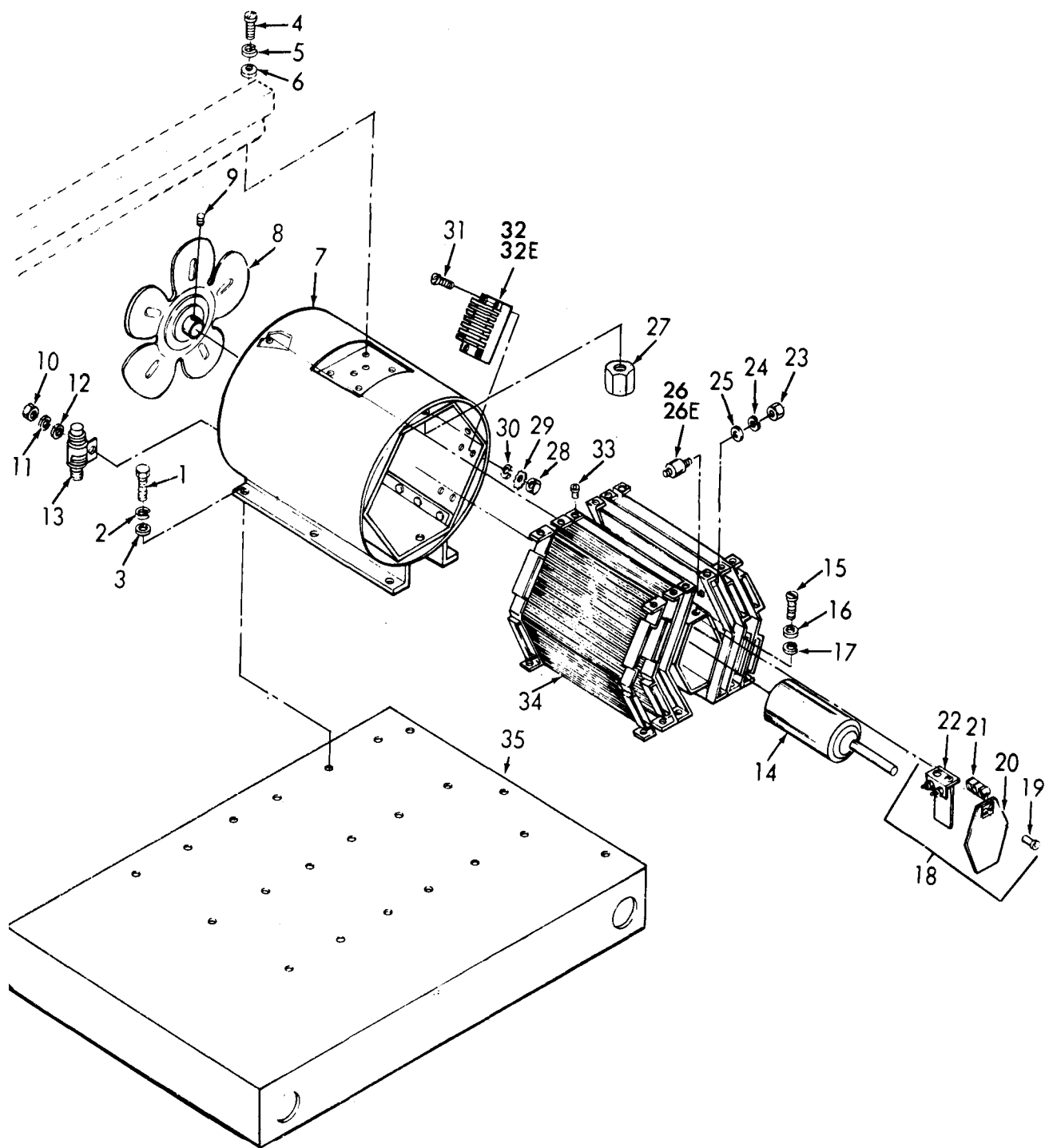


Figure B-4. Power absorber, fan motor, and load module (Sheet 1 of 2)

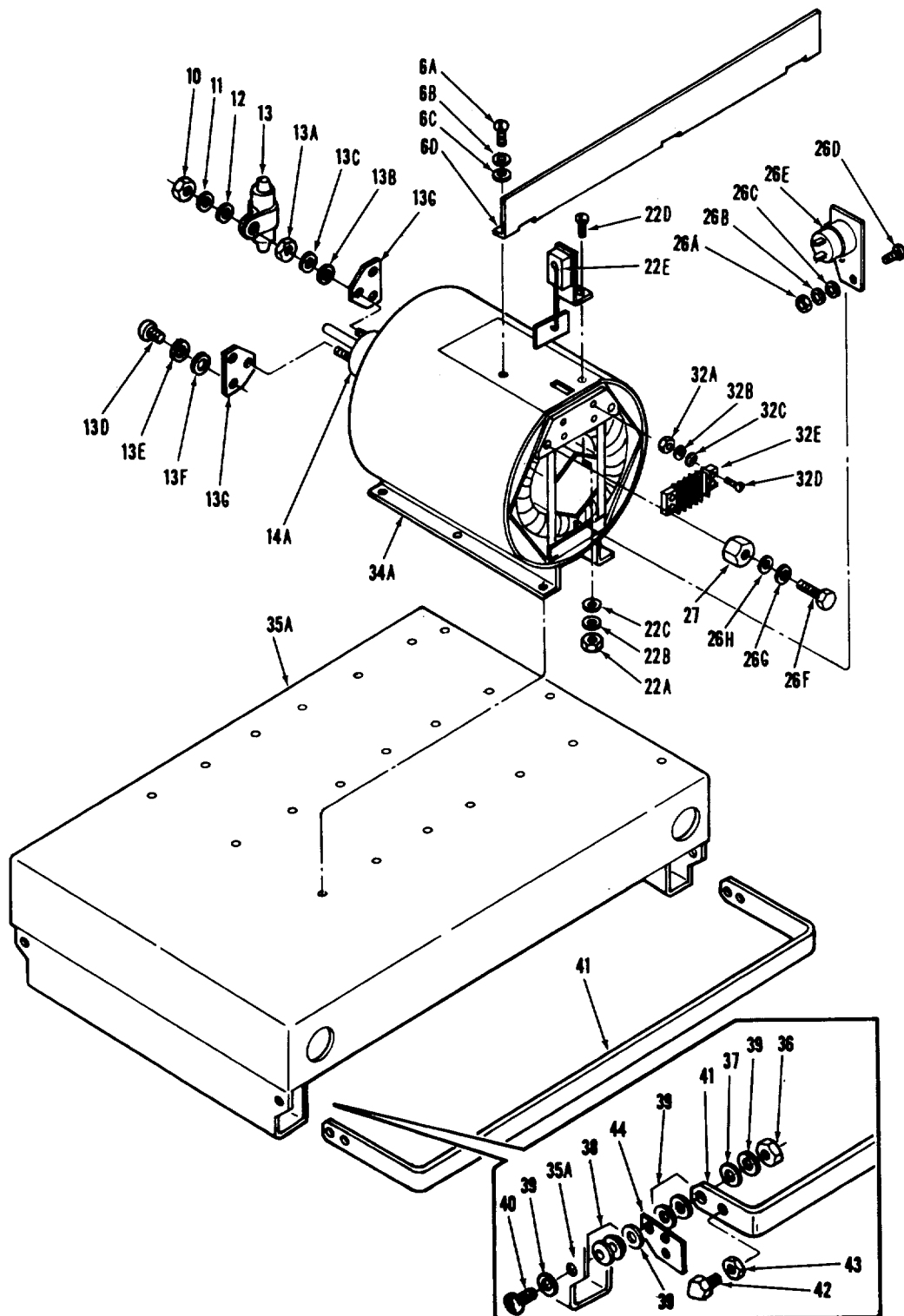


Figure B-4. Power absorber, fan motor, and load module (Sheet 2 of 2).

TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			QTY
(A)	(B)	SMR	NATIONAL	PART		USABLE		INC
FIG	ITEM	CODE	STOCK	NUMBER	FSCM	ON	U/M	IN
NO.	NO.		NUMBER	NUMBER		CODE		UNIT
4	1	PAFZZ	5305-00-068-0502	MS90725-6	96906	SCREW,CAP,HEXAGON HEAD POWER TO ABSORBER MTG TO BASE MTG, 1/4-20 THD SIZE, 3/4 IN. LG	EA	18
4	2	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER,LOCK POWER ABSORBER MTG TO BASE, 1/4 IN. SCREW SIZE	EA	18
4	3	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER,FLAT POWER ABSORBER MTG TO BASE, 1/4 IN. SCREW SIZE	EA	18
4	4	PAOZZ	5305-00-984-6191	MS35206-243	96906	SCREW,MACHINE ROOF ANGLE MTG TO POWER ABSORBER, NO. 8-32 THD SIZE, 3/8 IN. LG	A	4
4	5	PAOZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK ROOF ANGLE MTG TO POWER ABSORBER, NO. 8 SCREW SIZE	A	4
4	6	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER,FLAT ROOF ANGLE MTG TO POWER ABSORBER, NO. 8 SCREW SIZE	A	4
4	6A	PAFZZ	5305-00-989-7434	MS35207-263	96906	SCREW,PAN HEAD,LOAD DUCT TIE MTG, NO. 10-32 THD SIZE, 1/2 IN. LG	B	6
4	6B	PAFZZ	5310-00-045-3296	MS35338-43	96906	WASHER,LOCK,LOAD DUCT TIE MTG, NO. 10 SCREW SIZE	B	6
4	6C	PAFZZ	5310-00-014-5850	MS27183-42	96906	WASHER,FLAT,LOAD DUCT TIE MTG, NO. 10 SCREW SIZE	B	6
4	6D			A807-3309-2	21269	LOAD DUCT TIE	B	1
4	7	XBZZ	6115-00-179-8295	A427-4401	21269	POWER ABSORBER ASSY	A	3
4	7A			A807-4401	21269	POWER ABSORBER ASSY	B	3
4	8	PAOZZ	4140-00-248-5679	A427-1403	21269	FAN COOLING		1
4	9	PAOZZ	A427-1415	A427-1415	21269	SETSCREW FAN MTG		1
4	10	PAOZZ	5310-00-836-4476	MS35649-282	96906	NUT,PLAIN,HEXAGON CAPACITOR AND MOUNTING MTG, NO. 8-32 THD SIZE		1
4	11	PAOZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK CAPACITOR AND MOTOR MTG, NO. 8 SCREW SIZE	EA	1
4	12	PAOZZ	5310-00-715-3197	MS27183-41	96906	WASHER,FLAT CAPACITOR AND MOTOR MTG, NO. 8 SCREW SIZE	EA	1
4	13	PAOZZ	5915-00-400-1793	A427-1416	21269	CAPACITOR,FILTER		1
4	13A	PAFZZ	5310-00-934-9751	MS35650-302	96906	NUT,HEX,MOTOR MTG, NO. 10-32 THD SIZE	B	2
4	13B	PAFZZ	5310-00-014-5850	MS27183-42	96906	WASHER,FLAT,MOTOR MTG, NO. 10 SCREW SIZE	B	2
4	13C	PAFZZ	5310-00-045-3296	MS35338-43	96906	WASHER,LOCK,MOTOR MTG, NO. 10 SCREW SIZE	B	1
4	13D	PAFZZ	5305-00-984-6193	MS35206-245	96906	SCREW,PAN HEAD,MOTOR PLATE MTG, NO. 8-32 THD SIZE, 1/2 IN. LG	B	4
4	13E	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK,MOTOR PLATE MTG, NO. 8 SCREW SIZE	B	4
4	13F	PAFZZ	5310-00-715-3197	MS27183-41	96906	WASHER,FLAT,MOTOR PLATE MTG, NO. 8 SCREW SIZE	B	4
4	13G	XBZZ		A807-3305-2	21269	PLATE,MOTOR MTG	B	2
4	14	PAFZZ	6105-00-220-5032	A427-2402	21269	MOTOR,FAN	A	1
4	14A			A427-2402A	21269	MOTOR,FAN	B	1

CHANGE 1

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TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			QTY
(A) (B)		NATIONAL	PART			USABLE		INC
FIG ITEM		STOCK	NUMBER	FSCM		ON	U/M	IN
NO. NO.		NUMBER	NUMBER			CODE		UNIT
4	15	PAFZZ	5305-00-984-6191	MS35206-243	96906	SCREW,MACHINE FAN SWITCH MTG, NO. 8-32 THD SIZE, 3/8 IN. LG	EA	2
4	16	PAFZZ	5310-00-715-3197	MS27183-41	96906	WASHER,FLAT FAN SWITCH MTG, NO. 8 SCREW SIZE	EA	2
4	17	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK FAN SWITCH MTG, NO. 8 SCREW SIZE	EA	4
4	18	PAFZZ	5930-00-400-1791	A427-1409	21269	SWITCH,FAN	EA	1
4	19	XBFZZ	AA444D	AA444D	53705	RIVET SWITCH AIR PADDLE MTG	EA	2
4	20	XBFZZ	A427-1419	A427-1419	21269	PADDLE MTG	EA	1
4	21	PAFZZ	5930-00-803-4570	MS24547-1	96906	SWITCH,MICRO	EA	1
4	22	XBFZZ	A427-1300	A427-1300	21269	BRACKET SWITCH MTG	EA	1
4	22A	PAFZZ	5310-00-934-9757	MS35649-282	96906	NUT,HEX,AIR FLOW SWITCH MTG, NO. 8-32 THD SIZE	EA	1
4	22B	PAFZZ	5310-00-045-3299	MS35338-42	96906	WASHER,LOCK,AIR FLOW SWITCH MTG, NO. 8 SCREW SIZE	EA	1
4	22C	PAFZZ	5310-00-715-3199	MS27183-41	96906	WASHER,FLAT,AIR FLOW SWITCH MTG, NO. 8 SCREW SIZE	EA	1
4	22D	PAFZZ	5305-00-984-6193	MS35206-245	96906	SCREW,PAN HEAD,AIR FLOW SWITCH MTG, NO. 8-32 THD SIZE, 1/2 IN. LG	EA	1
4	22E	PAFZZ	A807-3402	A807-3402	21269	SWITCH ASSY, AIR FLOW	EA	1
4	23	PAOZZ	5310-00-934-9747	MS35649-262	96906	NUT,PLAIN,HEXAGON THERMO SWITCH MTG, NO. 6-32 THD SIZE	EA	1
4	24	PAOZZ	5310-00-045-4007	MS35338-41	96906	WASHER,LOCK THERMO SWITCH MTG, NO.6 SCREW SIZE	EA	1
4	25	PAOZZ	5310-00-983-8483	MS27183-5	96906	WASHER,FLAT THERMO SWITCH MTG, NO. 6 SCREW SIZE	EA	1
4	26	PAOZZ	5930-00-400-1790	A427-1408	21269	SWITCH,THERMO	EA	1
4	26A	PAOZZ	5310-00-934-9747	MS35649-262	96906	NUT,HEX,THERMO SWITCH MTG, NO. 6-32 THD SIZE	EA	2
4	26B	PAOZZ	5310-00-045-4007	MS35338-41	96906	WASHER,LOCK,THERMO SWITCH MTG, NO. 6 SCREW SIZE	EA	2
4	26C	PAOZZ	5310-00-082-1404	MS27183-6	96906	WASHER,FLAT,THERMO SWITCH MTG, NO. 6 SCREW SIZE	EA	2
4	26D	PAOZZ	5305-00-889-3000	MS35206-230	96906	SCREW,PAN HEAD,THERMO SWITCH MTG, NO. 6-32 THD SIZE, 1/2 IN. LG	EA	2
4	26E	PAOZZ	A807-1503	A807-1503	21269	SWITCH,THERMO	EA	1
4	26F	PAFZZ	5305-00-068-0500	MS90725-3	96906	SCREW,CAP,HEX HD, INSULATOR MTG, NO. 1/4-20 THD SIZE, 1/2 IN. LG	EA	4
4	26G	PAFZZ	5310-00-582-5965	MS35338-44	96906	WASHER,LOCK,INSULATOR MTG, 1/4 IN. SCREW SIZE	EA	4
4	26H	PAFZZ	5310-00-809-4058	MS27183-10	96906	WASHER,FLAT,INSULATOR MTG, 1/4 IN. SCREW SIZE	EA	4
4	27	PAFZZ	5970-00-442-6307	A427-1404	21269	INSULATOR,LOAD MODULE	EA	2

CHANGE 1

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TM5-6626-2691-13&P								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ILLUSTRATION					DESCRIPTION			
(A) (B)						USABLE		QTY
FIG (A) (B)	ITEM	SMR	NATIONAL	PART		ON	U/M	INC
NO. NO.	NO.	CODE	STOCK	NUMBER	FSCM	CODE		IN
								UNIT
4	28	PAFZZ	5310-00-934-9757	MS35649-282	96906	NUT,PLAIN,HEXAGON LOAD MODULE TERMINAL BOARD	A	EA 8
4	29	PAFZZ	5310-00-045-3299	MS35338-42	96906	MTG, NO. 8-32 THD SIZE WASHER,LOCK LOAD	A	EA 8
4	30	PAFZZ	5310-00-715-3197	MS27183-41	96906	MODULE TERMINAL BOARD MTG. NO. 8 SCREW SIZE	A	EA 8
4	31	PAFZZ	5305-00-984-6194	MS35206-246	96906	WASHER,FLAT LOAD MODULE TERMINAL BOARD	A	EA 8
4	32	PAFZZ		354-11-C7-001	71785	MTG, NO. 8 SCREW SIZE SCREW,MACHINE LOAD	A	EA 2
4	32A	PAFZZ	5310-00-934-9747	MS35649-262	96906	MODULE TERMINAL BOARD MTG, NO. 6-32 THD SIZE	B	EA 4
4	32B	PAFZZ	5310-00-045-4007	MS35338-41	96906	WASHER,LOCK,TERMINAL BOARD MTG, NO. 6	B	EA 4
4	32C	PAFZZ	5310-00-082-1404	MS27183-6	96906	SCREW SIZE WASHER,FLAT,TERMINAL	B	EA 4
4	32D	PAFZZ	5310-00-984-4992	MS35206-232	96906	BOARD MTG, NO. 6 SCREW SIZE	B	EA 4
4	32E	PAFZZ		140-6	86168	SCREW, PAN HD TEMINAL BOARD MTG, NO. 6-32	B	EA 1
4	33	XBFZZ		A427-1305	21269	THD SIZE, 3/4 IN. LG TERMINAL BOARD	A	EA 30
4	34	PAFZZ	6110-00-228-1272	A427-2406	21269	RIVET,DRIVE LOAD MODULE MTG	A	EA 1
4	34A			A807-2406	21269	MODULE,LOAD	B	EA 1
4	35	XBFZZ		A427-3307	21269	MODULE,LOAD	A	EA 1
4	35A	XBFZZ		A807-3306A	21269	SKID,BASE WELDMENT	B	EA 1
4	36	PAOZZ	5310-00-005-0476	MS35649-2382	96906	SKID,BASE WELDMENT	B	EA 4
4	37	PAOZZ	5310-00-637-9541	MS35338-46	96906	NUT,HEX,LIFTING HANDLE MTG, 3/8-16 THD SIZE	B	EA 4
4	38	PAOZZ		C163840-1	21269	WASHER,LOCK,LIFTING HANDLE MTG, 3/8 IN.	B	EA 8
4	39	PAOZZ	5310-00-080-6004	MS27183-14	96906	SCREW SIZE WASHER,CONICAL SPRING,	B	EA 20
4	40	PAOZZ	5310-00-269-3214	MS90725-64	96906	LIFTING HANDLE MTG, 3/8 IN.SCREW SIZE	B	EA 4
4	41	XBFZZ		A807-3306A-2	21269	WASHER,FLAT,LIFTING HANDLE MTG, 3/8 IN.	B	EA 2
4	42	PAOZZ		3-H-14-125-500	80813	SCREW SIZE BOLT,HEX HD,LIFTING	B	EA 4
4	43	PAOZZ	5310-00-768-0319	MS51968-2	96906	HANDLE MTG, 3/8-16 THD SIZE, 1-1/2 IN. LG	B	EA 4
4	44	XBOZZ		A807-3306A-3	21269	1/4-28 THD SIZE STUD,HEX THREADED	B	EA 4
						1/4-28 THD SIZE NUT,HEX,FINE THREAD	B	EA 4
						1/4-28 THD SIZE PLATE,PRESSURE	B	EA 4

CHANGE 1

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SECTION VII - INDEX-NATIONAL STOCK NUMBER AND REFERENCE NUMBER  
CROSS-REFERENCE TO FIGURE AND ITEM NUMBER

STOCK NUMBER	FIGURE NO.	ITEM NO.	STOCK NUMBER	FIGURE NO.	ITEM NO.
5310-00-005-0476	4	36	5305-00-576-7519	3	5
5310-00-014-5850	2	52	5305-00-576-7519	3	16A
5310-00-014-5850	3	41	5310-00-582-5965	1	2
5310-00-014-5850	4	6C	5310-00-582-5965	2	21
5310-00-014-5850	4	13B	5310-00-582-5965	2	32
5310-00-045-3296	1	27	5310-00-582-5965	2	36
5310-00-045-3296	3	14	5310-00-582-5965	3	36
5310-00-045-3296	3	31	5310-00-582-5965	3	56
5310-00-045-3296	3	40	5310-00-582-5965	4	2
5310-00-045-3296	4	6B	5310-00-582-5965	4	26G
5310-00-045-3296	4	13C	5305-00-622-1509	3	9
5310-00-045-3299	2	16	5310-00-637-9541	4	37
5310-00-045-3299	2	40	5305-00-638-3293	3	22
5310-00-045-3299	2	45	5305-00-638-3358	3	1
5310-00-045-3299	3	3	5930-00-655-1574	2	4
5310-00-045-3299	3	6	5930-00-655-1576	2	8
5310-00-045-3299	3	10	5310-00-715-3197	2	41
5310-00-045-3299	3	16B	5310-00-715-3197	2	46
5310-00-045-3299	4	5	5310-00-715-3197	4	12
5310-00-045-3299	4	11	5310-00-715-3197	4	13F
5310-00-045-3299	4	13E	5310-00-715-3197	4	16K
5310-00-045-3299	4	17	5310-00-715-3197	4	30
5310-00-045-3299	4	22B	5310-00-715-3199	4	22C
5310-00-045-3299	4	29	5310-00-761-6882	2	35
5310-00-045-4007	2	2	5310-00-761-6882	3	55
5310-00-045-4007	2	6	5340-00-762-6096	1	6
5310-00-045-4007	2	26	5340-00-762-6096	1	9
5310-00-045-4007	3	20	5310-00-765-3197	2	17
5310-00-045-4007	4	24	5310-00-765-3197	3	2
5310-00-045-4007	4	26B	5310-00-765-3197	3	7
5310-00-045-4007	4	32B	5310-00-765-3197	3	11
5305-00-068-0500	4	26F	5310-00-765-3197	3	16C
5305-00-068-0501	1	1	5310-00-765-3197	4	6
5305-00-068-0501	2	20	5310-00-768-0319	4	43
5305-00-068-0501	2	31	5930-00-803-4570	4	21
5305-00-068-0501	3	35	5310-00-809-4058	1	3
5305-00-068-0501	3	58	5310-00-809-4058	2	22
5305-00-068-0502	4	1	5310-00-809-4058	2	33
5310-01-077-1024	3	46	5310-00-809-4058	3	37
5310-01-077-1024	3	51	5310-00-809-4058	3	57
5310-00-080-6004	4	39	5310-00-809-4058	4	3
5310-00-082-1404	2	3	5310-00-809-4058	4	26H
5310-00-082-1404	2	7	5310-00-809-4958	2	37
5310-00-082-1404	4	26C	5310-00-809-8546	1	16
5310-00-082-1404	4	32C	5310-00-809-8546	1	28
5940-00-177-6740	3	27	5310-00-809-8546	3	15
5940-00-177-6765	3	34	5310-00-809-8546	3	22
6115-00-179-8295	4	7	5310-00-829-9981	3	62
5310-00-209-3078	3	63	5310-00-836-4476	4	10
6105-00-220-5032	4	14	5305-00-889-3000	2	1
5340-00-224-1138	1	18	5305-00-889-3000	2	5
5306-00-225-8492	3	60	5305-00-889-3000	4	26D
5306-00-225-8499	3	25	5920-00-892-9311	2	9
6115-00-228-1266	1	30	5310-00-934-9747	2	25
6110-00-228-1272	4	34	5310-00-934-9747	3	19
5310-00-228-1275	3	8	5310-00-934-9747	4	23
5355-00-229-0450	2	24	5310-00-934-9747	4	26A
6110-00-229-2834	3	17	5310-00-934-9747	4	32A
5340-00-229-3643	1	21	5310-00-934-9751	1	26
5340-00-229-3643	1	25	5310-00-934-9751	3	30
5940-00-229-6765	3	26	5310-00-934-9751	3	39
5355-00-244-2944	3	29	5310-00-934-9751	4	13A
5940-00-247-0470	3	28	5310-00-934-9757	2	15
4140-00-248-5679	4	8	5310-00-934-9757	2	42
5995-00-251-2607	3	24	5310-00-934-9757	2	47
5310-00-269-3214	4	40	5310-00-934-9757	4	22A
5315-00-375-9150	2	12	5310-00-934-9757	4	28
5945-00-400-1787	3	16	5310-00-983-8483	2	28
5950-00-400-1788	3	12	5310-00-983-8483	3	21
5930-00-400-1789	2	11	5310-00-983-8483	4	25
5930-00-400-1790	4	26	5305-00-984-4988	2	27
5930-00-400-1791	4	18	5310-00-984-4992	4	32D
5930-00-400-1792	2	13	5305-00-984-6191	4	4
5915-00-400-1793	4	13	5305-00-984-6191	4	15
5995-00-400-1794	3	18	5305-00-984-6193	2	18
5950-00-400-4669	2	23	5305-00-984-6193	4	13D
5310-00-407-9566	3	61	5305-00-984-6193	4	22D
5970-00-442-6307	4	27	5305-00-984-6194	3	9A
6115-00-450-5828	1	11	5305-00-984-6194	4	31
6115-00-450-9829	1	7	5305-00-984-6195	2	39
6115-00-458-8188	1	10	5310-00-984-6195	2	44
5340-00-493-3996	1	17	5305-00-984-7341	1	29
5920-00-519-5723	2	10	5305-00-984-7341	3	42
5305-00-543-5743	3	13	5305-00-989-7434	1	15
5305-00-543-5990	3	33	5305-00-989-7434	4	6A

## INDEX - CROSS REFERENCE PART NUMBER TO FIGURE AND ITEM NUMBER

PART NUMBER	FSCM	FIG. NO.	ITEM NO.	PART NUMBER	FSCM	FIG. NO.	ITEM NO.
AA444D	53507	1	19	A510-2202	21269	3	47
AA444D	53507	4	19	A510-2202A	21269	3	52
A427-1300	21269	4	22	A700-1149	21269	2	43
A427-1302	21269	2	19	A807-1000	21269	3	54
A427-1305	21269	1	12	A807-1500	21269	2	10A
A427-1305	21269	1	22	A807-1501	21269	3	16D
A427-1305	21269	4	33	A807-1501-NC	21269	3	16G
A427-1306	21269	1	6	A807-1501-NO	21269	3	16F
A427-1306	21269	1	9	A807-1503	21269	4	26E
A427-1308	21269	1	14	A807-2200	21269	3	48
A427-1309	21269	1	5	A807-2200-1	21269	3	53
A427-1309	21269	1	8	A807-2403	21269	2	23A
A427-1400	21269	3	16	A807-2406	21269	4	34A
A427-1401	21269	3	12	A807-2407	21269	3	43
A427-1401A	21269	3	12A	A807-2407-1	21269	3	49
A427-1402	21269	2	14	A807-2409	21269	3	18A
A427-1403	21269	4	8	A807-2410	21269	3	23A
A427-1404	21269	4	27	A807-2411	21269	3	24A
A427-1405	21269	3	26	A807-3305-2	21269	4	13G
A427-1406	21269	2	11	A807-3306A	21269	4	35A
A427-1408	21269	4	26	A807-3306A-2	21269	4	41
A427-1409	21269	4	18	A807-3306A-3	21269	4	44
A427-1411	21269	2	12	A807-3308	21269	2	34A
A427-1412	21269	1	30	A807-3309-2	21269	4	6D
A427-1414	21269	2	13	A807-3310A	21269	3	59
A427-1415	21269	4	9	A807-3311-1	21269	2	55
A427-1416	21269	4	13	A807-3400	21269	1	4A
A427-1417	21269	3	29	A807-3401	21269	2	38
A427-1418	21269	3	28	A807-3402	21269	4	22E
A427-1419	21269	4	20	A807-3407	21269	3	17A
A427-1420	21269	2	24	A807-3500	21269	3	8A
A427-2200	21269	3	34	A807-4401	21269	4	7A
A427-2306	21269	3	38	CCB7	92219	3	4
A427-2307	21269	1	11	C163840-1	21269	4	38
A427-2307-1	21269	1	10	HKP	71400	2	9
A427-2308	21269	1	7	MS141-2	86168	2	49
A427-2313	21269	1	17	MS15795-913	96906	3	46
A427-2314	21269	1	18	MS15795-913	96906	3	51
A427-2401	21269	2	29	MS24547-1	96906	4	21
A427-2402	21269	4	14	MS25105-23	96906	2	4
A427-2402A	21269	4	14A	MS25105-24	96906	2	8
A427-2403	21269	2	23	MS27183-10	96906	1	3
A427-2405	21269	2	30	MS27183-10	96906	2	22
A427-2406	21269	4	34	MS27183-10	96906	2	33
A427-2407	21269	3	27	MS27183-10	96906	2	37
A427-2408	21269	3	8	MS27183-10	96906	3	37
A427-2409	21269	3	18	MS27183-10	96906	3	57
A427-2410	21269	3	23	MS27183-10	96906	4	3
A427-2411	21269	3	24	MS27183-10	96906	4	26H
A427-3307	21269	4	35	MS27183-11	96906	3	63
A427-3308	21269	2	34	MS27183-14	96906	4	39
A427-3310	21269	1	20	MS27183-41	96906	2	17
A427-3311	21269	1	23	MS27183-41	96906	2	41
A427-3314	21269	1	24	MS27183-41	96906	2	46
A427-3400	21269	1	4	MS27183-41	96906	3	2
A427-3407	21269	3	17	MS27183-41	96906	3	7
A427-4401	21269	4	7	MS27183-41	96906	3	11
A510-1210	21269	2	24A	MS27183-41	96906	3	16C
A510-1412B	21269	3	44	MS27183-41	96904	4	6
A510-1412W	21269	3	45	MS27183-41	96906	4	12
A510-1412W	21269	3	50	MS27183-41	96906	4	13F

## INDEX - CROSS REFERENCE PART NUMBER TO FIGURE AND ITEM NUMBER

PART NUMBER	FSCM	FIG. NO.	ITEM NO.	PART NUMBER	FSCM	FIG. NO.	ITEM NO.
MS27183-41	96906	4	16	MS35338-42	96906	4	32B
MS27183-41	96906	4	30	MS35338-43	96906	1	27
MS27183-41	96906	4	22C	MS35338-43	96906	3	14
MS27183-42	96906	2	52	MS35338-43	96906	3	31
MS27183-42	96906	3	41	MS35338-43	96906	3	40
MS27183-42	96906	4	6C	MS35338-43	96906	4	6B
MS27183-42	96906	4	13B	MS35338-43	96906	4	13C
MS27183-5	96906	2	28	MS35338-44	96906	1	2
MS27183-5	96906	3	21	MS35338-44	96906	2	21
MS37183-5	96906	4	25	MS35338-44	96906	2	32
MS27183-6	96906	2	3	MS35338-44	96906	2	36
MS27183-6	96996	2	7	MS35338-44	96906	3	36
MS27183-6	96906	4	26C	MS35338-44	96906	3	56
MS27183-6	96906	4	32C	MS35338-44	96906	4	2
MS27183-8	96906	1	16	MS35338-44	96906	4	26G
MS27183-8	96906	1	28	MS35338-45	96906	3	61
MS27183-8	96906	3	15	MS35338-46	96906	4	37
MS27183-8	96906	3	32	MS35425-72	96906	3	25A
MS35191-273	96906	1	29	MS35649-2312	96906	3	62
MS35191-273	96906	3	42	MS35649-2382	96906	4	36
MS35206-228	96906	2	27	MS35649-262	96906	2	25
MS35206-230	96906	2	1	MS35649-262	96906	3	19
MS35206-230	96906	2	5	MS35649-262	96906	4	23
MS35206-230	96906	4	26D	MS35649-262	96906	4	26A
MS35206-232	96906	4	32D	MS35649-262	96906	4	32A
MS35206-243	96906	4	4	MS35649-282	96906	2	15
MS35206-243	96906	4	15	MS35649-282	96906	2	42
MS35206-245	96906	2	18	MS35649-282	96906	2	47
MS35206-245	96906	4	22D	MS35649-282	96906	4	10
MS35206-246	96906	3	9A	MS35649-282	96906	4	22A
MS35206-246	96906	3	16A	MS35649-282	96906	4	28
MS35206-246	96906	4	31	MS35650-302	96906	1	26
MS35206-247	96906	2	39	MS35650-302	96906	3	30
MS35206-247	96906	2	44	MS35650-302	96906	3	39
MS35207-263	96906	1	15	MS34650-302	96906	4	13A
MS35207-263	96906	4	6A	MS51967-2	96906	2	35
MS35223-31	96906	3	22	MS51967-2	96906	3	55
MS35223-45	96906	3	1	MS51968-2	96906	4	43
MS35223-45	96906	4	13D	MS90725-27	96906	3	60
MS35223-46	96906	3	5	MS90725-3	96906	4	26F
MS35224-63	96906	3	9	MS90725-34	96906	3	25
MS35224-65	96906	3	13	MS90725-5	96906	1	1
MS35240-73	96906	3	33	MS90725-5	96906	2	20
MS35338-41	96906	2	2	MS90725-5	96906	2	31
MS35338-41	96906	2	6	MS90725-5	96906	3	35
MS35338-41	96906	2	26	MS90725-5	96906	3	58
MS35338-41	96906	3	20	MS90725-6	96906	4	1
MS35338-41	96906	4	24	MS90725-64	96906	4	40
MS35338-41	96906	4	26B	0200F	44655	2	53
MS35338-42	96906	2	16	0200K	44655	2	54
MS35338-42	96906	2	40	1N4005	44655	3	16E
MS35338-42	96906	2	45	100-200-2-0	01890	1	13
MS35338-42	96906	3	3	13208E232	97403	1	21
MS35338-42	96906	3	6	13208E9232	97403	1	25
MS35338-42	96906	3	10	140-6	86168	4	32E
MS35338-42	96906	3	16B	141-2	86168	2	48
MS35338-42	96906	4	5	2326F194	04713	2	51
MS35338-42	96906	4	11	3-H-14-125-500	80813	4	42
MS35338-42	96906	4	13E	3AG	71400	2	10
MS35338-42	96906	4	17	354-11-07-001	71785	4	32
MS35338-42	96906	4	22B	7PA25	44655	2	50
MS35338-42	96906	4	29				



## APPENDIX C

### MAINTENANCE ALLOCATION CHART

#### Section I. INTRODUCTION

##### C-1. General

*a.* This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

*b.* Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component and the work measurement time required to perform the functions by the designated maintenance level. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

*c.* Section III lists the tools and test equipment required for each maintenance function as referenced from Section II.

##### C-2. Explanation of Columns in Section II

*a. Column (1), Group Number.* Column 1 lists group numbers to identify related components, assemblies, sub-assemblies, and modules with their next higher assembly. The applicable groups are listed in the MAC in disassembly sequence beginning with the first group removed.

*b. Column (2), Component/Assembly.* This column contains the noun names of components, assemblies, sub-assemblies and modules for which maintenance is authorized.

*c. Column (3), Maintenance Functions.* This column lists the functions to be performed on the item listed in column 2. The maintenance functions are defined as follows:

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

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

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

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

(5) *Align.* To adjust specified variable elements of an item to bring about optimum or desired performance.

(6) *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 comparison 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.

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

(8) *Replace.* The act of substituting a serviceable like type part, sub-assembly, or module (component or assembly) for an unserviceable counterpart.

(9) *Repair.* The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, sub-assembly, module (component or assembly), end item, or system.

(10) *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 a like new condition.

(11) *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 Equipment/Components.

*d. Column (4), Maintenance Category.* This column is made up of sub-columns for each category of maintenance. Work time figures are listed in these sub-columns for the lowest level of maintenance authorized to perform the function listed in column 3. These figures indicate the average active time required to perform the maintenance function at the indicated category of maintenance under typical field operating conditions.

*e. Column (5), Tools and Equipment.* This column is provided for referencing by code, the common tools sets (not individual tools) special tools, test and support equipment required to perform the designated function.

**C-3. Explanation of Columns in Section III.**

a. *Column (1), Reference Code.* This column consists of an arabic number listed in sequence from Column 5 of Section II. The number references the common tool sets, special tools and test equipment requirements.

b. *Column (2), Maintenance Category.* This column shows the lowest category of maintenance authorized to use the special tools or test equipment.

c. *Column (3), Nomenclature.* This column lists the

name or identification of the common tools sets, special tools or test equipment.

d. *Column (4), National Stock Number (NSN).* This column is provided for the NSN of common tool sets, special tools and test equipment listed in the nomenclature column.

e. *Column (5), Tool Number.* This column lists the manufacturer's code and part number of tools and test equipment.

**Section II. MAINTENANCE ALLOCATION CHART**

(1) Group number	(2) Component/assembly	(3) Maintenance function	(4) Maintenance category*					(5) Tools and equipment
			C	O	F	H	D	
01	HOUSING, DOORS, GRILLS							
0101	Grill: Exhaust Air	Inspect	0.1					
		Replace		0.8				
		Repair		0.3				
	Inlet Air	Inspect	0.1					
		Replace		0.6				
		Repair		0.2				
0102	Doors	Inspect	0.1					
		Service	0.2					
		Replace			0.9			
0103	Handles and Latches	Inspect	0.2					
		Service	0.2					
		Replace		0.9				
		Repair		0.8				
0104	Housing	Inspect	0.1					
		Service	0.2					
		Align			0.7			
		Replace			1.4			
		Repair			0.9			
0105	Braces and Brackets	Inspect	0.1					
		Align		0.1				
		Replace		0.3				
02	POWER ABSORBER							
0201	Fuses	Inspect	0.1					
		Test		0.2				1
		Replace	0.1					
0202	Fuseholders	Inspect		0.1				
		Replace		0.6				
0203	Switches: Wind	Inspect	0.1	0				
		Test		0.2				1
		Replace			0.3			
	Toggle	Inspect	0.1					
		Test		0.2				
		Replace		0.3				
0203A	Circuit Breaker	Inspect	0.1					
		Test		0.1				
		Replace			0.2			
0204	Rectifier	Inspect	0.1					
		Service		0.2				
		Test		0.2				1
		Replace			1.5			
0205	Terminal Stud	Inspect	0.1					
		Service	0.2					
		Replace		0.5				
0206	Variable Transformer	Inspect		0.1				
		Service		0.2				
		Test			0.5			1
		Replace			0.7			

\* SUBCOLUMNS ARE AS FOLLOWS:

F - DIRECT SUPPORT;

\*\* INDICATES WT/MH REQUIRED

C - OPERATOR/CREW;

H - GENERAL SUPPORT;

O - ORGANIZATIONAL;

D - DEPOT

(1)	(2)	(3)	(4)					(5)
Group number	Component/assembly	Maintenance function	Maintenance category*					Tools and equipment
			C	O	F	H	D	
0207	Voltage Sensing Module	Inspect		0.3				
		Service		0.2				
		Test		0.2				1
		Replace			1.2			
0208	Contactor	Inspect		0.1				
		Service		0.2				
		Test		0.2				1
		Replace			1.1			
0209	Control Transformer	Inspect		0.1				
		Service		0.2				
		Test		0.2				1
		Replace			1.2			
0210	Filter Capacitor	Inspect	0.2					
		Service		0.1				
		Test		0.2				1
		Replace		0.5				
0211	Voltage Plug	Inspect	0.2					
		Service		0.1				
		Test		0.2				1
		Replace			0.8			
0212	Fan	Inspect		0.1				
		Service		0.1				
		Replace		0.2				
0213	Fan Motor	Inspect			0.1			
		Service			0.2			
		Replace			0.2			

\* SUBCOLUMNS ARE AS FOLLOWS:

F - DIRECT SUPPORT;

\*\* INDICATES WT/MH REQUIRED

C - OPERATOR/CREW;

H - GENERAL SUPPORT;

O - ORGANIZATIONAL;

D - DEPOT

### Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1)	(2)	(3)	(4)	(5)
Reference code	Maintenance category	Nomenclature	National stock number (NSN)	Tool number
1	0	Multimeter	6625-00-553-0142	TS-352 B/U





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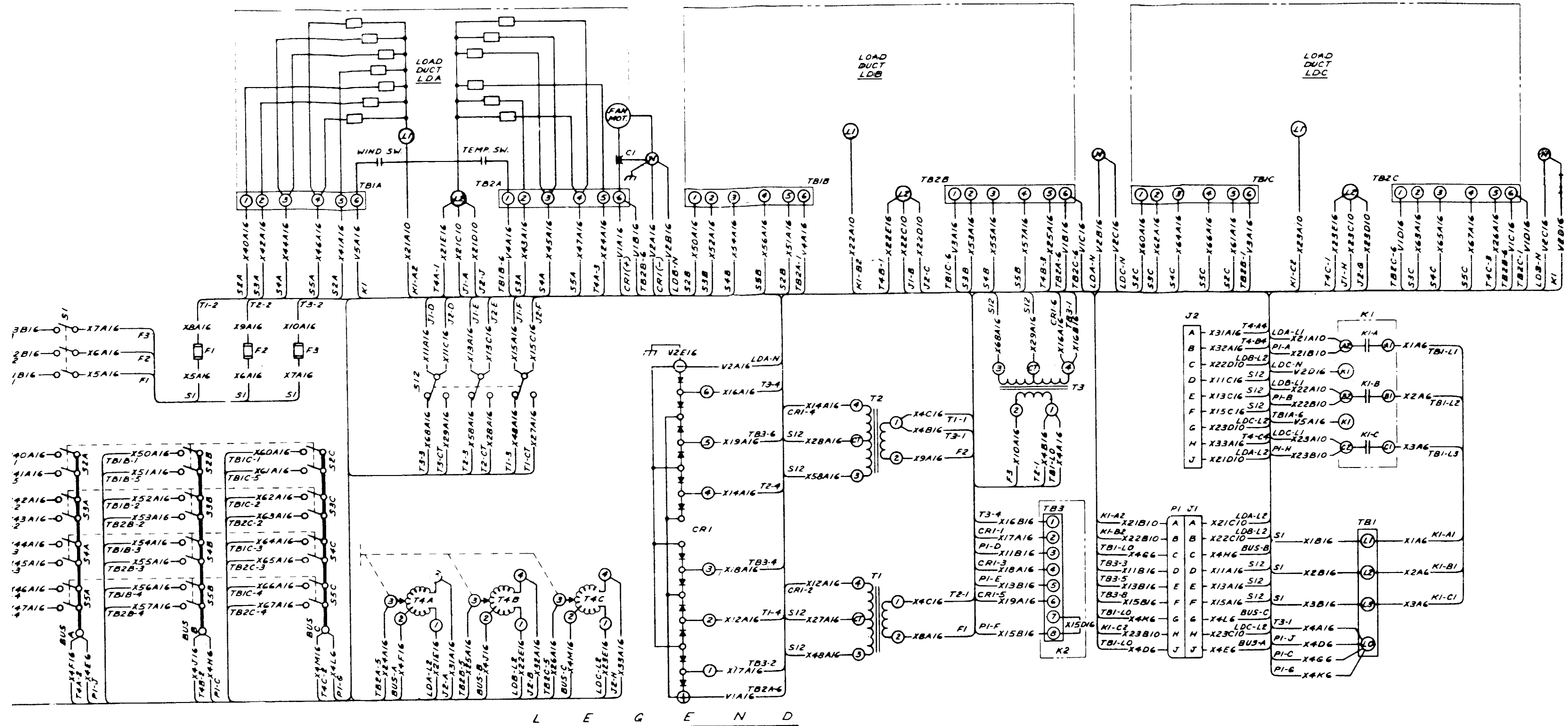
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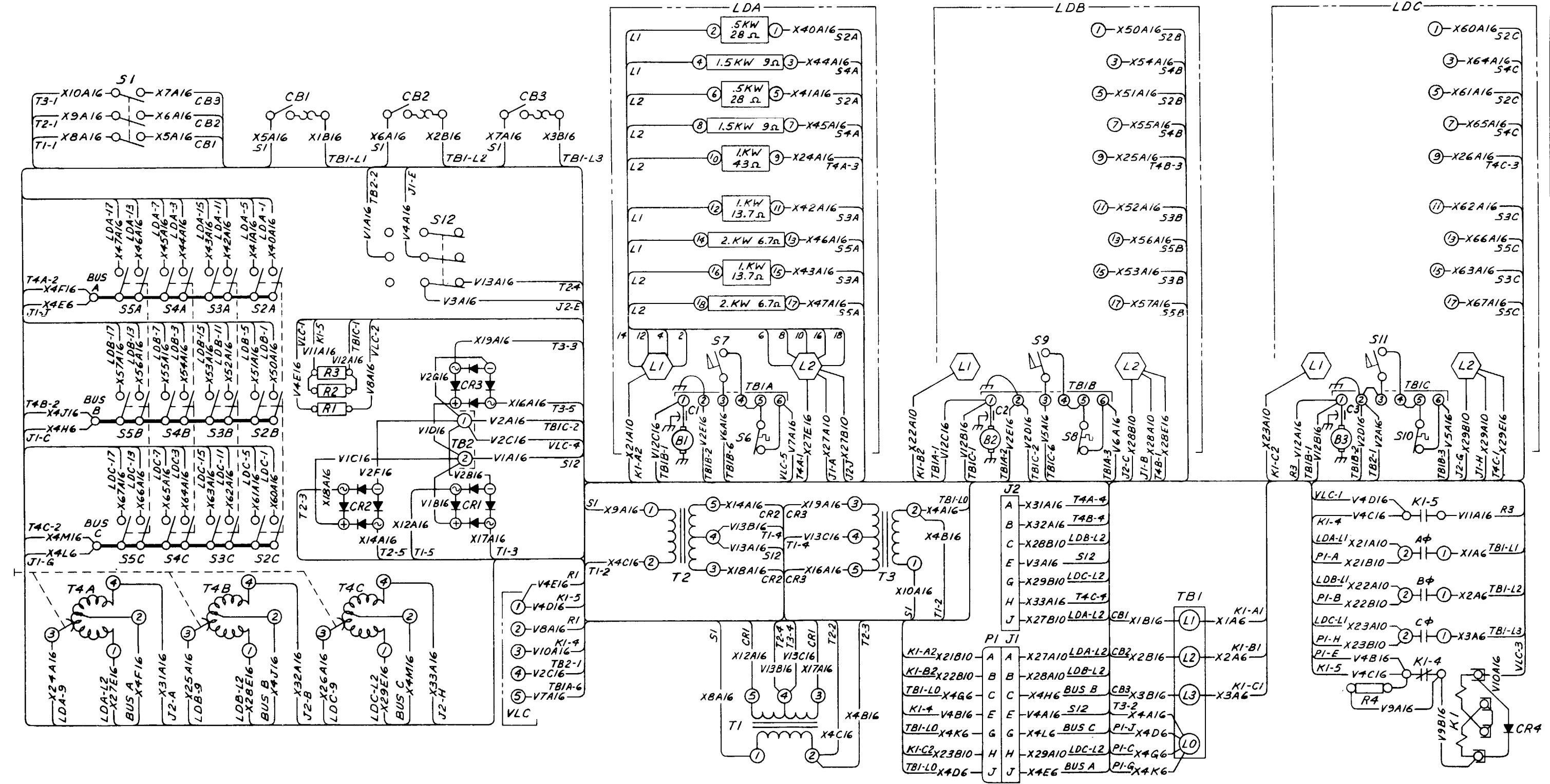
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FO-1. Wiring Diagram (Model A427)



FO-2. Wiring Diagram (Model A427B)

By Order of the Secretary of the Army:

FRED C. WEYAND  
*General, United States Army*  
*Chief of Staff*

Official:

PAUL T. SMITH  
*Major General, United States Army*  
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ARGN: State AG: (CA, HI, IL, IN, KY, MA, MN, MS, MT, NB, NJ, ND, OH, OR, SD, WI) (3 cys ea.)

USAR: None.

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



# SOMETHING WRONG WITH THIS MANUAL?

THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM, TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

FROM: (YOUR UNIT'S COMPLETE ADDRESS)

PFC JOHN DOE  
CoA, 3<sup>rd</sup> ENGINEER BN  
FT. LEONARD WOOD MO 63108

DATE 16 DEC 74

PUBLICATION NUMBER

TM5-6115-200-20 AND P

DATE

1 APR 72

TITLE

GENERATOR SET 10 KW  
NSN 6115-00-231-7286

BE EXACT... PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

6

2-1  
a

In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders

81

4-3

Callout 16 on figure 4-3 is pointing at a bolt. In the key to fig. 4-3, item 16 is called a shim. Please correct one or the other.

125 line 20

I ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered so the NSN is wrong. Please give me a good NSN

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE, PFC (268) 317-7111

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John Doe

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PUBLICATION NUMBER

DATE

TITLE

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AND WHAT SHOULD BE DONE ABOUT IT:

PAGE  
NO.

PARA-  
GRAPH

FIGURE  
NO.

TABLE  
NO.

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL MANUALS



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BE EXACT...PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG  
AND WHAT SHOULD BE DONE ABOUT IT:

PAGE  
NO.

PARA-  
GRAPH

FIGURE  
NO.

TABLE  
NO.

TEAR ALONG DOTTED LINE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

FILL IN YOUR  
UNIT'S ADDRESS

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THEN...JOT DOWN THE  
DOPE ABOUT IT ON THIS  
FORM, TEAR IT OUT, FOLD  
IT AND DROP IT IN THE  
MAIL!

# SOMETHING WRONG WITH THIS MANUAL?

FROM: (YOUR UNIT'S COMPLETE ADDRESS)

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# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.82 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

# Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	centimeters	inches	.394
feet	meters	.305	meters	feet	3.280
yards	meters	.914	meters	yards	1.094
miles	kilometers	1.609	kilometers	miles	.621
square inches	square centimeters	6.451	square centimeters	square inches	.155
square feet	square meters	.093	square meters	square feet	10.764
square yards	square meters	.836	square meters	square yards	1.196
square miles	square kilometers	2.590	square kilometers	square miles	.386
acres	square hectometers	.405	square hectometers	acres	2.471
cubic feet	cubic meters	.028	cubic meters	cubic feet	35.315
cubic yards	cubic meters	.765	cubic meters	cubic yards	1.308
fluid ounces	milliliters	29.573	milliliters	fluid ounces	.034
pints	liters	.473	liters	pints	2.113
quarts	liters	.946	liters	quarts	1.057
gallons	liters	3.785	liters	gallons	.264
ounces	grams	28.349	grams	ounces	.035
pounds	kilograms	.454	kilograms	pounds	2.205
short tons	metric tons	.907	metric tons	short tons	1.102

