DEPARTMENT OF THE ARMY TECHNICAL MANUAL

GENERAL SUPPORT
AND
DEPOT MAINTENANCE MANUAL
INCLUDING
REPAIR PARTS AND SPECIAL TOOLS LISTS
CHARGER, BATTERY PP-2926A/U
(NSN 6130-500-0069)

This copy is a reprint which includes current pages from Changes 1 and 2.

HEADQUARTERS, DEPARTMENT OF THE ARMY

4 FEBRUARY 1969

WARNING
EXTREMELY DANGEROUS VOLTAGES

(208, 230, or 460 volts, three-phase alternating current)
are used in the operation of
this equipment.

Deenergize the equipment before connecting or disconnecting the battery to be charged, and before performing any maintenance.

SEVERE INJURY OR
DEATH ON CONTACT
may result if personnel
fail to observe
safety precautions.

DISCONNECT EXTERNAL POWER BEFORE CHANGING TERMINAL BOARD CONNECTIONS OF CHARGER, BATTERY PP-2926A/U.

DON'T TAKE CHANCES!

WARNING

Charger, Battery PP-2926A/U weighs 300 pounds. Be *careful* when moving.
Mechanical lift required.
Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1. DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL
2. IF POSSIBLE, TURN OFF THE ELECTRICAL POWER
3. IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATERIAL
4. SEND FOR HELP AS SOON AS POSSIBLE
5. AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *26 MAY 1981*

General Support and Depot Maintenance Manual
Including Repair Parts and Special Tools Lists
CHARGER, BATTERY PP-2926AIU
(NSN 6130-00-500-0069)

TM 11-6130-225-45-1, 4 February 1969, is changed as follows:
1. Title of manual is changed as shown above.
2. New or changed material is indicated by a vertical bar in the margin.
3. Remove old pages and insert new pages as indicated below.

Remove	*Insert*
None	A and B (front of manual)
1-1 and 1-2	1-1 and 1-2
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A-1	A-1/(A-2 Blank)

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  - SAAD (30)
  - TOAD (14)
  - SHAD (2)
- USA Dep (l)
- Sig Sec USA Dep (1)
- Units org under fol TOE: (2)
  - 29-207
  - 29-610

NG: None
USAR: None
For explanation of abbreviations used, see AR 310-50.

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *28 March 1975*

General Support and Depot Maintenance Manual
Including Repair Parts and Special Tools Lists
CHARGER, BATTERY PP-2926A/U
(FSN 6130-500-0069)

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Remove	*Insert*
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USASA (2)
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OS Maj Comd (4)
LOGCOMDS (3)
MICOM (2)
TECOM (2)
USACC (4)
MDW (1)
Armies (2)
Corps (2)
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Svc Colleges (1)
USASESS (5)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USAINTCS (1)
WRAMC, (1)
WSMR (1)
ATS (1)
Fort Gordon (10)
Fort Huachuca (10)
Fort Carson (5)
Ft Richardson (ECOM Ofc) (2)
Army Dep (1) except
LBAD (14)
SAAD (30)
TOAD (14)
ATAD (10)
USA Dep (2)
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Units org under fol TOE
(1 copy each unit):
11-16
11-97
11-98
11-117
11-500(AA-AC)

NG: None.
USAR: None.
For explanation of abbreviations used, see AR 310-50.

TECHNICAL MANUAL
No. 11-6130-225-45-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *4 February 1969*

GENERAL SUPPORT AND DEPOT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

CHARGER, BATTERY PP-2926A/U

CHAPTER 1
FUNCTIONING OF EQUIPMENT

1-1. Scope

a. This manual contains general support and depot maintenance instructions for Charger, Battery PP-2926A/U (battery charger). It includes instructions appropriate for troubleshooting, testing, and repairing the equipment. It also lists tools, materials, and test equipment required for maintenance. Functional analysis of the equipment is covered in this chapter. Also the GS and depot repair parts list is included in appendix B.

NOTE
Appendix B is current as of 30 September 1968.

b. The complete technical manual for this equipment includes TM 11-6130-225-12-1.

1-2. Indexes of Publications

Refer to the latest issue of DA PAM 310-4 to determine whether there are new editions, changes, additional publications or modification work orders pertaining to the equipment.

1-2.1. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find and mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. In any case, a reply will be furnished direct to you.

1-2.2. Maintenance Forms, Records and Reports

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

b. Report of Item and Packaging Discrepancies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E.

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

1-2.3. Reporting Equipment Improvement Recommendations (EIR)

If your Charger, Battery PP-2926A/U (battery charger) needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. We'll send you a reply.

1-2.4. Administrative Storage

Administrative storage of equipment issued to and used by Army activities will have preventative maintenance performed before storing. When removing the equipment from administrative storage, the performance test and adjustment procedure should be performed to assure operational readiness. Original packing case may be used when repacking equipment for shipment for repair.

1-2.5. Destruction of Army Electronics Materiel

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

1-3. Block Diagram

(fig. 1-1)

a. Three-phase, 60-Hertz (Hz) primary input power is applied to the input circuit of fuses F2 through F7, contacts of start relay K1, and power transformer T1. Input power is applied to the primary of power transformer T1 through connections on terminal board TB4 to permit operation from 208, 230, or 460 volts. With the input control circuits activated by closure of the front panel which operates door interlock switch S3, setting ON-OFF switch to ON and HOURS timer M3 is at a setting other than 0, input power is applied through the terminal board connections to the primary winding of stepdown transformer T1. Alternating current (ac) input power is also applied to POWER ON indicator DS1, CHARGE RATE ADJUST circuitry, and the magnetic amplifier supply.

b. The output circuit of transformer T1 is delta-connected. The output voltage from transformer T1 is applied to bridge rectifier CR4 through CR9 through saturable reactor L1A, L1B, and L1C. The saturable reactor controls the ac input to the rectifier. The bridge rectifier converts the ac to a pulsating direct current (dc).

c. The battery charger output of current and voltage are monitored by AMPERES meter M2 and VOLTS PER CELL meter M1. Fuse F1 protects the output circuit for currents in excess of 200 amperes. Suppression of surge voltages is provided by suppressor zener diode CR12.

d. The voltage control effect of saturable reactor L1 is a function of the dc current flowing through the saturation winding obtained from the regulator circuit. The maximum amount of current depends on the setting of the CHARGE RATE ADJUST control, and the duration of the current is controlled by silicon-controlled rectifiers SCR1 and SCR2. The time of firing of the SCR1and SCR2 circuits is determined by the voltage obtained from the sense circuitry consisting of R3 through R7, CR10 and CR11, K2, and L2C.

1-4. Input Power
(fig. 4-3)

a. The battery charger operates from 208-, 230-, or 460-volt, 60-Hertz, three-phase input power. To provide the correct connections of input power to the primary of transformer T1, a terminal board is provided. Shorting links are connected between specific terminals on the

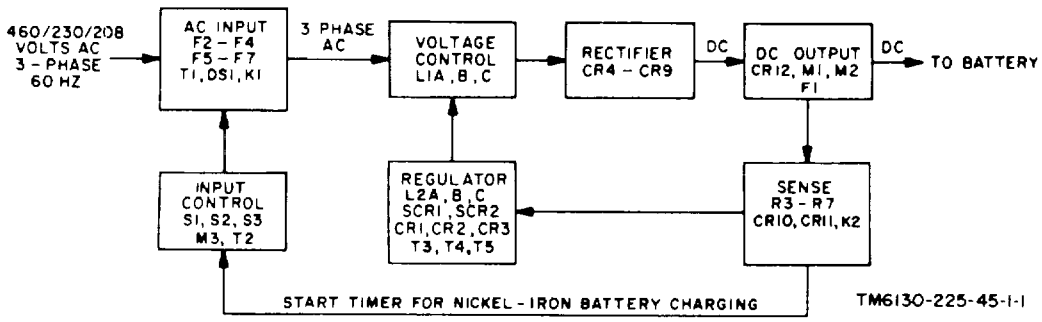


Figure 1-1. Charger, Battery PP-2926A/U, block diagram.

terminal board, depending on the voltage of the power source from which the battery charger is to be operated. Figures 1-2, 1-3, and 1-4 are simplified schematic diagrams that show how the primary windings are connected to the input power for 208, 230, and 460 volts, respectively.

b When the battery charger is connected to operate with a 208-volt input, shorting links are connected between specific terminals on the terminal board as shown by the heavy lines in figure 1-2. The six primary windings of transformer T1 are parallel-connected into a wye configuration. When start relay K1 is actuated to on, input power is routed from the input source through fuses F5, F6, and F7 to each parallel-connected pair or primary windings in each leg of the wye.

c When the battery charger is connected to operate with 230-volt input, shorting links are connected between specific terminals of the terminal board as shown by the heavy lines of figure 1-3. The six primary windings of transformer T1 are parallel-connected into a wye configuration. When start relay K1 is actuated to on, input power is routed from the source through fuses F5, F6, and F7 to each parallel-connected pair of primary windings in each leg of the wye.

d When the battery charger is connected to operate with 460-volt input, the shorting links are connected between specific terminals of the terminal board as shown by the heavy lines of figure 1-4. The six primary windings of transformer T1 are series-connected into a wye configuration. When start relay K1 is actuated to on, input power is routed through fuses F2, F3, and F4 to each series-connected pair of primary windings in each leg of the wye.

1-5. Input Control Circuits
(fig. 1-5)

Input power can be applied to the primary windings of power transformer T1 only if the front hinged panel is

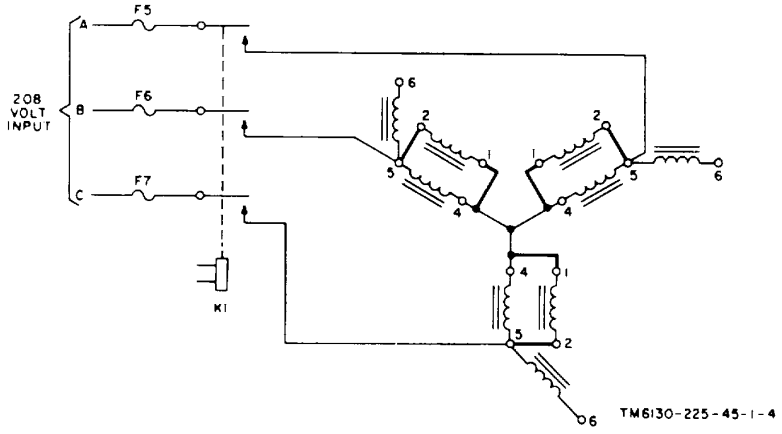


Figure 1-2. Connections to power transformer T1 primary winding for 208-volt input, simplified schematic diagram.

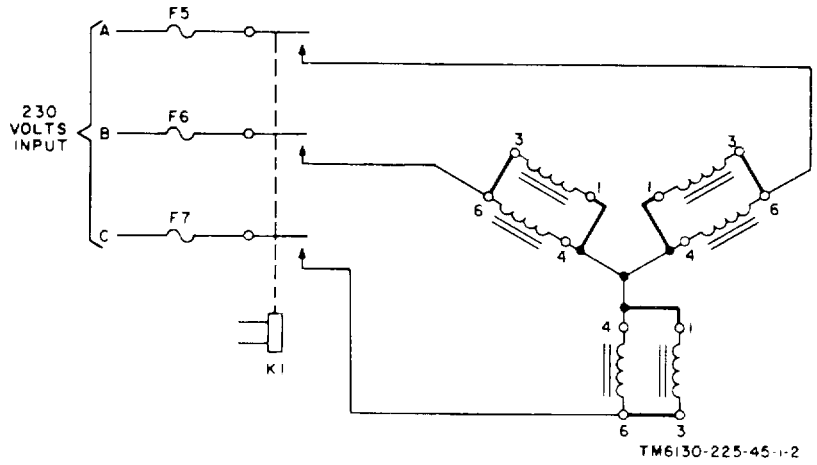


Figure 1-3. Connections to power transformer T1 primary winding for 230-volt input, simplified schematic diagram.

closed (interlock switch S3 is closed), the ON-OFF switch is set to ON, and the HOURS timer switch is at a setting other than 0 (timer contacts 7 and 8 are closed). When these three conditions are met, start relay K1 is activated and ac power is applied through the now-closed contacts of relay K1 to power transformer T1.

1-6. Rectifier

(fig. 1-6)

a. The rectifier circuit includes the three secondary windings of transformer T1, saturable reactor L1A, L1B, L1C, and diode rectifiers CR4 through CR9. The secondary windings of transformer T1 are connected in a delta configuration as shown in figure 1-6. Each secondary winding applies an ac voltage to a bridge rectifier circuit consisting of four of the six diodes (CR4 through CR9). The top secondary winding of transformer T1 is associated with the bridge rectifier consisting of diodes CR4, CR6, CR7, and CR9. Similarly, the middle and bottom windings are associated with other diodes in bridge rectifier configurations. The simplified diagram (fig. 1-6) and this explanation are confined to the top winding and associated diodes. The action of the saturable reactor in controlling the amount of voltage applied to the bridge rectifier is discussed in paragraph 1-7.

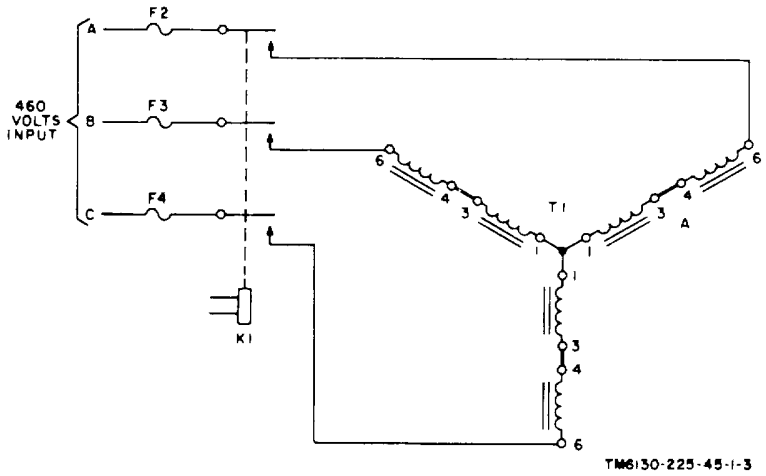


Figure 1-4. Connections to power transformer T1 primary winding for 460-volt input, simplified schematic diagram.

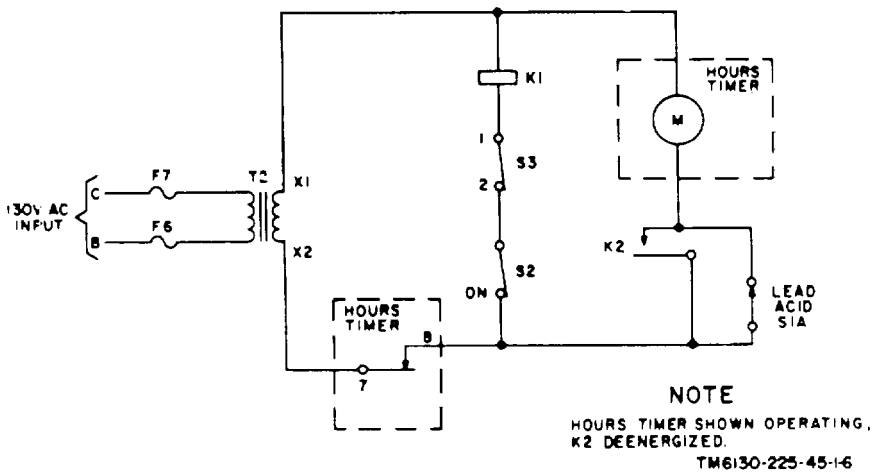


Figure 1-5. Input control, simplified schematic diagram.

b. When the ac voltage half-cycle occurs, the secondary winding at terminal 8 becomes positive with respect to terminal 7, diodes CR4 and CR9 become forward-biased, and diodes CR6 and CR7 become reverse-biased. Current flows from terminal 7 through diode CR9, the battery load, and diode CR4 to terminal 8. This current pulse is also a dc voltage of the same polarity applied to the battery under charge.

1-7. Control of Saturation Winding

(fig. 1-7)

a. The output de power applied to the battery under charge is controlled as to voltage and charging current by the current in the saturation winding of saturable reactor L1A, L1B, L1C (fig. 4-2 and 4-3). This current is, in turn controlled by the magnetic amplifier (L2A, L2B, and L2C) and the CHARGE RATE ADJUST circuitry.

b. Ac power is obtained from an autotransformer winding of T1 and is applied to CHARGE RATE ADJUST transformer T3. Setting of the slider of T3 determines the voltage input to T4. As the arm slides toward the top of the winding, the voltage increases; sliding the arm toward the lower end of T3 reduces the ac input to T4. The secondary voltage of T4 is applied to the bridge rectifier consisting of diodes CR3A and CR3B and silicon-controlled rectifiers SCR1 and SCR2.

c. Current flows through the bridge circuit only when the silicon-controlled rectifiers (SCR1 and SCR2) are pulsed with a positive voltage applied to the gate terminals. The required voltage is varied by the ac input to the bridge, as controlled by the CHARGE RATE ADJUST setting.

d. The gating pulse is obtained from the magnetic amplifier circuit as follows:

(1) An ac input, obtained from the same winding of T1 as the input for the CHARGE RATE ADJUST circuit, is applied to T5.

(2) The center-tapped secondary of T5 is wound to provide the same polarity to diodes CR1 and CR2; therefore, the diodes operate as independent half-wave rectifiers. When the tap (indicated as RED) of T5 is positive, the tap (indicated as YEL) is also positive. This action forward-biased diodes CR1 and CR2 and causes simultaneous conduction through load resistors R1 and R2. This current produces voltages across R1 and R2 of the polarity shown in figure 1-7, that is, a positive pulse is developed and applied for the gates of SCR1 and SCR2.

(3) These positive pulses permit conduction through SCR1 and SCR2. The amount of conduction depends on the time of firing. Firing near the peak of the alternation provides greater output.

e. When the RED and YEL taps of the secondary of T5 are negative, during the next alternation of the ac input to T5, diodes CR1 and CR2 are reverse-biased to cutoff. Consequently, the positive pulse (the trigger) is removed from the gates of SCR1 and SCR2, causing SCR1 and SCR2 to turn off.

f. To this point, conduction of the bridge takes place on the positive pulse obtained from the magnetic amplifier circuit. Since the amount of conduction

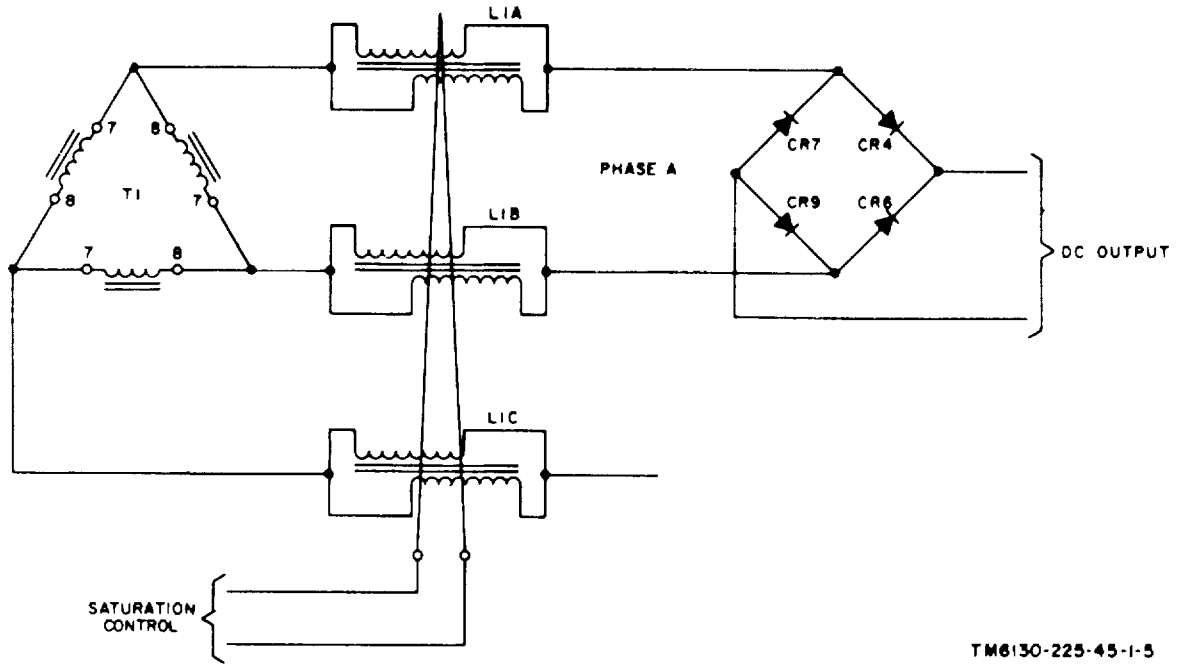


Figure 1-6. Rectifier, simplified schematic diagram.

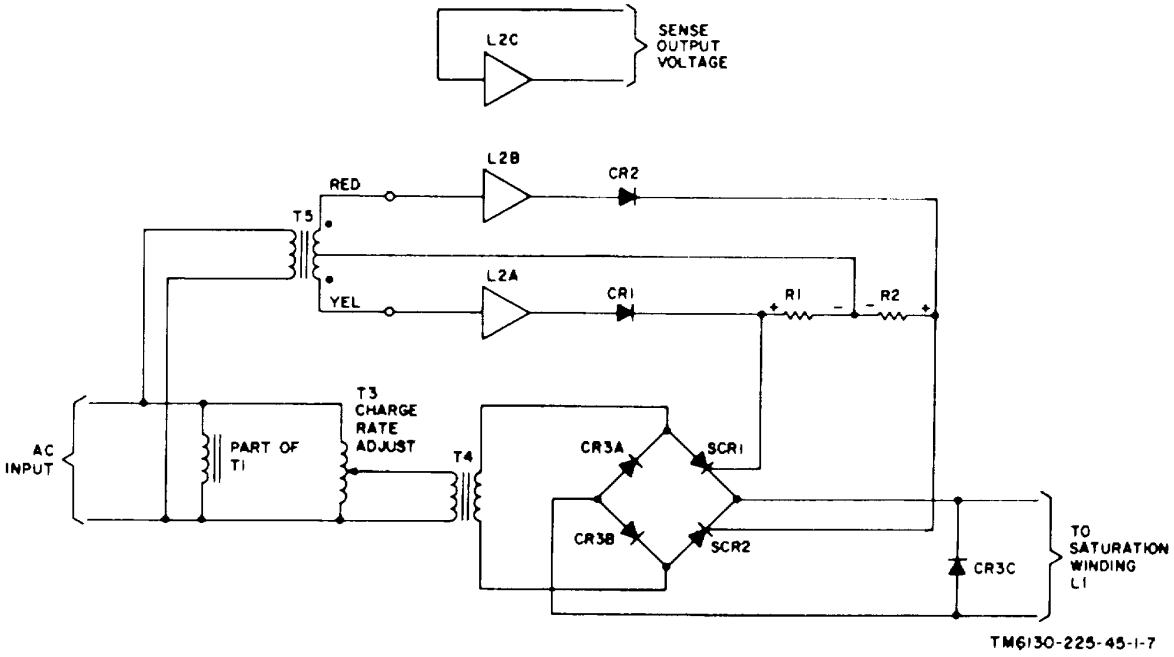


Figure 1-7. Saturation current control to L1A, L1B, and L1C, simplified schematic diagram.

depends on the timing of the pulse, it must be determined what controls pulse timing (*g* below).

g. When the top of transformer T4 secondary is positive, a forward bias is applied to SCR1 and CR3B. At the same point in the ac cycle, the input applied to T5 causes a positive pulse to be developed through CR1 and biases SCR1 for conduction. Current then flows

from the lower terminal of T4 through CR3B, saturation windings L1A, L1B, L1C, and SCR1, and returns to the top of T4. No current flows through CR3A and SCR2 because they are reverse-biased during this alternation of T4. The positive pulse on the gate of SCR2 cannot cause conduction. On the next alternation when the bottom of T4 becomes positive, diodes CR3A and SCR2 are forward-biased. Rectifier SCR2 has a positive gate pulse and current again flows through the bridge but from the top to T4 through CR3A, the saturation windings, SCR2 and to the bottom of T4. Diode CR3C, connected across the bridge circuit, aids in controlling the conduction period of SCR1 and SCR2. Current through the saturation winding for L1A, L1B, and L1C is always in one direction and is therefore a pulsating dc. The maximum amount of current flow depends on the ac voltage of T4, which is set by the CHARGE RATE ADJUST, and the gating pulses from the magnetic amplifiers. These gating pulses are a function of the sense voltage which is obtained from the dc output of the battery charger.

1-8. Sensing Circuit

(figs. 1-8, 1-9, and 4-3)

a. The charging voltage is applied to two sensing circuits as follows:

(1) Cutoff relay K2, reference Zener diode CR11, adjustable resistor R3, voltage divider consisting of R4, tapped resistor R5, and adjustable resistor R6.

(2) The circuit connected across the output consisting of reference Zener CR10 and series resistor R7.

(3) The purpose and operation of each sensing circuit is explained in *b* and *c* below.

b. Nickel-iron batteries must be charged for 1 hour after they reach a charge of 1.65 volts per cell (49.5 volts total for a 30-cell nickel-iron battery). The battery charger accomplishes this by starting the HOURS timer only when the proper cell voltage has been reached as follows:

(1) Variable resistor R3 is set to permit reference Zener diode CR11 to conduct when the output voltage reaches 49.5 volts.

(2) When CR11 conducts, cutoff relay K2 operates, closing the normally open contacts of K2. Contact closure applies ac voltage from transformer T2 to the HOURS timer motor.

(3) The HOURS timer motor starts, continues for the 1 hour required, and then turns off the input power to the battery charger.

c. The output voltage regulation of the battery charger is obtained through voltage-divider output sensors R4, R5, and R6 and the action of the winding of L2C. When LEAD ACID-NICKEL IRON switch S1 is placed in the LEAD ACID position (A fig. 1-9), a constant voltage obtained from reference diode CR10 is applied to the windings of L2C. During the charge cycle, the contacts of HOURS timer M3 apply a voltage from tap 3 of R5 to the other end of the winding of L2C. If the output voltage increases, the voltage across R5 increases in proportion to the increase in the output voltage. This increase causes a current flow through the winding of L2C which controls the current flow through L2A and L2B. The magnitude of this current flow determines the voltage drop across R1 and R2; therefore, the voltage applied to the gate of SCR1 and SCR2 causes a change in current flow for the control winding of L1A, L1B, and L1C that reduces the output of rectifier diodes CR4 through CR9. This action compensates for the original output voltage rise thereby maintaining the output voltage at a more constant dc level. During the equalization charge time (final 2 hours of charge cycle) of a lead-acid battery (B, fig. 1-9), HOURS timer M3 contacts apply a lower voltage from tap 2 of R5 to the winding of L2C. The regulating action is the same as during charge, but a lower voltage level

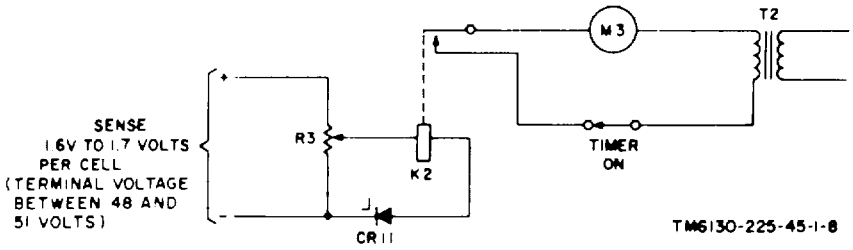


Figure 1-8. HOURS timer start circuit for nickel-iron battery, simplified schematic drawing.

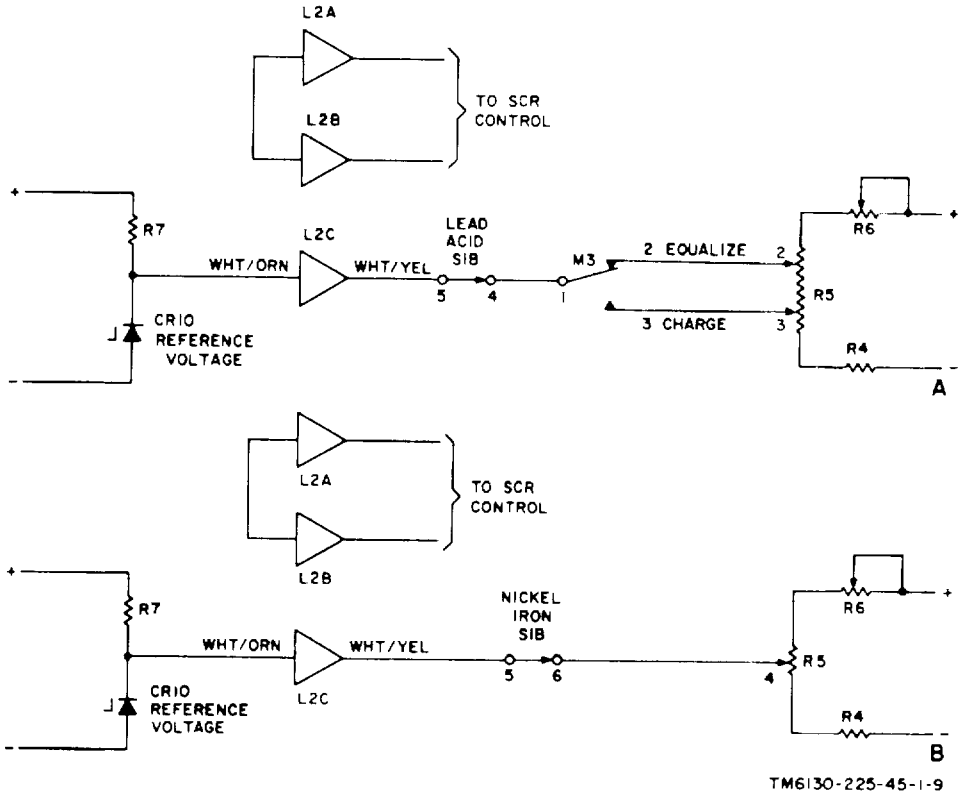


Figure 1-9. Output voltage regulation, simplified schematic diagram.

provides a higher charging current to equalize the battery. Regulation during nickel-iron battery charging is the same, but the controlling output voltage is taken from tap 4 of R5 (B, fig. 1-9), a lower positive voltage point.

1-9. Monitor Circuits and Output Protection (fig. 4-3)

VOLTS PER CELL meter M1 connected across the output of the battery charger indicates the battery charging cell voltage when the battery charging cell voltage when the battery charger is on, or the cell voltage of the battery connected to the battery charger when the battery charger is off. The upper scale is calibrated in volts per cell for lead-acid batteries and the lower scale is calibrated in volts per cell for nickel-iron batteries. AMPERES meter M2 is connected in series with the negative output lead and the battery being charged. The scale on AMPERES meter M2 is calibrated to read to a maximum of 300 amperes, when used with shunt RS1. Surge voltage is prevented from damaging the battery charger by the action of surge suppressor diode CR12. If pulses in excess of 75 volts appear across the output, surge suppressor CR12 conducts presenting a low impedance to the surge, thereby reducing the harmful effects. Output circuit protection against excess current loads is provided by fuse F1.

CHAPTER 2

TROUBLESHOOTING

Section I. GENERAL TROUBLESHOOTING INFORMATION

Warning. **When servicing the battery charger, be extremely careful of the high voltages. Be sure that the input power source is off before opening the hinged front panel to reach the interior of the unit. If tests must be performed with the power applied to the battery charger, be careful of the input voltage which is present at fuses F2 through F4 (460-volt input) and F5 through F7 (208- or 230-volt input), contacts of relay K1, and terminals 1, 2, 3, and 4 of terminal board TB2.**

2-1. General Instructions

Troubleshooting at the general support and depot maintenance category includes the techniques required to isolate a defective part. Paragraph 2-4*d* provides the troubleshooting chart to be used by the repairman.

2-2. Organization of Troubleshooting Procedures

a. General. The first step in servicing a defective PP-2926A/U is to sectionalize the fault. Sectionalization means tracing the fault to the input or output portion of the unit. The second step is to localize the fault. Localization means tracing the fault to a defective circuit responsible for the condition. Some faults, such as burned-out resistors arcing, and shorted transformers, can often be located by sight, smell, and sound. The majority of faults, however, must be isolated by checking voltages and resistance.

b. Sectionalization and Localization. The tests given in (1) and (2) below will reduce unnecessary work, and aid in tracing trouble in a defective battery charger. Charger, Battery PP-2926/U is a single unit, and is theoretically divided into several sections for convenience in troubleshooting: ac input, rectifiers, and dc output. Also, ac control circuitry, and output sensing sections are defined as aids to sectionalizing.

(1) *Visual inspection.* The purpose of visual inspection is to locate faults without testing or measuring circuits. All meter readings on the front panel of the battery charger should be observed and an attempt make to sectionalize and localize the fault to a particular part.

(2) *Operational test.* Operational test frequently indicate the general location of trouble. In many instances, the tests will help in determining the exact nature of the fault. The operational procedure given in TM 11-6130-225-12-1, with the normally expected indications called out in the procedures, provide good operational tests.

(3) *Troubleshooting chart.* The trouble-shooting chart (para. 2-4*d*) list symptoms of common troubles and gives corrective measures (or references). The chart cannot include all trouble symptoms that may occur; therefore, the repairman should use this chart as a guide in analyzing symptoms that may not be listed.

(4) *Registor color code diagram.* The color code diagram for resistors (fig. 4-2) provides pertinent resistance, wattage rating, and tolerance information.

(5) *Component locations.* Figures 2-1 through 2-4 show the component locations on the PP-2926A/U.

2-3. Test Equipment Required

Multimeter TS-352B/U is required for troubleshooting. It is used for continuity tests and resistance and ac or dc voltage measurements.

2-4. Localizing Troubles

a. General. The troubleshooting chart (*d* below) outlines procedures for localizing troubles within the various circuits of the battery charger. Refer to figures 2-1 through 2-4 for parts location. Refer to the schematic diagram (fig. 4-3) to identify circuit components. Depending on the nature of the operational symptoms,

one or more of the localizing procedures will be necessary. When trouble has been localized to a particular circuit, use voltage and resistance measurements to isolate the trouble to a particular part.

b. Use of Troubleshooting Chart. When an abnormal symptom is 'observed in the equipment, look for a description of the symptom in the Symptom column, and perform the corrective measure given in the Corrective measures column.

c. Conditions to Test. All checks outlined in the troubleshooting chart are to be conducted with the battery charger connected to a 208-, 230-, or 460-volt power source. The battery charger should be connected to a battery load (lead-acid or nickel-iron, whichever is required). When necessary to measure internal voltages with the door open, door interlock S3 must be closed to permit power to be applied to the battery charger. This is accomplished by inserting a screw, or other object to depress the interlock, and taping it in place. Upon completion, remove the tape and the object that was inserted.

d. Troubleshooting Chart.

Warning: **When troubleshooting the battery charger, be extremely careful of the high voltages. Be sure that the input power is off before opening the hinged front panel to reach the interior of the unit. If tests must be performed with the power applied to the battery charger, be careful of the input voltage which is present at fuses F2, F3, and F4 (460-volt input) for F5, F6, and F7 (208 or 230-volt input), contacts of relay K1, and terminals 1, 2, 3, and 4 of terminal board TB2.**

Symptom	*Probable trouble*	*Corrective measures*
1. POWER ON indicator lamp DS1 does not illuminate with ON-OFF switch S2 set to ON and HOURS timer M3 set for any time other than 0.	*a.* No ac power applied.	*a.* Check for input power.
	b. Door interlock S3 open.	*b.* Close door if open; replace interlock S3, if defective.
	c. Lamp DS1 burned out.	*c.* Replace DS1.
	d. Input power fuses not seated properly or open.	*d.* Seat fuses or replace, as necessary.
	e. Start relay K1 not energized.	*e.* Check continuity of K1, replace if defective.
	f. HOURS timer contacts 7 and 8 not closed.	*f.* Check HOURS timer, replace if necessary.
2. POWER ON indicator lamp DS1 illuminates and AMPERES meter M2 indicates 0.	*a.* Defective power transformer T1.	*a.* Replace defective power transformer.
	b. Fuse F1 open.	*b.* Replace defective fuse F1.
	c. AMPERES meter M2 defective.	*c.* Replace defective AMPERES meter.
	d Open in load.	*d.* Check load connections.
3. Low output voltage.	*a.* Defective rectifier CR4, CR5, CR6, CR7, CR8, or CR9.	*a.* Replace defective rectifier.
	b. Defective saturable reactor L1 (A, B, and C).	*b.* Replace defective saturable reactor.
	c. Defective power transformer T1.	*c.* Replace defective transformer.
4. Battery charger continues to provide charging current with HOURS timer at 0.	Defective HOURS timer.	Replace defective HOURS timer.
5. VOLTS PER CELL meter M1 indicates between 1.6 and 1.7 when charging nickel-iron battery, and HOURS timer does not start.	*a.* Cutoff rheostat R3 improperly adjusted.	*a.* Adjust R3 (para. 2-7).
	b. Defective Zener diode CR11.	*b.* Replace defective CR11.
	c. Defective cutoff relay K2.	*c.* Replace defective K2.
6. HOURS timer M3 reaches EQUALIZE 2 and AMPERES meter M2 does not indicate an increase in charging current for lead-acid battery.	*a.* Taps on resistors R5 and R6 improperly set.	*a.* Adjust R6 and R6 (para. 2-6).
	b. HOURS timer M3 defective.	*b.* Replace defective M3.
7. Charging current is greater than 180 amperes.	CHARGE RATE ADJUST control improperly set.	Adjust CHARGE RATE ADJUST control (para. 2-8).

Section II. REPAIRS AND ADJUSTMENTS

2-5. General Parts Replacement Techniques

Warning: **When repairing or performing adjustments to the battery charger, be extremely careful of the high voltages.**

All battery charger parts can be reached and replaced easily without special procedures. Refer to figures 2-1 through 2-4 for the location of all parts. Connect replaced items according to the schematic diagram (fig. 4-3).

2-6. Adjustment of Bands on Resistors R5 and R6

a. General. The bands on resistors R5 and R6 must be reset for any of the following conditions:

(1) HOURS timer between 2 and 8 hours, charging current for a lead-acid battery at 10 amperes, and the VOLTS PER CELL meter is not between 2.3 and 2.4 (output voltage between 41.4 and 43.2 volts).

(2) With lead-acid battery being charged, HOURS timer less than 2 hours, and VOLTS PER CELL meter is *not* between 2.4 and 2.5 (output voltage between 43.2 and 45.0 volts).

(3) Charging current for nickel-iron battery at 10 amperes and VOLTS PER CELL meter is *not* between 1.65 and 1.75 (output voltage between 49.5 and 52.5 volts).

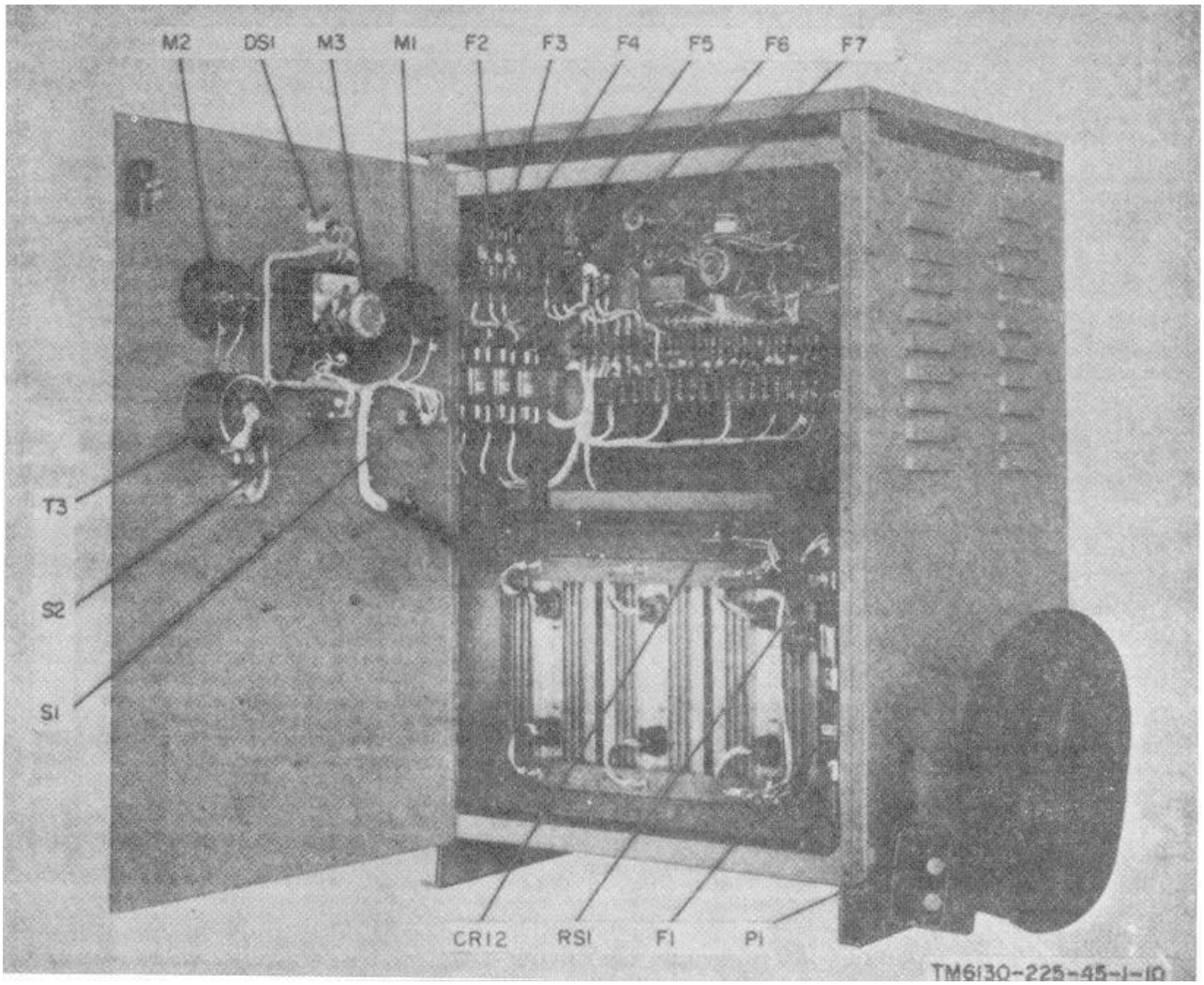


Figure 2-1. Input power fuses and panel components location.

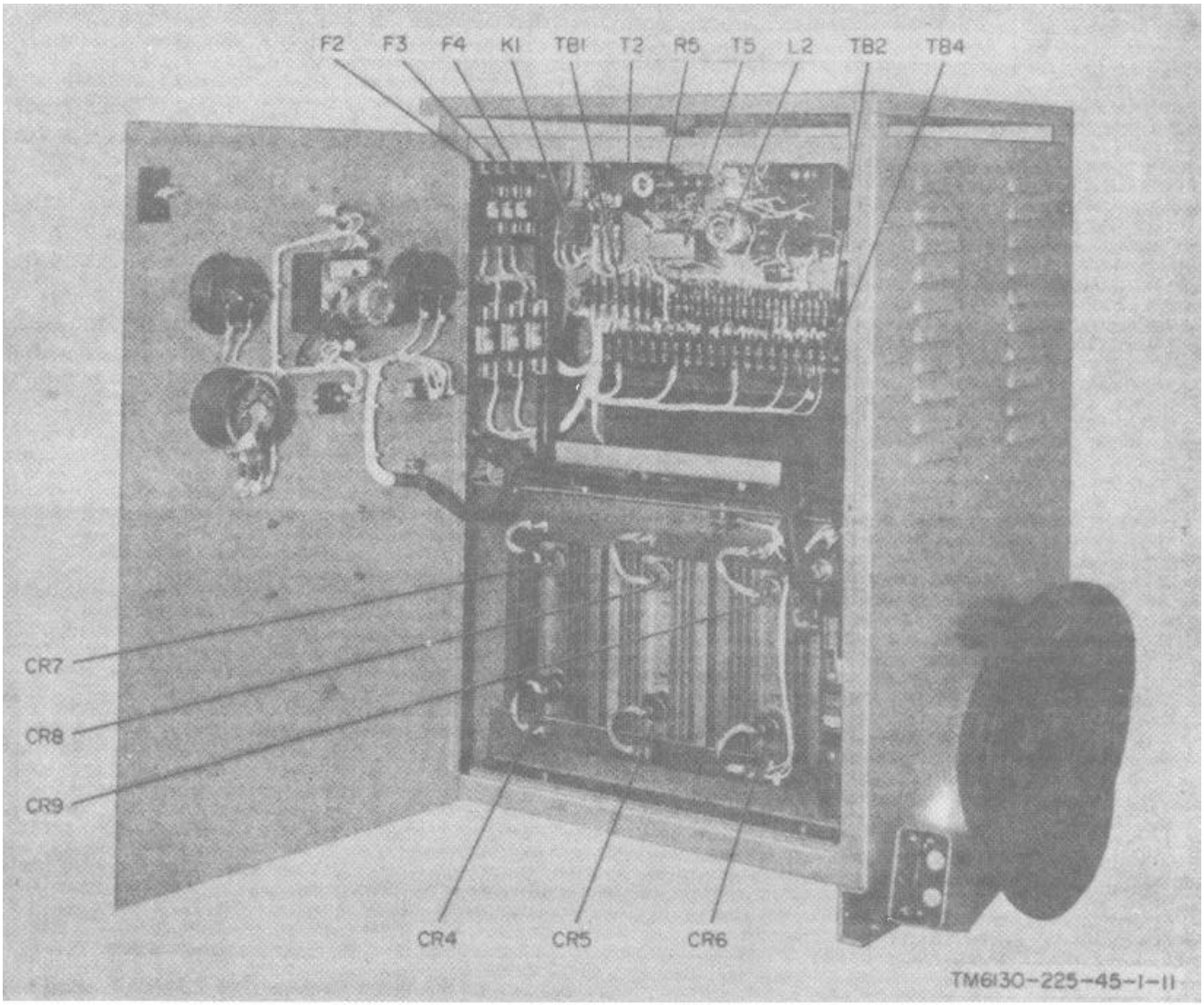


Figure 2-2. Interior of chassis components location.

b. Adjustment Procedure. Reset the bands on R5 and R6 as follows:

(1) Set the ON-OFF switch to OFF, the NICKEL IRON-LEAD ACID switch to LEAD ACID, and the HOURS timer switch to LEAD ACID 8.

(2) Remove the three screws on the front panel that allow the front panel to swing open on its hinge. After swinging the front panel to the open position, insert a screw or other suitable object into the door interlock switch to depress the door interlock switch, and tape it in place.

(3) Connect a discharged lead-acid battery to the battery charger.

Caution: **Be sure to set the ON-OFF switch to OFF before resetting the bands on R5 and R6.**

(4) Set the ON-OFF switch to ON and allow the charging current to taper to 10 amperes as monitored on the AMPERES meter. As soon as the charging current reaches 10 amperes, set the ON-OFF switch to OFF, and adjust band 1 on R5 until an indication of between 2.3 and 2.4 (output voltage between 41.1 and 43.2 volts) is obtained on the VOLTS PER CELL meter. The position of band 1 on R5 must be between 8 and 10 ohms resistance between band 1 on R5 and the nearest end of R5. If the resistance between band 1 on R5 and the nearest end of R5 is not between 8 and 10 ohms,

adjust the band on R6, and repeat the adjustment on band 1 on R5 until its resistance between 8 and 10 ohms when the VOLTS PER CELL meter indicates between 2.3 and 2.4.

(5) After band 1 on R5 and the band on R6 are set to provide an indication of between 2.3 and 2.4 on the VOLTS PER CELL meter when the charging current for the lead-acid battery is 10 amperes, continue the charging procedure until the HOURS timer is between 1 hour and 2 hours. Adjust band 2 on R5 until an indication of between 2.4 and 2.5 (output voltage between 43.2 and 45.0 volts) is obtained on the VOLTS PER CELL meter.

(6) After band 2 on R5 is set to provide an indication of between 2.4 and 2.5 on the VOLTS PER CELL meter, continue the charging procedure until the HOURS timer reaches 0 to fully charge the lead-acid battery.

(7) Set the ON-OFF switch to OFF and disconnect the lead-acid battery.

(8) Connect a discharged nickel-iron battery to the battery charger.

Caution: **Be sure to set the ON-OFF switch to OFF before resetting band 3 on R5.**

(9) Set the NICKEL IRON-LEAD ACID switch to NICKEL IRON, the HOURS timer to NICKEL IRON 1, the ON-OFF switch to ON, and allow the charging current to taper to 10 amperes as monitored on the AMPERES meter. As soon as the charging current reaches 10 amperes, set the ON-OFF switch to OFF, and adjust band 3 on R5 until the VOLTS PER CELL meter indicates between 1.65 and 1.75 (output voltage between 49.5 and 52.5 volts).

(10) After band 3 on R5 is set to provide an indication of between 1.65 and 1.75 on the VOLTS PER

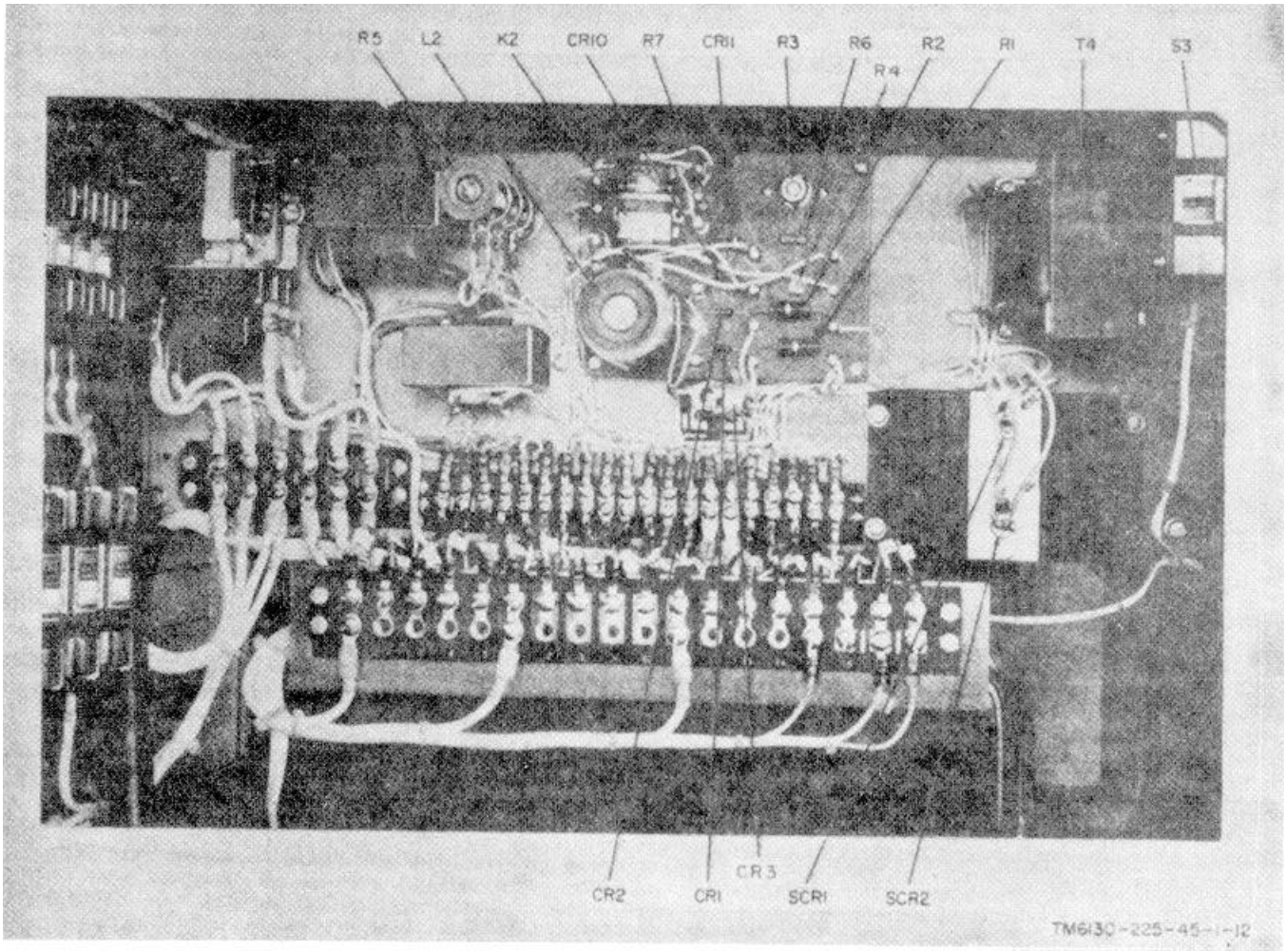


Figure 2-3. Top of chassis components location.

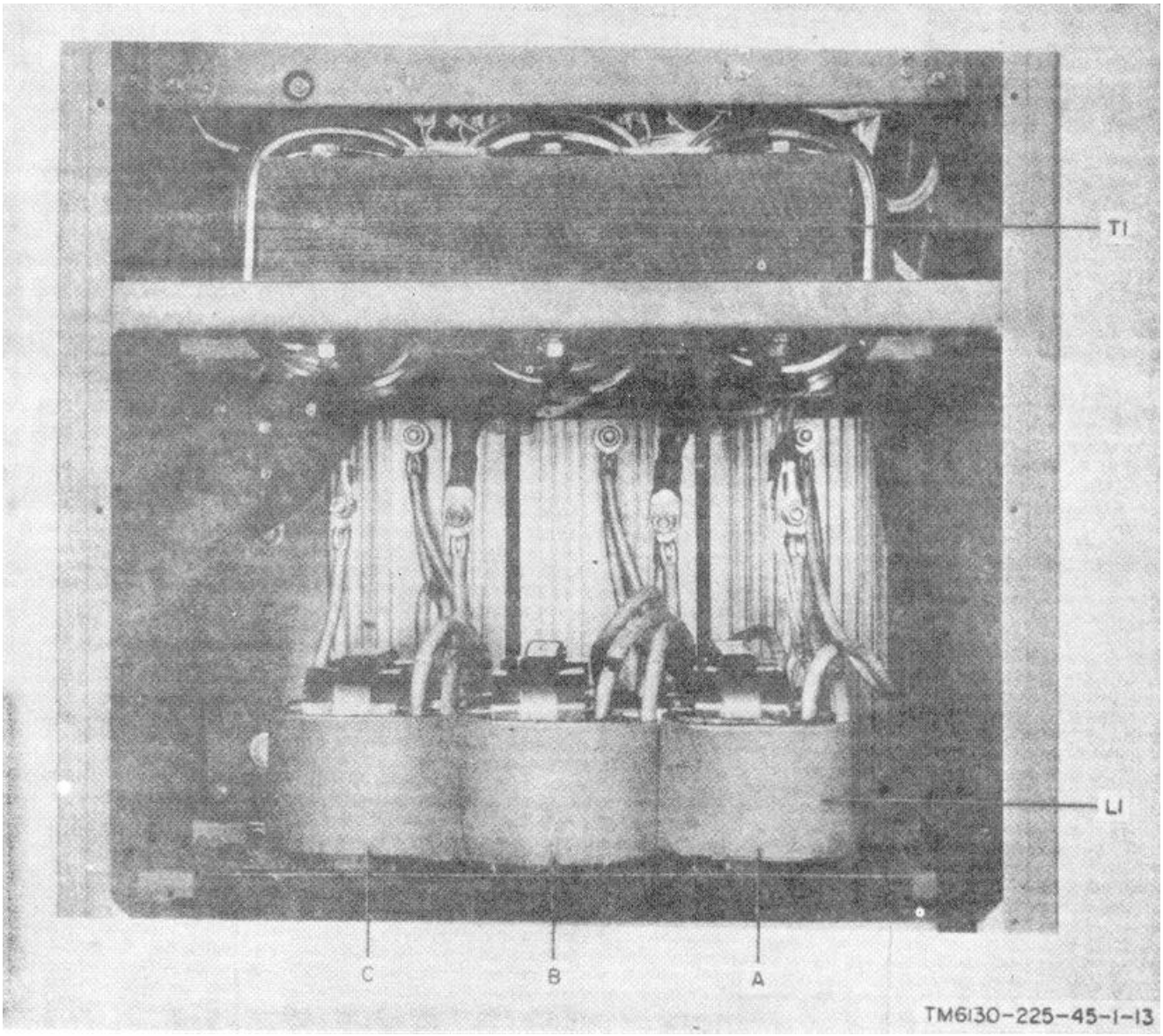


Figure 2-4. Location of power transformer T1 and saturable reactor L1 (A, B, and C).

CELL meter when the charging current for the nickel-iron battery is 10 amperes, continue the charging procedure until the HOURS timer reaches 0 to fully charge the nickel-iron battery.

(11) Set the ON-OFF switch to OFF, disconnect the nickel-iron battery, remove the tape and screw or object inserted in the interlock switch, close the front panel, and replace the three screws that lock the front panel to the case.

2-7. Adjustment of Cutoff Rheostat R3

When charging nickel-iron batteries, the setting of cutoff rheostat R3 provides the operating potential required to energize cutoff relay K2. The HOURS timer will only start when cutoff relay K2 is energized. Cutoff relay K2 should energize when the charging voltage for the nickel-iron battery is between 48 and 51 volts (VOLTS PER CELL meter indicates between 1.6 and 1.7). If cutoff relay K2 does not energize when the VOLTS PER CELL meter indicates between 1.6 and 1.7, adjust cutoff rheostat R3 as follows:

a. Set the ON-OFF switch to OFF, the NICKEL IRON-LEAD ACID switch to NICKEL IRON, and the HOURS timer to NICKEL IRON 1.

b. Remove the three screws on the front panel that allow the front panel to swing open on its hinge. After swinging the front panel to the open insert a screw or other suitable object into the door interlock switch to depress the door interlock switch, and tape it in place.

c. Connect a discharged nickel-iron battery to the battery charger.

Caution: **Be sure to set the ON-OFF switch to OFF before adjusting cutoff rheostat R3.**

d. Set the ON-OFF switch to ON and allow the charging voltage to rise to between 1.6 and 1.7 as monitored on the VOLTS PER CELL meter. As soon as the charging voltage reaches between 1.6 and 1.7 per cell, use an insulated screwdriver and adjust cutoff rheostat R3 to energize cutoff relay K2 when the VOLTS PER CELL meter indicates between 1.6 and 1.7.

e. After cutoff rheostat R3 is adjusted to energize cutoff relay K2 when charging voltage is between 1.6 and 1.7, continue the charging procedure until the HOURS timer reaches 0 to fully charge the nickel-iron battery.

f. Set the ON-OFF switch to OFF, disconnect nickel-iron battery, remove the tape and screw or object inserted in the interlock switch, close the front panel, and replace the three screws that lock the front panel to the case.

2-8. Adjustment of CHARGE RATE ADJUST Control

The maximum initial charging current is established by the setting of the CHARGE RATE ADJUST control. The built-in characteristics of the battery charger provides a tapering charge current for the battery being charged. Adjust the CHARGE RATE ADJUST control as follows:

a. Set the ON-OFF switch to OFF, the NICKEL IRON-LEAD ACID switch to LEAD ACID, the HOURS timer switch to LEAD ACID 8, and unlock and rotate the CHARGE RATE ADJUST control fully counterclockwise.

b. Connect a fully discharged lead-acid battery (specific gravity approximately 1.160) to the battery charger.

c. Set the ON-OFF switch to ON, monitor the AMPERES meter indication, and adjust the CHARGE RATE ADJUST control for an indication of approximately 185 amperes; then immediately rotate the CHARGE RATE ADJUST control counterclockwise for an indication of between 170 and 180 amperes and lock the CHARGE RATE ADJUST control.

d. Continue the charging procedure until the HOURS timer reaches 0 to fully charge the lead-acid battery.

e. Set the ON-OFF switch to OFF and disconnect the equipment.

CHAPTER 3

GENERAL SUPPORT TESTING PROCEDURES

3-1. General

a. Testing procedures are prepared for use by field maintenance shops and service organizations responsible for general support maintenance of electronic equipment to determine the acceptability of repaired equipment. These procedures set forth specific requirements that repaired equipment *must* meet before it is returned to the using organization. A summary of the performance standards is given in paragraph 3-6.

b. Comply with the instructions preceeding each chart before proceeding to the chart. Perform each step in sequence. Do not vary the sequence. For each step, perform all the actions required in the *Control settings* columns; then perform each specific test procedure and verify it against its performance standard.

3-2. Test Equipment, Tools, and Materials

All test equipment, tools, and materials required to perform the testing procedures given in this chapter are listed in *a*, *b*, and *c*, below and are authorized under TA 11-17 and TA 11-100(11-17).

a. Test Equipment.

Nomenclature	*Federal stock No.*	*Technical manual*
Multimeter TS-352B/U	6625-553-0142	TM 11-6625-366-15
Insulation Breakdown Test Set AN/GSM-6	6625-542-1331	TM 11-6625-273-12
Ohmmeter ZM-21A/U	6625-581-2466	TM 11-2050

b. Tools. All the tools required are included in Tool Kit, Electronic Equipment TK-105/G.

c. Materials

(1) Two-foot length of AWG #10 wire.
(2) Known good 18-cell lead-acid battery.
(3) Known good 30-cell nickel-iron battery.

3-3. Physical Tests and Inspection

a. Test Equipment and Materials. None required.

b. Test Connections and Conditions. No connections are necessary. Swing the front panel door open.

c. Procedure.

Step No.	*Test equipment*	*Control settings* *Equipment under test*	*Test procedure*	*Performance standard*
1	None.	Controls may be in any position.	a. Inspect case and chassis for damage, missing parts, and condition of paint. *Note.* Touchup painting is recommended instead of refinishing whenever practical: screwheads, binding posts, receptacles and other plated parts will not be painted or polished with abrasives. b. Inspect all controls and mechanical assemblies for loose or missing screws, bolts, and nuts.	a. No damage evident or parts missing. External surfaces intended to be painted will not show bare metal. Panel letter ing will be legible. *b*. Screws, bolts and nuts will be tight. None missing.

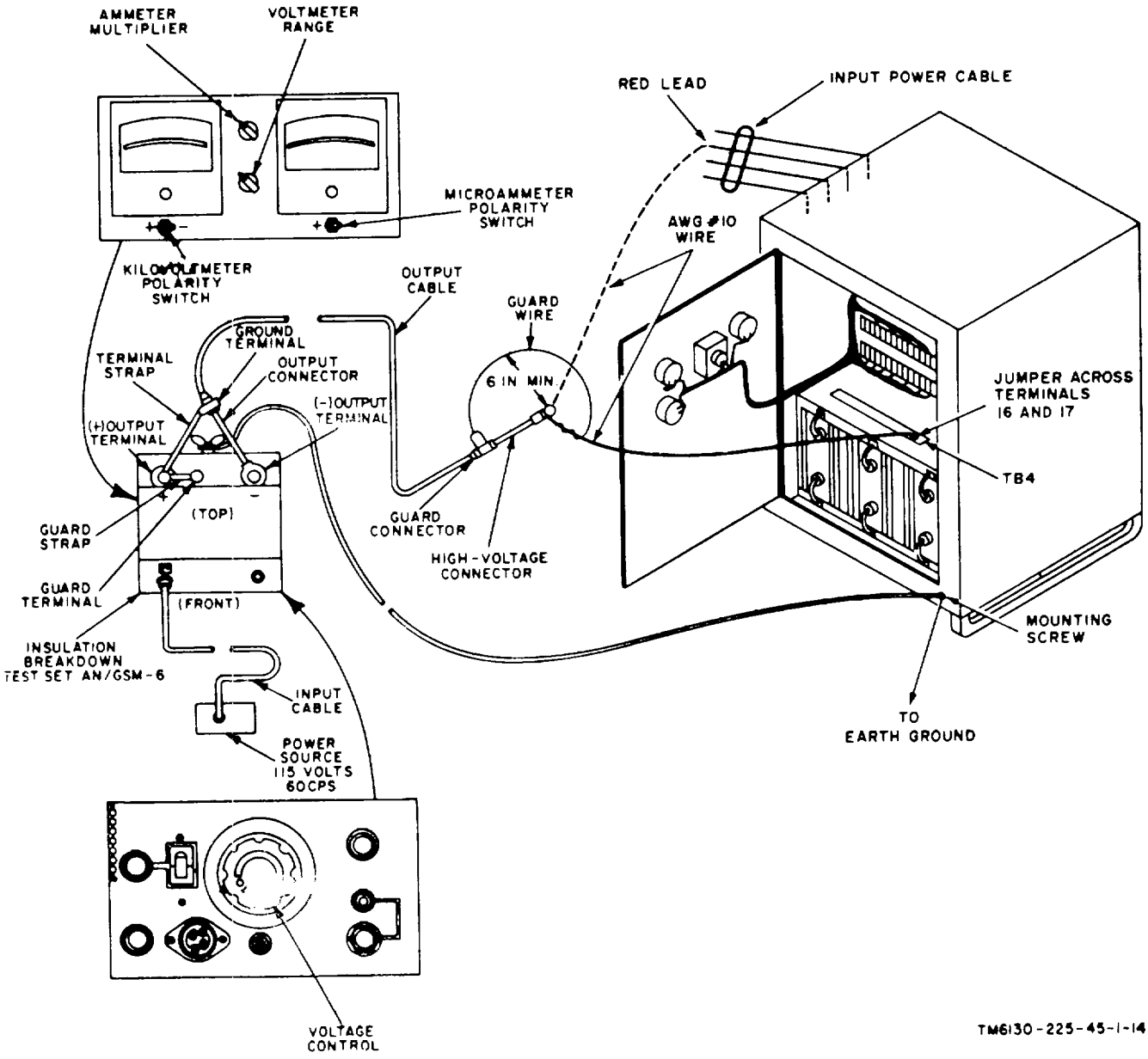


Figure 3-1. Connection diagram for insulation breakdown test.

3-4. Insulation Breakdown Test

a. Test Equipment and Materials.

(1) Insulation Breakdown Test Set AN/GSM-6.
(2) Two-foot length of AWG #10 wire.
(3) Ohmmeter ZM-21A/U.

b. Test Connections and Conditions. Turn off all power to Charger, Battery PP-2926A/U.

c. Procedure.

Control settings

Step No.	*Test equipment*	*Equipment under test*	*Test procedure*	*Performance standard*
1	None	None	*a*. Connect the output connector (fig. 3-1) to the negative (-) output terminal of AN/GSM-6.	*a*. None.
			b. Connect the terminal strap to the positive (+) output terminal of AN/GSM-6 (fig. 3-1).	*b*. None.
			c. Lower the high-voltage caution plate of AN/GSM-6 against the output terminal.	*c*. None.
			d. Connect the output cable of AN/GSM-6 (fig. 3-1) to PP-2926A/U as follows: (1) Loosen the screws that hold the jumper straps on terminal board TB4. Connect one end of the 2-foot length of AWG #10 wire under the jumper straps and tighten the screws. (2) Connect the high-voltage connection of AN/GSM 6 to the other end of the 2-foot length of AWG #10 wire. **Caution: Be sure to maintain at least s 6-inch clearance between the guard wire and high-voltage lead, and between the guard wire and the frame of PP-2926A/U during the tests.** (3) Connect a guard wire from guard connector of AN,/ GSM-6 to the insulation of the AWG #10 wire. (4) Connect the chassis of PP-2926A/U to earth ground.	*d*. None.
2	AN/GSM-6 AMMETER MULTIPLIER switch: 1000 Kilovoltmeter polarity switch -. Microammeter polarity switch -. VOLTMETER RANGE switch: 5. Voltage control: 0. High-voltage caution plate raised and secured with chain. Circuit breaker at ON.		a. Press high-voltage push and rotate control clockwise while watching the kilovoltmeter and microammeter. Continue until maximum voltage (1,920 volts) of test is reached. b. Maintain the output voltage for between 60 and 90 seconds.	a. Reading of approximately 1.92 kilovolts on 5Kv scale. b. No insulation breakdown. (Opening of the circuit breaker switch, lighting of the DC OVERLOAD indicator, or increased wavering of the microammeter pointer of the AN/ GSM-6 are indica-

Step No.	Test equipment	Control settings / Equipment under test	Test procedure	Performance standard
				tions that the inrulation is defective).
			c. Set voltage control to 0, circuit breaker switch to OFF, and allow AN/GSM-6 to discharge (through its internal resistance). When kilovoltmeter reading is nearly zero, short the output terminals by lowering the high-voltage caution plate.	*c.* None.
			d. Disconnect the 2-foot length of AWG #10 wire and connect the high-voltage connector of AN/GSM-6 to the input red lead (top terminal of fuse F3) of PP-2926A/U. ***Caution:*** **Be sure to maintain at least a 6-inch clearance between the guard wire and high-voltage lead, and between the guard wire and the frame of PP-2926A/U during the test.**	*d* None.
			e. Raise high-voltage caution plate and secure with chain. Set circuit breaker to ON, press high-voltage push, and rotate voltage control clockwise while watching the kilovoltmeter and microammeter. Continue until maximum voltage (1,920 volts) of test is reached.	*e*. Reading of approxlmately 1.92 kilovolts on 5-kw scale.
			f. Maintain the output voltage for between 60 and 90 seconds.	*f.* No insulation breakdown. (Opening of the circuit breaker switch, lighting of the DC OVERLOAD indicator, or increased wavering of the microammeter pointer of the AN/GSM-6 are indications that the insulation is defective).
			g. Set the voltage control to 0, circuit breaker switch to allow AN/GSM-6 to discharge (through its internal resistance). When kilovoltmeter reading is nearly zero, short the output terminals by lowering the high-voltage caution plate.	*g*. None.
			h. Disconnect the equipment.	*h*. None.
			a. Connect the ground lead of the ZM-21A/U to the frame of the PP-2926A/U.	*a*. None.
			b. Connect the line lead of the ZM-21A/U to the top of fuse F1 (fig. 2-1).	*b*. None.
			c. Operate the ZM-21A/U and observe the indication on the ZM-21A/U meter.	*c.* Meter indicates greater than 20 megohms.
			d. Disconnect the equipment.	*d*. None.

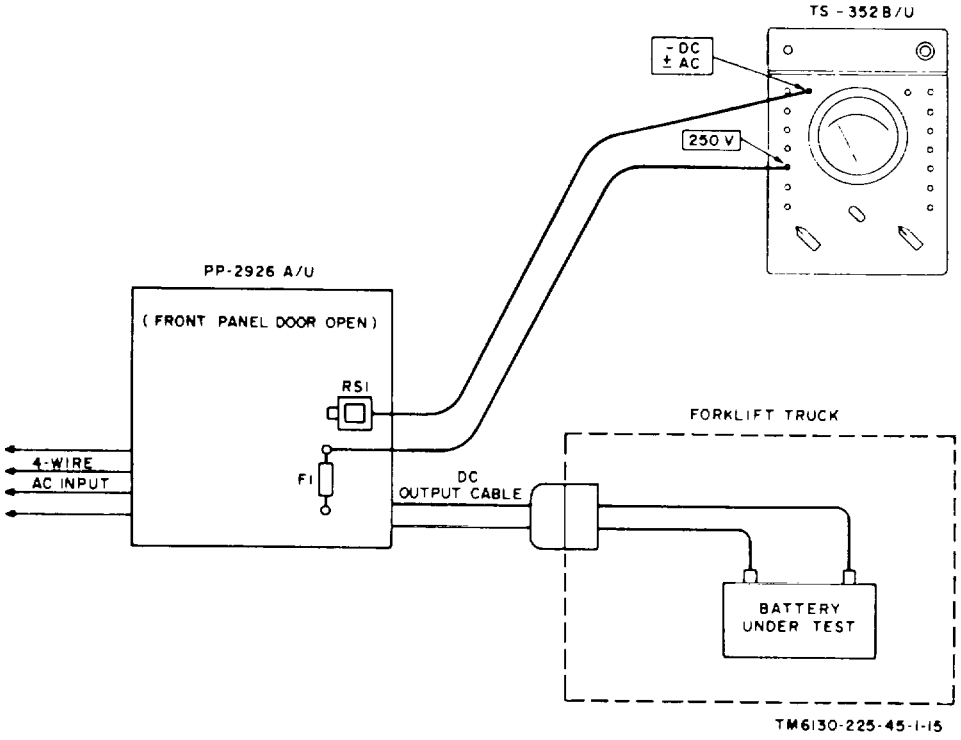


Figure 3-2. Connection diagram for performance tests.

3-5. Performance Test

a. Test Equipment and Materials.

(1) Multimeter TS-352B/U

(2) Known good 18-cell lead-acid battery in discharged state (specific gravity less than 1.190).

(3) Known good 30-cell nickel-iron battery in partial discharged state (terminal voltage not greater than 33 volts).

b. Test Connections and Conditions. Connect the equipment as shown in figure 3-2. *Do not* turn on input power to the PP-2926A/G at 208-volt, three-phase input power.)

c. Procedure.

Step No.	Test equipment	Control settings: Equipment under test	Test procedure	Performance standard
1	*TS-35B/U*	ON-OFF switch: OFF	*a*. Connect PP-2926A/U for 208-volt, three-phase operation.	*a*. None.
	FUNCTION: DIRECT	NICKEL-IRON-LEAD ACID: LEAD ACID	*b*. Connect PP-2926A/U to a 208-volt, three-phase source of input power.	*b*. None.
		HOURS timer: LEAD ACID 8	*c*. Connect the dc output cable to a forklift 18-cell lead-acid battery receptacle. (Battery in forklift should be a known good 18-cell lead-acid battery in discharged state (specific gravity less than 1.190).	*c*. None.
			d. Remove the vent caps from the battery and add distilled or de-ironized water as neces sary. Replace the vent caps. **Caution: Never smoke or light matches in the charging area.**	*d*. None.
			e. Set the ON-OFF switch on PP-2926A/U to ON, and monitor the initial battery-charging current on the PP-2926A/U AMPERES meter.	*e*. AMPERES meter reading is less than 180 amperes
			Monitor the voltage on the VOLTS PER CELL meter and TS-352B/U.	VOLTS PER CELL meter reading multiplied by 18 and TS-352B/U reading is within 5 percent
			f. Allow the charging to continue while monitoring battery-charging current.	*f*. Battery-charging current reduces
			g. Continue the charging while monitoring the HOURS timer and the AMPERES meter for a rise in battery-charging current when HOURS timer has less than 2 hours remaining.	*g*. Battery-charging carrent rises.
			h. Continue charging until HOURS timer switch reaches 0.	*h*. PP-2926A/U automatically turns off when HOURS timer reaches 0.
			i. Set the ON-OFF switch to OFF and disconnect the equipment.	*i*. None.
2	*TS-352B/U*	ON-OFF switch: OFF	*a*. Connect PP-2926A/U for 209-volt, three-phase operation.	*a*. None.
	FUNCTION: DIRECT	NICKEL IRON-LEAD ACID: NICKEL IRON	*b*. Connect PP-2926A/U to a 208-volt, three-phase source of input power.	*b*. None.
		HOURS timer: NICKEL IRON 1	*c*. Connect dc output cable to a forklift 30-cell nickel-iron	*c*. None.

Step No.	Test equipment	Control settings / Equipment under test	Test procedure	Performance standard
			battery receptacle. (battery. in forklift should be a known good 30-cell nickel-iron battery in partial discharged state (terminal voltage not greater than 33 volts)).	
			d. Remove vent caps from battery and add distilled or de-ionized water as necessary. Replace the vent caps.	d. None.
			***Caution*: Never smoke or light matches in the charging are:**	
			e. Set the ON-OFF switch on PP-2926A/U to ON, and monitor the initial battery-charging current on the PP-2926A/U AMPERES meter.	e. AMPERES meter reading is less than 180 amperes.
			Monitor voltage on VOLTS PER CELL meter and TS-352B/U.	VOLTS PER CELL meter reading multiplied by 30 and TS-352B/U reading is within 5 percent.
			f. Allow charging to continue while monitoring battery-charging current.	f. Battery charging current reduces.
			g. Continue charging while monitoring VOLTS PER CELL meter and HOURS timer.	g. HOURS timer starts when VOLTS PER CELL meter indicates between 1.6 and 1.7.
			Monitor AMPERES meter	Battery-charging current rises when HOURS timer starts.
			h. Continue charging until HOURS timer switch reaches 0.	h. PP-2926A/U automat ically turns off when HOURS timer reaches 0.
			i. Set ON-OFF switch to OFF and disconnect the equipment.	i. None.

3-6. Test Data Summary

a. Insulation breakdown:

(1) Input ..... 1,920 volts for 60 to 90 seconds.

(2) Output ..... 20 megohms minimum.

b. Operational test:

(1) Charging current (18-cell lead-acid battery) ..... 180 amperes maximum. Charging current reduces as HOURS timer progresses from LEAD ACID 8 to LEAD ACID EQUALIZE 2. Charging current increases as HOURS timer progresses past LEAD ACID EQUALIZE 2, and then reduces till HOURS timer indicates 0 and automatically turns off PP-2926A/U.

(2) Charging current (30-cell nickel-iron battery) ..... 180 amperes maximum. When VOLTS PER CELL meter indicates between 1.6 and 1.7, HOURS timer starts, and charging current increases and then reduces till HOURS timer indicates 0 and automatically turns off PP-2926A/U.

CHAPTER 4

DEPOT OVERHAUL STANDARDS

4-1. Applicability of Depot Overhaul Standards

The tests outlined in this chapter are designed to measure the performance capability of a repaired equipment. Equipment that is to be returned to stock should meet the standards given in these tests.

4-2. Applicable References

a. Repair Standards. The applicable procedures of the depots performing these tests and their general standards for repaired electronic equipment are given in TB SIG 355-1, TB SIG 355-2, and TB SIG 355-3 and form a part of the requirements for testing this equipment.

b. Modification Work Orders. Perform all modification work orders applicable to this equipment before making the tests specified. DA Pam 310-7 lists all available MWO's

4-3. Test Facilities Required

The following items are required for depot testing.

a. Test Equipment.

Item	*Federal stock No.*	*Technical manual*
Multimeter TS-352B/U.	6625-553-0142	TM 11-6625-366-15
DC clamp ammeter (0-200 amperes minimum range).		
Variable transformer 3-phase, 60-Hz 0- to 560-volt, 28-ampere (Superior Electric Company or equal).		
Insulation Breakdown Test Set AN/GSM-6.	6625-542-1331	TM 11-6625-273-12
Ohmmeter ZM-21A/U.	6625-581-2466	TM 11-2050
Voltmeter TS-340/U.	6625-643-0624	

b. Materials.

(1) Load bank, resistive variable from 0.2 to 32 ohms at 250 amperes. (Ward Leonard Electric Company, loopohm type, or equal).

(2) Two-foot length of AWG #10 wire.

4-4. Insulation Breakdown Test

The depot overhaul standards insulation breakdown test procedures are the same as those for general support (para. 3-4). Equipment that meets the performance standards stated in these tests will furnish satisfactory insulation resistance.

4-5. Performance Tests

(fig. 4-1)

a. Connect the PP-2926A/U for 208-volt, three-phase, 60-Hz input power.

b. Using nominal 208-volt, three-phase, 60-Hz input power, connect the equipment as shown in figure 4-1.

c. Set the ON-OFF switch to OFF, the NICKEL IRON-LEAD ACID switch to LEAD ACID, and the HOURS timer switch to LEAD ACID 8.

d. Set the load bank to approximately 32 ohms.

e. Set the ON-OFF switch to ON, adjust the three-phase variable transformer to provide 280 volts input to PP-2926A/G, and monitor the output current on the AMPERES meter and the dc clamp ammeter while reducing the resistance of the load bank until a reduction of resistance does not result in an increase of output current. The output current should not be greater than 180 amperes and the readings on the AMPERES meter

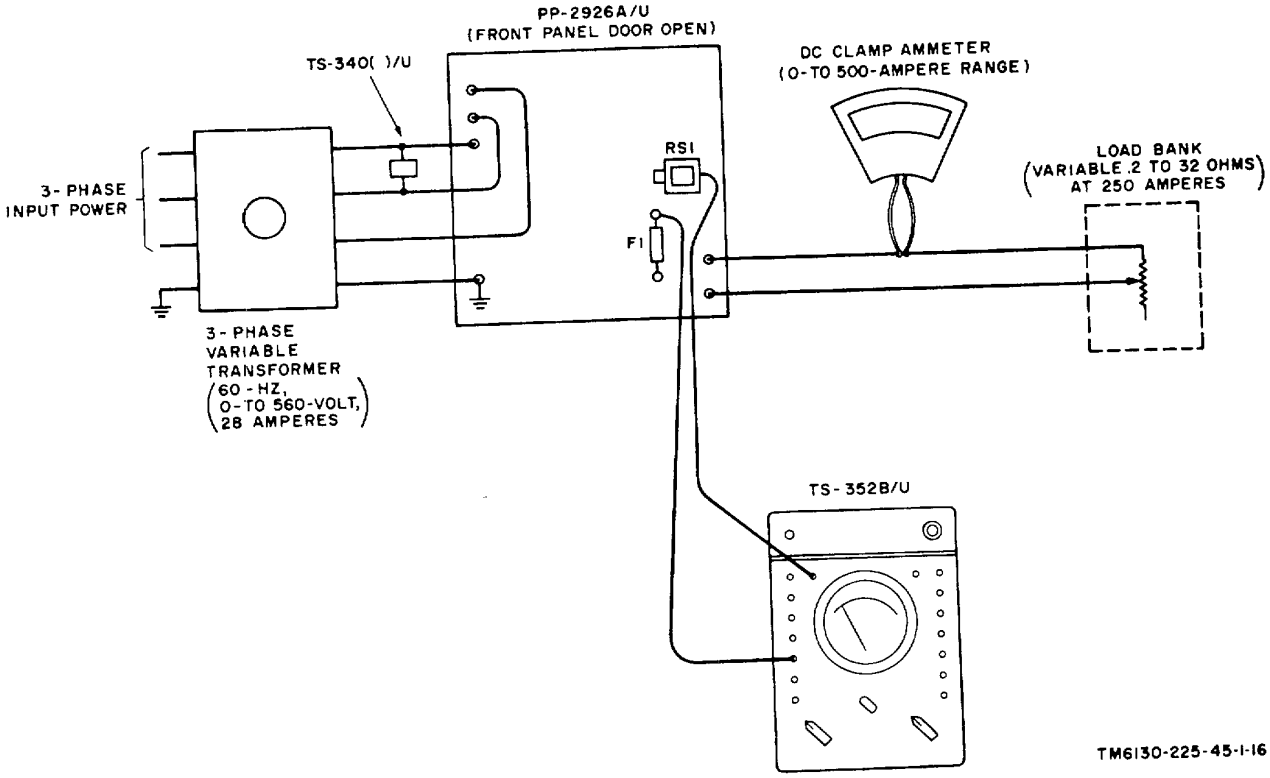
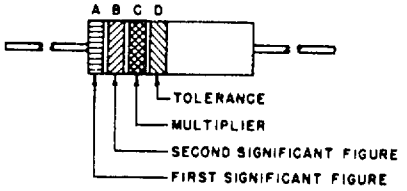


Figure 4-1. Test setup diagram.

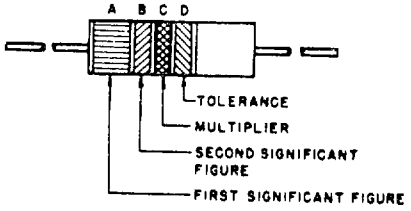
COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS

COMPOSITION-TYPE RESISTORS



BAND A— Equal Width Band Signifies Composition-Type

WIREWOUND-TYPE RESISTORS

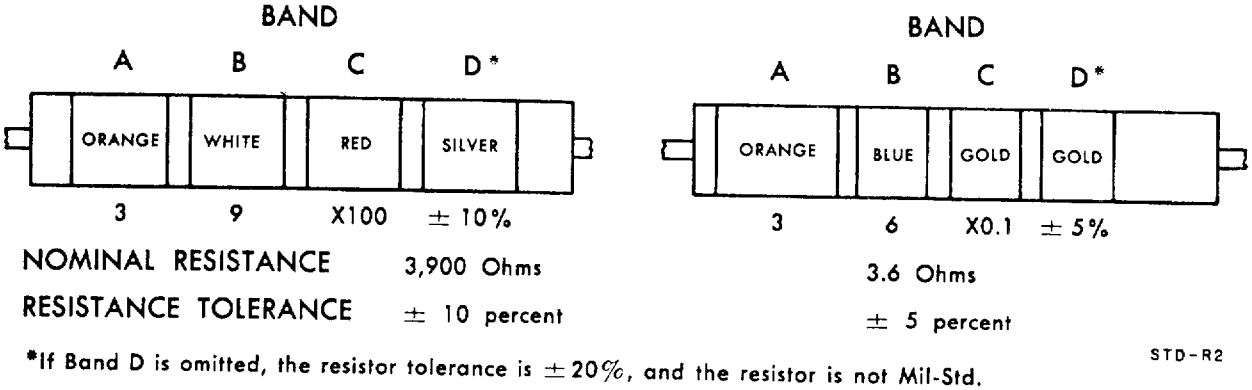


BAND A— Double Width Signifies Wire-wound Resistor

COLOR CODE TABLE

BAND A		BAND B		BAND C		BAND D*	
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)
BLACK	0	BLACK	0	BLACK	1		
BROWN	1	BROWN	1	BROWN	10		
RED	2	RED	2	RED	100		
ORANGE	3	ORANGE	3	ORANGE	1,000		
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	± 10
GREEN	5	GREEN	5	GREEN	100,000	GOLD	± 5
BLUE	6	BLUE	6	BLUE	1,000,000		
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7				
GRAY	8	GRAY	8	SILVER	0.01		
WHITE	9	WHITE	9	GOLD	0.1		

EXAMPLES OF COLOR CODING



*If Band D is omitted, the resistor tolerance is ±20%, and the resistor is not Mil-Std.

Figure 4-2. MIL-STD resistor color code markings.

and the dc clamp ammeter should be within 5 percent. The VOLTS PER CELL meter reading multiplied by 18 and the TS-352B/U reading should be within 5 percent.

f. Increase the resistance of the load bank for an output current of 10 amperes.

g. Set the HOURS timer switch to LEAD ACID EQUALIZE 2. The output current should increase.

h. Set the HOURS timer switch to approximately 10 minutes and allow the HOURS timer to clock off till 0 is reached. When the HOURS timer reaches 0, the PP-2926A/U should automatically turn off.

i. Set the ON-OFF switch to OFF.

j. Set the NICKEL IRON-LEAD ACID switch to NICKEL IRON, the HOURS timer to NICKEL IRON 1, and the load bank to approximately 0.3 ohm.

k. Set the ON-OFF switch to ON and increase the resistance of the load bank until the HOURS timer starts. The VOLTS PER CELL meter should indicate between 1.6 and 1.7 when the HOURS timer starts. The VOLTS PER CELL meter reading multiplied by 30 and the TS-352B/U reading across the charger dc voltage output terminals shall be within 5 percent.

NOTE

Chargers that have 75 volt dc panel meters M1 and the monitoring TS-352B/U shall indicate between 48 and 51 volts dc.

l. Set the HOURS timer switch to 0; the PP-2926A/U should automatically turn off.

m. Set the ON-OFF switch to OFF.

n. Connect the PP-2926A/U for 208-volt, three-phase, 60-Hz input power.

o. Disconnect the 230-volt input power and connect 208-volt, three-phase, 60-Hz input power to the PP-2926A/U.

p. Set the NICKEL IRON-LEAD ACID switch to LEAD ACID, the HOURS timer switch to LEAD ACID 8, the ON-OFF switch to ON, adjust the three-phase variable transformer to provide 208 volts input power to the PP-2926A/U, and adjust the load bank for 10 amperes output current. Note the voltage reading on the TS-352B/U.

q. Adjust the three-phase variable transformer to provide 228 volts input to the PP-2926A/U. The TS-352B/U voltage reading should be within 3 percent of the reading obtained in *p* above.

r. Adjust the three-phase variable transformer to provide 228 volts input to the PP-2926A/U. The TS-352B/U voltage reading should be within 3 percent of the reading obtained in *p* above.

s. Adjust the three-phase variable transformer to provide 208 volts power to the PP-2926A/U, and adjust the load bank for 160 amperes output current. Note the voltage reading on the TS-352B/U.

t. Adjust the three-phase variable transformer to provide 228 volts input to the PP-2926A/U. The TS-352B/U voltage reading should be within 3 percent of the reading obtained in *s* above.

u. Adjust the three-phase variable transformer to provide 228 volts input to the PP-2926A/U. The TS-352B/U voltage reading should be within 3 percent of the reading obtained in *s* above.

v. Set the ON-OFF switch to OFF.

w. Disconnect the 208-volt input power and connect 460-volt, three-phase, 60-Hz input power to the PP-2926A/U. Connect the PP-2926A/U for 460-volt, three-phase, 60-Hz input power.

x. Set the ON-OFF switch to ON and adjust the three-phase variable transformer for 460 volts input to the PP-2926A/U. The reading on the AMPERES meter should indicate output current.

y. Set the ON-OFF switch to OFF and disconnect the equipment.

Figure 4-3 Charger, Battery PP-2926A/U schematic diagram.
(Located in back of manual)

APPENDIX A
REFERENCES

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, Lubrication Orders and Modification Work Orders.
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by the Army.
TB SIG 355-1	Depot Inspection Standard for Repaired Signal Equipment.
TB SIG 355-2	Depot Inspection Standard for Refinishing Repaired Signal Equipment.
TB SIG 355-3	Depot Inspection Standard for Moisture and Fungus Resistant Treatment.
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TM 11-2050	Test Set I-48-B and Ohmmeter ZM-21A/U.
TM 11-6130-225-12-1	Operator's and Organizational Maintenance Manual: Charger, Battery PP-2926A/U.
TM 11-6625-273-12	Operator's and Organizational Maintenance: Insulation Breakdown Test Sets AN/GSM-6 and AN/GSM-6A.
TM 11-6625-366-15	Operator's Organizational, Direct Support, General Support, and Depot Maintenance Manual: Multimeter TS-352B/U (NSN 6625-00-553-0142).
TM 38-750	The Army Maintenance Management System (TAMMS).

APPENDIX B
GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LISTS (INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS)

Section I. INTRODUCTION

B-1. Scope
This appendix lists repair parts and special tools required for the performance of general support and depot maintenance of the PP-2926A/U. The PCCN for the PP-2926A/U is GTBAAT for all models. This appendix is current as of December 1974.

NOTE

No parts authorized for stockage at direct support.

B-2. General
This repair parts and special tools list is divided into the following sections:

a. Repair Parts List -Section II. A list of repair parts authorized for the performance of maintenance at the general support and depot level. This repair parts list is arranged in alphabetical order.

b. Special Tools, Test and Support Equipment - Section III. Not applicable.

c. Index - Federal Stock Number and Reference Number Cross-Reference to Figure and Item Number - Section IV. A list, in ascending numerical sequence, of all Federal stock numbers appearing in the listings, followed by a list, in alphanumeric sequence, of all reference numbers appearing in the listings. Federal stock number and reference numbers are cross-referenced to each illustration figure and item number or reference designation appearance.

B-3. Explanation of Columns
The following provides an explanation of columns found in the tabular list.

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

(1) *Source code*. Indicates the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are —

Code *Explanation*

PA — Item procured and stocked for anticipated or known usage.

PB — Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply systems.

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 outfittings. 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 direct support or general support 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 direct support maintenance level.

MH — Item to be manufactured or fabricated at general support maintenance level.

MD — Item to be manufactured or fabricated a depot maintenance level.

AO — Item to be assembled at organizational level.

Code *Explanation*

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 manufacturers' part number.

XD — Support items can be requisitioned with justification.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source 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) Use (third position). The maintenance code entered in the third position indicates the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position indicates one of the following levels of maintenance.

Code *Application/Explanation*

O — Support item is removed, replaced, used at the organizational level of maintenance.

NOTE

A code "C" may be used in this position to denote crew or operator maintenance performed within organizational maintenance.

F — Support item is removed, replaced, used at the direct support maintenance level.

H — Support item is removed, replaced, used at the general support maintenance.

D — Support items that are removed, replaced, used at depot only.

(b) Repair (fourth position). 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). When a maintenance code is not used a dash (-) sign is entered. For multi-service equipment/systems or when a code is entered, this position will contain one of the following maintenance codes as assigned by the service(s) that require the code —

Code *Application/Explanation*

O — 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 direct support.

H — The lowest maintenance level capable of complete repair of the support item is general support.

D — The lowest maintenance level capable of complete repair of the support item is the depot level.

L — Repair restricted to designated Specialized Repair Activity.

Z — Non-repairable. No repair is authorized.

B — No repair is authorized. The item may be 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 —

Code *Explanation*

Z — Nonrepairable item. When unserviceable, condemn and dispose at the level indicated in the first digit of the maintenance code.

O — Repairable item. When uneconomically repairable, condemn and dispose at organizational level.

F — Repairable item. When uneconomically repairable, condemn and dispose at the direct support level.

H — Repairable item. When uneconomically repairable, condemn and dispose at the general support level.

D — Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.

L — Repairable item. Repair, condemnation, and disposal not authorized below depot/ Specialized Repair Activity level.

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).

b. Federal Stock Number. Indicates the Federal stock number assigned to the item.

NOTE

For requisitioning purposes, the Federal stock number must be converted to the National stock number by adding "-00-" after the Federal stock classification (FSC) code first four digits). For example, FSN 6625-553-0142 converts to NSN 6625-00-553-0142.

c. Description. Indicates the Federal item name and a minimum description required to identify the item. The last line indicates the reference number followed by the applicable Federal Supply Code for Manufacturer (FSCM) in parentheses. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42.

d. Unit of Measure (U/M.). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation; e.g., ea, in, pr, etc., and is the basis used to indicate quantities and allowances in subsequent columns. 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.

e. Quantity Incorporated in Unit. This column indicates the quantity of the item used in the equipment. Subsequent appearances of the same item in the same assembly are indicated by the letters "REF".

f. 30-Day DS/GS Maintenance Allowances.

NOTE

Allowances in GS column are for GS maintenance only.

(1) The repair parts indicated by asterisk entries in separate allowance columns for GS represent those authorized for use at that category of maintenance to be requisitioned on an "as required" basis, until stockage is based on demand in accordance with AR 710-2.

(2) Allowance quantities are indicated in the special tool lists section for special tools, TMDE, and other support equipment.

g. 1-Year Allowances Per 100 Equipments/ Contingency Planning Purposes. Column intentionally left blank.

h. Depot Maintenance Allowance Per 100 Equipments. Not applicable.

i. 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.* Indicates the item number or reference designation used to reference the item in the illustration.

B-4. Special Information

Usable on codes are included in column 3. Uncoded items are applicable to all models. Identification of the usable on codes used in this publication are —

Code	*Used on*
A7E	PP-2926A/U

B-5. Location of Repair Parts

a. This appendix contains one cross-reference index (sec IV) to be used to locate a repair part when either the Federal stock number or reference number (manufacturer's part number) is known. The first column in the index is prepared in numerical or alphanumeric sequence in ascending order. The reference numbers (manufacturer's part numbers) are listed immediately following the last listed Federal stock number in the index of Federal stock numbers.

b. When the Federal stock number or reference number is known, follow the procedures given in (1) and (2) below.

(1) Refer to the index of Federal stock numbers (see IV) and locate the Federal stock number or reference number. The FSN and reference number are cross-referenced to the applicable figure and item number or reference designation.

(2) Refer to the repair parts list (see II and locate the figure number (col 10a) and item number or reference designation (col 10b) as noted in the FSN index.

c. When the figure and item number or reference designation are known, scrutinize columns 10a and 10b of the repair parts list (see II) until the item is located.

d. When the FSN, reference number, figure number, item number and reference designation are not known, scrutinize column 3 of the repair parts list (see II, which is arranged in alphabetical order.

B-6. Abbreviations

Not applicable.

(Next printed page is B-6)

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30 DAY DS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(7) 30 DAY GS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(8) 1-YR ALW PER 100 EQUIP CNTGCY	(9) DEPOT MAINT ALW PER 100 EQUIP	(10) ILLUSTRATION (a) FIGURE NO.	(b) ITEM NO.
PAHZZ	5950-764-2347	AMPLIFIER MAGNETIC L2 X1049 (00062)		EA	1				*	*	*			2-2	L2
XDHZZ		CABLE POWER ELECTRICAL W1 10 FEET LONG A4424 (94638)		EA	1				*	*	*			4-3	W1
PAHZZ	6130-105-6212	CABLE POWER ELECTRICAL W2 10 FEET LONG A4423 (94638)		EA	1				*	*	*			4-3	W2
PAHZZ	5935-063-3237	CONNECTOR, PLUG, ELECTRICAL P1 58048 (80495)		EA	1				*	*	*			2-1	P1
PACZZ	5920-057-2963	FUSE CARTRIDGE F2 FRN20 (71400)		EA	3				*	*	*			2-1	F2
PACZZ	5920-057-2963	FUSE CARTRIDGE F3 FRN20 (71400)		EA	REF				*	*	*			2-1	F3
PACZZ	5920-057-2963	FUSE CARTRIDGE F4 FRN20 (71400)		EA	REF				*	*	*			2-1	F4
PACZZ	5920-762-2594	FUSE CARTRIDGE F1 FRN200 (71400)		EA					*	*	*			2-1	F1
PACZZ	5920-686-2664	FUSE CARTRIDGE F5 FRNA35 (71400)		EA	3				*	*	*			2-1	F5
PACZZ	5920-686-2664	FUSE CARTRIDGE F6 FRNA35 (71400)		EA	REF				*	*	*			2-1	F6
PACZZ	5920-686-2664	FUSE CARTRIDGE F7 FRNA35 (71400)		EA	REF				*	*	*			2-1	F7
PACZZ	6210-935-6967	LAMP ASSY DS1 32-2111T (95263)		EA	1				*	*	*			2-1	DS1
PAHZZ	5950-764-2342	REACTOR L1 T1884 (00062)		EA	1				*	*	*			2-4	L1
XBHZZ		RECTIFIER CR3 SA1450ALPAC (14099)		EA	1				*	*	*			2-3	CR3
PAHZZ	5961-115-8337	SEMICONDUCTOR DEVICE, CONTROLLED RECTIFIER SCR1 MCR2305-3RP (04713)		EA	2				*	*	*			2-3	SCR1
PAHZZ	5961-115-8337	SEMICONDUCTOR DEVICE, CONTROLLED RECTIFIER SCR2 MCR2305-3RP (04713)		EA	REF				*	*	*			2-3	SCR2
PAHZZ	5945-768-2040	RELAY, ARMATURE K1 S30-902 (80089)		EA	1				*	*	*			2-2	K1
PAHZZ	5945-135-6164	RELAY, ARMATURE K2 41F2500GBSL (78277)		EA	1				*	*	*			2-3	K2
PAHZZ	5905-279-1959	RESISTOR, FIXED, COMPOSITION R1 RC42GFI50K (81349)		EA	2				*	*	*			2-3	R1
PAHZZ	5905-279-1959	RESISTOR, FIXED, COMPOSITION R2 RC42GF150K (81349)		EA	REF				*	*	*			2-3	R2
XDHZZ		RESISTOR, FIXED, COMPOSITION R7 RC32GF392J (81349)		EA	1				*	*	*			2-3	R7
PAHZZ	5905-917-0346	RESISTOR, FIXED R6 10A750 (14841)		EA	1				*	*	*			2-3	R6
PAHZZ	5905-763-4652	RESISTOR, VARIABLE R5		EA	1				*	*	*			2-3	R5

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR. CODE USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 30 DAY DS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(7) 30 DAY GS MAINT ALLOWANCE (a) 1-20	(b) 21-50	(c) 51-100	(8) 1-YR ALW PER 100 EQUIP CNTGCY	(9) DEPOT MAINT ALW PER 100 EQUIP	(10) ILLUSTRATION (a) FIGURE NO.	(b) ITEM NO.
		50A75 (14841)												
PAHZZ	5905-883-7305	RESISTOR, VARIABLE R4 WN102 (71590)	EA	1				*	*	*			2-3	R4
PAHZZ	5961-768-1902	SEMICONDUCTOR, DEVICE, DIODE CR1 M670C (13327)	EA	2				*	*	*			2-3	CR1
PAHZZ	5961-768-1902	SEMICONDUCTOR, DEVICE, DIODE CR2 M670C (13327)	EA	REF				*	*	*			2-3	CR2
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR7 MR1212SB (04713)	EA	3				*	*	*			2-2	CR7
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR8 MR1212SB (04713)	EA	REF				*	*	*			2-2	CR8
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR9 MR1212SB (04713)	EA	REF				*	*	*			2-2	CR9
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR4 MR1212SBR (04713)	EA	3				*	*	*			2-2	CR4
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR5 MR1212SBR (04713)	EA	REF				*	*	*			2-2	CR5
XDHZZ		SEMICONDUCTOR, DEVICE, DIODE CR6 MR1212SBR (04713)	EA	REF				*	*	*			2-2	CR6
PAHZZ	5961-892-0920	SEMICONDUCTOR, DEVICE, DIODE CR10 1N3021B (81349)	EA	2				*	*	*			2-2	CR10
PAHZZ	5961-892-0920	SEMICONDUCTOR, DEVICE DIODE CR11 1N3021B (81349)	EA	REF				*	*	*			2-3	CR11
PAHZZ	5920-221-8375	ABSORBER, OVERVOLTAGE CR12 6RS21VA3DX (03508)	EA	1				*	*	*			2-1	CR12
XDHZZ		SWITCH INTERLOCK S3 M74603301G4HM (24446)	EA	1				*	*	*			2-3	S3
PAHZZ	5930-764-2457	SWITCH, TOGGLE S2 457 (72041)	EA	1				*	*	*			2-1	S2
XDHZZ		SWITCH, TOGGLE S1 7592K6 (15605)	EA	1				*	*	*			2-1	S1
PAHZZ	6645-105-9975	TIMER M3 271 (14907)	EA	1				*	*	*			2-1	M3
PAHZZ	5950-764-2341	TRANSFORMER T1 T1883A (00062)	EA	1				*	*	*			2-4	T1
PAHZZ	5950-111-4863	TRANSFORMER, POWER, STEP-DOWN T5 X1046 (00062)	EA	1				*	*	*			2-2	T5
XDHZZ		TRANSFORMER POWER T4 X1048 (00062)	EA	1				*	*	*			2-3	T4
PAHZZ	5950-764-2347	TRANSFORMER, POWER, STEP-DOWN T2 X1047 (00062)	EA	1				*	*	*			2-2	T2
PAHZZ	5950-688-2881	TRANSFORMER VARIABLE T3 10B (58474)	EA	1				*	*	*			2-1	T3
PAHZZ	6625-143-6634	VOLTMETER M1 20823352-041 (33005)	EA	1				*	*	*			2-1	M1
XBHZZ		AMMETER M2 M3T (3815M)	EA	1				*	*	*			2-1	M2

INDEX - FEDERAL STOCK NUMBER AND REFERENCE NUMBER CROSS-REFERENCE TO FIGURE AND ITEM NUMBER

STOCK NUMBER	FIGURE NO.	ITEM NO.
5905-279-1959	2-3	R1
5905-279-1959	2-3	R2
5905-763-4652	2-3	R5
5905-883-7305	2-3	R4
5905-917-0346	2-3	R6
5920-057-2963	2-1	F3
5920-057-2963	2-1	F4
5920-057-2963	2-1	F2
5920-221-8375	2-1	CR12
5920-686-2664	2-1	F5
5920-686-2664	2-1	F6
5920-686-2664	2-1	F7
5920-762-2594	2-1	F1
5930-164-2457	2-1	S2
5935-063-3237	2-1	P1
5945-135-6164	2-3	K2
5945-768-2040	2-2	K1
5950-111-4863	2-2	T5
5950-688-2881	2-1	T3
5950-764-2341	2-4	T1
5950-764-2342	2-4	L1
5950-764-2347	2-2	L2
5950-164-2347	2-2	T2
5961-115-8337	2-3	SCR1
5961-115-8337	2-3	SCR2
5961-768-1902	2-3	CR1
5961-768-1902	2-3	CR2
5961-892-0920	2-3	CR10
5961-892-0920	2-3	CR11
6130-105-6212	2-2	CR7
6210-935-6967	2-1	DS1
6625-143-6634	2-1	M1
6645-105-9975	2-1	M3

REFERENCE NO.	MFR CODE	FIG. NO.	ITEM NO.
A4423	94638	4-3	W2
A4424	94638	4-3	W1
FRNA35	71400	2-1	F5
FRNA35	71400	2-1	F6
FRNA35	71400	2-1	F7
FRN20	71400	2-1	F3
FRN20	71400	2-1	F4
FRN20	71400	2-1	F2
FRN200	71400	2-1	F1
MCR2305-3RP	04713	2-3	SCR1
MCR2305-3RP	04713	2-3	SCR2
MR1212SB	04713	2-2	CR7
MR1212SB	04713	2-2	CR8
MR1212SB	04713	2-2	CR9
MR1212SBR	04713	2-2	CR4
MR1212SBR	04713	2-2	CR5
MR1212SBR	04713	2-2	CR6
M3T	3815M	2-1	M2
M670C	13327	2-3	CR1
M670C	13327	2-3	CR2
M74603301G4HM	24446	2-3	S3
RC32GF392J	81349	2-3	R7
RC42GF150K	81349	2-3	R1
RC42GF150K	81349	2-3	R2
SA1450ALPAC	14099	2-3	CR3
S30-902	80089	2-2	K1
T1883A	00062	2-4	T1
T1884	00062	2-4	L1
WN102	71590	2-3	R4
X1046	00062	2-2	T5
X1047	00062	2-2	T2
X1048	00062	2-3	T4
X1049	00062	2-2	L2
1N3021B	81349	2-3	CR10
1N3021B	81349	2-3	CR11
10A750	14841	2-3	R6
10B	58474	2-1	T3
20823352-041	33005	2-1	M1
271	14907	2-1	M3
32-2111T	95263	2-1	DS1
41F2500GBSL	78277	2-3	K2
457	72041	2-1	S2
50A75	14841	2-3	R5
5804B	80495	2-1	P1
6RS21VA3DX	03508	2-1	CR12
7592K6	15605	2-1	S1

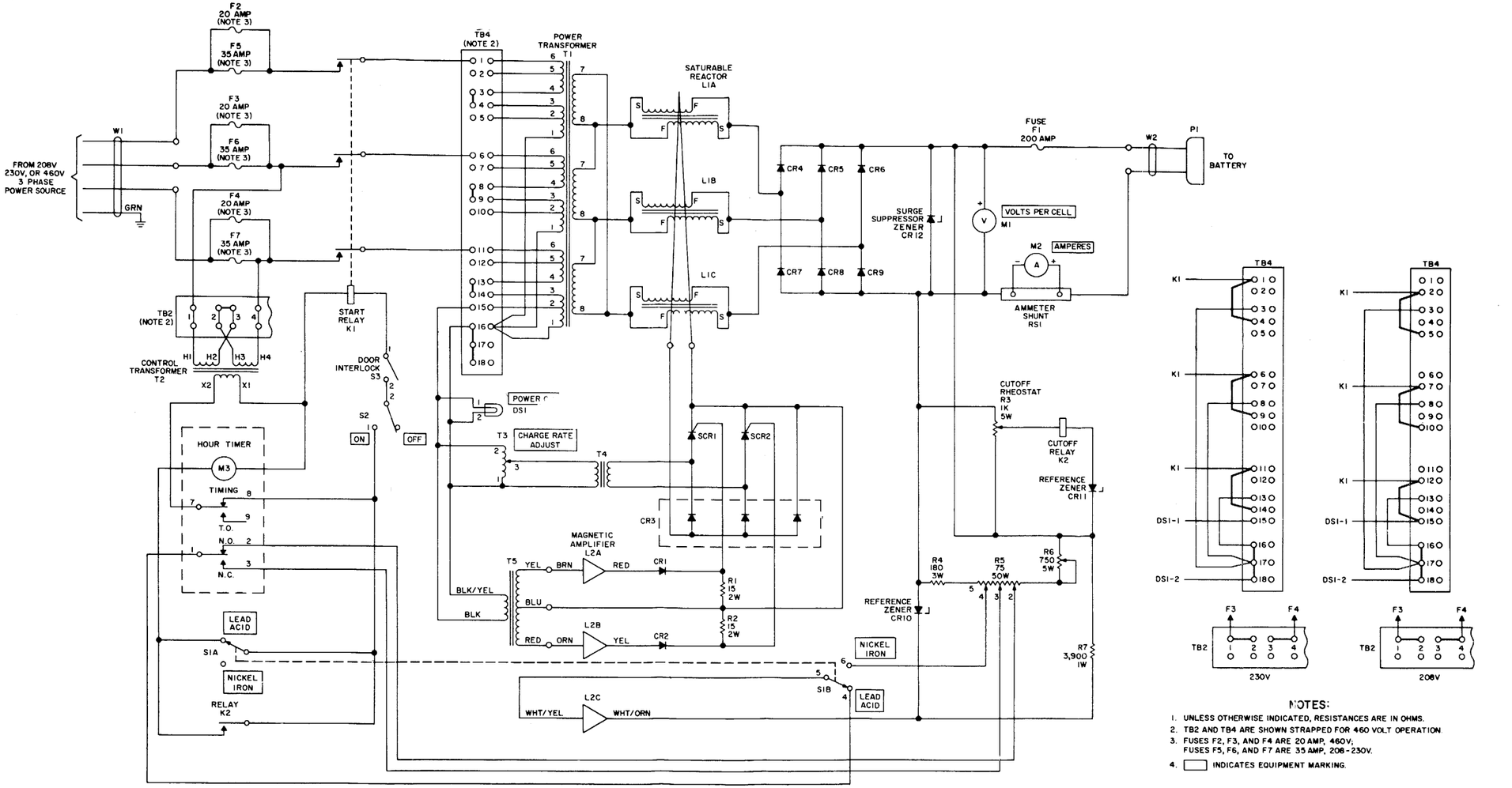


Figure 4-3. Charger, Battery PP-2926A/U schematic diagram.

Figure 4-3.

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:
KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:
Active Army:
USASA (2)
CNGB (1)
ACSC-E (2)
Dir of Trans (1)
CofEngrs (1)
TSG (1)
CofSpts (1)
USAARENBD (2)
USACDCEC (10)
USACDC Agcy (1)
USAMC (5)
USCONARC (5)
ARADCOM (5)
ARADCOM Rgn (2)
OS Maj Comd (4)
USAMICOM (4)
USASTRATCOM (4)
LOGCOMD (2)
USAESC (70)
USMACV (50)
MDW (1)
Armies (2)
Corps (2)
Instl (2) except
Ft Gordon (10)
Ft Huachuca (10)
Ft Carson (21)
Ft Knox (21)
WSMR (5)
USAEPG (5)
USATCFE (8)
1st Cav Div (5)
Svc Colleges (2)
USASCS (5)
USASESS (5)
USAADS (2)
USAAMS (2)
USAARMS (10)
USAIS (2)
USAES (2)
USAQMS (10)
USATC Armor (2)
USATC Inf (2)
USASTC (2)
Gen Dep (2)
Sig Sec, Gen Dep (5)
Sig Dep (12)
Army Dept (2) except
LBAD (14)
SAAD (30)
TOAD (14)
LEAD (7)
SHAD (3)
NAAD (5)
SVAD (5)
CHAD (3)
ATAD (10)
ANAD (8)
FTWIAD (8)
NCAD (8)
UMAD (8)
AMS (1)
MAAG (2)
WRAMC (1)
USARMIS (2)
USAERDAA (2)
USAERDAW (13)
USACRREL (2)
USASPTC (8)
Army Pic Cen (2)
Sig FLDMS (2)
4th USASA Fld Sta (5)
Units org under fol TOE:-2 ea.
11-57
11-97
11-98
11-117
11-127
11-155
11-157
11-158
11-500(AA-AC)
11-587
11-592
11-597

ARNG and USAR: None.
For explanation of abbreviations used, see AR 320-50.

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