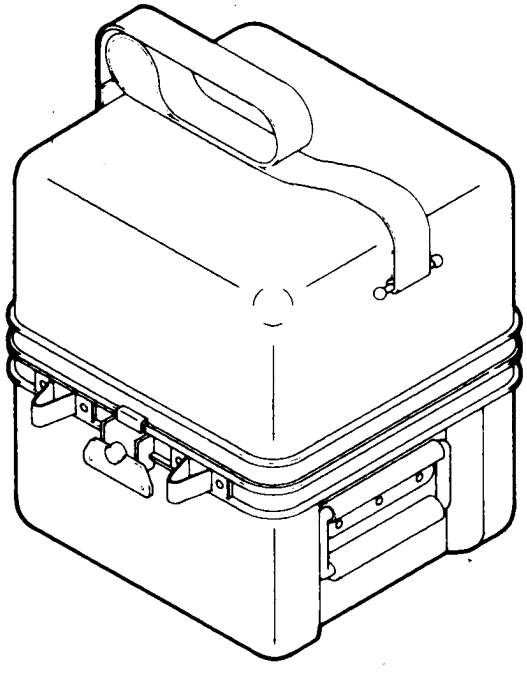
TECHNICAL MANUAL

ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL FOR



BATTERY POWER CONDITIONER (NSN 6135-01-143-4470)

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

HEADQUARTERS, DEPARTMENT OF THE ARMY
11 MARCH 1986

Remove power before removing and replacing any assembly, subassembly, or component. HIGH VOLTAGE is used in this system. Death or injury can result if you do not observe safety precautions.

Toluene is toxic and flammable and must be used with extreme care. Vapors in high concentration are anesthetic and dangerous to life. Avoid prolonged or repeated breathing of this vapor or contact with skin. Use only in a well-ventilated area, away from heat and open flame.

Chemical agent resistant coating (CARC) is extremely toxic and flammable. Never use where sparks, smoking or open flame may be present. CARC, if improperly used, may cause long-term health problems. Avoid contact with skin, breathing of fumes, or ingestion of dried particles. Use must be monitored by the local safety office and preventative medicine support activity. Refer to TM 43-0139 for applicable safety precautions prior to removal or application of CARC.

A lithium battery is used in this equipment and is potentially hazardous if misused or tampered with before, during, or after discharge. The following precautions must be strictly observed to prevent possible injury to personnel or damage to equipment.

DO NOT heat, incinerate, crush, puncture, disassemble, or otherwise mutilate battery.

DO NOT short circuit.

DO NOT by-pass internal fuse or replace with fuse of a different rating. Replacement fuses are packed two per every ten batteries.

DO NOT store in equipment during long periods of nonuse (in excess Of 30 days).

TURN OFF immediately if you detect the battery compartment becoming unduly hot or rapidly increasing in temperature, hear battery venting (hissing), or smell irritating sulfur dioxide gas. Remove and dispose of the battery only after it is cool (cool to touch).

DO NOT use carbon dioxide extinguisher on exposed lithium metal fires. Flood the burning material with water or use a graphite type compound or extinguishers to extinguish burning lithium.

REMOVE the battery when battery monitor light comes on (or equipment does not operate properly) and replace with a new battery.

TECHNICAL MANUAL

No. 9-5855-884-24

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *11 March 1986*

ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL

FOR

BATTERY POWER CONDITIONER (NSN 5855-01-143-4470)

(NSN 5855-01-248-5725)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of any 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, U.S. Army Missile Command, ATTN: AMSMI-LC-ME-PL, Redstone Arsenal, AL 35898-5238. A reply will be furnished to you.

HOW TO USE THIS MANUAL

1. Take a few minutes to look through this manual. We've designed this manual so that it will be easy for you to find and perform the procedures you need.

2. If the Battery Power Conditioner needs repair and you know what's wrong with it, here's what you do:

   a. Turn to the index and check for a paragraph on the component you want to remove and replace.

   b. Turn to the paragraph. Under the paragraph title, you'll find the tools, materials, and equipment condition needed to perform the procedure. If there are no tools or materials needed, it will also be noted here. If you have more than one of a specific type of tool (for example, two different screwdrivers) the text will indicate which tool to use in the necessary steps. If there is no equipment condition needed to prepare the Battery Power Conditioner for the removal procedure, it will be noted that the Battery Power Conditioner is assembled.

   c. To remove the bad component, perform the removal procedure.

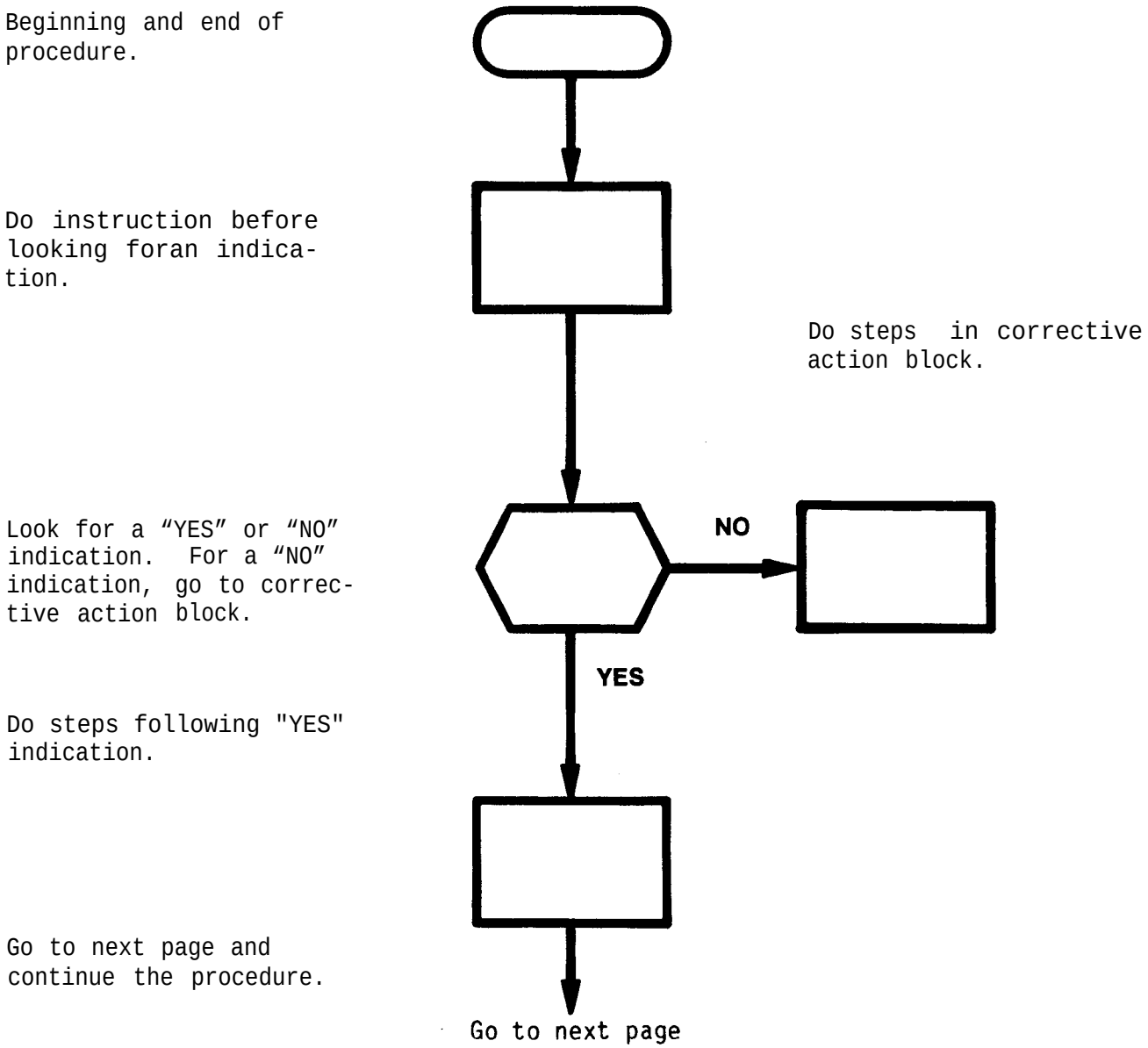
   d. To install the new component, perform the replacement procedure. The Battery Power Conditioner should now be ready to operate.

   e. Perform the troubleshooting procedure paragraph 3-6 to verify repair of the Battery Power Conditioner.

3. If the Battery Power Conditioner needs repair and you don't know what's wrong with it, you go to the troubleshooting procedures. Troubleshooting procedures are written in the flow chart style. Each set of instructions is written in a box and the boxes are connected by arrows. By following the arrows, you can work your way through the procedure. The chart on the following page tells you what the various boxes mean.

HOW TO USE THIS MANUAL (CONT)

3. (Cont)



After performing a step in a corrective action block, return to the beginning of the procedure and perform the procedure again. If you branch into the same corrective action block, perform the second step, and so on. The troubleshooting procedure has been successfully performed when you go from "START" to "END OF TASK" without branching into a corrective action block.

CHAPTER 1

INTRODUCTION

CHAPTER OVERVIEW

This chapter is an introduction to the Battery Power Conditioner. The chapter is divided into three sections. Section I contains general information on the Battery Power Conditioner. Section II gives a description and data for the Battery Power Conditioner and lists equipment used with the Battery Power Conditioner. Section III contains principles of operation for the Battery Power Conditioner.

CHAPTER CONTENTS

Section I. GENERAL INFORMATION

SECTION CONTENTS

1-1. SCOPE

Type of Manual: Organizational, Direct Support, and General Support Maintenance.

Model Number and Equipment Name: Battery Power Conditioner.

Purpose of Equipment: Supplies 4.8 V dc and 16.8 V dc to the Night Sight junction box.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Destruction of Army Electronics materiel to prevent enemy use shall be in accordance with TM 750-244-4-2.

1-4. PREPARATION FOR STORAGE OR SHIPMENT

Refer to TM 9-1260-477-12 for instructions for Preparation of Equipment for Storage or Shipment.

1-5. NOMENCLATURE CROSS-REFERENCE LIST

Official nomenclature for items and parts of the Battery Power Conditioner and associated Night Sight equipment are listed in the Repair Parts and Special Tools List (RPSTL), TM 9-5855-882-24P, TM 9-5855-450-24P, TM 9-5855-1450-24P, or TM 9-5855-1882-24P. The following cross-reference covers those items used with the Battery Power Conditioner which have common names that differ from the official nomenclature.

TM NOMENCLATURE	OFFICIAL NOMENCLATURE
Night Sight	Night Vision Sight, Infrared
AN/TAM-3A, AN/TAM-3B, or AN/TAM-3C	Test Set, Night Vision Sight AN/TAM-3A, AN/TAM-3B, or AN/TAM-3C

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design, put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US. Army Missile Command, ATTN: AMSMI-QA-CF, Redstone Arsenal, AL 35898-5290. We'll send you a reply.

1-7. ALINEMENT

Refer to Chapter 3 for alinement procedures.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-8. SCOPE

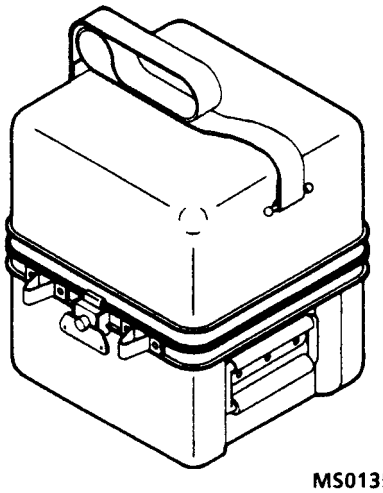
This section describes the equipment characteristics, capabilities, features, differences, and other data. It also describes safety, care and handling of equipment.

1-9. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The Battery Power Conditioner and major components are shown in paragraph 1-10.

1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

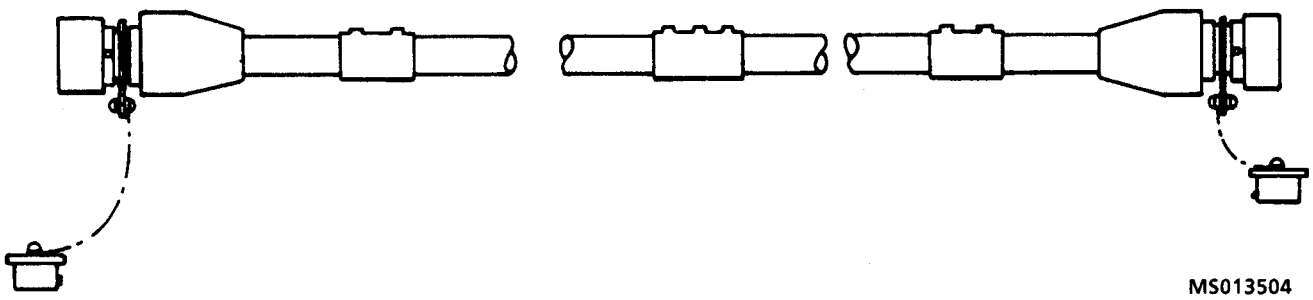
a. Battery Power Conditioner.



MS013503

The Battery Power Conditioner contains two non-rechargeable (throw-away) batteries which power the Night Sight for about 10 hours when vehicle power is not available.

b. Power Cable.



MS013504

Power cable 8W1, which is used with the Night Sight, is part of the Battery Power Conditioner and is included within the assembly.

1-11. DIFFERENCES BETWEEN MODELS

a. There are two different Battery Power Conditioners: NSN 5855-01-248-5725, PN 13251627, and NSN 5855-01-143-4470, PN SM-D-969142. Please note that NSN 5855-01-143-4470 may be shown on the equipment identification plate as NSN 6135-01-143-4470. The 6135 class code has been superseded by class code 5855, but some BPCS will show the old number.

b. Part number SM-D-969142 is the primary configuration standard for this TM. Differences between PN SM-D-969142 and PN 13251627 will be identified by a dashed line around text or art applying to BPC PN 13251627.

1-12. EQUIPMENT DATA

Table 1-1 provides power requirements for the Battery Power Conditioner

Table 1-1. EQUIPMENT DATA

Electrical power source	Battery Power Conditioner contains the non-rechargeable lithium batteries.
Voltage output	4.8 V dc and 16.8 V dc

1-13. TRANSPORTATION DATA

Table 1-2. Transportation Data

	Length in. (cm)	Width in. (cm)	Height in. (cm)	Volume cu ft (m^3)	Weight lb (kg)
Battery Power Conditioner with cables and batteries	(23.5)	(21.6)	10.0 (25.4)	0.50 (0.01)	14.1 (5.3)

1-14. SAFETY, CARE, AND HANDLING

Remove power before removing and replacing any assembly, subassembly, or component. HIGH VOLTAGE is used in this system. Death or injury can result if you do not observe safety precautions.

Toluene is toxic and flammable and must be used with extreme care. Vapors in high concentration are anesthetic and dangerous to life. Avoid prolonged or repeated breathing of this vapor or contact with skin. Use only in a well ventilated area, away from heat and open flame.

A lithium battery is used in this equipment and is potentially hazardous if misused or tampered with before, during, or after discharge. The following precautions must be strictly observed to prevent possible injury to personnel or damage to equipment.

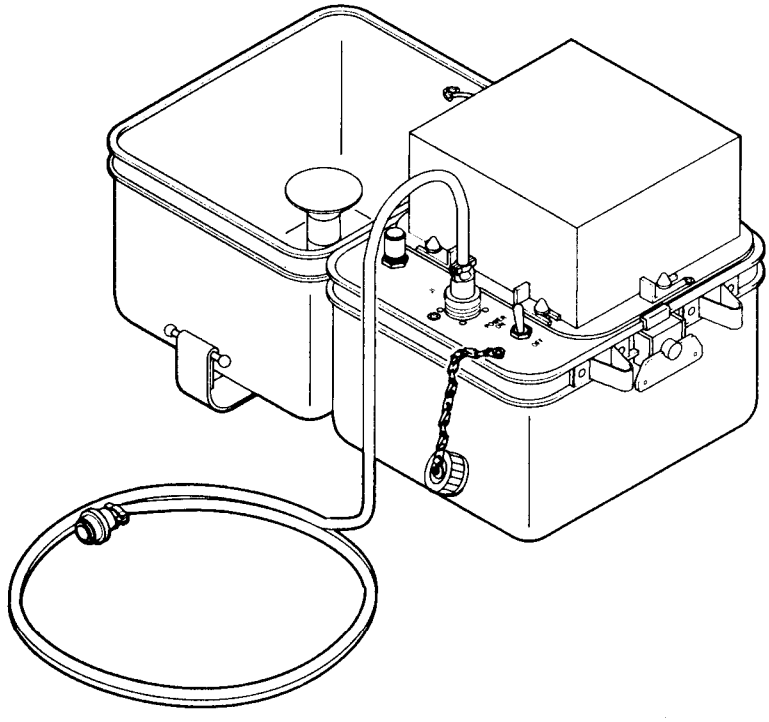
DO NOT heat, incinerate, crush, puncture, disassemble, or otherwise mutilate battery.
DO NOT short circuit.
DO NOT by-pass internal fuse or replace with fuse of a different rating. Replacement fuses are packed two per every ten batteries.
DO NOT store in equipment during long periods of nonuse (in excess of 30 days).
TURN OFF immediately if you detect the battery compartment becoming unduly hot or rapidly increasing in temperature, hear battery venting (hissing), or smell irritating sulfur dioxide gas. Remove and dispose of the battery only after it is cool (cool to touch).
DO NOT use carbon dioxide extinguisher on exposed lithium metal fires. Flood the burning material with water or use a graphite-type compound or extinguishers to extinguish burning lithium.
REMOVE the battery when battery monitor light comes on (or equipment does not operate properly) and replace with a new battery.

Section III. PRINCIPLES OF BATTERY POWER CONDITIONER OPERATION

1-15. SCOPE

The principles of operation of the Battery Power Conditioner are in the following paragraphs.

1-16. BATTERY POWER CONDITIONER



The Battery Power Conditioner has two non-rechargeable batteries to supply the input power. Setting circuit breaker CB1 to ON enables relay K1. If the power output cable is connected to the Night Sight junction box, the relay ground interlock circuit is completed and activates the relay. The 4.8/16.8 V dc regulator converts the battery voltage to regulated 4.8 V dc and 16.8 V dc and supplies the voltage to the Night Sight junction box.

CHAPTER 2

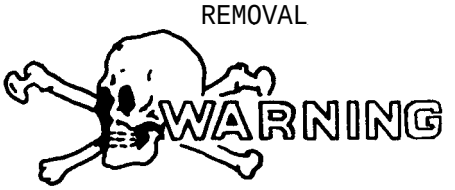
ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

This chapter contains organizational maintenance instructions for the Battery Power Conditioner.

2-1. REMOVAL AND REPLACEMENT OF BATTERY POWER CONDITIONER BATTERIES (Sheet 1 of 2)

STEP 1 REMOVAL



A lithium battery is used in this equipment and is potentially hazardous if misused or tampered with before, during, or after discharge. The following precautions must be strictly observed to prevent possible injury to personnel or damage to equipment.

DO NOT heat, incinerate, crush, puncture, disassemble, or otherwise mutilate battery.
DO NOT short circuit.
DO NOT by-pass internal fuse or replace with fuse of a different rating. Replacement fuses are packed two per every ten batteries.

DO NOT store in equipment during long periods of nonuse (in excess of 30 days).
TURN OFF the equipment immediately if you detect the battery compartment becoming unduly hot, or rapidly increasing in temperature, hear battery venting (hissing sound), or smell irritating sulfur dioxide gas. Remove and dispose of the battery only after it is cool (cool to touch).
DO NOT use carbon dioxide extinguisher on exposed lithium metal fires. Flood the burning material with water or use a graphite type compound or extinguishers to extinguish burning lithium.
REMOVE the battery when battery monitor light comes on (or equipment does not operate properly) and replace with a new battery.

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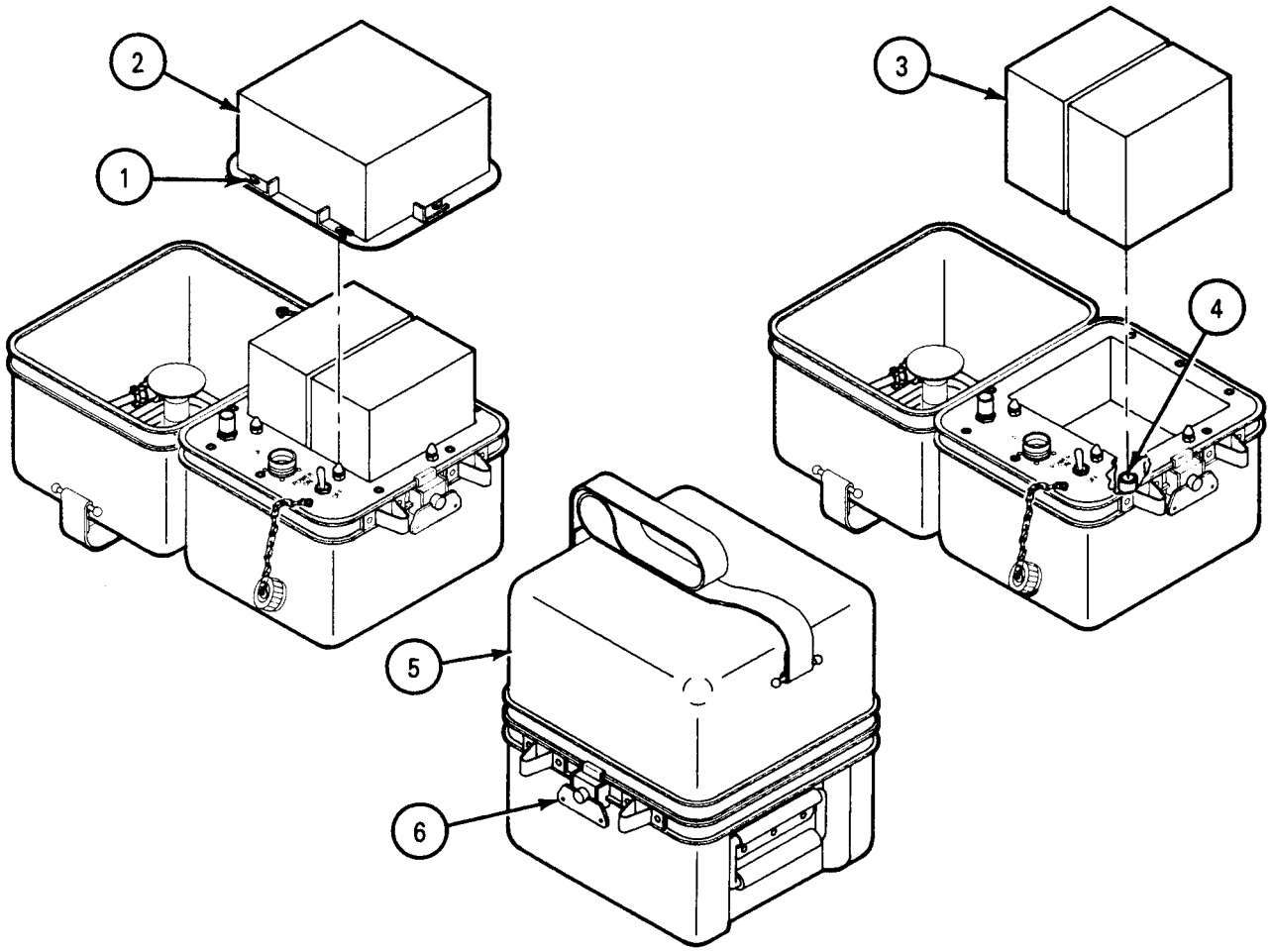
2-1. REMOVAL AND REPLACEMENT OF BATTERY POWER CONDITIONER BATTERIES (CONT) (Sheet 2 of 2)



STEP 1 REMOVAL

A. Slide six latches (1) to unlatched position and remove battery cover (2).

B. Remove two batteries (3).

STEP 2 REPLACEMENT

A. Insert terminals of each battery (3) into mating connector (4) and press down on battery (3).

B. Install battery cover (2) and latch six latches (1).

c. Close battery case lid (5) and secure latch (6).

END OF TASK

CHAPTER 3

BATTERY POWER CONDITIONER MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

This chapter contains maintenance instructions on the Battery Power Conditioner. Section I describes the repair parts; special tools; test, maintenance and diagnostic equipment (TMDE); and support equipment. Section II provides troubleshooting data. Section III outlines the maintenance procedures for the Battery Power Conditioner (BPC).

CHAPTER CONTENTS

Section I. BATTERY POWER CONDITIONER COMMON TOOLS AND EQUIPMENT, SPECIAL TOOLS, TMDE, SUPPORT EQUIPMENT, AND REPAIR PARTS

SECTION CONTENTS

3-1. SCOPE

This section outlines the repair parts, special tools, TMDE, and support equipment for the Battery Power Conditioner.

3-2. COMMON TOOLS AND EQUIPMENT

Common tools and test equipment are listed in the maintenance allocation chart (MAC), Appendix B.

3-3. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Special tools and equipment are listed in the maintenance allocation chart (MAC), Appendix B.

3-4. REPAIR PARTS

Repair parts are listed and illustrated in the Repair Parts and Special Tools List (TM 9-5855-450-24P, TM 9-5855-1450-24P, TM 9-5855-1882-24P, or TM 9-5855-882-24P).

Section II. BATTERY POWER CONDITIONER TROUBLESHOOTING

SECTION CONTENTS

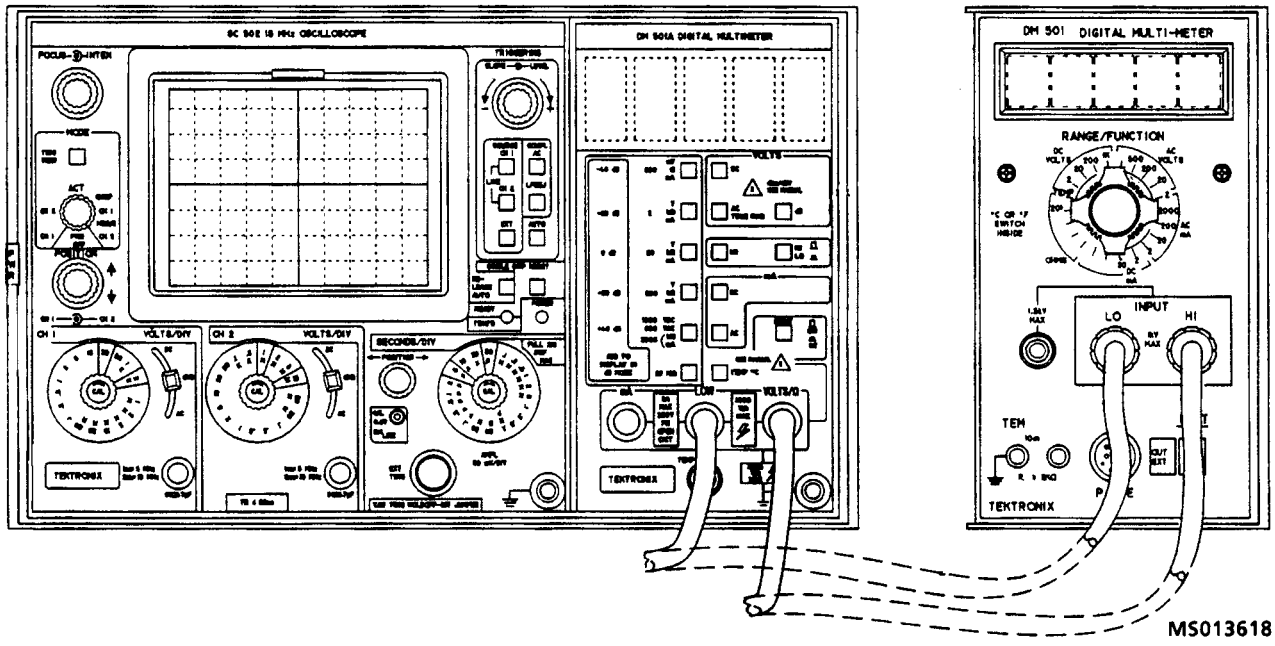
3-5. SCOPE

This section contains the Battery Power Conditioner Troubleshooting Procedure.

NOTE

There are two multimeters, DM-501 and DM-501A, either of which may be found in the AN/TAM-3B. They are configured slightly differently and connections are made at different points, but either multimeter will perform all the maintenance required in this manual. All multimeters illustrated in the procedures of this manual will reflect the DM-501A configuration. If you have DM-501, adjustments to connection points and settings will be required to perform these procedures.

OSCILLOSCOPE/MULTIMETER



3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (Sheet 1 of 12)

This paragraph provides troubleshooting procedure for the Battery Power Conditioner.

TEST EQUIPMENT: AN/TAM-3A, AN/TAM-3B, or AN/TAM-3C

NOTE

- Follow steps in order given in the procedures. Do not skip any steps.
- When you enter the "NO" chain, perform the procedure and/or repairs as instructed in the corrective action block.
- Unless otherwise specified, after performing the corrective action of the "NO" chain always return to the "START" of the procedure you were checking. When more than one corrective action may be required, perform the first corrective action, return to "START," and repeat the procedure. If the problem still exists, perform the next corrective action and repeat.

3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 2 of 12)

START

STEP 01

a. Connect oscilloscope/ multimeter (1) to 115 V ac source.
b. Set oscilloscope/ multimeter (1) to indicate dc volts.

STEP 02

On power supply (2);
a. Connect oscilloscope/ multimeter (1) positive lead (3) to positive output terminal (4).
b. Connect oscilloscope/ multimeter (1) negative lead (5) to negative output terminal (6).
c. Connect to 115 V ac source.
d. Set power supply (2) ON/OFF switch (7) to ON.
e. Adjust VOLTAGE knob (8) until multimeter (1) indicates between 20.0 and 24.0 V dc.
f. Disconnect oscilloscope/ multimeter (1).
g. Set power supply (2) ON/OFF switch (7) to OFF.
h. Use jumper wire to short output terminals (4 and 6) together.
i. Set power supply (2) ON/OFF switch (7) to ON.

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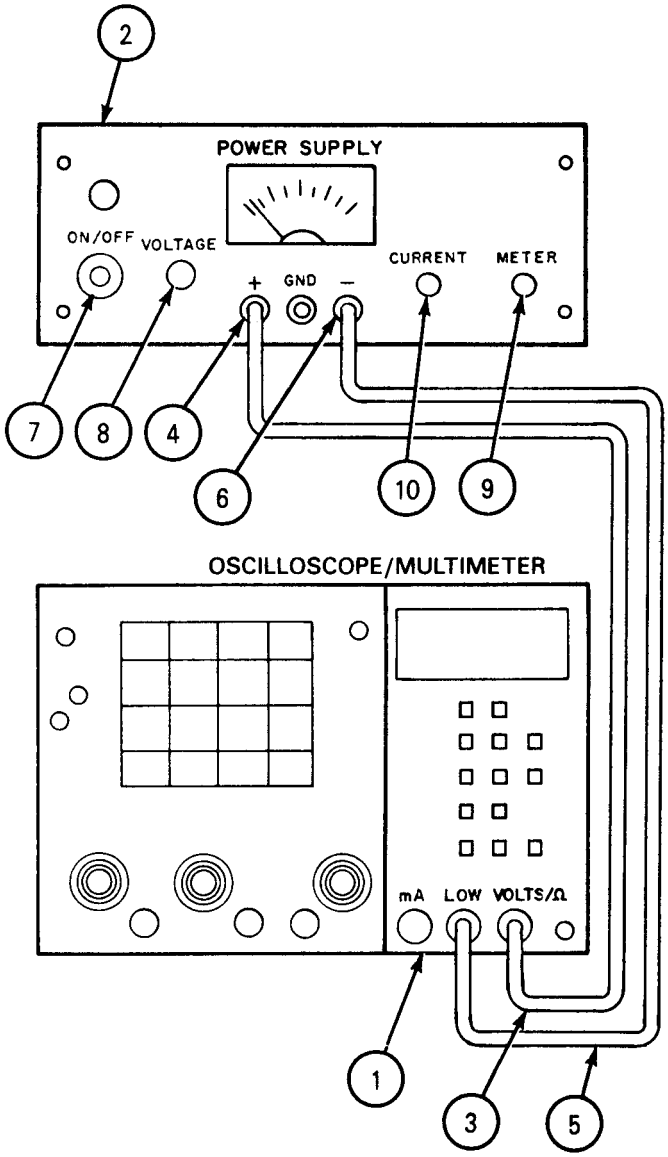
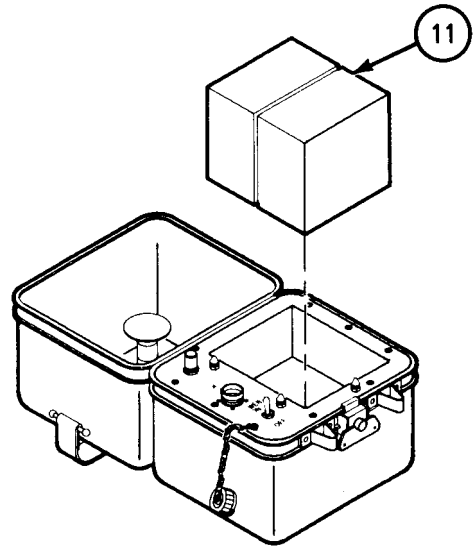


3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 3 of 12)

Continued from previous page

STEP 02 (Cont)

j. Set METER select switch (9) to 4.0 amperes and adjust CURRENT knob (10) to 3.0 amperes.
k. Set power supply (2) ON/OFF switch (7) to OFF.
l. Disconnect jumper wire.



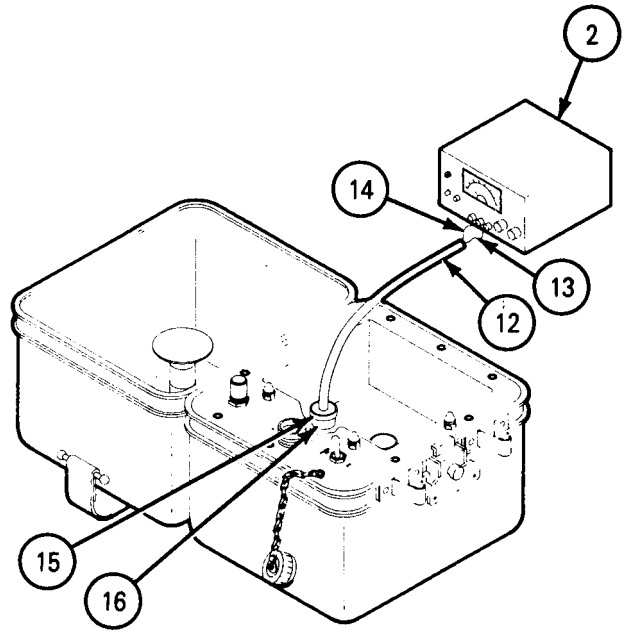
BATTERY POWER CONDITIONER

STEP 03

On Battery Power Conditioner, remove batteries (11).

STEP 04

On cable 7W7 (12):
a. Connect connector P3 (13) to power supply (2) negative terminal (6).
b. Connect connector P2 (14) to power supply (2) positive terminal (4).
c. Connect connector P1 (15) to Battery Power Conditioner connector XBT1 (16).



BATTERY POWER CONDITIONER

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3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 4 of 12)

Continued from previous page

STEP 05

Connect load box assembly to 115 V ac power source.

STEP 06

a. Connect cable 8W1 (17) to Battery Power Conditioner J1 (18) and load box assembly connector J1 (19).
b. Connect oscilloscope/ multimeter (1) positive lead (3) to load box assembly J5 (20) and negative lead (5) to load box assembly J4 (21).

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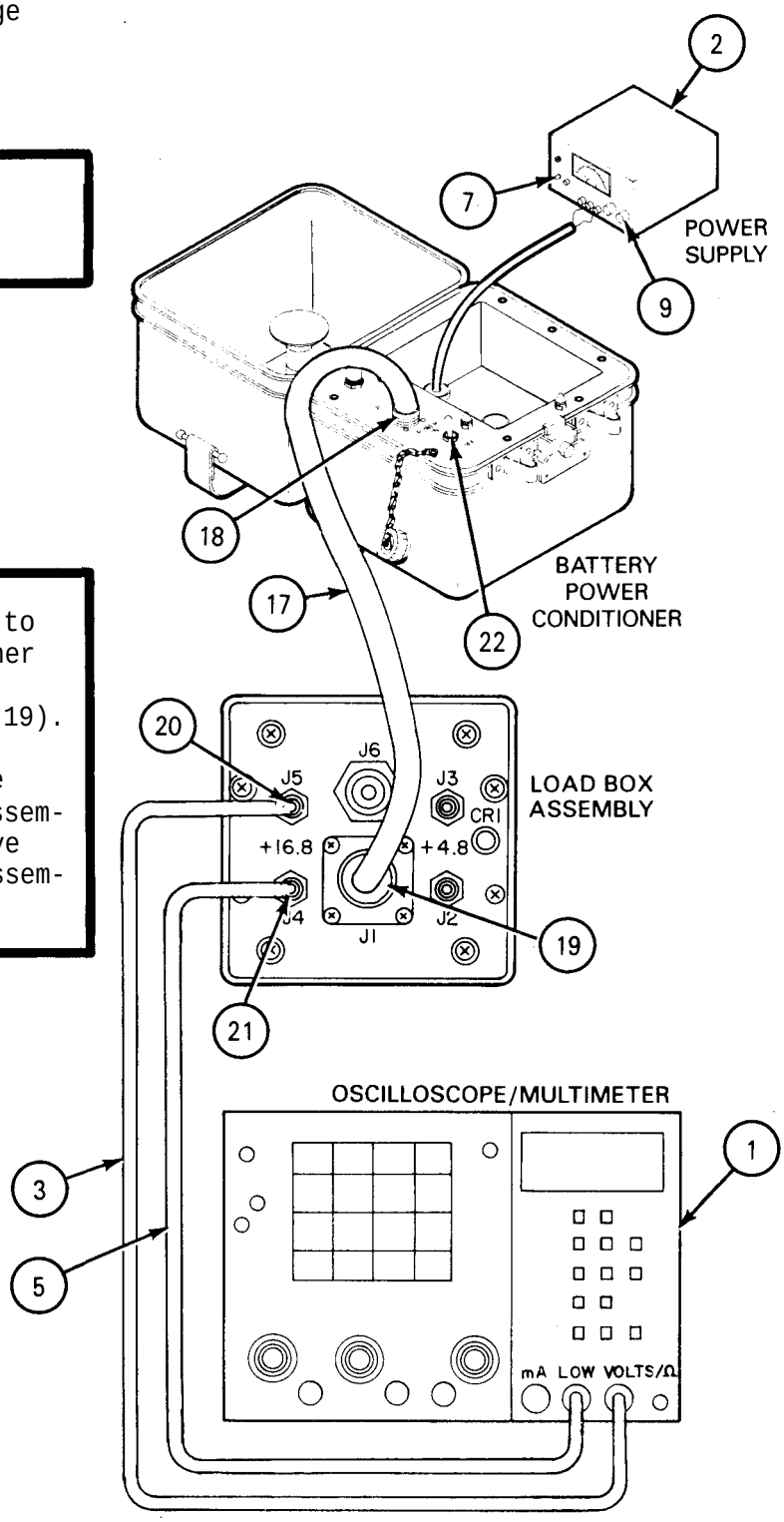
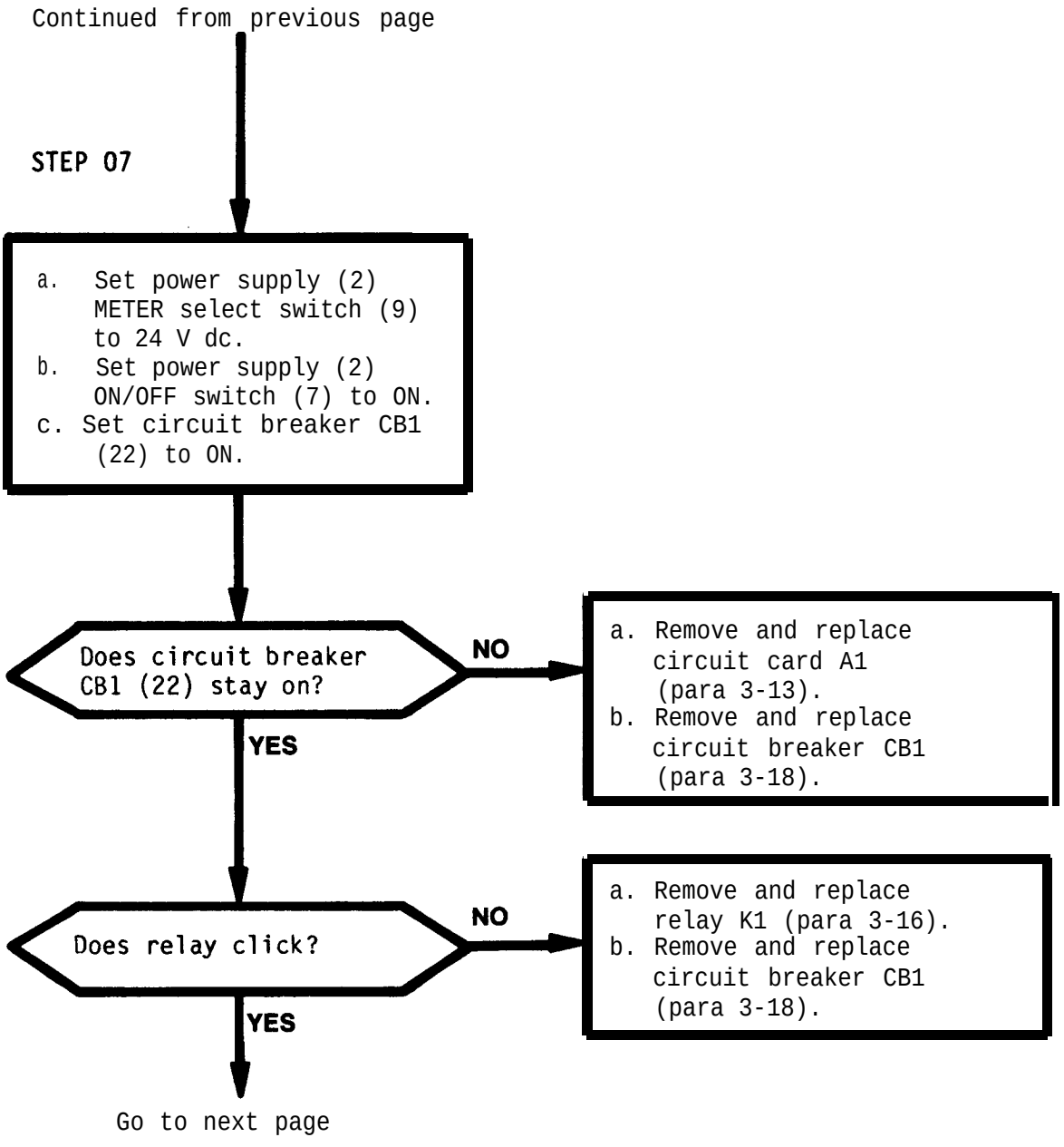


3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 5 of 12)



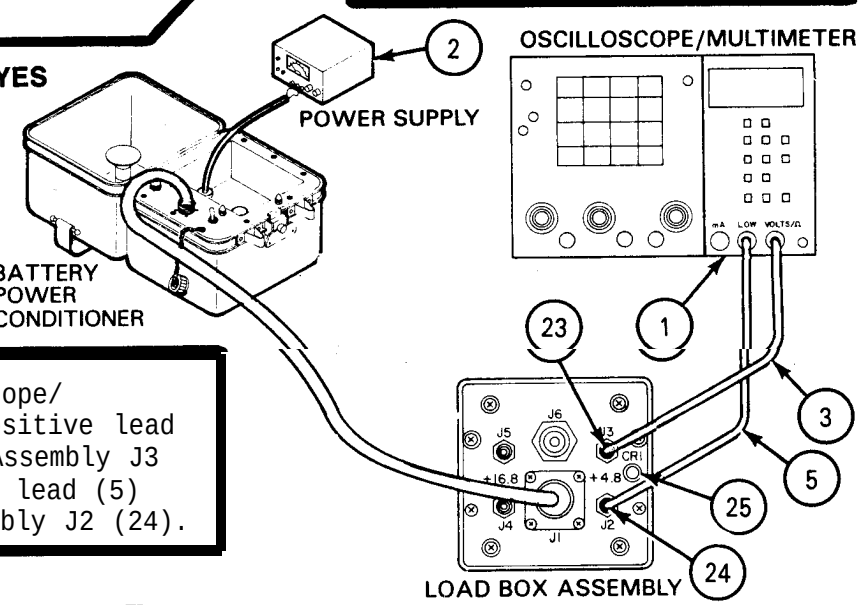
3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 6 of 12)

Continued from previous page

Does oscilloscope/ multimeter indicate between 16.5 and 17.5 V dc?

NO → Go to STEP 13.

YES



STEP 08

Connect oscilloscope/ multimeter (1) positive lead (3) to Load Box Assembly J3 (23) and negative lead (5) to Load Box Assembly J2 (24).

Does oscilloscope/ multimeter indicate between 4.5 and 5.5 V dc?

NO → Go to STEP 16.

YES

STEP 09

Decrease power supply (2) voltage to between 19.0 and 20.0 V dc.

Does low voltage lamp CR1 (25) light?

NO → Remove and replace circuit card A2 (para 3-15).

YES

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3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 7 of 12)

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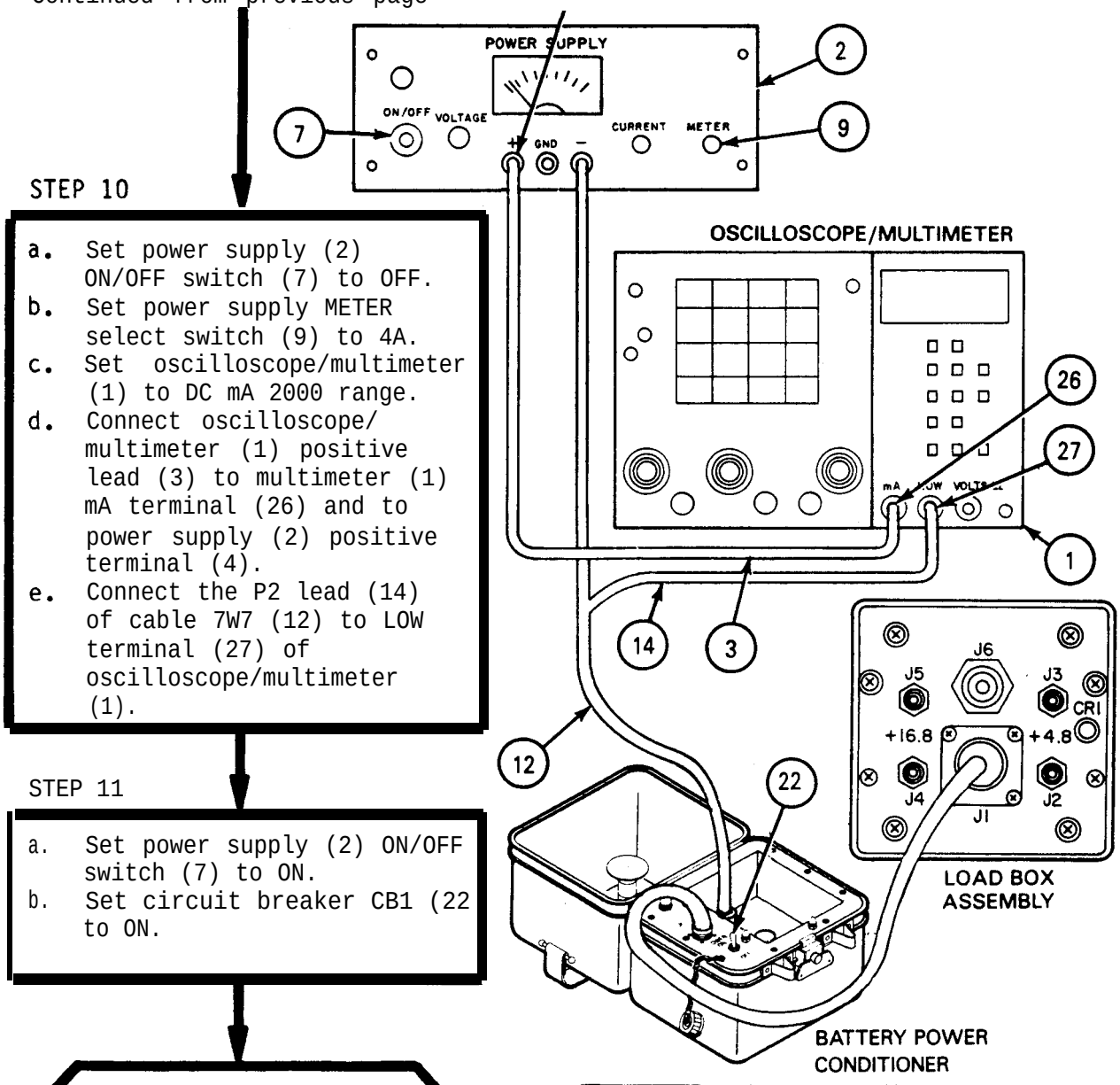

STEP 10

a. Set power supply (2) ON/OFF switch (7) to OFF.
b. Set power supply METER select switch (9) to 4A.
c. Set oscilloscope/multimeter (1) to DC mA 2000 range.
d. Connect oscilloscope/ multimeter (1) positive lead (3) to multimeter (1) mA terminal (26) and to power supply (2) positive terminal (4).
e. Connect the P2 lead (14) of cable 7W7 (12) to LOW terminal (27) of oscilloscope/multimeter (1).

STEP 11

a. Set power supply (2) ON/OFF switch (7) to ON.
b. Set circuit breaker CB1 (22 to ON.

Does oscilloscope/ multimeter indicate less than 2000 milliamps?

NO → Remove and replace circuit card A1(para 3-13).

YES

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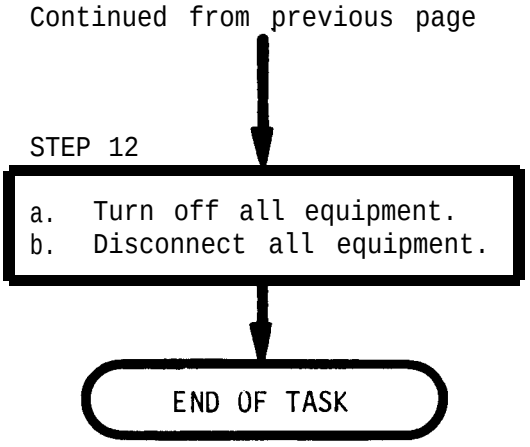
3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 8 of 12)



3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 9 of 12)

Continued from STEP 07

STEP 13

a. Remove battery housing (para 3-12).
b. Perform procedure in para 3-13, step 1A.

STEP 14

Connect oscilloscope/ multimeter (1) positive lead (3) to circuit card Al (28) connector P1 (29) pin 7 and negative lead (5) to circuit card Al (28) test point J1O (30).

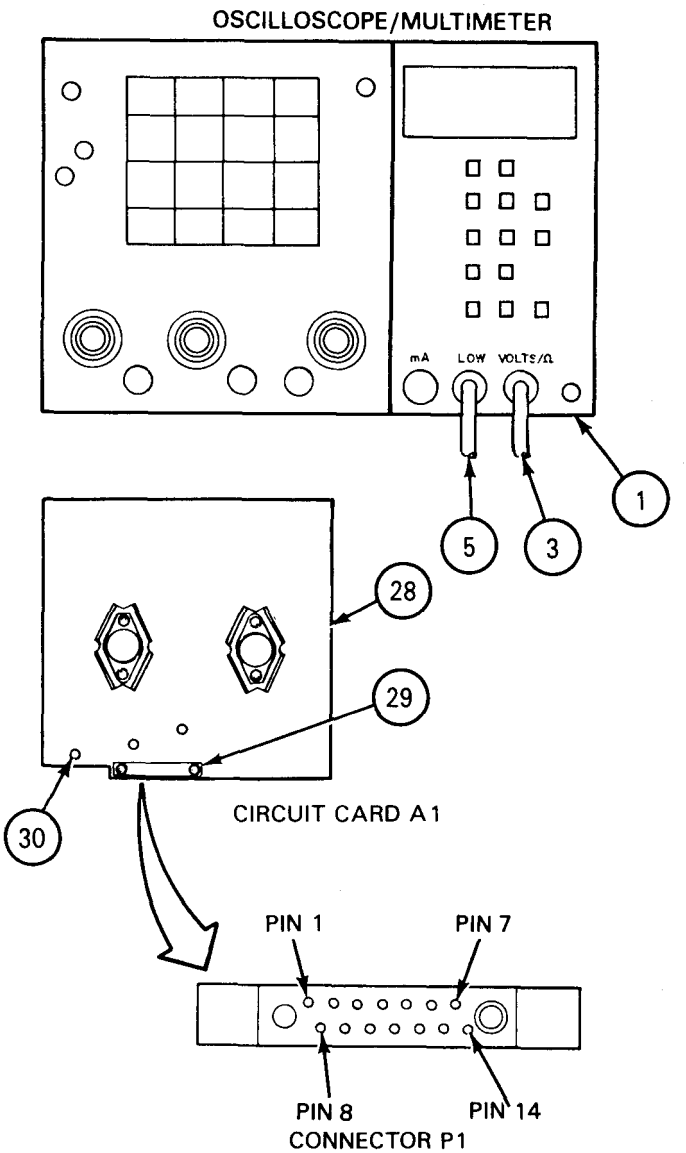
Does oscilloscope multimeter indicate between 20.0 and 24.0 V dc?

NO

a. Adjust power supply.
b. Remove and replace circuit breaker CB1 (para 3-18).
c. Remove and replace relay K1 (para 3-16).

YES

Go to next page

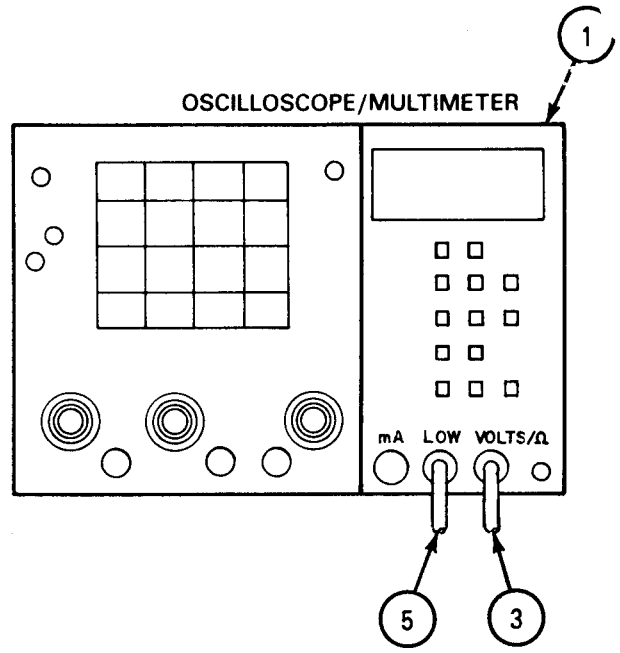


3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 10 of 12)

Continued from previous page

STEP 15

Connect oscilloscope/ multimeter (1) positive lead (3) to circuit card A1(28) test point J4 (31) and negative lead (5) to test point J10 (30).



Does oscilloscope/ multimeter indicate between 16.65 and 16.95 V dc?

NO

a. Perform circuit card A1 alinement (para 3-21).
b. Replace circuit card A1 (para 3-13).

Go to STEP 04

YES

Replace connector J1 (para 3-19).

Go to STEP 04

3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 11 of 12)

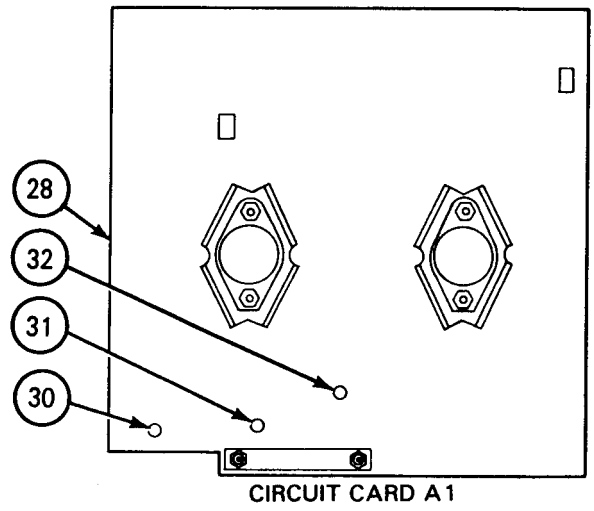
Continued from STEP 08

STEP 16

a. On Battery Power Conditioner, set circuit breaker to OFF.
b. Remove battery housing (para 3-12).
c. Perform procedure in para 3-13, step 1A.

STEP 17

a. Connect oscilloscope/ multimeter (1) positive lead (3) to circuit card Al (28) test point J3 (32) and negative lead (5) to circuit card A1 (28) test point J1O (30).
b. On Battery Power Conditioner, set circuit breaker to ON.



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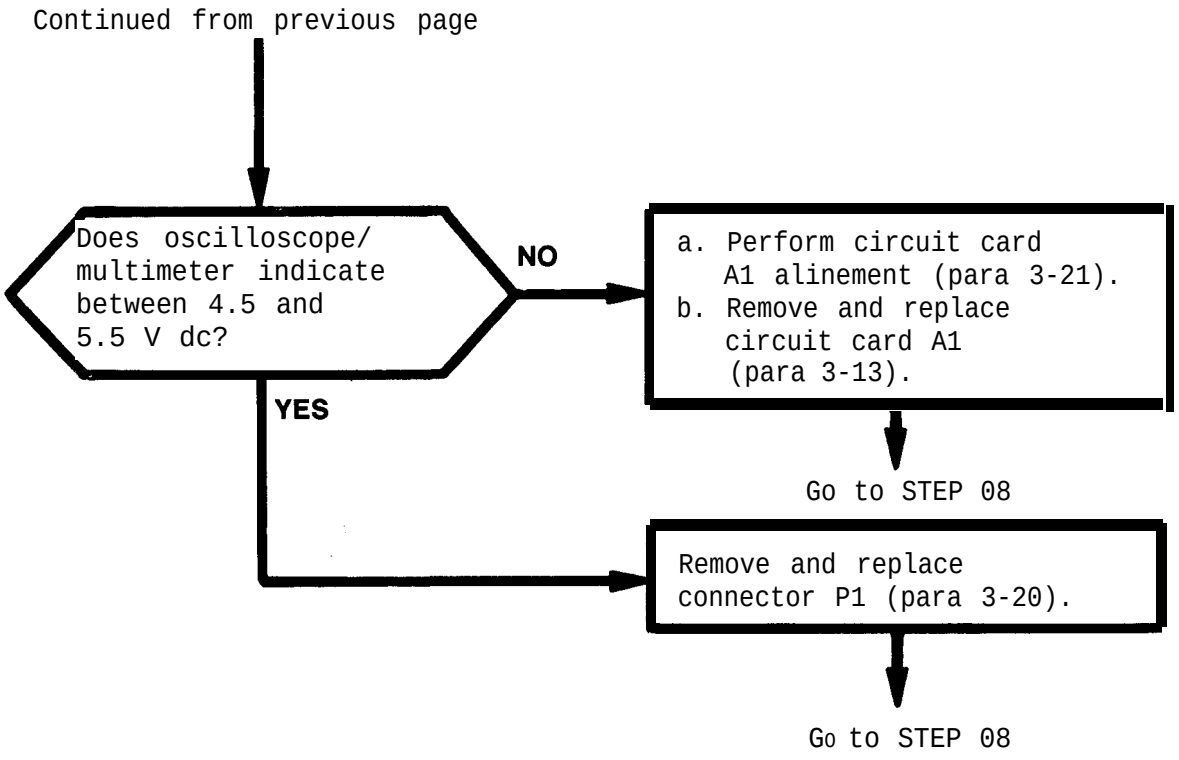
3-6. BATTERY POWER CONDITIONER TROUBLESHOOTING PROCEDURE (CONT) (Sheet 12 of 12)



Section III. BATTERY POWER CONDITIONER MAINTENANCE PROCEDURES

3-7. SCOPE

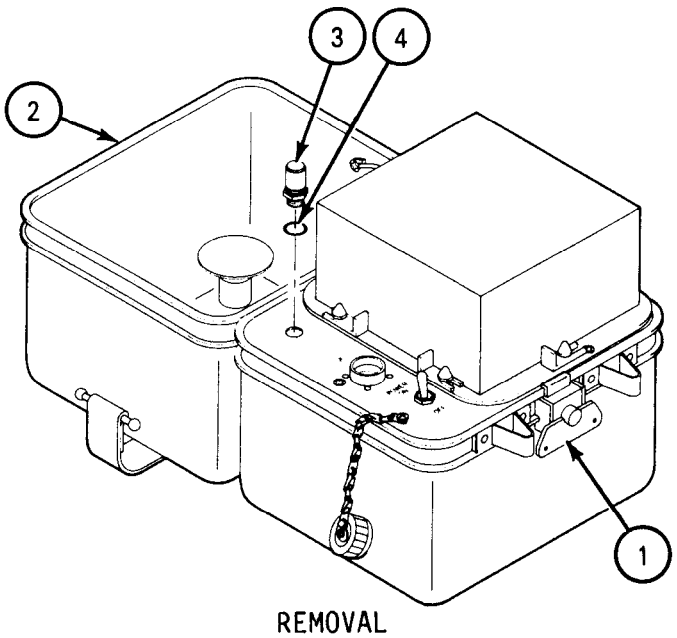
This section contains the maintenance procedures for the Battery Power Conditioner.

3-8. REMOVAL AND REPLACEMENT OF PRESSURE RELIEF VALVE

TOOLS:
5/8-inch open-end wrench

EQUIPMENT CONDITION:
Assembled

MATERIALS:
Silicone compound (Item 1, Appendix D)



REMOVAL

STEP 1

A. Release latch (1) and open cover (2).

B. Remove pressure relief valve (3) and preformed packing (4).

STEP 2 REPLACEMENT

NOTE

Check preformed packing (4) for damage.
Replace as required.

A. Apply thin coat of silicone compound (Item 1, Appendix D) to threads of relief valve (3),

B. Install preformed packing (4) and pressure relief valve (3).

C. Close cover (2) and secure latch (1).

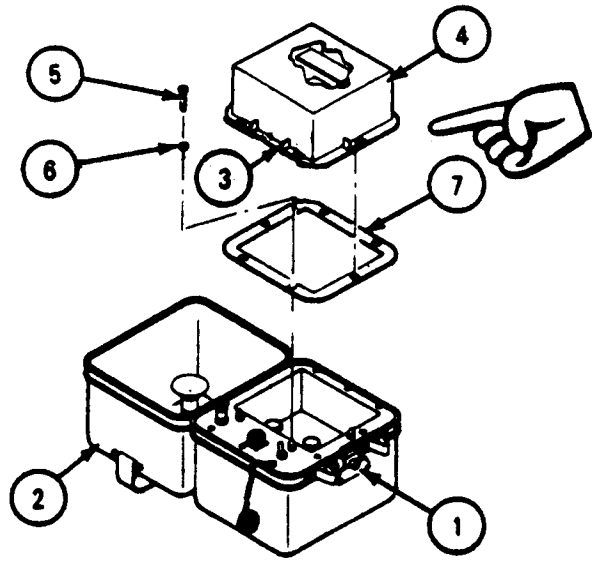
END OF TASK

3-9. REMOVAL AND REPLACEMENT OF GASKET PLATE

TOOLS:
5/16-inch socket-wrench
screwdriver

EQUIPMENT CONDITION:
Batteries removed

MATERIALS:
Silicone compound (Item 1, Appendix D)



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STEP 1 REMOVAL

A. Release latch (1) and open cover (2).

B. Release six latches (3) and remove battery cover (4).

C. Remove six shoulder bolts (5), six flat washers (6), and gasket plate (7).

STEP 2 REPLACEMENT

A. Apply silicone compound (Item 1, Appendix D) to underside of gasket plate (7).

B. Install gasket plate (7), six flat washers (6), and six shoulder bolts (5).

C. Install battery cover (4) and secure six latches (3).

D. Close cover (2) and secure latch (1).

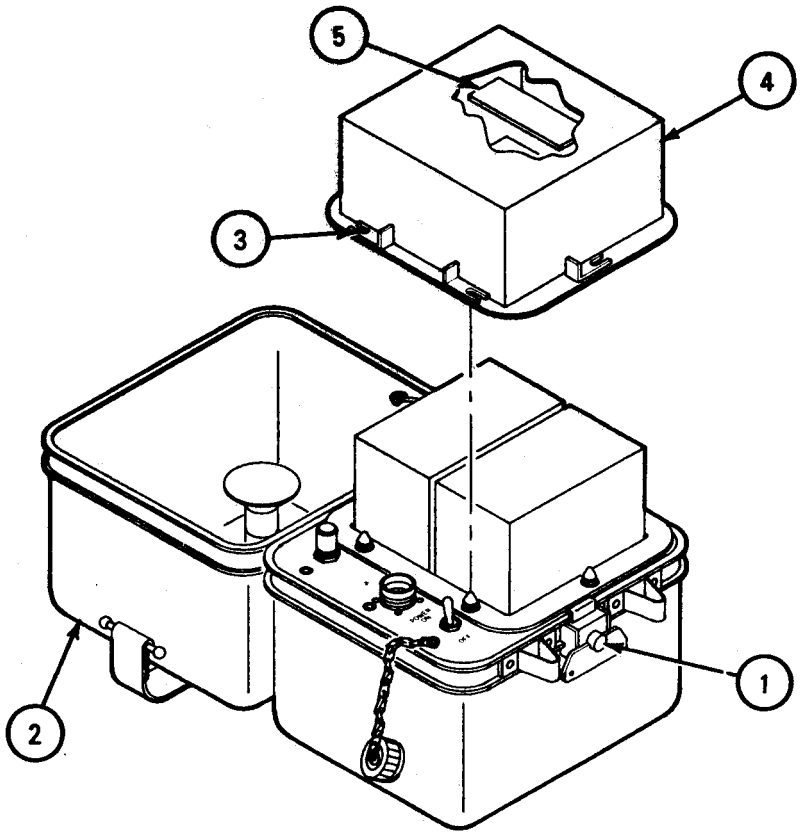
END OF TASK

3-10. REMOVAL AND REPLACEMENT OF PADS (Sheet 1 of 2)

TOOLS:
Putty knife

EQUIPMENT CONDITION:
Assembled

MATERIALS:
Wiping rag (Item 2, Appendix D)
Toluene (Item 3, Appendix D)



STEP 1 REMOVAL

A. Release latch (1) and open cover (2).

B. Release six latches (3) and remove battery cover (4).

c. Remove pad (5).

GO TO NEXT PAGE

3-10. REMOVAL AND REPLACEMENT OF PADS (CONT) (Sheet 2 of 2)

STEP 2 REPLACEMENT

Toluene is toxic and flammable and must be used with extreme care. Vapors in high concentration are anesthetic and dangerous to life. Avoid prolonged or repeated breathing of this vapor or contact with skin. Use only in a well ventilated area, away from heat and open flame.

A. Using toluene (Item 3, Appendix D), clean inside of battery cover (4).

B. Peel backing from pad (5) and stick in place.

C. Install battery cover (4) and secure six latches (3).

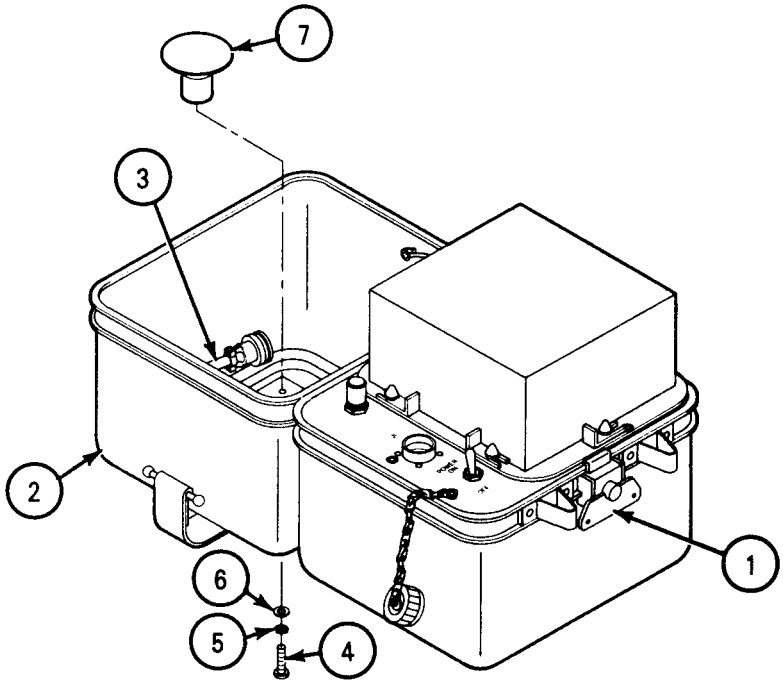
D. Close cover (2) and secure latch (1).

END OF TASK

3-11. REMOVAL AND REPLACEMENT OF CABLE SPOOLS

TOOLS:
No. 2 cross-tip screwdriver

EQUIPMENT CONDITION:
Assembled



STEP 1 REMOVAL

A. Release latch (1) and open cover (2).

B. Remove cable 8W1 (3).

c. Remove screw (4), lockwasher (5), flat washer (6), and cable spool (7).

STEP 2 REPLACEMENT

A. Install cable spool (7), flat washer (6), lockwasher (5), and screw (4).

B. Install cable 8W1 (3).

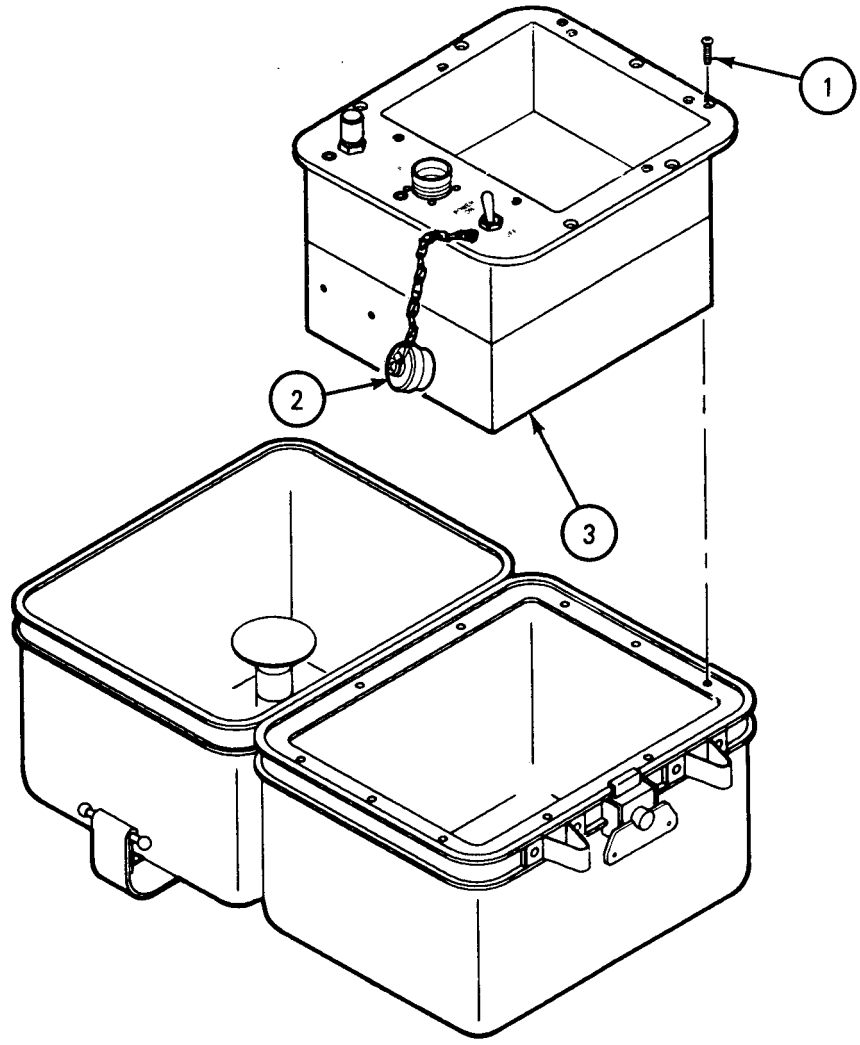
c. Close cover (2) and secure latch (1).

END OF TASK

3-12. REMOVAL AND REPLACEMENT OF BATTERY HOUSING (Sheet 1 of 2)

TOOLS:
No. 2 cross-tip screwdriver

EQUIPMENT CONDITION:
Batteries removed
Gasket plate removed (para 3-9)



STEP 1 REMOVAL

A. Remove 10 screws (1) and dust cover (2).

B. Remove battery housing (3).

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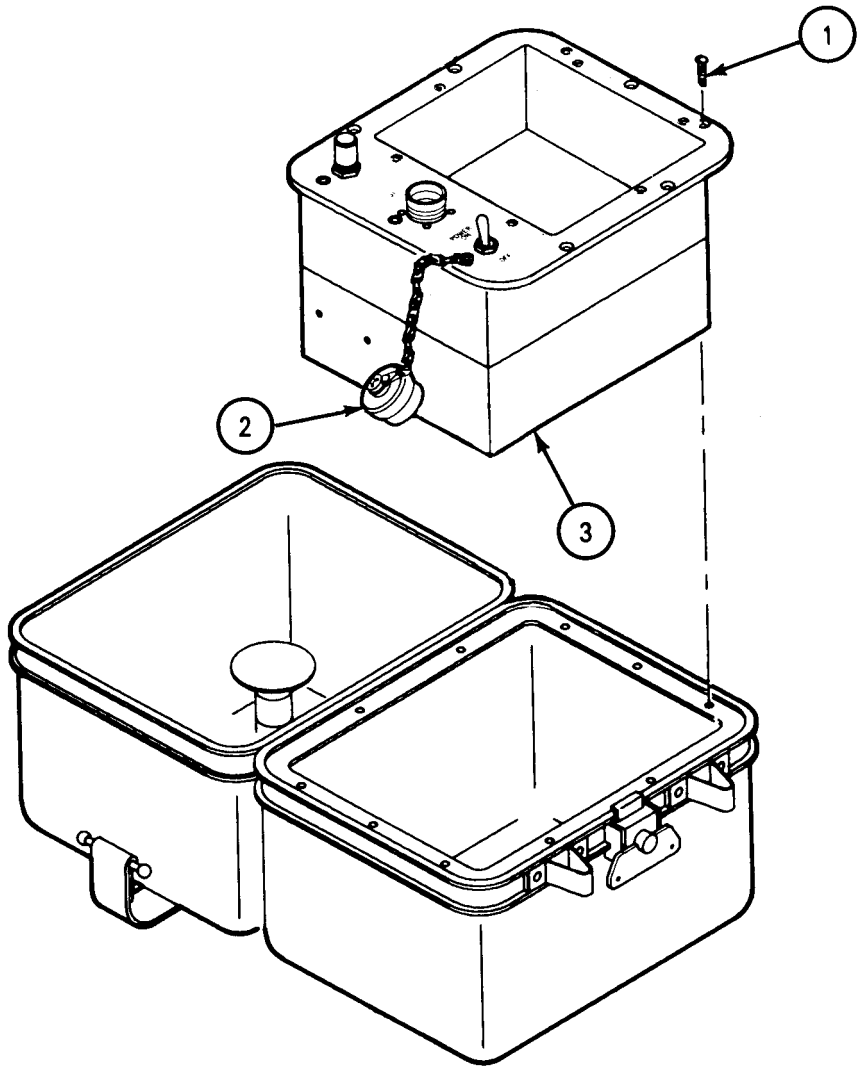
3-12. REMOVAL AND REPLACEMENT OF BATTERY HOUSING (CONT) (Sheet 2 of 2)



STEP 2 REPLACEMENT

A. Install battery housing (3)

B. Install dust cover (2) and 10 screws (1).

c. Install gasket plate (para 3-9).

END OF TASK

3-13. REMOVAL AND REPLACEMENT OF CIRCUIT CARD A1 (Sheet 1 of 2)

TOOLS:

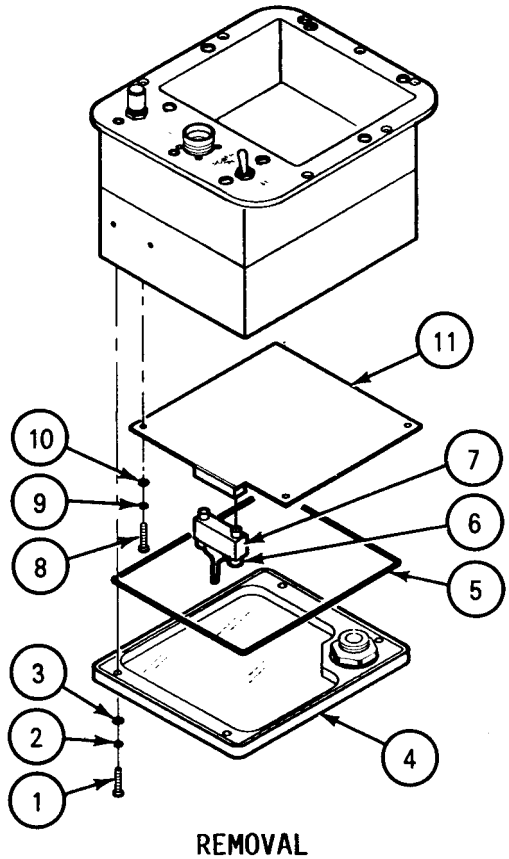
No. 1 cross-tip screwdriver
No. 2 cross-tip screwdriver
5/64-inch socket-head screw key

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)

MATERIALS:

Silicone compound (Item 1, Appendix D)



REMOVAL

STEP 1

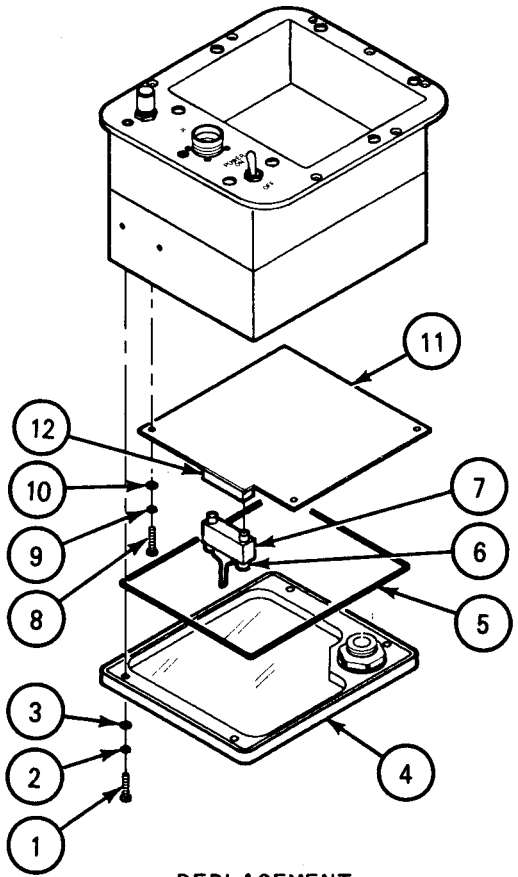
A. Using No. 2 cross-tip screwdriver, remove four screws (1) with packing (2), four flat washers (3), bottom cover (4), and preformed packing (5).

B. Alternately loosen two captive screws (6) and disconnect connector P1 (7).

C. Using No. 1 cross-tip screwdriver, remove four screws (8), four lock-washers (9), four flat washers (10), and circuit card Al (11).

GO TO NEXT PAGE

3-13. REMOVAL AND REPLACEMENT OF CIRCUIT CARD A1 (CONT) (Sheet 2 of 2)



STEP 2 REPLACEMENT

A. Install circuit card A1 (11), four flat washers (10), four lock-washers (9), and four screws (8).

B. Connect connector P1 (7) to connector A1P1 (12) and alternately tighten two captive screws (6).

C. Apply silicone compound (Item 1, Appendix D) to four screws (1) with packing (2) and preformed packing (5).

D. Install preformed packing (5), bottom cover (4), four flat washers (3), four packings (2), and four screws (1)

E. Perform circuit card A1 alinement (para 3-21).

F. Install battery housing (para 3-12).

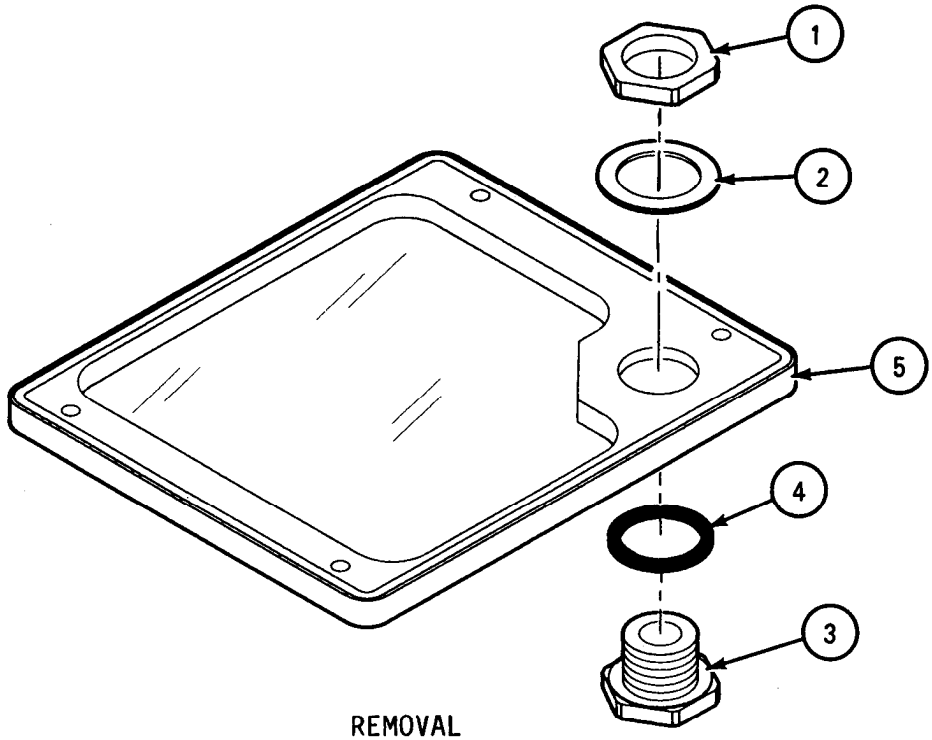
END OF TASK

3-14. REMOVAL AND REPLACEMENT OF RELIEF VALVE

TOOLS:
1-1/8-inch box-end wrench

EQUIPMENT CONDITION:
Bottom cover removed
(para 3-13, step 1A)

MATERIALS:
Silicone compound (Item 1, Appendix D)



REMOVAL

STEP 1

Remove nut (1), plastic washer (2), relief valve (3), and preformed packing (4) from bottom cover (5).

STEP 2 REPLACEMENT

A. Apply silicone compound (Item 1, Appendix D) to plastic washer (2) and preformed packing (4).

B. Install preformed packing (4) and relief valve (3) in bottom cover (5).

C. Install plastic washer (2) and nut (1).

D. Install bottom cover (para 3-13, steps 2C and 2D).

END OF TASK

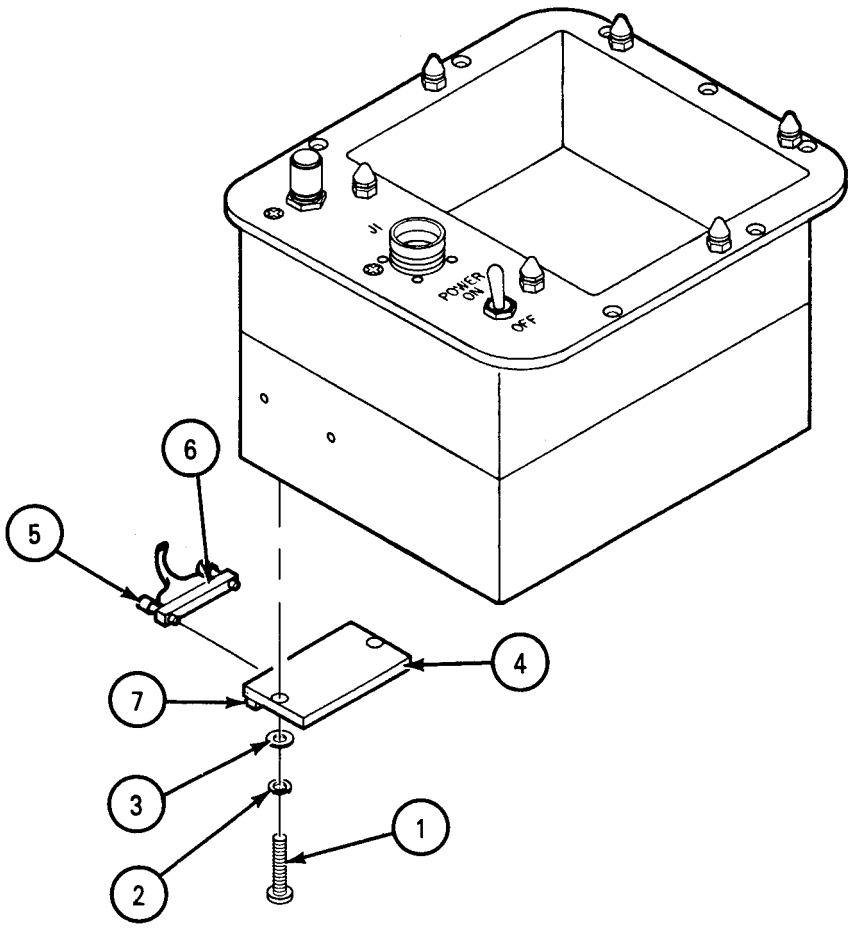
3-15. REMOVAL AND REPLACEMENT OF CIRCUIT CARD A2 (Sheet 1 of 2)

TOOLS:

No. 1 cross-tip screwdriver
5/64-inch socket-head screw-key wrench

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card Al removed (para 3-13)



STEP 1 REMOVAL

A. Remove two screws (1), two lockwashers (2), two flat washers (3), and circuit card A2 (4) .

B. Alternately loosen two captive screws (5) and disconnect connector P2 (6).

GO TO NEXT PAGE

3-15. REMOVAL AND REPLACEMENT OF CIRCUIT CARD A2 (CONT) (Sheet 2 of 2)

STEP 2 REPLACEMENT

A. Connect connector P2 (6) to connector A2P1 (7) and alternately tighten two captive screws (5).

B. Install circuit card A2 (4), two flat washers (3), two lockwashers (2), and two screws (1).

C. Install circuit card A1 (para 3-13 steps 2A-2D).

D. Install battery housing (para 3-12).

END OF TASK

3-16. REMOVAL AND REPLACEMENT OF RELAY K1 (Sheet 1 of 2)

TOOLS:

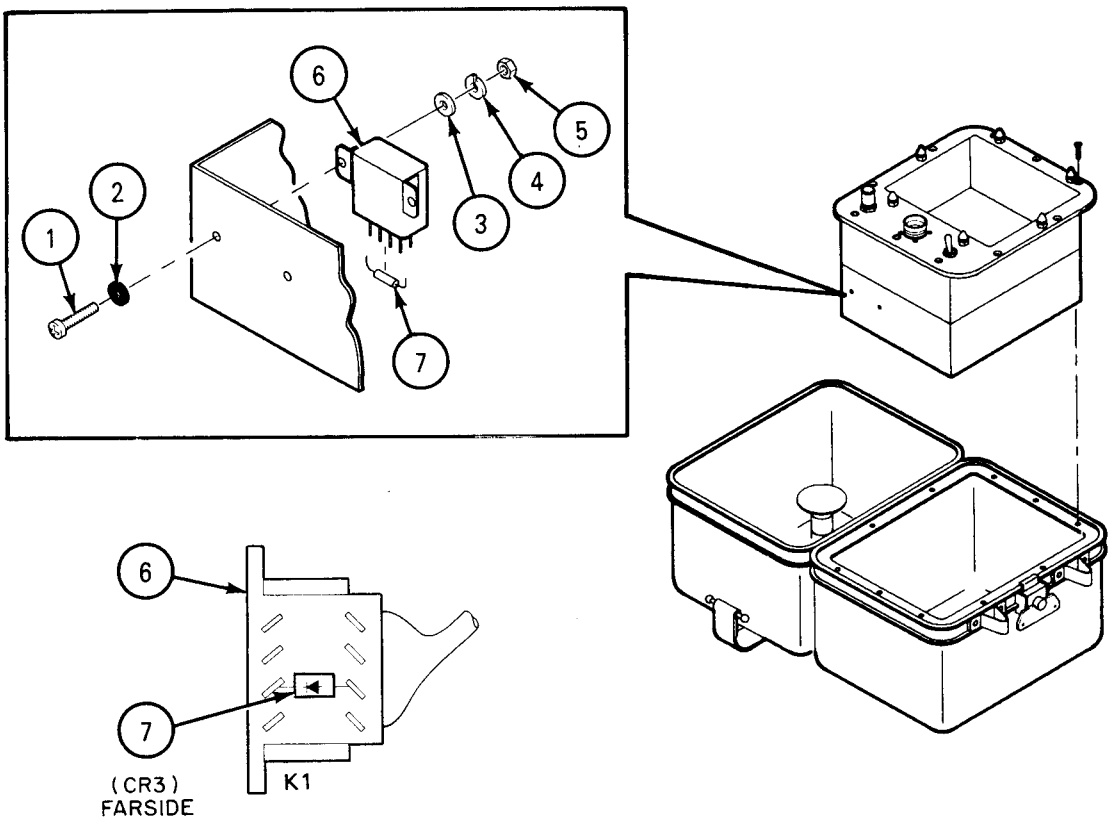
No. 1 cross-tip screwdriver
1/4-inch open-end wrench
Soldering iron

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card A1 removed (para 3-13)

MATERIALS:

Silicone compound (Item 1, Appendix D)
Solder (Item 4, Appendix D)



STEP 1 REMOVAL

A. Remove two screws (1), two preformed packings (2), two flat washers (3), two lockwashers (4), two nuts (5), and relay K1 (6).

B. Tag and unsolder leads from relay K1 (6).

GO TO NEXT PAGE

3-16. REMOVAL AND REPLACEMENT OF RELAY K1 (CONT) (Sheet 2 of 2)

STEP 2 REPLACEMENT

A. Using solder (Item 4, Appendix D), solder new diode CR3 (7) leads to new relay K1 (6).

B. Using solder (Item 4, Appendix D), solder leads to relay K1 (6) terminals and untag.

C. Apply silicone compound (Item 1, Appendix D) to two preformed packings (2).

D. Install relay K1 (6), two preformed packings (2), two screws (1), two flat washers (3), two lockwashers (4), and two nuts (5).

E. Install circuit card A1 (para 3-13, steps 2A-2D).

F. Install battery housing (para 3-12).

END OF TASK

3-17. REMOVAL AND REPLACEMENT OF CONNECTOR XBT1 OR XBT2 (Sheet 1 of 2)

TOOLS:

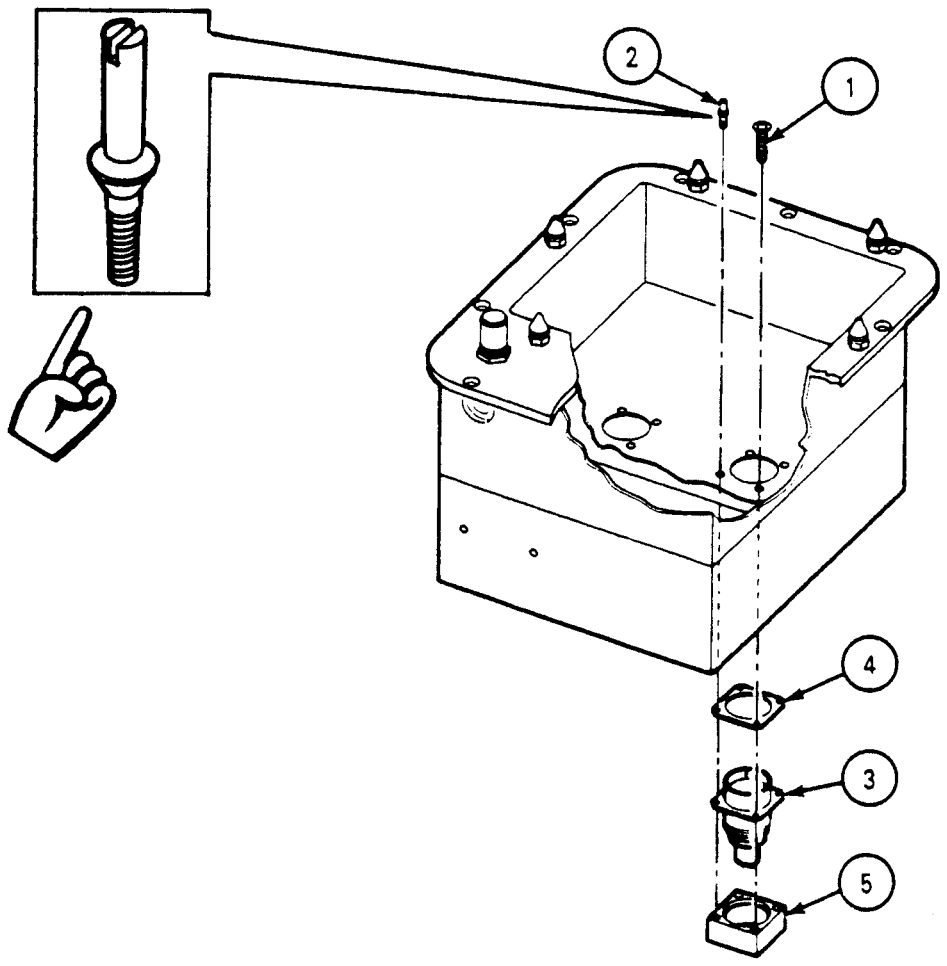
No. 1 cross-tip screwdriver
3/16-inch nut driver
Soldering iron

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card A1 removed (para 3-13)

MATERIALS:

Silicone compound (Item 1, Appendix D)
Solder (Item 4, Appendix D)
Sealing compound (Item 5, Appendix D)
Sealing compound primer (Item 6, Appendix D)
Silicone compound (Item 7, Appendix D)
Silicone compound primer (Item 8, Appendix D)



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3-17. REMOVAL AND REPLACEMENT OF CONNECTOR XBT1 OR XBT2 (CONT) (Sheet 2 of 2)

STEP 1 REMOVAL

NOTE

Connectors XBT1 and XBT2 are removed and replaced in the same manner. Removal and replacement procedures are described only for connector XBT2 in this procedure.

A. Remove two screws (1), two guide pins (2), connector (3) and gasket (4).

B. Remove cured silicone sealant from inside of connector block (5), then separate connector block (5) from connector (3).

C. Tag and unsolder leads from connector (3).

STEP 2 REPLACEMENT

A. Slide connector block (5) over wires of harness.

B. Using solder (Item 4, Appendix D), solder wires to connector (3) and untag.

C. Position connector block (5) against connector.

D. Apply silicone compound primer (Item 8, Appendix D) to inside of connector block (5) and fill cavity flush within ± 0.050 inch using silicone compound (Item 7, Appendix D), and allow to cure.

E. Apply sealing compound primer (Item 6, Appendix D) to tapers only of two screws (1) and two guide pins (2), then apply sealing compound (Item 5, Appendix D) to the same items.

F. Install connector block (5), connector (3), gasket (4), two screws (1) and two guide pins (2).

G. Install circuit card A1 (para 3-13, steps 2A-2D).

H. Install battery housing (para 3-12).

END OF TASK

3-17.1 REMOVAL AND REPLACEMENT OF CONNECTOR XBT1 OR XBT2 (Sheet 1 of 2)

TOOLS:

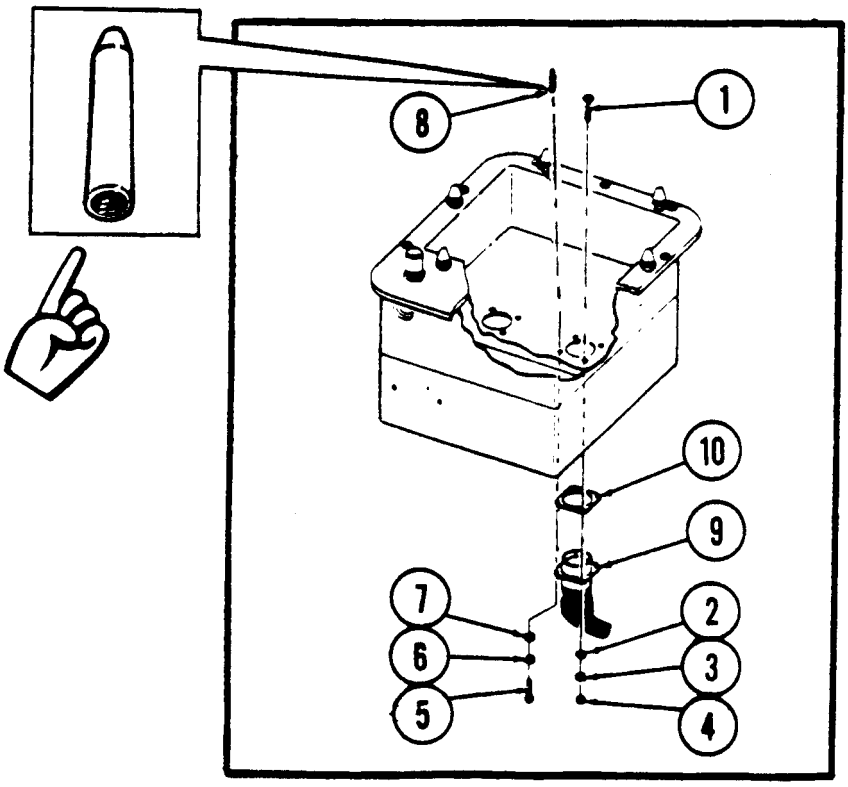
No. 1 cross-tip screwdriver
3/16-inch nut driver
Soldering iron

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card Al removed (para 3-13)

MATERIALS:

Solder (item 4, Appendix D)
Sealing compound (Item 5, Appendix D)
Sealing compound primer (Item 6, Appendix D)



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3-17.1 REMOVAL AND REPLACEMENT OF CONNECTOR XBT OR XBT2 (CONT) **(Sheet 2 of 2)**

STEP 1 REMOVAL

NOTE

Connectors XBT1 and XBT2 are removed and replaced in the same manner. Removal and replacement procedures are described only for connector XBT2 in this procedure.

A. Remove two screws (1), two flat washers (2), two lock washers (3), and two nuts (4).

B. Remove two screws (5), two lock washers (6), two flat washers (7), and two guide pins (8).

C. Remove connector (9) and gasket (10).

D. Tag and unsolder wires from connector (9).

STEP 2 REPLACEMENT

A. Using solder (Item 4, Appendix D), solder wires to connector (9) and untag.

B. Apply sealing compound primer (Item 6, Appendix D) to tapers only of two screws (1) and two screws (5), then apply sealing compound (Item 5, Appendix D) to the same item.

C. Install gasket (10) and connector (9) and secure in place using two screws (1), two flat washers (2), two lock washers (3), and two nuts (4).

D. Install two guide pins (8) and secure in place with two screws (5), two lock washers (6), and two flat washers (7).

E. Install circuit card A1 (para 3-13, steps 2A-2D).

F. Install battery housing (para 3-12).

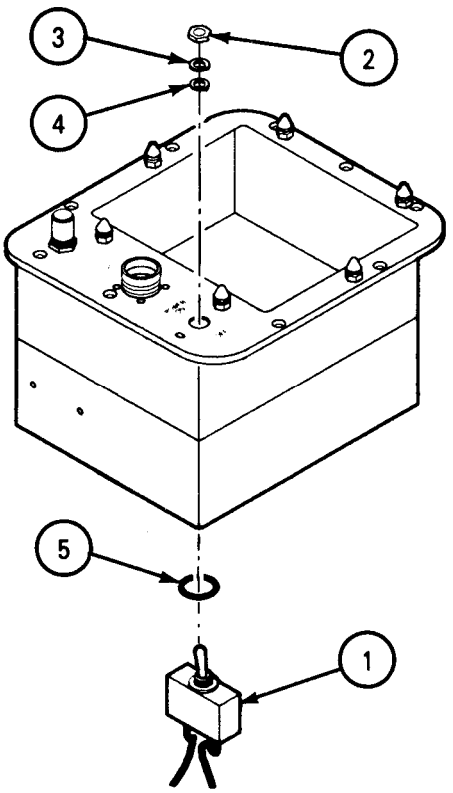
END OF TASK

3-18. REMOVAL AND REPLACEMENT OF CIRCUIT BREAKER CB1 (Sheet 1 of 2)

TOOLS:
1/2-inch open-end wrench
Soldering iron

EQUIPMENT CONDITION:
Batteries removed
Battery housing removed (para 3-12)
Circuit card Al removed (para 3-13)

MATERIALS:
Silicone compound (Item 1, Appendix D)
Solder (Item 4, Appendix D)



STEP 1 REMOVAL

A. Tag and unsolder leads from circuit breaker CB1 (1).

B. Remove nut (2), lockwasher (3), key washer (4), circuit breaker CB1 (1), and preformed packing (5).

GO TO NEXT PAGE

3-18. REMOVAL AND REPLACEMENT OF CIRCUIT BREAKER CB1 (CONT) (Sheet 2 of 2)

STEP 2 REPLACEMENT

A. Apply silicone compound (Item 1, Appendix D) to preformed packing (5) .

B. Install preformed packing (5), circuit breaker CB1 (1), key washer (4), lockwasher (3), and nut (2).

C. Using solder (Item 4, Appendix D), solder leads to circuit breaker CB1 (1) and untag.

D. Install circuit card A1 (para 3-13, steps 2A-2D).

E. Install battery housing (para 3-12).

END OF TASK

3-19. REMOVAL AND REPLACEMENT OF CONNECTOR J1 (Sheet 1 of 2)

TOOLS:

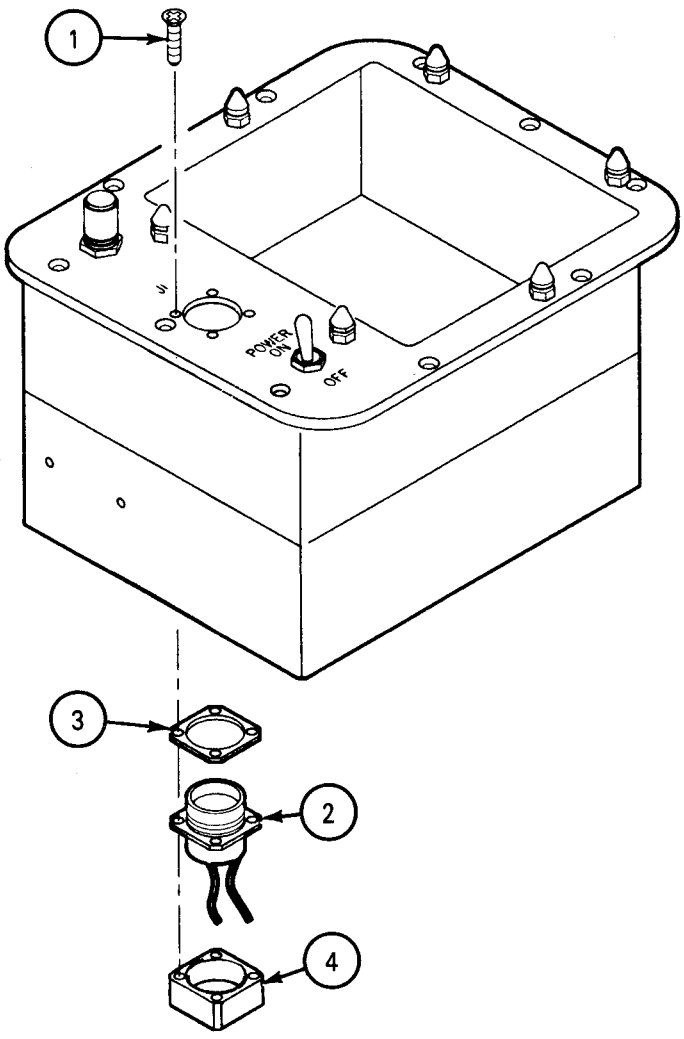
No. 1 cross-tip screwdriver
Soldering iron

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card Al removed (para 3-13)

MATERIALS:

Silicone compound (Item 1, Appendix D)
Solder (Item 4, Appendix D)
Sealing compound (Item 5, Appendix D)
Sealing compound primer (Item 6, Appendix D)
Silicone compound (Item 7, Appendix D)
Silicone compound primer (Item 8, Appendix D)



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3-19. REMOVAL AND REPLACEMENT OF CONNECTOR J1 (CONT) (Sheet 2 of 2)

STEP 1 REMOVAL

A. Remove four screws (1), connector J1 (2), and gasket (3).

B. Remove cured silicone sealant from inside of connector block (4), then separate connector block (4) from connector (2).

C. Tag and unsolder leads from connector J1 (2).

STEP 2 REPLACEMENT

A. Slide connector block (4) over wires of harness.

B. Using solder (Item 4, Appendix D), solder wires to connector (2) and untag.

C. Position connector block (4) against connector (2).

D. Apply silicone compound primer (Item 8, Appendix D) to inside of connector block (4) and fill cavity flush within ± 0.050 inch using silicone compound (Item 7, Appendix D), and allow to cure.

E. Apply sealing compound primer (Item 6, Appendix D) to tapers only of four screws (1), then apply sealing compound (Item 5, Appendix D) to the same screws.

F. Install connector block (4), connector (2), gasket (3), and four screws (1).

G. Install circuit card A1 (para 3-13, steps 2A-2D).

H. Install battery housing (para 3-12).

END OF TASK

3-19.1 REMOVAL AND REPLACEMENT OF CONNECTOR J1 (Sheet 1 of 2)

TOOLS:

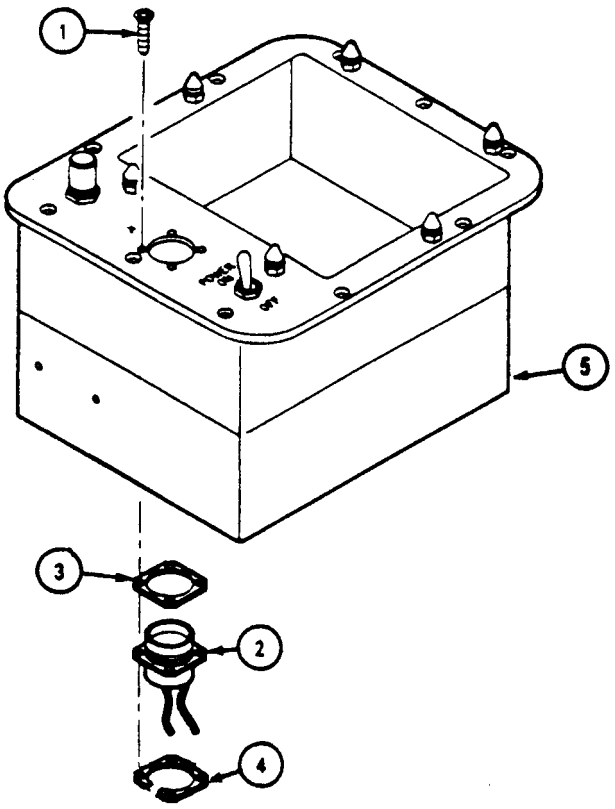
No. 1 cross-tip screwdriver
Soldering iron

EQUIPMENT CONDITION:

Batteries removed
Battery housing removed (para 3-12)
Circuit card Al removed (para 3-13)

MATERIALS:

Solder (Item 4, Appendix D)
Sealing compound (Item 5, Appendix D)
Sealing compound primer (Item 6, Appendix D)



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3-19.1 REMOVAL AND REPLACEMENT OF CONNECTOR J1 (CONT) (Sheet 2 of 2)

STEP 1 REMOVAL

A. Remove four screws (1), connector J1 (2), gasket (3), and nut plate (4).

B. Tag and unsolder wires from connector J1 (2).

STEP 2 REPLACEMENT

A. Using solder (Item 4, Appendix D), solder wires to connector (2) and untag.

B. Apply sealing compound primer (Item 6, Appendix D) to tapers only of four screws (1), then apply sealing compound (Item 5, Appendix D) to the same screws.

C. Position gasket (3), connector (2), and nut plate (4) in battery housing (5).

D. Secure in place using four screws (1).

E. Install circuit card A1 (para 3-13, steps 2A-2D).

F. Install battery housing (para 3-12).

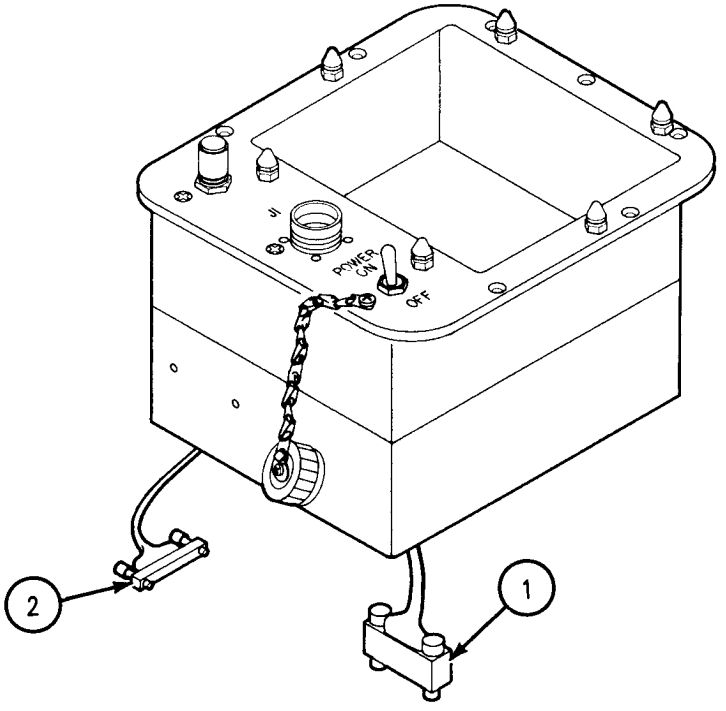
END OF TASK

3-20. REMOVAL AND REPLACEMENT OF CONNECTOR P1 OR P2

TOOLS:
Soldering iron

MATERIALS:
Solder (Item 4, Appendix D)

EQUIPMENT CONDITION:
Batteries removed
Battery housing removed (para 3-12)
Circuit card A1 removed (para 3-13)
Circuit card A2 removed (para 3-15)



STEP 1 REMOVAL

Tag and unsolder leads from connector P1 (1) or connector P2 (2).

STEP 2 REPLACEMENT

A. Using solder (Item 4, Appendix D), solder leads to connector P1 (1) or connector P2 (2) and untag.

B. Install circuit card A2 (para 3-15, steps 2A and 2B).

C. Install circuit card A1 (para 3-13, steps 2A-2D).

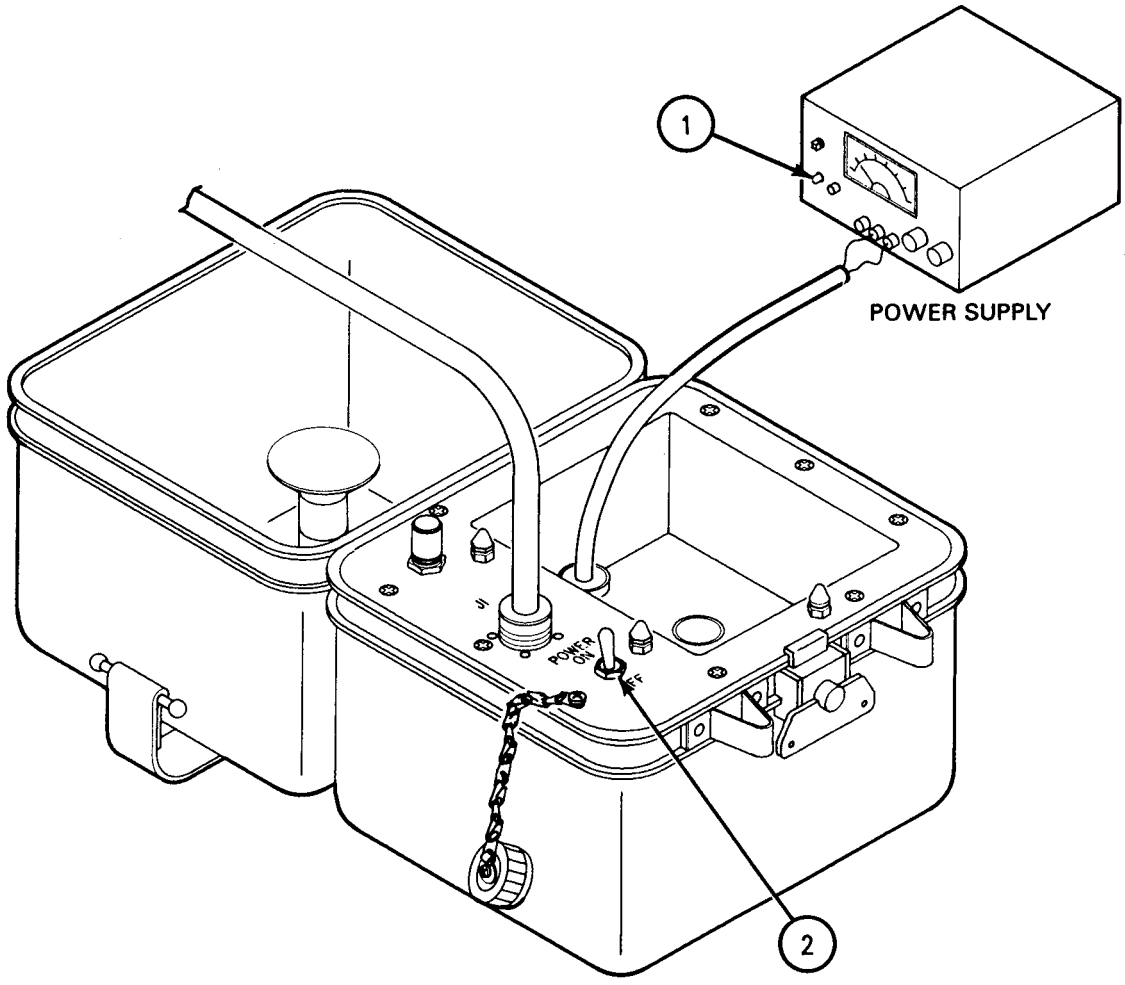
D. Install battery housing (para 3-12).

END OF TASK

3-21. CIRCUIT CARD A1 ALINEMENT (Sheet 1 of 3)

TOOLS:
0.100-inch jeweler's screwdriver

EQUIPMENT CONDITION:
Bottom cover removed



A. Perform paragraph 3-6, steps 01 through 06, of Battery Power Conditioner Troubleshooting Procedure.

B. Set power supply ON/OFF switch (1) to ON.

C. Set circuit breaker CB1 (2) to ON.

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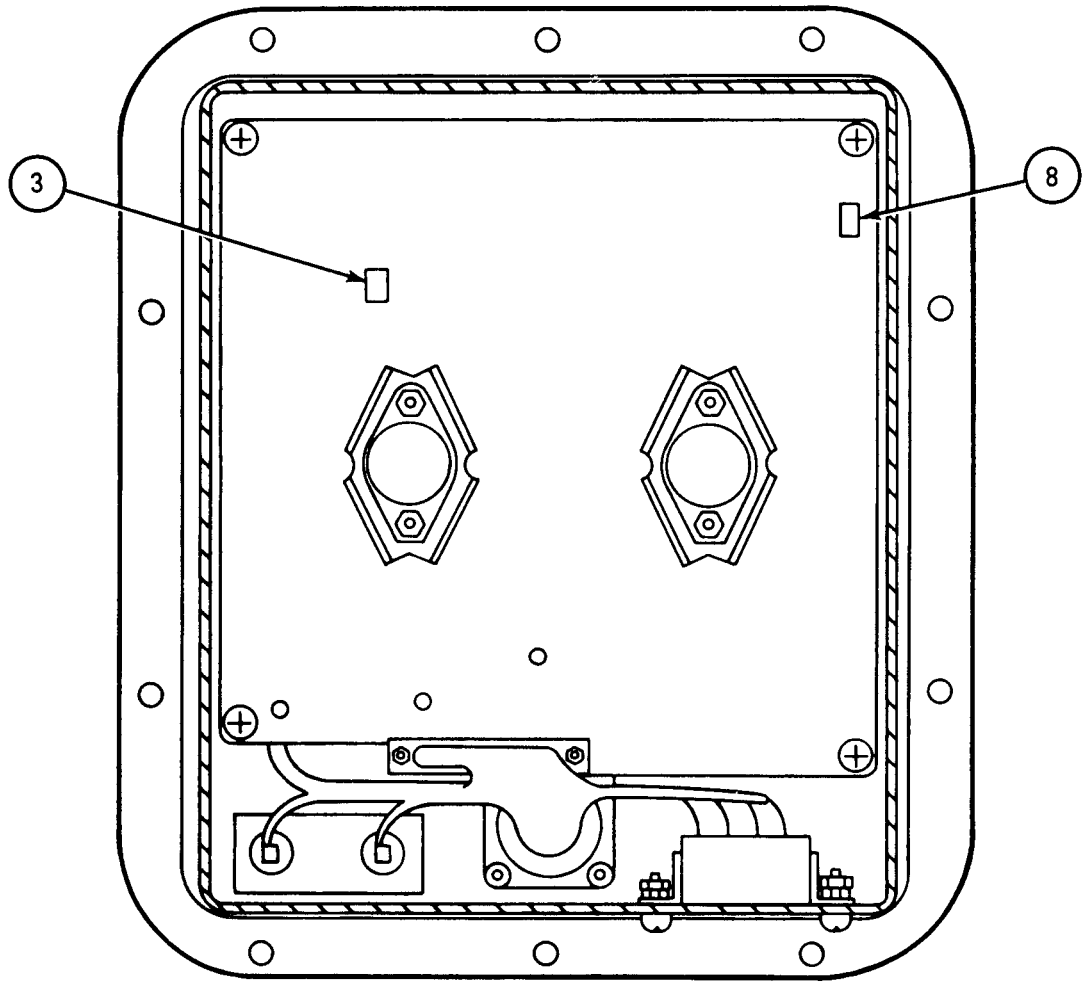
3-21. CIRCUIT CARD A1 ALINEMENT (CONT) (Sheet 2 of 3)



CIRCUIT CARD A1

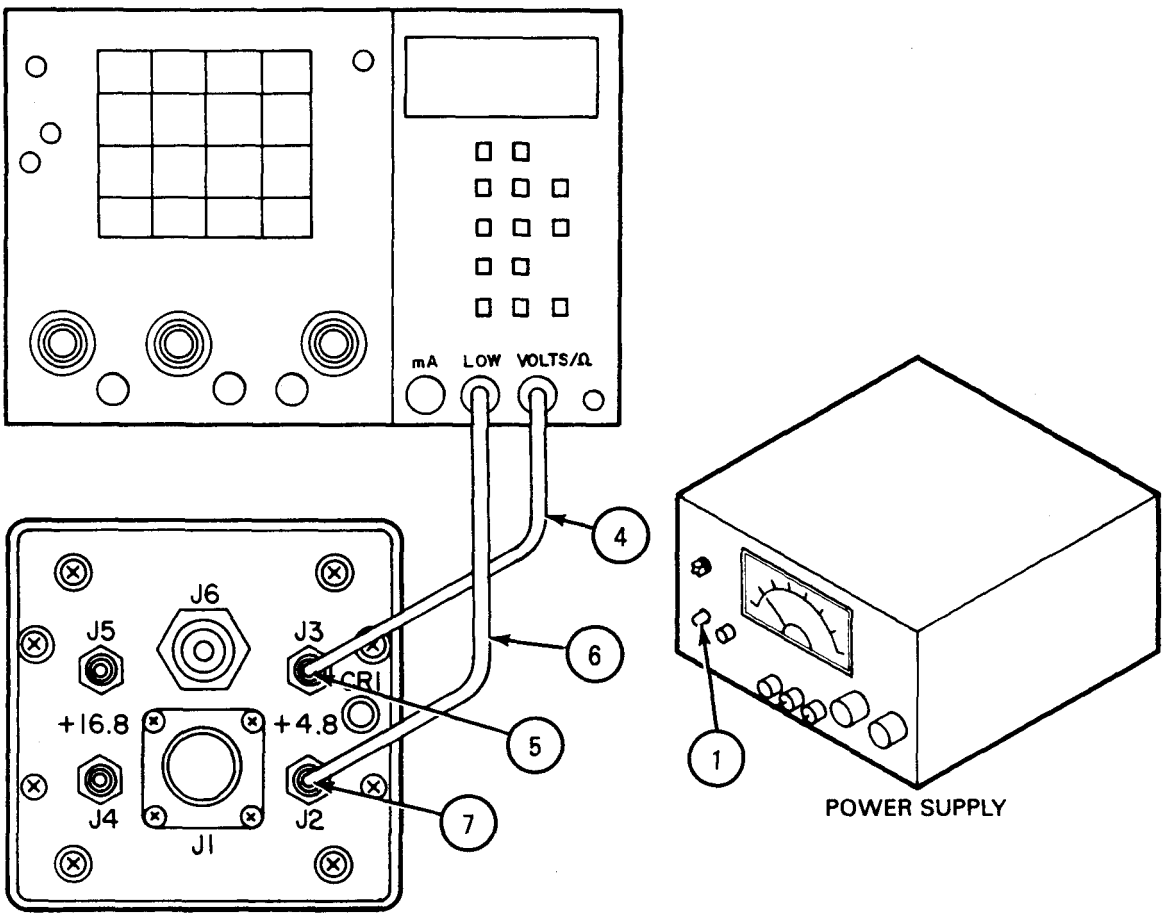
NOTE

Some printed circuit boards found in the Battery Power Conditioner will appear to be different from this illustration. They are, however, identical in form, fit, and function and are all interchangeable.

D. Adjust circuit card A1 potentiometer R42 (3) until multimeter indicates between 16.7 and 16.9 V dc.

GO TO NEXT PAGE

3-21. CIRCUIT CARD A1 ALINEMENT (CONT) (Sheet 3 of 3)



E. Set power supply ON/OFF switch (1) to OFF.

F. Connect oscilloscope/multimeter positive lead (4) to load box assembly test point J3 (5) and negative lead (6) to test point J2 (7).

G. Set power supply ON/OFF switch (1) to ON.

H. Adjust circuit card A1 potentiometer R38 (8) until oscilloscope/multimeter indicates between 4.7 and 4.9 V dc.

I. Turn off power and disconnect all test equipment.

J. Install bottom cover (para 3-13, steps 2C and 2D).

END OF TASK

3-22. TOUCHUP PAINTING

MATERIALS:

CARC paint (Item 10, Appendix D)
Primer coating (Item 9, Appendix D)

Chemical agent resistant coating (CARC) is extremely toxic and flammable. Never use where sparks, smoking, or open flame may be present. CARC, if improperly used, may cause long term health problems. Avoid contact with skin, breathing of fumes, or ingestion of dried particles. Use must be monitored by the local safety office and preventive medicine support activity. Refer to TM 43-0139 for applicable safety precautions prior to removal or application of CARC.

CAUTION

Use masking tape to ensure that no paint is applied to lenses, bolt holes, attaching surfaces, preformed packings, preformed packing grooves, or surfaces treated with lubricant.

EXTERNAL TOUCHUP PAINTING INSTRUCTIONS

Direct support maintenance personnel are authorized to spot paint the surfaces of BPC with CARC paint. Prime metal surfaces in accordance with MIL-C-46168.

END OF TASK

APPENDIX A

REFERENCES

A-1 . SCOPE

This appendix lists all forms, field manuals, technical manuals and miscellaneous publications referenced in this manual.

A-2. FORMS

Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).	CTA 50-970
Recommended Changes to Publications and Blank Forms.	DA Form 2028
Recommended Changes to DA Publications.	DA Form 2028-2
The Army Maintenance Management System (TAMMS).	DA PAM 738-750

A-3. TECHNICAL MANUALS

List of Applicable Publications (LOAP) for TOW 2 Heavy Antitank/Assault Weapon System.	TM 9-1425-450-L
Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List Including Depot Maintenance Repair Parts and Special Tools for Night Vision Sight, Infrared AN/TAS-4A Basic Sight Assembly SU-108A/TAS, Vehicle Power Conditioner, Battery Power Conditioner, and Collimator, Boresight SU-93A/TAS.	TM 9-5855-450-24P
Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List Including Depot Maintenance Repair Parts and Special Tools for Equipment Set, Night Vision Sight, Infrared AN/UAS-12B.	TM 9-5855-882-24P
Instructions for Preparation of Equipment for Storage or Shipment.	TM 9-1260-477-12
Operator's Organizational, Direct Support, and General Support Maintenance Manual for Test Set, Night Vision Sight, AN/TAM-3, AN/TAM-3A, AN/TAM-3B.	TM 9-5855-255-14

Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).	TM 750-244-4-2
Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List Including Depot Maintenance Repair Parts and Special Tools for Equipment Set, Night Vision Sight, Infrared AN/UAS-12D (NSN 5855-01-212-4996), Night Vision Sight Infrared AN/TAS-4D (NSN 5855-01-218-1646), Basic Sight Assembly SU-108A/TAS (NSN 5855-01-143-3182). Vehicle Power Conditioner (NSN 5855-01-143-3181). Battery Power Conditioner (NSN 6135-01-143-4470), Collimator, Boresight SU-93A/TAS (NSN 5855-01-109-6433).	TM 9-5855-1882-24P
Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List Including Depot Maintenance Repair Parts and Special Tools for Equipment Set, Night Vision Sight, Infrared AN/UAS-12C (NSN 5855-01-212-4997), Night Vision Sight Infrared AN/TAS-4C (NSN 5855-01-218-6992), Basic Sight Assembly SU-108A/TAS (NSN 5855-01-143-3182). Vehicle Power Conditioner (NSN 5855-01-143-3181), Battery Power Conditioner (NSN 6135-01-143-4470), Collimator, Boresight SU-93A/TAS (NSN 5855-01-109-6433).	TM 9-5855-1450-24P

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL

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

b. The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

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

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

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

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

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

B-2. MAINTENANCE FUNCTIONS (CONT)

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

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

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

i. Repair. The application of maintenance services (inspect, test, service, adjust, aline, calibrate, 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, subassembly, module (component or assembly), end item, or system.

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

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

B-3. EXPLANATION OF MAC (SECTION II) COLUMN ENTRIES

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

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

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

B-3. EXPLANATION OF MAC (SECTION II) COLUMN ENTRIES (CONT)

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of taskhours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time, in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

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

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

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

B-4. EXPLANATION OF TOOL AND TEST EQUIPMENT REQUIREMENTS (SECTION III) COLUMN ENTRIES

a. Column 1, Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Column 2, Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

B-4. EXPLANATION OF TOOL AND TEST EQUIPMENT REQUIREMENTS (SECTION III) COLUMN ENTRIES (CONT)

c. Column 3, Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. Column 4, National Stock Number. This column lists the National Stock Number of the specific tool or test equipment.

e. Column 5, Tool Number. This column lists the manufacturer's part number of the tool followed by the five-digit Federal Supply Code for Manufacturers in parentheses.

B-5. EXPLANATION OF REMARKS (SECTION IV) COLUMN ENTRIES

a. Column 1, Reference Code. This code refers to the appropriate item in section II, column 6.

b. Column 2, Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

Section II. MAINTENANCE ALLOCATION CHART FOR BATTERY POWER CONDITIONER

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTIONS	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS & EQPT	(6) REMARKS
3000	Battery Power Conditioner (BPC) Box Assembly	Inspect			0.1				
		Test			0.1			1, 2a, 2b, 2c	
		Adjust			0.1			1, 2a, 2b, 2c	
		Repair			0.5			1, 3	
		Repair					0.7	1, 3	
3020	Battery Power Conditioner Assembly	Inspect	0.1						
		Test			0.1			1, 2b	
		Service	0.1						
		Adjust			0.1			1, 2b	
		Install	0.1						
		Replace	0.1						
		Repair	0.5						
	Cable Assembly W1, Battery	Replace	0.1						
	Battery	Replace	0.2						
	Low Voltage Monitor Circuit Board	Replace			0.1				
		Repair					0.5		
2020	Voltage Regulator Circuit Board (for BPC)	Test			0.3			1, 2a, 2b, 2c	
		Adjust			0.1			1, 2a, 2b, 2c	
		Replace			0.2			1	
		Repair					0.3	1	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR BATTERY POWER CONDITIONER

(1) TOOL OR TEST EQUIPMENT REF CODE	(2) MAINTENANCE CATEGORY	(3) NOMENCLATURE	(4) NATIONAL STOCK NUMBER	(5) TOOL NUMBER
1	F, D	Tool Kit, Guided Missile Maintenance	5180-00-179-3574	
2	F, D	Test Set, Night Vision Sight AN/TAM-3A	5855-01-154-7831	SM-D-774995
2a	F, D	Vehicle Power Conditioner Load Box	5855-01-171-8390	SM-D-806753
2b	F, D	Digital Multimeter, Tektronix DM-501A	6625-01-112-7153	
2c	F, D	Power Supply, HP-6284A	6130-00-497-0505	
3	F, D	Soldering Iron	3439-00-346-7538	W-S-570

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

C-1. SCOPE

This appendix lists components of the end item for the Battery Power Conditioner to help you inventory items required for safe and efficient operation.

C-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged or stowed for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. Not applicable.

C-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column 1, Illustration Number. This column indicates the number of the illustration in which the item is shown.

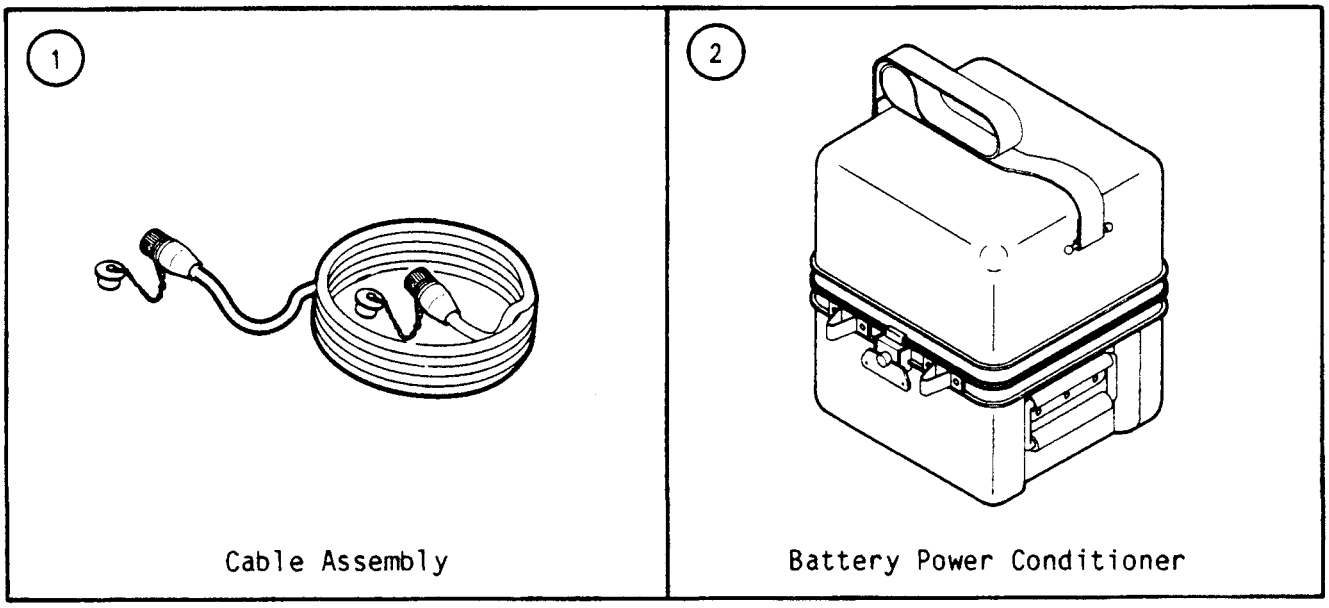
b. Column 2, National Stock Number. Indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.

c. Column 3, Description. Indicates the Federal item name and the FSCM in parentheses followed by the part number.

d. Column 4, Unit of Measure (U/M) . Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

e. Column 5, Quantity Required. Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5855-01-143-9399	Cable Assembly, Battery Power Conditioner (SM-D-969174)	EA	1
2	5855-01-143-4470	Battery Power Conditioner	EA	1
2	5855-01-248-5725	Battery Power Conditioner	EA	1

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the Battery Power Conditioner. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. EXPLANATION OF COLUMNS

a. Column 1, Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use desiccant item 9, Appendix D").

b. Column 2, Level. This column identifies the lowest level of maintenance that requires the listed item.

C-Operator/Crew

O-Organizational Maintenance

F-Direct Support

H-General Support

D-Depot

c. Column 3, National Stock Number. This is the National Stock Number assigned to the item. Use it to request or order the item.

d. Column 4, Description. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. Column 5, Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	F	6850-00-127-5094	Compound, Silicone MIL-S-8660B	TU
2	F	7920-00-205-1711	Rag, Wiping	LB
3	F	6810-00-579-8431	Toluene, Technical, TT-T-548	CN
4	F	3439-00-555-4629	Solder	RL
5	F	8030-00-964-7537	Compound Sealing, Grade C MIL-S-22473	TU
6	F	8030-00-082-2508	Compound Sealing Primer, Grade T MIL-S-22473	TU
7	F	1285-01-132-0302	Compound, Silicone	TU
8	F	8010-00-768-0180	Compound, Silicone Primer	TU
9	F	8010-00-935-7080	Coating, Primer (CARC) (81349), MIL-C-47009	KT
10	F	8010-01-229-7546	Coating, Chemical Agent Resistant (CARC) (80244), MIL-C-46168	PT

APPENDIX E

SCHEMATIC, FUNCTIONAL, AND WIRING DIAGRAMS

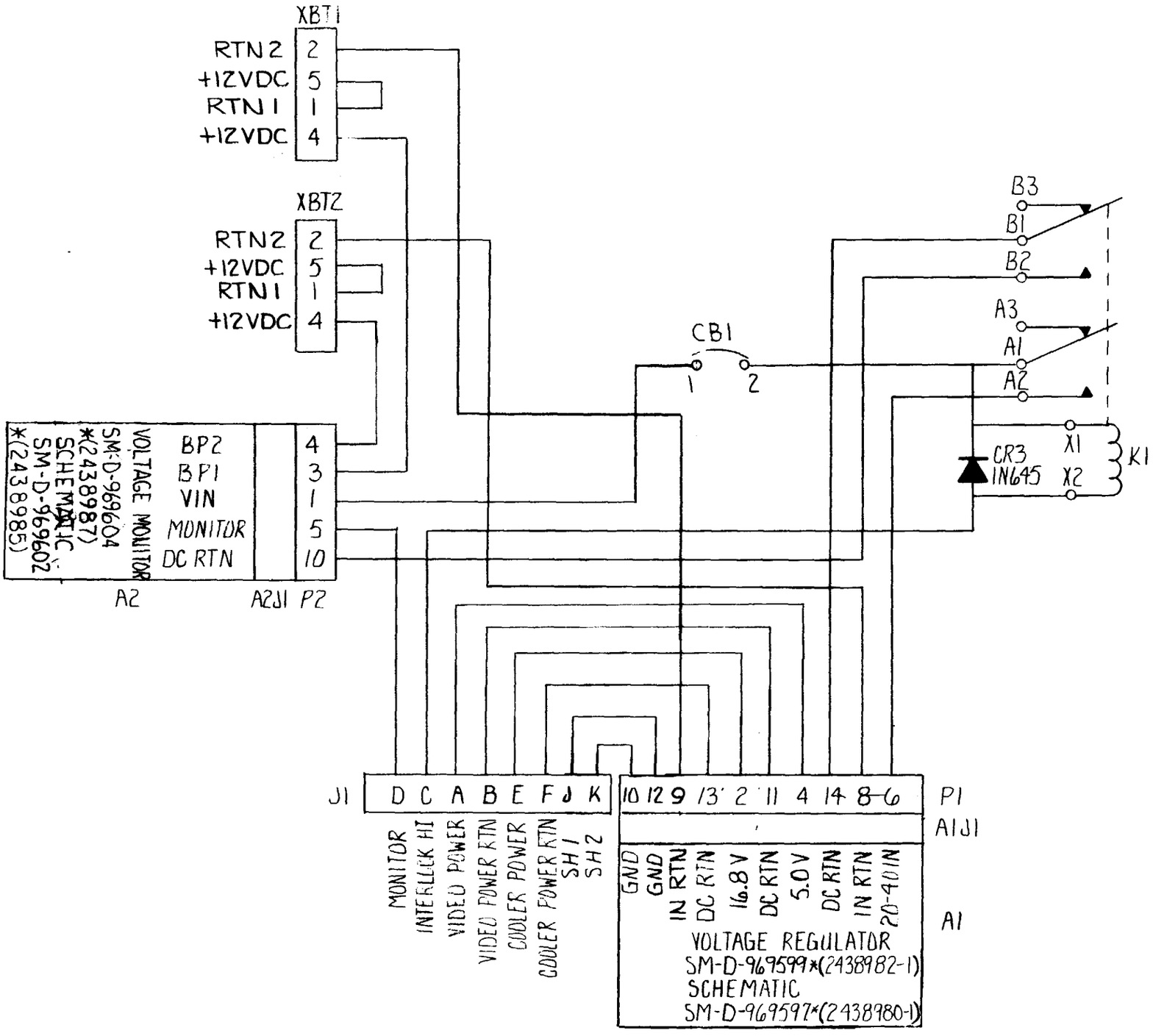


Figure E-1. Battery Power Conditioner Interconnection Diagram

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INDEX - Continued

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

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To be distributed in accordance with DA Form 12-32, Organizational, Direct Support and General Support Maintenance requirements for AN/TVQ-2 (GLLD) (GVLLD), AN/UAS-11; AN/UAS-11A; AN/UAS-12; AN/UAS-12A; AN/UAS-12B; AN/UAS-12C; Modular Universal Laser Equipment (MULE).

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Key West, FL 33040

DATE SENT
14 January 1979

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1430-550-34-1	7 Sep 72	Unit of Radar Set AN/MPQ-50 Tested at the HFC

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
9-19		9-5	
21-2	step 1C		21-2

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

"B" Ready Relay K11 is shown with two #9 contacts. That contact which is wired to pin 8 of relay K16 should be changed to contact #10.

Reads: Multimeter B indicates 600 K ohms to 9000 K ohms.

Change to read: Multimeter B indicates 600 K ohms minimum.

Reason: Circuit being checked could measure infinity. Multimeter can read above 9000 K ohms and still be correct.

NOTE TO THE READER:

Your comments will go directly to the writer responsible for this manual, and he will prepare the reply that is returned to you. To help him in his evaluation of your recommendations, please explain the reason for each of your recommendations, unless the reason is obvious.

All comments will be appreciated, and will be given immediate attention. Handwritten comments are acceptable.

For your convenience, blank "tear out" forms, preprinted, addressed, and ready to mail, are included in this manual.

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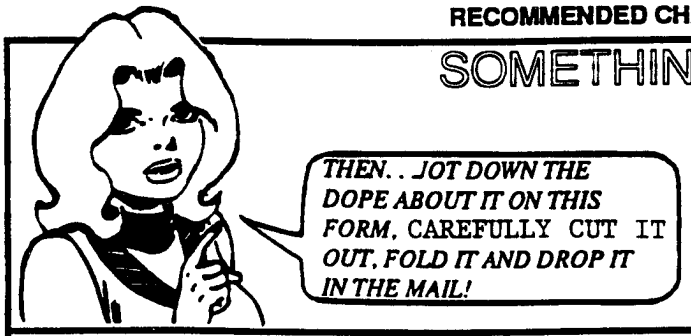

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

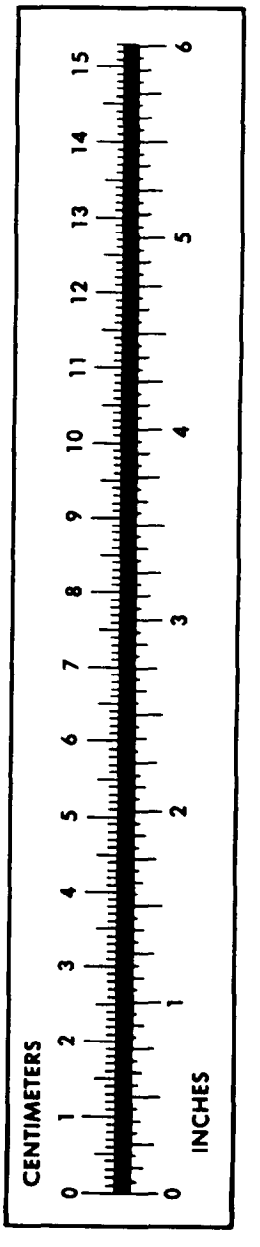
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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