TM 9-6115-669-13&P

SUPERSEDES TM 9-6115-669-13&P, 15 APRIL 1997

TECHNICAL MANUAL

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

ELECTRIC POWER PLANT III
2 x 150 kW, 400 Hz
(NSN 6115-01-374-5038)

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1998

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 20 September 1999

TECHNICAL MANUAL

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) ELECTRIC POWER PLANT Ill 2 X 150 kW, 400 HZ (NSN 6115-01-374-5038)

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

TM 9-6115-669-13&P, 01 June 1998, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

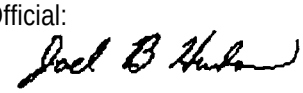
Remove pages	Insert pages
c/(d blank)	c/(d blank)
	A and B
iii and iv	iii and iv
2-9 and 2-10	2-9 and 2-10
2-37 and 2-38	2-37 and 2-38
2-43 and 2-44	2-43 and 2-44
2-47 and 2-48	2-47 and 2-48
2-51 and 2-52	2-51 and 2-52
	2-52.1/(2-52.2 blank)
2-59 and 2-60	2-59 and 2-60
2-69 and 2-70	2-69 and 2-70
4-1 and 4-2	4-1 and 4-2
4-11 through 4-14	4-11 through 4-14
4-23 and 4-24	4-23 and 4-24
4-33 and 4-34	4-33 and 4-34
4-39 and 4-40	4-39 and 4-40
4-45 through 4-48	4-45 through 4-48
4-53 through 4-56	4-53 through 4-56
4-71 and 4-72	4-71 and 4-72
4-111/(4-112 blank)	4-111 through 4-114
5-3 and 5-4	5-3 and 5-4
5-9 through 5-20	5-9 through 5-20
5-23 through 5-26	5-23 through 5-26
5-29 and 5-30	5-29 and 5-30

Remove pages	Insert pages
5-47 through 5-50	5-47 through 5-50
F-1-1 thru F4-1/(F4-2 blank)	F-1-1 thru F-4-1/(F-4-2 blank)
F-5-1 thru F-25-2/(F-25-3 blank)	F-5-1 thru F-25-2/(F-25-3 blank)
F-26-1/(F-26-2 blank)	F-26-1/(F-26-2 blank)
F-27-1 thru F-27-3/(F-27-4 blank)	F-27-1 thru F-27-3/(F-27-4 blank)
F-28-1 and F-28-2	F-28-1 and F-28-2
F-29-1 thru F-32-1/(F-32-2 blank)	F-29-1 thru F-32-1/(F-32-2 blank)
F-33-1 and F-33-2/(F-33-3 blank)	F-33-1 and F-33-2/(F-33-3 blank)
F-34-1 thru F-36-1/(F-36-2 blank)	F-34-1 thru F-36-1/(F-36-2 blank)
F-37-1 and F-37-2	F-37-1 and F-37-2
F-38-1 thru Fig. 40 (Sh 1 of 3)	F-38-1 thru F-40 (Sh 1 of 3)
F-40-1 thru F-40-3/(F-40-4 blank)	F-40-1 thru F-40-3/(F-40-4 blank)
F-41-1/(F-41-2 blank)	F-41-1/(F-41-2 blank)
F-42-1/(F-42-2 blank)	F-42-1/(F-42-2 blank)
F-43-1/(F-43-2 blank)	F-43-1/(F-43-2 blank)
Bulk-1/(Bulk-2 blank)	Bulk-1/(Bulk-2 blank)
F-45-1/(F-45-2 blank)	F-45-1/(F-45-2 blank)
I-1 thru I-10	I-1 thru I-10
Index 1 and Index 2	Index 1 and Index 2

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

By Order of the Secretary of the Army:

Official:



JOEL B. HUDSON
Administrative *Assistant to* the
Secretary of the *Amy*

9922102

ERIC K. SHINSEKI
Genera/, United States Army
Chief *of* Staff

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 256439, requirements for TM 9-6115-669-13&P.

LIST OF EFFECTIVE PAGES

Insert latest changed pages; dispose of superseded pages in accordance with regulations.

NOTE: On a changed page, the portion of the text affected by the latest change is indicated by a vertical line or other change symbol, in the outer margin of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

Dates of issue for original and changed pages are:

Original 01 Jun 1998 Change 1 20 Sep 1999

Page No.	*Change No.
Cover	0
a and b	0
c/(d blank)	1
A and B	1
i and ii	0
iii and iv	1
v thru xviii	0
1-1 thru 1-36	0
2-1 thru 2-9	10
2-10	1
2-11 thru 2-37	0
2-38	1
2-39 thru 2-43	0
2-44	1
2-45 and 2-46	0
2-47 and 2-48	1
2-49 and 2-50	0
2-51 and 2-52.	1
2-52.1/(2-52.2 blank)Added	1
2-53 thru 2-59	0
2-60	1
2-61 thru 2-69	0
2-70	1
2-71 thru 2-76	0
3-1 thru 3-8	0
4-1	0
4-2	1
4-3 thru 4-11	0
4-12 thru 4-14	1
4-15 thru 4-23	0
4-24	1
4-25 thru 4-32	0
4-33 and 4-34	1
4-35 thru 4-38	0
4-39 and 4-40	1
4-41 thru 4-44	0
4-45 and 4-46	1
4-47	0
4-48	1
4-49 thru 4-53	0
4-54 thru 4-55	1
4-56 thru 4-70	0
4-71	1
4-72 thru 4-111	0
4-112 thru 4-114 Added	1
5-1 and 5-2	1
5-4 thru 5-8	0
5-9 thru 5-12	1
5-13	0
5-14 and 5-15	1
5-16	0
5-17	1
5-18 and 5-19	0
5-20	1
5-21 and 5-22	0
5-23	1
5-24	0
5-25	1
5-26 thru 5-28	0
5-29	1
5-30 thru 5-46	0
5-47	1
5-48	0
5-49	1
5-50 thru 5-63/(5-64 blank)	0
A1 and A2	0
B1 thru B9/(B-10 blank)	0
C1 thru C3/(C-4 blank)	0
D1 and D2	0
E1 and E2	0
F-1 thru F-9	0

*Zero in this column indicates an original page.

Page No.	*Change No.
Fig. F-1	0
F-1-1	1
Fig. F-2	0
F-2-1	1
Fig. F-3	0
F-3-1	1
Fig. F-4	0
F-4-1/(F-4-2 blank)	1
Fig. 5 (Sh 1 and 2)	0
F-5-1	1
F-5-2/(F-5-3 blank)	1
Fig. F-6	1
F-6-1	1
Fig. F-7	1
F-7-1	1
Fig. F-8	1
F-8-1	1
Fig. F-9	1
F-9-1	1
Fig. F-10	1
Fig. 10-1	1
Fig. F-11	0
F-11-1	1
Fig. F-12	0
F-12-1	1
Fig.F-13	0
F-13-1	1
Fig. F-14	0
F-14-1	1
Fig. F-15	0
F-15-1	1
Fig. F-16	0
F-16-1	1
Fig.F-17	0
F-17-1	1
Fig. F-18	0
F-18-1	1
Fig. F-19	0
F-19-1	1
Fig. F-20	0
F-20-1	1
Fig. F-21	0
F-21-1	1
Fig. F-22	0
F-22-1	1
Fig. F-23	0
F-23-1	1
Fig. F-24	0
F-24-1	1
Fig. F-25	0
F-25-1	1
F-25-2/(F-25-3 blank)	1
Fig. F-26	0
F-26-1/(F-26-2 blank)	1
Fig. F-27 (Sh 1 thru 4)	0
F-27-1 and F-27-2	1
F-27-3/(F-27-4 blank)	1
Fig. F-28 (Sh 1 thru 46)	0
F-28-1	1
F-28-2/(F-28-3 blank)	1
Fig. F-29	0
F-29-1	1
Fig. F-30	0
F-30-1	1
Fig. F-31	0
F-31-1	1
Fig. F-32	0
F-32-1/(F-32-2 blank)	1
Fig. F-33 (Sh 1 and 2)	0
F-33-1	1
F-33-2/(F-33-3 blank)	1
Fig. F-34	0
F-34-1	1
Fig. F-35	0
F-35-1	1
Fig. F-36	0
F36-1/(F-36-2 blank)	1
Fig. F-37 (Sh 1 and 2)	0
F-37-1	1
F-37-2/(F-37-3 blank)	1
Fig. F-38	0
F-38-1	1
Fig. F-39	0
F-39-1	1
Fig. F-40 (Sh 1 thru 3)	0
F-40-1 and F-40-2	1
F-40-3/(F-40-4 blank)	1
Fig. F-41 (Sh 1 and 2)	0
F-41-1/(F-41-2 blank)	1
Fig. F-42 (Sh 1 and 2)	0
F-42-1/(F-42-2 blank)	1
Fig. F-43 (Sh 1 and 2)	0
F-43-1/(F-43-2 blank)	1
Bulk-1/(Bulk-2 blank)	1
Fig. F-45 (Sh 1 thru 4)	0
F-45-1/(F-45-2 blank)	1
l-1 thru l-10	1
G-1/(G-2 blank)	0
Glossary-1 and Glossary-2	0
Index 1	0
Index 2	1
Index 3/(Index-4 blank)	0
FP-1/(FP-2 blank) thru FP-15/(FP-16 blank)	0

*Zero in this column indicates an original page.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Failure to observe this warning can cause severe personal injury or death.

WARNING

Hot exhaust can cause fires. Park the truck so that generator set 150 kW exhausts are directed a way from trees or brush.

WARNING

Before beginning any procedure, read paragraph 2.5 (fire extinguisher procedures).

WARNING

- **Do not use leaky exhaust hoses. Keep exhaust hoses away from flammable materials.**
- **Do not block the generator air intake and discharge openings.**
- **Make sure intake air is as cool as possible. Hot intake air will cause engine overheating. Drawing hot air into the air filter will lead to reduced power output.**
- **When operating indoors, provide adequate ventilation.**
- **Wear gloves when detaching hot exhaust hoses from the mufflers.**

WARNING

Before initial operation, provide grounding connections between the EPP III and loads (for voltage compensation and lightning protection) as shown in the grounding diagram. Maximum contact resistance is 100 mOhm.

WARNING

When refueling a generator set 150 kW from an external source such as a fuel tanker, the external source must be grounded to the generator set fuel tank before refueling to prevent any electrical discharge.

WARNING

If metal to metal contact is not maintained during refueling, a spark may result which could ignite fuel fumes. Make sure the fuel nozzle stays in contact with the fuel tank.

WARNING

Do not operate the generator set 150 kW unless all grounding provisions are properly and securely connected, electrical faults in the generator sets 150 kW, load lines or load equipment can cause severe injury or electrocution from contact with the ungrounded system.

WARNING

Use caution around electrical equipment. Do not use when voltages exceed 1000 V; do not approach closer than 3.3 ft. (1 m).

WARNING

Never attempt to connect or disconnect control or power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

WARNING

- **Do not stand in the operating area of the crane or forklift Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the Generator Set 150 kW easily off the truck bed.**
- **When moving the Generator Set 150 kW or pallet frame with the crane, proceed slowly so they remain horizontal.**

WARNING

Use the forklift only on the side of the Generator Set 150 kW. This requires folding down side panels.

WARNING

For safety reasons, both Generator Sets 150 kW must be removed before the pallet frame is dismantled.

WARNING

For safety reasons (load Imbalance) always use the forklift on the side of the pallet frame where the cable drums are located.

WARNING

- The Generator Sets 150 kW produce lethal voltages.
- Turn off power to the EPP or Generator Set 150 kW before performing any Installation, removal, disassembly, or assembly work.

WARNING

- Potential 150kw/208 VAC shock hazard with failure to adhere to this warning. Contact with this high power could result In death or severe Injury. If the removal of one generator from the EPP Ill Is required, replace It with an extra generator If available. If the EPP Ill must be operated with only one generator Installed, Insure that all cables for the removed generator have the protective caps properly Installed prior to starting the remaining generator set.
- Prior to energizing the equipment the operator must check for exposed electrical terminals.
- Always Install protective covers on control and power cables when cables are not connected.
- Be sure to observe all Warning labels on equipment.

Refer to FM 21-11 for first aid.

TECHNICALMANUAL

NO. 9-6115-669-13&P

HEADQUARTERS
DEPARTMENTS OF THE ARMY
WASHINGTON, D.C., *01 June 1998*

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

ELECTRIC POWERPLANT III, 2 X 150 kW, 400 Hz (NSN: 6115-01-374-5028)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve these procedures, please let us know. Mail or fax your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to: Commander, U. S. Army Communications-Electronics Command and Fort Monmouth ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000. The fax number is 732-532-1413, DSN 922-1413. You may also e-mail your recommendations to AMSEL-LC-LEO-PUBS-CHG@cecom3.monmouth.army.mil.

In either case a reply will be furnished direct to you.

PATRIOT HELPLINE

If problems are experienced concerning Patriot EPPIII, contact the Patriot EPPIII Helpline, located at the Patriot operations Center. Hours of operation are 06:30-1700 CST. DSN 645-3032/3547 or Commercial: 256-955-3022/3457,

If a replacement part needs to be purchased locally, use manufacturers part number for requisitioning.

TABLE OF CONTENTS

		Page
	HOW TO USE THIS MANUAL	xiii
CHAPTER 1	INTRODUCTION	1-1
	Section I. General Information	1-2
	Section II. Equipment Description	1-5
	Section III. Principles of Operation	1-13

*This manual supersedes TM 9-6115-669-13&P, 15 April 1997.

TABLE OF CONTENTS - continued

			Page
CHAPTER 2	OPERATING INSTRUCTIONS		2-1
	Section I.	Description and Use of Controls and Indicators	2-2
	Section II.	Operator Preventive Maintenance Checks and Services (PMCS)	2-22
	Section III.	Operation under Usual Conditions	2-32
	Section IV.	Operation under Unusual Conditions	2-70
CHAPTER 3	OPERATOR MAINTENANCE INSTRUCTIONS		3-1
	Section I.	Operator Lubrication	3-2
	Section II.	Troubleshooting	3-6
	Section III.	Maintenance Procedures	3-8
CHAPTER 4	UNIT MAINTENANCE INSTRUCTIONS		4-1
	section I.	Repair Parts Tools; Special Tools; Test, Measurement and Diagnostic Equipment (TMDE); and Support Equipment	4-3
	Section II.	Service Upon Receipt of Equipment	4-4
	Section III.	Unit Lubrication	4-10
	Section IV.	Unit Preventive Maintenance Checks and Services (PMCS)	4-11
	Section V.	Troubleshooting	4-14
	Section VI.	Maintenance Procedures	4-24

TABLE OF CONTENTS - Continued

			Page
CHAPTER 5	DIRECT SUPPORT MAINTENANCE INSTRUCTIONS		5-1
	Section I.	Repair Parts; Tools; Special Tools; Test, Measurement and Diagnostic Equipment (TMDE); and Support Equipment	5-2
	Section II.	Troubleshooting	5-3
	Section III.	Maintenance Procedures	5-9
APPENDIX A	REFERENCES		A-1
APPENDIX B	MAINTENANCE ALLOCATION CHART (MAC)		B-1
	Section I.	Introduction	B-1
	Section II.	Maintenance Allocation Chart for EPP III	B-4
	Section III.	Tool and Test Equipment Requirements for EPP III	B-7
	Section IV.	Remarks	B-8
APPENDIX C	COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS		**C-1**
	Section I.	Introduction	C-1
	Section II.	Components of End Item	C-2
	Section III.	Basic Issue Items	C-3
APPENDIX D	ADDITIONAL AUTHORIZATION LIST (AAL)		D-1
	Section 1.	Introduction	D-1
	Section II.	Additional Authorized Items List	D-2
APPENDIX E	EXPENDABLE AND DURABLE ITEMS LIST		E-1
	Section I.	Introduction	E-1
	Section II.	Expendable and Durable Items List	E-2

TABLE OF CONTENTS - Continued

		Page	Illus/Figure
APPENDIX F	REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)	F-1	
	Section I. Introduction	F-1	
	Section II. Repair Parts List	F-1-1	
	Group 00 ELECTRICAL POWER PLANT, 2X150KW/400HZ, LOADING PACK, PATRIOT	F-1-1	F-1
	Group 01 CABLE DRUM ASSEMBLY (ECS POWER CABLE SET)	F-2-1	F-2
	0101 . . CABLE ASSEMBLY	F-3-1	F-3
	Group 02 . . POWER DISTRIBUTION UNIT ASSEMBLY	F-4-1	F-4
	0201 . . POWER DISTRIBUTION UNIT (ACCESSORY PARTS)	F-5-1	F-5
	020101 . .PROTECTIVE CASING ASSEMBLY	F-6-1	F-6
	020101A . .PROTECTIVE CASING ASSEMBLY	F-7-1	F-7
	020101B . .PROTECTIVE CASING ASSEMBLY	F-8-1	F-8
	020101C . .PROTECTIVE CASING ASSEMBLY	F-9-1	F-9
	020101D . . PROTECTIVE CASING ASSEMBLY	F-10-1	F-10
	020102 . .POWER CABLE ASSEMBLY, ONE PHASE	F-11-1	F-11
	020102A . .POWER CABLE ASSEMBLY, ONE PHASE..	F-12-1	F-12
	020102B . .POWER CABLE ASSEMBLY, ONE PHASE	F-13-1	F-13
	020102C . . POWER CABLE ASSEMBLY, ONE PHASE	F-14-1	F-14
	020102D . .POWER CABLE ASSEMBLY, ONE PHASE	F-15-1	F-15
	020103 . . CABLE ASSEMBLY, CONTROL PDU TO GENERATOR SET	F-16-1	F-16
	020103A . . CABLE ASSEMBLY, CONTROL PDU To GENERATOR SET..	F-17-1	F-17
	0202 . . POWER DISTRIBUTION UNIT (CONTROL PANEL)	F-18-1	F-18
	020201 . . LIGHT INDICATOR ASSEMBLY, RED	F-19-1	F-19
	020201A . . LIGHT INDICATOR ASSEMBLY, WHITE..	F-20-1	F-20
	020201B . . PUSH BUTTON SWITCH AND INDICATOR ASSEMBLY, WHITE	F-21-1	F-21
	020201C . . LIGHT INDICATOR ASSEMBLY, YELLOW	F-22-1	F-22
	020202 . . LIGHT INDICATOR ASSEMBLY, RED	F-23-1	F-23
	020202A . . PUSH BUTTON SWITCH ASSEMBLY, BLACK	F-24-1	F-24
	0203 . . POWER DISTRIBUTION UNIT (CONNECTING PANEL)	F-25-1	F-25

TABLE OF CONTENTS - Continued

	Page	Illus/Figure
020301 . . DESIGNATION PLATE SET	F-26-1	F-26
0204 . . POWER DISTRIBUTION UNIT ASSEMBLY, 150 KW	F-27-1	F-27
020401 . . WIRING, PDU ASSEMBLY	F-28-1	F-28
020402 . . ELECTRONIC MODULE ASSEMBLY	F-29-1	F-29
020403 . . TIME RELAY ASSEMBLY	F-30-1	F-30
020403A . . TIME RELAY ASSEMBLY	F-31-1	F-31
020404 . . HOUSING ASSEMBLY, PDU CABINET, 150 KW	F-32-1	F-32
0205 . . PDU ELECTRONIC ASSEMBLY, TYPE 3.522	F-33-1	F-33
03 . CABLE DRUM ASSEMBLY (POWER CABLE SET)	F-34-1	F-34
04 . CABLE DRUM ASSEMBLY (CONTROL CABLE SET)	F-35-1	F-35
0401 . . CONTROL CABLE ASSEMBLY	F-36-1	F-36
05 .PALLET FRAME ASSEMBLY	F-37-1	F-37
0501 . . SWINGING DEVICE ASSEMBLY, CABLE DRUM.	F-38-1	F-38
0501A . . SWINGING DEVICE ASSEMBLY, CABLE DRUM.	F-39-1	F-39
06 TRUCK, CARGO, 10 TONS..	F-40-1	F-40
0601 . WIRING HARNESS	F-41-1	F-41
0601A . WIRING HARNESS	F-42-1	F-42
0601B . WIRING HARNESS	F-43-1	F-43
Group 98 BULK-MATERIALLIST	BULK-1	NONE

TABLE OF CONTENTS - Continued

		Page	Illus/Figure
Section III.	Special Tools and Test Equipment		
Group 99	SPECIAL TOOLS AND TEST EQUIPMENT	F-45	45
Section IV.	Cross Reference Indexes	I-1	
	NATIONAL STOCK NUMBER INDEX	I-1	
	PART NUMBER INDEX-	I-4	
APPENDIX G	TORQUE LIMITS	G-1	
GLOSSARY	.....	GLOSSARY -1	
	Section I. Abbreviations	GLOSSARY -1	
	Section II. Definition of Unusual Terms	GLOSSARY -2	
INDEX	.....	INDEX -1	

LIST OF ILLUSTRATIONS - Continued

Figure	Title	Page
1-1	Electric Power Plant HI	1-3
1-2	Electric Power Plant III, Location of Major Components (Sheet 1 of 2)	1-6
1-3	Electric Power Plant III, Dimensions	1-12
1-4	Electric Power HI, Configurations	1-14
1-5	Electric Power III, Operating Modes	1-17
1-6	EPP III with Commercial Power Converter, Block Diagram	1-19
1-7	Main power circuits 208/120 v, 400 Hz	1-21
1-8	Main power circuit control systems	1-22
1-9	PDU electronics group N6 monitoring circuits	1-24
1-10	Controlling operation with the commercial power converter	1-27
1-11	Signaling Circuits	1-29
1-12	Internal Power Supply and Lighting	1-31
1-13	Control Signals and Signal Lines in the System	1-33
2-1	Control Cabinet Assembly, Controls and Indicators	2-2
2-2	Control Cabinet Assembly, Circuit Breakers (Sheet 1 of 2)	2-7
2-3	Control Cabinet Assembly, Receptacles	2-10
2-4	Base Frame Assembly, J3 SLAVE RECEPTACLE 24 VOLTS	2-11
2-5	Power Distribution Unit, Controls and Indicators	2-12
2-6	Power Distribution Unit, Circuit Breakers	2-14
2-7	Power distribution Unit, Receptacles	2-16
2-8	Electric Power Plant III, Cabling Connections.	2-18
2-9	Electric Power Plant HI, Fire Extinguishers.	2-20
2-10	Electric Power Plant III, Operator PCMS Routing Diagram (Sheet 1 of 4).	2-25
2-11	Electric Power Plant III with Truck (Sheet 1 of 2).	2-34
2-12	Operating Mode Cable Connections.	2-37

LIST OF ILLUSTRATIONS - Continued

Figure	Title	Page
2-13	Grounding Diagram, EPP III to ECS and RS Loads.	2-38
2-14	Connecting Cables (Sheet 1 of 2).	2-41
2-15	Diesel Engine Oil Level Maintenance.	2-44
2-16	Refueling.	2-47
2-17	Controls and Indicators During Operation.	2-49
2-18	Operation of EPP III PDU	2-52
2-19	Operating the Generator Set 150 kW	2-53
2-20	Fault Signals on Generator Set 150 kW Control Panel.	2-54
2-21	Fault Signals on EPP III PDU Control Panel.	2-55
2-28	Operating the Flame Glowplug System	2-73
2-29	Fuel Injection Pump Actuator Linkage	2-75
3-1	Electric Power Plant III, Lubrication Points (Sheet 1 of 3)	3-3
3-2	No power to ECS or RS, but generator is operating properly	3-7
4-1	Original Packaging in Container	4-5
4-2	Unpacking the Container	4-7
4-3	EPP III, Unpacked	4-8
4-4	No power to ESC or RS, but Generator Set 150 kW is operating properly	4-15
4-5	Indicator Panel light does not illuminate although Generator Sets 150 kW are operating normally	4-16
4-6	Overload Shutdown of ECS or RS Load although Generator is Operating Normally	4-17
4-7	Cannot Switch Over from Generator 1 or 2 to Commercial Power Converter	4-18
4-8	Emergency Shutdown Inoperative	4-19
4-9	Battle Short Inoperative	4-20

LIST OF ILLUSTRATIONS - Continued

Figure	Title	Page
4-10	Brightness Control on Control Panel Inoperative	4-21
4-11	PDU Internal Illumination Inoperative	4-22
4-12	Lamp Test on Control Panel Inoperative	4-23
4-13	Locking Device Assembly	4-26
4-14	Power Cable Drum Mount	4-29
4-15	Power Cable Drum	4-32
4-16	Power Cable	4-35
4-17	Control Cable Drum	4-38
4-18	Control Cable	4-41
4-19	Power Distribution Unit Connection Panel and Ground Cable Connections	4-44
4-20	Generator Set 150 kW, Connection Panel	4-48
4-21	Attachments Between Generator Set 150 kW and Pallet Frame	4-49
4-22	Removing a Generator Set 150 kW from Pallet Frame using a Crane	4-50
4-23	Removing a Generator Set 150 kW from Pallet Frame using a Forklift	4-52
4-24	Inserting Forks into the Forklift Sockets of Generator Set 150 kW	4-55
4-25	Removing the Pallet Frame from the Truck Bed using a Crane	4-58
4-26	Removing the Pallet Frame from the Truck Bed using a Forklift	4-59
4-27	Pallet Frame, Mounted Parts	4-61
4-28	Installing the Pallet Frame on the Truck Bed using a Crane	4-64
4-29	Removing the Pallet Frame from the Truck Bed using a Forklift	4-65
4-30	Removing the Power Distribution Unit from Pallet Frame using a Crane	4-68
4-31	Power Distribution Unit	4-70

LIST OF ILLUSTRATIONS - Continued

Figure	Title	Page
4-32	Power Distribution Unit, Mounted Parts	4-71
4-33	Power Distribution Unit, Cable Installation Position	4-72
4-34	Swing Arm Maintenance	4-75
4-35	Stanchion and Chain Assembly Maintenance	4-77
4-36	U.S. Standard Grounding Assembly Maintenance	4-79
4-37	Storage Box Assembly Maintenance	4-81
4-38	Light Indicator	4-84
4-39	Pushbutton Switch with Light Indicator	4-87
4-40	Brightness Control N7/R1	4-90
4-41	Contactor Protective Resistor	4-93
4-42	Current Transformer	4-96
4-43	Auxiliary Contactors (except K20, K21)	4-99
4-44	Auxiliary Contactors K20, K21	4-102
4-45	AC/DC Transformer	4-105
4-46	Circuit Breakers	4-108
4-47	Cabinet illumination S5/H11	4-111
5-1	No Power to ECS or RS although Generator is Operating Normally	5-4
5-2	Power Distribution Unit Not Operating although Generator is Operating Normally	5-5
5-3	Overload Shutdown of ECS or RS Load although Generator is Operating Normally	5-6
5-4	Cannot Switch Over from Generator 1 or 2 to Commercial Power Converter	5-7
5-5	Cannot Switch Over from Commercial Power Converter to Generator Operation	5-8
5-6	PDU Power Cable, One Phase	5-13
5-7	Protective Casing and Power Cable Assembly	5-14
5-8	Control Cable Assembly, PDU to Generator Set 150 kW	5-18
5-9	Power Cable (ECS Power Cable Set)	5-24

LIST OF ILLUSTRATIONS - Continued

Figure	Title	Page
5-10	Control Cable	5-28
5-11	Contractor Assemblies	5-32
5-12	Diode Assembly	5-34
5-13	Electronic Module A1 Assembly	5-37
5-14	Time Relay K14	5-40
5-15	Wipe Relay K13	5-43
5-16	Internal Power Supply V5/T13	5-46
5-17	PDU Electronic Assembly N6	5-50
5-18	PDU Electronic Assembly N6, Front Panel	5-51
5-19	PDU Electronic Assembly N6, Test Connections	5-52
5-20	Connection Panel, Receptacles and Varistors	5-59
5-21	Connection Panel, Receptacles J1 to J5 (Sheet 1 of 2)	5-60
5-22	Connection Panel, Connection Diagram, Receptacles J1 to J4	5-62
5-23	Connection Panel, Connection Diagram, Receptacles J5 to J7, J11, J12,J20	5-63
FO-1	Electric Power Plant III Wiring Diagram	FO-1

LIST OF TABLES

Number	Title	Page
1-1	Nomenclature Cross-reference List	1-4
1-2	Electric Power Plant III, Description of major components	1-8
1-3	Tabulated Data for Electric Power Plant III	1-10
1-4	Control Signals Between Generator Sets 150 kW and PDU	1-34
1-5	Control Signals Between EPP III and ECS Load	1-35
2-1	Control Cabinet Assembly, Description of Controls and Indicators	2-3
2-2	Control Cabinet Assembly, Description of Circuit Breakers	2-9
2-3	Control Cabinet Assembly, Description of Receptacles	2-10
2-4	Power Distribution Unit, Description of Controls and Indicators	2-13
2-5	Power Distribution Unit, Description of Circuit Breakers	2-15
2-6	Power Distribution Unit, Description of Receptacles	2-17
2-7	Electric Power Plant III, Description of Cabling Connections	2-19
2-8	Electric Power Plant III, Operator Preventive Maintenance Checks and Services	2-21
2-9	Electric Power Plant III, Operator Preventive Maintenance Checks and Services	2-29
2-10	General Operating Procedure	2-50
4-1	Unit Preventive Maintenance Checks and Services	4-13
5-1	Wiring Layout for Cable Assembly Control, PDU to Generator Set 150 kW	5-19
5-2	Power Cable Wiring Layout	5-23
5-3	Control Cable Wiring Layout	5-29

HOW TO USE THIS MANUAL

DESCRIPTION OF THE MANUAL.

Manual Organization. This manual is designed to help you operate and maintain the Electric Power Plant III. Warning pages are located in the front of this manual. Read the warnings before operating or doing maintenance on the equipment.

The major elements of this manual are the chapters and appendices. Each chapter has one or more sections. The Table of Contents, beginning on page i, is provided for quick reference to the subjects covered by each chapter, section, and appendix. Each chapter also has a chapter index. The chapter index lists the chapter sections and paragraphs. Appendix F also has a table of contents to help you locate the items listed in that appendix.

A glossary follows the last appendix. The glossary lists and explains the special or unique abbreviations and the unusual terms used in this manual.

An alphabetical index follows the glossary. That index is for use in locating specific items of information.

Chapters. This manual has five chapters and eight appendices. Each chapter is divided into sections. Each section is divided into descriptive paragraphs. The paragraphs have specific information about the Electric Power Plant III and their major components.

Paragraph Numbering. All paragraphs are numbered. This helps you find what you need when you need it. USE THE TABLE OF CONTENTS OR ALPHABETICAL INDEX TO FIND THE SECTION OR PARAGRAPH YOU NEED. Some paragraphs have a related illustration, to show the items discussed in the paragraph. Also, some paragraphs have a related table that provides a detailed list of items introduced by the paragraph. Each primary paragraph, illustration, and table is identified by the number of the chapter in which it appears, followed by a dash and another number. The number after the dash indicates the sequence in which the paragraph, illustration, or table appears in the chapter. Some paragraphs are further divided into subparagraphs.

Subparagraphs are identified by the number of the primary paragraph followed by a decimal number, as follows:

Examples:
- 4.5 is the fifth paragraph in chapter 4.
- 4.5.1 is the first subparagraph of paragraph 4.5.
- 4.5.2 is the second subparagraph of paragraph 4.5.
- 4.5.2.1 is the first subparagraph under 4.5.2.
- Figure 3-3. is the third illustration in chapter 3.
- Table 2-1. is the first table in chapter 2.

Appendices. Each appendix covers a specific subject; sometimes general, such as the list of references in Appendix A, or sometimes very detailed, such as the repair parts and special tools list in Appendix F.

CHAPTER 1 - INTRODUCTION.

Chapter 1 provides an introduction to the Electric Power Plant III. It is divided into three sections, as follows:

Section I - General Information. This section provides general information about this manual and the related forms and records. Instructions are provided for making equipment improvement recommendations. Coverage includes a reference to the TM that contains instructions on destruction of material to prevent enemy use. Also, a nomenclature cross-reference list is provided.

Section II - Equipment Description. This section describes Electric Power Plant III capabilities, characteristics, and features. It provides basic equipment data and shows the locations of major Electric Power Plant III components. Descriptions of the major components are also provided.

Section III - Principles of Operation. This section provides functional descriptions of the Electric Power Plant III.

CHAPTER 2 - OPERATING INTRODUCTIONS.

Chapter 2 provides introductions for operating the Electric Power Plant III. The chapter is divided into four sections, as follows:

Section I - Description and Use of Operator's Controls and Indicators. This section contains information on operator's controls and indicators for the Electric Power Plant III.

Section II - Operators Preventive Maintenance Checks and Services (PMCS). This section contains detailed instructions for the before, during, and after operation preventive maintenance checks and services that the operator must perform.

Section III - Operation Under Usual Conditions. This section contains instructions for preparing the Electric Power Plant III for use and operating them under usual conditions.

Section IV - Operation Under Unusual Conditions. This section contains instructions for preparing the Electric Power Plant III for use and operating them under unusual conditions.

CHAPTER 3 - OPERATOR MAINTENANCE INSTRUCTIONS.

Chapter 3 covers maintenance of the Electric Power Plant III that is to be performed by the operator. Its purpose is to provide you with the information you need to keep the equipment in good operating condition. The chapter is divided into three sections, as follows:

Section I - Operator Lubrication. This section provides references to the applicable lubrication instructions.

Section II - Troubleshooting. This section covers troubleshooting procedures and corrective actions that are to be performed at the operator maintenance level.

Section III - Maintenance Procedures. This section refers the operator to the preventive maintenance checks and services required by section II of chapter 2.

CHAPTER 4 - UNIT MAINTENANCE INSTRUCTIONS.

Chapter 4 provides instructions covering the Electric Power Plant III maintenance that must be performed at unit level. The chapter is divided into seven sections, as follows:

Section I - Repair Parts: Tools; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment. This section lists the documents that contain the needed information.

Section II - Service Upon Receipt of Equipment. This section contains instructions for inspecting and servicing each Electric Power Plant III when it is received. It includes instructions for unpacking the equipment when it is received. The instructions include unpacking and stowing the basic issue items that accompany the Electric Power Plant III. Also included are instructions on positioning the Electric Power Plant III for operating and connecting an external fuel source.

Section III - Unit Lubrication. This section contains specific lubrication instructions for the Electric Power Plant III.

Section IV - Unit Preventive Maintenance Checks and Services (PMCS). This section contains instructions covering the PMCS that must be performed at the unit maintenance level. A table provides information on maintenance intervals and actions required.

Section V - Troubleshooting. This section covers troubleshooting procedures and corrective actions that are to be performed at the unit maintenance level.

Section VI - Maintenance Procedures. This section contains detailed instructions on unit level maintenance of the Electric Power Plant III.

CHAPTER 5 - DIRECT SUPPORT MAINTENANCE INTRODUCTIONS.

Chapter 5 provides instructions for the maintenance actions designated to be performed at the direct support maintenance level. The chapter is divided into three sections, as follows:

Section I - Repair Parts; Tools; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment. This section lists the documents that contain the needed information.

Section II - Troubleshooting. This section includes instructions for troubleshooting faults in the operation of the power distribution unit. It includes eighteen go-no-go flowcharts for eighteen possible control cabinet malfunctions.

Section III - Maintenance Procedures. This section contains detailed instructions for direct support maintenance of the Electric Power Plant III.

APPENDICES.

Appenix A - References. This appendix lists all publications that are referenced in the various chapters of the technical manual. The listing includes the title of each publication.

Appendix B - Maintenance Allocation chart. This appendix has four sections, as follows:

Section I - Introduction. This section explains what is covered in the maintenance allocation chart.

Section II - Maintenance Allocation Chart. This section contains a tabular listing that assigns maintenance functions to specific maintenance levels. It lists the work time needed to perform each maintenance function at the assigned level. It also contains a column that has entries keyed to the tools and equipment listed in section III. Another column has entries keyed to the remarks in section IV.

Section III - Tool and Test Equipment Requirements. This section contains complete identification information for the items referenced in the tools and equipment column of section II.

Section IV - Remarks. This section provides additional information for each entry in the remarks column of section II.

Appendix C - Components of End item (COEI) and Basic Issue Items (BII) Lists. This appendix lists the items that are usually packaged separately but needed for installation and operation of the Electric Power Plant III. The appendix has three sections, as follows:

Section I - Introduction. This section explains what is covered in section II and section III.

Section II - Components of End Item. The Electric Power Plant III is normally shipped fully assembled, so this section is not applicable.

Section III - Basic Issue Items. This section contains a list of the accessories needed for installation and operation of the Electric Power Plant III.

Appendix D - Additional Authorization List (AAL). This appendix lists additional items you are authorized for support of the Electric Power Plant III.

Appendix E- Expendable and Durable Items List. This appendix lists expendable/durable supplies and materials needed to operate and maintain the Electric Power Plant III. The appendix contains two sections, as follows:

Section I - Introduction. This section explains the entries in section II.

Section II - Expendable and Durable Supplies and Material List. The list indicates the maintenance level that needs each item and identifies the items by National Stock Number, description, and unit of measure.

Appendix F - Unit and Direct Support Maintenance Repair Parts and Special Tools List. This appendix lists and authorizes the repair parts and special tools needed to perform operator, unit, and direct support maintenance of the Electric Power Plant III. It contains four sections, as follows:

Section I - Introduction. This section explains what is covered in sections II, III, and IV.

Section I - Repair Parts List. This section contains illustrations, and lists. The illustrations aid in identification of the parts. The lists include information that tells which maintenance levels are authorized to use the part, the part number that identifies the part, the name of the part, and the quantity used.

Section III - Repair Parts List. This section informs the user that no special tools are needed.

Section IV - Cross-Reference Indexes. This section contains two indexes, a national stock number index and a part number index. Each index lists all of the parts contained in section II. The national stock number index is in National Item Identification Number (NIIN) sequence. The part number index is in alphanumeric part number sequence.

Appendix G - Torque Limits. This appendix lists standard torque values for bolts and screws used in the Electric Power Plant III.

Glossary. This Glossary has two sections, as follows:

Section I - Abbreviations. This section lists the special or unique abbreviations used in this technical manual. Special or unique abbreviations are those not listed in MIL-STD-12D.

Section II - Definition of Unusual Terms. This section lists and defines the terms used in this technical manual that are not listed in the Army dictionary (AR 310-25).

INDEX.

An alphabetical index at the back of this technical manual provides a listing of subjects covered, cross-referenced to the applicable paragraph.

HOW TO FIX AN ELECTRIC POWER PLANT III MALFUNCTION.

Determining the Cause. Finding the cause of a malfunction, troubleshooting, is the first step in fixing the Electric Power Plant III and returning it to operation. Follow these simple steps to determine the root of the problem:

a. Turn to the Table of Contents in this manual (page i).

b. Locate "Troubleshooting" under the chapter that covers your level of maintenance. Turn to the page indicated.

c. For operator troubleshooting, follow the instructions in the references listed in Chapter 3.

d. For troubleshooting at the unit maintenance level, find the malfunction listing in the troubleshooting symptom index. Follow the instructions in the figure (troubleshooting chart) indicated by the symptom index.

Preparing for a Task. Be sure that you understand the entire maintenance procedure before beginning any maintenance task. Make sure that all parts, materials, and tools are handy. Read all steps before beginning. Prepare to do the task as follows:

a. Carefully read the entire task before starting. It tells you what you will need and what you have to know to start the task. DO NOT START THE TASK UNTIL:

(1) You know what is needed.

(2) You have everything you need.

(3) You understand what to do.

b. If parts are listed, they can be drawn from technical supply. Before you start the task, check to make sure you can get the needed parts. National Stock numbers (NSNs) and part numbers for Electric Power Plant III parts are listed in Appendix F.

c. If expendable/durable supplies or materials are needed, get them before starting the task. Refer to Appendix E for the correct nomenclature and NSN.

How to do the Task. Before starting read the entire task. Be sure that you understand the entire procedure before you begin the task. As you read, remember the following:

a. PAY ATTENTION TO WARNING, CAUTIONS, AND NOTES.

b. Use the GLOSSARY if you do not understand the special abbreviations or unusual terms used in this manual.

c. The following are standard maintenance practices. Instructions about these practices are usually not included in task steps. When standard maintenance practices do not apply, the task steps will tell you. The standard maintenance practices are:

(1) Tag electrical wiring before disconnecting it.

(2) Discard used preformed packing, retainers, gaskets, cotter pins, lockwashers, and similar items. Install new parts to replace the discarded items.

(3) Coat packing before installation, accordance with the task instruction.

(4) Disassembly procedures describe the disassembly needed for total authorized repair. You may not need to disassemble and item as far as described in the task. Follow the disassembly steps only as far as needed to repair/replace worn or damaged parts.

(5) Clean the assembly, subassembly, or part before inspecting it.

(6) Before installing components having mating surfaces, inspect the mating surfaces to make sure they are in serviceable condition.

(7) Hold the bolt (or screw) head with a wrench (or screwdriver) while tightening or loosening a nut on the bolt (or screw).

(8) Torque to the special torque cited when the task instructions include the words “torque to”. Use standard torques at all other times.

(9) When a cotter pin is required, align the cotter pin holes within the allowable torque range.

(10) Inspect for foreign objects after performing maintenance.

CHAPTER 1

INTRODUCTION

Subject Index		Page
Section I.	General Information	1-2
1.1	Scope	1-2
1.2	Maintenance Forms and Records	1-2
1.3	Destruction of Army Material to Prevent Enemy Use	1-2
1.4	Preparation for Storage and Shipment	1-2
1.5	Equipment Improvement Recommendation (EIR)	1-2
1.6	Nomenclature Cross-Reference List	1-4
1.7	List of Abbreviations	1-4
1.8	Glossary	1-4
Section II.	Equipment Description	1-5
1.9	Equipment Characteristics, Capabilities, and Features	1-5
1.10	Location and Description of Major Components	1-5
1.11	Construction	1-9
1.12	Equipment Data	1-10
Section III.	Principles of Operation	1-13
1.13	General Description	1-13
1.14	Functional Description	1-20
1.15	Related Technical Manuals	1-36

Section I. GENERAL INFORMATION

1.1 SCOPE.

This Manual provides information for the operation, troubleshooting and maintenance of Electric Power Plant III (figure 1-1). Information is provided on operating principles, controls and indicators, preventive maintenance checks and services, lubrication, operation under usual and unusual conditions, troubleshooting, and maintenance.

1.2 MAINTENANCE FORMS AND RECORDS.

Department of Army forms and procedures used for equipment maintenance will be those described by DA Pam 738-750, The Army Maintenance Management System (TAMMS).

1.3 DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE.

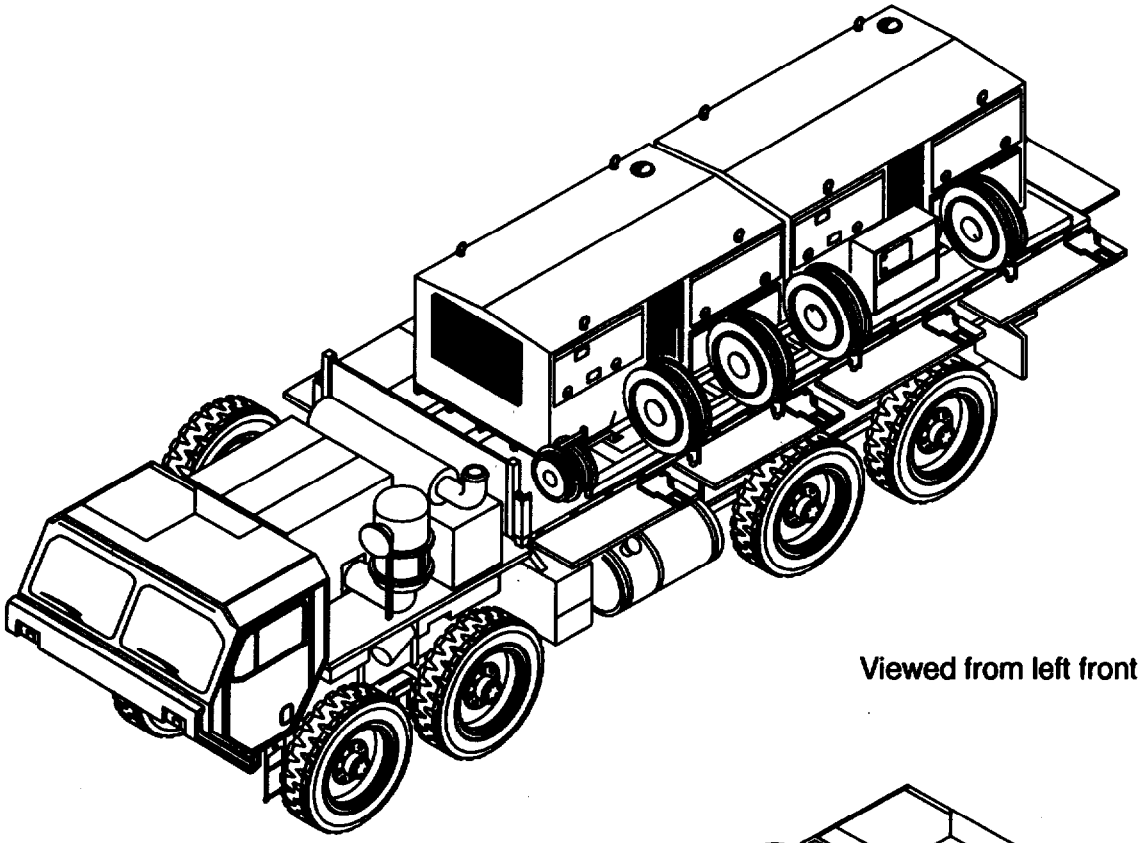
Destruction of Army material to prevent enemy use shall be in accordance with TM 760-244-3.

1.4 PREPARATION FOR STORAGE AND SHIPMENT.

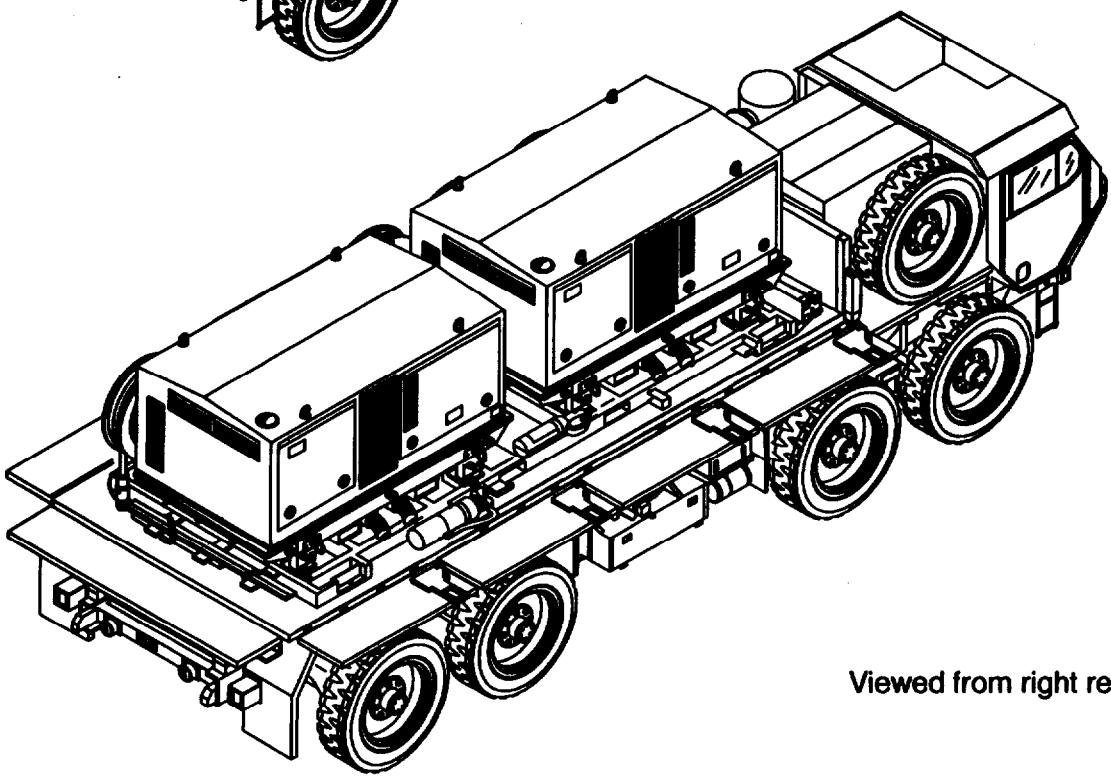
Refer to Chapter 4, Section II.

1.5 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

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 or performance. Put it on SF 368 (Product Quality Deficiency Report). Mail it to us at Commander, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000,. We will send you a reply.



Viewed from left front



Viewed from right rear

Figure 1-1 Electric Power Plant III.

1.6 NOMENCLATURE CROSS-REFERENCE LIST.

Refer to table 1-1 for nomenclature cross-reference list.

Table 1-1 Nomenclature Cross-reference List.

Common Name	Official Nomenclature
ECS	Engagement Control Station
EHG	Electra-hydraulic Fan
EPP III	Electric Power Plant III
FK	Filter Box
GEN SET 150 kW	Generator Set 150 kW
KHD	Klockner Humboldt Deutz (Diesel Engine Company)
OH	rating Hours
PDU	Power Distribution Unit
RS	Radar Set
VAC	Voltage, Alternating Current
VDC	Voltage, Direct Current

1.7 LIST OF ABBREVIATIONS.

Refer to the glossary at the back of this manual.

1.8 GLOSSARY.

Refer to the glossary at the back of this manual.

Section II. EQUIPMENT DESCRIPTION

1.9 EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

The Electric Power Plant III consists of a pallet frame on which two three-phase 400 Hz, 120/208 V generators, producing 150 kW each, are placed. The EPP III is mounted on a truck chassis and can provide power to the Radar Set (RS) and Engagement Control Station (ECS) on a mobile basis. The EPP III also contains equipment for distributing power to the loads, in the form of a power distribution unit and cable drums with capacity sufficient to reach loads located up to 98 ft (30 m) away. The EPP III is qualified for desert conditions. The Generator Sets 150 kW are described in more detail in TM 9-6118-668-13.

1.10 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

Figure 1-2 shows the location of the major components of Electric Power Plant III. Table 1-2 provides a short description of major components.

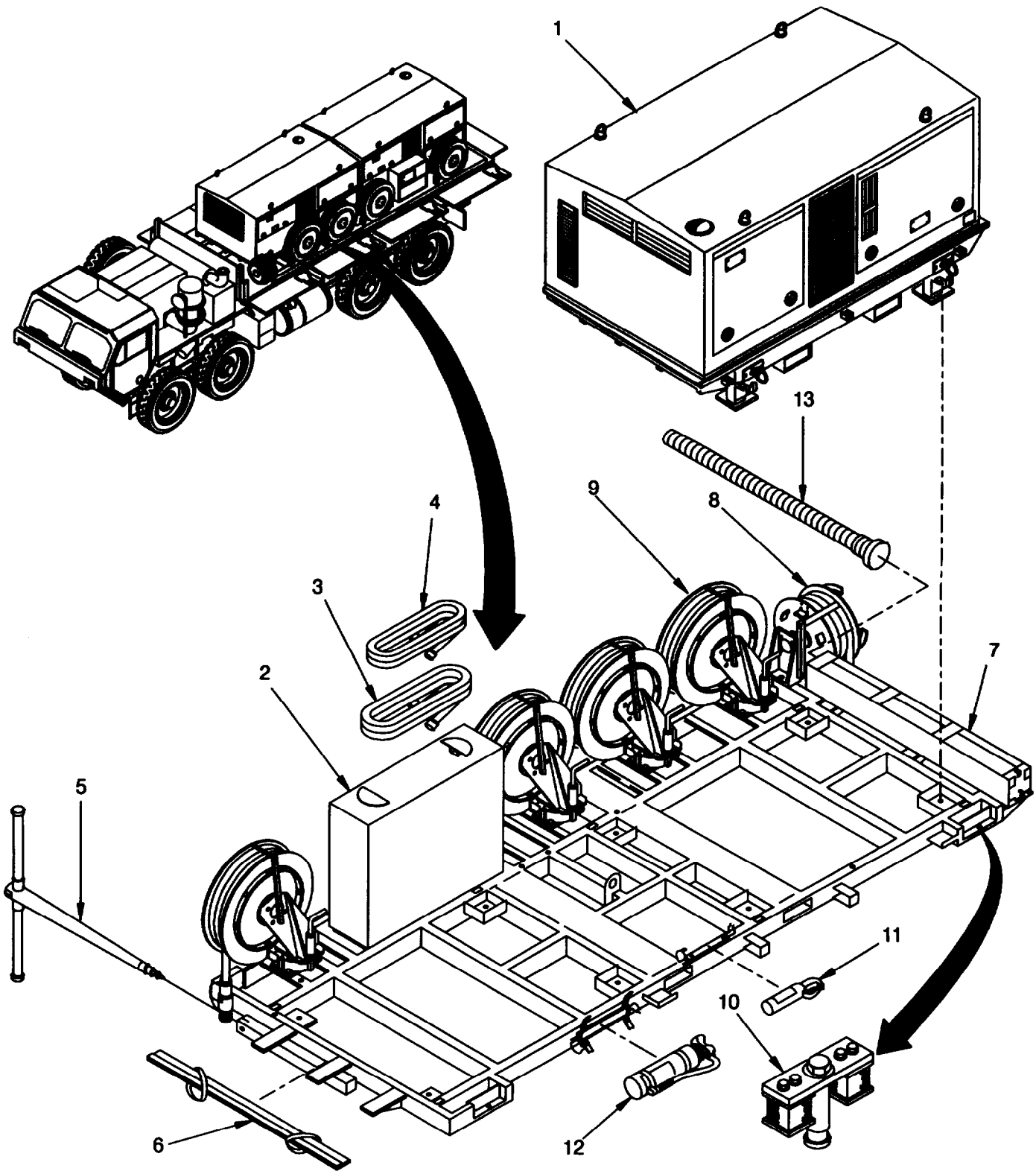


Figure 1-2 Electric Power Plant III, Location of Major Components (sheet 1 of 2).

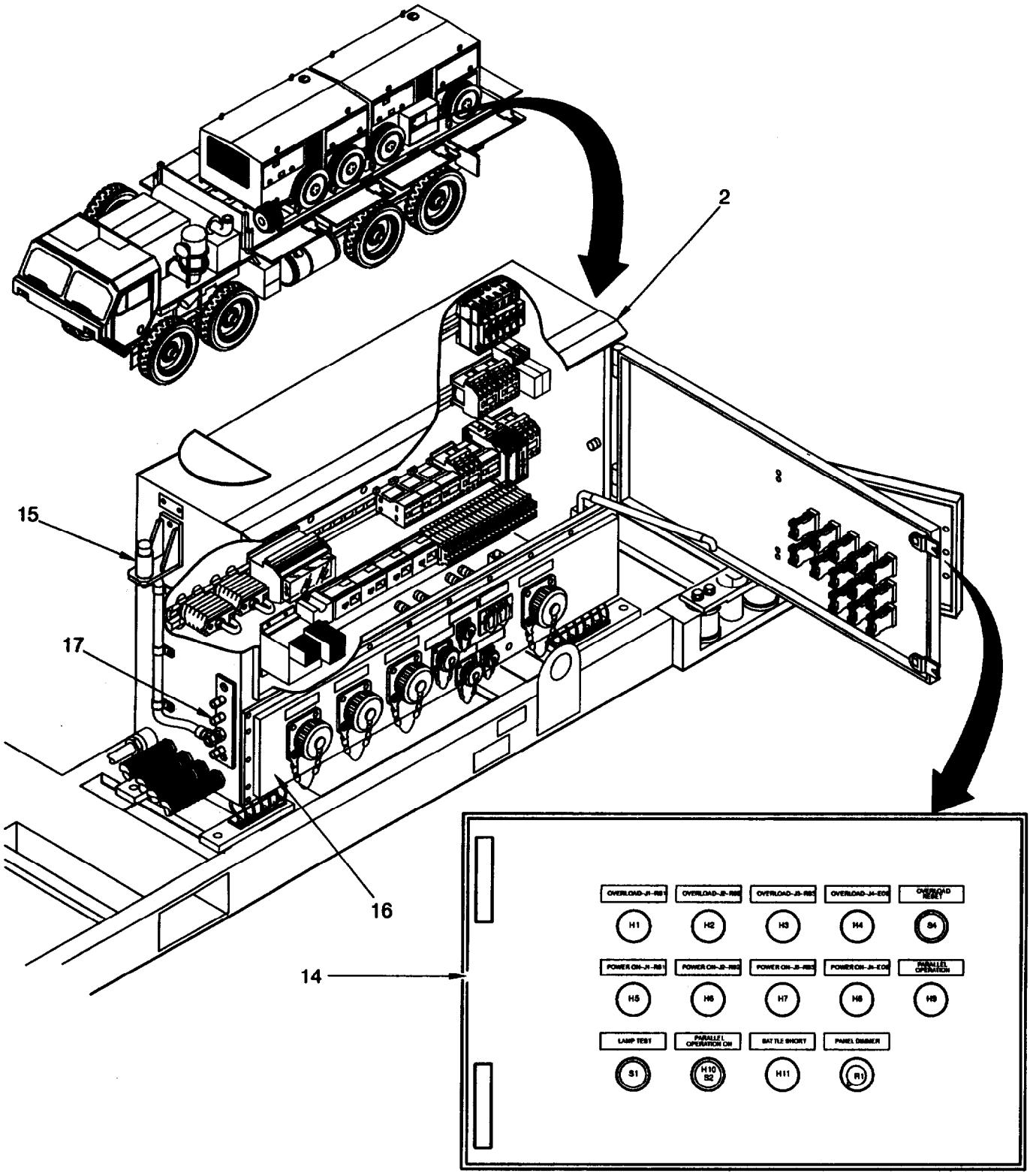


Figure 1-2 Electric Power Plant III, Location of Major Components (sheet 2 of 2).

Table 1-2 Electric Power Plant III, Description of major components.

Item No.	Item Name	Short Description
1	Generator set 150 kW	Two generator sets 150 kW, operating individually or in parallel, to provide power to RS and ECS loads. Refer to TM 9-6116-663-13
2	Power distribution unit	Distributes power to loads; controls operating modes between generators and loads
3,4	Grounding cable	Grounding cable for EPP III and RS/ECS loads
5	Groundingrod	Connecting rod, augured into the ground and connected to grounding cable
6	Sling assembly	Used to remove and install generator sets 150 kW and pallet frame from and onto truck chassis for transport and maintenance
7	Pallet frame assembly	Supports all EPP III components
8	Control cable drum	Connects EPP III and ECS for operational control and signaling
9	Power cable drum	Provides three-phase power to RS and ECS loads through EPP III
10	Tightening assembly	Secures pallet frame to truck chassis (with integrated shock absorbers)
11	Fire extinguisher	Fire fighting, Class A, B, and C 4.4 lb (2 kg)
12	Fire extinguisher	Fire fighting, Class A, B, and C 13.22 lb (6 kg)
13	Exhaust hose	Discharges generator exhaust at ground level
14	Control panel	EPP III operational control and signaling
15	Groundingconnector	Connection for grounding cable
16	Connection panel	For all connections to RS and ECS loads
17	Grounding bar	Connection for grounding cable
N. I.	Grounding cable	Connecting EPP III PDU and grounding rod (5)

1.11 CONSTRUCTION.

1.11.1 Basic Power Plant III.

1.11.1.1 Pallet Frame.

The Electric Power Plant III consists of a pallet frame (7, figure 1-2) on which all components are mounted. The pallet frame consists of a welded aluminum honeycomb frame, three lifting, and two forklift sockets for transportation and installation or removal onto or from the truck chassis. The pallet frame also has eight bolt mounting points with recesses, into which the two Generator Sets 150 kW (1) are bolted. Toward the front is a closable enclosure housing the four exhaust hoses (13). On the right side are a total of five cable drums (8,9). The four power cable drums (9) can be swung out 90" and locked in place. A power distribution unit (2) is also mounted. An enclosure housing the grounding rod (6) is welded onto the rear of the pallet frame. Once disassembled, the grounding rod can be placed in this enclosure and secured with a bolt closure. The sling assembly (6), folded up and secured with two straps, is also located at the rear of the pallet frame. 'Iwo fire extinguishers (11,12) are mounted on the left side. The pallet frame can be placed on the truck chassis, using four tightening assemblies (10) that are secured with bolts. The mounting assemblies include shock absorbers.

1.11.1.2 Power Distribution Unit.

The power distribution unit (2) consists of a cabinet housing with an access door. A swing-out control panel (14) is located on the door. The cabinet door can be secured in the open position with prop. The power distribution unit contains all the electrical equipment, consisting of power contactors, auxiliary relays, time relays, and electronics groups. All connecting lines are installed in cable conduits, and emerge at a connection panel (16). All Electric Power Plant III connections are made through this panel. The power distribution unit is mounted on the pallet frame (7) on four shock absorbers.

A grounding connector (16) and a grounding bar (17) are installed on the power distribution unit for the connection of grounding cables (3,4).

1.11.1.3 Generator Sets 150 kW.

The Generator Sets 150 kW (1) are each secured on the pallet frame (7) with four eyebolts and are connected to the pallet frame with a grounding cable. Connection to the power distribution unit (2) is made with power cables which are attached on the power distribution unit.

1.11.1.4 Cable Drums.

The four power cable drums (9) remain in the stowed position for transport or when not in use, and are swung out **90°** for operation. They lock into place in both positions. The cable, approximately 95 ft (29 m) long, is unreeled for operation. The drums contain a tension mechanism with lock, that continuously ratchets as cable is unreeled or wound in. The control cable drum (8) does not swing out. The cable, approximately 104 ft (32 m) long, is unreeled for operation.

1.12 EQUIPMENT DATA.

1.12.1 Generator Set 150 kW.

Refer to TM 9-6115-668-13.

1.12.2 Tabulated Data.

Refer to table 1-3 for tabulated data.

Table 1-3 Tabulated Data for Electric Power III.

WRIGHTS AND DIMENSIONS	
Operational weight	16,657 pounds (7.664 kg)
Overall length *	236.2 in. (699.6 cm)
Overall width *	92.1 in. (234.0 cm)
Overall height *	69.7 in. (177.0 cm)
*See figure 1-3	
GENERAL SPECIFICATIONS	
Manufacturer	Lechmotoren GmbH
Apparent output	187.5 kVA
Rated power factor	cos φ 0.8
Rated voltage	3~ 400 Hz, 120/208 V
Max. inclination	maximum 10° (18%)
TRANSPORTATION	
Truck, rail, air and trailer transportable	Generator Set 150 kW and Pallet Frame can be transported separately only by using a forklift or hoist
Tilt angle	25° maximum, any direction
PERFORMANCE CHARACTERISTICS PALLET FRAME ASSEMBLY	
Manufacturer	Lechmotoren GmbH
Operational weight	3,528 pounds (1.600 kg)
Shipping weight	5,954 pounds (2.700 kg)
Length	230.5 in. (686.6 cm)
Width	92.1 in. (234.0 cm)
Height	11.8 in. (30.0 cm)
Construction	Welded aluminum frames

Table 1-3 Tabulated Data for Electric Power Plant III (continued).

POWER DISTRIBUTION UNIT	
Manufacturer	Lechmotoren GmbH
Model No.	SBS-150-400
Input/output voltage	3~ 400 Hz, 120/208 V
Internal power supply	+26 VDC
Weight	320 pounds (145 kg)
Length	63 in. (160 cm)
Width	16.2 in. (41 cm)
Height	37.8 in. (96 cm)
POWER CABLE DRUM	
Manufacturer	Lechmotoren GmbH
Cable length	95.12 ft (29 m)
CONTROL CABLE DRUM	
Manufacturer	Lechmotoren GmbH
Cable length	104.96 ft (32 m)

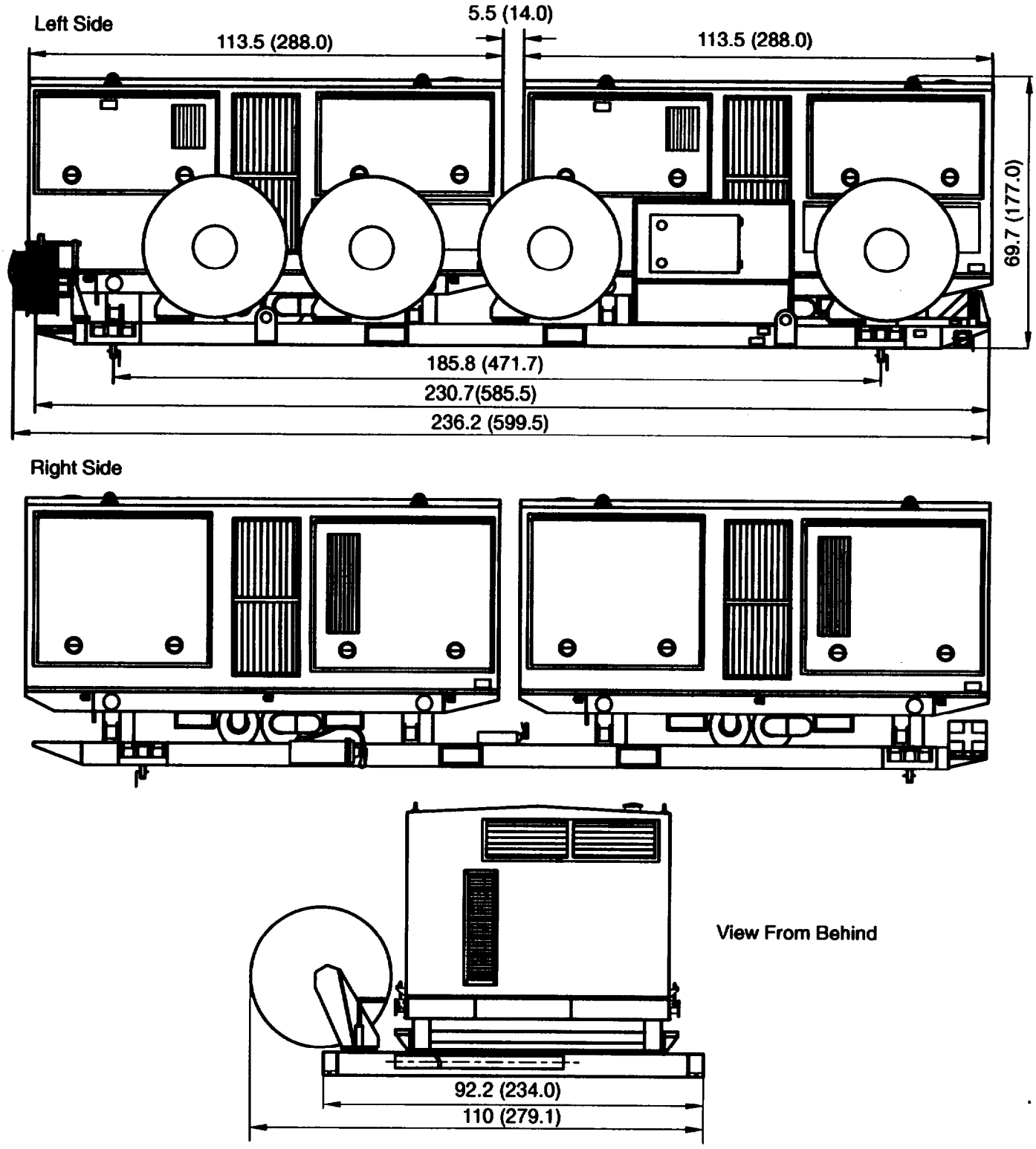


Figure 1-3 Electric Power Plant III, Dimensions.

Section III. PRINCIPLES OF OPERATION

1.13 GENERAL DESCRIPTION.

1.13.1 Technical Principles of Operation.

The operation of the Electric Power Plant III is essentially automatic and needs little attention from the operator. Operator duties consist of positioning and setting up the unit, connecting electrical cables, starting the Generator Sets 150 kW, putting the EPP III on-line, and monitoring operations. When in operation, the generator regulator/monitor senses generator output voltage and maintains it at a constant value. The generator electronic control senses generator output frequency and controls engine speed to maintain a constant output frequency. In addition to the EPP III operator, personnel in the Engagement Control Station (ECS) can also start and stop the Generator Sets 150 kW and monitor their functions.

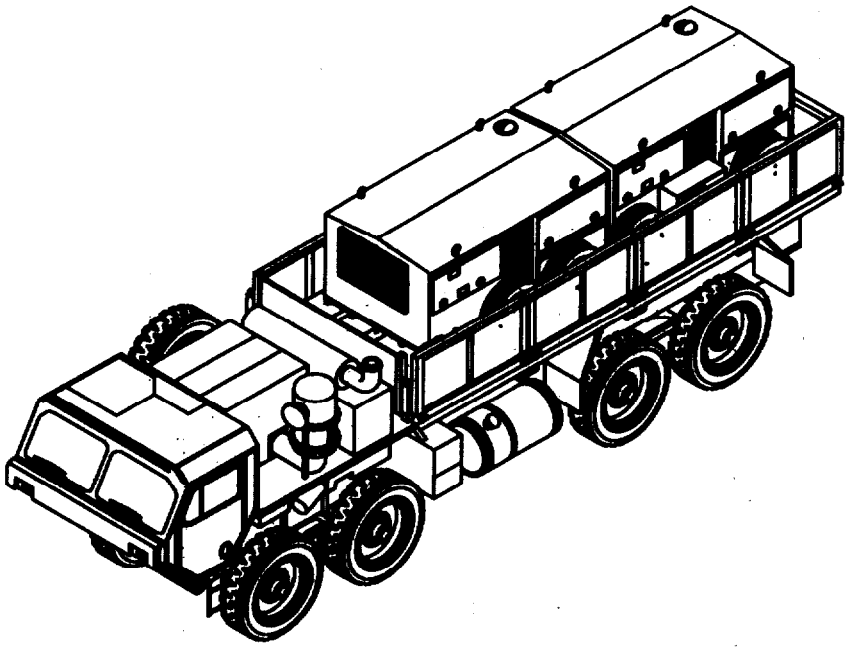
The generator electronic control provides automatic control of the sequence of events during the start cycle. The start cycle begins when the operator activates the glow plug and the engine begins cranking. Fuel and ignition are turned on at a preset value; the ignition system is turned off automatically. The engine continues to accelerate until it stabilizes at operating speed.

After the engine has been started and has stabilized at operating speed (normally within 15 seconds), the output voltage and frequency are manually adjusted to the appropriate levels. About one minute after these values have been reached, the Generator Set 150 kW may be switched on-line to supply power. When maintenance is to be performed on a Generator Set 150 kW that is running, or when a problem occurs, the second generator is started and put on line before the first is shut down.

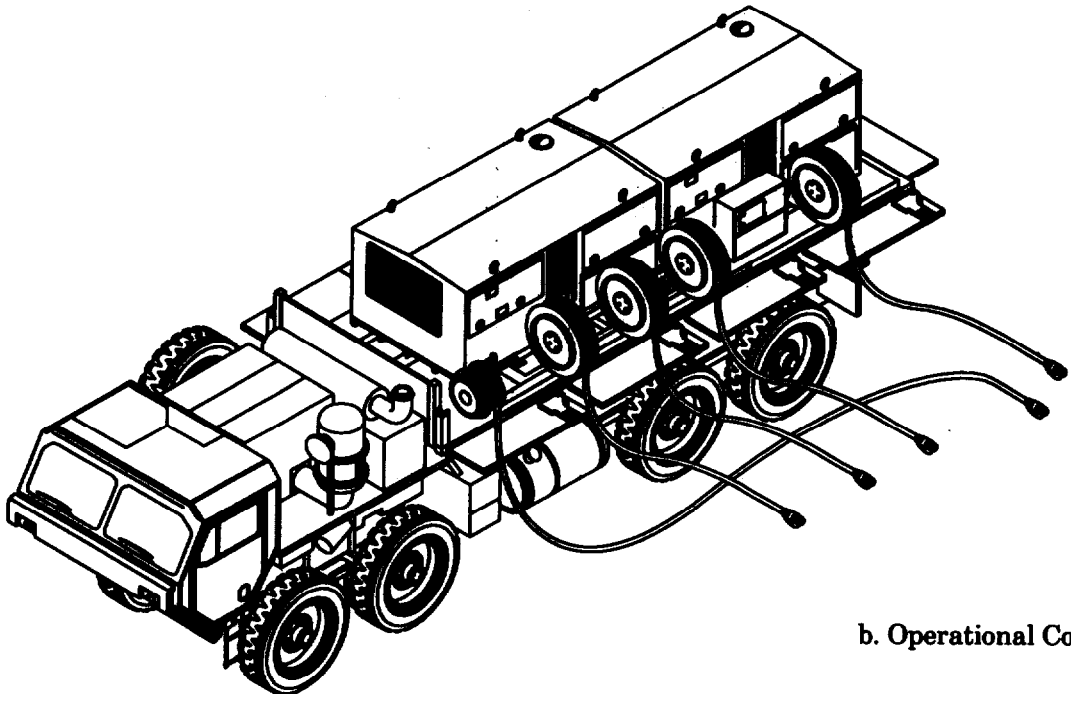
Fuel for operation of the Generator Sets 150 kW is stored in one 100-gallon tank in each Generator Set 150 kW. This provides 10 hours of continuous operation without refueling. The fuel system is controlled and monitored automatically and status is indicated on a panel in the ECS.

Converting from road travel configuration into operational configuration:

For road travel configuration, all accessories are stowed in the requisite storage containers, and cable drums are reeled in and locked in the stowed position. Side panels are raised so the truck is ready to drive (figure 1-4a). For operational configuration, the EPP III provides power to the ECS and RS on a stationary basis (figure 1-4b). This involves parking the truck in a suitable location, folding down the side panels, unpacking accessories, and putting the EPP III into operational condition.



a. Road Travel Configuration



b. Operational Configuration

Figure 1-4 Electric Power Plant III, Configurations.

1.13.2 Generator Operating Modes.

The EPP III contains two independent three-phase Generator Sets that can supply power to the RS and ECS loads either individually or in parallel mode (figure 1-5a). If a commercial power converter is also available, there is a further mode in which the KS and ECS loads can also be powered via the commercial power converter, i.e. operating with a third generator as power converter (figure 1-5b). In general it is possible to switch among all the modes without interruption at any time, once the synchronizing devices have established voltage and frequency synchronization. Each generator can individually supply all the power required for all loads.

1.13.3 Operating with one Generator.

The standard procedure is to operate with one generator set. In this mode, EPP III generator set 1 or 2 is operating. The generator set delivers 208V three-phase current at 400 Hz, at an output level of 150 kW, by its power contactor K1. Power can be delivered immediately after the generator set is turned on, although a few minutes of warmup time are generally allowed. Power is delivered and distributed as shown in figure 1-5a, through a power distribution unit and bus bars. Prom there, the RS load is powered through power contactors K3, K4, and K5 and three plug-in power cables each approximately 95 ft (29 m) long. Power contactors K3 to K5 are used to distribute power over three cables. A cable interlock loop also ensures that all three cables must be connected. The ECS load is powered in the same way, through power contactor K6 and an additional power cable. A control cable also runs to the ECS load, carrying control signals between the EPP III and ECS. The ECS load can be operated individually, but the RS cannot, since the ECS contains the entire control system for the load side.

1.13.4 Parallel Operation with Generator Sets 1 and 2.

A second generator set is brought on-line, with its power contactor K1, if one generator set either fails or is being serviced. This mode can also be used for output distribution, i.e. each generator set then operates at half its output. If one generator set fails, the second generator set automatically produces full output. There is no interruption when switching between generator set 1, generator set 2, and parallel mode.

1.13.5 Operating with Commercial Power Converter,

When a commercial power converter (figure 1-5b) is available, it is inserted between the EPP III and the loads. The unit contains a converter that is supplied with 3x220 V, 50-60 Hz from the external power grid. The converter (third generator) can also provide full power for the loads when power contactor K40 switches converter voltages to the commercial power converter unit's bus bars.

The procedure for switching over from the EPP III generator set to the commercial power converter is as follows:

- EPP III generator set 1 or 2, or both generator sets, are operating and supplying power for the loads.
- Commercial power converter is operating, but not on-line through K40.
- Initiate synchronization by pressing button on EPP III PDU control panel.
- When voltage and frequency synchronization has been achieved between commercial power converter and EPP III generator set 1 and/or 2, power contactor K40 is switched into converter bus bars.
- EPP III then cuts off power from generator set 1 and/or 2. The generator set 1 and/or 2 is/are now idling and can also be shut down.

The procedure for switching over from the commercial power converter to an EPP III generator set is as follows:

- Commercial power converter is providing power for the loads.
- Generator set 1 or 2 is operating.
- Initiate synchronization by pressing button on EPP III PDU control panel.
- When voltage and frequency synchronization has been achieved at bus bars of the commercial power converter and EPP III, power contactor K1 of the EPP III generator set is switched onto the EPP III bus bars.
- The commercial power converter then cuts off power through power contactor K40.

There is no interruption when switching from the EPP III to the commercial power converter or vice versa. The power distribution unit and bus bars of the commercial power converter are identical in construction to those of the EPP III. Operating with the commercial power converter requires two additional control cables:

- Cable J6 supplies two phase voltages of the 400 Hz power supply to the commercial power converter, to determine synchronization.
- Cable J20 switches power contactor K40.

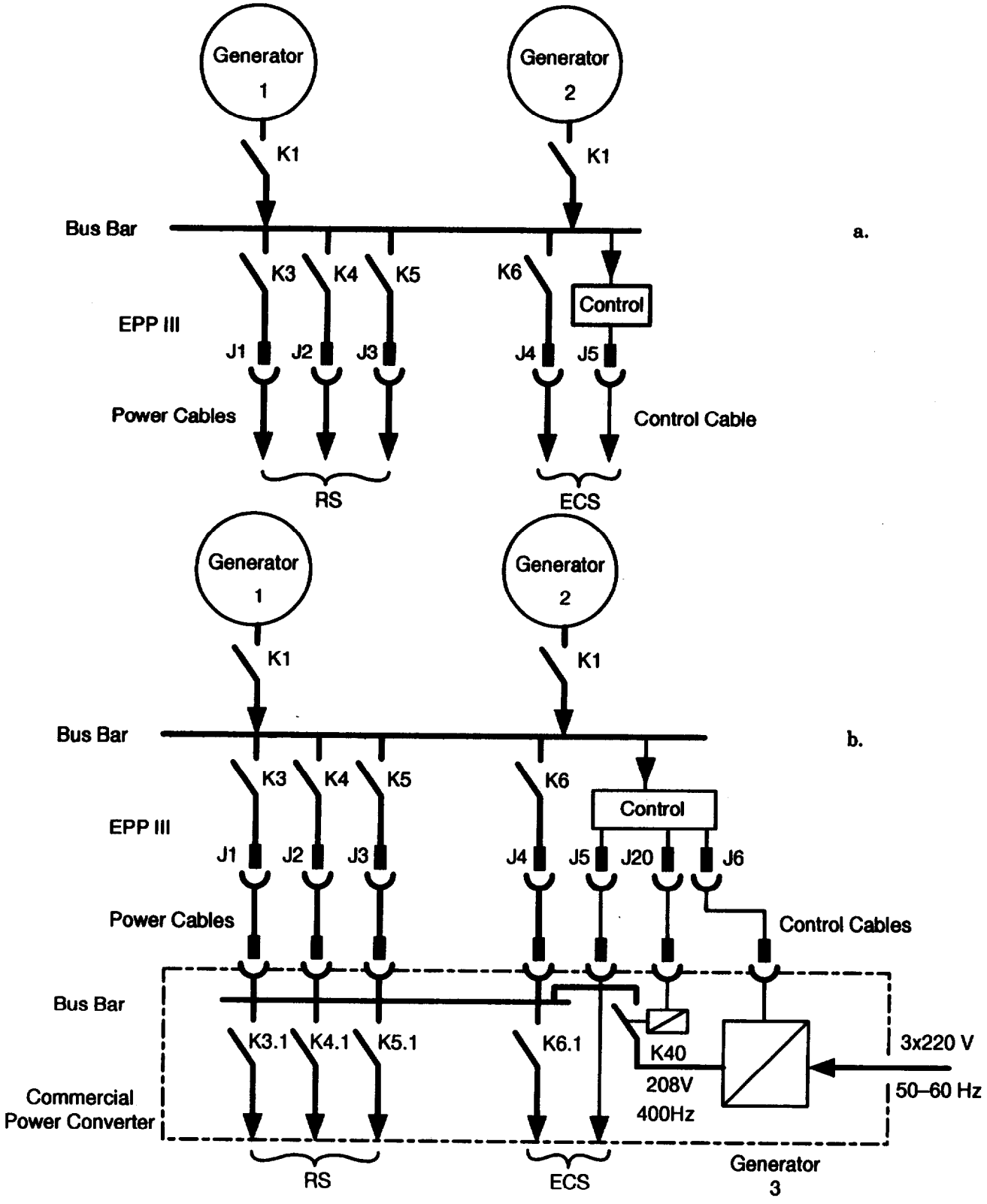


Figure 1-5 Electric Power Plant III, Operating Modes.

1.13.6 Electric Power Plant III Functions.

The EPP III (figure 1-6) consists of two identical generator sets 1 and 2. The operation of the Generator Set 150 kW is described in more detail in manual TM 9-6115-668-13.

Each Generator Set 150 kW has a connection panel with receptacles for the following outputs:

Receptacles L1, L2, L3	3x208 V, 400 Hz output
Receptacle N	Neutral conductor
Receptacle J1	1x120 V, 400 Hz receptacle output (not used for EPP III)
Receptacle J2	24 VDC receptacle output (not used for EPP III)
Receptacle J9	Control connection between generator sets 1 and 2 and power distribution unit, for parallel operation

Generator set 150 kW output voltages L1, L2, L3, and N pass through individual cables to the PDU bus bars. From the bus bars, power is distributed among power contactors K3 to K6 for the loads. Monitoring circuits for overload cutout functions are incorporated into each phase conductor of these main power circuits.

Overload data is evaluated, together with the sychronization circuit, in the PDU electronics group N6. If an overload occurs, the phase in question is shut down with power contactor K3, K4, K5, or K6.

The synchronization system switches the commercial power converter power contactor K40 in and out; i.e. it acts through cables J6 and J20 in the commercial power converter operating mode.

In addition to the power contactors, the PDU comprises a control device with additional auxiliary relays, time relays, and a control panel from which all operations are controlled.

The PDU receives power from the bus bars through an internal power supply component that is active once the generator has reached operating speed.

Until the generator reaches operating speed, the PDU is temporarily supplied with +24 VDC from the generator by one each of the conductors of cable J9. This supply immediately becomes effective again if the PDU internal power supply fails.

The EPP III PDU has a connection panel for all connections involved in operating the loads.

Receptacles J1 to J4	Output 3x208 V, 400 Hz (J1 to J3 for RS, J4 for ECS)
Receptacle J5	Control and signal lines between ECS and EPP III
Receptacle J6	R (L1) and S (L2) phases of converter to synchronizing system, where R (L1) and S (L2) phases of generator are evaluated for voltage and frequency synchronization
Receptacle J7	Connection for communication line between EPP III and ECS via two conductors of cable J5
Receptacle J11	1x120 V, 400 Hz receptacle output
Receptacle J12	24 VDC receptacle output
Receptacle J20	Control power contactor K40 in commercial power converter via EPP III

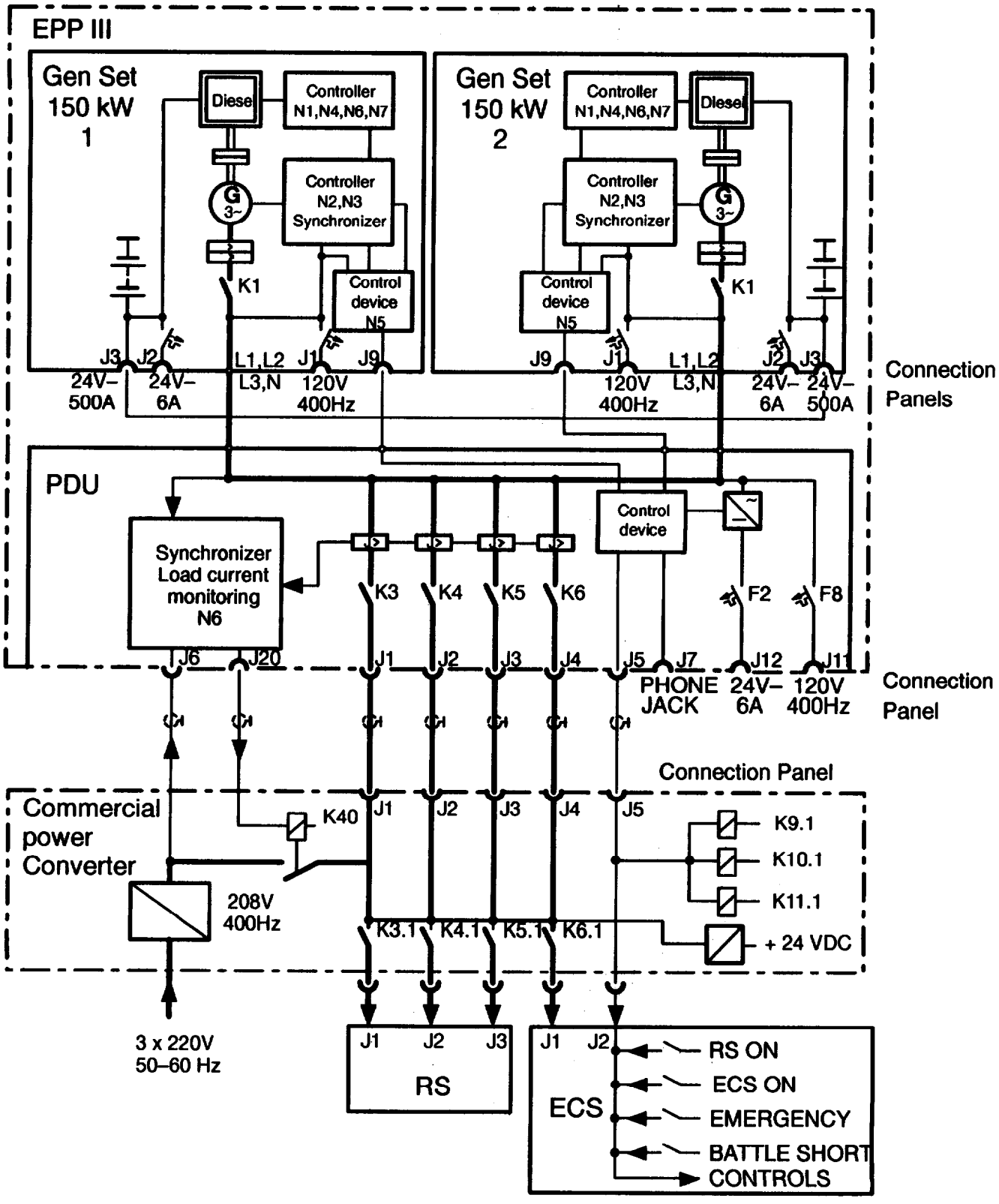


Figure 1-6 EPP III with Commercial Power Converter, Block Diagram.

1.14 FUNCTIONAL DESCRIPTION.

1.14.1 208/120V, 400Hz Main Power Circuits.

Generators 1 and 2 (figure 1-7) provide three-phase 208V/400Hz power to the four bus bars L1, L2, L3, and N in the EPP III power distribution unit. Prom the bus bars, all phase lines are directed to power contactors K3 to K6 by pass through current transformers T1 to T12. The pass through current transformers transform the phase currents in the ratio 150:1. The resulting analog voltages are delivered to the monitoring circuits of the PDU (paragraph 1.14.2). A 120V/400Hz power supply is made available at receptacle J11.

Main power circuit control system

The main power circuits are switched on with the ECS ON (figure 1-8) and/or RS ON switches on the ECS control panel; this energizes relay K10 and/or K11. Contact K13/14 of K10 enables the main power circuit for power contactor K6, and contact 3/4 of K11 enables the main power circuit of power contactors K3 to K5. The power circuits are identical, and will be described below using the example of K6.

Relay contact 13/14 of K10 is closed. The +24 VDC signal passes by the ECS interlock loop J4-D/B of the power cable, and break contact 22/21 of relay K19, to power contactor K6. The contactor is energized. This opens its contact 31/32 and reduces the holding current of the coil via 7.4-ohm protective resistor R6. At the same time, POWER ON-J4-ECS lamp H8 on the control panel lights up.

If current transformer T10, T11, or T12 (figure 1-7) indicates an overload, PDU electronics group N6 sets time pulse relay K19 (figure 1-9). Break contact 22/21 of K19 (figure 1-8) opens, and the main power circuit is shut down as power contactor K6 de energizes.

Once the fault is remedied, OVERLOAD RESET pushbutton switch S4 (figure 1-9) on the control panel must be pressed to reset relay K19 and turn the main power circuit back on. If an overload cutout occurs, OVERLOAD-J4-ECS lamp H4 (figure 1-8) on the PDU control panel lights up.

Activation of power contactors K3 to K5 requires that all three power cables be connected to J1 to J3 in order to close interlock loop J1-D/B, J2-D/B, and J3-D/B.

The control and overload cutout systems for power contactors K3 to K5 are similar to those for K6.

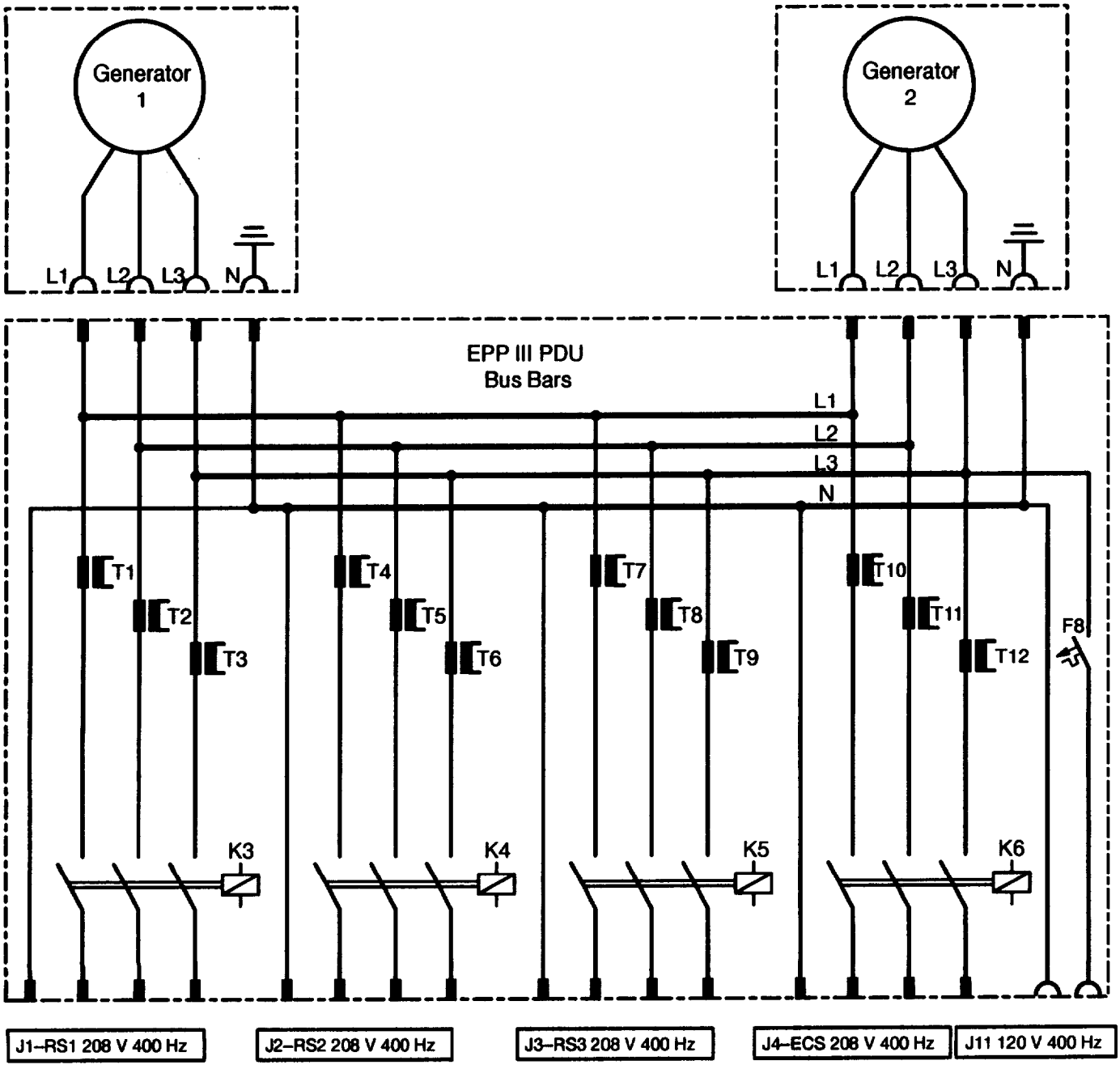


Figure 1-7 Main power circuits 208/120 V, 400 Hz.

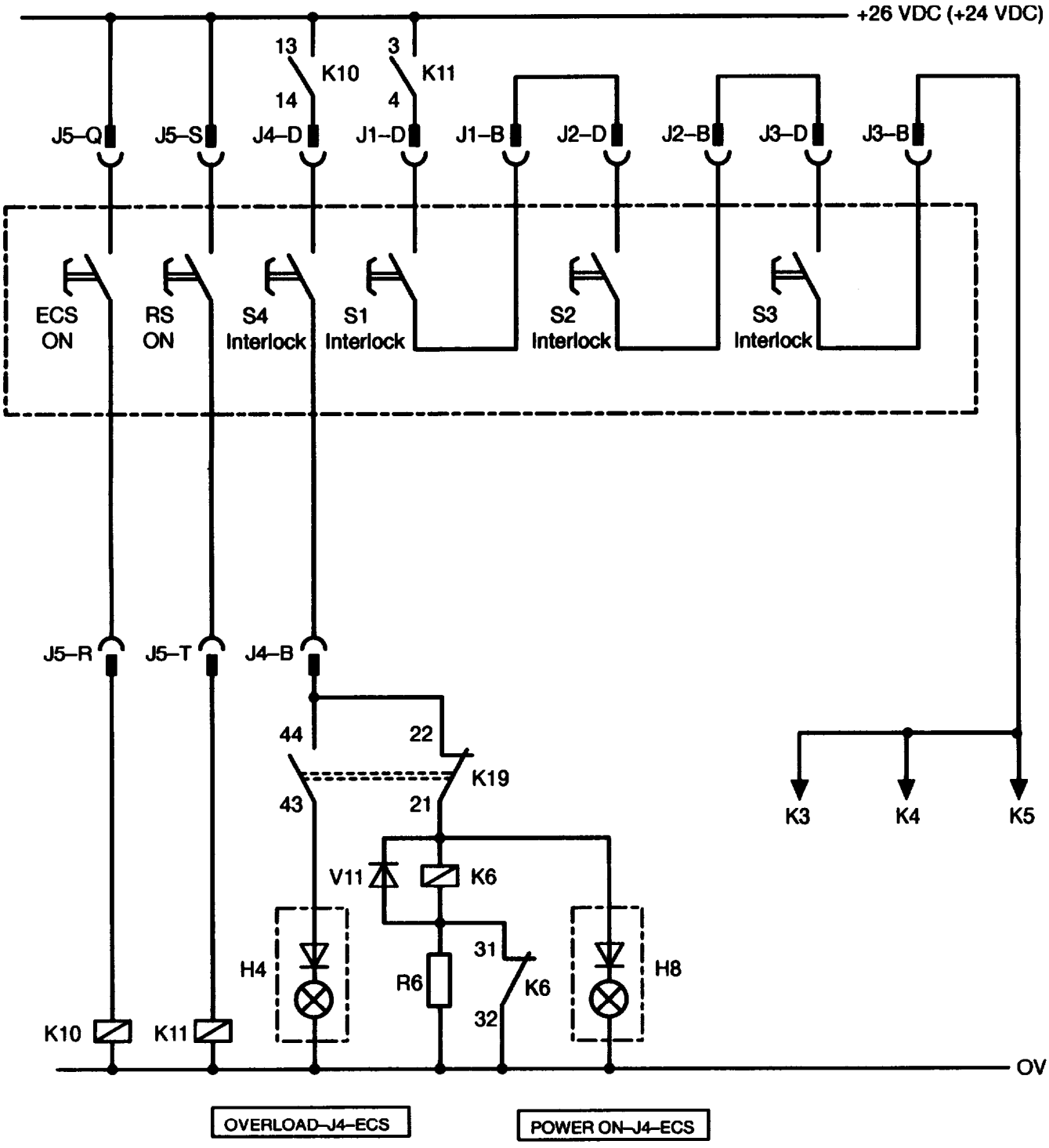


Figure 1-8 Main power circuit control systems.

1.14.2 PDU Electronics Group Monitoring Circuit.

The PDU electronics group N6 (figure 1-9) performs two functions:

- Main power cutout if a limit value is exceeded on a phase line.
- Detecting voltage and frequency synchronization at EPP III PDU bus bars and commercial power converter bus bars if the converter is used.

Main power cutout

The main power cutout system consists of four identical plug in boards. Operation will be described using the example of power contactor K6, which is cut out by relay K19.

If an overload at any of current transformers T10, T11, or T12 causes the voltage at input 4JR, 4JS, or 4JT to exceed its limit value, time relay K19 at output J4 is set, and cuts out contactor K6 in the main power circuit (figure 1-8). The contactor is not switched back on until relay K19 is reset by pressing the OVERLOAD RESET pushbutton switch S4 on the control panel (figure 1-9).

Overload triggering is preset at the factory, by means of resistors R30, R31, and R32 and three potentiometers on the PDU electronics group N6, to the following levels:

- Cutout at 1.2 times rated value J = 156 A, with a delay less than (<)2.5 seconds.
- Cutout at 1.8 times rated value J = 234 A, with a delay less than (<)1.5 seconds.

These settings cannot be changed by the customer.

Synchronization

Pressing PARALLEL OPERATION ON pushbutton switch S2 (figure 1-10), on the control panel energizes relay K12 (figure 1-9), and initiates sychronization testing. +24 VDC voltage is delivered to PDU electronics group N6 input +S, activating synchronization.

In this process, the R and S phases of generators 1 and 2 of the EPP III, and phases R (L1) and S (L2) (R'/S') of the commercial power converter, are evaluated by the synchronization plug in board.

When voltage and frequency synchronization criteria have been met, time relay K13 is energized, emitting a 0.5 seconds wipe pulse which triggers the appropriate generator change over process (paragraph 1.14.3).

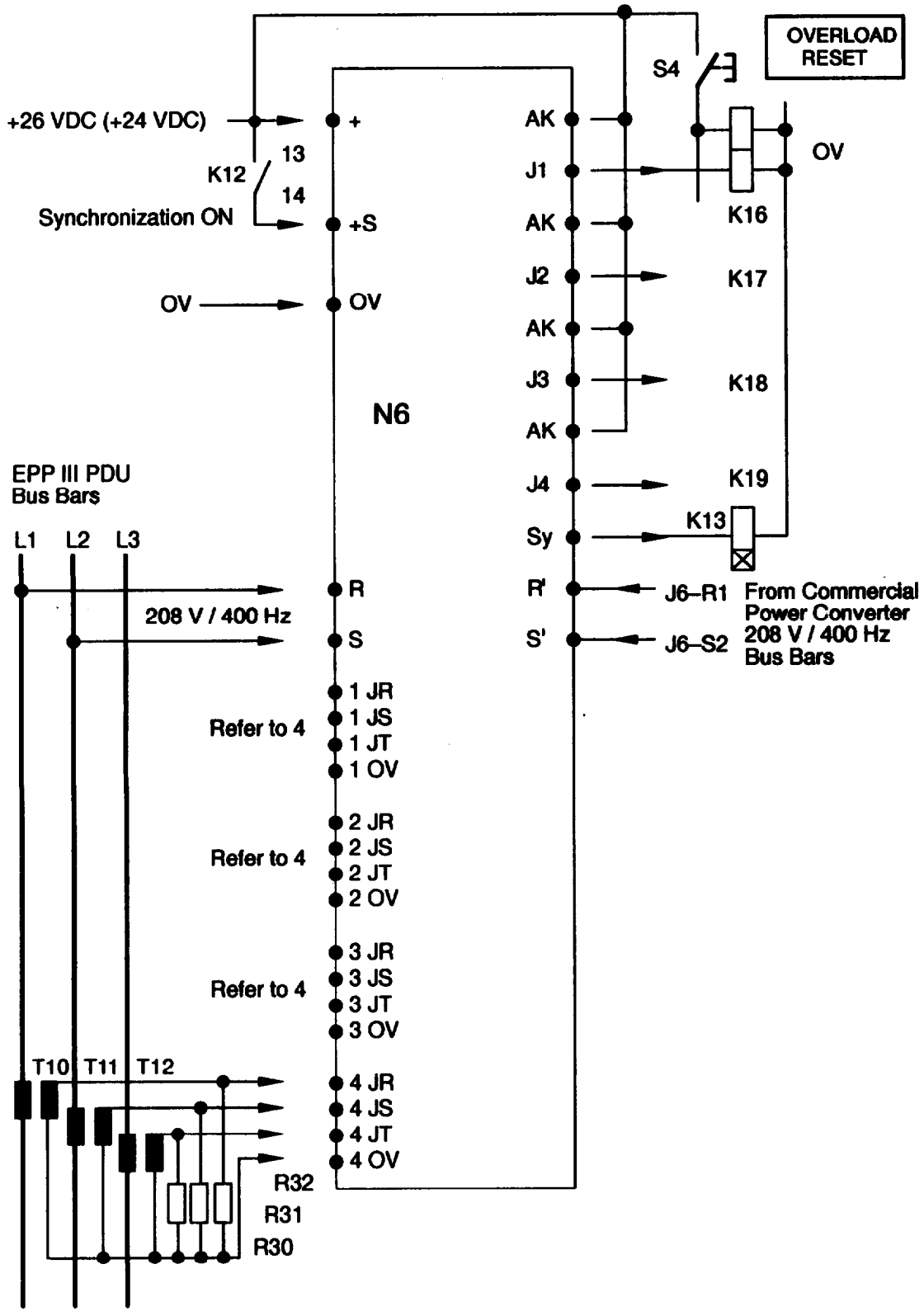


Figure 1-9 PDU electronics group N6 monitoring circuits

1.14.3 Controlling Operation with Commercial Power Converter.

Five cases can exist when operating with the commercial power converter (figure 1-6):

Case 1: EPP III connected by commercial power converter; EPP III providing power to loads; changeover to generator 1 or 2.
Case 2: EPP III connected by commercial power converter; commercial power converter providing power to loads; changeover to generator 1.
Case 3: EPP III connected by commercial power converter; EPP III providing power to loads; commercial power converter shut down.
Case 4: EPP III connected by commercial power converter; commercial power converter providing power to loads; EPP III shut down.
Case 5: Commercial power converter providing power to loads; EPP III not connected.

Case 1: EPP III connected by commercial power converter; EPP III providing power to loads; changeover to generator 1 or 2.

1. Relay K21 (figure 1-10) is energized, because EPP III is providing power to the loads. This relay detects the presence of phase voltages on the EPP III bus bars.
2. Relay K20 detects the presence of commercial power converter phase voltages (the commercial power converter has not yet been switched into its bus bars).
3. Pressing PARALLEL OPERATION ON illuminated pushbutton switch S2 on the EPP III PDU control panel energizes relay K12, which latches by contact 34/33. At the same time, PARALLEL OPERATION ON lamp H10 lights up on the control panel. Relay contact 13/14 of K12 closes, initiating evaluation of synchronization between EPP III and commercial power converter (paragraph 1.14.2). PDU electronics group N6 checks the conditions below and switches time relay K13 when the two systems are synchronized.
4. Time relay K13 delivers a 0.6 seconds activation pulse, by its contact 15/16, to relay K15 when the following conditions are met:

   ECS and/or RS loads activated, relay contact 33/34 of K10 and/or 13/14 of K11 closed.
   Commercial power converter delivering voltage; contact 13/14 of K20 closed.
   Generator delivering voltage (i.e. power); contact 21/22 of K21 open.
   Synchronization assured since time relay K13 is active.
   Relay contact 16/15 of K14 closed.

When relay K16 is energized, generator changeover occurs as follows:

1. Relay K16 latches by contact 5/6.
2. Contact 21/22 of K16 opens, causing relay K12 to de-energize; PARALLEL OPERATION ON lamp H10 on control panel goes out. PARALLEL OPERATION lamp H9 goes on, since contact 13/14 of K15 closes.
3. Contact 1/2 of K15 activates power contactor K40 in the commercial power converter, by connector pin J20-A/B, so that the commercial power converter is now additionally switched onto the bus bars, i.e. the loads. Connector pin J20-C/D provides the minus terminal for K40.
4. Contact 3/4 of K15 closes, issuing a shutdown command to generator 1 or 2. The generator disconnects from the bus bars of the EPP III, and runs at idle.

Case 2: EPP III connected by commercial power converter; commercial power converter providing power to loads changeover to generator 1 or 2.

The changeover is performed as follows:

1. Generator 1 (or 2) is operating at idle.
2. Commercial power converter is activated through relay K15, and providing power to the loads.
3. Changeover is initiated by pressing PARALLEL OPERATION ON pushbutton switch S9 on the control panel of generator 1 or 2 (refer to TM 9-6115-663-13). The generator checks synchronization with the commercial power converter in the same way as the PDU electronics group N6 of the EPP III, measuring voltages by the EPP III bus bars. When synchronization is achieved, the generator is switched onto the bus bars.
4. Once generator 1 or 2 is on line, +24 VDC voltage is switched to time relay K14 by diode A1/V18 or A1/V19. 0.5 seconds after energization of the relay, its contact 15/16 is opened for a further 0.5 seconds causing relay K15 to de-energize.
5. Contact 1/2 of K15 opens, and disconnects the commercial power converter from the bus bars by de-energization of power contactor K40 in the commercial power converter.
6. PARALLEL OPERATION lamp H9 on the EPP III control panel goes out. Changeover is now complete.

Case 3: EPP III connected by commercial power converter; EPP III providing power to loads; commercial power converter shut down.

Circuit conditions are as follows (figure 1-6):

1. Generator is delivering voltage; K1 activated.
2. Loads are being powered by PDU; K3, K4, K5, and K6 activated.
3. K3.1, K4.1, K5.1, and K6.1 in commercial power converter are activated.
4. ECS is controlling EPP III and receiving signals.

Case 4: EPP III connected by commercial power converter; commercial power converter providing power to loads; EPP III shut down.

Circuit conditions are as follows (figure 1-6):

1. ECS is controlling commercial power converter with ECS ON (K10.1), RS ON (K11.1), and EMERGENCY (K9.1), with same functions at relays K10, K11, and K9 in EPP III.
2. K40 on, delivering voltage.
3. Power being provided by K3.1, K4.1, K5.1, and K6.1.

Case 5: Commercial power converter providing power to loads; EPP III not connected.

Same as Case 4, with interlock loops bridged at input J1 to J4 of commercial power converter.

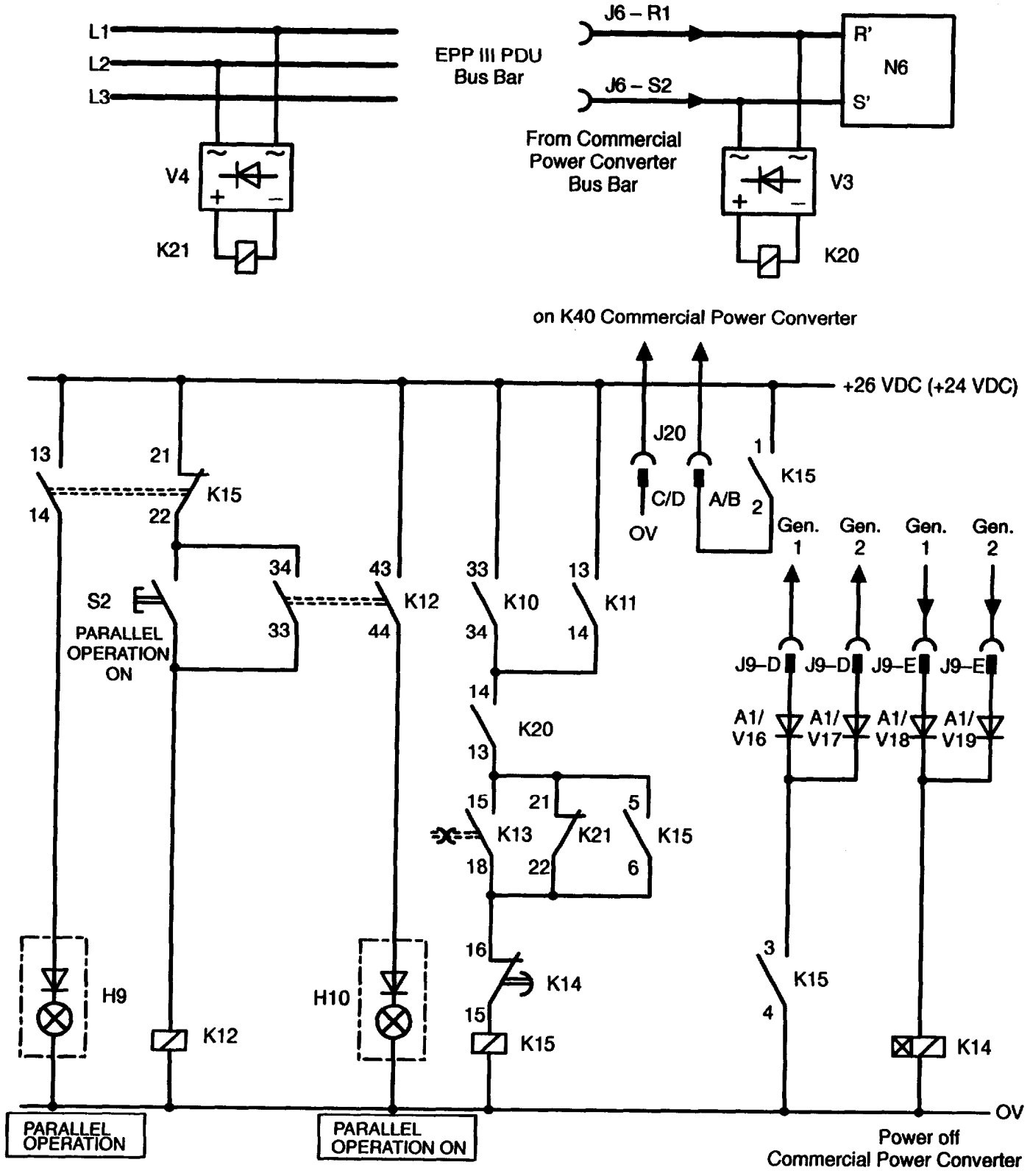


Figure 1-10 Controlling operation with the commercial power converter.

1.14.4 Signaling Circuits, operational Function.

The Generator Sets 150 kW and PDU of the EPP III deliver the following signals to the ECS (figure 1-11):

Low Fuel	Indicates low fuel through diodes A1/V12 and A1/V14
Faults	Diodes A1/V13 and A1/V15 signal generator faults. This signal is a combined signal of the following functions: Battery charging control oil pressure Oil temp-cylinder head Air filter Under/over frequency Under/over voltage Generator over temperature Overload Reverse power In addition, cutout of any power contactor K3 to K6 in the PDU due to overload is signaled by relay contacts 13/14 of K16 to K19.
Generator 1 On line	Generator 1 is delivering power to the system.
Generator 2 On line	Generator 2 is delivering power to the system.

BATTLE SHORT Function

This function is implemented in the ECS, in certain phases of the RS/ECS radar system, on the basis of EPP III signals, and prevents a generator from shutting down during that phase due to the faults listed below. In other words, power delivery from the generator must be especially reliable at that time. The function takes effect when relay K8 is activated by the ECS, and is signaled to the generators. Battle Short prevents the EPP III generators from shutting down due to faults involving

- Oil pressure
- Oil temp-cylinder head
- Generator over temperature
- Under/over voltage
- Battery charging control

The same function can also be activated at the generator.

EMERGENCY Function

This function is activated by a switch on the ECS and immediately switches the EPP III generator to idle, i.e. it is disconnected from the power system by de-energization of power contactor K1 (figure 1-6). The function is used, for example, when an overload is detected at the loads or when cable faults occur, and takes effect when relay K9 (figure 1-11) is activated. The Emergency function is not effective when the Battle Short function is active, since relay contact 21/22 of K8 interrupts the circuit of relay K9. In other words, Battle Short takes priority over Emergency.

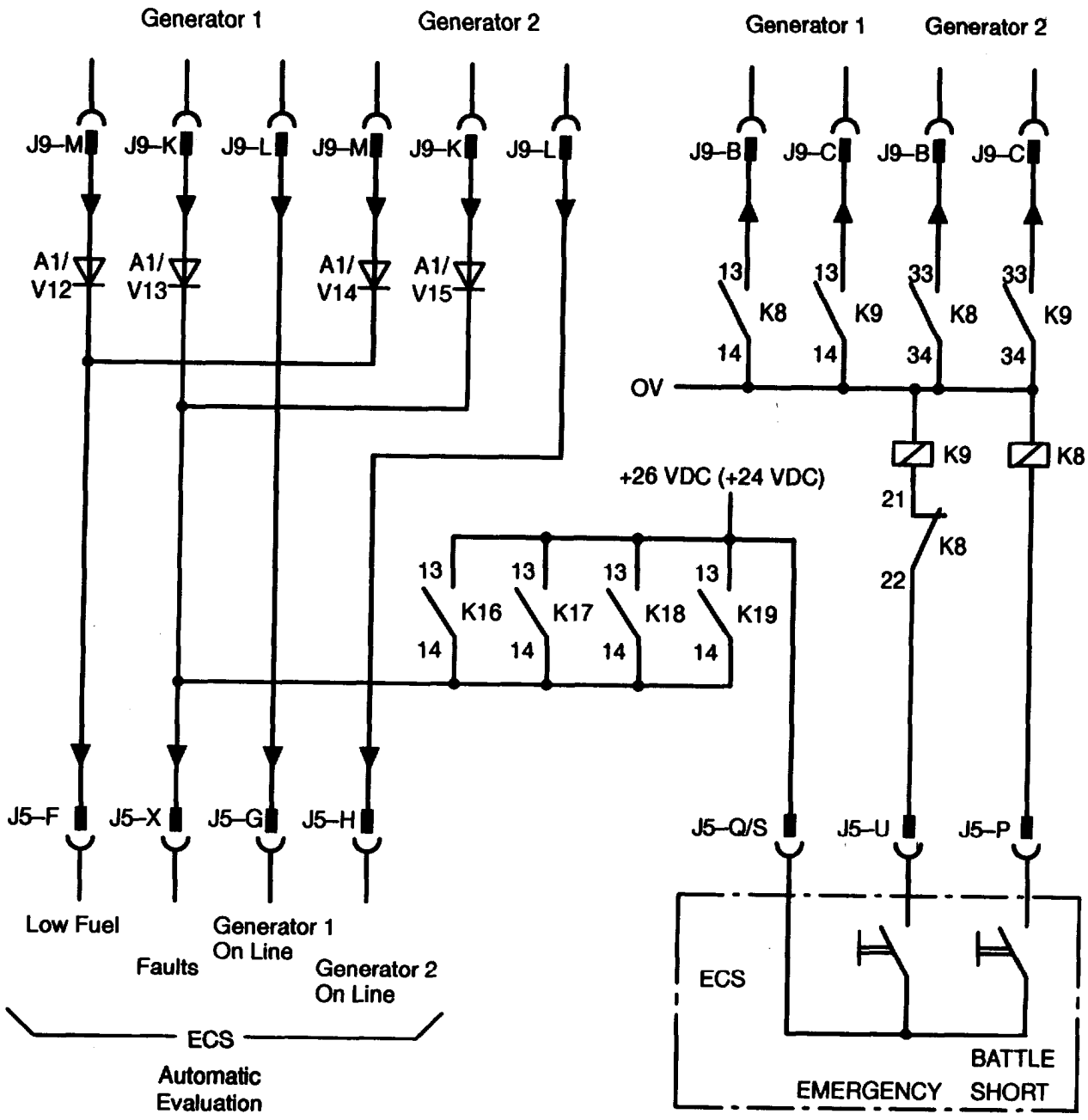


Figure 1-11 Signaling Circuits.

1.14.5 Internal Power Supply.

PDU switching elements and lamps are designed for an internal operating voltage of +24 VDC. The internal operating voltage is delivered from the generators and/or generated by a power supply in the PDU. Voltage from the generators is fed by buffer diodes V1, V2 (figure 1-12) directly into the internal line power system. This feed operates during the activation phase when the generator power system is not yet supplying voltage. Once the generator has reached operating speed, voltage is present at PDU bus bars L1, L2, L3. This voltage is transformed by T13 and rectified by V5, making available an internal power supply of approximately +26 VDC during steady-state operation. The voltage then increases from approximately +24 VDC to approximately +26 VDC. If power supply T13/V5 fails, diodes V1, V2 once again supply power operation is maintained.

1.14.6 Indicator Lamp Circuits.

The PDU contains a cabinet lighting system with lamp H12. Opening the access door closes switch S5, activating the interior cabinet lighting.

Control panel lamps H1 to H11 are powered from a brightness control N7 (figure 1-12) in the form of a dimmer circuit. Lamp brightness is set with PANEL DIMMER potentiometer R1. LAMP TEST pushbutton switch S1 is used for lamp testing. The lamps contain two diodes which switch them either for operation (e.g. relay contact 43/44 of K12 for lamp H10), or for lamp testing.

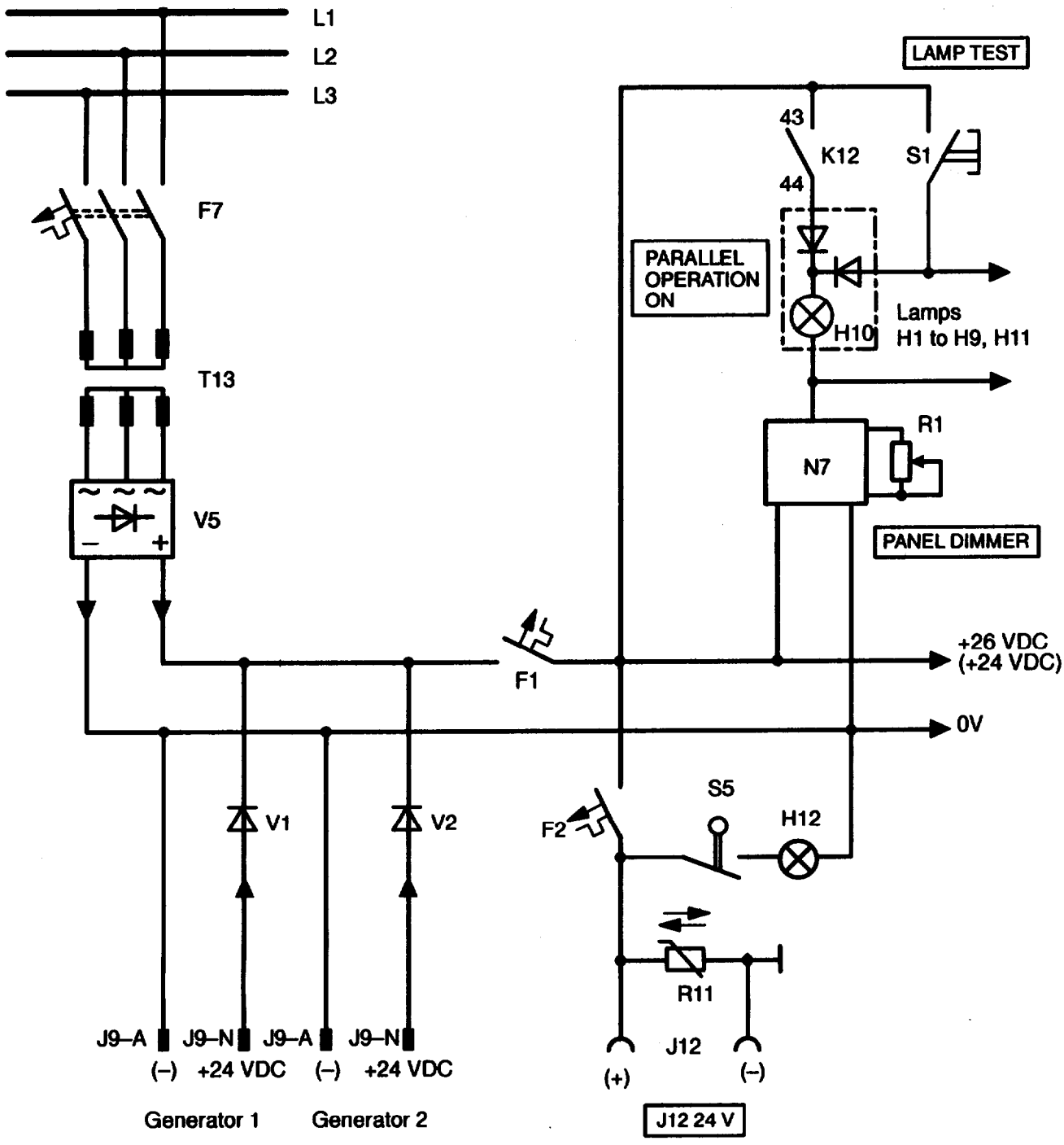


Figure 1-12 Internal Pow Supply and Lighting.

1.14.7 Interaction of Components within the System.

Operating the EPP III with the loads or with the commercial power converter involves transferring a variety of control and acknowledgment signals through the signal lines. The subparagraphs above also provide detailed descriptions of the signals.

Synchronization

Synchronization involves measuring the R (L1) and S (L2) phase voltages on the bus bars (figure 1-13). Identical synchronization circuits are present for this purpose in the generators and in the EPP III PDU, which are active simultaneously. During operation with the commercial power converter, both bus bars 1 and 2 are linked through the power contactors and power cable. Power contactors K1 and K40 are activated when synchronization is assured.

Control System for Parallel Generator Operation

The control lines required for parallel generator operation are looped from the two J9 connectors of the generator connection panels through the PDU. The signals involved are those on J9 connector pins F, G, H, J, P, R, S, T, U, X, Y, 2 (table 1-4). These signals are not used in the PDU.

Control System between EPP III, Commercial Power Converter, and ECS Load

These control signals and signal lines act between the generator and PDU control systems through connector J9 (table 1-4), and then through connector J5 and the control cable to the ECS (table 1-5).

Operating with the Commercial Power Convetrter

For this operating mode, two additional cables must be connected to the PDU. Phase voltages R (L1) and S (L2) are switched through the cable to J6 for synchronization purposes. The cable to J20 is used to switch power contactor K40.

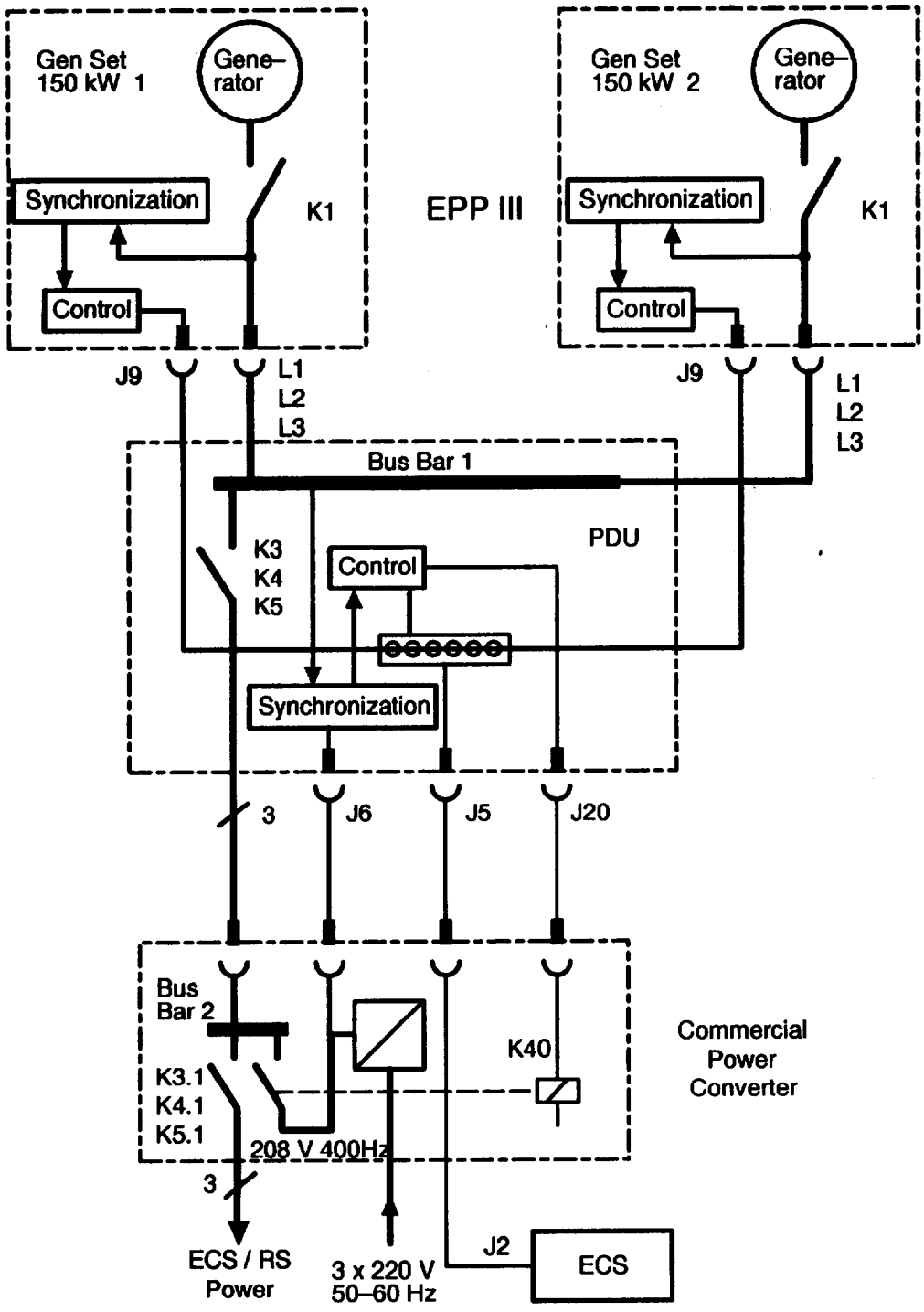


Figure 1-13 Control Signals and Signal Lines in the System.

Table 1-4 Control Signals Between Generator Sets 150 kW and PDU.

Control Cabinet Assembly, Designation	J9 Parallel Operation, Contact	Affects
OV (24-VDC system)	A	EPP III, OV (24 VDC system)
BATTLE SHORT (S21)	B	ECS, BATTLE SHORT switch
OV (excitation of K12)	C	ECS, EMERGENCY switch
OV	D	Commercial Power Converter operation
+24V	E	EPP III operation
Interlock loop	F	2nd Gen Set 150kW, J9-G, N-O contact K14
AC CIRCUIT INTERRUPTER ON	G	2nd Gen Set 150kW, J9-F, energizes K20
OV	H	2nd Gen Set 150kW, J9-J, energizes K18
PARALLEL OPERATION ON (S9)	J	2nd Gen Set 150kW, J9-H, OV (24 VDC system)
BATTERY CHARGING CONTROL OIL PRESSURE OIL TEMP-CYLINDER HEAD	K	ECS, fault message
AIR FILTER	K	ECS, fault message
UNDER/OVER FREQUENCY	K	ECS, fault message
UNDER/OVER VOLTAGE	K	ECS, fault message
GENERATOR OVER TEMPERATURE	K	ECS, fault message
OVERLOAD	K	ECS, fault message
REVERSE POWER	K	ECS, fault message
+24V	L	ECS, ON message Gen Set 150kW
LOW FUEL	M	ECS, LOW FUEL message Gen Set 150kW
+24V	N	EPP III, +24V (24 VDC system)
+24V	P	2nd Gen Set 150kW, J9-U, N-C contact K19
Power distribution	R	2nd Gen Set 150kW, J9-R, N4,10
Active power output	S	2nd Gen Set 150kW, J9-S, N4,11
Cable shield	T	2nd Gen Set 150kW, J9-T, cable shield
OV	U	2nd Gen Set 150kW, J9-P, energizes K19
Power distribution	X	2nd Gen Set 150kW, J9-Y, N2, E
Reactive power	Y	2nd Gen Set 150kW, J9-X, N2, A
Cable shield	Z	2nd Gen Set 150kW, J9-Z, cable shield

Table 1-5 Control Signals Between EPP III and ECS Load.

Control Cabinet Assembly, Designation	J5-Control, Contact	Affects
Spare	A	
Spare	B	
Spare	C	
Spare	D	
Spare	E	
Low Fuel	F (EPP III → ECS)	Generator Low Fuel message, J9-11
Generator 1	G (EPP III →ECS)	Generator 1On line, J9-L
Generator 2	H (EPP III →ECS)	Generator 2 On line, J9-L
Spare	J	
Spare	K	
0V (26 VDC/24 VDC)	L (EPP III → ECS)	ECS power supply control system, J9-A
Commo Sound Power	M	Activates communication line between EPP III connector J7 and ECS
Commo Sound	N	Activates communication line between EPP III connector J7 and ECS
Battle Short	P (ECS → EPP III)	Switches Battle Short function on/off K8, J9-B
+26 VDC (+24 VDC)	Q (EPP III →ECS)	ECS power supply control system parallel to J5-S, J9-N
ECS ON	R (ECS → EPP III)	Switch-on command from ECS to main power circuits of PDU, K10
+26 VDC (+24 VDC)	S (EPP III → ECS)	ECS power supply control system parallel to J5-Q, J9-N
RS ON	T (ECS → EPP III)	Switch-on command from RS to main power circuits of PDU, K11
Emergency	U (ECS → EPP III)	Switch Emergency function on/off, K9, J9-C, K12
Spare	V	
Spare	W	
Faults	X (EPP III → ECS)	Combined signal, EPP III faults J9-K
Spare	Y	
Spare	Z	

1.15 RELATED TECHNICAL MANUALS.

Refer to appendix A for related technical manuals.

CHAPTER 2

OPERATING INSTRUCTIONS

Subject Index		Page
Section I.	Description and Use of Controls and Indicators	2-2
2.1	Generator Set 150 kW, Control Cabinet Assembly	2-2
2.2	Pallet Frame, Power Distribution Unit	2-12
2.3	Electric Power Plant III, Cabling Connections	2-18
2.4	Electric Power Plant III, Fire Extinguishers	2-20
Section II.	Operator Preventive Maintenance Checks and Services (PMCS)	2-22
2.5	Introduction to Operator PMCS Table	2-22
Section III.	Operation under Usual Conditions	2-32
2.6	Assembly and Preparation for Use	2-32
2.7	Operating Procedures	2-43
2.8	Preparation for Movement	2-63
Section IV	Operation under Unusual Conditions	2-70
2.9	Operating Generator Set 160 kW	2-70
2.10	Operating Electric Power Plant III	2-76

Section I. DESCRIPTION AND USE OF CONTROLS AND INDICATORS

2.1 GENERATOR SET 150 KW, CONTROL CABINET ASSEMBLY.

2.1.1 Controls and Indicators.

The controls and indicators of the control cabinet assembly are shown in figure 2-1 and listed in table 2-1.

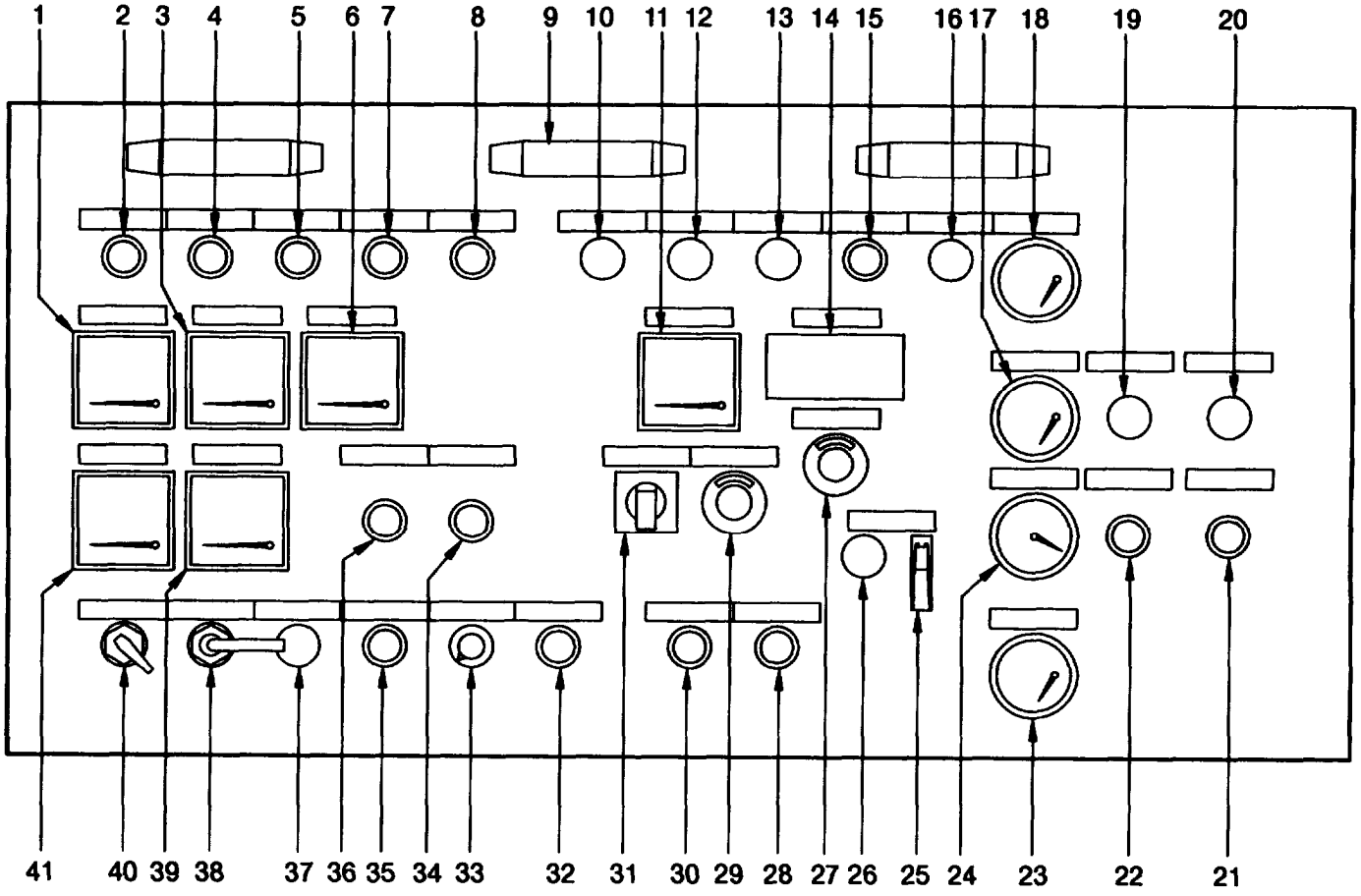


Figure 2-1 Control Cabinet Assembly, Controls and Indicators.

Table 2-1 Control Cabinet Assembly, Description of Controls and Indicators.

Item Number	Description	Function
1	AMPS L1(ØA) meter 0 - 600 A (P1)	Indicates current in line 1
2	UNDER/OVER FREQUENCY illuminated pushbutton switch, red (H8, S4)	H8 lights up if generator frequency is above or below setpoint; S4 cancels the fault message
3	AMPS L2 (ØB) meter 0 - 600 A (P2)	Indicates current in line 2
4	UNDE/OVER VOLTAGE illuminated pushbutton switch, red (H9, S5)	H9 lights up if generator voltage is above or below setpoint; S5 cancels the fault message
5	GENERATOR OVER TEMPERATURE illuminated pushbutton switch, red (H10, S6)	H10 lights up if generator overheats; S6 cancels the fault message
6	AMPS L3 (ØC) meter 0 - 600 A (P3)	Indicates current in line 3
7	OVERLOAD illuminated pushbutton switch, red (H13, S10)	H13 lights up if generator overloads; S10 cancels the fault message
8	REVERSE POWER illuminated pushbutton switch, red (H11, S22)	H11 lights up if reverse power is too high; S22 cancels the fault message
9	Lights (H6)	For front panel illumination; use PANEL DIMMER switch/potentiometer (33) to turn on and adjust brightness
10	BATTERY CHARGING CONTROL lamp, red (H2)	Must go out after start; if H2 lights up during operation, battery set is not being charged
11	VOLTAGE meter 0 - 250 V (P6)	Indicates line or phase voltages L-L or L-N
12	OIL PRESSURE lamp, red (H3)	Must go out after start; if H3 lights up during operation, oil pressure is too low
13	OIL TEMP-CYLINDER HEAD lamp, red (H4)	Lights up when oil and/or cylinder head temperature is too high
14	FREQUENCY meter, digital display (P5)	Displays generator frequency (400.0 ± 0.2 Hz during operation)

Table 2-1 Control Cabinet Assembly, Description of Controls and Indicators (continued).

Item Number	Description	Function
15	AIR FILTER illuminated pushbutton switch, red (HS, S17)	H5 lights up when the air filter is dirty; S17 cancels the fault message
16	LOW FUEL lamp, amber (H15)	Lights up when fuel level in fuel tank has dropped to minimum tank level
17	OIL TEMPERATURE meter, illuminated (P10)	Indicates engine oil temperature:
	Green arc	Operating temperature range
	Red arc	Overtemperature range
18	OIL PRESSURE meter, illuminated, 0-5 bar (P9)	Indicates engine oil pressure (>4 bar during operation)
19	READY TO START IF HEATING IS ON lamp, green (H102)	Lights up when engine preheat time has elapsed and engine can be started
20	HEATING FAILURE lamp, red (H103)	Lights up in the event of a heating system failure
21	HEATING ON illuminated pushbutton switch, green (S102, H101)	Turns heating system on; H101 lights up when heating system is on
22	HEATING OFF pushbutton switch (S101)	Shuts heating system off; H101 goes out when heating system is off
23	FUEL LEVEL meter 0 - 1/1, illuminated (P11)	Indicates level in fuel tank
24	HOURMETER meter (P8)	Activated when diesel engine is operating
25	BATTLE SHORT switch (S21)	Shuts off safety and monitoring functions
26	BATTLE SHORT lamp, amber (H17)	Lights up when safety and monitoring functions are off
27	FREQUENCY ADJUST potentiometer, 10 turn (R4)	Adjusts generator frequency:
	Set between 4 and 5	For rated frequency indicated on FREQUENCY meter (14)

Table 2-1 Control Cabinet Assembly, Description of Controls and Indicators (continued).

Item Number	Description	Function
28	AC CIRCUIT INTERRUPTER ON illuminated pushbutton switch, green (S8, H14)	Turns on power system (main contactor), H14 lights up when power is ON
29	VOLTAGE ADJUST potentiometer, 10 turn (R3)	Adjusts generator voltage:
	Set between 4 and 5	For rated voltage indicated on VOLTAGE meter (11)
30	AC CIRCUIT INTERRUPTER OFF pushbutton switch (S7)	Shuts down power system (main contactor); H14 goes out when power is OFF
31	VOLTAGE SELECTOR SWITCH (S11)	
	L3-L1, L2-L3, L1-L2	Line voltages
	L1-N, L2-N, L3-N	Phase voltages
		Indicated on VOLTAGE meter (11)
32	PARALLEL OPERATION ON illuminated pushbutton switch, white (S9, H12)	Initiates synchronization; H12 lights up during synchronization
33	PANEL DIMMER with switch (S16, R2)	Adjusts panel light brightness and shuts off lights
	S16 off, R2 turned all the way left	All active lights at minimum brightness
	S16 on, R2 turned to the right	All lights at maximum brightness
34	FUEL TANK PUMP ON illuminated pushbutton switch, green (S19, H16)	Turns fuel pump on; H16 lights up when fuel pump is on
35	LAMP TEST pushbutton switch (S20)	Tests operation of front panel lamps
36	FUEL TANK PUMP OFF pushbutton switch (S18)	Shuts fuel pump off, H16 goes out when fuel pump is off
37	GLOWPLUG ON lamp, amber (H1)	Lights up about 90 seconds after glowplug operation begins

Table 2-1 Control Cabinet Assembly, Description of Controls and Indication (continued).

Item Number	Description	Function
38	GLOWPLUG/START rotary switch (S2)	
	SWITCH POSITION	
	0	Off
	GLOWPLUG	Activates flame glowplugs and solenoid valve; GLOWPLUG ON lamp (37) lights up
	START	Activates flame glowplugs, solenoid valve, and starter
39	BATTERY CHARGE meter 0 - 60 A (P7)	Indicates battery charging current (approximately 10 A when batteries are charged)
40	MASTER SWITCH key switch (S1)	Removable key
	SWITCH POSITION	
	LOCK	Off
	OFF	24 V power off
	ON	24 V power on; Engine can be started with GLOWPLUG/ START rotary switch (38)
41	KILOWATTS meter 0 - 200 kW (P4)	Indicates active power output

2.1.2 Circuit Breakers.

Control cabinet assembly circuit breakers are illustrated in figure 2-2. Table 2-2 describes circuit breaker functions.

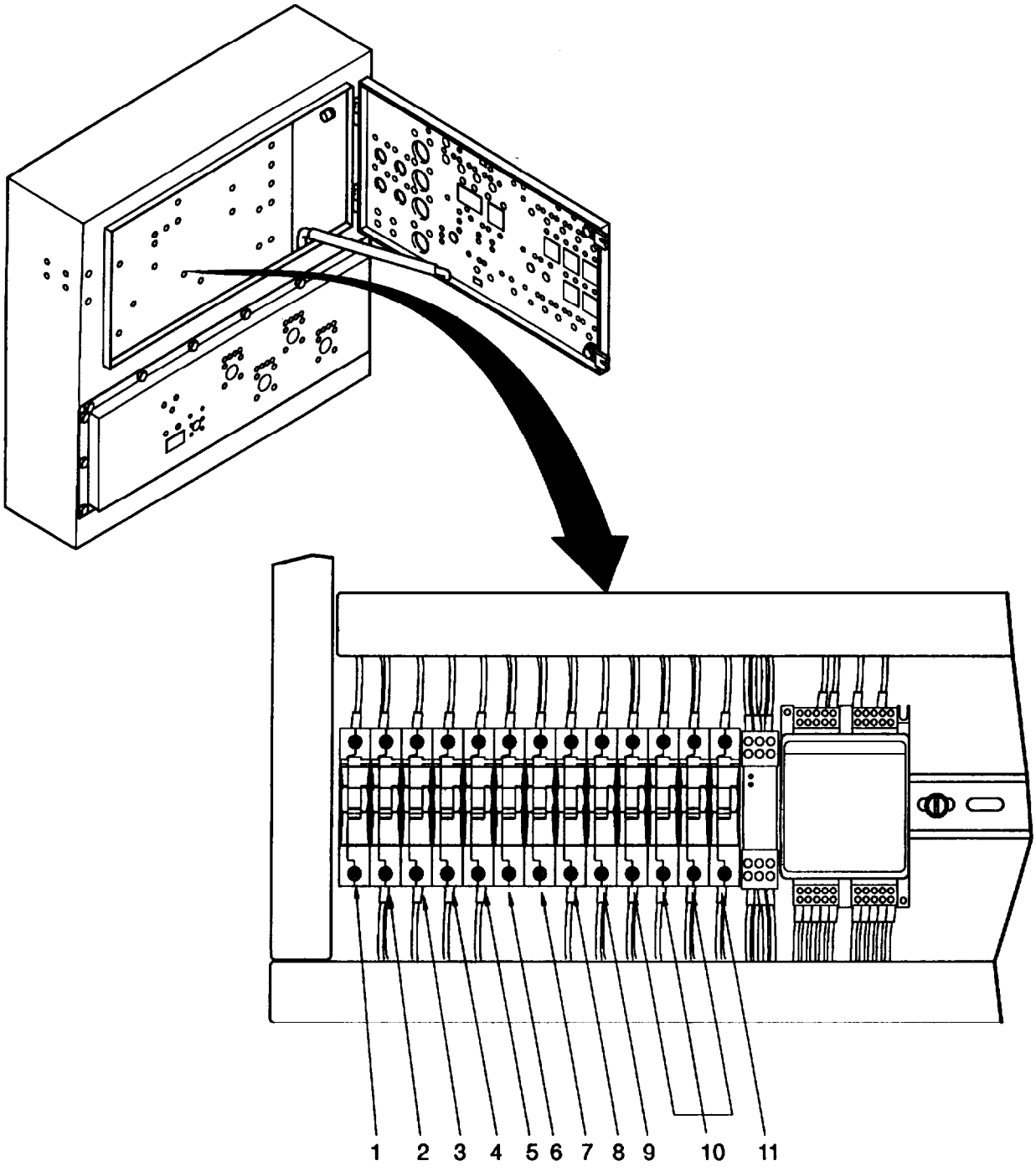


Figure 2-2 Control Cabinet Assembly, Circuit Breakers (sheet 1 of 2).

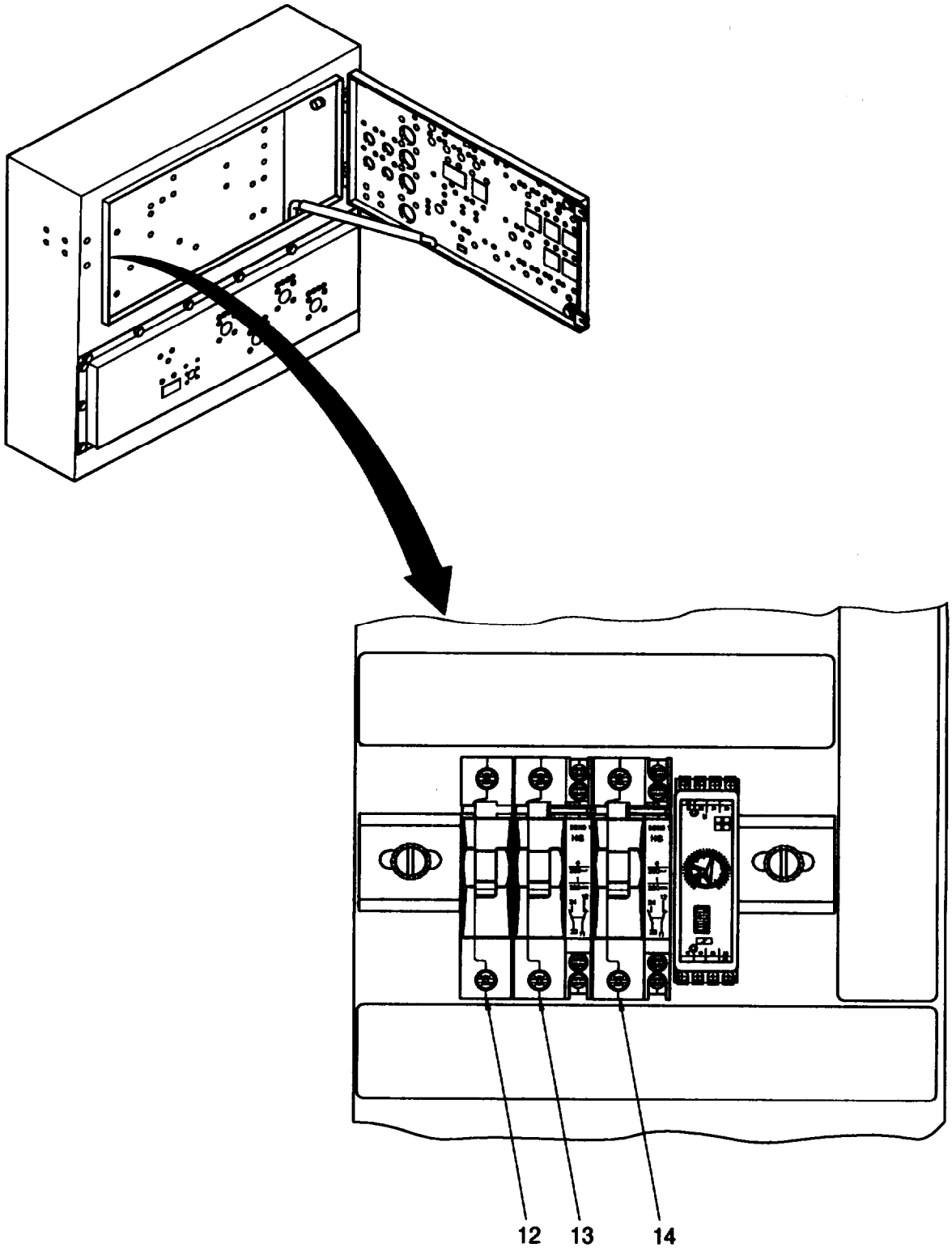


Figure 2-2 Control Cabinet Assembly, Circuit Breakers (sheet 2 of 2).

Table 2-2 Control Cabinet Assembly, Description of Circuit Breakers.

Item Number	Description	Protects
1	24 V DC/50 A circuit breaker, 1 pole (F1)	Circuit breakers, K4 and K28; time relay K10; control cabinet 24 V circuits
2	24 V DC/6 A circuit breaker, 1 pole (F2)	J2/24 V receptacle, cabinet light H7
3	24 V DC/16 A circuit breaker, 1 pole (F3)	Speed governor assembly N1, digital isochronous load sharing module N4
4	24 V DC/6 A circuit breaker, 1 pole (F4)	Auxiliary contactor K2 (charging control system, oil pressure, cylinder head and oil temperature)
5	24 V DC/6 A circuit breaker, 1 pole (F5)	OIL PRESSURE, OIL TEMPERATURE, FUEL LEVEL meters
6	24 V DC/6 A circuit breaker, 1 pole (F6)	FREQUENCY meter, HOURMETER meter, brightness control N5
7	24 V DC/16 A circuit breaker, 1 pole (F7)	Auxiliary contactors K5, K7, KS, K9, K11, K12, K19, K21, K23 and K27; time relays K3 and K13; thermistor relay F12, safety circuits
8	24 V DC/16 A circuit breaker, 1 pole (F8)	Auxiliary contactor K24 (Tank max.); FUEL TANK PUMP ON illuminated pushbutton switch, FUEL TANK PUMP OFF pushbutton switch
9	24 V DC/20 A circuit breaker, 1 pole (F9)	Auxiliary contactors K6, K14, K16, K18 and K20; time relays K25 and K26; main contactor K1; voltage regulator N2; safety device N3
10	120 V AC/6 A circuit breaker, 3 pole (F10)	FREQUENCY, KILOWATTS and VOLTAGE meters; voltage regulator N2; safety device N3
11	120 V AC/16 A circuit breaker, 1 pole (F11)	J1/120 V 400 Hz double receptacle
12	24 V DC/20 A receptacle, 1 pole (F101)	Auxiliary contactors K101 to K105, K111, time relays K106, K107 and K110, glow-plug, air flap, fan motor, circuit breaker F102
13	24 V DC/20 A circuit breaker, 2 pole (F102)	Oil pump, HEATING FAILURE lamp H103
14	24 V DC/0,5 A circuit breaker, 2 pole (F103)	Time relay K108, auxiliary contactor K109, solenoid valve, HEATING FAILURE lamp H103

2.1.3 Receptacles.

Control cabinet assembly receptacles are illustrated in figure 2-3. Receptacle functions are described in table 2-3. J3 SLAVE RECEPTACLE 24 VOLTS on the base frame assembly is illustrated in figure 2-4.

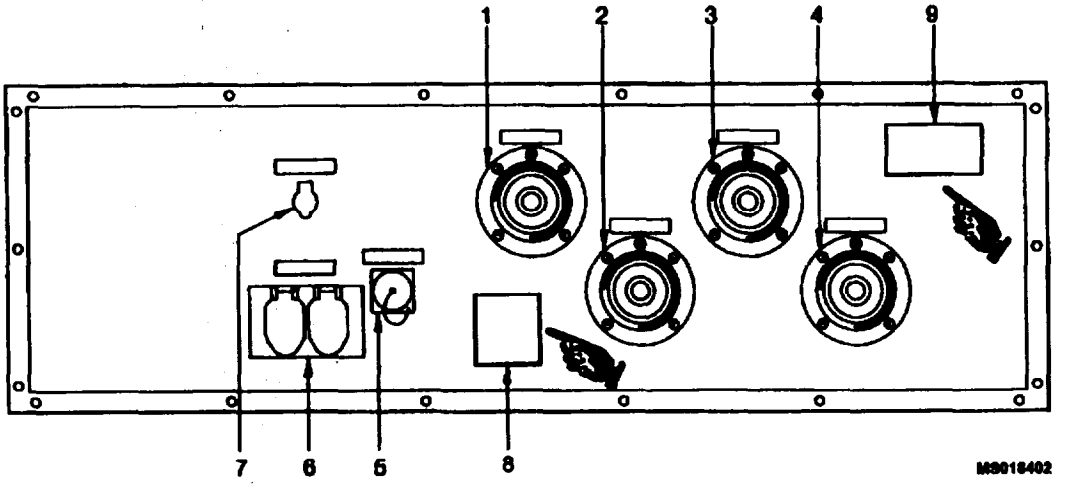


Figure 2-3 Control Cabinet Assembly, Receptacles.

Table 2-3 Control Cabinet Assembly, Description of Receptacles.

Item Number	Description	Function
1	L1 (0A) receptacle with interlock switch	Connection to EPP III, PDU power cable
2	L2 (0B) receptacle with interlock switch	Connection to EPP III, PDU power cable
3	L3 (0C) receptacle with interlock switch	Connection to EPP III, PDU power cable
4	N receptacle with interlock switch	Connection to EPP III, PDU power cable
5	J9 PARALLEL OPERATION receptacle	Connection to EPP III, PDU control cable
6	J1/120 V 400 Hz double receptacle	Load connection (maximum 16 A)
7	J2/24 V receptacle	Load connection (maximum 6 A)
8	Warning Plate	Warning 208 VAC - Install protective covers
9	Warning Plate	Warning 208 VAC

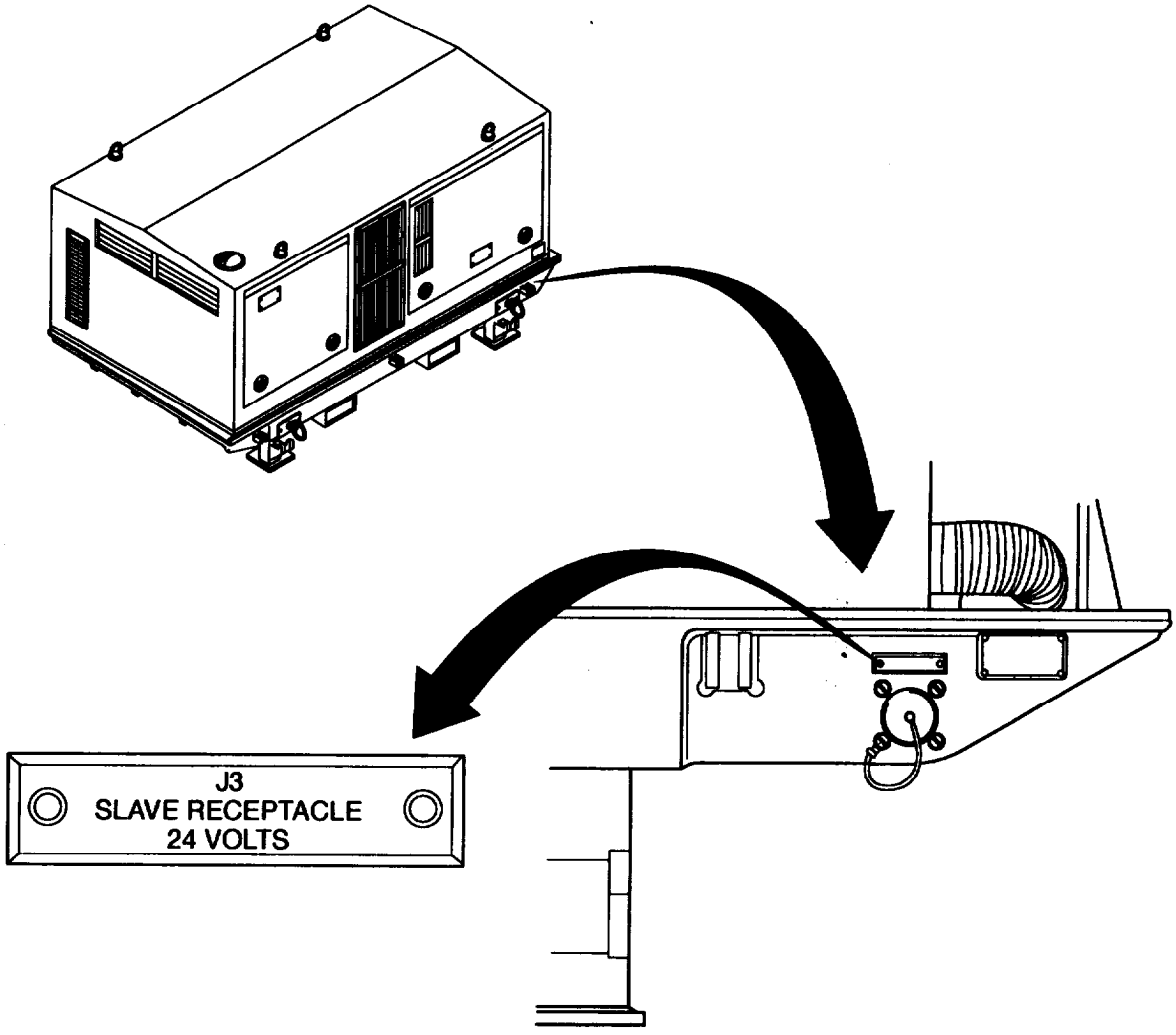


Figure 2-4 Base Frame Assembly, J3 SLAVE RECEPTACLE 24 VOLTS.

2.2 PALLET FRAME, POWER DISTRIBUTION UNIT.

2.2.1 Controls and Indicators.

The controls and indicators of the power distribution unit are shown in figure 2-5 and listed in table 2-4.

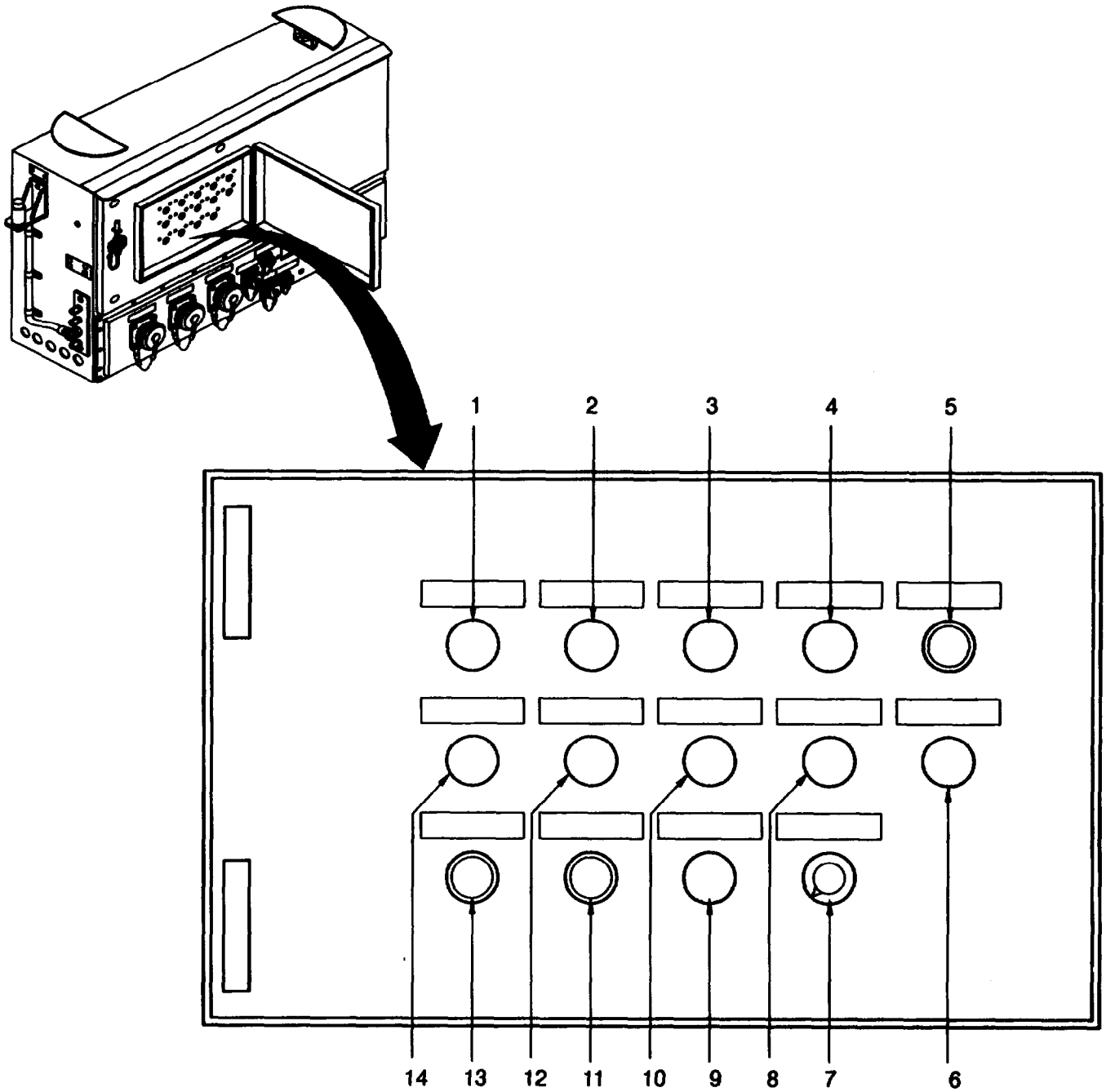


Figure 2-5 Power Distribution Unit, Controls and Indicators.

Table 2-4 Power Distribution Unit, Description of Controls and Indicators.

Item Number	Description	Function
1	OVERLOAD-J1-RS1 lamp, red (H1)	Lights up when overload cutout occurs on power cable with connector J1-RS1 (RS load)
2	OVERLOAD-J2-RS2 lamp, red (H2)	Lights up when overload cutout occurs on power cable with connector J2-RS2 (RS load)
3	OVERLOAD-J3-RS3 lamp, red (H3)	Lights up when overload cutout occurs on power cable with connector J3-RS3 (RS load)
4	OVERLOAD-J4-ECS lamp, red (H4)	Lights up when overload cutout occurs on power cable with connector J4-RS4 (ECS load)
5	OVERLOAD RESET pushbutton switch (S4)	Cancels OVERLOAD messages (1 to 4) after fault has been remedied
6	PARALLEL OPERATION lamp, white (H9)	Lights up after changeover to 2nd EPP III generator or to commercial power converter
7	PANEL DIMMER potentiometer (R1)	Adjust brightness of all lamps on PDU control panel
8	POWER ON-J4-ECS lamp, white (H8)	Lights up when ECS is being supplied with power by connector J4
9	BATTLE SHORT lamp, amber (H11)	Lights up when Battle Short function is active
10	POWER ON-J3-RS3 lamp, white (H7)	Lights up when RS is being supplied with power by connector J3
11	PARALLEL OPERATION ON illuminated pushbutton switch, white (S2, H10)	Lights up after actuation until changeover to 2nd EPP III generator or commercial power converter is complete
12	POWER ON-J2-RS2 lamp, white (H6)	Lights up when RS is being supplied with power by connector J2
13	LAMP TEST pushbutton switch (S1)	Tests operation of all lamps on PDU control panel
14	POWER ON-J1-RS1 lamp, white (H5)	Lights up when RS is being supplied with power by connector J1

2.2.2 Circuit Breakers.

Power distribution unit circuit breakers are illustrated in figure 2-6. Table 2-5 describes circuit breaker functions.

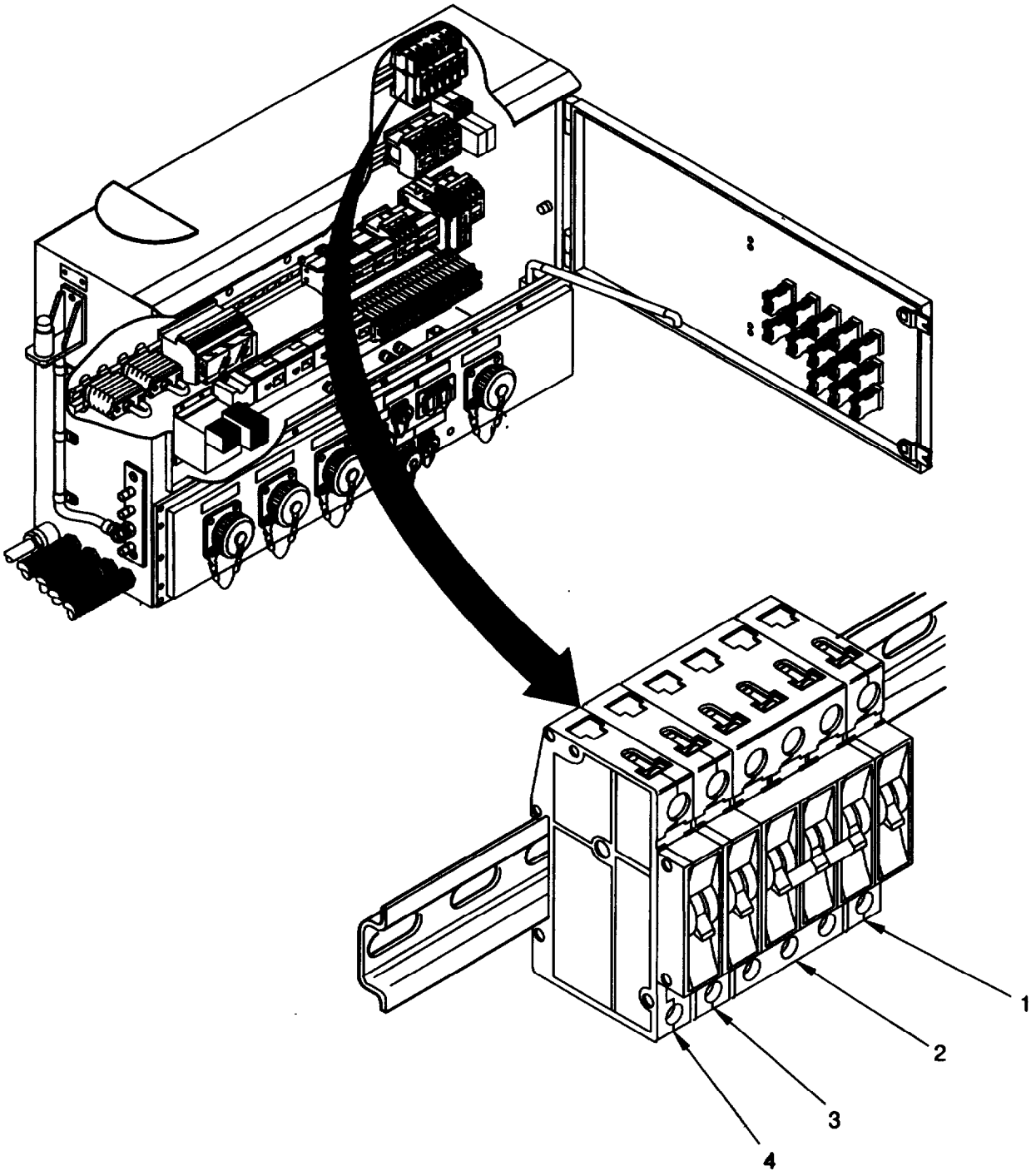


Figure 2-6 Power Distribution Unit, Circuit Breakers.

Table 2-5 Power Distribution Unit, Description of Circuit Breakers.

Item Number	Description	Protects
1	120 VAC/16 A circuit breaker, Single pole (F8)	J11 120 V 400 Hz double receptacle, US standard
2	120 VAC/6 A circuit breaker, Three pole (F7)	Primary side (T13) of internal power supply +26 VDC (+24 VDC)
3	24 VDC/6 A circuit breaker, Single pole (F2)	J12 24 V receptacle, cabinet light H12
4	24 VDC/16 A circuit breaker, Single pole (F1)	Secondary side (V5) of internal power supply +26 VDC (+24 VDC)

2.2.3 Receptacles.

Power distribution unit receptacles are illustrated in figure 2-7. Receptacle functions are described in table 2-6.

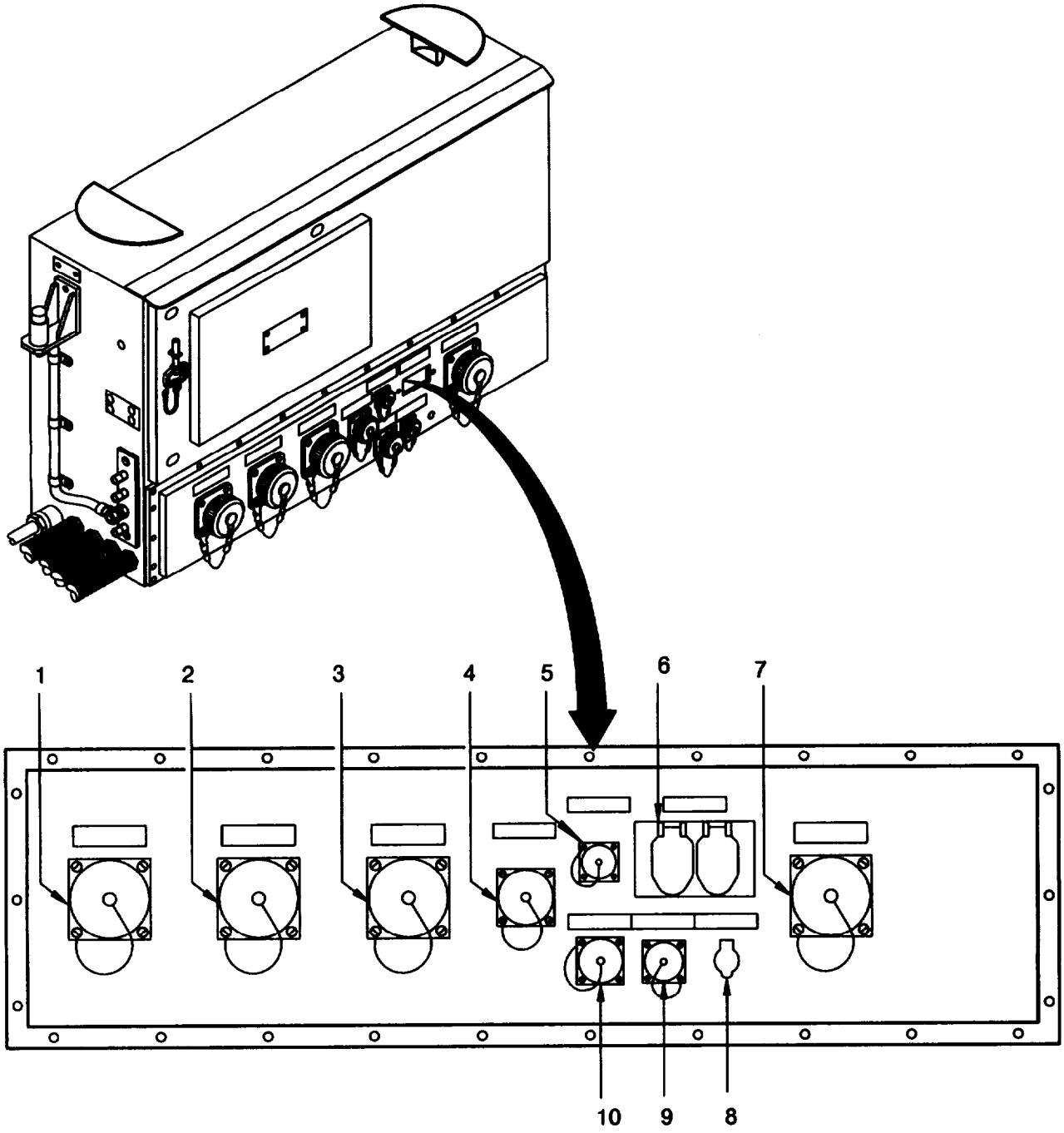


Figure 2-7 Power Distribution Unit, Receptacles.

Table 2-6 Power Distribution Unit, Description of Receptacles.

Item Number	Description	Function
1	J1-RS1 208 V 400 Hz receptacle	Connects to RS load through power cable drum
2	J2-RS2 208 V 400 Hz receptacle	Connects to RS load through power cable drum
3	J3-RS3 208 V 400 Hz receptacle	Connects to RS load through power cable drum
4	J5-CONTROL receptacle	Connects to ECS load. Controls all operations between EPP III and load
S	J20-PARALLEL CONVERTER CONTROL receptacle	For operation with commercial power converter only: controls power contactor K40 in commercial power converter via EPP III
6	J11 120 V 400 Hz double receptacle, US standard	Load connection (maximum 16 A)
7	J4-ECS 208 V 400 Hz receptacle	Connects to ECS load through power cable drum
8	J12 24 V receptacle	Load connection (maximum 6 A)
9	J7-PHONE JACK receptacle	For communication line connection between EPP III and ECS
10	J6-PARALLEL CONVERTER SIGNAL receptacle	Only for operation with commercial power converter: switches R and S phase voltages of converter to PDU electronics group for synchronization measurement

2.3 ELECTRIC POWER PLANT III, CABLING CONNECTIONS.

EPP III cabling connections are illustrated in figure 2-8. Table 2-7 describes the connection functions.

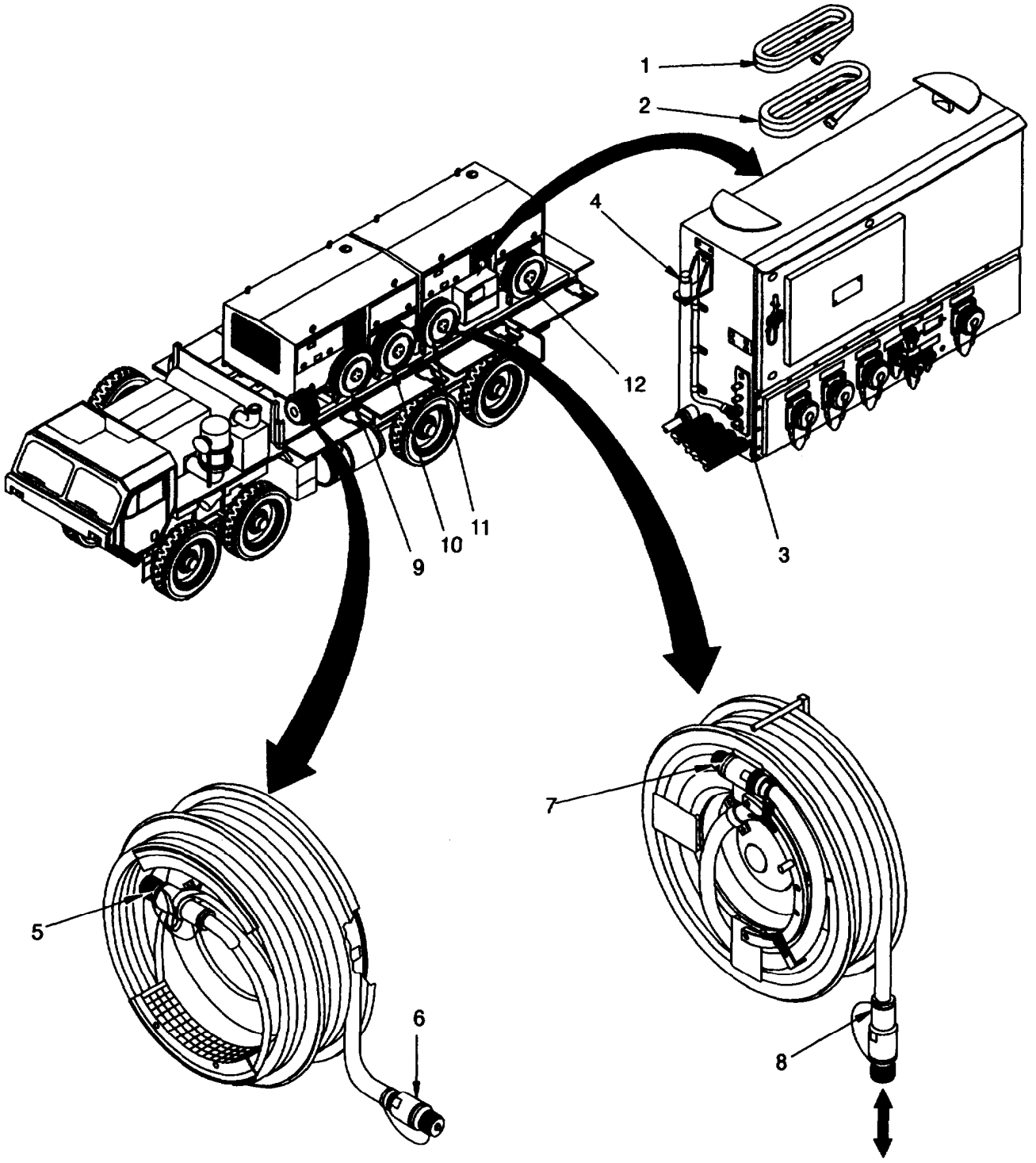


Figure 2-8 Electric Power Plant III, Cabling Connections.

Table 2-7 Electric Power Plant III, Description of Cabling Connections.

Item Number	Description	Function
1,2	Grounding cables	Ground connection, voltage compensation between EPP III and ECS/RS loads
3	Grounding bar	For connecting grounding cable
4	Grounding connector	Ground connection, voltage compensation between EPP III and ECS/RS loads
5	Control cable plug connector, EPP III end	Connects control cable to power distribution unit, receptacle J5
6	Control cable plug connector, ECS end	Connects control cable to ECS load
7	Power cable plug connector, EPP III end	Connects power cable to power distribution unit, receptacles J1, J2,J3,J4
8	Power cable plug connector, ECS/RS end	Connects power cable to ECS/RS loads
9,10, 11	Power cable drums	Connection to the RS load
12	Power cable drum	Connection to ECS load

2.4 ELECTRIC POWER PLANT III, FIRE EXINGUISHERS.

EPP III fire extinguishers are illustrated in figure 2-9. Table 2-8 describes the fire extinguisher functions.

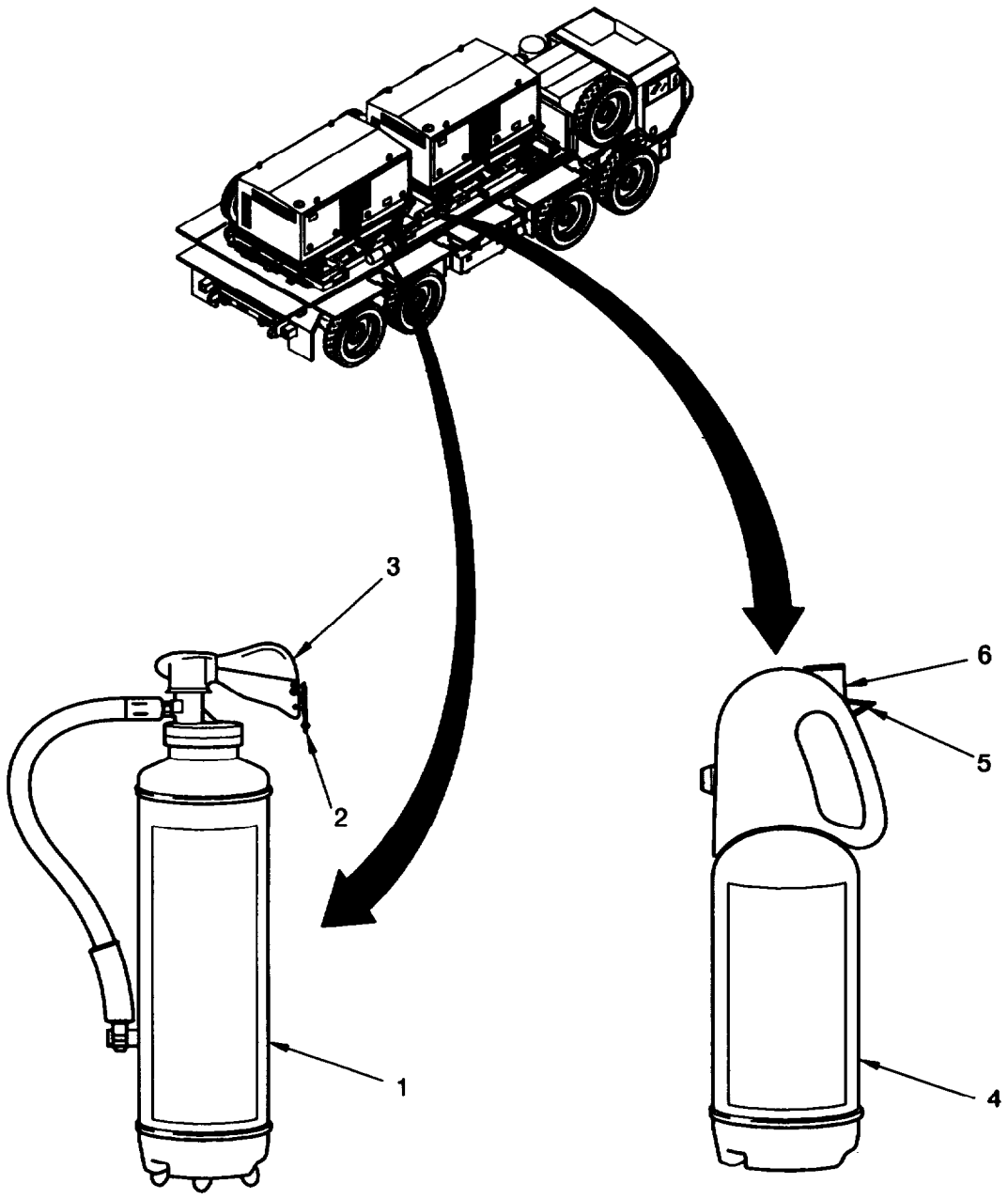


Figure 2-9 Electric Power Plant III, Fire Extinguishers.

Table 2-8 Electric Power Plant III, Description of Fire Extinguishers.

Item Number	Description	Function
	NOTE Fire class A - Incandescent fires (solid materials) B - Liquid fires C - Fires in the presence of electrical power	
1	Fire extinguisher 13.22 lb (6 kg) NSN 4210-12-163-9176	Powder extinguisher for use on Class A, B, and C fires
2	Locking ring	Unlocks handle (3)
3	Handle	Delivers extinguisher powder
4	Fire extinguisher, 4.4 lb (2 kg) NSN 4210-12-330-6828	Continuous delivery Powder extinguisher for use on Class A, B, and C vehicle fires
5	Locking button	Unlocks actuation button (6)
6	Actuation button	Delivers extinguisher powder

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

2.5 INTRODUCTION TO OPERATOR PMCS TABLE.

Table 2-9 (PMCS table) has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

2.5.1 Warnings, Cautions, and Notes. Always observe the **WARNINGS, CAUTIONS,** and **NOTES** appearing in your PMCS table. Warnings and cautions appear before applicable procedures. You must observe **WARNINGS** to prevent serious injury to yourself and others. You must observe **CAUTIONS** to prevent your equipment from being damaged. You must observe **NOTES** to ensure procedures are performed properly.

2.5.2 Explanation of Table Entries. The PMCS table is divided into five columns. Each column is explained in the following paragraphs.

2.5.2.1 Item No. Column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

2.5.2.2 Interval Column. This column tells you when you must do the procedure in the procedure column. "BEFORE?' procedures must be done before you operate the equipment for its intended mission. "DURING" procedures must be done during the time you are operating the equipment for its intended mission. "AFTER" procedures must be done immediately after you have operated the equipment. Perform "WEEKLY" procedures at the listed interval.

2.5.2.3 Location, Item to Check/Service Column. This column lists the location and the item to be checked or serviced. The item location is underlined.

2.5.2.4 Procedure Column. This column gives the procedure for checking or servicing the item listed in the location, item to check/service column. You must perform the procedure to know if the unit is ready or available for its intended mission or operation. You must do the procedure at the time stated in the interval column.

2.5.2.5 Not Fully Mission Capable if: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make checks or services that shows faults listed in this column, do not operate the equipment.

2.5.2 Other Table Entries. Be sure to observe all special information and notes that appear in your table.

2.5.4 Special Instructions. Preventive maintenance is not limited to performing the checks and services listed in the PMCS table. Covering unused receptacles, stowing unused accessories, and other routine procedures such as equipment inventory, cleaning components, and touch-up painting are not listed in the table. These are things you should do any time you see that they need to be done. If a routine check is listed in the PMCS table, it is because experience has shown that problems may occur with this item. Take along the tools and cleaning cloths needed to perform the required checks and services. Use the information in the following paragraphs to help you identify problems at any time. Use the following information to help identify potential problems before and during checks and services.

WARNING

Dry cleaning solvent wed to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly, Do not smoke or use near open flame or excessive heat. Failure to observe this warning can cause severe personal injury or death.

CAUTION

Keep cleaning solvents, gasoline and lubricants away from rubber or soft plastic parts. They will deteriorate material.

a. Keep it clean. Dirt, grease, and oil get in the way and may cover up a serious problem. Use dry cleaning solvent to clean metal surfaces.

b. Use soap and water to clean rubber or plastic parts and material.

c. Check all bolts, nuts, and screws to make sure they are not loose, missing, bent, or broken. Do not try to check them with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one loose, report it to the next higher level of maintenance.

d. Inspect welds for loose or chipped paint, rust, or gaps where parts are welded together. If a broken weld is found, report it to the next higher level of maintenance.

e. Inspect electrical wires, connectors, terminals, and receptacles for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors. Examine terminals and receptacles for serviceability. If deficiencies are found, report them to the next higher level of maintenance.

f. Inspect hoses and fluid lines. Look for wear, damage, and leaks. Make sure that clamps and fittings are tight. Wet spots and stains around a fitting or connector can mean a leak. If a leak comes from a loose connector, or if something is broken or worn out, report it to the next higher level of maintenance.

2.5.5 Leakage Definitions. You must know how fluid leakage affects the status of your equipment. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your equipment. Learn and be familiar with them. When in doubt, notify your supervisor.

Leakage Class	Leakage Definition
Class I	Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
Class II	Leakage of fluid great enough to form drops, but not enough to cause drops to drip from the item being checked/inspected.
Class III	Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

2.5.6 Operation of Generator Set 150 kW with Minor Leaks.

CAUTION

Equipment operation is allowable with minor leakage (Class I or ID of any fluid except fuel. Fluid capacity must be considered before deciding to continue operation of the equipment with minor leaks. When operating with Class I or II leaks, fluid level must be checked more often than required by the PMCS table. Parts without fluid will stop working and/or cause equipment damage.

a. Consider the equipment's capacity for the fluid that is leaking. If the capacity is small, the fluid level may soon become too low for continued operation. If in doubt, notify, your supervisor.
b. Check the fluid level more often than required in the PMCS table. Add fluid as needed.

2.5.7 Corrosion Prevention and Control (CPC). CPC of Army material is of continuing concern. It is important that any corrosion problems with the equipment be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using Standard Form 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA Pam 738-750.

2.5.8 Order in Which PMCS Will be Done. Figure 2-10 shows the order in which you are to perform your PMCS. The number callouts on figure 2-10 correspond to the numbers in the Item No. column of table 2-9, for 'Before" PMCS.

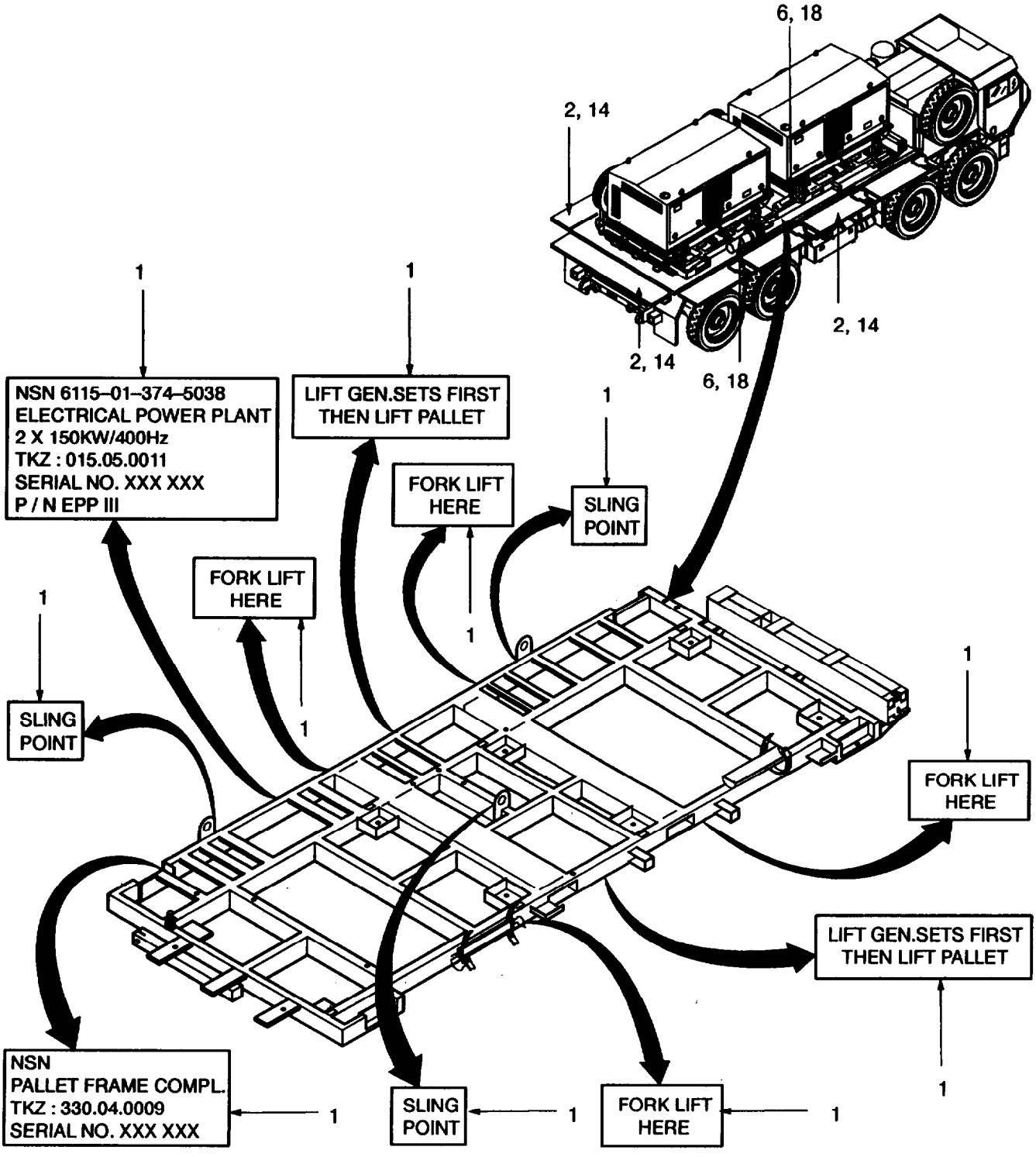


Figure 2-10 Electric Power Plant III, Operator PCMS Routing Diagram (sheet 1 of 4).

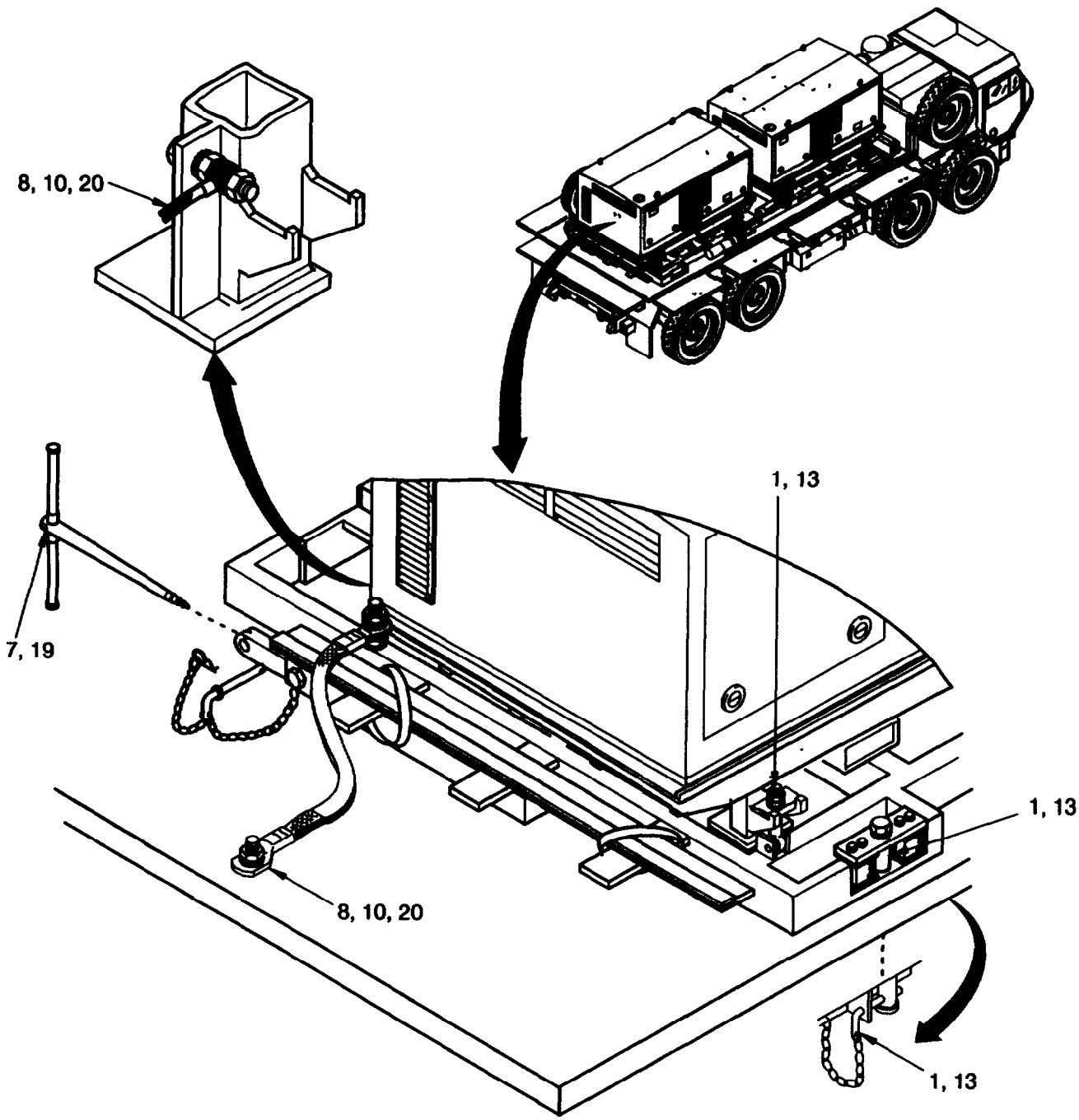


Figure 2-10 Electric Power Plant III, Operator PCMS Routing Diagram (sheet 2 of 4).

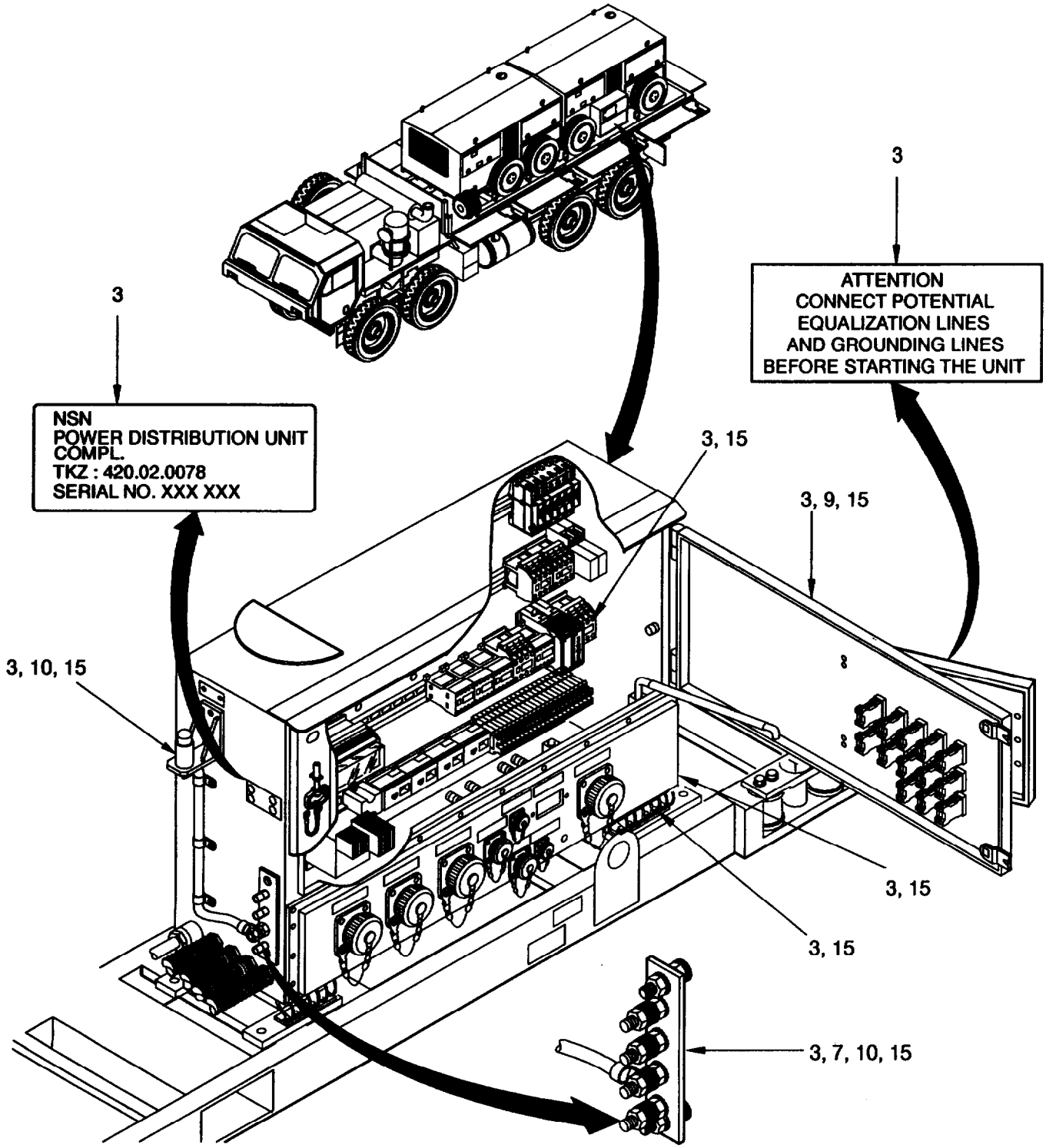


Figure 2-10 Electric Power Plant III, Operator PCMS Routing Diagram (sheet 3 of 4).

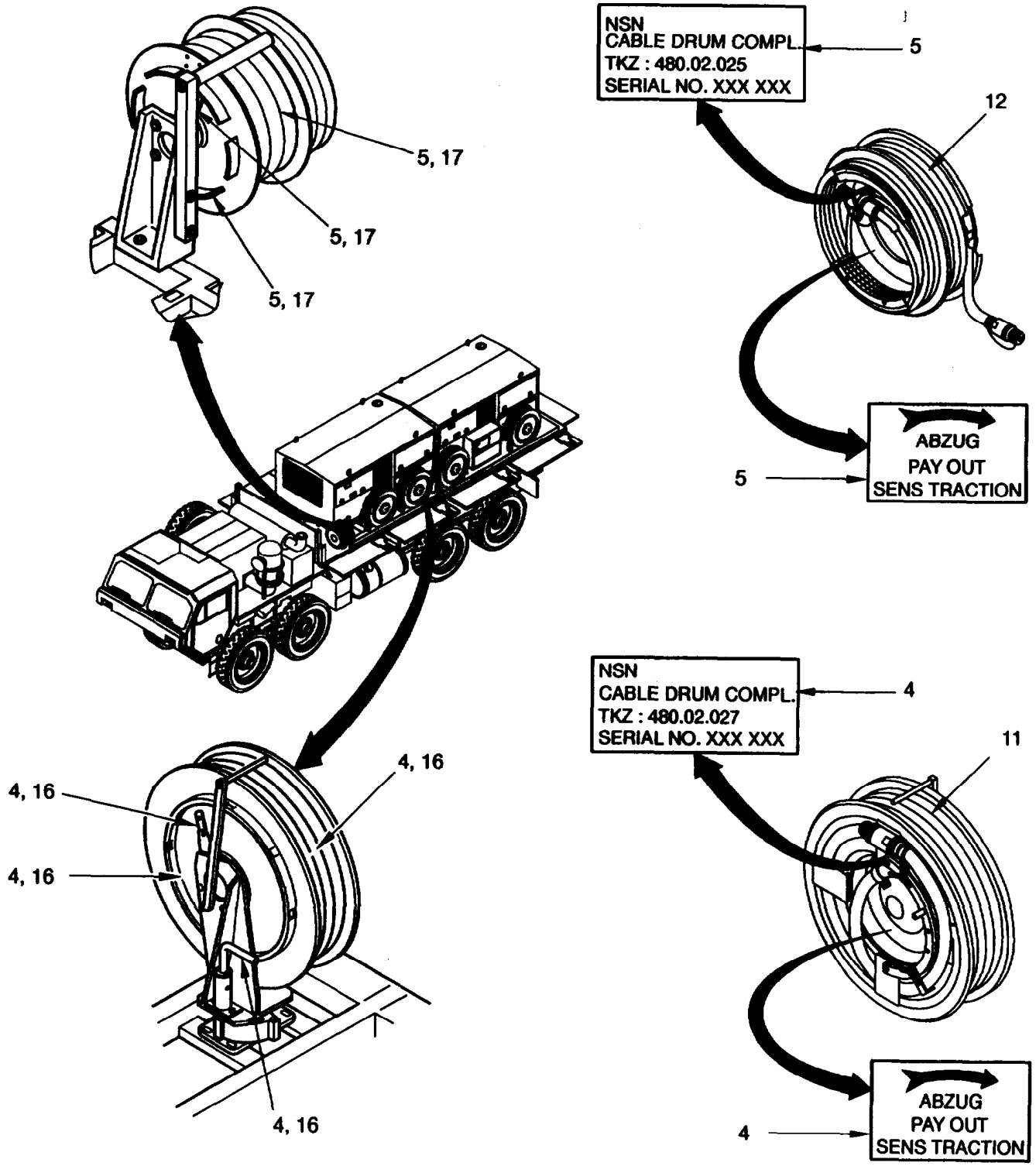


Figure 2-10 Electric Power Plant III, Operator PCMS Routing Diagram (sheet 4 of 4).

Table 2-9 Electric Power Plant III, Operator Preventive Maintenance Checks and Services (PMCS).

Item Number	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
1	Before	Pallet Frame	Pallet must be secure to truck chassis.	Pallet frame is not secure to truck chassis. Loose broken or missing hardware.
2	Before	support Arms, walkways, Chains, Stanchions and Comer Panels	Check: Support Arms, Walkways, Chains, Stanchions must be secure.	Support Arms and Walkways are not secure, comers are missing. Chains and Stanchions are not in place, loose broken or missing hardware.
3	Before	PDU Control Cabinet	Check:Cabinet is in place and secure. Electrical connections are accomplished. Shock absorbers are secure and all controls and indicators are in place and secure.	Cabinet is not secure, electrical connections are not connected or secure. Shock absorbers are not secure, indicators and controls are not present or secure. Loose or missing hardware, knobs or switches.
4	Before	Power Cable Reels	Check for loose or missing hardware and operation of swing mounts ratchet and release mechanisms.	Swing mounts will not swing. Reels will not allow cable to be unreeled. Ratchet releases will not operate or loose or missing hardware.
5	Before	Control Cable Reel	Check for operation of reel, ratchet and release mechanism.	Reel will not allow cable to be unreeled. Release mechanism will not operate. Loose or missing hardware.
6	Before	Fire Extinguisher	Check for presence of two extinguishers and pins and seals.	Fire extinguishers are missing or pins removed or seals broken.
7	Before	Grounding Rod and Ground Cable (Rod to PDU)	Check ground connection attachment of grounding cables. Loose or missing hardware.	Ground rod is missing, not attached to ground cable, ground cable is not attached to PDU.
8	Before	Ground Cables (Generator Set to Pallet Frame and Pallet Frame to Truck)	Check ground connection between Generator Set and Pallet Frame and Pallet frame to truck.	Ground cable is loose, missing or broken. Loose or missing hardware.

Table 2-9 Electric Power Plant III, Operator Preventive Maintenance Ckecks and Service (PMCS). -continued

Item Number	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
9	During	PDU	Check lights, gauges, and indicators.	Lights are not working, indicators and gauges are not functioning. Loose or missing hardware.
10	During	Grounding	Check all grounds.	Ground cables are not attached. Loosen, broken or missing hardware.
11	During	Power Cables	Check cables for functionality	Power cables are not functional or are cut or sliced.
12	During	Control Cables	Check cables for functionality	Control cables will not function or is cut or sliced.
13	After	Pallet Frame	Pallet must be secure to truck chassis.	Pallet frame is not secure to truck chassis. Loose broken or missing hardware.
14	After	Support Arms, Walkways, Chains, Stanchions and Comer Panels	Check: Support Arms, Walkways, Chains, Stanchions must be secure.	Support Arms and Walkways are not secure, comers are missing. Chains and Stanchions are not in place, loose broken or missing hardware.
15	After	PDU Control Cabinet	Check: Cabinet is in place and secure. Electrical connections are accomplished. Shock absorbers are secure and all controls and indicators are in place and secure.	Cabinet is not secure, electrical connections are not connected or secure. Shock absorbers are not secure, indicators and controls are not present or secure. Loose or missing hardware, knobs or switches.
16	After	Power Cable Peels	Check for loose or missing hardware and operation of swing mounts ratchet and release mechanisms.	Swing mounts will not swing. Reels will not allow cable to be unreeled. Ratchet releases will not operate or loose or missing hardware.

Table 2-9 Electric Power Plant III, Operator Preventive Maintenance Ckecks and Services **(PMCS).-continued**

Item Number	Interval	Location Item to Check/&vice	Procedure	Not Fully Mission Capable if:
17	After	Control Cable Reel	Check for operation of reel, ratchet and release mechanism.	Reel will not allow cable to be unreeled. Release mechanism will not operate. Loose or missing hardware.
18	After	Fire Extinguisher	Check for presence of two extinguishers and pins and seals.	Fire extinguishers are missing or pins removed or seals broken.
19	After	Grounding Rod and Ground Cable (Rod to PDU)	Check ground connection attachment of grounding cables. Loose or missing hardware.	Ground rod is missing, not attached to ground cable, ground cable is not attached to PDU.
20	After	Ground Cables (Generator Set to Pallet Frame and Pallet Frame to Truck)	Check ground connection between Generator Set and Pallet frame and Pallet frame to truck.	Ground cable is loose, missing or broken. Loose or missing hardware.

Section III. OPERATION UNDER USUAL CONDITIONS

2.6 ASSEMBLY AND PREPARATION FOR USE.

2.6.1 Converting Electric Power Plant III to Operational Configuration.

This section presents procedures for converting the EPP III from its configuration for road travel to an operationally deployed configuration ready to supply power for the ECS and RS.

WARNING

- **Before beginning any procedure, read paragraph 2.7.7. (fire extinguisher procedure@.**
- **Hot exhaust can cause fires. Park the truck so that generator set exhausts are directed away from trees or brush.**

CAUTION

The tilt angle of the EPP III and generators must not exceed 10° = 18%. Engine lubrication cannot be guaranteed at greater angles.

a. Park the truck with EPP III (1, figure 2-11) at a suitable location so that its distance from the ECS and RS does not exceed the available length of cable on the EPP III drums approximately 76 fi (23 m).
b. After parking the truck, shut off the engine and secure the vehicle for stationary operation.
c. From the rear (2) and curb side (3) boxes, remove:
   Eight individual safety rail posts (4) with two lengths of chain and clips per post.
   Two sets of three safety rail posts with four lengths of chain per set (5).
   Two extra sets of chain with clips.
   Two triangular walkway corner panels (6).
d. From under the road side of the HEMTT bed (7) unhook the two spring loaded hooks which hold the ladder in place. Remove ladder and place it safely out of the way Replace the spring loaded hooks in their original positions.
e. There are eighteen swing out support arms (8) mounted on the sides and rear of the extended HEMTT bed. Grasp the end of the support arm which is farthest away from the support arm mounting plate (9) with one hand. With the other hand, press up on the support arm locking member (10) and pull on the far end of the arm until the locking mechanism locks the arm in the deployed position.
f. Remove the sixteen small pins from the round safety rail post receptacles (11) located in the fold down walkway panels (twelve pins) and tailgate walkway panel (four pins).
g. Remove the large corner pin holding the forward fold-down walkway panel to the front stationary wall. Flip up the hinged latch which locks the first and second panels together. Slowly swing the first panel (12) down to rest on the walkway support arm. Repeat this procedure until all walkway panels (12) have been swung down into place and properly supported by their respective support arms. Remove corner pins and flip up hinged latches as required. After panels are down and supported, close all hinged latches (13) to stiffen the joints between panels.
h. Place the corner panels (6) into the rear corners of the walkway to connect the rearmost side panel on each side of the truck to the tailgate panel. Make sure that the round holes for the safety rail posts in the corner panels line up with the round post holes in the walkway panels.
i. Retrieve the ladder from where it was placed (step d.) and install it on the forward walkway panel (either side of the truck) by placing the hooked pins of the ladder into the holes on the front end of the forward walkway panel. Check to make sure ladder is securely locked into position.

NOTE

The rail posts and chain assemblies are of different length which dictates their position.

j. Put all safety rail posts and chains with clips on the walkway. Install the safety rail posts (4,5) as follows:
   1. Individual posts with two lengths of chain attached to each, are placed into the first four post positions (holes) in the walkway on each side of the truck (starting from the front), with the loops on the posts facing away from the EPP III. Connect each post to the next one with the chains and clips.
   2. Starting at one corner of the walkway (fifth post position), on either side of the truck, place a set of 3 posts with four lengths of chain (6) into both corner post positions and one rear position. Repeat this for the other side of the truck with the loops on the posts facing away from the EPP III.
   3. Connect the loose safety rail chains on either side of the truck to the next post rearward. Install the 2 remaining lengths of chain between the two middle safety rail posts on the tailgate section of the walkway.

k. Return to the ground and place the small pins (see step f.) through the base of their respective safety rail posts.

l. Remove the four black exhaust extensions from their compartment (14). Attach the extensions to the Generator Set 150 kW exhausts by sliding the end of the extension over the exhaust outlet (15) and twisting the extension to the left (counter clockwise) until it locks in place.

WARNING

- **Do not use leaky exhaust hoses. Keep exhaust hoses away from flammable materials.**
- **When operating indoors, provide adequate ventilation.**

CAUTION

- Do not block the Generator Set 150 kW air intake and discharge openings.
- Make sure intake air is as cool as possible. Hot intake air will cause engine overheating. Drawing hot air into the air filter will lead to reduced power output.

NOTE

The EPP III is now in its operational configuration.

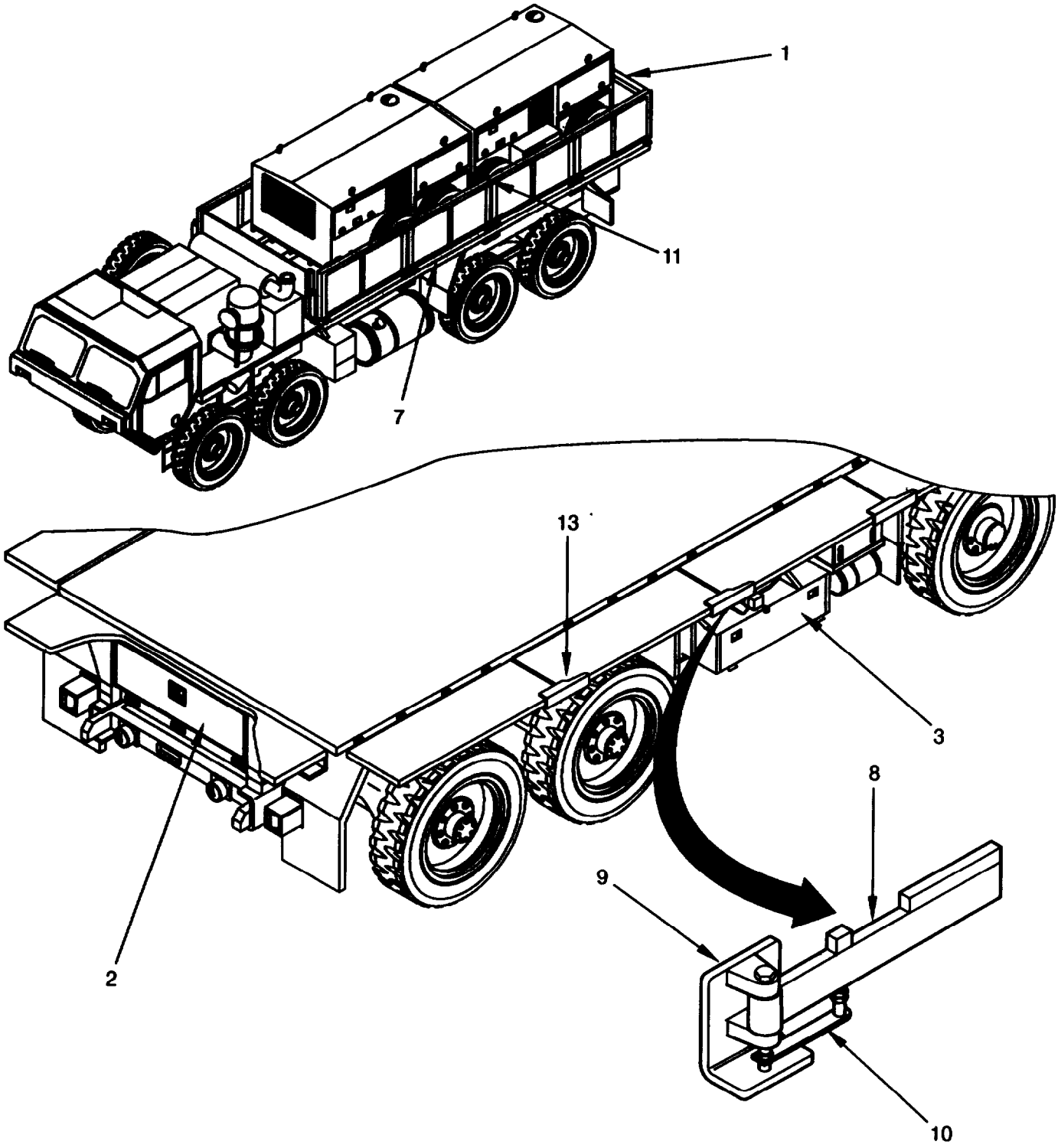


Figure 2-11 Electric Power Plant III with Truck (sheet 1 of 2).

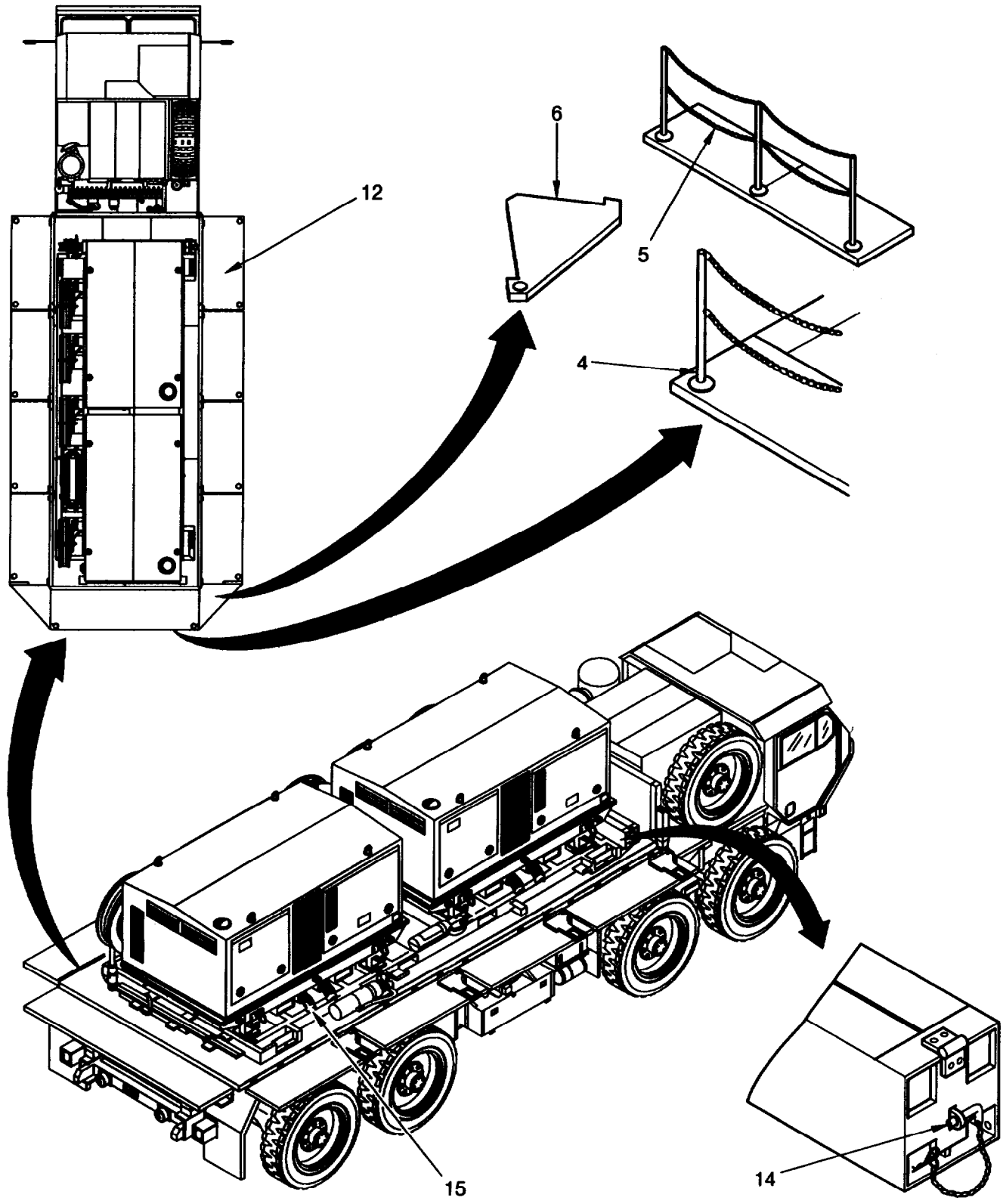


Figure 2-11 Electric Power Plant III with Truck (sheet 2 of 2).

2.6.2 Installation Instructions.

The EPP III can be operated directly with the ECS/RS loads, or looped through the commercial power converter (figure 2-12).

2.6.2.1 Direct operation with loads (normal operation).

The following two cases are possible:

Case 1: ECS load only connected.

Case 2: ECS and RS loads connected.

In either case, it is possible to switch without interruption between the two EPP III Generator Sets 150 kW, or to operate both generator sets 150 kW in parallel.

2.6.2.2 Operation with commercial power converter.

In this operating mode, the commercial power converter can be used as a third generator (converter).

Five cases can occur when operating with the converter:

Case 1: EPP III connected via converter; EPP III providing power to loads; changeover to generator 1 or 2.

Case 2: EPP III connected via converter; converter providing power to loads; changeover to generator 1.

Case 3: EPP III connected via converter; EPP III providing power to loads; converter shut down.

Case 4: EPP III connected via converter; converter providing power to loads; EPP III shut down.

Case 6: Converter providing power to loads; EPP III not connected.

In each mode, grounding must be provided between the units for voltage compensation and lightning protection (figure 2-13).

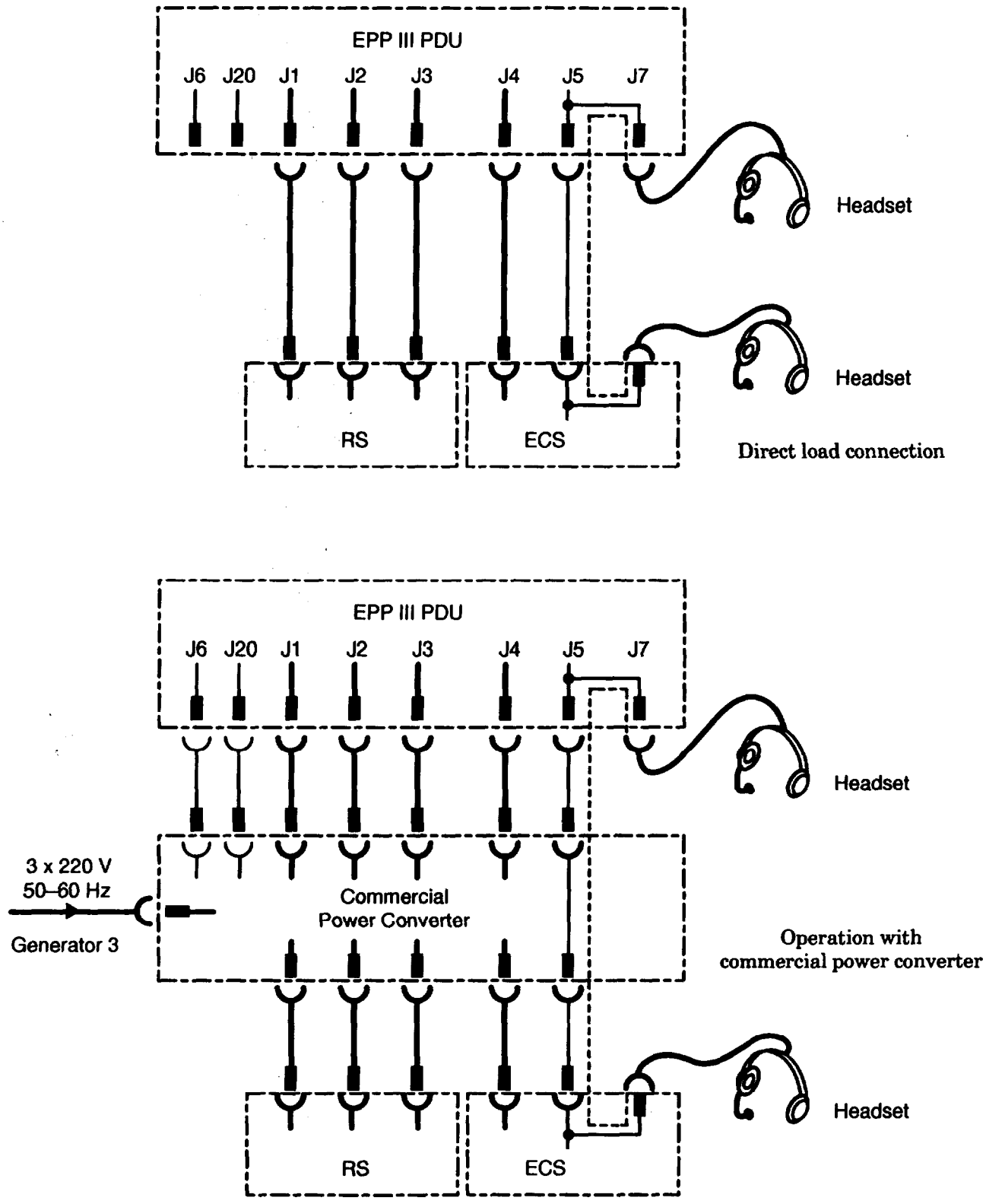
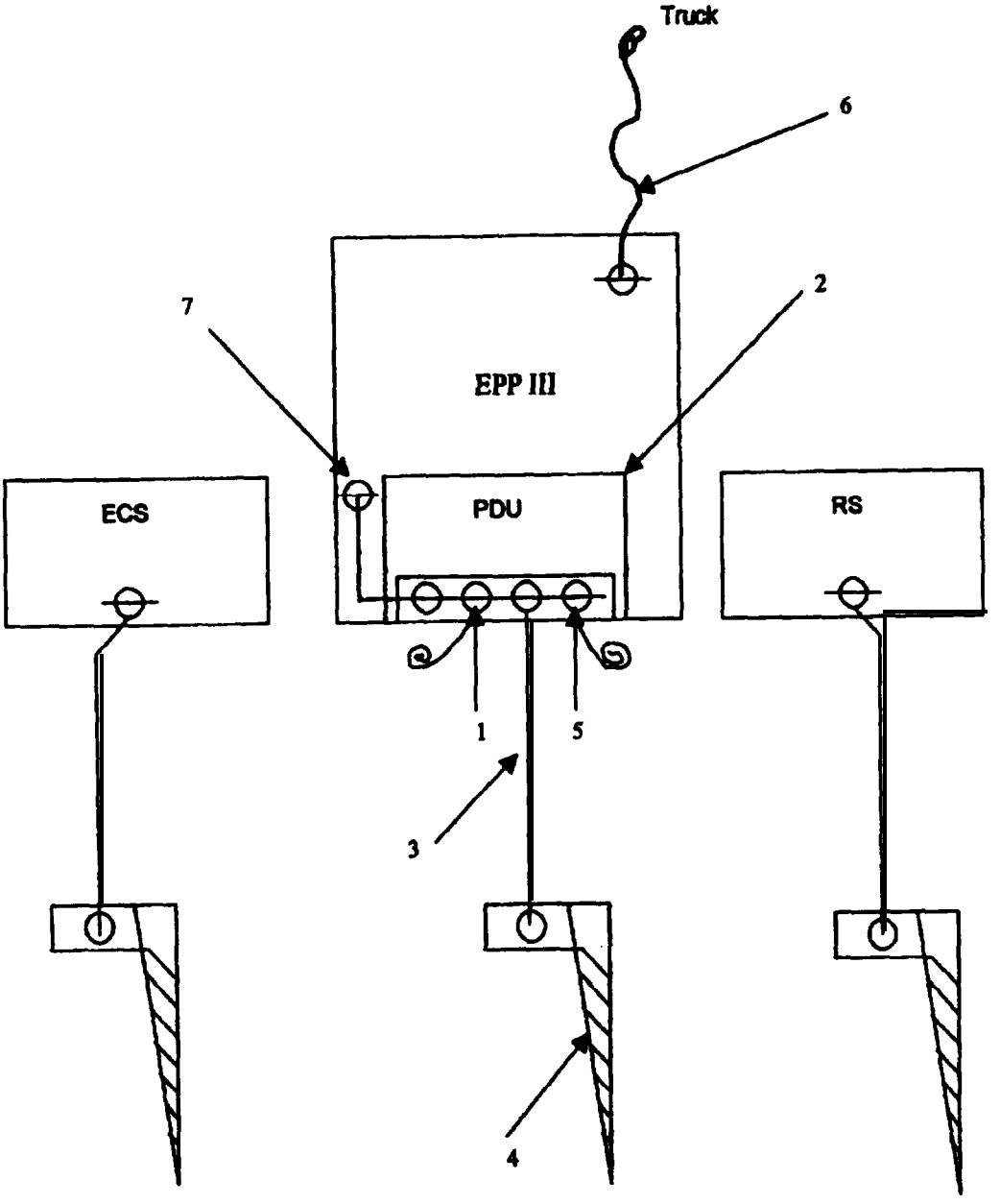


Figure 2-12 Operating Mode Cable Connections.



1 Grounding cable, 98 ft (30 m)
(Not used US PATRIOT)

2 Grounding Bar

3 Grounding cable, 49 ft (15 m)

4 Grounding rod

5 Grounding cable, 98 ft (30 m)
(Not used US PATRIOT)

6 Grounding cable,
EPP III Pallet frame-Truck

7 Grounding connector

Figure 2-13 Grounding Diagram, EPP III to ECS and RS Loads.

2.6.2.3 Set up the cable connections as described below.

WARNING

The opration of cable drums and handling of the cables is a two-person job. If not performed properly, severe back injury can result.

a. Set up the four cable drums (1, figure 2-14) by pulling up on the right-angle pin (2) at the base of the drum and then turning the entire drum assembly 90° clockwise. The drum will lock in place when the right angle pin slips into its hole.

b. Pull the control (4) and power (3) cables out one at a time until only one complete layer of cable is left on each drum. Make sure that the drum is then locked in place. Unstrap the other end of each cable (5,6) which is strapped to the inside of the drum.

c. Pull the remaining cable out to its full length and lock the drum in place. Both ends of the cable should be draped over the walkways (the long end is nearly 75 ft (23 m) from the EPP III and the short end is on the ground just below the EPP III).

d. Remove the green “socks” from the cable connectors and store the five straps and ten “socks” in one of the storage boxes of the truck.

e. Connect the short end of each cable to the PDU receptacles. The power cables from the first, second, and third power cable drums connect to the J1-RS1(7), J2-RS2 (8) and J3-RS3 (9) receptacles.

f. Connect the short end of the power cable from the fourth (rear most) power cable drum to the J4-ECS receptacle (10). The control cable connects to the J5-CONTROL receptacle (11).

CAUTION

When moving the cables, keep the connectors off the ground; dragging the connectors can damage them and results in short circuits and system failure.

g. Route and connect the long end of each cable to its corresponding equipment (RS numbers to the Radar Station and the ECS number to the Engagement Control Station).

NOTE

Voice communication is enabled once the control cable has been connected to J5-CONTROL receptacle (11) on the EPP III PDU and the corresponding receptacle on the ECS.

h. Connect a headset to J7-PHONE JACK receptacle (12) on the EPP III PDU and the corresponding receptacle on the ECS.

WARNING

- **Before initial operation, provide grounding connections between the EPP III and loads (for voltage compensation and lightning protection) as shown in the grounding diagram (figure 2-13). Maximum contact resistance is 100 mOhm.**
- **In sandy or desert conditions water must be poured into the grounding rod (13, figure 2-14) "after" it is installed in the earth to moisten the ground around, the grounding rod to reduce resistance in order to effect proper grounding.**

i. Insert the grounding rod (13, figure 2-14), found on the rear of the pallet frame, or a straight copper rod, into the ground within 40 ft (12 m) of the EPP III.

WARNING

Even if the earth is too hard to drive in the ground rod, the EPP III still must be adequately grounded.

j. Connect the 49 ft (16 m) grounding cable (14) stored beside PDU to the grounding bar (19) on the PDU. Using washers (17,18), serrated lock washer (16), and nut (16). Tighten nut (16).

k. Connect the far end of the grounding cable to the grounding rod.

l. Connect the above 98 ft (30 m) grounding cable (20) found on top of the PDU to the grounding bar (19) on the PDU. Using washers (23,24), serrated lock washer (22), and nut (21). Tighten nut (21).

m. Connect the far end of the grounding cable to the ECS.

n. Connect the above 98 ft (30 m) grounding cable (26) found on top of the PDU to the grounding bar (19) on the PDU. Using washers (28, 29), serrated lock washer (27), and nut (26). Tighten nut (26).

o. Connect the far end of the grounding cable to the RS.

NOTE

- An alternative is to ground the ECS and RS directly to the earth in the same manner as the EPP III, provided suitable grounding rods are available (see ⚠1, figure 2-13).
- The US standard grounding plug (30) provides an additional grounding connection.

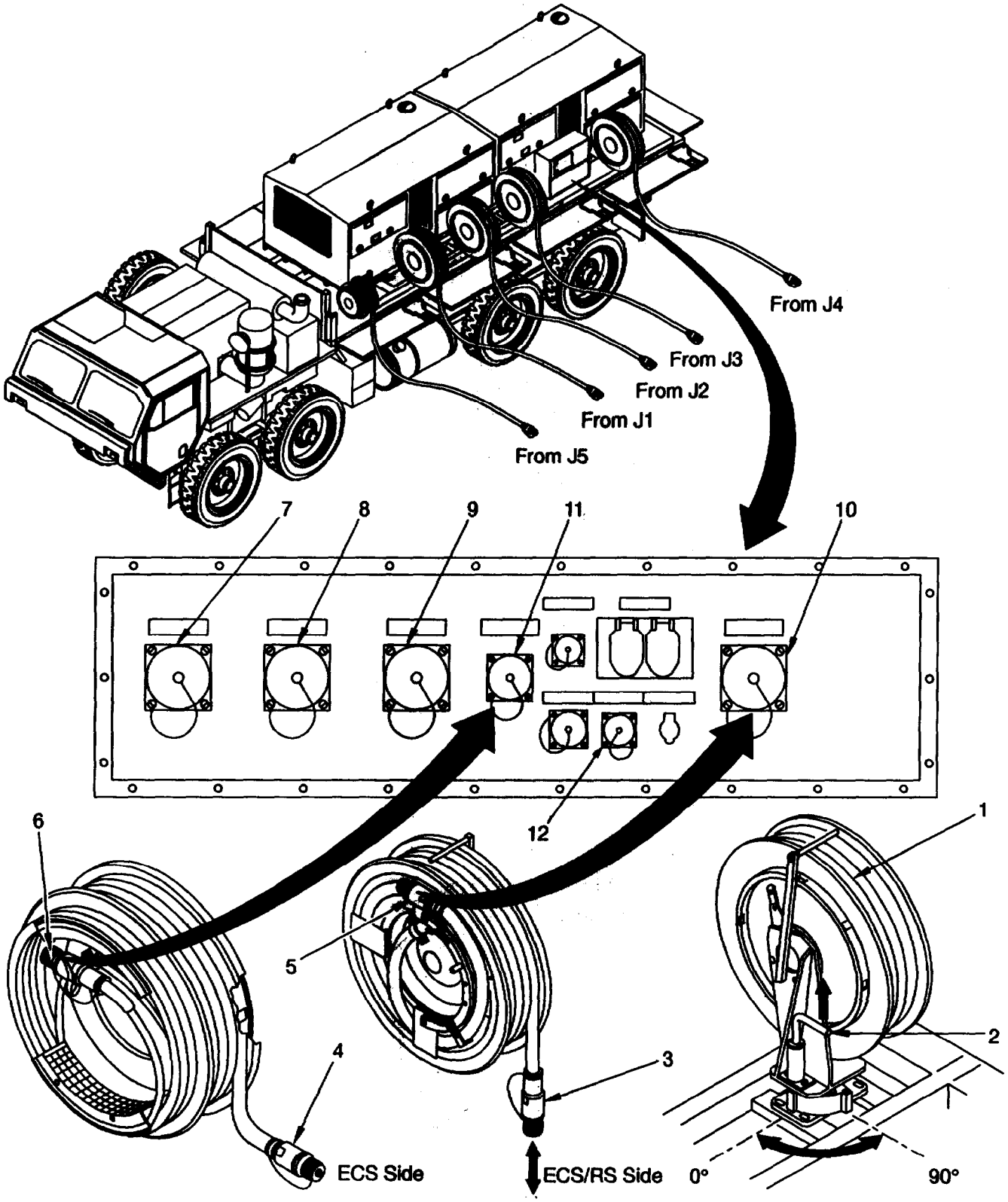


Figure 2-14 Connecting Cables (sheet 1 of 2).

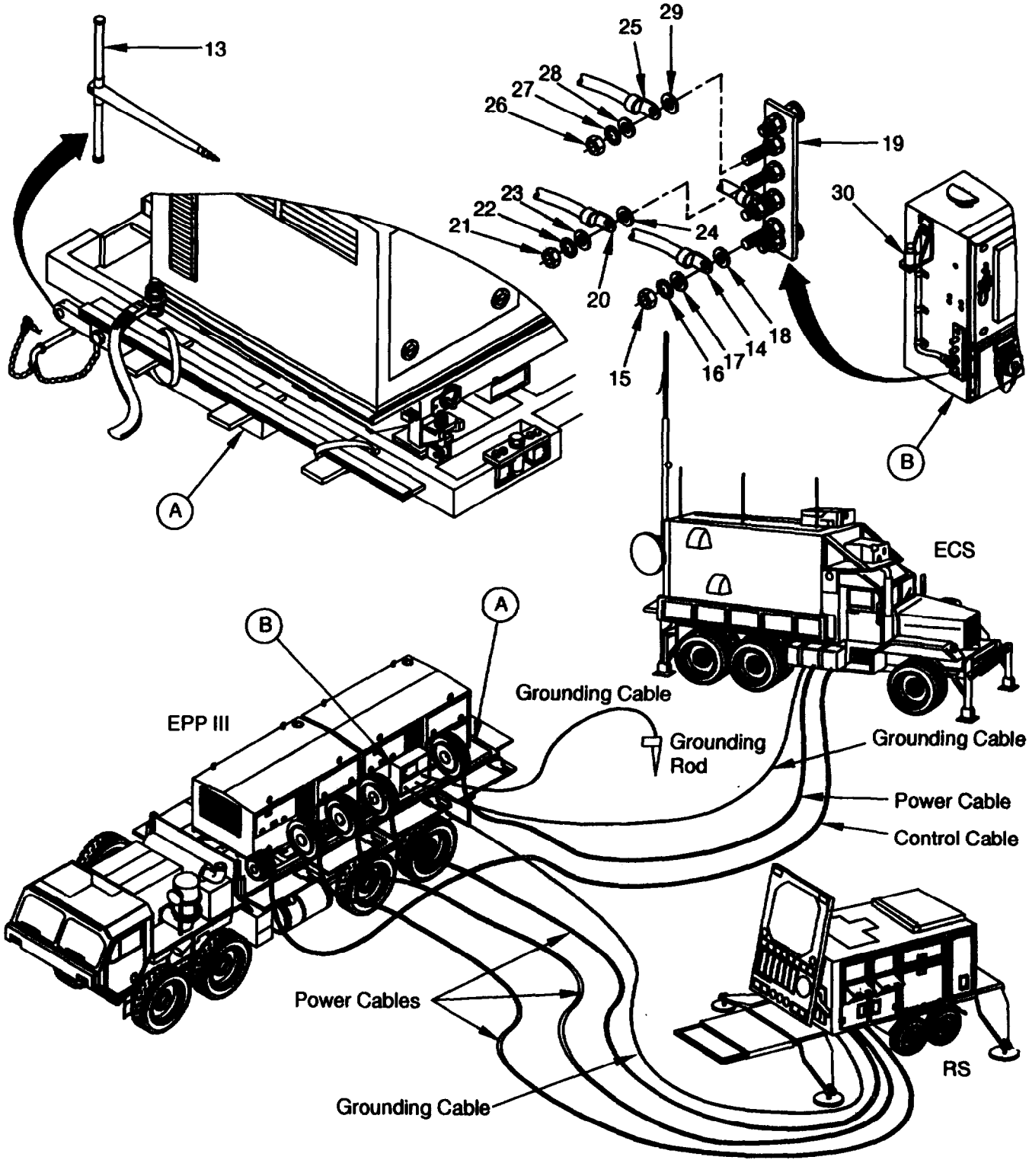


Figure 2-14 Connecting Cables sheet 2 of 2).

2.6.3 Check Diesel Engine Oil Level before starting Engine.

NOTE

Engine oil must be checked on level surface.

a. Open flap (1, figure 2-15).
b. Remove dipstick (4) from tube and wipe off with cloth.

NOTE

Oil level must reach to upper dot marking (5).

c. Insert dipstick (4) into tube until it stops, then remove and read off oil level.

CAUTION

If the oil level reaches only to lower dot marking (6), immediately add oil of the same specification.

d. Insert dipstick (4) back into tube until it stops.
e. Unscrew cap (2) from oil filler neck (3).

CAUTION

Do not mix oils of different specifications.
Use a cloth to catch any oil overflows.
Check oil level frequently while adding; do not go above upper dot marking (5).

f. Place funnel in oil tiller neck (3) and add oil of correct specification for the engine (refer to TM 9-6115-668-13).
g. Remove funnel from oil filler neck (3) and screw on cap (2).
h. Close flap (1).

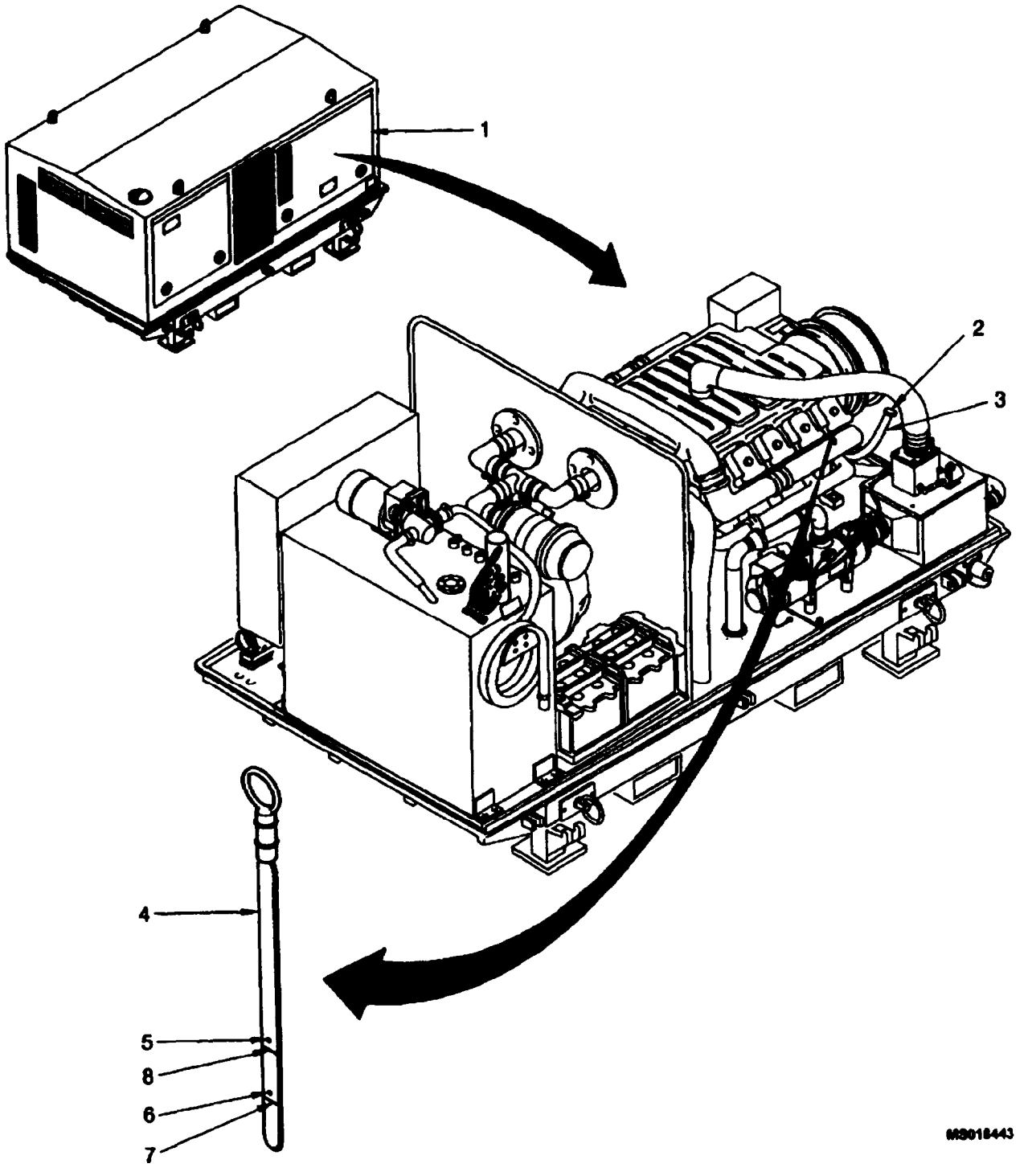


Figure 2-16 Diesel Engine Oil Level Maintenance.

2.6.4 Check fuel level.

NOTE

The MASTER SWITCH (9, figure 2-16) is a five position switch:

Position One - Locked and Gen Set 150 kW will not run in this position.

Position Two - Off with the key fully inserted (pushed in); Gen Set 150 kW will run in this position but cannot be started.

Position Three - Off with the key in the half-way inserted position; this is the "NORMAL" shut down position.

Position Four - Switch is on with key fully inserted; this is the "NORMAL" start and run position.

Position Five - Switch is on with key inserted half way; this is the "EMERGENCY" shut down position.

a. Open flap (4). Set MASTER SWITCH (9) to ON position.
b. Read FUEL LEVEL meter (6). If fuel level is insufficient, refuel engine.
c. Set MASTER SWITCH (9) to OFF position.

NOTE

If the LOW FUEL lamp (5) lights up during operation, refuel. If refueling is not performed in time, the fuel system will draw in air and must be bled.

2.6.4.1 Refueling.

The Generator Set 150 kW tank has a capacity of 101.7 gallons (385 liters) of diesel fuel, including reserve. It can be filled with the fuel pump, a fueling nozzle, or a canister.

WARNING

- **When refueling a generator set from an external source such as a fuel tanker, the external source must be grounded to the generator set fuel tank before refueling to prevent any electrical discharge.**
- **If metal to metal contact is not maintained during refueling, a spark may result which could ignite fuel fumes. Make sure the fuel nozzle stays in contact with the fuel tank. Ensure the grounding point is an unpainted metal surface.**
- **The fuel in this Generator Set 150 kW is highly explosive. Do not smoke or use open flame when performing maintenance. Fire and explosion could occur, resulting in severe personal injury or death.**
- **Use only the pump method to "hot refuel" the generator set. Do not use the open port/manual refueling method for "hot refueling". Fuel spills during "hot refueling" cause fire hazards.**

CAUTION

- The fuel pump must always be delivering diesel fuel during operation; it will be damaged if it is allowed to run dry.
- Refuel the generator set by pump whenever possible. Open port/manual refueling could result in fuel spilling onto the batteries and create a fire hazard.
- Do not use diesel fuel with a sulfur content greater than 1%. At temperatures below 32°F (0° C) use only winter diesel fuel with the appropriate additive or flow improver.

2.6.4.1.1 Refueling with the Fuel Pump.

a. Open flaps (1 and 4, figure 2-16) and turn MASTER SWITCH (9) ON.
b. Unreel fuel hose (2) from its holder on the tank, and immerse the lower end in the storage tank.
c. Press FUEL TANK PUMP ON illuminated pushbutton switch (7):
Fuel pump delivers diesel fuel (refueling an empty tank takes approximately 18 minutes).
d. After the proper amount of diesel fuel has been added, press FUEL TANK PUMP OFF pushbutton switch (8) or wait until fire tank pump automatically turns off when tank is full.
e. Remove the fuel hose from the storage tank, dry it off, and coil it onto the holder.

2.6.4.1.2 Refueling with a Fueling Nozzle or Canister.

a. Open flap (4, figure 2-16) and turn MASTER SWITCH (9) ON.
b. Unscrew tank cap (3).
c. Insert fueling nozzle into the filler opening and begin fuel delivery; or insert a funnel into the filler opening and fill the tank from a canister.
d. Have a second person monitor and call out the fuel level from the FUEL LEVEL meter (6).
e. Stop delivering Fuel when the tank is full, and screw the tank cap back on.

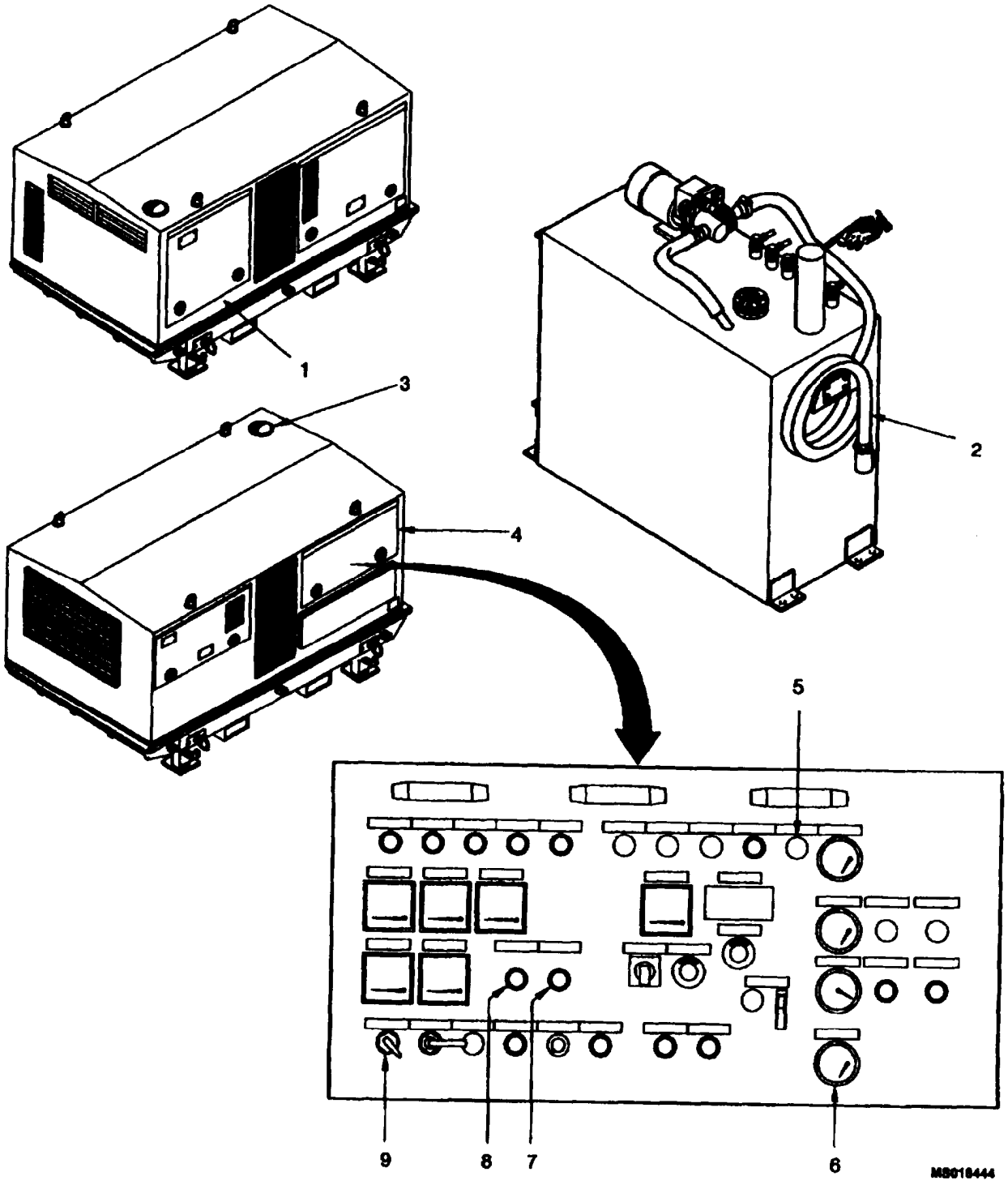


Figure 2-16 Refueling.

2.7 OPERATING PROCEDURES.

WARNING

- **When operating the EPP III ensure all personnel are wearing hearing protection. Failure to observe this warning could result in severe personal injury due to loss of hearing.**
- **Do not operate the generator sets unless all grounding provisions are properly and securely connected Electrical faults in the generator sets, load lines, or load equipment can cause severe personal injury or electrocution from contact with the ungrounded system.**
- **If operating the EPP III with only one generator set installed, insure that all cables for the missing generator set have protective covers installed prior to starting the remaining generator set.**
- **Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.**
- **Always install protective covers on control and power cables when cables are disconnected.**

CAUTION

- **Before operating the generator sets, check the voltage and frequency requirements of the load against the voltage and frequency rating of the generator sets. If the voltage and frequency requirements do not match the generator sets ratings, DC NOT attempt to operate the generator sets.**
- **When they are deployed, cables and exhaust extensions lie on the walkway and create a hazard to walking. Care should be exercised when on the walkways to avoid falls and possible injury.**

2.7.1 General operating procedure.

CAUTION

All Generator Sets 150 kW PMCS must be accomplished prior to starting the engine (refer to TM 9-6115-668-13).

All operations are controlled from the control panels (1 to 3, figure 2-17):

Switch on the generator sets at control panel (1).

Activate the RS and ECS loads at control panel (3).

Perform switching operations and observe operations at control panels (1 to 3).

The general operating procedure is described in table 2-10.

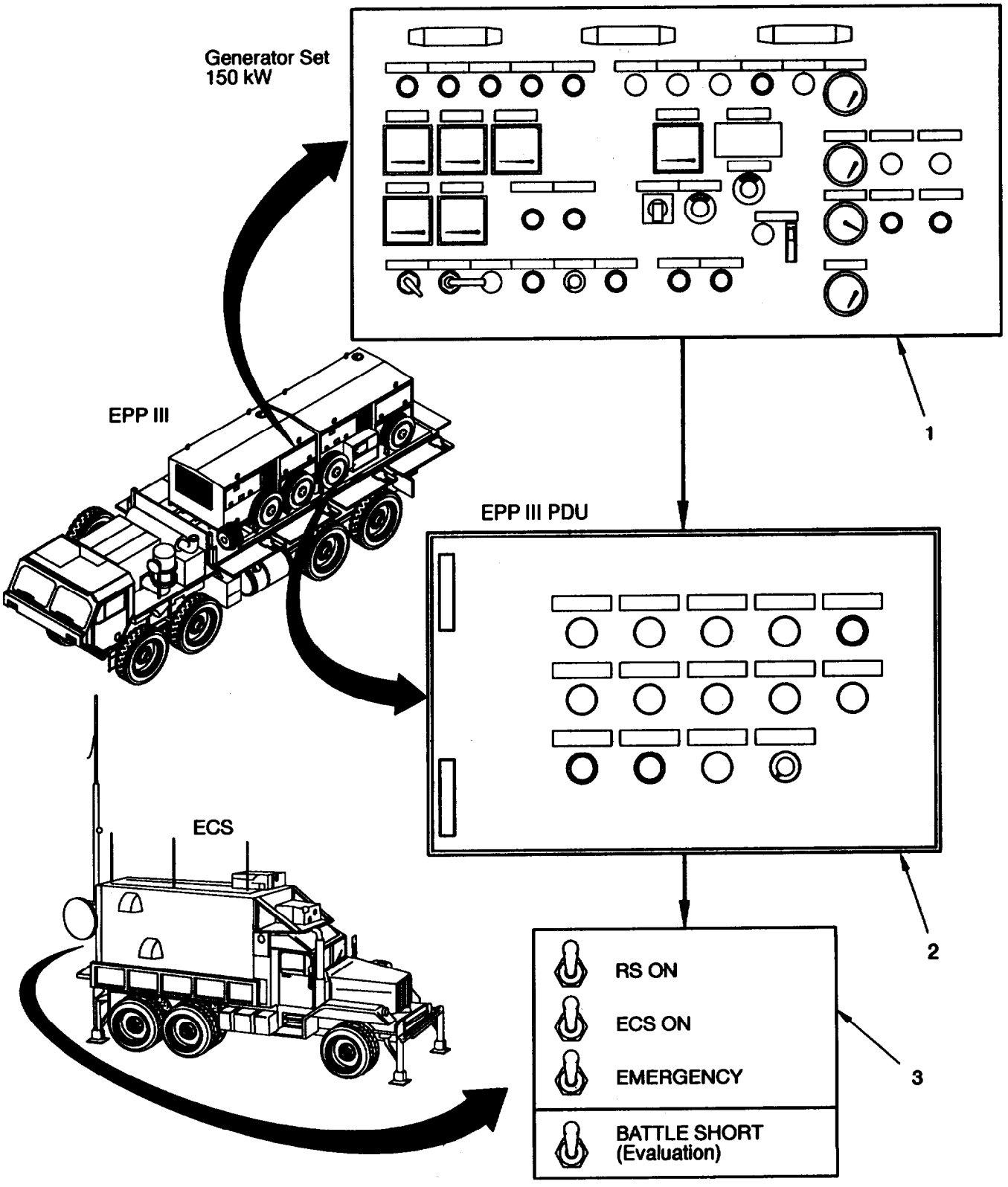


Figure 2-17 Control and Indicators During Operation.

Table 2-10 General Operating Procedure.

		Paragraph
SETTING UP		
1.	Set up EPP III equipment for operational configuration.	2.6.1
2.	Connect cables to RS and ECS loads for appropriate operating mode, including grounding (voltage compensation/lightning protection).	2.6.2
3.	Generator sets: Check Oil level Check Fuel level	 2.6.3 2.6.4
STARTING UP		
1.	Switch on generator sets.	2.7.2
2.	Activate ECS and/or RS loads.	2.7.3
OPERATION		
1.	Monitoring during operation. Observe generator instruments indicating total power and power distribution of phase conductors and loads. If necessary, use parallel mode to divide power. To cool off generator, switch to idle or shut down. Each generator can individually generate full power.	2.7.4 2.7.5.1
2.	Generator activation/changeover. Start up additional generator. Adjust voltage and frequency on generator control panel. Push button to switch to parallel operation on generator or PDU control panel (for converter changeover) Changeover proceeds automatically.	 2.7.5.2 to 2.7.5.5
3.	Battle Short function. Can be implemented from ECS or Generator Set 150 kW control panel.	 2.7.5.7
4.	Emergency shutdown. If fault or short circuit occurs, immediately switch generator to idle from ECS.	 2.7.5.6
SHUT-DOWN		
1.	While generator is running, disconnect loads by selecting ECS off/RS off in ECS.	
2.	Shut down generator at generator control panel: normal, or emergency under load.	2.8.1
TAKE DOWN		
1.	Convert EPP III to road travel configuration.	2.8.2

2.7.2 Operating the Generator Set 150 kW.

WARNING

- **Do not operate Generator Set 150 kW unless it is properly grounded and all load terminals are not shorted. Failure to observe this warning can result in severe personal injury or death.**

CAUTION

Before starting the Generator set, note the ambient temperature and refer to TM 9-1430-668-13, figs. 2-16 and 2-17 as applicable. Do not use Glow Plug/Start procedures when temperatures are above 32°F. Use Glow Plug/Start procedures when temperatures are below (32° degrees F, -0°C and -12°F, -30°C). Use Engine Pre-start procedures when temperatures are below -12°F, -32°C.

- **Do not turn the GLOWPLUG/START rotary switch (19, figure 2-19) to the START position until the GLOWPLUG ON lamp (18) lights.**
- **Release the GLOWPLUG/START rotary switch as soon as the diesel engine is running under its own power.**

NOTE

- **Before operating Generator Set 150 kW, all connections must be made to the PDU. See also 150 kW Short Operating Insturctions plate.**
- **If the diesel engine does not run smoothly or emits dense whitish-gray smoke, set the GLOWPLUG/START rotary switch (19) back to GLOWPLUG and repeat the glowplugprocedure (maximum duration: 3 minutes).**

2.7.2.1 Starting the Diesel Engine and Synchronous Generator.

NOTE

- **Refer to TM 9-6115-668-13 troubleshooting porcedures if required for steps b. through g. below.**

a. Open flap (1, figure 2-19) and turn MASTER SWITCH (21) ON.

b. Turn GLOWPLUG/START rotary switch (19) to START and hold:

Diesel engine must start and begin accelerating within 20 seconds.

BATTERY CHARGING CONTROL and OIL PRESSURE lamps (5 and 7) go out 2-3 seconds after engine starts. If the diesel engine does not start within 20 seconds, wait approximately 30 seconds and repeat the starting procedure.

NOTE

- **The synchronous generator is activated in approximately 90 seonds.**

NOTE

- **If the diesel engine or the synchronous generator malfunctions during operation, the main contractor K1 or Generator Set 160 kW will shut down.**

c. Read OIL PRESSURE meter (11): 3 - 5 bare.

d. Read BATTERY CHARGE meter (20): 10 - 60 A.

e. Read FREQUENCY meter (8): 400.0 ±0.2 Hz.
If reading is different, set frequency with the FREQUENCY ADJUST potentiometer (13) and lock in place with locking lever (12).

f. Set VOLTAGE SELECTOR SWITCH (17) to L1-L2, then L2-L3, then L3-L1, and read VOLTAGE meter (6): 208 ±2 V.
If reading is different, set voltage with the VOLTAGE ADJUST potentiometer (16) and lock in place with locking lever (15).

g. Set VOLTAGE SELECTOR SWITCH (17) to L1-N, then L2-N, then L3-N, and check VOLTAGE meter (6): 120 ±1 V.

2.7.2.2 Switching Voltage to the EPP III Power Distribution Unit,

NOTE

At temperatures below 32 °F (0 °C), allow the diesel engine to warm up for approximately 10 minutes before actuating the AC CIRCUIT INTERRUPTER ON illuminated pushbutton switch (14, figure 2-19).

a. Press AC CIRCUIT INTERRUPTER ON illuminated pushbutton switch (14):
AC CIRCUIT INTERRUPTER ON lamp (14) lights up.
Power system (main contactor K1) is turned on and power is supplied to power distribution unit bus bars.

2.7.3 Switching ECS/RS Loads to the EPPS III.

a. On ECS (3, figure 2-17) set ECS ON switch to On.
POWER ON-J4-ECS lamp (4, figure 6-19) on control panel must light up; the ECS is now receiving power.

b. On ECS (3, figure 2-17) set RS ON switch to On.
POWER ON-J1-RS1 (1, figure 6-19), POWER ON-J2-RS2 (2), and POWER ON-J3-RS3 (3) lamps on control panel must light up; the RS is now receiving power.

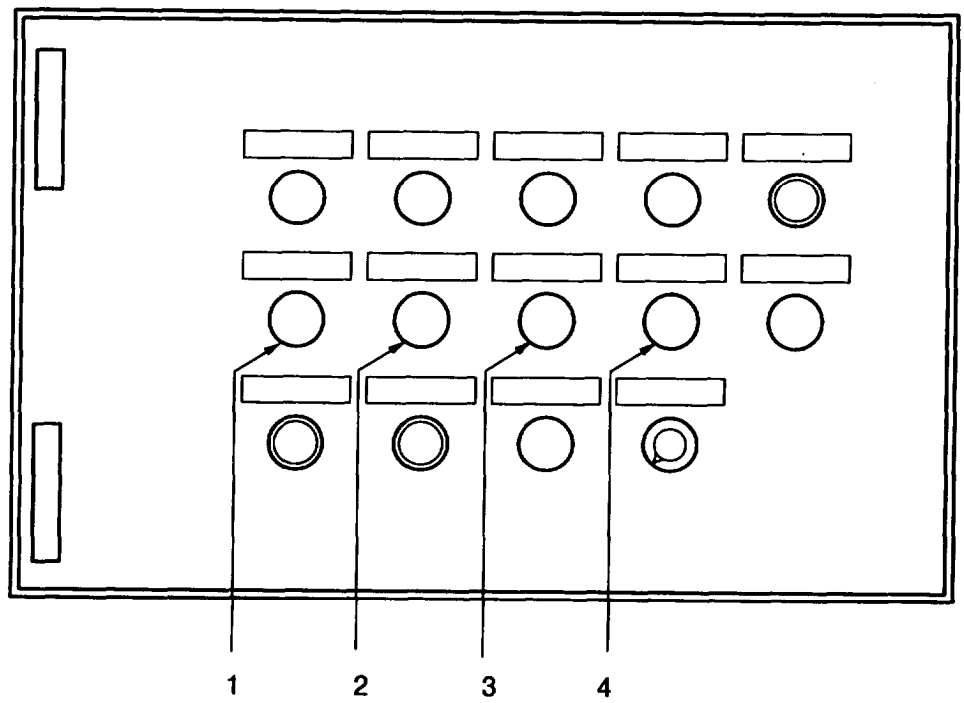


Figure 2-18 Operation of EPP III PDU.

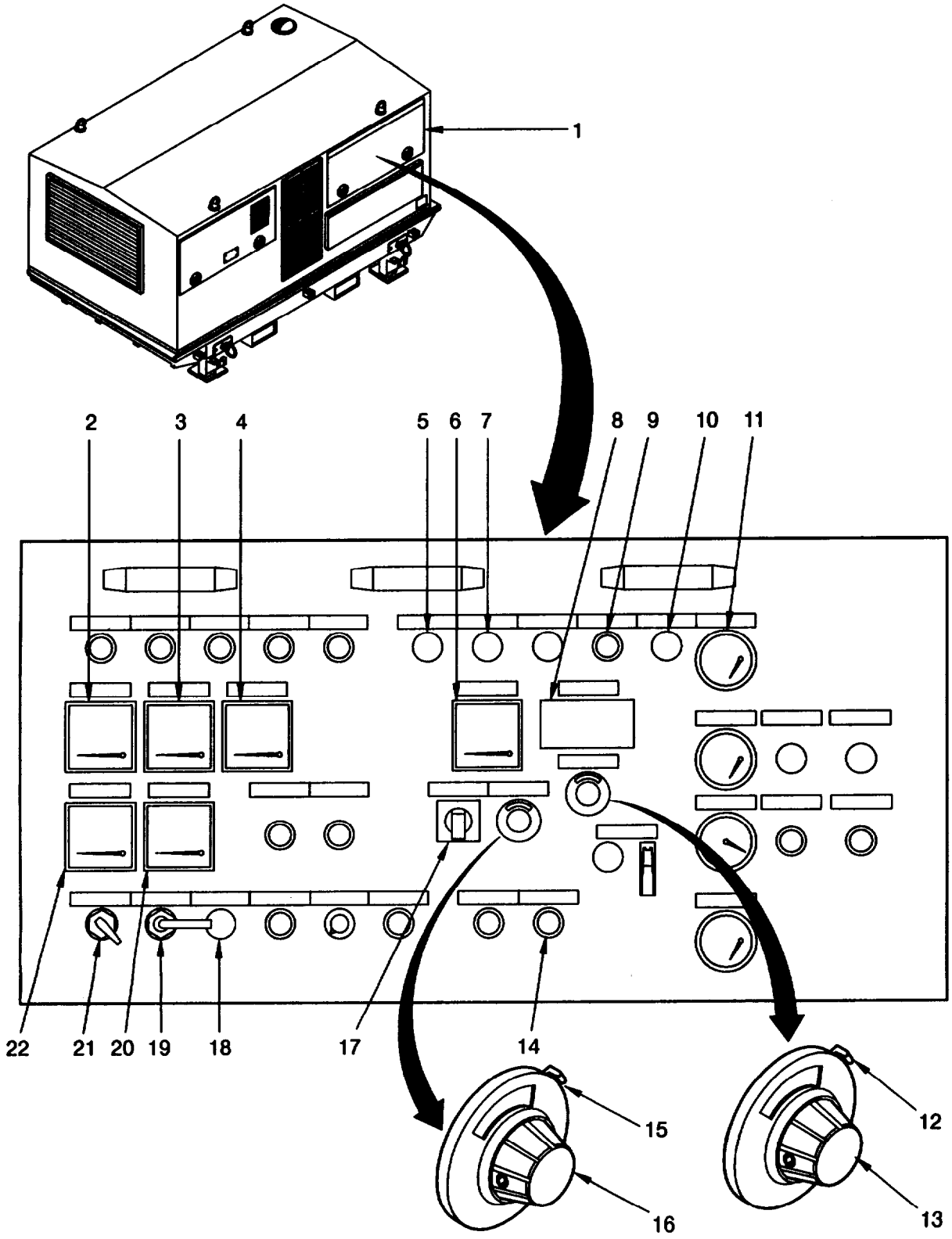


Figure 2-19 Operating the Generator Set 150 kW.

2.7.4 Monitoring During Operation.

NOTE

Maximum difference between current readings: less than or equal to (£)40 A

a. Read AMPS L1 (OA), AMPS L2 (OB), and AMPS L3 (OC) meters (2, 3, and 4, figure 2-19): **0-600 A.**

b. Read KILOWATTS meter (22): **0 - 200 kW.**

C. The following indications (figure 2-20) indicate generator faults or maintenance required:

UNDER/OVER FREQUENCY (1)
UNDER/OVER VOLTAGE (2)
GENERATOR OVER TEMPERATURE (3)
OVERLOAD (4)
RESERVE POWER (5)
OIL PRESSURE (6)
OIL TEMP-CYLINDER HEAD (7)
AIR FILTER (8)
LOW FUEL (9)
OIL TEMPERATURE (10)

If OIL PRESSURE lamp (6) lights up, check diesel engine oil level (paragraph 2.6.3).
If LOW FUEL lamp (9) lights up, add fuel (paragraph 2.6.4).

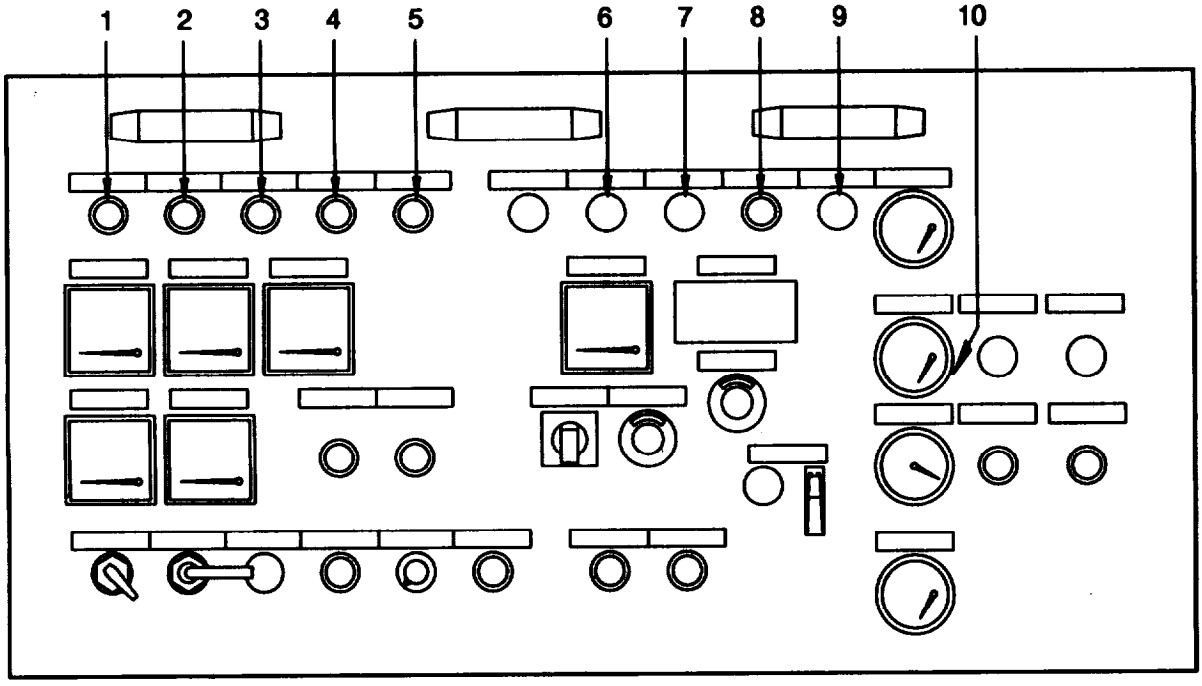


Figure 2-20 Fault Signals on Generator Set 150 kW Control Panel.

d. The following lamps (figure 2-21) indicate shutdown due to fault/overload in the power supply to the loads:

OVERLOAD-J1-RS1 (1)
OVERLOAD-J2-RS2 (2)
OVERLOAD-J3-RS3 (3)
OVERLOAD-J4-ECS (4)

The OVERLOAD lamp (4, figure 2-20) indicates shutdown due to a generator set fault/overload.

To reset after remedying an OVERLOAD malfunction:

After remedying a load malfunction, press OVERLOAD RESET pushbutton switch (5, figure 2-21).

After remedying a generator malfunction, press OVERLOAD illuminated pushbutton switch (4, figure 2-20).

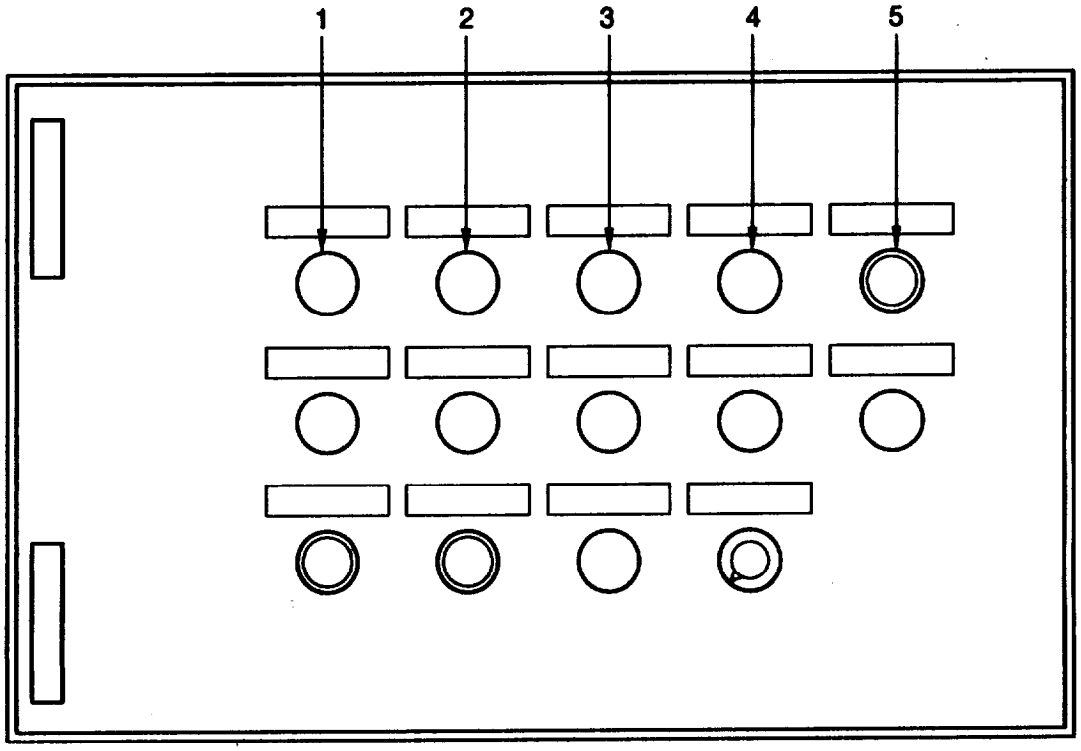


Figure 2-21 Fault Signals on EPP III PDU Control Panel.

2.7.5 Operating Mode Changeover.

An operating mode changeover may be made for the following reasons:

1. Parallel operation	'lb distribute generator power, e.g. for cooling purposes.
2. Changeover	Changeover to alternate generator due to malfunction or maintenance requirement. Changeover due to change in configuration, e.g. shutdown of external power input from commercial power converter.
3. Temporary/emergency changeovers	Battle Short or idle operation; Emergency Shutdown.

2.7.5.1 Parallel Operation of Generator Sets.

Initial status: Generator set 1 in operating mode.

a. Start up second generator set as instructed in paragraph 2.7.2.1. Allow the second generator set to idle.

b. Press PARALLEL OPERATION ON illuminated pushbutton switch (10, figure 2-22) on generator set. The PARALLEL OPERATION ON lamp (10) lights up. After synchronization, the second generator set is automatically switched on line and the PARALLEL OPERATION ON lamp (10) then goes out.

Both generator sets are now on line with a power distribution of approximately 60%. If one generator set fails, the remaining generator set will, without interruption, supply full power output to the loads.

2.7.5.2 Switching Between Generator Sets.

Initial status: Parallel operation of generator sets 1 and 2.

Press AC CIRCUIT INTERRUPTER OFF pushbutton switch (9, figure 2-22) on generator set (1 or 2). The generator set (1 or 2) will switch to idle and can then be shut down (paragraph 2.8.1).

2.7.5.3 Switching from EPP III to Commercial Power Converter.

Initial status: Generator set 1 or generator set 2 or both are supplying power.
Commercial power converter runs idle.

a. Set frequency and voltage on EPP III generator:
Use control elements (4, 7, figure 2-22) to set frequency to 400.0 +/- 0.2 Hz
Use control elements (1, 2, 3) to set voltage to 208 +/- 2 V

b. Press PARALLEL OPERATION ON illuminated pushbutton switch (13) on PDU control panel.

The PARALLEL OPERATION ON lamp (13) lights up. Once changeover is complete PARALLEL OPERATION lamp (11) lights up, and PARALLEL OPERATION ON lamp (13) goes out.
The commercial power converter is now providing power.

2.7.5.4 Switching from Commercial Power Converter to EPP III.

Initial status: Commercial power converter is supplying power; EPP III generator is shut down (or idling).

a. Start up generator set as instructed in paragraph 2.7.2.1. Allow the generator set to idle.

b. Press PARALLEL OPERATION ON illuminated pushbutton switch (13, figure 2-22). The PARALLEL OPERATION ON lamp (13) lights up. Once changeover is complete PARALLEL OPERATION lamp (11) lights up, and PARALLEL OPERATION ON lamp (13) goes out. The EPP III generator is now providing power.

2.7.5.5 Switching ECS/RS Loads to the Commercial Power Converter.

Initial status: Commercial power converter is supplying power; EPP III generator is shut down.

Set ECS ON switch (16, figure 2-22) and RS ON switch (14) to on.

2.7.5.6 Emergency shutdown.

NOTE

The Emergency Shutdown function will not operate when the Battle Short function is active, since the latter function has a higher priority.

Set EMERGENCY switch (16, figure 2-22) to On. AC CIRCUIT INTERRUPTER ON lamp (8) must go out.

2.7.5.7 Battle Short operation.

This function is utilized, in certain phases of the RS/ECS radar system, on the basis of EPP III signals in the ECS, and prevents the generator from being shut down during that phase as a result of the faults listed below. Power delivery from the generator must be especially reliable at this time. The generator set will not shut down even if the following malfunctions occur:

BATTERY CHARGING CONTROL
OIL PRESSURE
OIL TEMP-CYLINDER HEAD
UNDER/OVERVOLTAGE
GENERATOR OVER TEMPERATURE

The generator set will shut down if the following faults are indicated:

UNDER/OVER FREQUENCY
OVERLOAD
RESERVE POWER

CAUTION

To prevent damage to the generator, use this function manually only for short periods. Normally Battle Short is invoked automatically on the basis of EPP III signals in the ECS.

a. Turn BATTLE SHORT switch (6, figure 2-22) or (17) to On.
   The BATTLE SHORT lamps (6 and 12) lights up, activating the function.
b. Switch the function off again by setting BATTLE SHORT switch (5) or (17) to Off.

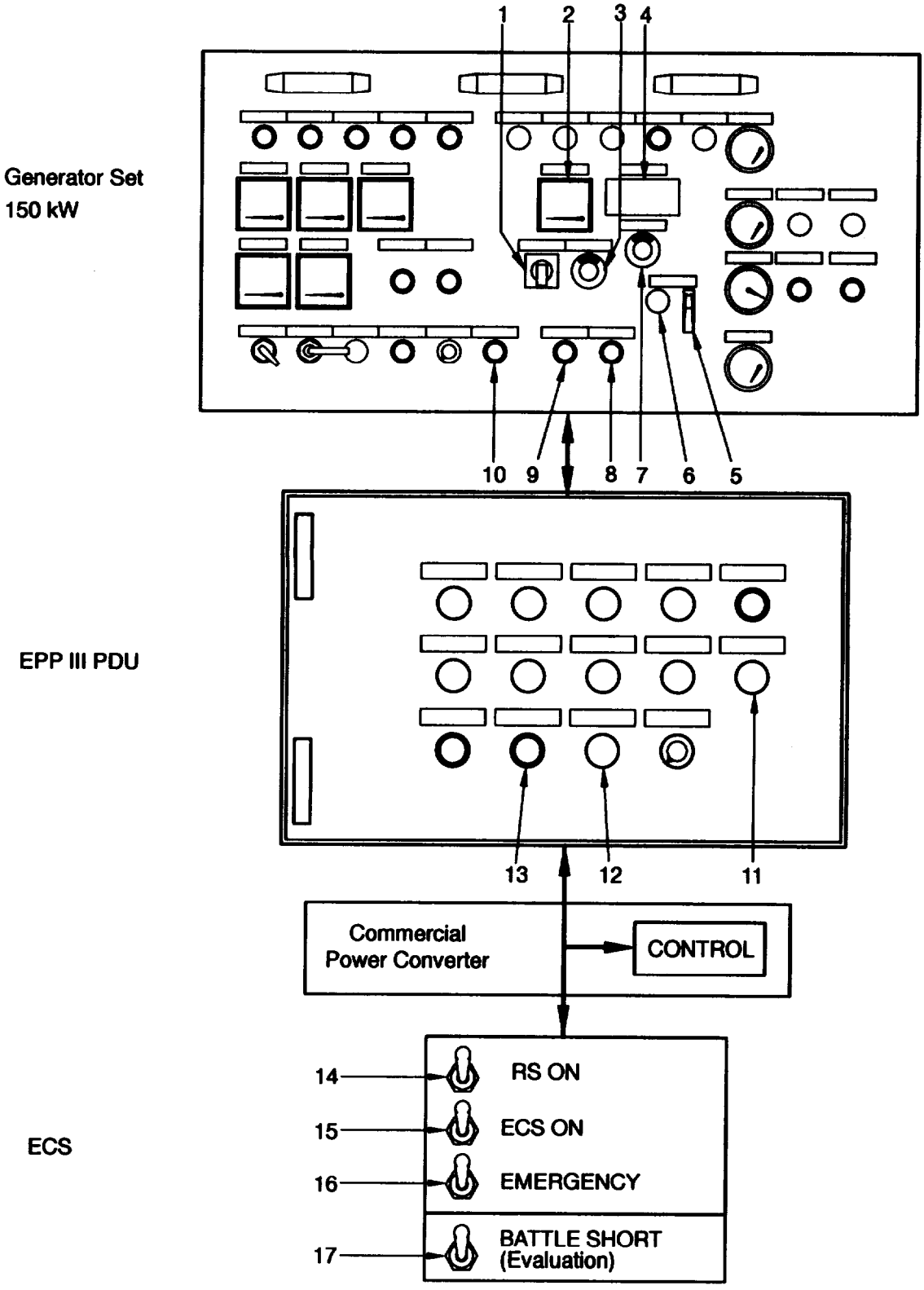


Figure 2-22 Switching Operating Mode Using EPP III and ECS Load Control Panels.

2.7.6 External connections.

2.7.6.1 External loads.

During operation, external loads can be connected to the connection panels of the Generator Set 150 kW and EPP III PDU (figure 2-23). This requires appropriate circuit breakers of the internal power sources are switched on.

Item Number	Receptacle	Loads	Circuit breaker
1	J1/120 V 400 Hz double receptacle	16 A maximum	F11 (paragraph 2.1.2)
2	J2/24 V receptacle	6 A maximum	F2 (paragraph 2.1.2)
3	J11 120 V 400 Hz double receptacle	16 A maximum	F8 (paragraph 2.2.2)
4	J12 24 V receptacle	6 A maximum	F2 (paragraph 2.2.2)

2.7.6.2 Battery connection

Battery connection between the two generator battery sets can be made, if the battery of one generator set fails or is not present.

Figure	Receptacle	Loads	Connection
2-4	J3 SLAVE RECEPTACLE 24 VOLTS	500 A maximum	Battery cable

2.7.6.3 Voice communication.

Voice communication is possible between the ECS and EPP III at any time, even when shut down generator sets 150 kW (figure 2-23). Connection from EPP III to ECS can be made by using the control cable and two headsets.

Item Number	Receptacle	Connection Figure 2-12
5	J7-PHONE JACK receptacle	Headset
6	J5-CONTROL receptacle	Control cable (table 1-5)
N.I.	Corresponding receptacle at the ECS end	Control cable (table 1-5)
N.I.	Corresponding receptacle at the ECS end	Headset

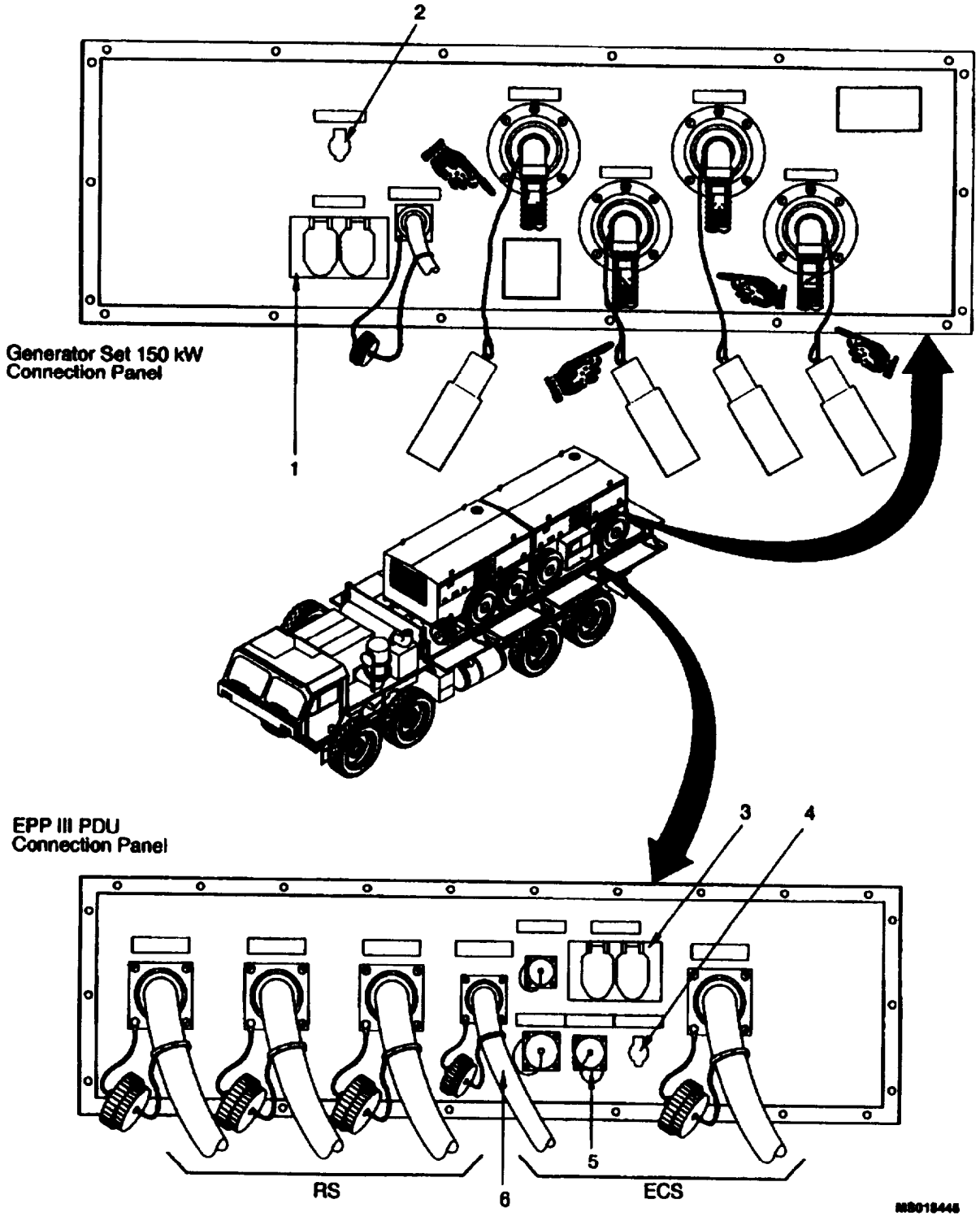


Figure 2-23 Electric Power Plant III Connection Panels.

2.7.7 Fire Extinguishing Procedures.

Two fire extinguishers (figure 2-24) are installed on the pallet frame for fire fighting

- Powder extinguisher for Class A, B, and C fires.
- Continuous delivery powder extinguisher for Class A, B, and C vehicle fires.

WARNING

Use caution around electrical equipment. Do not use when voltages exceed 1000 V; do not approach closer than 3.3 ft (1 m).

NOTE

After each use, immediately recharge fire extinguisher and make sure it is ready to use.

2.7.7.1 Procedure for extinguishing a fire with the powder extinguisher.

Remove fire extinguisher, 13.22 lb (6 kg) from holder on pallet frame:

1. Pull out locking ring (1).
2. Grasp hose (2), push down handle (3), and release.
3. Direct nozzle (4) at base of fire while holding down handle (3).

2.7.7.2 Procedure for extinguishing a vehicle fire.

Remove fire extinguisher, 4.4 lb (2 kg) from holder on pallet frame:

1. Push down locking button (6).
2. Actuate actuation button (6).
3. Hold unit and fire extinguisher so powder nozzle (7) is directed at base of tire.

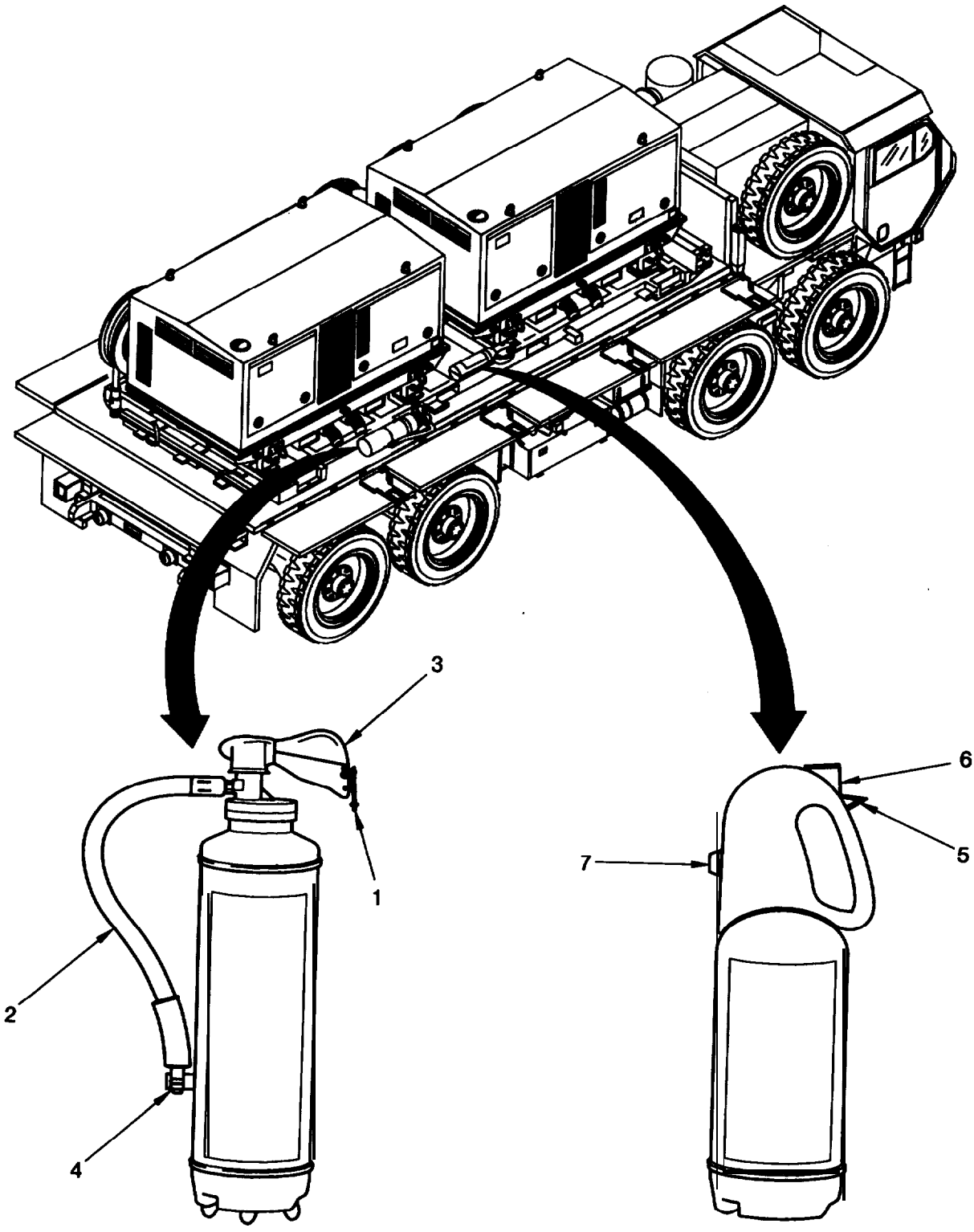


Figure 2-24 Electric Power Plant III Fire Extinguishers.

2.8 PREPARATION FOR MOVEMENT.

2.8.1 Generator Set 150 kW Shutdown.

Open Flap (1, figure 2-25).

NOTE

The MASTER SWITCH (4) is a five position switch:

Position One - Locked and Gen Set 150 kW will not run in this position.

Position Two - Off with the key fully inserted (pushed in); Gen Set 150 kW will run in this position but cannot be started.

Position Three - Off with the key in the half-way inserted position; this is the "NORMAL" shut down position.

Position Four - Switch is on with key fully inserted, this is the "NORMAL" start and run position.

Position Five - Switch is on with key inserted half way; this is the EMERGENCY shut down position.

2.8.1.1 Normal Shutdown.

a. Press AC CIRCUIT INTERRUPTER OFF pushbutton switch (3):
AC CIRCUIT INTERRUPTER ON lamp (2) goes out.

CAUTION

Before shutting down Generator Set 150 kW, allow it to operate for five minutes with no load applied.

b. Turn MASTER SWITCH (4) to OFF. Pull key 1/4 to 1/2 way out from MASTER SWITCH.

2.8.1.2 EMERGENCY Shutdown.

a. Remove key from MASTER SWITCH (4).

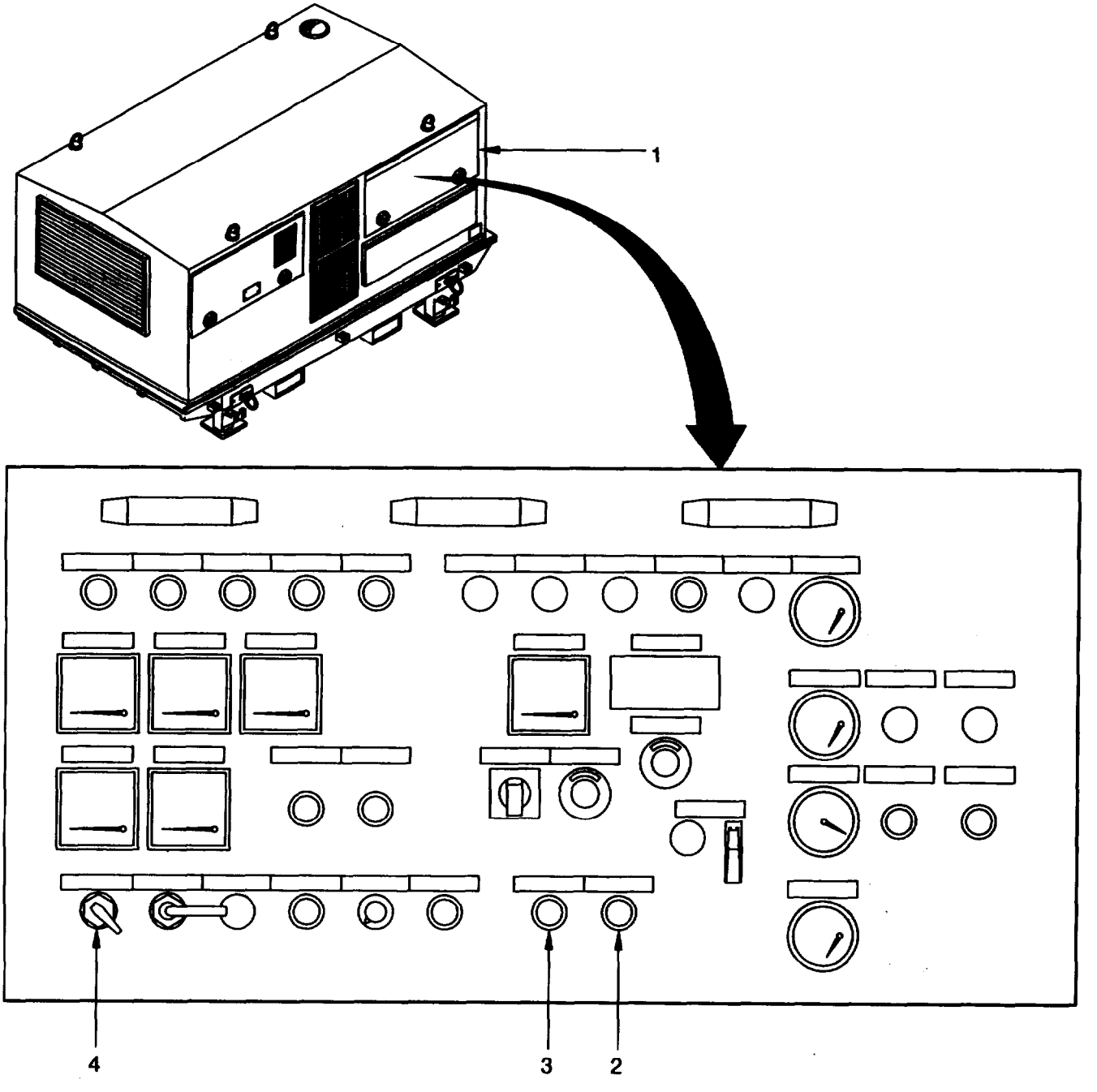


Figure 2-25 Generator Set 150 kW Shutdown.

CAUTION

Perform all generator set 150 kW PMCS (refer to TM 9-6115-668-13).

2.8.2 Converting Electric Power Plant III to Road Travel Configuration.

CAUTION

If commercial power is being used, disconnect power supply from commercial power converter.

a. Shut down EPP III as instructed in paragraph 2.8.1.
b. Unscrew connectors of the four power cables (13, figure 2-26) at RS and ECS (and commercial power converter if used), and at plug connectors J1 to J4 (15 to 17, 19) at EPP III PDU.

WARNING

The operation of cable drums and handling of the cables is a two person job. If not performed properly, severe back injury can result.

CAUTION

When moving the cables, keep the connectors off the ground; dragging the connectors can damage them and results in short circuits and system failure.

c. Manually wind on cable portion with EPP connector (20), slide “green sock” over connector, and secure with strap.
d. Reel in cable portion with ECS connector (21) by briefly pulling on cable to unlatch locking device. Then slowly release the cable until it is completely reeled in. Slide “green sock” over connector and secure with strap.
e. Set up the four power cable drums (22) by pulling up on the right angle pin (23) at the base of the drum and then turning the entire drum assembly 90° counterclockwise. The drum will lock in place when the right angle pin slips into the hole.
f. Unscrew connectors for control cable (14) at ECS (and commercial power converter if used), and at plug connector J5 (18) at EPP III PDU.
g. Manually wind on cable portion with EPP connector (24), slide “green sock” over connector, and secure with strap.
h. Reel in cable portion with ECS connector (25) by briefly pulling on cable to unlatch locking device. Then slowly release the cable until it is completely reeled in. Slide “green sock” over connector and secure with strap.
i. Disconnect the above 98 ft (30 m) grounding cable (1) from the ECS.
j. Disconnect the far end of the grounding cable (6) from the grounding bar (4) on the PDU. Using washers (9, 10), serrated lock washer (8), and nut (7). Tighten nut (7).
k. Disconnect the above 98 ft (30 m) grounding cable (1) from the RS.
l. Disconnect the far end of the grounding cable (6) from the grounding bar (4) on the PDU. Using washers (9, 10), serrated lock washer (8), and nut (7). Tighten nut (7).
m. Disconnect the 49 ft (15 m) grounding cable (1) from the grounding rod (2).
n. Disconnect the far end of the grounding cable (6) from the grounding bar (4) on the PDU. Using washers (9, 10), serrated lock washer (8), and nut (7). Tighten nut (7).
o. Wind grounding cables 98 ft (30 m) around union (3), and store grounding cable 49 ft (15 m) beside PDU (5) next to U.S. Standard Grounding Assembly

p. Disassemble grounding rod (2) and place parts in box (11). Secure grounding rod with bolt (12) and cotter pin.

q. Disassemble safety rail posts (26) and safety rail posts with four lengths of chain per set (27) and pack away in rear and curb side boxes.

r. Disassemble triangular walkway corner panels (28) and pack away in rear and curb side boxes.

WARNING

Wear gloves when removing hot exhaust hoses.

s. Remove exhaust hoses (29) and pack away in compartment (30).

t. Remove ladder from walkway panel, fold up walkway panels (31), and fasten. Secure ladder under the side of the HEMTT bed.

u. Swing out support arms (32) and secure.

NOTE

The EPP III is now in road travel configuration.

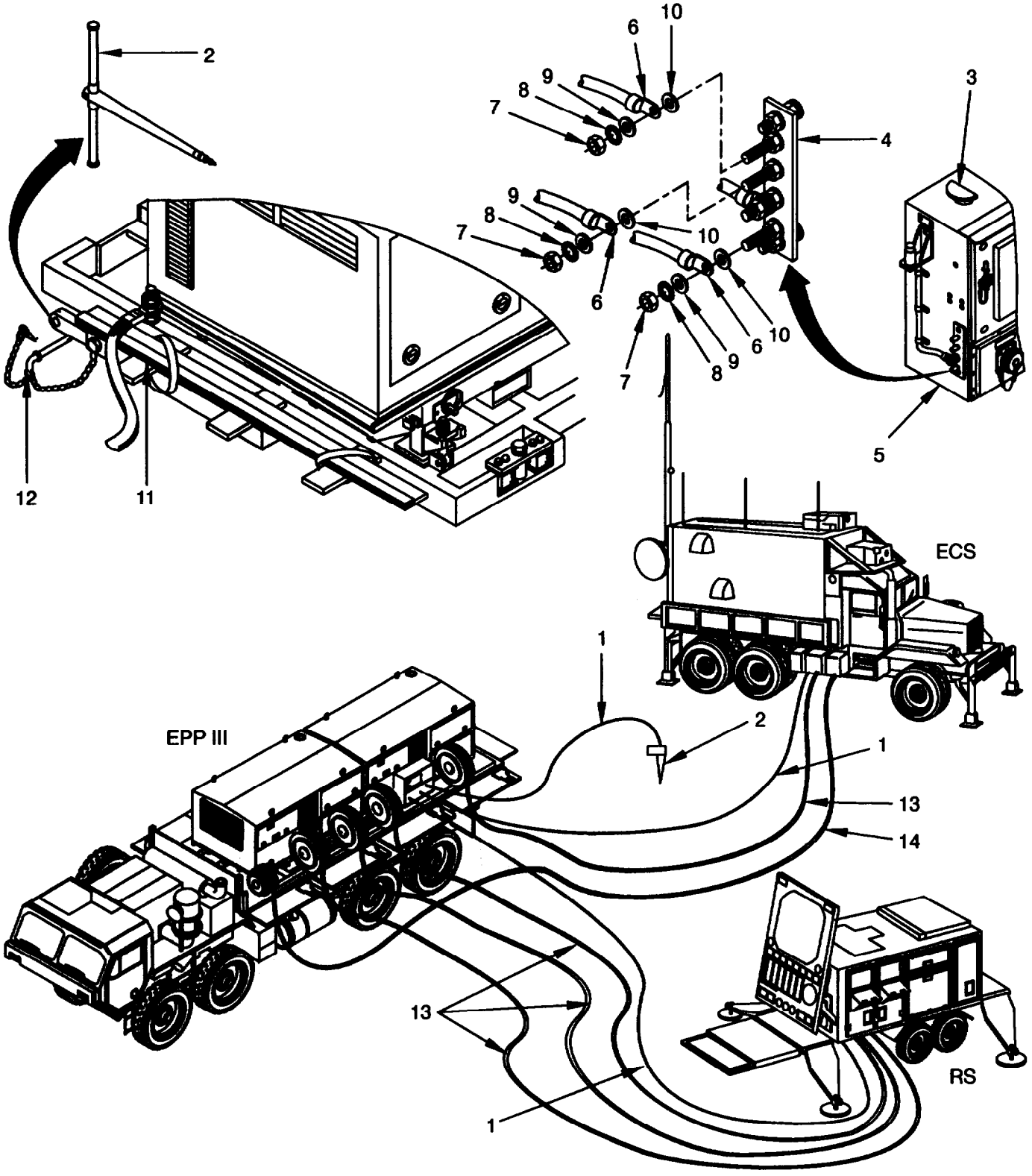


Figure 2-26 Converting EPP III to Road Travel Configuration (sheet 1 of 3).

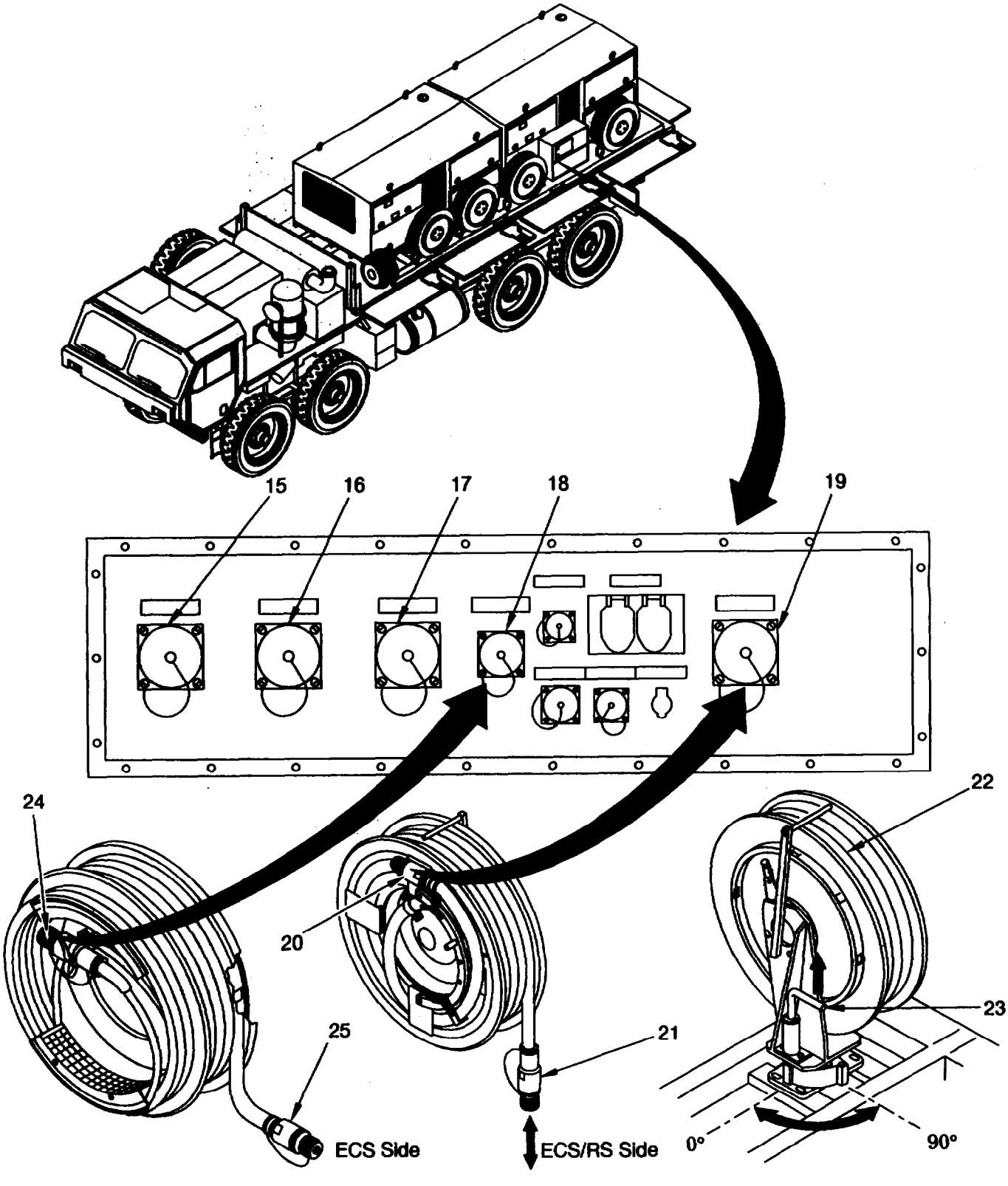


Figure 2-26 Converting EPP III to Road Travel Configuration (sheet 2 of 3).

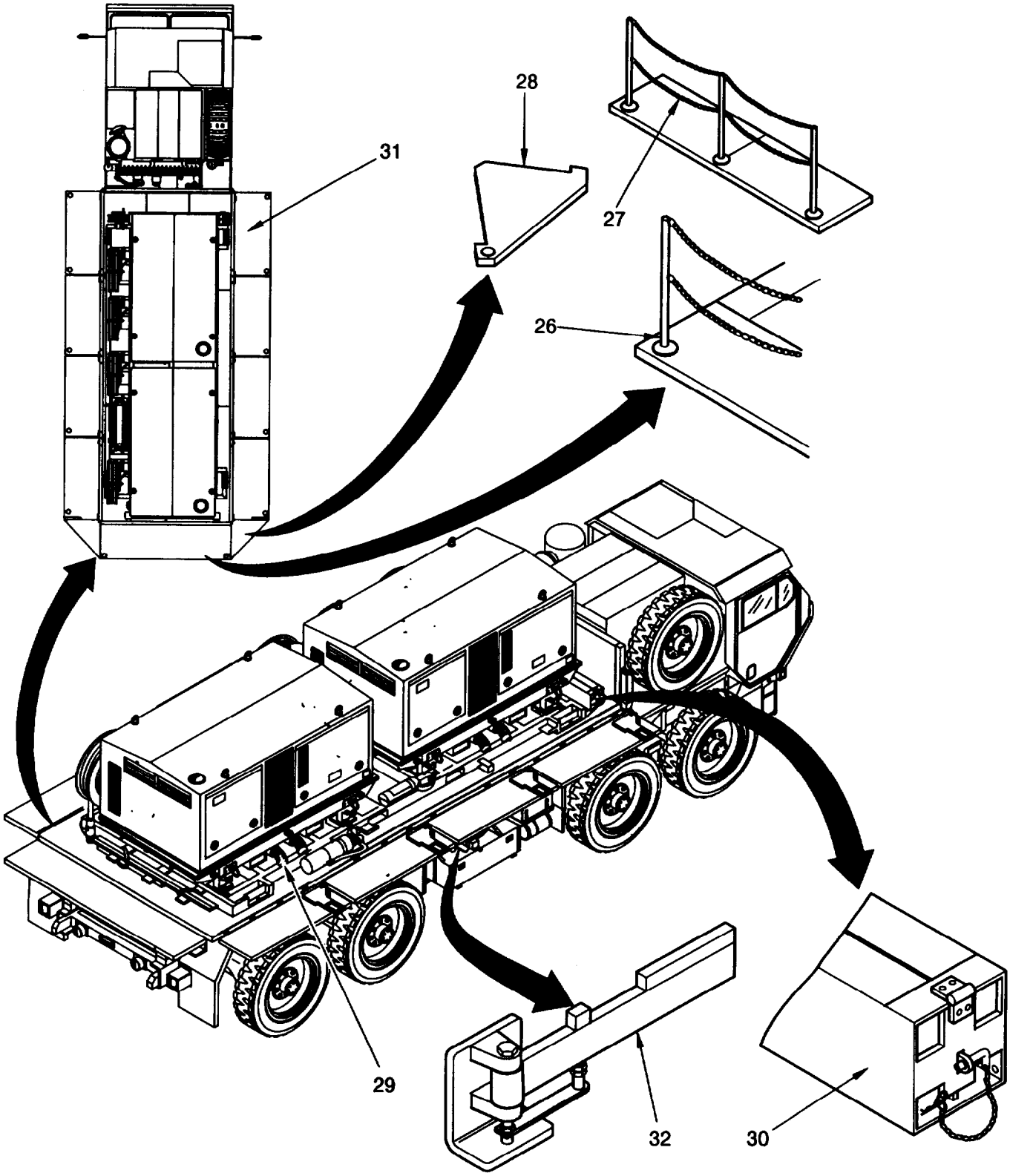


Figure 2-26 Converting EPP III to road travel configuration (sheet 3 of 3).

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

WARNING

- **Potential 150 kw/208 VAC shock hazard with failure to adhere to this warning. Contact with this high power could result in death or severe injury, If the removal of one generator from the EPP III is required, replace it with an extra generator if available. If the EPP III must be operated with only one generator installed, insure that all cables for the removed generator have the protective caps properly installed prior to starting the remaining generator set.**
- **If operation of one of the EPP III generators when the other generator is dismounted is required, protective covers must be installed on power cable connectors L1, L2, L3 and N.**
- **Prior to energizing the equipment the operator must check for exposed electrical terminals.**
- **Always install protective covers on control and power cables when cables are not connected.**
- **Be sure to observe all Warning labels on equipment.**
- **Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.**

WARNING

Do not operate Generator Set 150 kW unless it is properly grounded and all load terminals are not shorted. Failure to observe this warning can result in severe personal injury or death.

NOTE

Before operating Generator Set 150 kW, all connections must be made to the EPP III PDU. See also kW Short Operating Instructions plate.

2.9 OPERATING GENERATOR SET 150 KW.

NOTE

The MASTER SWITCH is a five position switch:

Position One	-	Locked and Gen Set 150 kW will not run in this position.
Position Two	-	Off with the key fully inserted (pushed in); Gen Set 150 kW will run in this position but cannot be started.
Position Three	-	Off with the key in the half-way inserted position; this is the “NORMAL” shut down position.
Position Four	-	Switch is on with key fully inserted; this is the “NORMAL” start and run position.
Position Five	-	Switch is on with key inserted half way; this is the EMERGENCY shut down position.

2.9.1 Operating the Engine Preheating Assembly.

The Engine Preheating Assembly can be used at 14 °F (-10 °C) or below and must be used at -22 °F (-30 °C) or below.

a. Perform the Preventive Maintenance Checks and Services (PMCS) listed as 'Before" in table 2-9 (refer to TM 9-6115-668-13).

b. Open flap (1, figure 2-27) Control cabinet assembly controls and indicators are accessible.

C. Set MASTER SWITCH (8) to ON (Position Four):
BATTERY CHARGING CONTROL (2) and OIL PRESSURE (3) lamps light up.

d. Press HEATING ON illuminated pushbutton switch (6): Heating unit begins operating, and HEATING ON lamp (6) lights up.

NOTE

The READY TO START IF HEATING IS ON lamp (4) may not light up at temperatures above 14 °F (-10 °C), since the temperature switch monitoring the oil temperature may perform a shutdown.

e. The READY TO START IF HEATING IS ON lamp (4) lights up after about 13 minutes. The diesel engine can be started (the fan motor will continue to run for about 90 seconds).

f. If the HEATING ON lamp lights up before the READY TO START IF HEATING IS ON lamp (4) lights up, press the HEATING ON illuminated pushbutton switch (6) again.

g. If the diesel engine is started before the READY TO START IF HEATING IS ON lamp (4) lights up, shut down the heating system with the HEATING OFF pushbutton switch (7). Refer to TM 9-6116-668-13, Chapter 3, Section II if the HEATING FAILURE lamp (5) lights up, or if the READY TO START IF HEATING IS ON lamp (4) does not light up (i.e. the engine preheating assembly is not operating properly).

2.9.2 Operating the Flame Glowplug System (Below 32 °F (0 °C)).

a. Perform the Preventive Maintenance Checks and Services (PMCS) listed as "Before" in table 2-9(refer to TM 9-6116-668-13).

b. Open flap (1, figure 2-28): control cabinet assembly controls and indicators are accessible.

c. Set MASTER SWITCH (6) to ON (Position Four):
BATTERY CHARGING CONTROL (2) and OIL PRESSURE (3) lamps light up.

d. Turn GLOWPLUG/START rotary switch (5) to GLOWPLUG and hold:
GLOWPLUG ON lamp (4) must light up within 90 seconds.

CAUTION

- Do not turn the GLOWPLUG/START rotary switch (5) to the START position until the GLOWPLUG ON lamp (4) lights.
- Release the GLOWPLUG/START rotary switch (5) as soon as the diesel engine is running under its own power.

e. Turn GLOWPLUG/START rotary switch (5) to START and hold:
Diesel engine must start and begin accelerating within 20 seconds. BATTERY CHARGING CONTROL and OIL PRESSURE lamps (2, 3) go out 2-3 seconds after engine starts.

If the diesel engine does not start within 20 seconds, wait approximately 30 seconds and repeat the starting procedure.

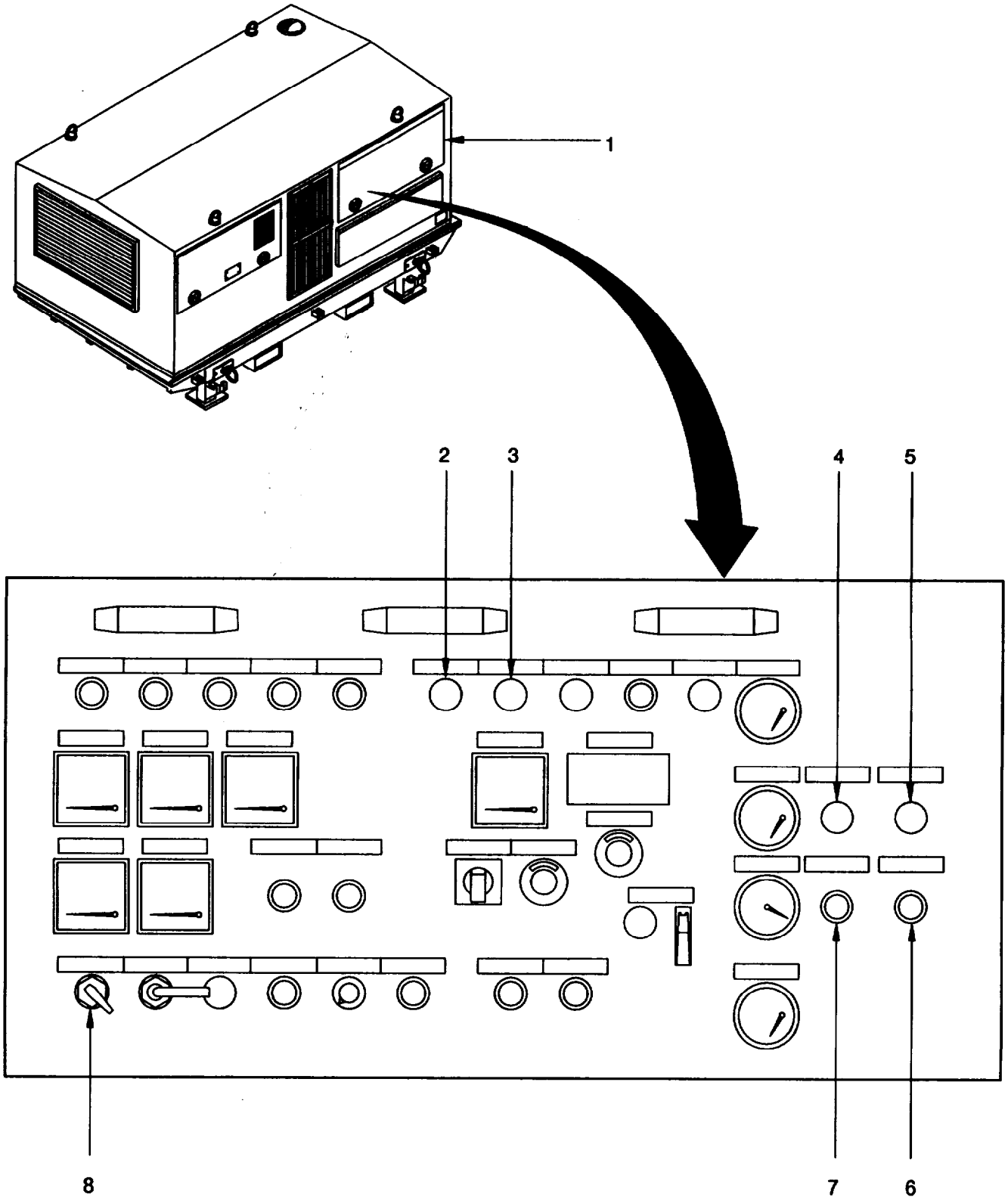


Figure 2-27 Operating the Engine Preheating Assembly.

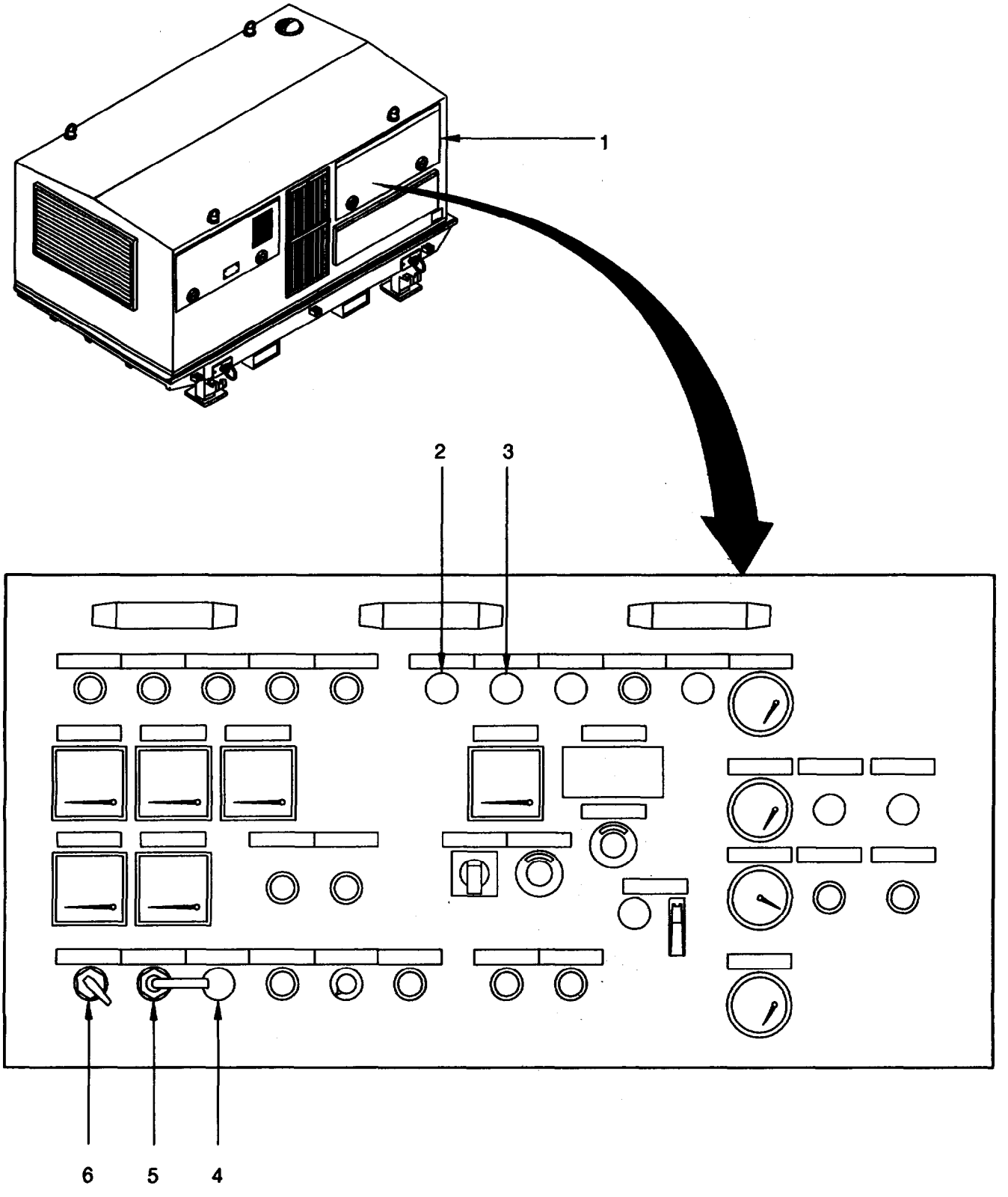


Figure 2-28 Operating the Flame Glowplug System.

2.9.3 Operation in Extreme Cold (below -22 °F (-30 °C)).

NOTE

For paragraphs “2.3.3“, “2.3.4”, “2.3.5”, and figure “2-16” refer to TM 9-6115-668-13.

1. Use engine oil of the appropriate viscosity class paragraph “2.3.3”.
2. Fill tank with winter diesel fuel with appropriate additive or flow improver paragraph “2.3.4”.
3. Check generator V belts: winter type is smooth. If a toothed belt is installed, refer to the next higher level of maintenance to install proper belt.

NOTE

See also Engine Preheating Plate (figure “2-16”).

4. Connect battery sets in parallel to start diesel engine paragraph “2.3.5”.
6. Start engine preheating assembly paragraph 2.9.1.

WARNING

Failure to wear gloves when operating actuator, could result in severe personal injury.

6. Have a second person open flap (1, figure 2-29) and pull the fuel injection pump actuator rod (2) in the direction of the arrow.
7. Start flame glowplug system paragraph 2.9.2.
8. Start diesel engine paragraph 2.7.2.1 and release actuator/fuel injection pump linkage.
9. Allow diesel engine to warm up for approximately 10 minutes.
10. Turn on power system (main contactor K1) paragraph 2.7.2.2.

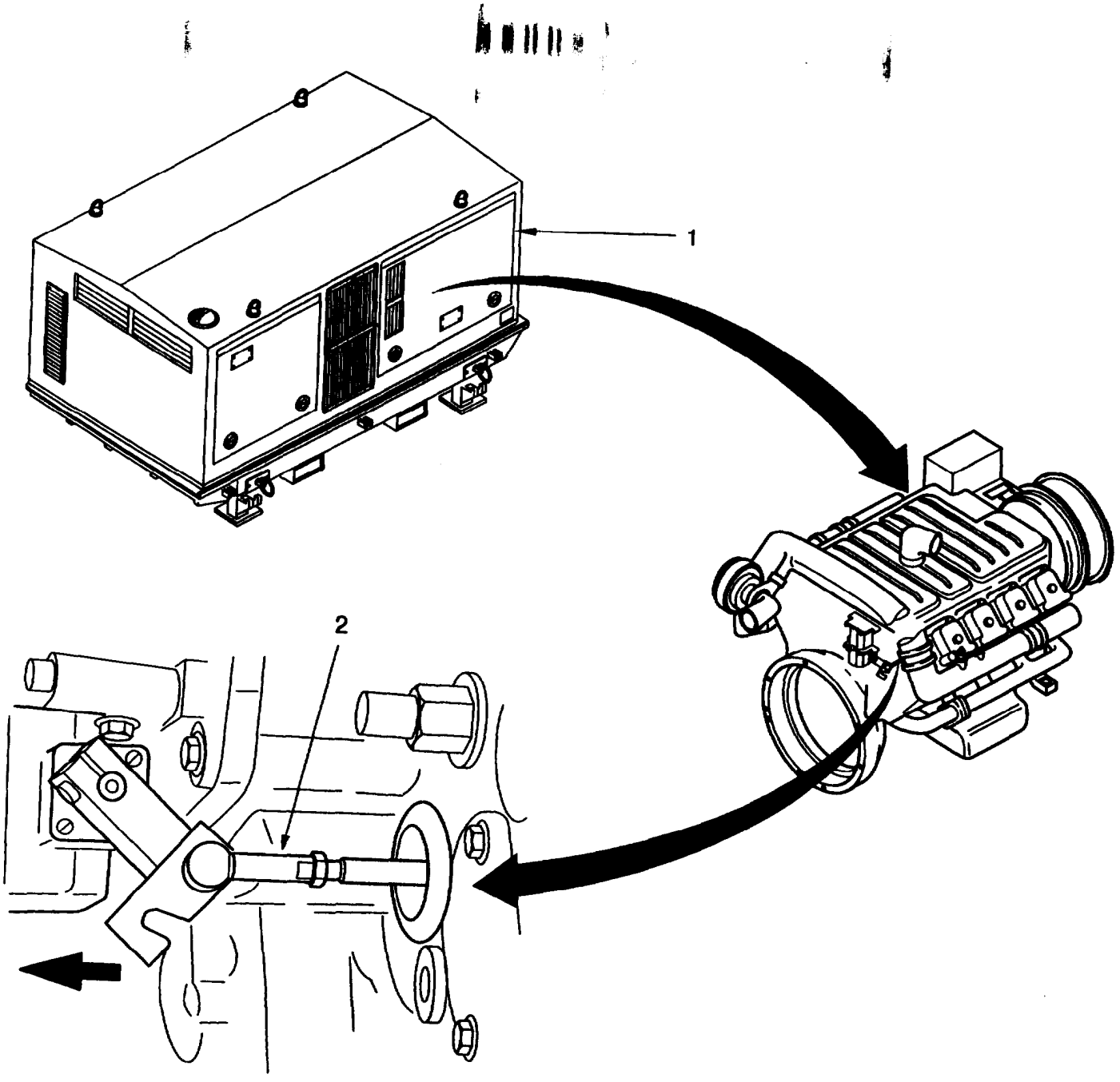


Figure 2-29 Fuel Injection Pump Actuator Linkage.

2.10 OPERATING ELECTRIC POWER PLANT III.

2.10.1 General.

There are no special activities required for operating EPP III under unusual conditions.

CHAPTER 3
OPERATOR MAINTENANCE INSTRUCTIONS

Subject Index

		Page
Section I.	Operator Lubrication	3-2
3.1	General	3-2
Section II.	Troubleshooting	3-6
3.2	General	3-6
Section III.	Maintenance Procedures	3-8
3.3	General	3-8

Section I. OPERATOR LUBRICATION

3.1 GENERAL.

Lubricate the Electric Power Plant III at regular intervals as indicated in figure 3-1.

Item No.	Item Name	Lubricate with
1	Gen Set 1 and 2, groundind strap screw	Terminal grease (item 4, Appendix E)
2	PDU grounding bar, grounding strap screws	Terminal grease (item 4, Appendix E)
3	Pallet frame, grounding strap screw	Terminal grease (item 4, Appendix E)
4	Control cable drum, inner surfaces	Lubricating grease (item 1, Appendix E)
5	Power cable drums, inner surfaces	Lubricating grease (item 1, Appendix E)
6	Power cable drums, swinging device grease nipple	Lubricating grease (item 1, Appendix E)
N.I.	All threaded and plug connections	Copper paste (item 5, Appendix E)
N.I.	All bolt/spring pin connections	Lubricating grease (item 1, Appendix E)
7	Storage box hinge	Lubricating grease (item 1, Appendix E)
8	Swing arm grease nipple	Lubricating grease. (item 1, Appendix E)
9	Swing arm pin	Lubricating grease (item 1, Appendix E)

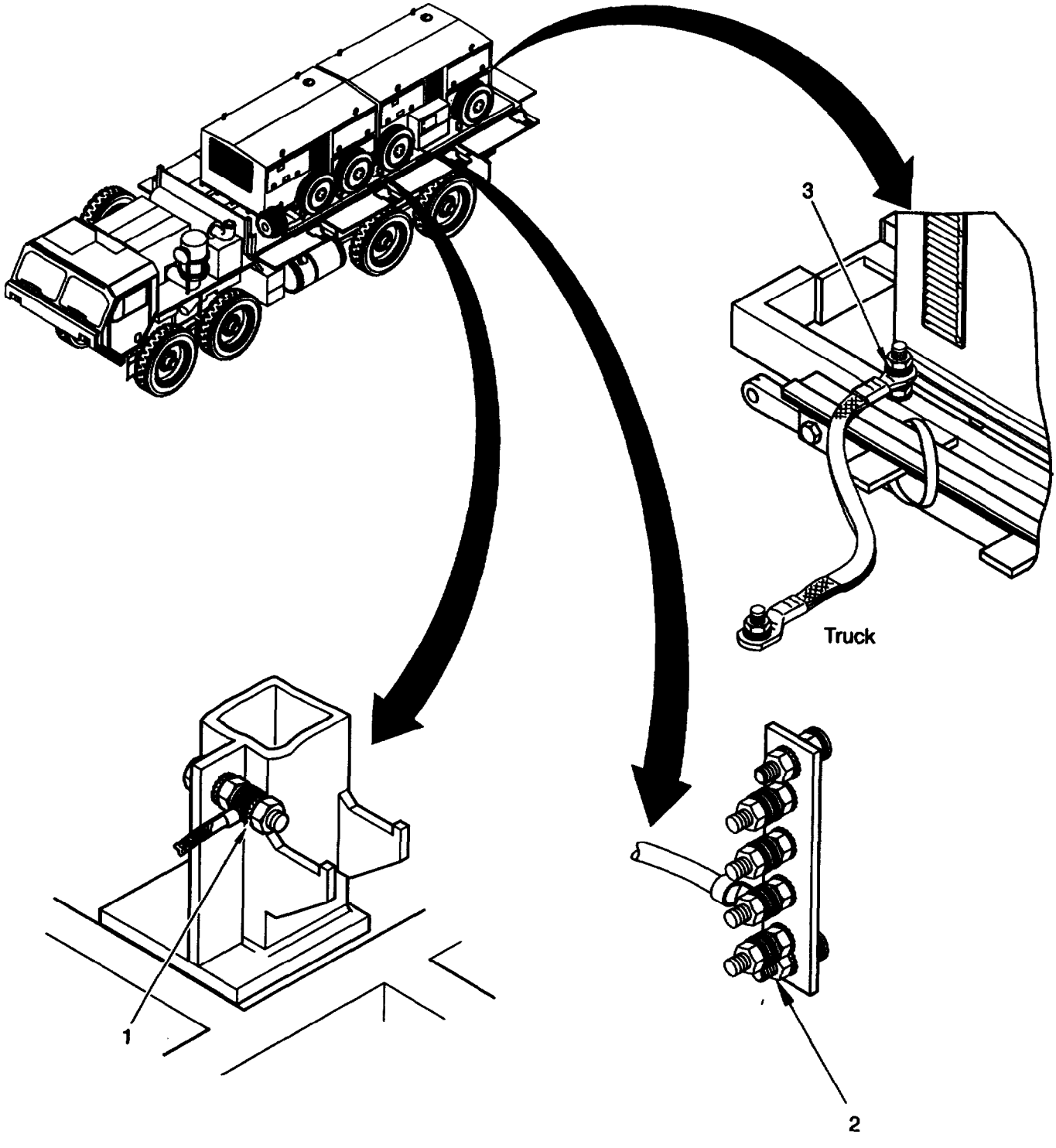


Figure 3-1 Electric Power Plant III, Lubrication Points (sheet 1 of 3).

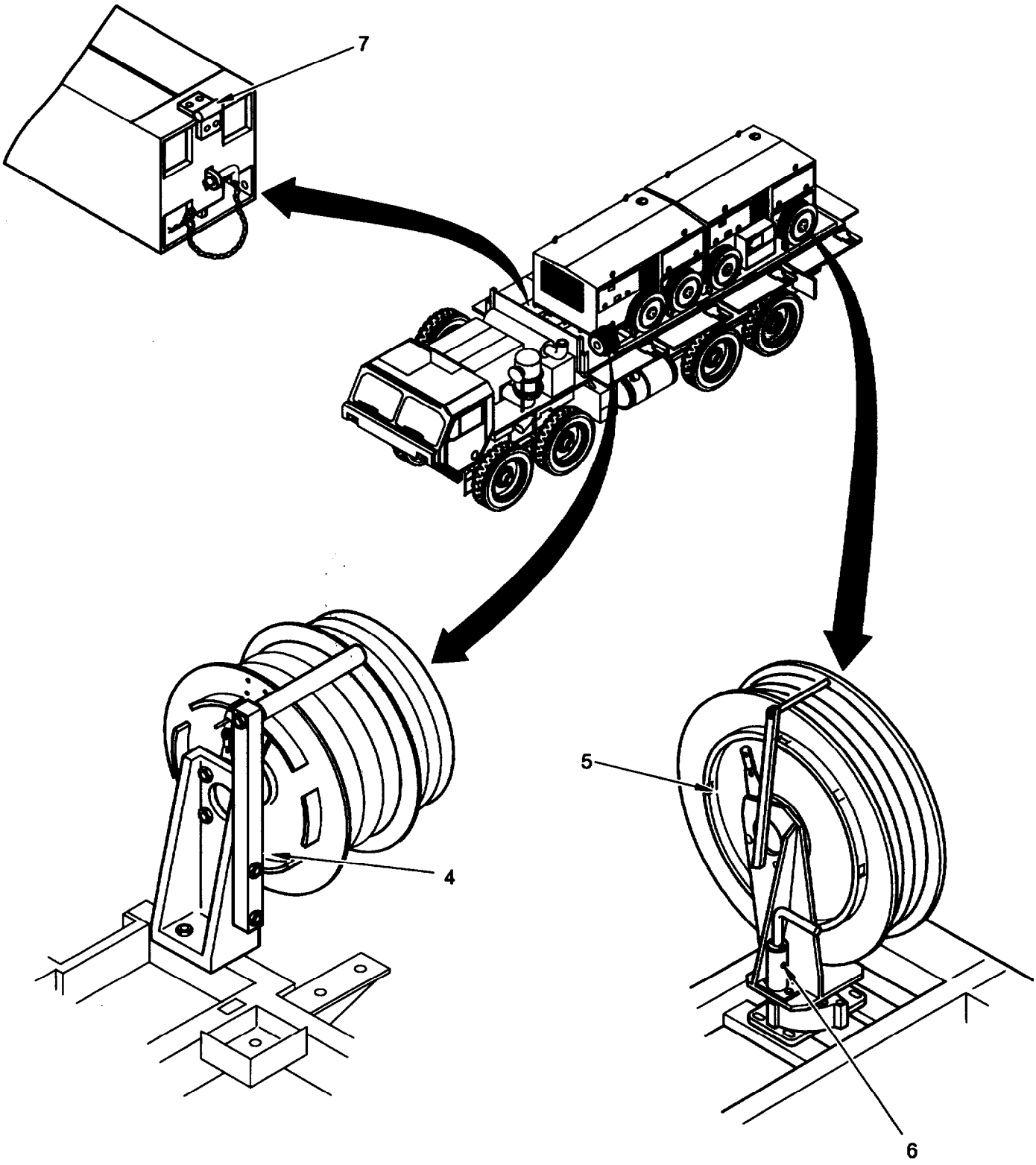


Figure 3-1 Electric Power Plant III, Lubrication Points (sheet 2 of 3).

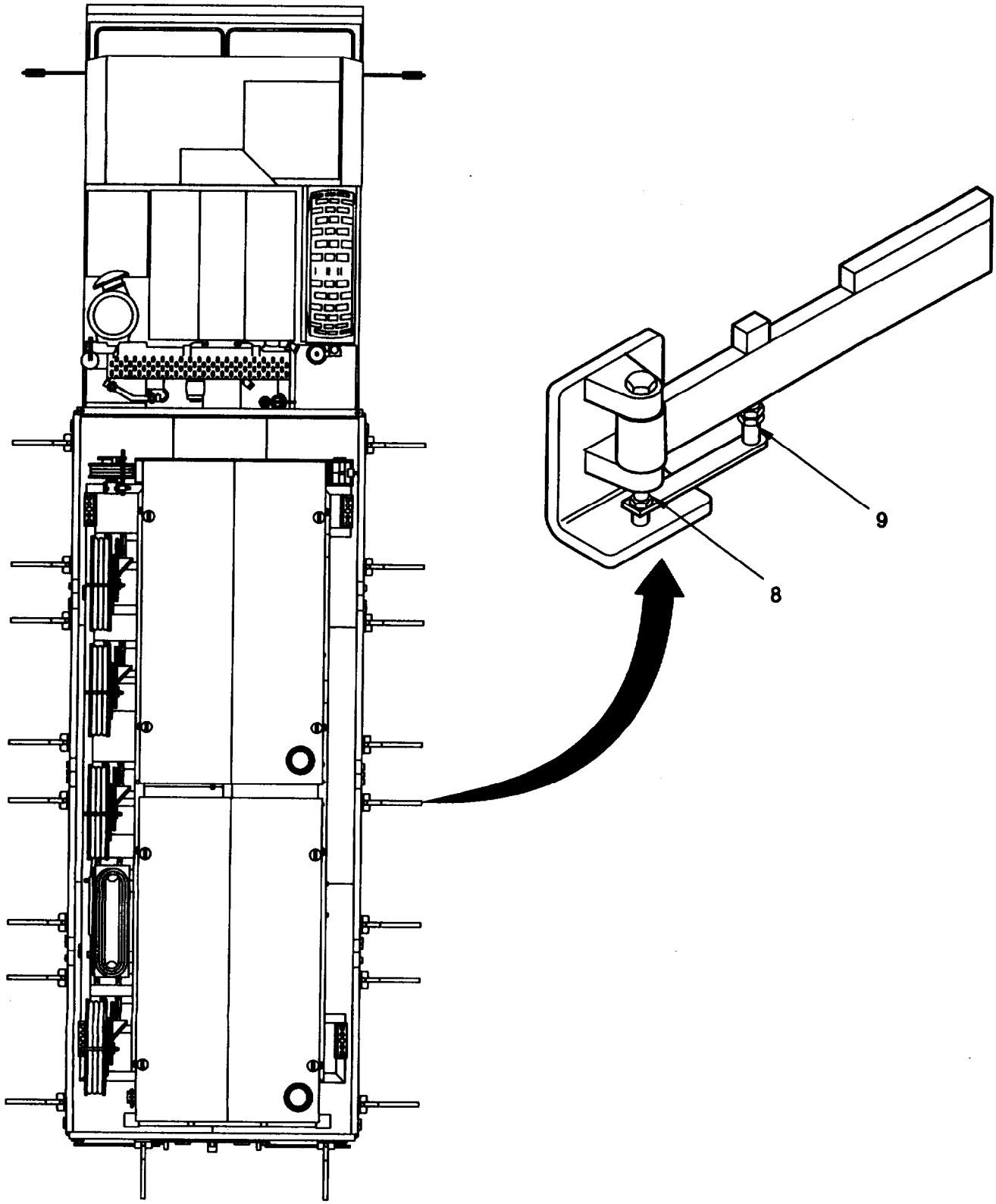


Figure 3-1 Electric Power Plant III, Lubrication Points (sheet 3 of 3).

Section II. TROUBLESHOOTING

3.2 GENERAL.

The symptom index for electric power plant III lists faults associated with power distribution unit operation. Figure 3-2 provides a go/no-go flowchart for a malfunction, including a reference to help you determine probable causes and corrective actions to take. The symptom index cannot list all faults that may occur, or all the tests, inspections, and corrective actions. If a malfunction is not listed or cannot be corrected by listed corrective actions, notify next higher level of maintenance for assistance.

SYMPTOM INDEX	Troubleshooting Procedure
No power to ECS or RS, but generator is operating properly.	Figure 3-2

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORE ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

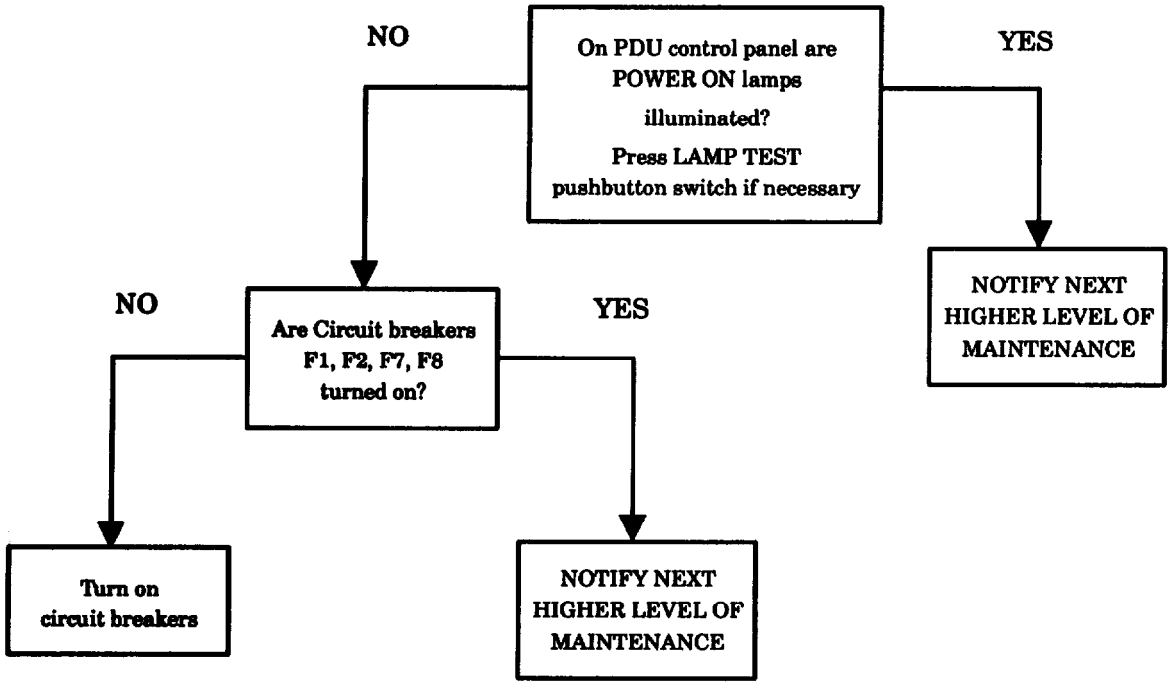


Figure 3-2 No power to ECS or RS, but generator is operating properly.

Section III. MAINTENANCE PROCEDURES

3.3 GENERAL.

Not applicable.

CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS

Subject Index

		Page
Section I. Repair Parts; Tools; Special Tools; Test, Measurement and Diagnostic Equipment (TMDE); and Support Equipment		4-3
4.1	Common Tools and Equipment	4-3
4.2	Special Tools, TMDE, and Support Equipment	4-3
4.3	Repair Parts	4-3
Section II. Service Upon Receipt of Equipment		4-4
4.4	Service Upon Receipt of Material	4-4
4.5	Unpacking Equipment from the Container Using a Crane	4-9
Section III. Unit Lubrication		4-10
4.6	General	4-10
Section IV. Unit Preventive Maintenance Checks and Services (PMCS)		4-11
4.7	Introduction to Unit PMCS Table	4-11
Section Troubleshooting		4-14
4.8	General	4-14
Section VI. Maintenance Procedures		4-24
4.9	General	4-24
4.10	Power Cable Drum Locking Device Maintenance.	4-25
4.11	Power Cable Drum Mount Maintenance.	4-27
4.12	Power Cable Drum Maintenance.	4-30
4.13	Power Cable Maintenance.	4-33
4.14	Control Cable Drum Maintenance.	4-36
4.15	Control Cable Maintenance.	4-39
4.16	Power Distribution Unit Connection Panel Maintenance	4-42
4.17	Generator Set 150 kW Maintenance.	4-45
4.18	Pallet Frame Maintenance.	4-56
4.19	Power Distribution Unit Maintenance.	4-66
4.20	Swing Arm Maintenance.	4-74
4.21	Stanchion and Chain Assembly Maintenance.	4-76
4.22	U.S. Standard Grounding Assembly Maintenance.	4-78
4.23	Storage Box Assembly Maintenance.	4-80

4.24	Light Indicator Assembly Maintenance	4 - 82
4.25	Pushbutton Switch and Light Indicator Maintenance	4-85
4.26	Brightness Control N7/R1 Maintenance	4 - 88
4.27	Contactor Protective Resistor Maintenance	4 - 91
4.28	Current Transformer Maintenance	4 - 94
4.29	Auxiliary Contactors Maintenance (Except K20 and K21)	4-97
4.30	Auxiliary Contactors K20 and K21 Maintenance	4 - 100
4.31	AC/DC Transformer/Rectifier Maintenance	4 - 103
4.32	Circuit Breaker Maintenance..	4 - 106
4.33	Cabinet Illumination S5/H11 Maintenance	4 - 109
4.34	Load Bank Procedures (Avtron 150 kw Resistive	4 - 112

Section L REPAIR PARTS; TOOL; SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

4.1 COMMON TOOLS AND EQUIPMENT.

A list of recommended tools and teat equipment required to maintain the Electric Power Plant III is contained in Appendix B, SECTION III.

4.2 SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

For special tools refer to appendix F.

4.3 REPAIR PARTS.

For repair parts refer to appendix F.

Section II. SERVICE UPON RECEIPT OF EQUIPMENT

4.4 SERVICE UPON RECEIPT TO OF MATERIEL.

4.4.1 Storage and Transport on Original Packaging.
The Generator Set 150 kW and pallet frame are packed separately, each in a wooden container (figure 4-1). The container is covered at the top by rainwater protection film (1). The packing list is located below the plate (2). The container is labeled with the necessary logistical identifiers (5).

4.4.2 Transport.

CAUTION

The container is designed for transportation in a horizontal position only (4).

a. When transporting with a forklift, insert forks into openings (6).
b. When transporting with a crane, attach slings to (3).

WARNING

- Do not stand in the operating area of the crane or forklift. Do not walk under the suspended load.
- Move the container slowly so that it remains in the horizontal position.

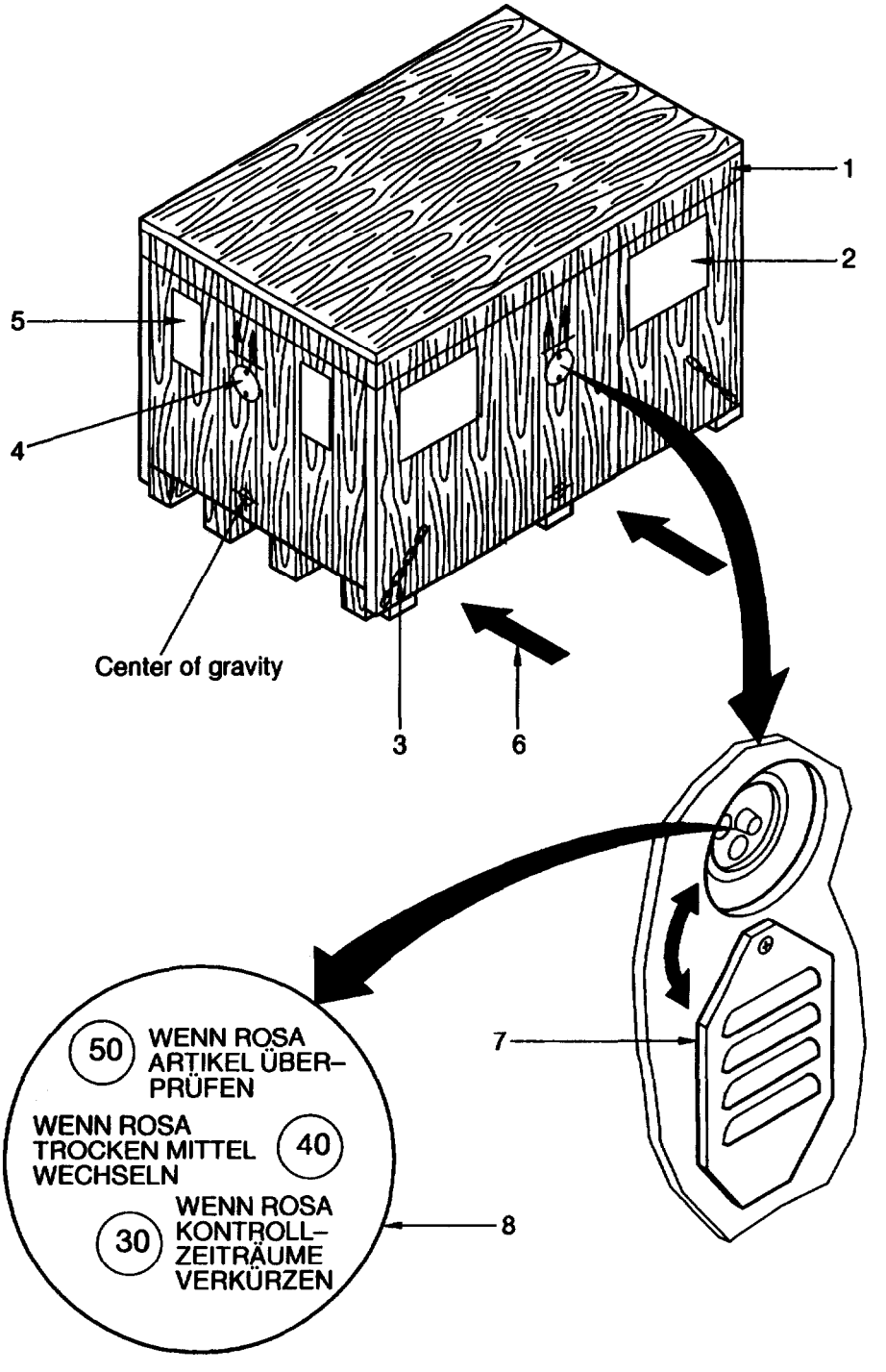
4.4.3 Storage.

The container can be stored in the original packaging for up to two years. The unit is packaged in airtight materials meeting MIL standards. The packaging can be checked at regular intervals using the moisture indicator (8), as follows:

a. Open protective grill (7).
b. The indicator must be blue in color. If the indicator is entirely or partly pink, proceed as indicated for 30%, 40%, and 50% relative humidity.
c. Close protective grill (7).

NOTE

The Generator Set 150 kW is packaged with a residual amount of fuel and with battery terminals detached.



NOTE
If the indicator is entirely or partly pink:

50 Check content

40 Change desiccant

30 Shorten check intervals

Figure 4-1 Original Packaging in Container

4.4.4 Unpacking Equipment.

Unpack the Generator Sets 150 kW and pallet frame as indicated in figure 4-2.

a. Remove coyer (1) and wooden members (2).
b. Remove one wide side.
c. Detach film at points (3). The forklift sockets (18, 19, figure 4-3) are located here.

CAUTION

To ensure correct lifting of the pallet frame, use the forklift only on the side where the cable drums are located (load imbalance hazard).

NOTE

- The Generator Set 150 kW is secured to the bottom of the container with square wooden members only (no threaded fasteners), and can be lifted up.
- Separate the Generator Set 150 kW from the container using a forklift or crane. If using a crane, see paragraph 4.5.

d. Insert forks, lift Generator Set 150 kW with packaging, and lower onto a solid surface.
e. Remove all film material from the Generator Set 150 kW. Check pallet frame against figure 4-3 for completeness.
f. The following parts must be installed on the pallet frame:
   4 Exhaust pipes (1) in container
   1 Fire extinguisher (2)
   1 Fire extinguisher (3)
   2 Grounding cables (4), one cable unattached
   1 Grounding rod (5)
   1 Sling assembly (6) with two attachment belts
   3 Grounding straps (7) bolted onto frame
   8 Bolt connections (8)
g. The following items (four of each) are also included in the packaging
   Threaded bolts (9)
   Serrated lock washers (10)
   Washers (11)
   Tightening assembly (12)
   Threaded bushings (13)
   Bolts with spring pins (14)
   Once unpacked, the EPP III is ready to operate.
h. Prepare the Generator Set 150 kW for start up as instructed in TM9-6115-668-13:
i. Fill the unit fuel tank, and attach cable to battery (-) terminal.

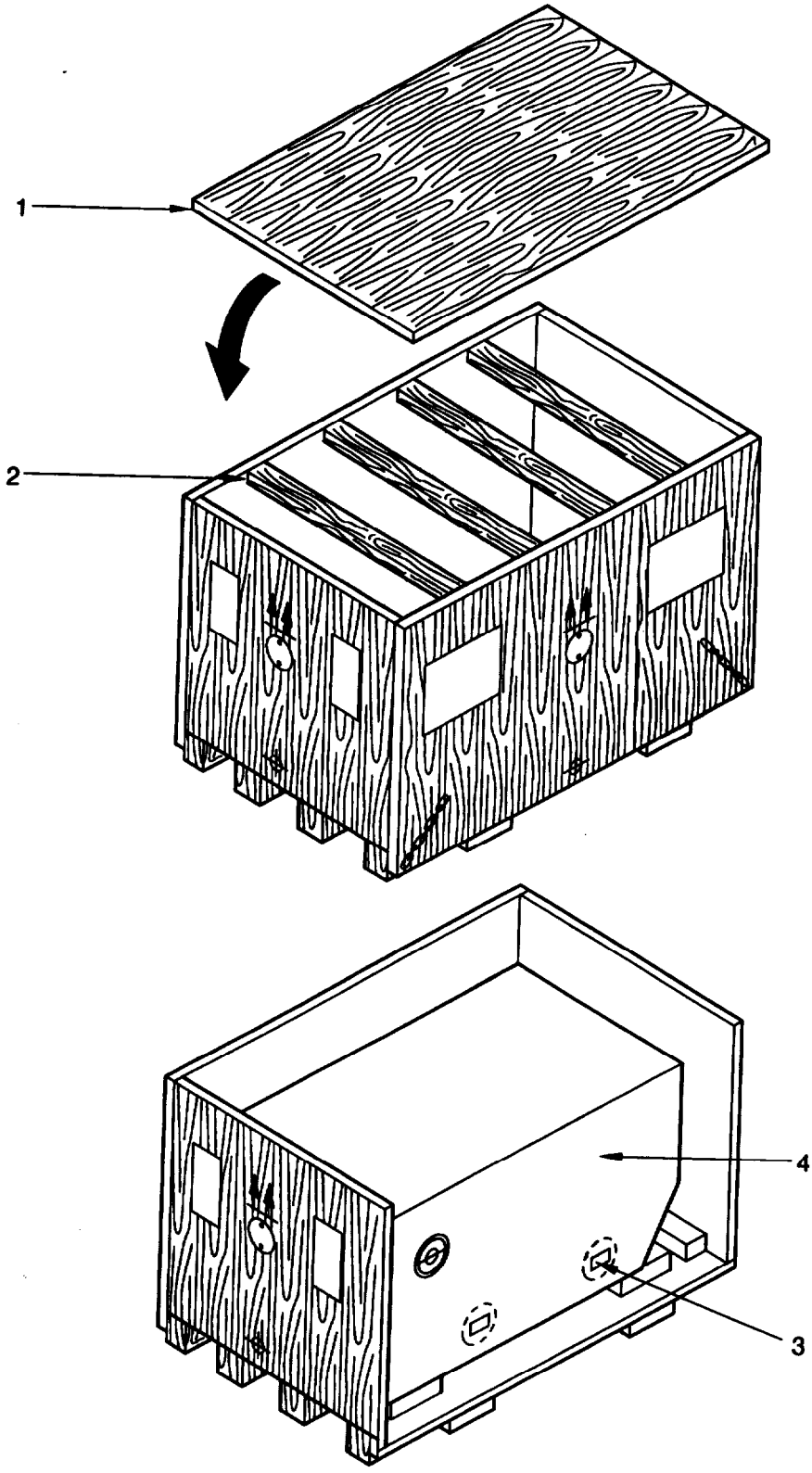


Figure 4-2 Unpacking the Container.

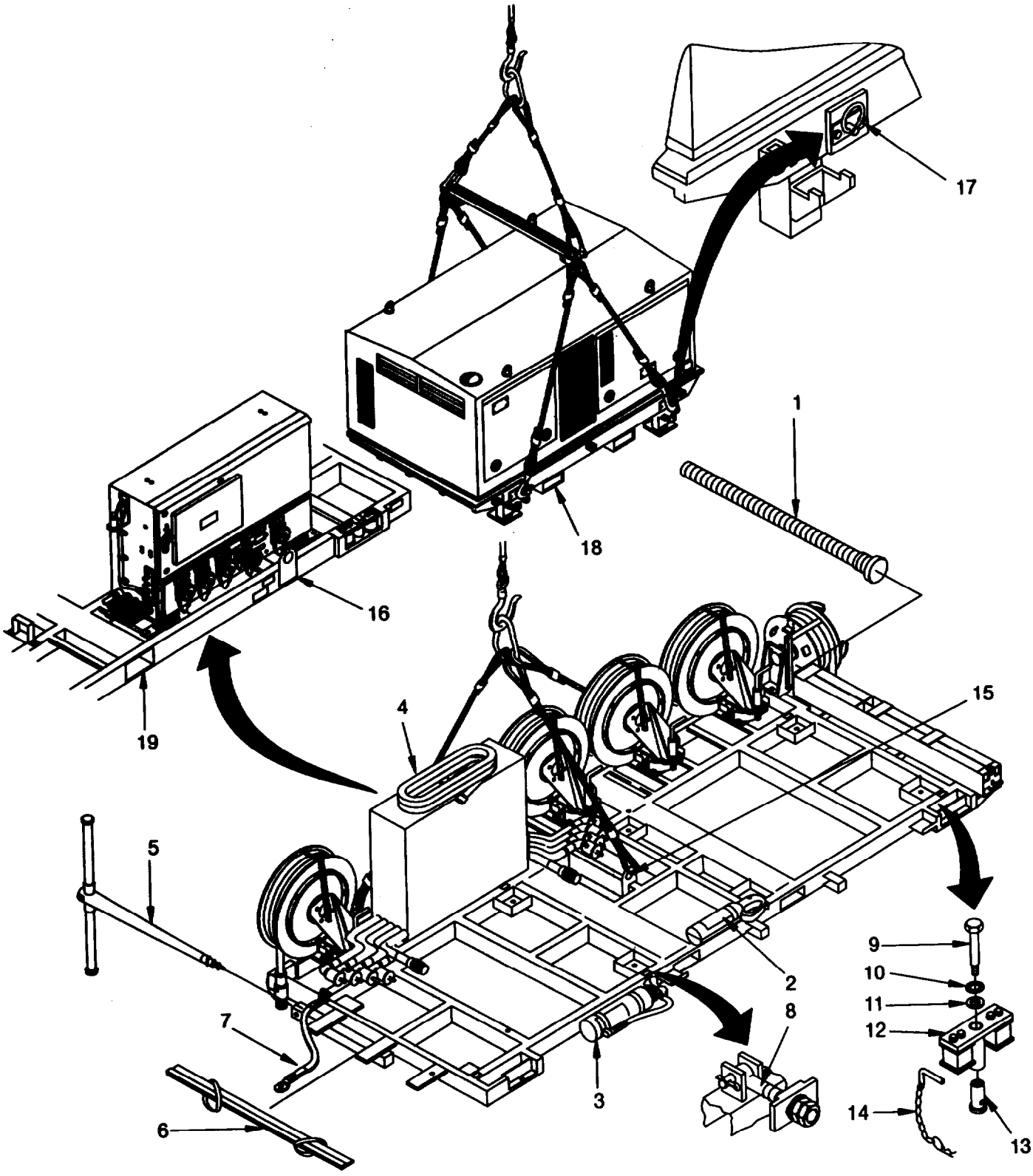


Figure 4-3 *EPP III, Unpacked.*

4.5 UNPACKING EQUIPMENT FROM THE CONTAINER USING A CRANE.

4.5.1 Unpacking Pallet Frame.

a. Remove cover and four sides of the container (figure 4-1).
b. Detach film so that lifting lug (15, figure 4-3) at center and the two lifting lugs (16) on the pallet frame are accessible from the side.
c. Detach film from the end of the pallet frame so the sling assembly (6) is accessible.
d. Remove sling assembly (6) from the pallet frame. Suspend the sling assembly from the crane.
e. Position the crane approximately centered above the three lifting lugs (15, 16) of the pallet frame.

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **Move the pallet frame slowly so that it remains in the horizontal position.**

f. Insert the three cable hooks of the sling assembly into the three lifting lugs (15,16). Lift up the pallet frame and lower it onto a solid surface.
g. Detach the sling assembly and mount it on the pallet frame.

4.5.2 Unpacking Generator Set 150 kW.

a. Remove cover and four sides of the container (figure 4-1).
b. Detach film so the four lifting rings (17) at the corners are accessible.
c. Remove sling assembly (6) from the pallet frame. Suspend the sling assembly from the crane and position the crane approximately above the center of Generator Set 150 kW as shown in figure 4-3.

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **Move the Generator Set 150 kW slowly so that it remains in the horizontal position.**

d. Insert the four cable hooks of the sling assembly into the lifting rings (17). Lift up the Generator Set 150 kW with the crane and lower it onto a solid surface.
e. Detach the sling assembly from the Generator Set 150 kW and mount it on the pallet frame.

Section III. UNIT LUBRICATION

4.6 GENERAL.

For Generator Set 150 kW refer to TM 9-6115-668-13.
For Electric Power Plant III no Lubrication required.

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

4.7 INTRODUCTION TO UNIT PMCS TABLE.

Table 4-1 (PMCS table) has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

4.7.1 Warnings, Cautions and Notes. Always observe the WARNINGS, CAUTIONS and NOTES appearing in your PMCS table. Warnings and cautions appear before applicable procedures. You must observe WARNINGS to prevent serious injury to yourself and others. You must observe CAUTIONS to prevent your equipment from being damaged. You must observe NOTES to ensure procedures are performed properly.

4.7.2 Explanation of Table Entries.

4.72.1 Item No. Column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

4.7.2.2 Interval Column. This column tells you when you must do the procedure in the procedure column. Perform procedures such as Monthly or Quarterly at the listed calendar interval. Perform procedures designated by number of hours when the equipment has been operated for that many hours.

4.7.2.3 Location, Item to be Checked or Serviced Column. This column lists the item to be checked or serviced.

4.7.2.4 Procedure Column. This column gives the procedure for checking or servicing the item listed in the item to check/service column. You must perform the procedure to know if the EPP III is ready or available for its intended mission or operation. You must do the procedure at the time stated in the interval column.

4.7.2.5 Not fully Mission Capable if: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make checks or services that show faults listed in this column, do not operate the equipment.

4.7.3 Other Table Entries. Be sure to observe all special information and notes that appear in your table.

4.7.4 Special Instructions. Preventive maintenance is not limited to performing the checks and services listed in the PMCS table. Covering unused receptacles, stowing unused accessories, and other routine procedures such as equipment inventory, cleaning components, and touch-up painting are not listed in the table. These are things you should do any time you see that they need to be done. If a routine check is listed in the PMCS table, it is because experience has shown that problems may occur with this item. Take along the tools and cleaning cloths needed to perform the required checks and services.

Use the information in the following paragraphs to help you identify problems at any time. Use the following information to help identify potential problems before and during checks and services.

WARNING

Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.

Always install protective covers on control and power cables when cables are disconnected.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Failure to observe this warning can cause severe personal injury or death.

CAUTION

Keep cleaning solvents, gasoline and lubricants away from rubber or soft plastic parts. They will deteriorate material.

a. Keep it clean. Dirt, grease, and oil get in the way and may cover up a serious problem. Use dry cleaning solvent to clean metal surfaces.

b. Use soap and water to clean rubber or plastic parts and material.

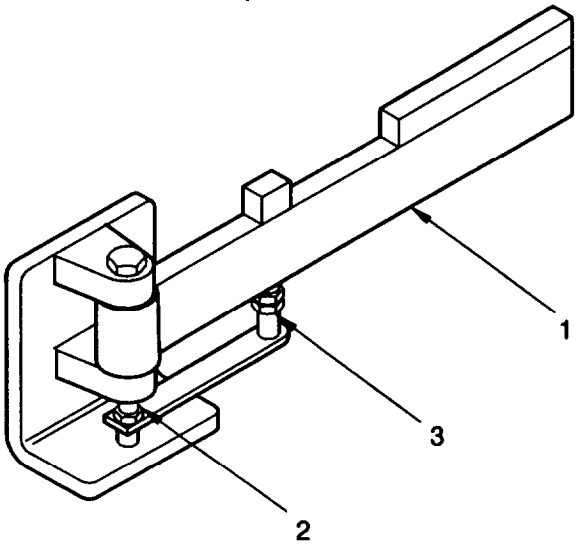
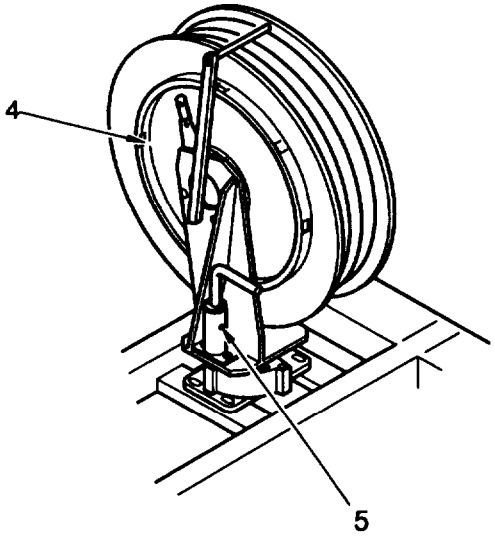
c. Check all bolts, nuts, and screws to make sure they are not loose, missing, bent, or broken. Do not try to check them with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one loose, report it to the next higher level of maintenance.

d. Inspect welds for loose or chipped paint, lust, or gaps where parts are welded together. If a broken weld is found, report it to the next higher level of maintenance.

e. Inspect electrical wires, connectors, terminals, and receptacles for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors. Examine terminals and receptacles for serviceability. If deficiencies are found, report them to the next higher level of maintenance.

f. Inspect hoses and fluid lines. Look for wear, damage, and leaks. Make sure that clamps and fittings are tight. Wet spots and stains around a fitting or connector can mean a leak. If a leak comes from a loose connector, or if something is broken or worn out, report it to the next higher level of maintenance.

Table 4-1 Unit Preventive Maintenance Checks and Services

Item No.	Interval	Item to be Checked or Serviced	Procedure	Not Fully Mission Capable if:
		NOTE In conditions where fine sand exists, cleaning and lubrication must be done more often.		
1	weekly	support Arms	Clean and lubricate support arms (1). Wipe excess grease from grease nipple (2). Oil spring loaded pin (3). 	Grease nipples will not accept grease.
2	weekly	Power Cable Reel	Clean and lubricate cable reels (4) and grease nipples (5) and wipe excess grease and oil. 	Grease nipples will not accept grease.
3	Semi-Annually	EPP III	Connect load Bank to EPP III and perform procedures in paragraph 4.34.	

Section V. TROUBLESHOOTING

4.8 GENERAL.

The symptom index for EPP III lists faults associated with PDU assembly operation. Figures 4-4 through 4-12 provide a go/no-go flowchart for a malfunction. The malfunction listed includes a reference to the applicable figure that contains a chart to help you determine probable causes and corrective actions to take. The symptom index cannot list all faults that may occur, or all possible tests or inspections and corrective actions. If a malfunction is not listed or cannot be corrected by the corrective actions listed, notify the next higher level of maintenance for assistance.

WARNING

- **Potential 150 kw/208 VAC shock hazard with failure to adhere to this warning. Contact with this high power could result in death or severe injury. If the removal of one generator from the EPP III is required, replace it with an extra generator if available. If the EPP III must be operated with only one generator installed, insure that all cables for the removed generator have the protective caps properly installed prior to starting the remaining generator set.**
- **Prior to energizing the equipment the operator must check for exposed electrical terminals.**
- **Always install protective covers on control and power cables when cables are not connected.**
- **Be sure to observe all Warning labels on equipment.**
- **Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.**

SYMPTOM INDEX	Troubleshooting Procedure
No power to ECS or RS, but Generator Set 150 kW is operating properly	Figure 4-4
Indicator Panel light does not illuminate although Generator Sets 150 kW are operating normally	Figure 4-5
OVERLOAD SHUTDOWN of ECS or RS Load although Generator is Operating Normally.	Figure 4-6
CANNOT SWITCH OVER from Generator 1 or 2 to Comercial Power Converter	Figure 4-7
EMERGENCY SHUTDOWN Inoperative.	Figure 4-8
BATTLESHORTInoperative	Figure 4-9
BRIGHTNESS CONTROL ON CONTROL PANEL Inoperative.	Figure 4-10
PDU INTERNAL ILLUMINATION Inoperative.	Figure 4-11
Lamp Test on Control Panel Inoperative	Figure 4-12

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

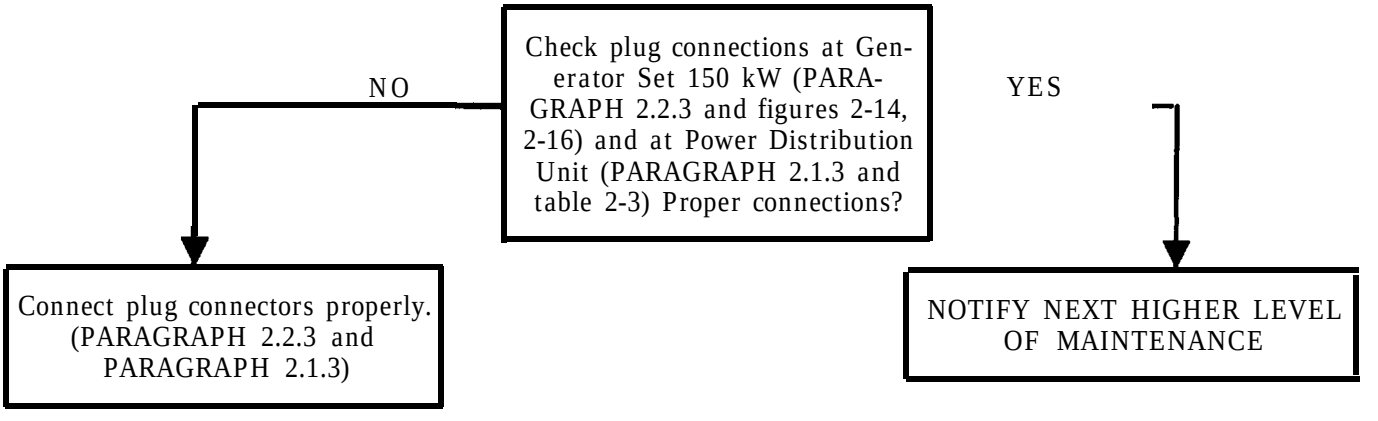


Figure 4-4 No power to ECS or RS, but Generator Set 150 k W is operating properly.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

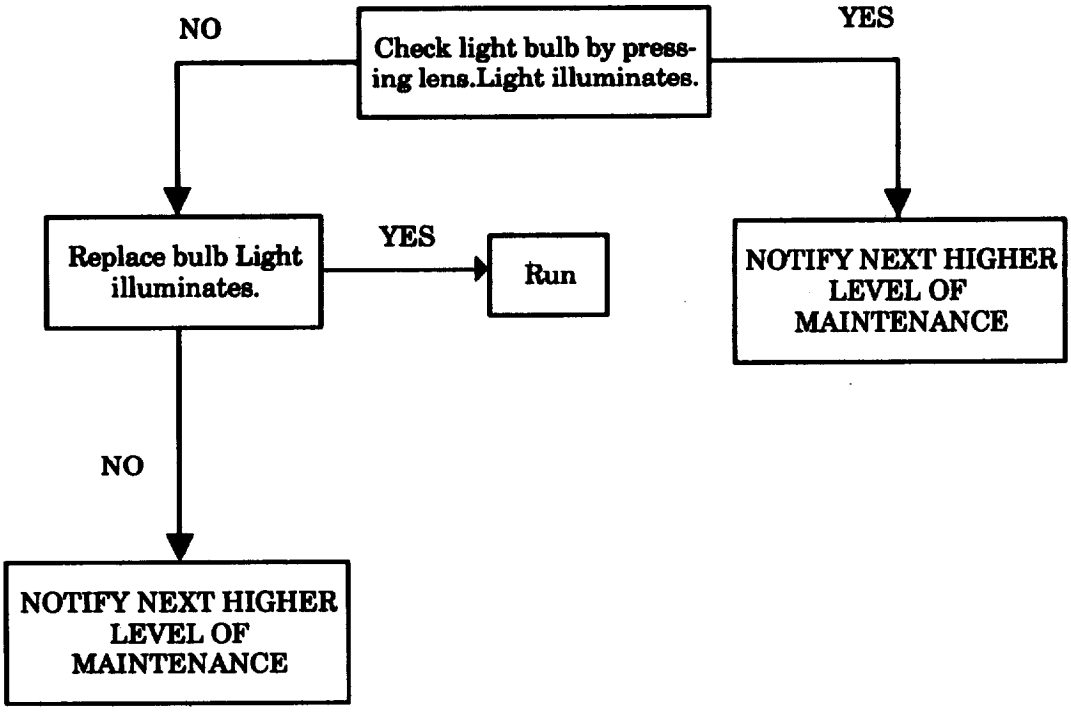


Figure 4-5 Indicator Panel light does not illuminate although Generator Sets 150 kW are operating normally.

WARNING
DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS W-G COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

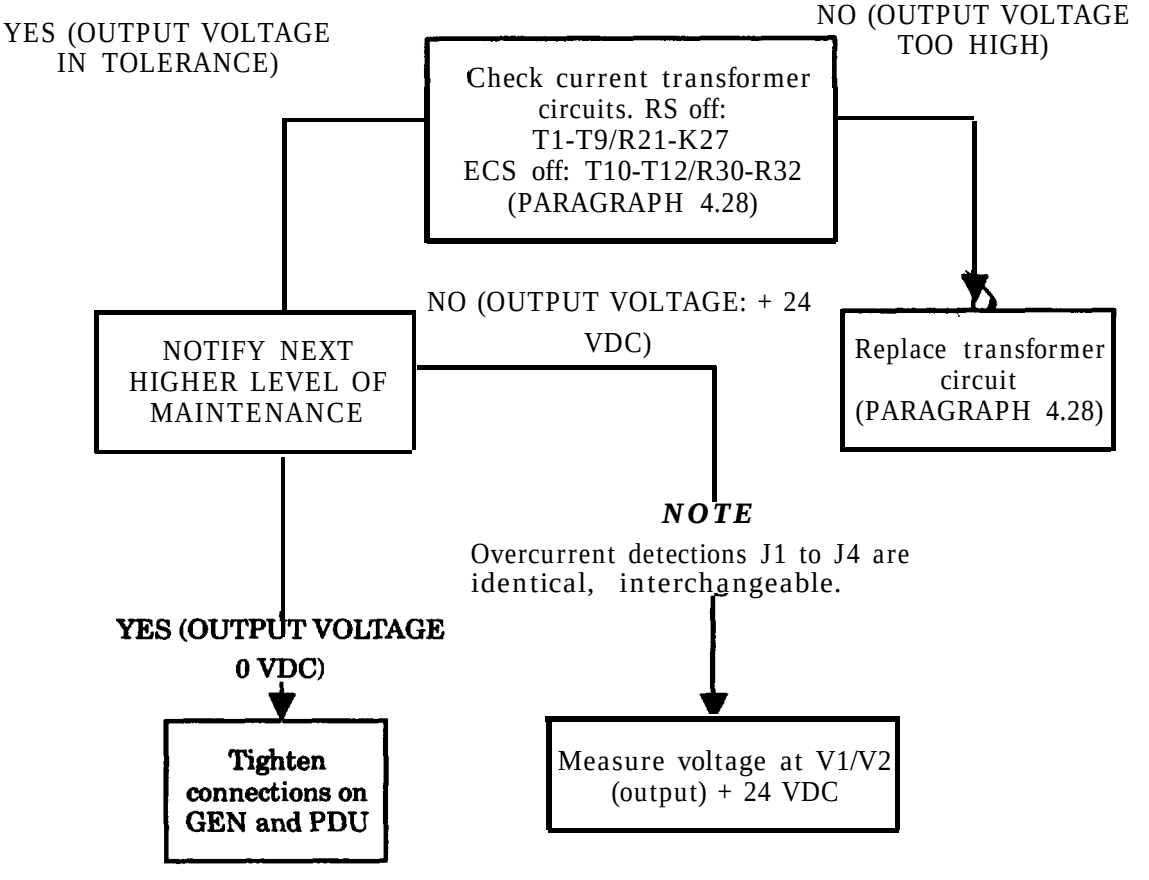


Figure 4-6 Overload Shutdown of ECS or RS Load although Generator is Operating Normally.

WARNING
DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

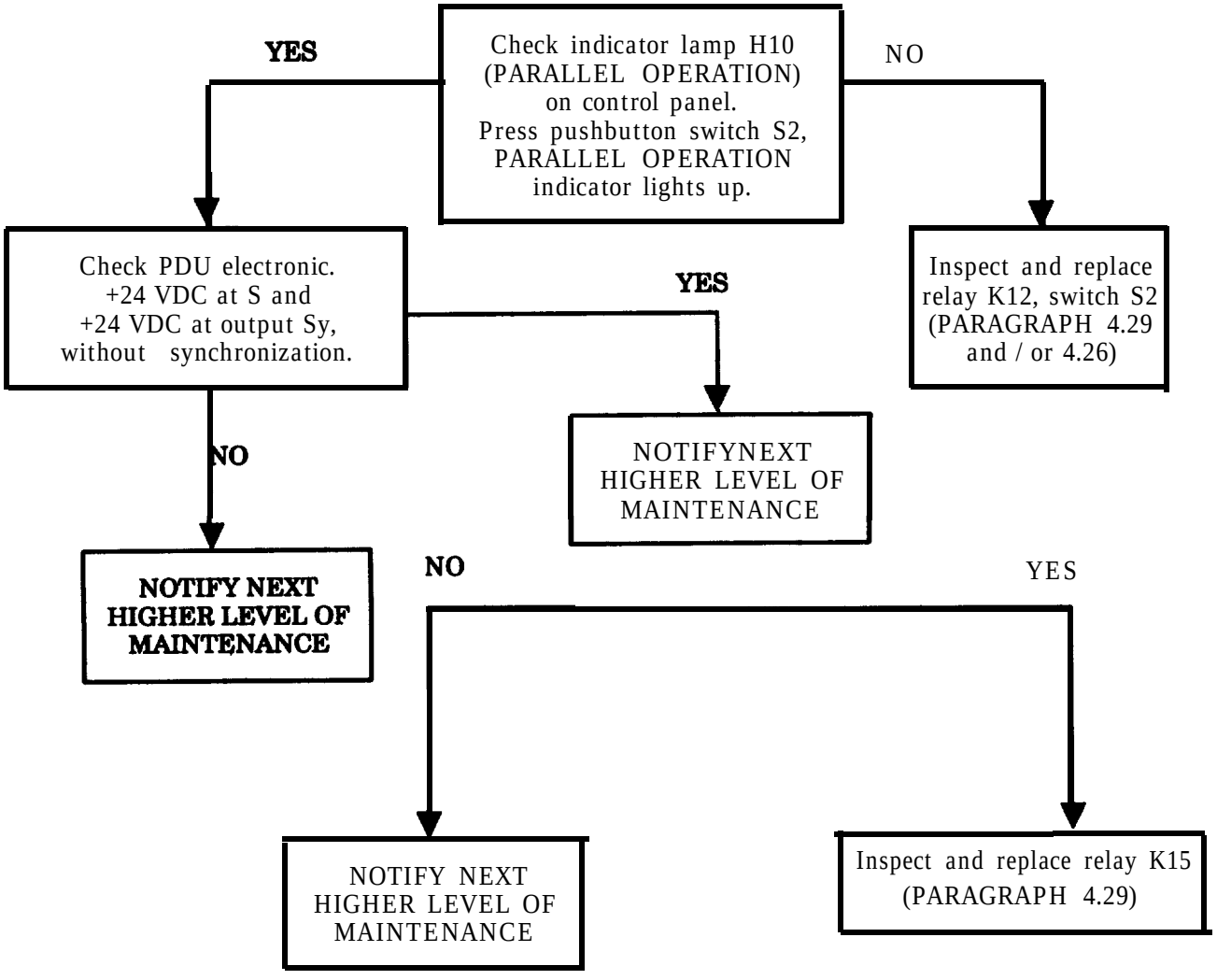


Figure 4-7 Cannot Switch Over Fan, Generator 1 or 2 to Commercial Power Converter.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS-AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULDRESULT IN SEVERE PERSONAL INJURY OR DEATH.

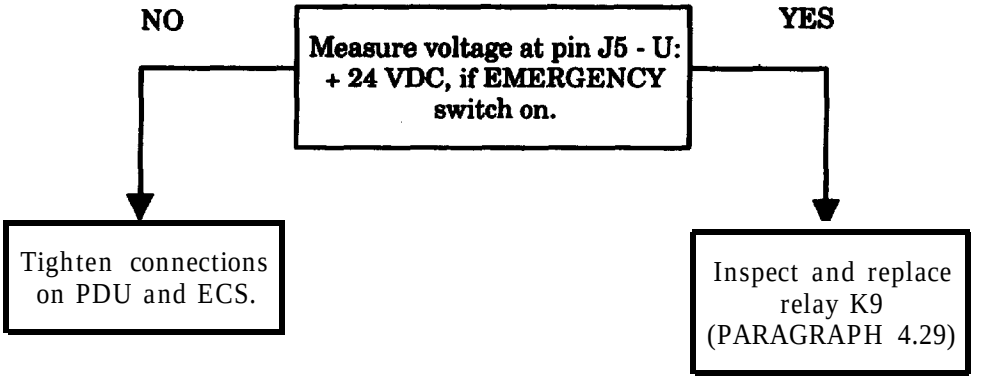


Figure 4-8 Emergency Shutdown Inoperative.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

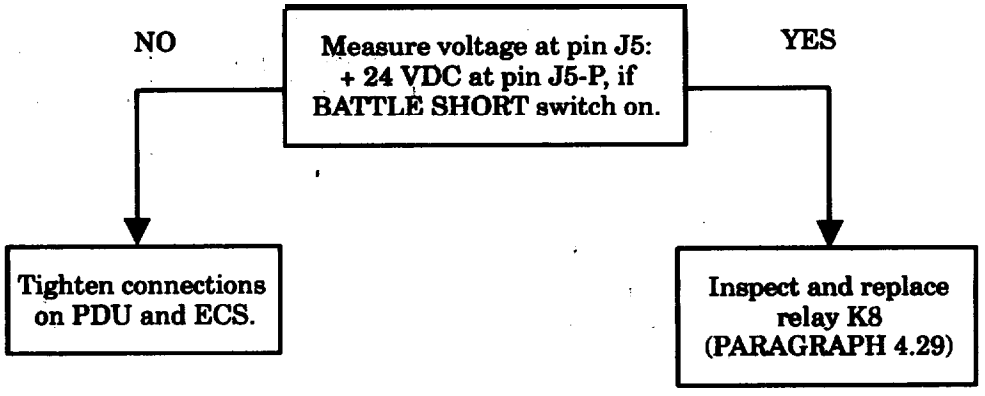


Figure 4-9 Battle Short Inoperative.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

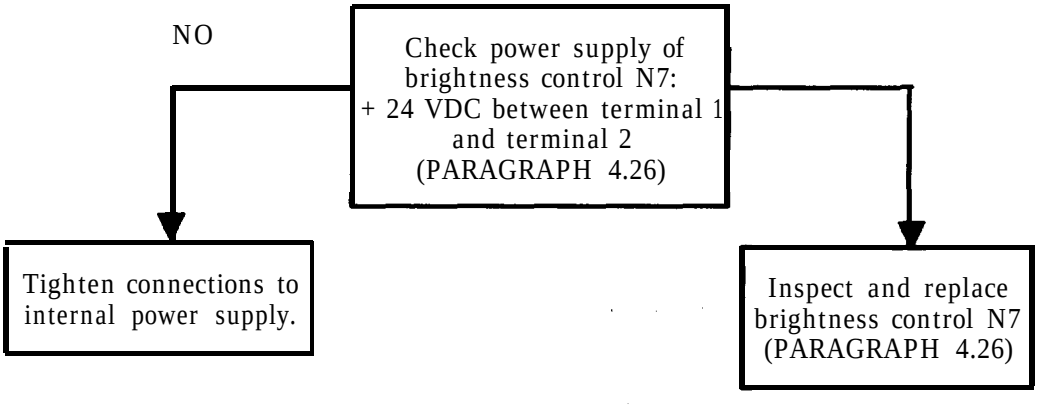


Figure 4-10 Brightness Control on Control Panel Inoperative.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORE ALONE. FAILURE TO OBSERVE THIS W-G COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

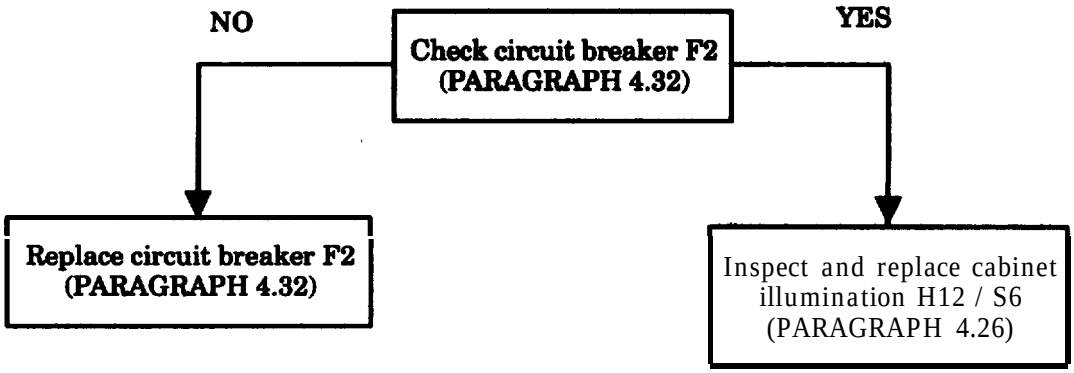


Figure 4-11 PDU Internal Illumination Inoperative.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORE ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

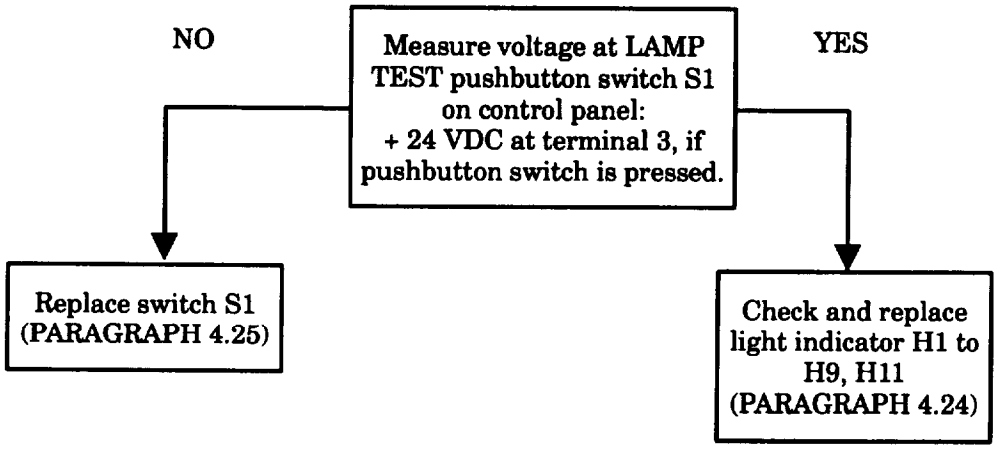


Figure 4-12 Lamp Test on Control Panel Inoperative.

Section VI. MAINTENANCE PROCEDURES

4.9 GENERAL.

This section will provide authorized unit level maintenance instructions for the EPP III, Each major component of the EPP III will be covered under its own paragraph heading. Each paragraph will be further divided into specific maintenance tasks, as directed by the Maintenance Allocation Chart (MAC). These tasks will include inspection on LRU level, repair, and installation, as applicable. Step by step instructions and spot illustrations will guide personnel through each maintenance task.

WARNING

- **The Generator Sets 150 kW produce potentially fatal voltages.**
- **Switch off the Generator Sets 150 kW before any removal, installation, disassembly, and/or assembly operations.**
- **Make sure that personnel can communicate among themselves, in particular with the crane operator, while performing any maintenance operation.**
- **Wear protective gloves whenever working on main assemblies of the EPP III.**

WARNING

- **Potential 150kw/208 VAC kw shock hazard with failure to adhere to this warning. Contact with this high power could result in death or severe injury. If the removal of one generator from the EPP III is required, replace it with an extra generator if available. If the EPP III must be operated with only one generator installed, insure that all cables for the removed generator have the protective caps properly installed prior to starting the remaining generator set.**
- **Prior to energizing the equipment the operator must check for exposed electrical terminals.**
- **Always install protective covers on control and power cables when cables are not connected.**
- **Be sure to observe all Warning labels on equipment.**
- **Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.**

NOTE

- Before removing any electrical or electronic assemblies or components, check that cables are labeled and label if necessary.
- Use Loctite 243 to secure all screws and nuts (except those on electrical connections).
- Use a torque wrench to tighten screws and nuts on the EPP III.
- Apply terminal grease to all ground connections.
- Lubricate screw and plug connections with copper paste.

4.10 POWER CABLE DRUM LOCKING DEVICE MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair c. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Materials/Parts

Lubricating grease (item 1, appendix E)

Equipment Conditions

Reference
Generator Set 150 kW shut, down, paragraph 2.8.1

Personnel Required

One

REMOVAL

a. Remove two screws (1, figure 4-13) and serrated lock washers (2).
b. Remove plate (3) and bracket (4), spring (5) and pins (7).

INSPECTION

Check if spring (6) is in good condition. There must be no cracks in the spring.

REPAIR

a. Replace a defective spring

(1) Pull out lower pin (7) and remove spring (6). Discard spring (6).

(2) Insert new spring (6) and secure with lower pin (7).

b. Remove defective grease nipple (6) and install new nipple.

NOTE

Before installation of cable drum locking lever apply a thin core of grease to the lower portion of the locking lever.

INSTALLATION

a. Install bracket (4) in plate (3) using screws (1) and serrated lock washers (2). Tighten screws (1).
b. Secure plate (3) with screws (1) and serrated lock washers (2).
c. Lubricate with grease using grease nipple (6).

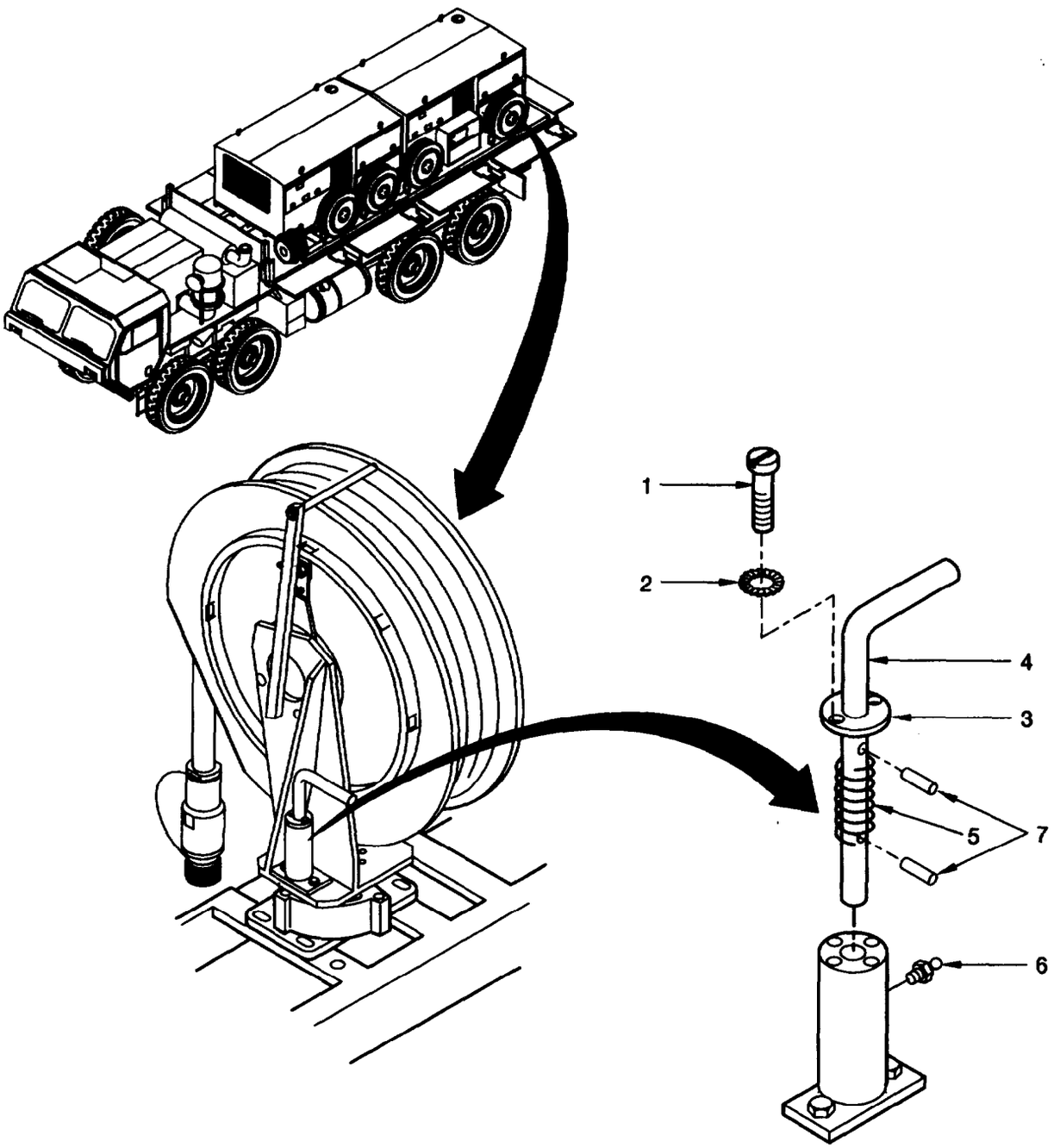


Figure 4-13 Locking Device Assembly.

4.11 POWER CABLE DRUM MOUNT MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Generator Set 150 kW shut down, paragraph 2.8.1.

Materials/Parts

Lubricating grease (item 1, appendix E)

Personnel Required

Two

REMOVAL

WARNING

Never attempt to disconnect power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

NOTE

Before performing the removal operation below, the cable must be completely wound up.

a. Swing cable drum (1, figure 4-14) forward into operating position and lock in place.

CAUTION

Sling must be installed under cable retaining arm (11) to avoid damage to arm while lifting.

b. Position crane centered above cable drum (2) and lay sling (3) around the cable drum, loop through, and suspend from the crane.

NOTE

The screws (4) cannot be removed, because the cable is wound up.

c. Loosen four screws (4) from plate (6).
d. Remove cable drum (2) by lifting with a crane.
e. Remove four screws (7), serrated lock washers (8), and washers (9), and remove mount (6) off pallet frame (10).

INSTALLATION

a. Install mount (6), using screws (7), serrated lock washers (8), and washers (9), to pallet frame (10). Tighten screws (7).
b. Coat contact surface between mount (6) and cable drum (2) with lubricating grease.
c. Lower cable drum (2) with crane so the four screws (4) align with the holes in mount (6).
d. Tighten screws (4).
e. Remove sling (3) from cable drum (2) and crane.

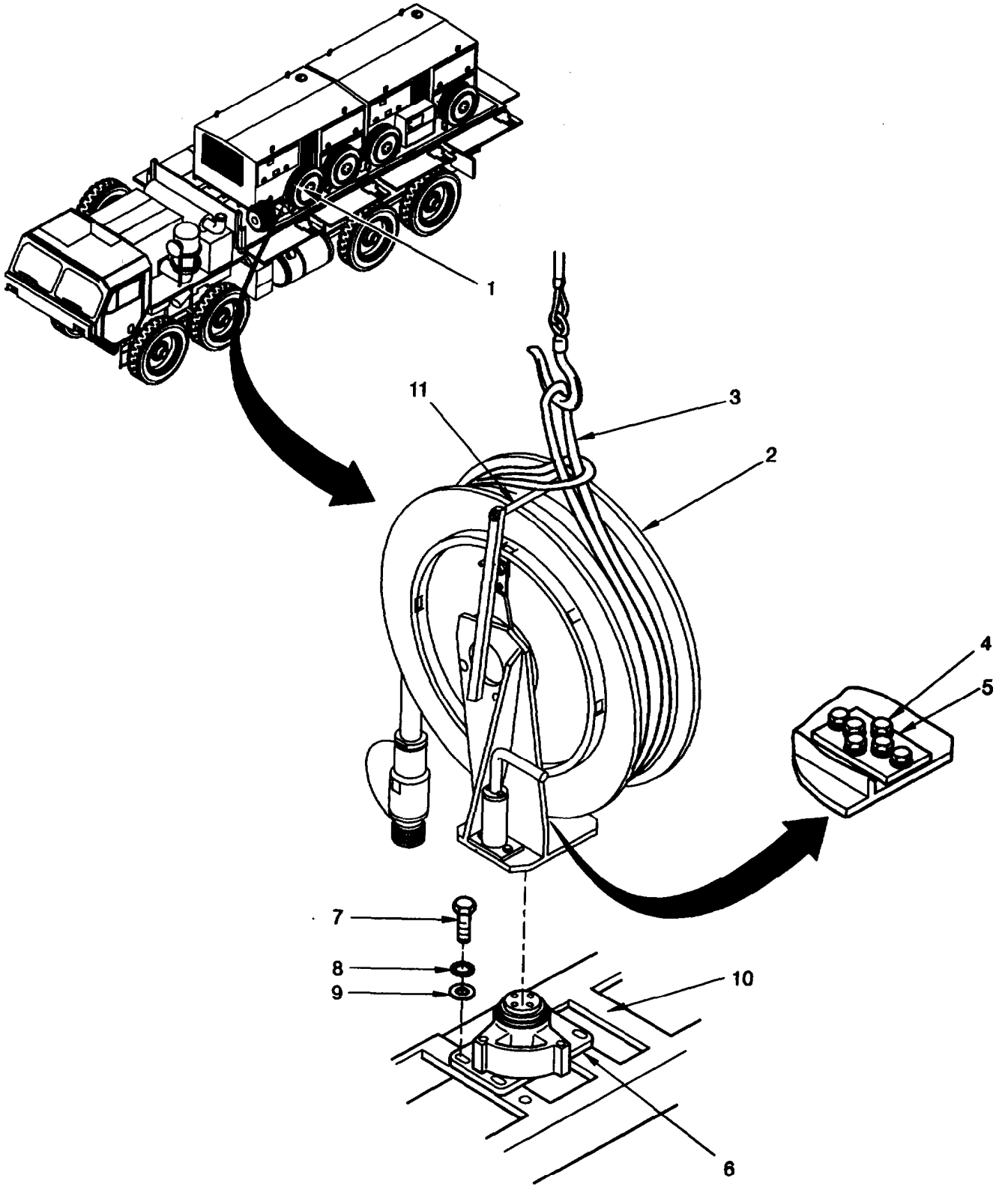


Figure 4-14 Power Cable Drum Mount.

4.12 POWER CABLE DRUM MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Generator Set 150 kW shut down, paragraph 2.8.1.

Materials/Parts

Lubricating grease
(item 1, appendix E)

Personnel Required

Two

REMOVAL

WARNING

Drum spring must be detensioned to avoid personal injury.

NOTE

- The four power cable drums are identical. But drum (1) has a bevel (12).
- Before removing the cable drum, power cable must be removed. See paragraph 4.13.

a. Grasp cable drum (1, figure 4-15), release ratchet, and slowly allow cable drum to run out 15 revolutions until it is completely detensioned.
b. Remove four screws (2), serrated lock washers (3), washer (4), and cable drum (1) from carrier (6).
c. Remove nuts (6), serrated lock washers (7), washers (8, 10), screws (9), and cable drum bracket (11) of cable drum (1).

INSPECTION

Check if cable drum is in good external condition. The cable drum cannot be disassembled.

REPAIR

NOTE

To replace spring (16), removal of cable drum is not required.

a. Turn cable drum (1) into a position, that ratchet cannot snap into a locking position.
b. Using a wooden wedge block cable drum (1).
c. Remove nut (13), and parts (14, 15, 16) from mount.
d. Unhook upper end of spring (16).

e. Remove nut (14) and spring (16) from screw (15).
f. Install a new spring (16) on screw (16) and install nut (14).
g. Install parts (14, 15, 16) on mount and secure with nut (13). Tighten nut (13).
h. Remove wooden wedge and loosen cable drum (1) until ratchet locks in place.

INSTALLATION

a. Install cable drum bracket (11) with screw (9), washer (8, 10), serrated lock washer (7), and nut (6). Tighten nut (6).
b. Place cable drum (1) on carrier (5) so the four holes align and the locking lever is not in contact with the ratchet mechanism on the cable drums.
c. Attach cable drum with four screws (2), serrated lock washers (3) and washers (4).
d. Tension cable drum by rotating it through 15 revolutions, and engage the cable drum locking.
e. Install power cable as instructed in paragraph 4.13.

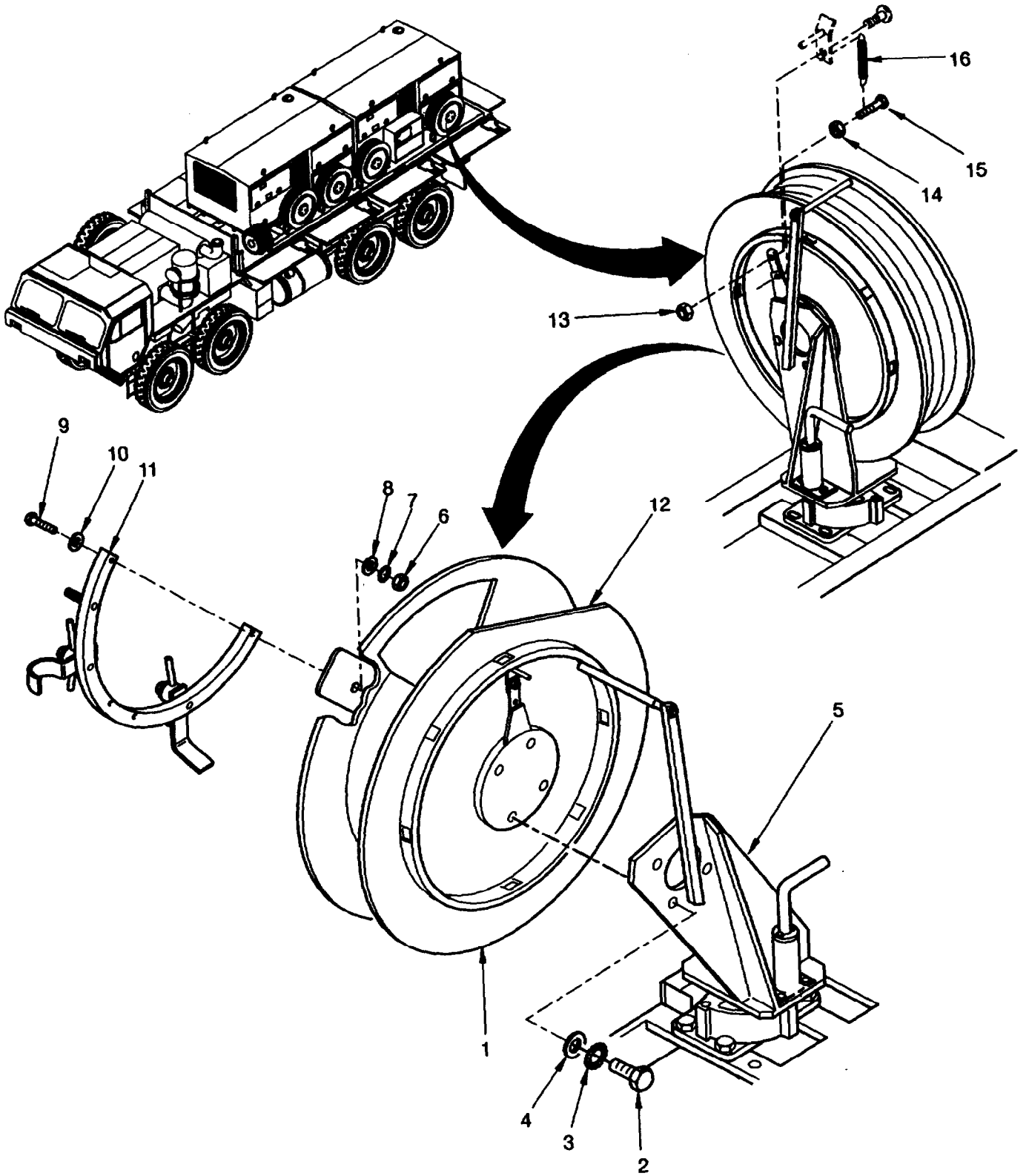


Figure 4-15 Power Cable Drum.

4.13 POWER CABLE MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit(item 3, appendix B)
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.81.

Materials/Parts

None

Personnel Required

Two

REMOVAL

WARNING

- **Never attempt to disconnect power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.**
- **After unwinding the cable drum, make sure the ratchet (3, figure 4-16) is engaged The cable drum spring is fully tensioned after 15 revolutions.**

a. Swing cable drum (1, figure 4-16) forward into operation position and lock in place.
b. Unwind cable section with plug (2) completely off the cable drum.
c. Unwind cable section with plug (4):

(1) Loosen both mounts (5), swing inward, and tighten so that cable is exposed.
(2) Unwind cable by hand.

d. Remove two nuts (6, 7) with clamp (8). Pull the cable completely out of the cable drum through slot (9).

INSPECTION

a. Ensure the plug is not broken and the cable surface has no external damage over its entire length of approximately 95 feet (29 meters).
b. Ensure plug pins and sockets are unbroken, and exhibit no charring.
c. Ensure plug housing threads are in good condition.

REPAIR

To repair power cable refer to paragraph 5.8.

INSTALLATION

NOTE

The EPP III plug end can be identified by a piece of heatshrink tubing 18.04 ft. (5500 mm) before the plug. The plug also has pins (male).

a. Grasp cable at EPP III plug end (4), and insert into the cable drum through slot (9).
b. Position the cable at the point with the piece of heatshrink tubing above the clamp (8). Secure cable with clamp (8) and two nuts (6, 7), tighten the first nut (7) and lock with the second nut (6).
c. Connect load bank to generator set and perform procedures in paragraph 4.34.

NOTE

When stowing the cable, cover the plugs with their protective green "socks" and secure them with the strap.

d. Wind cable on by hand and secure with mounts (5).
e. Proceeding slowly, wind cable completely on at RS/ECS end (2) by hand.

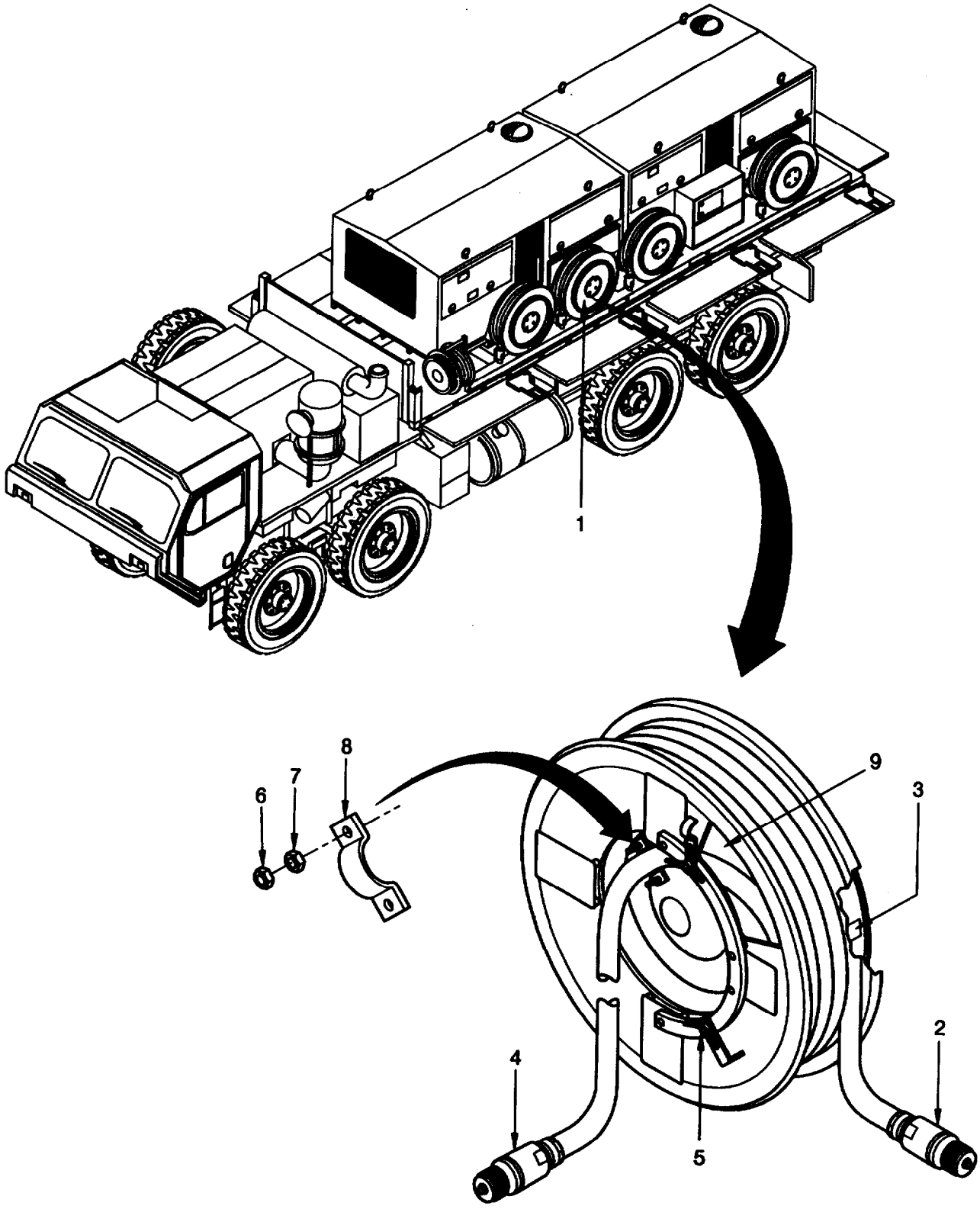


Figure 4-16 Power Cable.

4.14 CONTROL CABLE DRUM MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut Down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

REMOVAL

WARNING

Drum spring must be detensioned to avoid personal injury.

NOTE

Before removing the drum, remove the control cable. See paragraph 4.15.

a. Grasp cable drum (1, figure 4-17), release ratchet, and allow cable drum to run out slowly (27 revolutions) until it is completely detensioned.
b. Remove four screws (2), serrated lock washers (31, washers (41, and remove cable drum (11 off bracket (6).

INSPECTION

Check that cable drum is in good external condition. The cable drum cannot be disassembled.

REPAIR

NOTE

To replace spring (9) removal of cable drum (1) is not required.

a. Turn cable drum (1) into a position, that ratchet cannot snap into a locking position.
b. Using a wooden wedge block cable drum (1).
c. Remove nut (6) and parts (7, 8, 9) from mount.
d. Unhook upper end of spring (9).
e. Remove nut (7) and remove spring (9) from screw (11).
f. Install a new spring (9) on screw (11) and install nut (10).
g. Install parts (7, 8, 9) on mount and secure with nut (6). Tighten nut (6).
h. Remove wooden wedge and loosen cable drum (1) until ratchet locks in place.

INSTALLATION

a. Place cable drum (1) on bracket (5) so the four holes are aligned.
b. Secure cable drum using four screws (2), serrated lock washers (3), and washers (4). Tighten screws (2).
c. Place cable drum (1) under tension by rotating it (27 revolutions), and engage cable drum locking device.
d. Install control cable as instructed in paragraph 4.15.

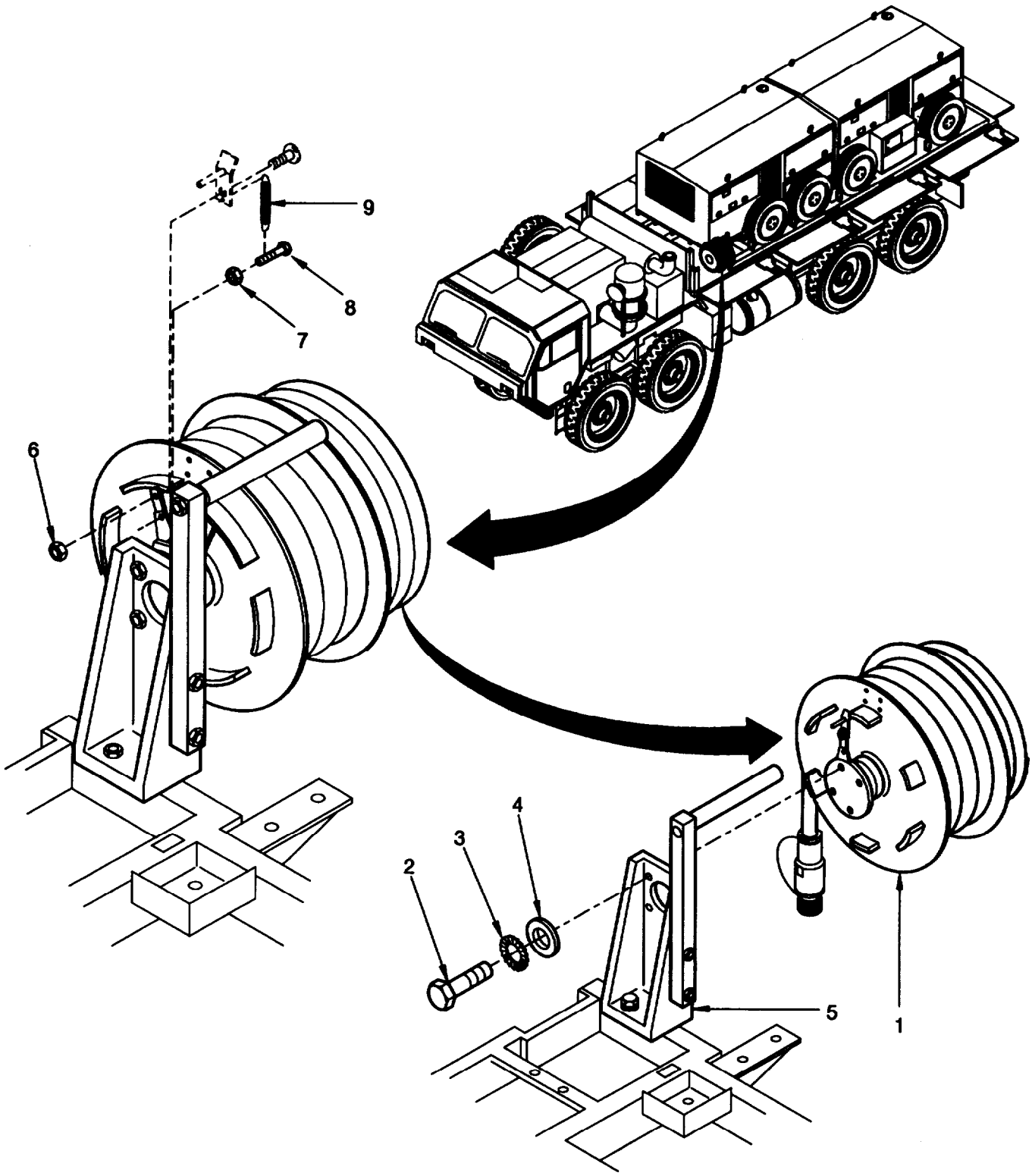


Figure 4-17 Control Cable Drum.

4.15 CONTROL CABLE MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic' s Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

REMOVAL

WARNING

- **Never attempt to disconnect the control cable while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.**
- **After unwinding the cable drum, make sure the ratchet (2, figure 4-18) stays latched. The spring on the unwound cable drum is fully tensioned after 27 revolutions. Failure to observe this warning could result in severe personal injury or death.**

a. Completely unwind cable section with plug (1, figure 4-18) from cable drum.
b. Unwind cable section with plug (3):
   (1) Undo strap clip (4).
   (2) Unwind cable manually.
c. Remove two nuts (5, 6) and clamp (7), and pull cable completely out of the cable drum through slot (8).

INSPECTION

a. Ensure the plugs are not broken, and the cable surface has no external damage over its entire length of approximately 104 feet (32 meters).
b. Ensure plug pins and sockets are unbroken, and exhibit no charring.
c. Ensure the plug housing threads are in good condition.

REPAIR

To repair control cable refer to appendix G.

INSTALLATION

NOTE

The EPP III plug end (with pins) is identified by a piece of heatshrink tubing located 220.8 inches (5600 mm) before the plug.

a. Grasp cable at the EPP III plug end (3) and pass it through slot (8) into the cable drum.
b. Position the cable at the point with the piece of heatshrink tubing above clamp (7). Secure cable with clamp (7) using two nuts (5, 6), tighten the first nut (6) and lock it with the second nut (5).
c. Connect load bank to generator set and perform procedures in paragraph 4.34.

NOTE

When stowing the cable, cover the plugs with their appropriate protective green “socks” and secure them with the strap.

d. Wind the cable on by hand and secure with the strap clip (4).
e. At the RS/ECS plug end (1), slowly wind cable completely on by hand.

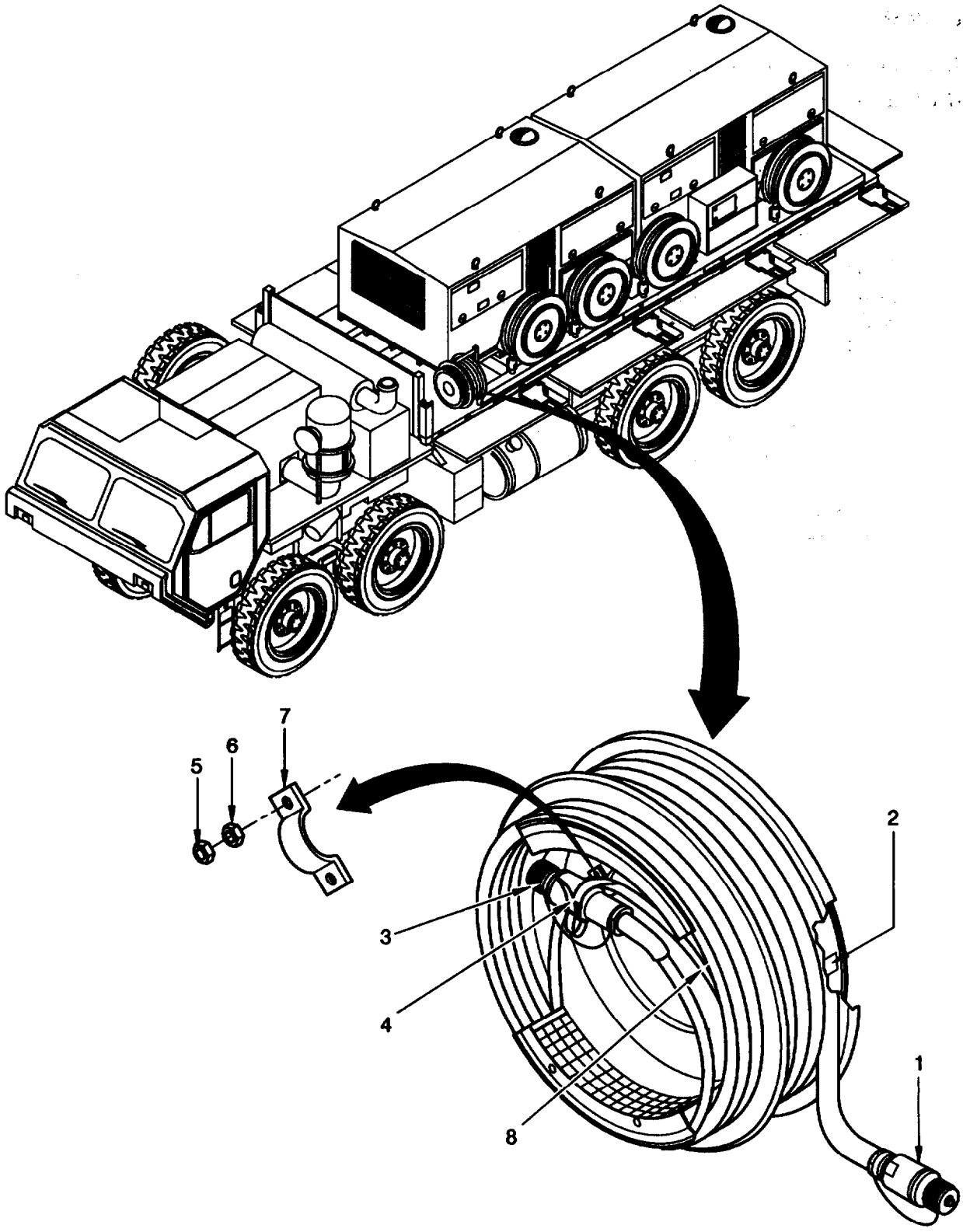


Figure 4-18 Control Cable.

4.16 POWER DISTRIBUTION UNIT CONNECTION PANEL MAINTENANCE.

This task covers: a. Removal b. Inspection c. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

One

REMOVAL

WARNING

Never attempt to disconnect control or power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by eletrocution.

a Disconnect control cable:

(1) Unscrew protective cap (4, Figure 4-19) for plug and protective cap (3) for socket from each other.
(2) Pull plug of control cable (1) out of socket (2).
(3) Screw protective cap (4) onto plug of control cable (1).
(4) Screw protective cap (3) onto socket (2).

b. Disconnect power cables (5,6,7,8) using the same procedure as for the control cable.

NOTE

- If U. S. Standard Grounding Assembly is used for grounding, disconnect grounding cable (27) from grounding connector (26).
- If grounding cables are attached on grounding bar (25) do steps c. through e.

c. Remove nut (10), serratad lock washer (11), washer (12) and grounding cable (13) from grounding stud (14). Put washer (12) and serrated lock washer (11) back on, and screw nut (10) on temporariIy.

d. Remove nut (15), serrated lock washer (16), washer (17) and grounding cable (18) from grounding stud (19). Put washer (17) and serrated lock washer (16) back on, and screw nut (15) on temporarily.

e. Remove nut (20), serrated lock washer (21), washer (22) and grounding cable (23) from grounding stud (24). Put washer (22) and serrated lock washer (21) back on, and screw nut (20) on temporarily.

INSPECTION

a. Ensure whether plugs on plug connection panel (9) fit securely and are not charred.

b. Ensure whether the cover caps are easy to thread onto the plugs.

c. Ensure whether the hinged socket covers close properly.

INSTALLATION

WARNING

Never attempt to connect control or power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

a. Connect control cable:

NOTE

All cable connections must be secure.

(1) Unscrew protective cap (4) from plug of control cable (1).

(2) Unscrew protective cap (3) from socket (2).

(3) Plug control cable (1) into socket (2) and tighten down.

(4) Screw protective caps (3, 4) for socket and plug to one another.

b. Connect power cables (5, 6, 7, 8) using the same procedure as for the control cable.

NOTE

- If U. S. Standard Grounding Assembly is used for grounding, connect grounding cable (27) to grounding connector (26).
- If grounding cables are to attach on grounding bar (26) do steps c. to e.

c. After removing parts (20 to 22) from grounding stud (24), install grounding cable (23), washer (22), serrated lock washer (21), and nut (20). Tighten nut (20).

d. After removing parts (16 to 17) from grounding stud (19), install grounding cable (18), washer (17), serrated lock washer (16) and nut (16). Tighten nut (16).

e. After removing parts (10 to 12) from grounding stud (14), install grounding cable (13), washer (12), serrated lock washer (11) and nut (10). Tighten nut (10).

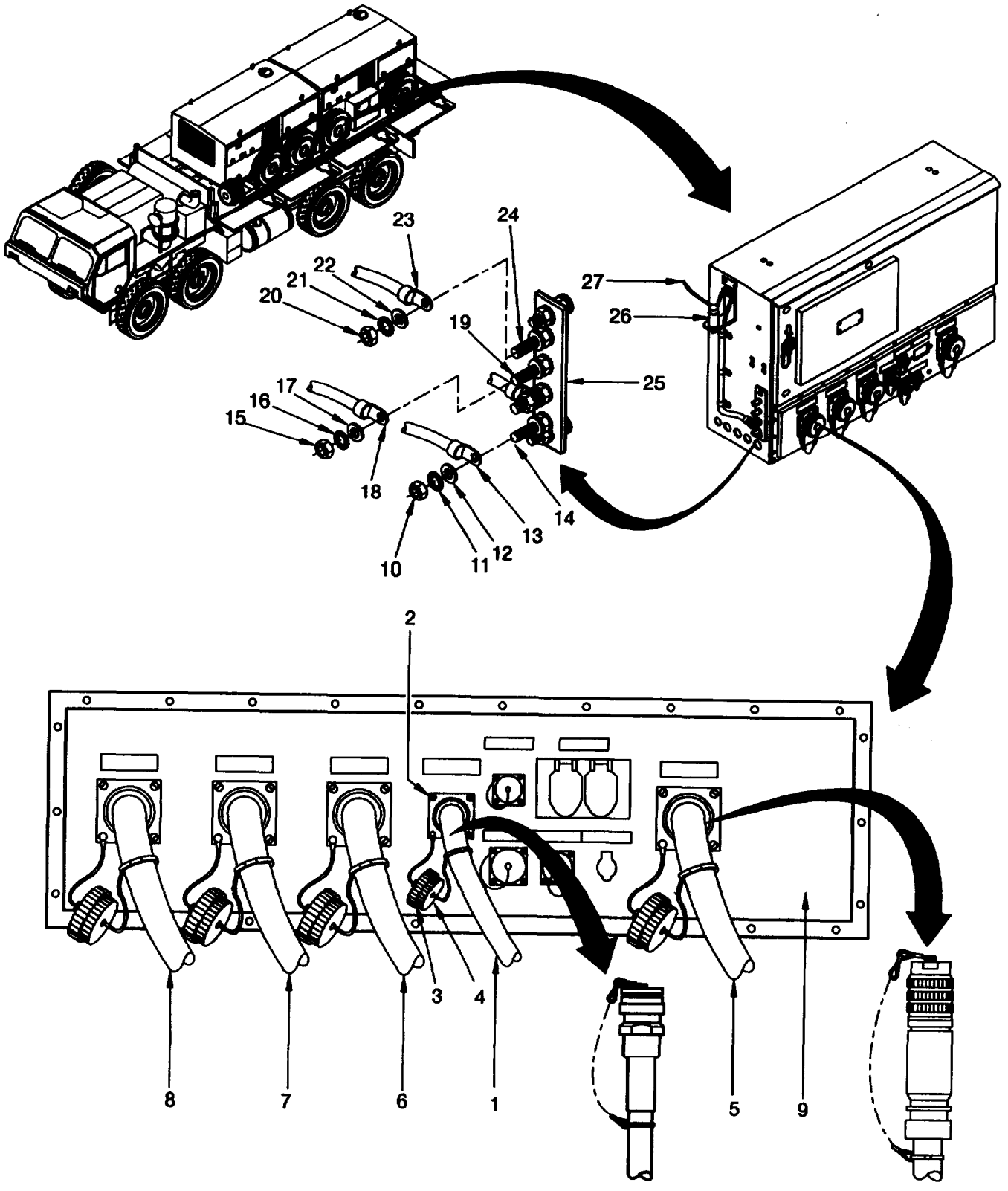


Figure 4-19 Power Distribution Unit Connection Panel and Ground Cable Connections.

4.17 GENERATOR SET 150 KW MAINTENANCE.

This task covers: a. Removal b. Inspection c. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit
(item 3, appendix B)
Torque wrench
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

Terminal grease
(item 4, appendix E)
Copper paste
(item 5, appendix E)

Personnel Required

Two

NOTE

- For removal and installation, proceed according to appropriate paragraphs depending on whether a crane or forklift is available.
- Swing truck side panels (14, figure 4-20) down to horizontal position for access.

REMOVAL USING A CRANE

WARNING

Never attempt to disconnect control or power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

a. Proceeding from left to right in the sequence (1), (2), (3), (4), swing cable drums (1 to 4) forward in operating position and lock in place, so the two Generator Sets 150 kW connection panels (5) are accessible.

NOTE

Power cable drum (4) has one beveled edge. Rotate the cable drum so the beveled edge is at the top; this will allow to open the front panel (13) of the Generator Set 150 kW.

b. Detach all cables from connector panel (5), as follows:

Disconnect control cable as follows:

(1) Unscrew protective caps (7, 8) from one another.

(2) Pull control cable (6) out of J9 PARALLEL OPERATION socket.

(3) Screw protective cap (8) onto plug at end of control cable (6).

(4) Screw protective cap (7) onto J9 PARALLEL OPERATION socket.

Disconnect power cables as follows:

(1) Disconnect plug (12) and pull power cable L1 out of L1 (OA) socket and install protective cover (18) on cable end.

(2) Disconnect plugs (9, 10, 11) and pull out power cables L2 (OB), L3 (OC) and N and install protective covers (15, 16, 17) on cable end.

c. Remove the four Generator Set 150 kW mounts:

(1) Remove nut (1, figure 4-21).

(2) Unscrew nut (2) to end of threads.

(3) Swing plate (4) with bolts (5) in the direction of the arrow.

(4) Screw nut (2) down and screw nut (1) back on temporarily.

d. Detach grounding straps from Generator Set 150 kW

(1) Remove nut (6), serrated lock washer (7), washer (8), and grounding strap (9) from grounding bolt (13), and leave washer (14) on grounding bolt (13).

(2) Put washer (8) and serrated lock washer (7) back on, and screw nut (6) on temporarily.

e. Remove exhaust hose (12) and stow.

f. Swing cable drums into stowed position and lock in place.

CAUTION

Use only a crane with a capacity of approximately 12,000 lb. (6 metric tons).

g. Remove sling assembly (2, figure 4-22) from pallet frame (3). Suspend sling assembly on crane, and position crane approximately over the center of the Generator Set 150 kW (1), as shown in figure 4-22.

WARNING

- **Ensure lifting rings (10, figure 4-21) are properly installed and are in the proper position (up) for lifting.**
- **Do not stand in the operating area of the crane. Do not walk under thesuspended load.**
- **The lifting height of the crane must be sufficient to lift the Generator Set 150 kW easily off the truck bed**
- **When moving the Generator Set 150 kW with the crane, proceed slowly so the Generator Set 150 kW remains horizontal.**

CAUTION

Do not damage PDU cable (10, figure 4-22) during lifting of the Generator Set 150 kW.

h. Thread lifting rings (10, figure 4-21) all the way into the sling points, engage the four cable hooks of the sling assembly (2, figure 4-22) in the lifting rings. Lift the Generator Set 150 kW with the crane, and lower it onto a solid surface.

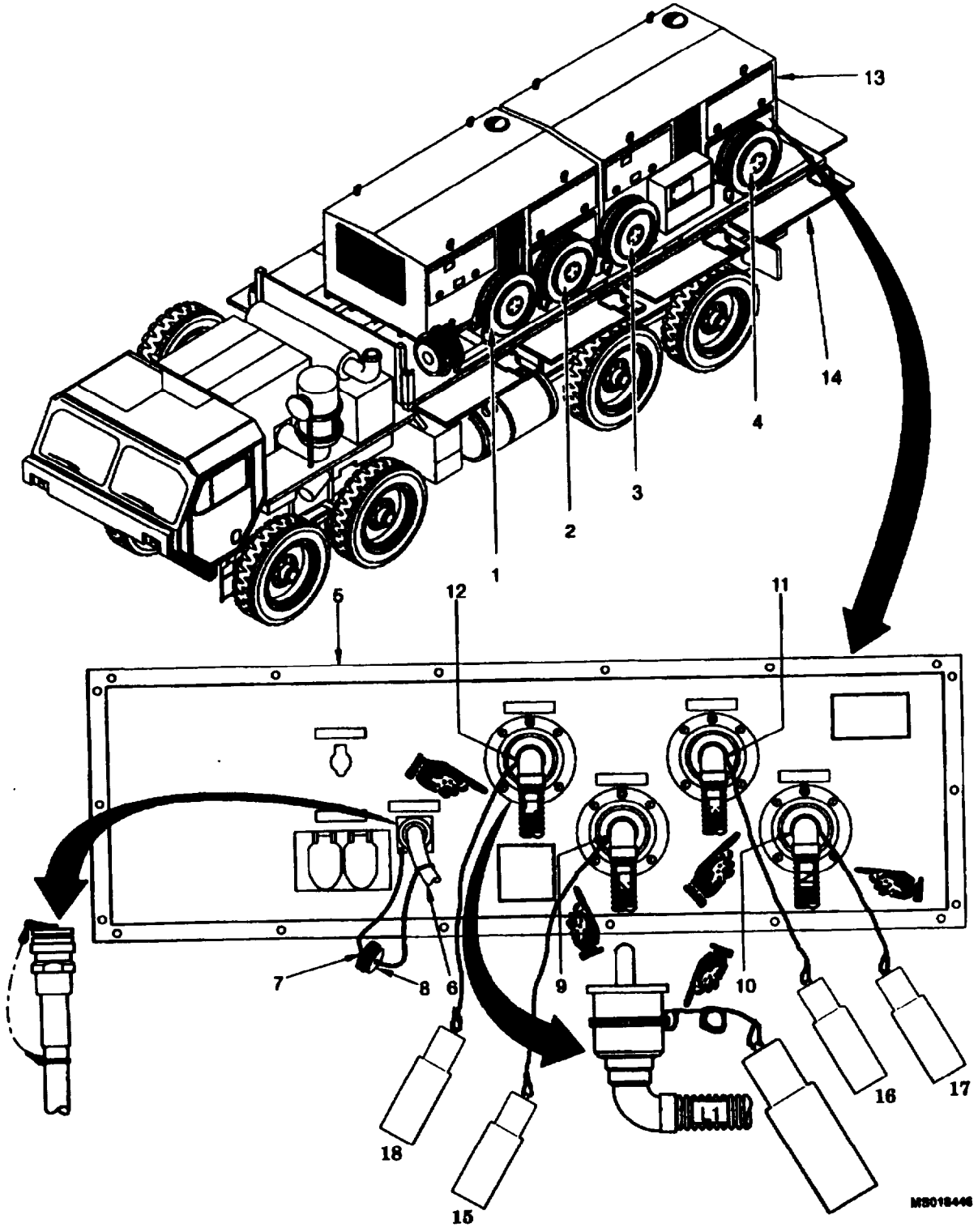


Figure 4-20 ***Generator Set 150*** **kW,** ***Connection Panel.***

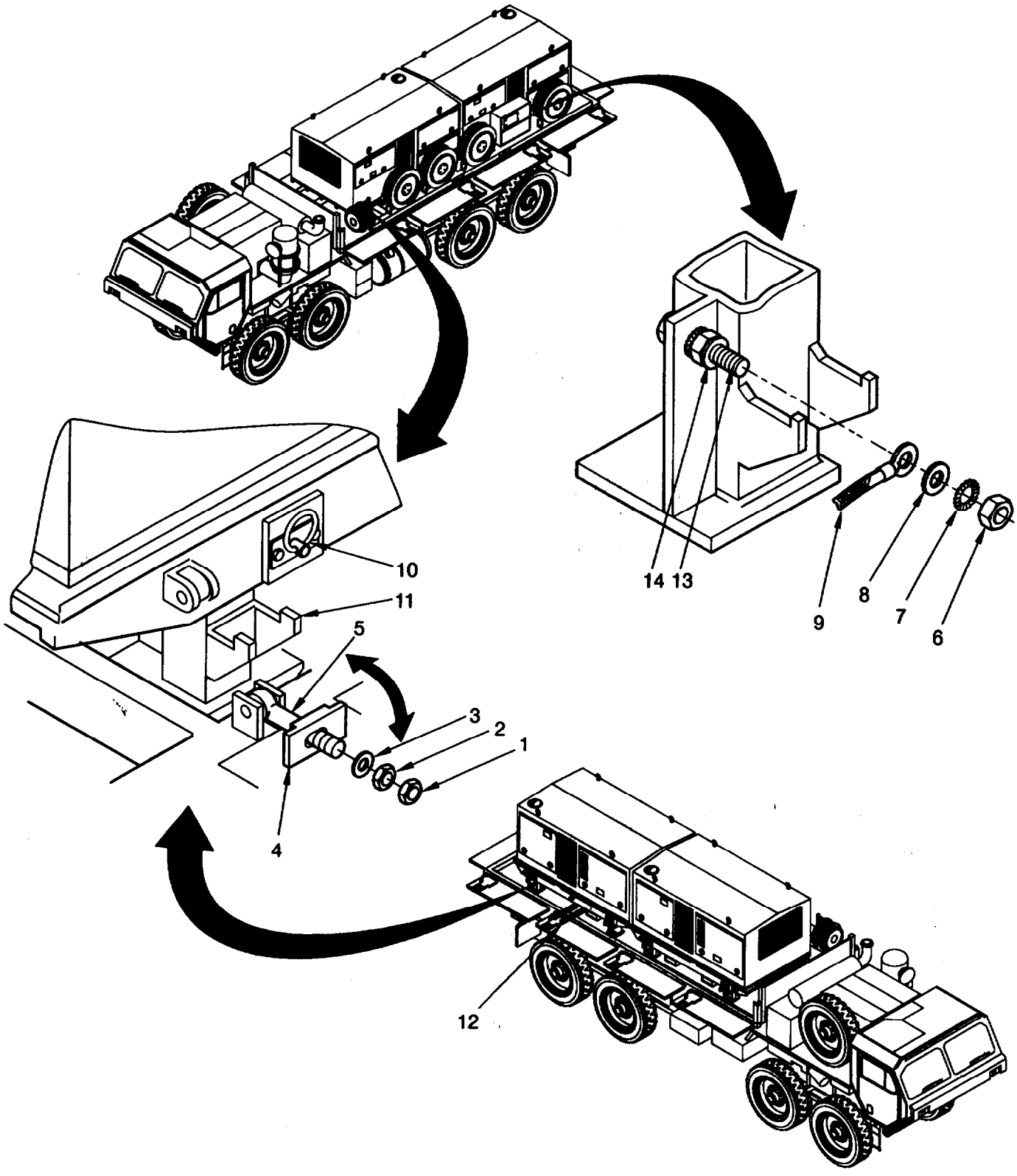


Figure 4-21 Attachments Between Generator Set 150 kW and Pallet Frame.

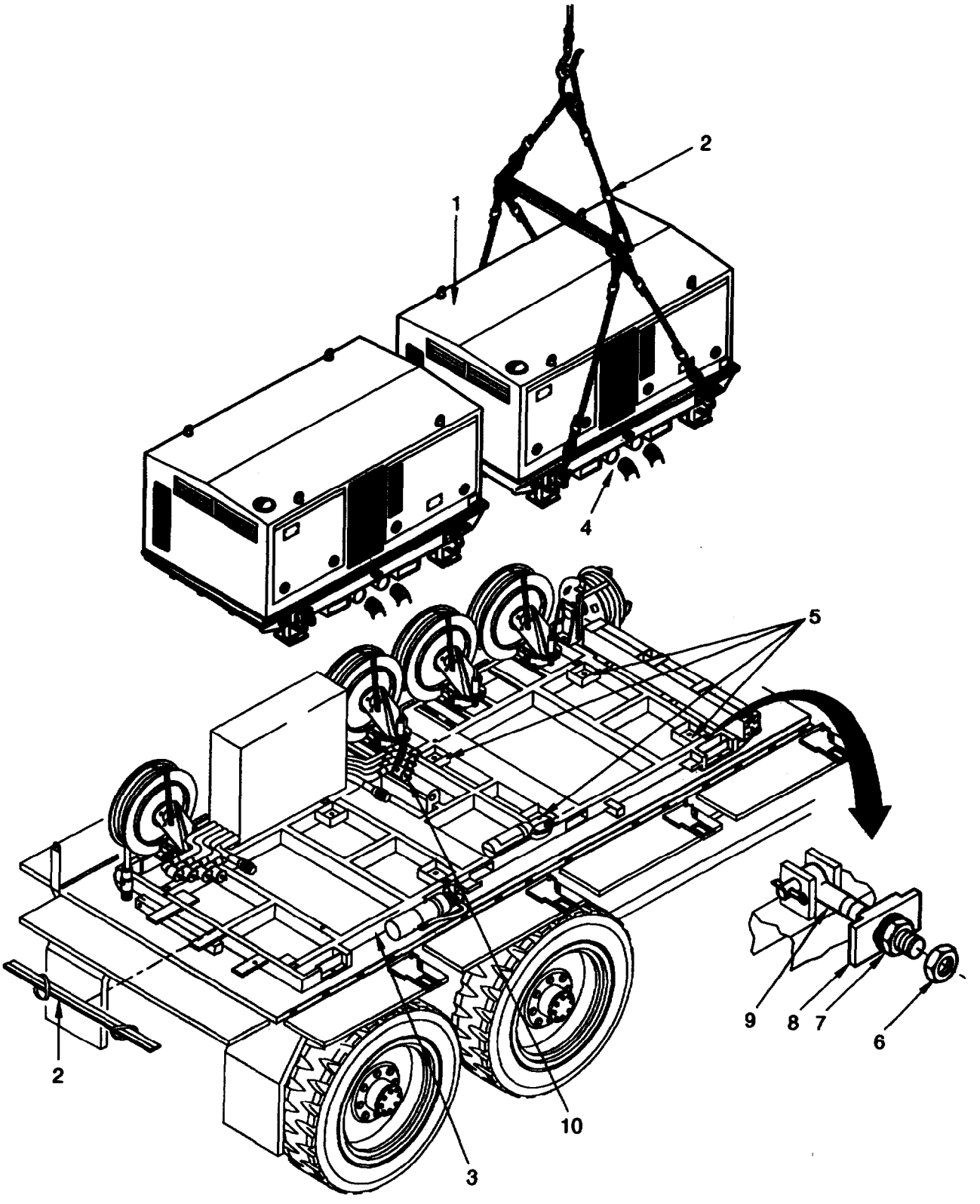


Figure 4-22 Removing a Generator Set 150 kW from Pallet Frame using a Crane.

REMOVAL USING A FORKLIFT

a Perform steps a. through f. as described in “Removal Using a Crane”.

WARNING

For safety reasons (load imbalance) always we the forklift on the side of the pallet frame where the cable drums are located

CAUTION

Use only forklifts with a fork length of at least 80 inches (2000 mm) and a capacity of approximately 12,000 lb. (6 metric tons). Place a mark at 20 inches (5000 mm) as shown in figure 4-24.

b. Fold down side panels (2, figure 4-23).

WARNING

Use the forklift only on the side of the Generator Set 150 kW as shown in figure 4-24.

c. Position the forklift in front of the Generator Set 150 kW and insert the forks into the forklift sockets (1, figure 4-23) as far as possible. The remaining fork length visible will then be approximately 20 inches (500 mm).

CAUTION

Do not damage PDU cable (10, figure 422) during lifting of the Generator Set 150 kW.

d. Lift the Generator Set 150 kW and place it on a solid surface.

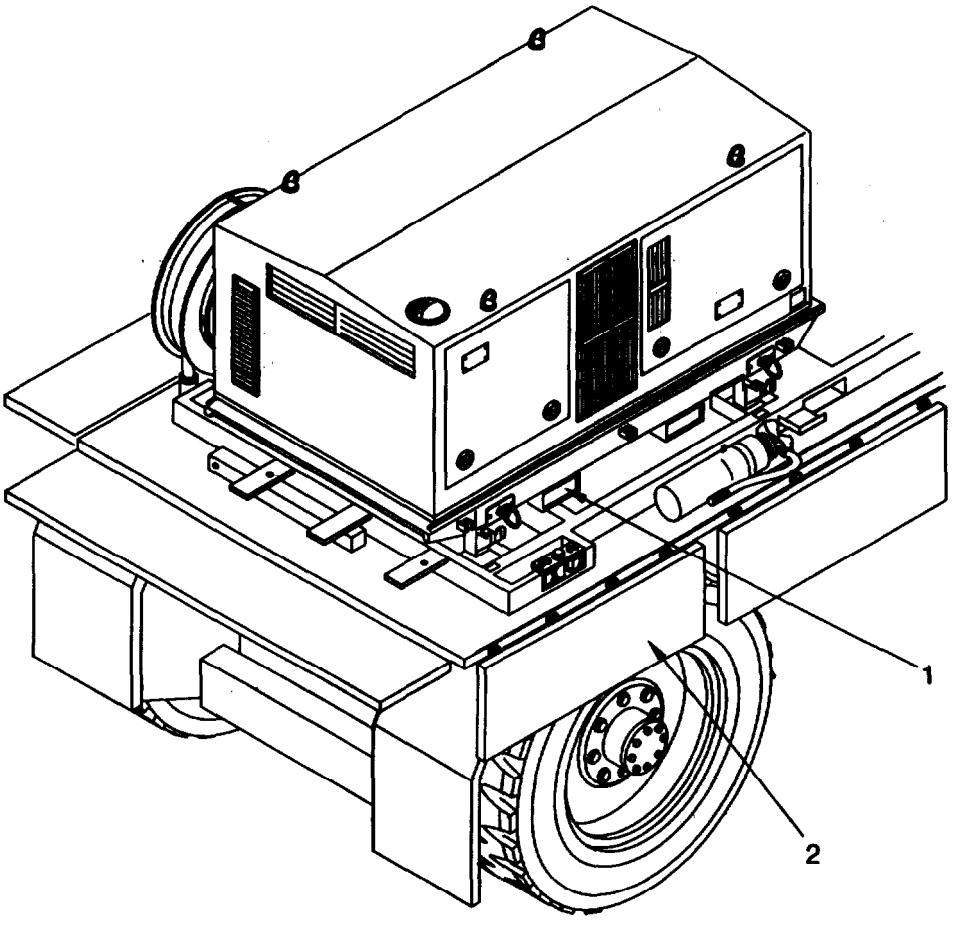


Figure 4-23 Removing a Generator Set 150 kW from Pallet Frame using a Forklift.

INSPECTION

Inspect the Generator Set 150 kW as instructed in TM 9-6115-666-13.

INSTALLATION USING A CRANE

CAUTION

Do not damage PDU cables (10, figure 4-22) during set down of the Generator Sets 150 kW.

a Arrange PDU cable (10) so it will not be damaged when the Generator Set 150 kW is set down.

b. Make sure cable drums are in stowed position.

c. Remove sling assembly (2) from pallet frame (3). Suspend sling assembly from crane, and position crane approximately over the center of the Generator Set 150 kW as shown in figure 4-22.

WARNING

- **Ensure lifting rings (10, figure 4-21) are properly installed and are in the proper position (up) for lifting.**
- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the Generator Set 150 kW easily off the truck bed.**
- **When moving the Generator Set 150 kW with the crane, proceed slowly so the Generator Set 150 kW remains horizontal.**

d. Thread lifting rings (10) all the way into the sling points, engage the four cable hooks of the sling assembly (2, figure 4-22) in the lifting rings. Lift the Generator Set 150 kW with the crane, and position it above the pallet frame so the Generator Set 150 kW is centered over recesses (5).

CAUTION

Before lowering Check the alignment of the Generator Set 150 kW. The openings of the exhaust pipes (4) must be visible and not on the same side as the cable drums.

e. Lower the Generator Set 150 kW into the recesses (5) in the pallet frame.

f. Swing the cable drum into the operating position and lock in place.

g. Attach the four mounts to the Generator Set 150 kW:
   (1) Remove nut (6).
   (2) Unscrew nut (7) to end of threads.
   (3) Coat threads of bolt (9) with copper paste.
   (4) Swing plate (8) with bolt (9) so the bolt rests in fork (11, figure 4-21).
   (5) Tighten nut (7, figure 4-22) to a torque value of 88.42 ft-lb (120 Nm).
   (6) Tighten nut (6) to a torque value of 132.66 ft-lb (180 Nm).

h. Attach grounding cable:
   (1) Place grounding cable (9, figure 4-21), washer (8) and serrated washer (7), onto grounding bolt (13).
   (2) Tighten nut (6) to a torque value of 18.42 R-lb (26 Nm).
   (3) Apply terminal grease to threaded connection.

i. Remove sling assembly (2, Figure 4-22), and attach to pallet frame.

WARNING

Never attempt to connect control or power cables while the Generator Set 150 kW is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

j. Connect all cables to Generator Set 150 kW:

Connect control cable:

(1) Remove protective cap (8, Figure 4-20) from plug at end of control cable (6).

(2) Remove protective cap (7) from J9 PARALLEL OPERATION socket.

(3) Coat threads of control cable plug (6) and socket J9 with copper paste.

(4) Insert plug of control cable (6) into J9 PARALLEL OPERATION socket, and tighten down.

(5) Screw protective caps (7) and (8) together.

NOTE

The interlock switch (interlock loop) of sockets L1 (OA), L2 (OB), L3 (OC), and N will not close until the cable plugs are correctly tightened down.

Connect power cables as follows:

(1) Remove protective covers (15, 16, 17 and 18) from end of cables L1, L2, L3, and N.

(2) Coat threads of plug from power cable L1 (12) and socket L1 (OA) with copper paste.

(3) Insert plug of power cable L1 into socket L1 (OA), and tighten down.

(4) Insert plugs of power cables L2, L3 and N (9, 10, 11) and tighten down.

k. If necessary, swing cable drums (1 to 4) back in the operation position, and lock in place.

l. If necessary, attach exhaust hoses (4, figure 4-22).

m. Connect load bank to generator set and perform procedures in paragraph 4.34.

INSTALLATION USING A FORKLIFT

CAUTION

- Use the forklift only on the side of the Generator Set 150 kW shown in figure 4-23. This requires folding down side panels (2).
- Use only forklifts with a fork length of at least 80 inches (2000 mm) and a capacity of approximately 12,000 lb. (6 metric tons). Place a mark at 20 inches (600 mm) as shown in figure 4-24.
- Do not damage RDU cable (3, figure 4-22) during set down of the Generator Set 150 kW.

a. Arrange PDU cable (3) so it will not be damaged when the Generator Set 150 kW is set down.

b. Make sure cable drums are in stowed position.

c. Position forklift in front of the Generator Set 150 kW and insert forks into forklift sockets (1, figure 4-24) until 20 inches (500 mm) length of fork is still visible. This distance is necessary in order to place the Generator Set 150 kW on the truck.

d. Lift the Generator Set 150 kW and position it above the pallet frame so it is centered over the four recesses (5, figure 422). Lower the generator set 150 kW into recesses (5).

e. Perform steps f. through h. and j. through m. in “Installation Using a Crane”.

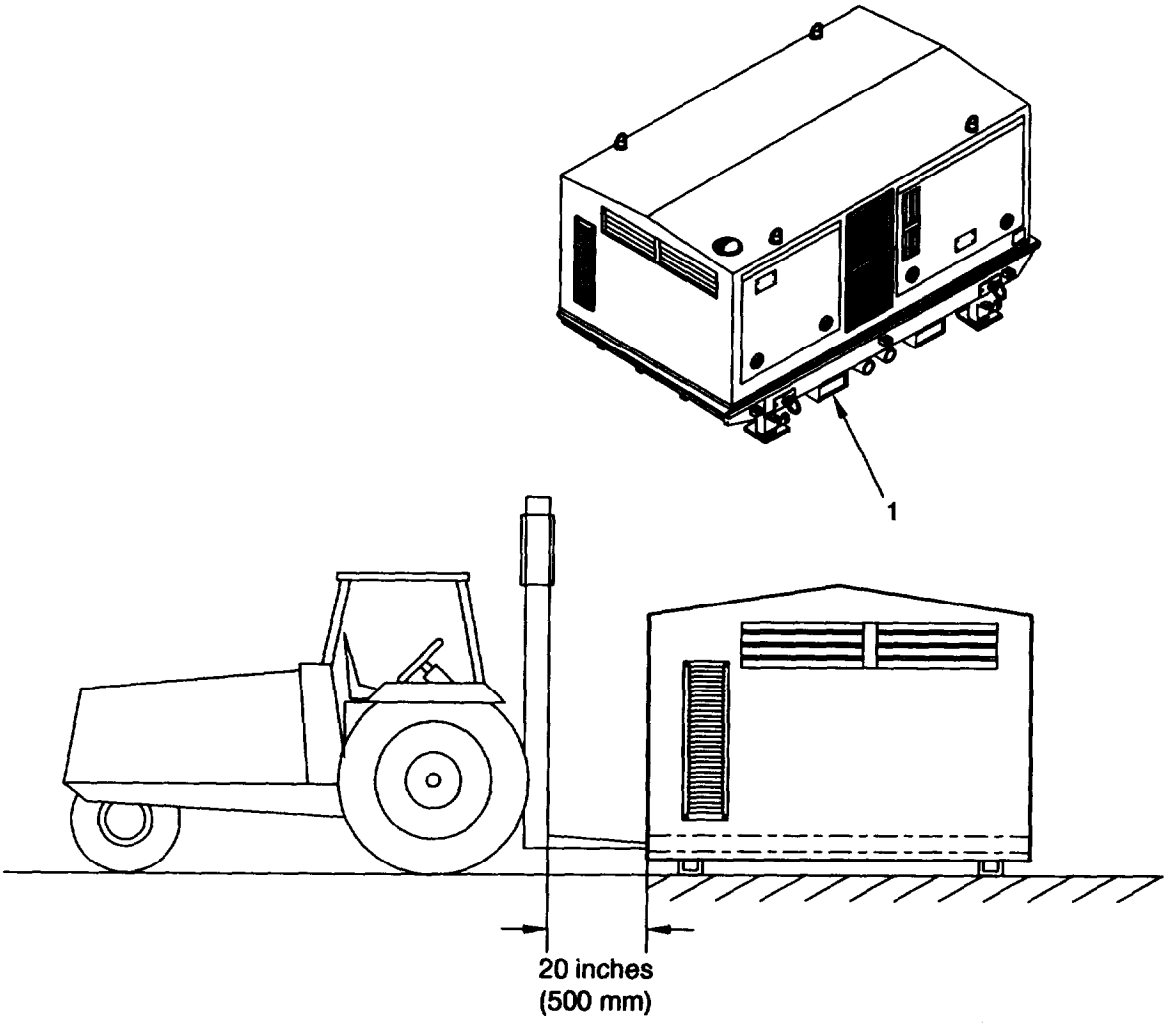


Figure 4-24 Inserting Forks into the Forklift Sockets of Generator Set 150 kW.

4.18 PALLET FRAME MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
Torque wrench
Guide mandrels, 2

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

Terminal grease (item 4, appendix E)

Personnel Required

Two

WARNING

For safety reasons, both Generator Sets 150 kW must be removed as instructed in paragraph 4.17 before the pallet frame is dismantled.

NOTE

- For removal and installation, proceed according to appropriate paragraphs depending on whether a crane or forklift is available.
- The fire extinguishers mounted on the frame must be removed before the pallet frame is dismantled.
- Swing truck side panels down to horizontal for access.

REMOVAL USING A CRANE

a. Remove both Generator Sets 150 kW as instructed in paragraph 4.17. Then pivot cable drums into stowed position and lock in place.
b. Remove nut (2, figure 4-25), serrated lock washer (3), washer (4), and grounding strap (1) from grounding bolt (5) on truck bed. Leaf washer on grounding bolt (5) and temporarily thread parts 2 to 4 on grounding bolt (5).
c. Remove bolt (10), serrated washer (11), and washer (12) from threaded bushing (9).
d. Bull spring pins (6) out of studs (7) at all four corners of the pallet frame.
e. Rotate (unlock) stud (7) so it can be pulled out through threaded bushing (9).

f. Remove tightening assembly (13) from pallet frame. The pallet frame is now sitting unattached on the truck bed, so it can be lifted off.

CAUTION

Temporarily fasten or arrange PDU cable (16) so that it cannot be damaged when frame is set down.

g. Remove sling assembly (14) from the pallet frame. Suspend sling assembly on crane. Position crane approximately centered over the three lifting lugs (15) on the pallet frame. One lifting lug is located at the center of the frame, the other two on the sides.

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the pallet frame easily off the truck bed.**
- **Move the pallet frame slowly so it remains horizontal.**

h. Engage the three cable hooks of the sling assembly in the three lifting lugs (15). Lift the pallet frame and lower it onto a solid surface.

i. Detach the sling assembly and attach it to the pallet frame.

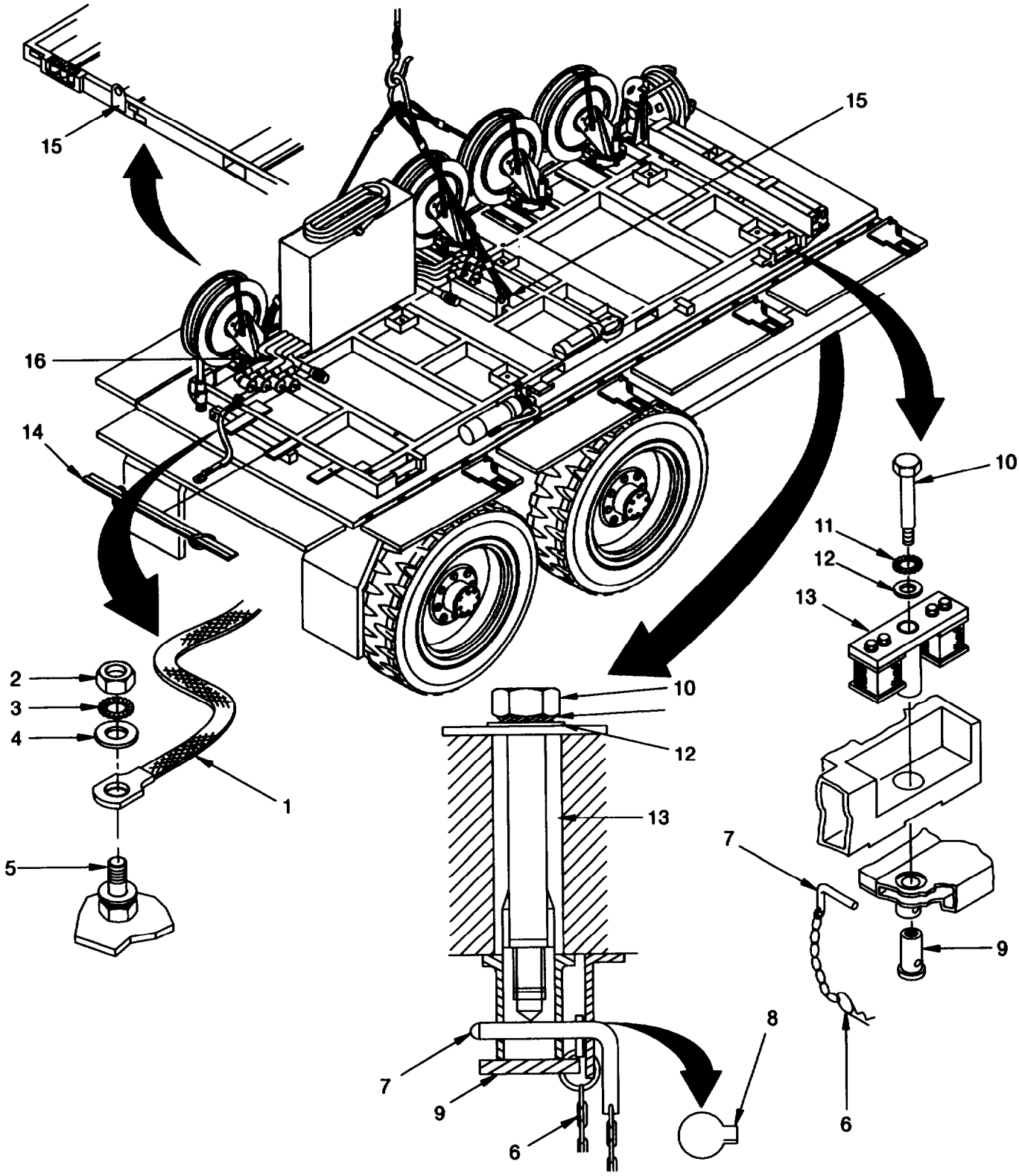


Figure 4-25 Removing the Pallet Frame from the Truck Bed wing a Crane.

REMOVAL USING A FORKLIFT

a. Perform steps a. through f. as described in “Removal Using a Crane”.

WARNING

For safety reasons (load imbalance) always use the forklift on the side of the pallet frame where the cable drums are located.

CAUTION

Use only forklifts with a fork length of at least 80 inches (2000 mm) and a capacity of approximately 12,000 lb. (6 metric tons). Place a mark at 20 inches 500 mm) as shown in figure 4-29.

b. Fold down truck side panel (2, figure 4-26). Leave the other side panels in the horizontal position.

c. Position the forklift in front of the pallet frame and insert the forks into the forklift sockets (1) until a 20 inches (500 mm) length of the forks is still visible.

WARNING

Do not stand in the forklift operating area. Do not walk under the suspended load

d. Lift the pallet frame and place it on a solid surface.

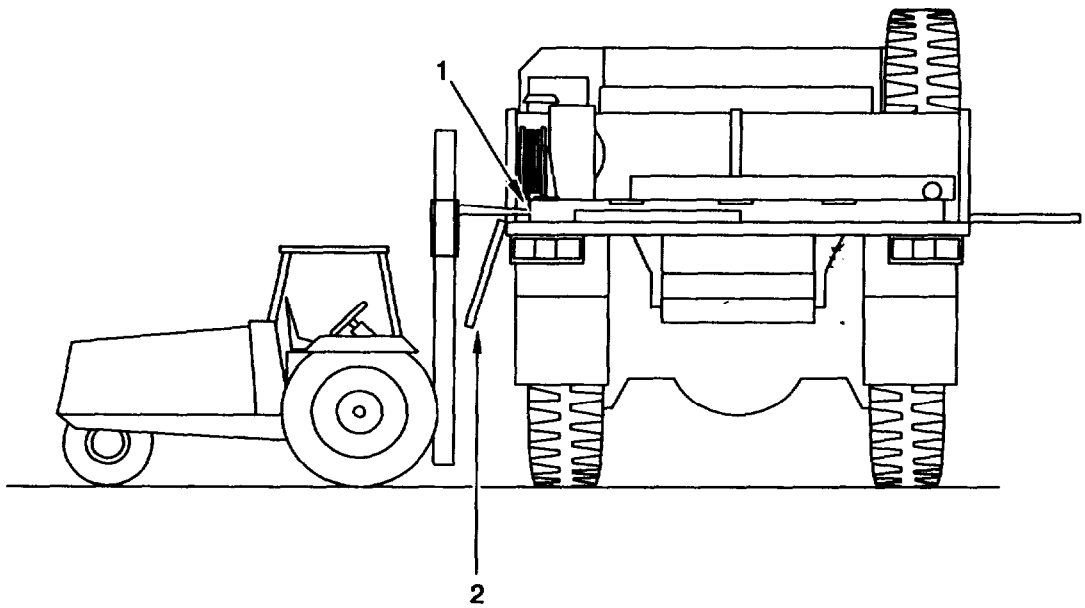


Figure 4-26 Removing the Pallet Frame from the Truck Bed using a Forklift.

INSPECTION

a. Check condition of the pallet frame. There must be no visible damage to the frame. Check that all mounted parts in figure 4-27 are present and firmly attached.
b. Check that the three grounding cables (4 to 7) are firmly attached, and that braiding is undamaged.
c. Check that the eight bolt fasteners (2) for the Generator Set 150 kW are in good condition and move easily.
d. Check operation of hinged fastener (28) and good condition of parts (12 to 17).
e. Check that lifting lugs (1) are in good condition.
f. Check that rubber plates (27) are firmly attached. The plates are glued in position.
g. Check that mounting mechanism for fire extinguishers (18, 19) are in proper condition and operate easily.
h. Check that parts (21 to 26) of ground rod box are in good condition.

NOTE

Check fire extinguishers at every inspection interval according to labels.

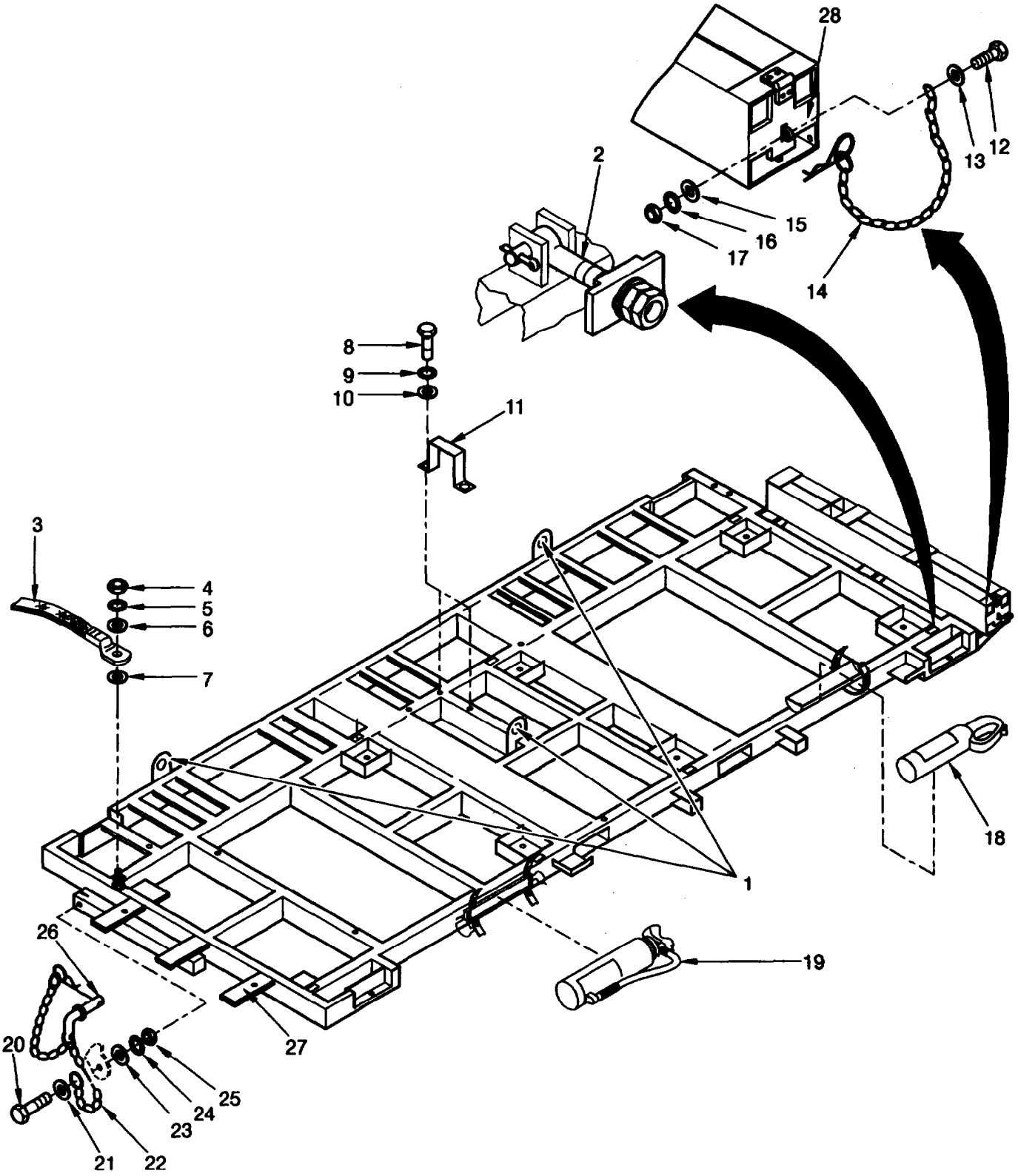


Figure 4-27 Pallet Frame, Mounted Parts.

REPAIR

a. To repair a defective ground strap (3):
   (1) Remove nut (4), serrated washer (5), washer (6), and ground strap (3) from grounding bolt.
   (2) Install new ground strap (3), washer (6), serrated washer (5) and nut (4). Torque nut (4) to torque value 18.42 ft-lb (26 Nm).
   (3) Apply terminal grease to threaded connection.

b. To remove a defective bracket (11):
   (1) Remove two screws (8), serrated washer (9) and washer (10), and defective bracket (11).
   (2) Install new bracket (11), washer (10), serrated washer (9) and two screws (8).

c. To repair a defective chain (14):
   (1) Remove nut (17), serrated washer (16), washer (15), chain (14), washer (13) and screw (12). Detach splint and ring from chain.
   (2) Install new chain (14) with splint and ring, using screw (12), washer (13), washer (15), serrated washer (16), and nut (17). Tighten nut (17).

d. To repair a defective chain (22):
   (1) Remove nut (25), serrated washer (24), washer (23), chain (22), washer (21) and screw (25).
   (2) Remove chain (22), with splint and ring, from stud (26).
   (3) Install new chain (22), with splint and ring, on stud (26).
   (4) Install chain (22) with screw (20), washer (21, 23), serrated washer (24), and nut (26). Tighten nut (25).

INSTALLATION USING A CRANE

a. Remove sling assembly (14, figure 4-26) from pallet frame. Suspend sling assembly from crane. Position crane approximately centered over the three lifting lugs (16) of the pallet frame.
b. Engage the three cables of the sling assembly in the three lifting lugs (16).

CAUTION

Arrange the PDU connector cable (16) on the pallet frame so it cannot be damaged when the pallet frame is set down.

c. On the truck bed, fold the side panels (1, figure 4-28) and tailgate (2) down to the horizontal position for access. On the opposite side, fold the side panel (1) all the way down. The pallet frame will be installed from this side.
d. Install guide mandrels (4) into holes (3, 7).

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load**
- **The lifting height of the crane must be sufficient to place the pallet frame easily onto the truck bed.**
- **When moving the pallet frame with the crane, proceed slowly so the frame remains horizontal.**

e. Move pallet frame (5) so it is centered over the truck platform.

f. Lower pallet frame to about 4 inches (10 cm) above platform, and suspend it so frame member (6) site in guide mandrel (4).

g. Lower the frame all the way. The two guide mandrels in position (3, 7) locate the frame diagonally.

h. For complete accessibility, move the folded down side panels back up to horizontal. Remove the crane and sling assembly Mount the sling assembly on the pallet frame.

i. Insert threaded bushings (9, figure 4-25) from below into the two diagonally opposite mounting points that are still unoccupied. Push stud (8) through and secure with spring pin (6).

j. Install the two diagonal tightening assemblies (13).

k. Coat the threads of bolt (10) with Loctite 243 and install using serrated washer (11) and washer (12), onto threaded bushing (9). Tighten bolt (10) to a torque value of 176.88 ft-lb (240 Nm).

l. Pull out the two guide mandrels (4, figure 4-28) one after the other, and install the remaining tightening assemblies as instructed in steps i. through k.

m. Install ground strap (1, figure 4-25), washer (4) and serrated washer (3), and secure with nut (2). Torque nut (2) to a torque value of 14.74 ft-lb (20 Nm). Apply terminal grease to threaded connection (5).

n. Install Generator Set 150 kW as instructed in paragraph 4.17.

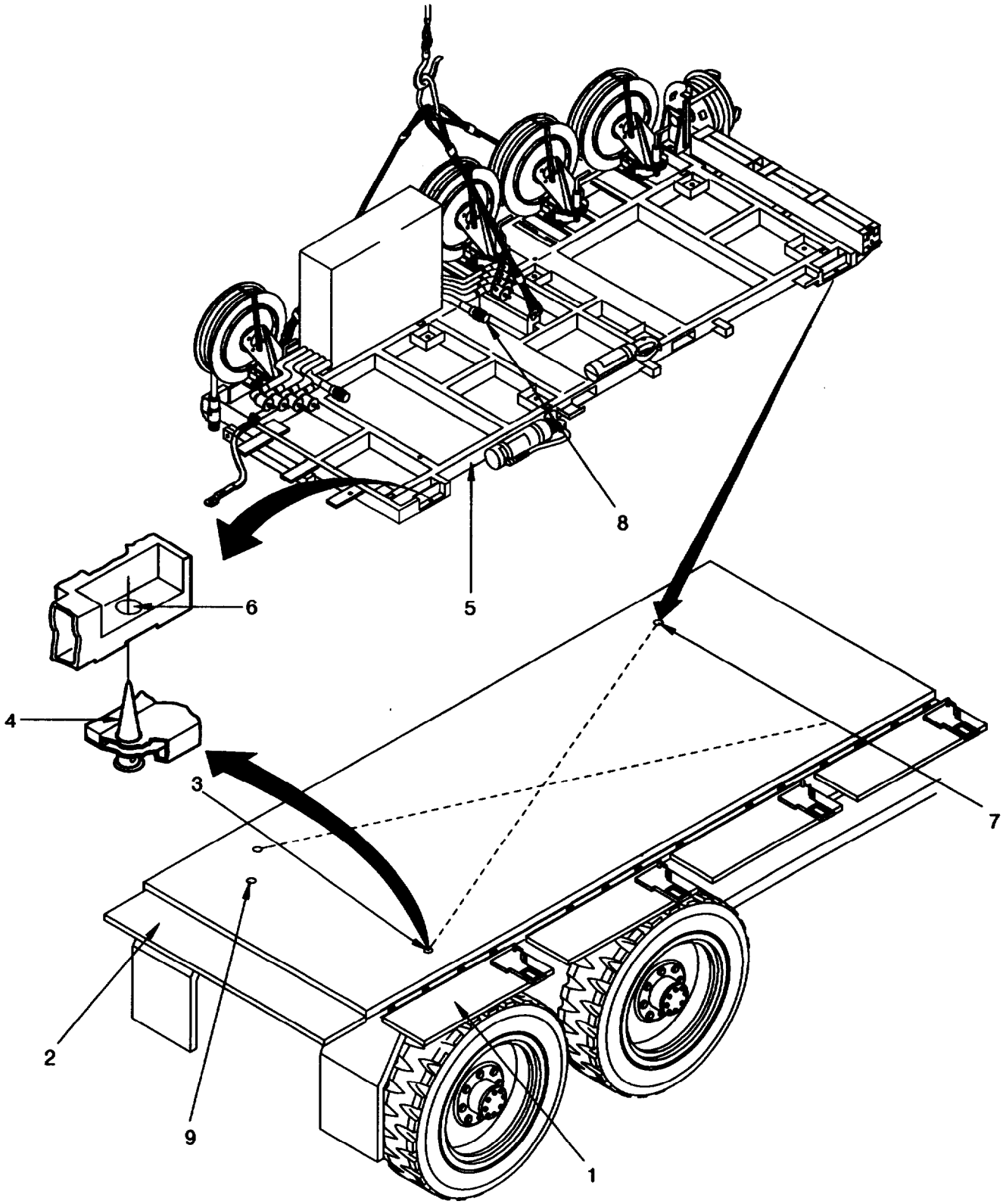


Figure 4-28 Installing the Pallet Frame on the Truck Bed wing a Crane.

INSTALLATION USING A FORKLIFT

WARNING

- **For safety reasons (load imbalance), always use the forklift on the side of the pallet frame where the cable drums are located.**
- **Do not stand in the forklift operating area. Do not walk under the suspended load**

CAUTION

Use only forklifts with a fork length of at least 80 inches (2000 mm) and a capacity of approximately 12,000 lb. (6 metric tons). Place a mark at 20 inches (500 mm) as shown in figure 4-29.

a. Position forklift in front of pallet frame (1) and insert forks into forklift sockets to the 20 inches (500 mm) mark as shown in the figure. This distance is necessary in order to place the pallet frame on the truck.

CAUTION

Arrange PDU connector cable (8, figure 4-28) on the pallet frame so it can not be damaged when the pallet frame is set down.

b. Perform steps c. through g. in “Installation Using a Crane”.

c. Remove forklift and perform steps i. through n. in “Installation Using a Crane”.

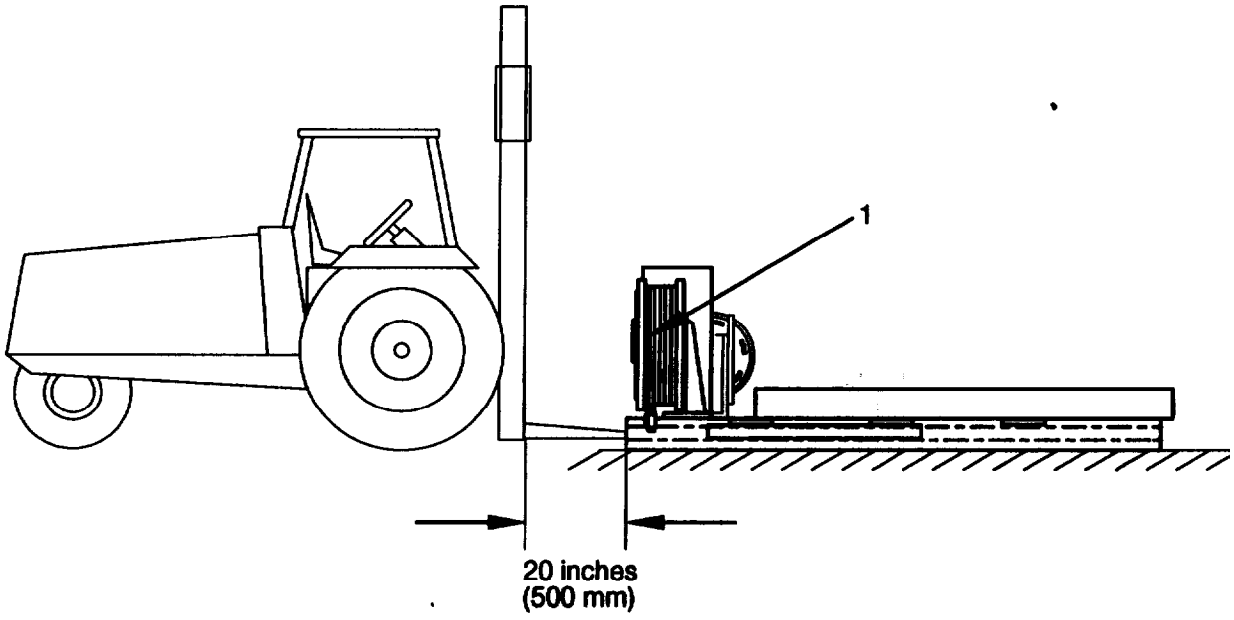


Figure 4-29 Installing the Pallet Frame on the Truck Red wring a Forklift.

4.19 POWER DISTRIBUTION UNIT MAINTENANCE.

This task covers: a. Removal b. Inspection c. Repair d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit(item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

REMOVAL

WARNING

Never attempt to disconnect power cables or control cables while Generator Set 150 kW is running.
Failure to observe this warning could result in severe personal injury or death by electrocution.

a Remove all cables from connection panel (2, figure 4-30) and from grounding bar as instructed in paragraph 4.16.

b. Working from left to right in the order (1), (2), (3), (4), swing cable drums (1 to 4) forward in operating position and lock in place. This provides access to the left and right sides of the power distribution unit.

c . Disconnect power cables and control cables from both Generator Sets 150 kW as instructed in paragraph 4.17.

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the cable drum easily off the base frame.**

d. Remove cable drum (4) as instructed in paragraph 4.11.

e. Remove sling from the cable drum (4). Secure the cable drum to keep it from rolling.

CAUTION

lb prevent damage to the corrugated hoses and cables, make sure the sling is attached beside the four shock absorbers (2) as shown in figure 4-30.

f. Position the crane above power distribution unit (1), and attach the sling to the power distribution unit (1).

g. Remove four screws (3), serrated lock washers (4), and washers (5).

h. Remove screw (11), serrated washer (12), washer (13), and bracket (17). Remove the three cables (14, 15, 16) underneath, then screw the components temporarily back on.

i. Lift power distribution unit (1) approximately 8 inches (20 cm) with the crane.

j. Remove the five left side and five right side cables (figure 4-24) from the cable duct of the pallet frame (18), and gather them to the front.

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the power distribution unit easily off the base frame.**
- **Move the power distribution unit slowly so it remains horizontal.**

CAUTION

Be careful not to damage the cables.

k. Use the crane to lift the power distribution unit (1) completely off, and set it on a solid surface.

NOTE

To ensure stability and easy access to all components, the power distribution unit should preferably be set down in the position illustrated (16). Two hearing blocks, for example, constitute a stable support.

l. Detach the sling from the crane and power distribution unit (1).

m. Open the access door (1, figure 4-31) and secure with prop (2).

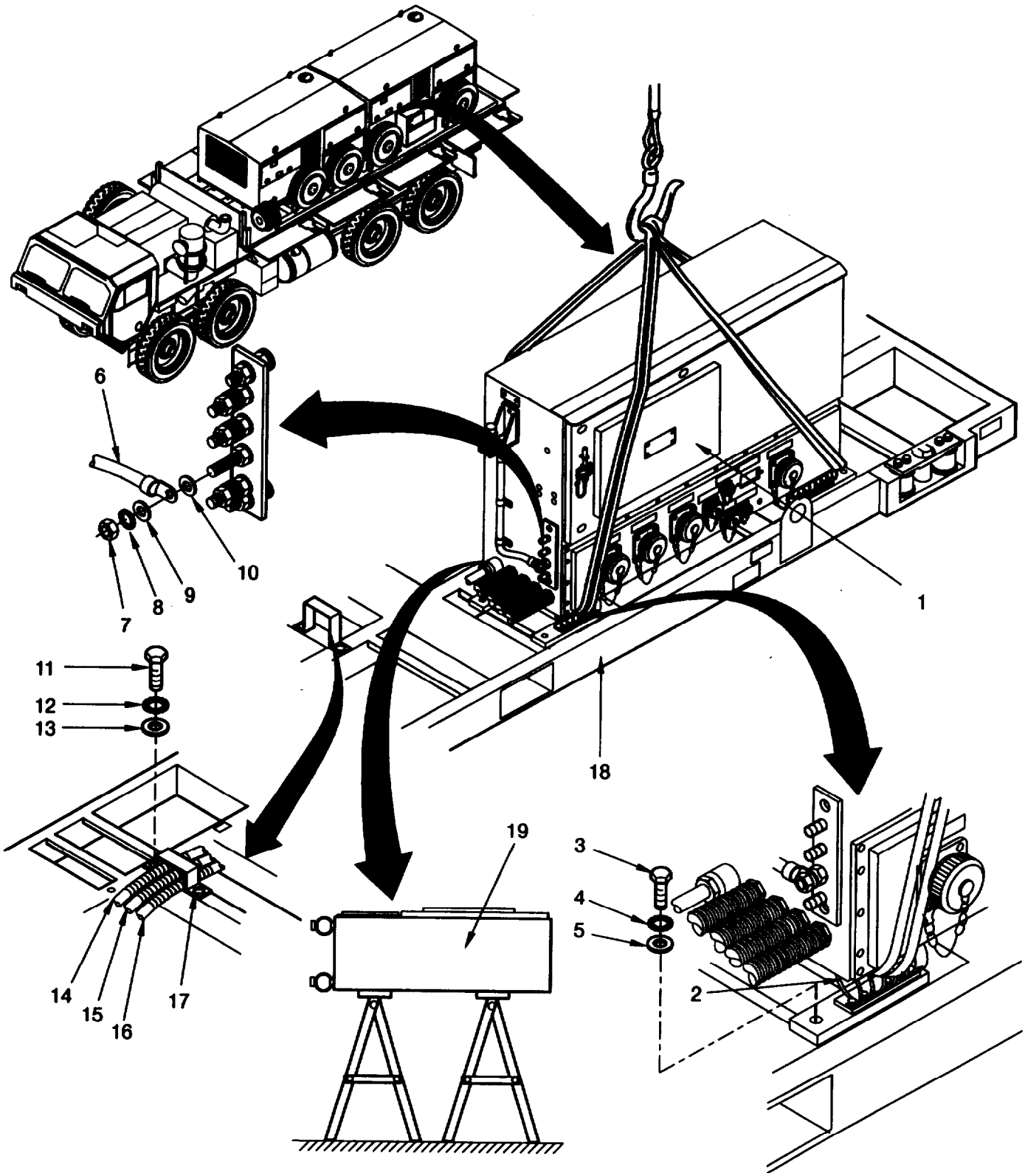


Figure 4-30 Removing the Power Distribution Unit from Pallet Frame using a Crane.

INSPECTION

a Check if power distribution unit (1, figure 4-30) is in good condition.
b. Check cables (figure 4-32) for loose plugs or damaged corrugated hoses.
c. Inspect that connection panel (11, figure 4-31) is in good condition. Plug contacts must be secure and must not be charred. The cover caps must be easy to thread onto the plugs. The hinged socket covers must close properly.
d. Check shock absorber (15) for external damage or cracking.
e. Check that U.S. Standard Grounding Assembly (21) is securely attached.
f. Check that attaching parts on grounding bar (20) are all present and undamaged.
g. Check rubber flap (5) for external damage.

REPAIR

To replace a defective shock absorber:

a. Remove four screws (3), washers (4, 9) and rubber flap (5).
b. Remove twenty two screws (6), washer (7), serrated lock washer (8), four spacers (10) and swing connection panel (11) forward.
C. Remove four screws (18), serrated lock washer (17), washer (16), and four plates (19).
d. Remove four screws (l2), serrated lock washer (13), washer (14), and shock absorbers (15).
e. Install new shock absorber (15) using screws (12), serrated lock washer (13), and washer (14).
f. Install plate (19) using screws (18), serrated lock washer (17), and washer (16).
g Install connection panel (11) using twenty two screws (6), serrated lock washer (7), and washer (8). Tighten screws (6).
h. Install four spacers (10) and tighten.
i. Install rubber flap (5) using four screws (3) and washers (4, 9).

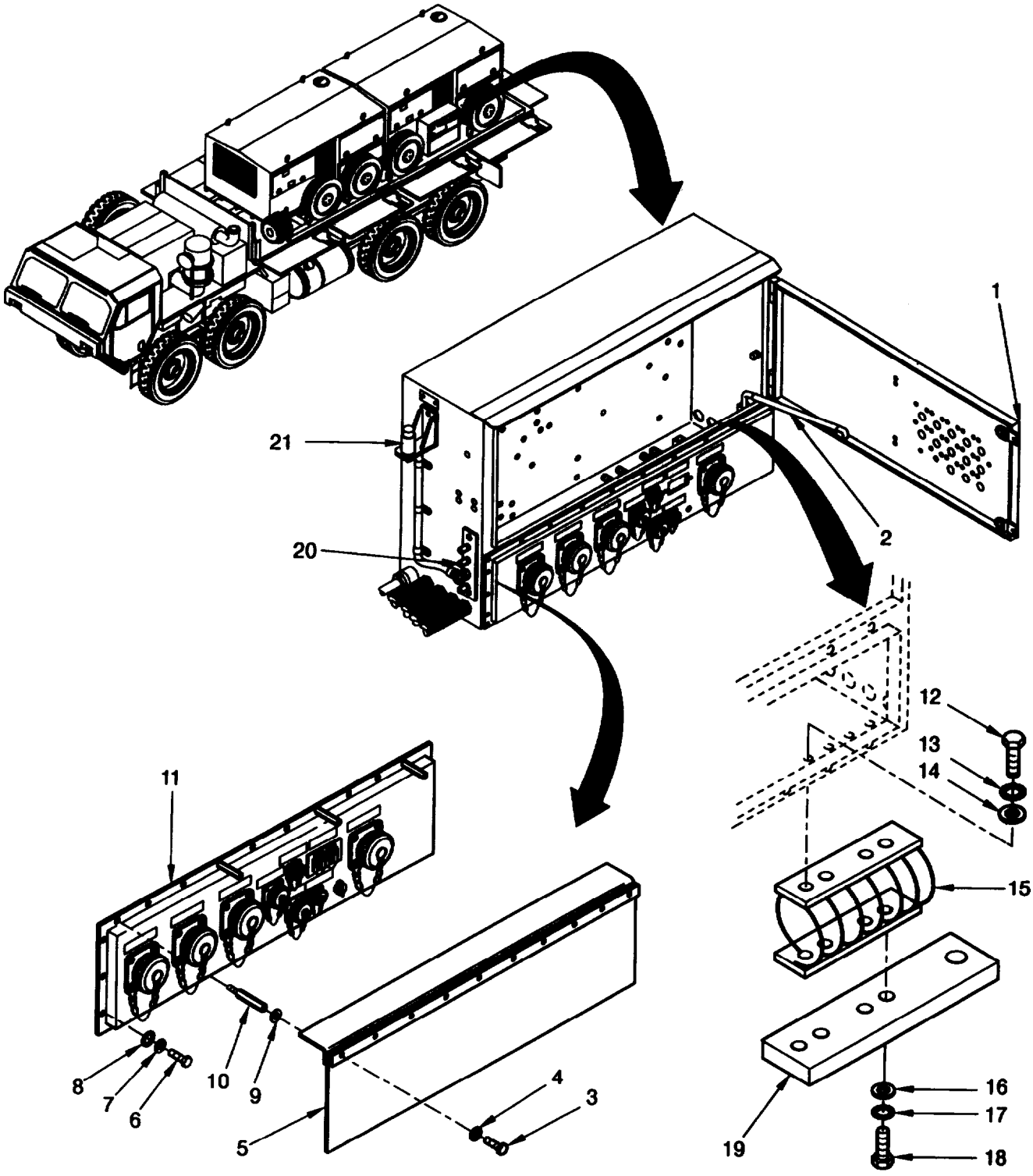


Figure 4-31 Power Distribution Unit.

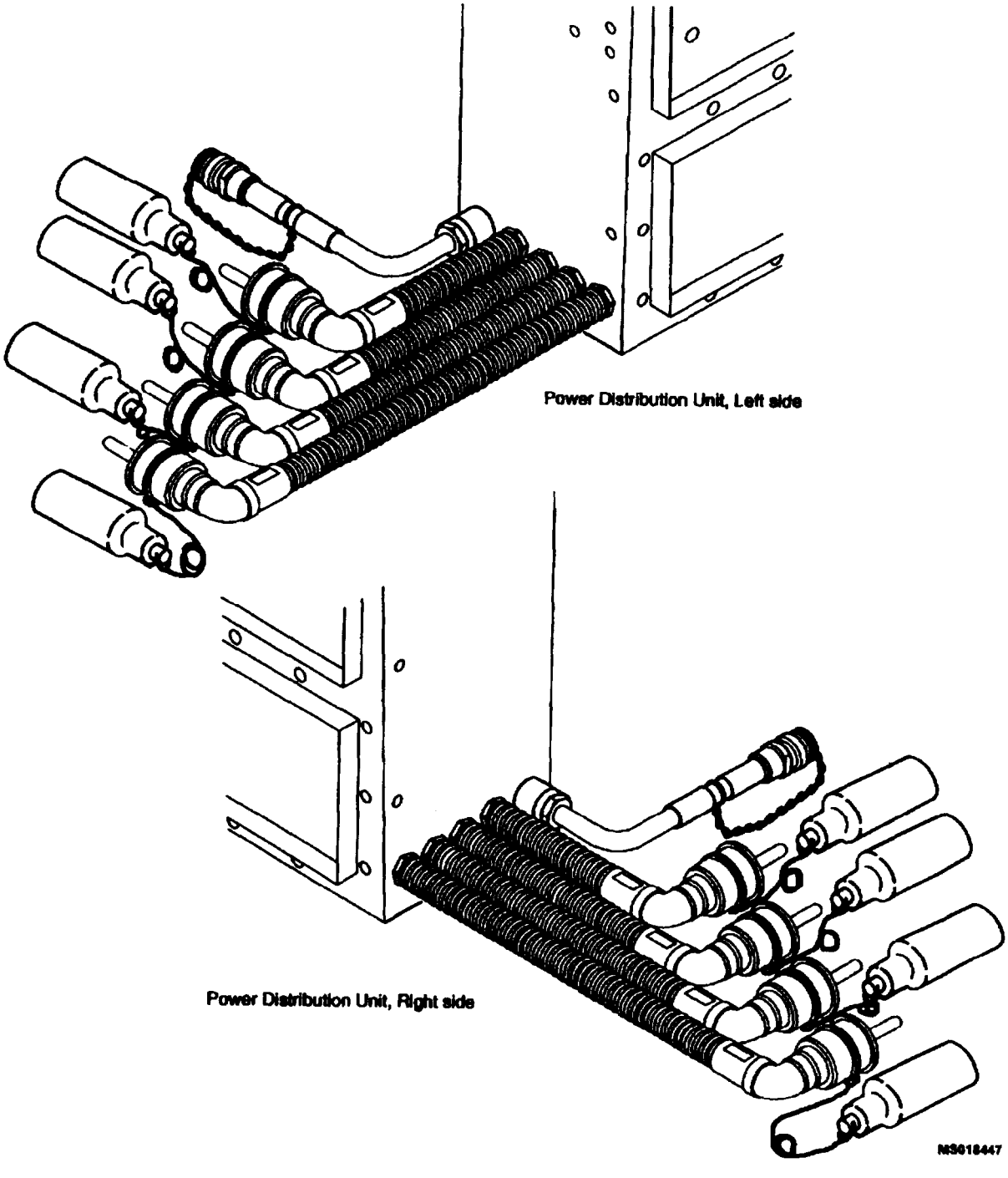


Figure 4-32 Power Distribution Unit, Mounted Parts.

INSTALLATION

a. Stow prop (2), close access door (1), and secure.
b. Position crane with sling in front of power distribution unit so that sling can be attached beside shock absorbers (2, figure 4-30).

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the power distribution unit easily off the base frame.**
- **Move the power distribution unit slowly so it remains horizontal.**

CAUTION

Be careful not to damage the cables.

c. Using the crane, position power distribution unit (1) approximately 8 inches (20 cm) above pallet frame (18) so that screws (3) align with their holes in the pallet frame.
d. Gather the power distribution unit cables to the front.
e. Lay out the cables as shown in figure 4-33. On the left side of the power distribution unit, cables N, L1, and the control cable must lie against pallet frame (1) betweenthe two holes (2). The other cables pass beneath the cable drum mounts (3), as shown in front of and behind the mount.

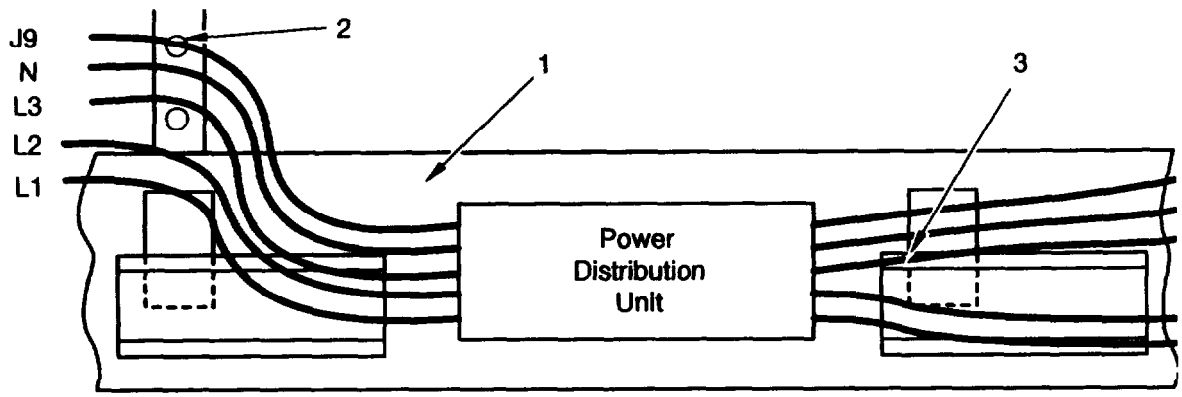


Figure 4-33 Power Distribution Unit, Cable Installation Position.

f. Use the crane to lower power distribution unit (1, figure 4-30) all the way. Remove the crane and sling.

g. Install four screws (3), serrated lock washer (4), and washer (5). Tighten screws (3).

h. Bundle cables L3, N, and control cable J9 (14, 15, 16) under the bracket (17). Install bracket (17) on pallet frame (18) using screws (11), serrated lock washer (12), and washer (13). Tighten screws (11).

WARNING

- **Do not stand in the operating area of the crane. Do not walk under the suspended load.**
- **The lifting height of the crane must be sufficient to lift the cable drum easily off the base frame.**

NOTE

Be sure to identify the correct cable drum. Cable drum (4) has a bevel on the drum.

i. Install cable drum (4) as instructed in paragraph 4.11.

j. Remove crane and sling.

k. Reconnect power cables and control cables to both Generator Sets 150 kW as instructed in paragraph 4.17.

l. Reconnect cables on power distribution unit as instructed in paragraph 4.16.

4.20 SWING ARM MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit
(item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

Lubricating grease
(item 1, appendix E)

Personnel Required

Two

REMOVAL

a. Move walkway (1, figure 4-34) in the up (stowed) position.
b. Remove bolt (2) from nut (3) with spacer (4). Discard nut (3).
c. Using a suitable pry bar, pry up on the washer welded to the top of pin (5).
d. Remove grease nipple (9).
e. Once pin (5) moves freely remove pin (5) from bracket (8).
f. Remove swing arm (6) by depressing locking arm (7).
g. Remove nut (10) with pin (13), spacer (14), spring (11) and pin (12).

INSTALLATION

NOTE

Prior to installation clean and grease pin (5) and pin (12).

a Insert pin (12) in nut (10) with pin (13), spacer (14), spring (11) and install in swing arm (6).
b. Install swing arm (6) in bracket (8) by depressing locking arm (7) and align hole to allow pin (5) to pass through.
c. Install pin (5).
d. Install grease nipple (9) in pin (5).
e. Lower walkway (1) on swing arm (6).

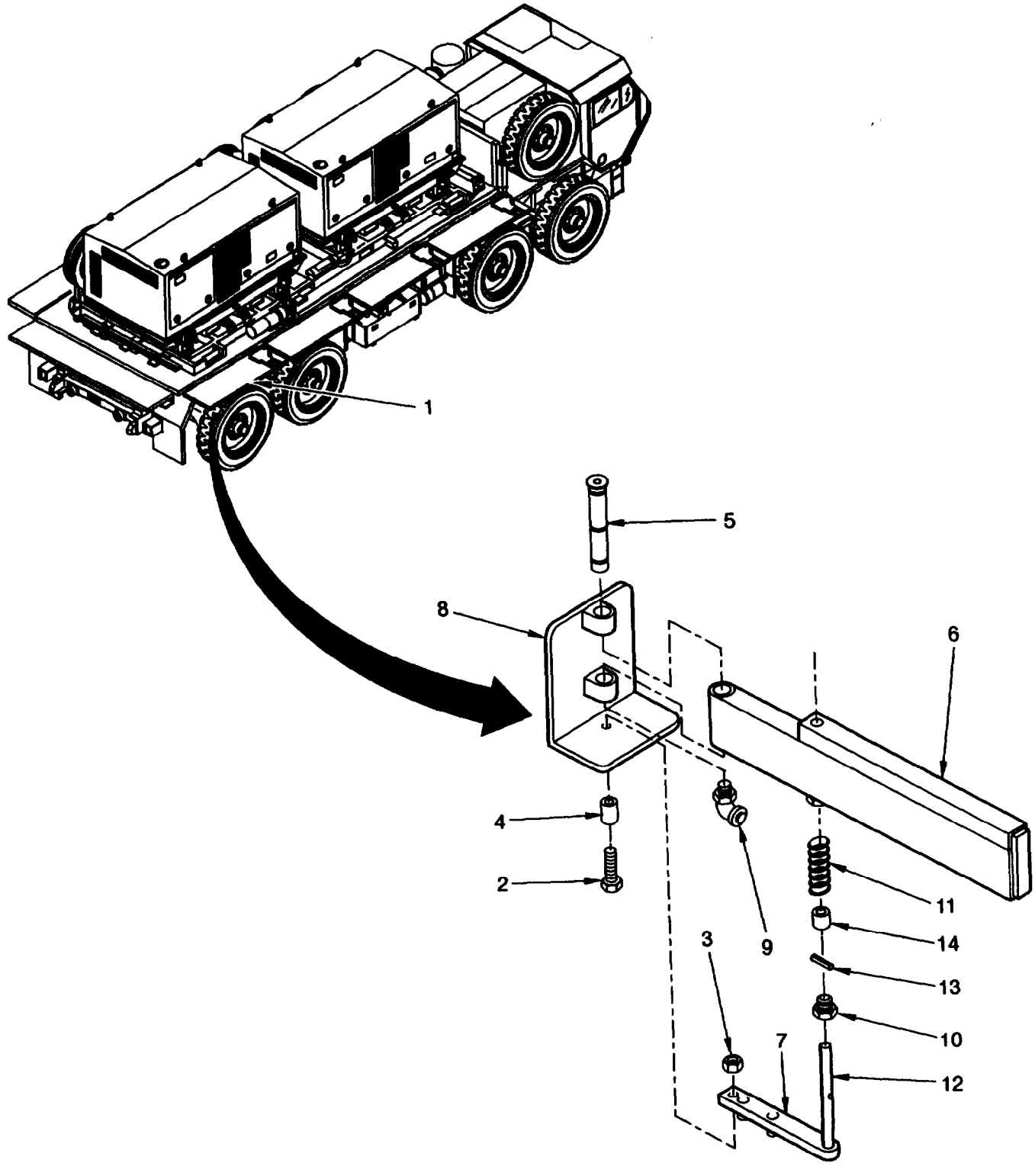


Figure 4-34 Swing Arm Maintenance.

4.21 STANCHION AND CHAIN ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

one

REMOVAL

NOTE

Stanchion and chain assemblies are not interchangeable. Do not attempt to lengthen chain.

a. Loosen retaining nut (3, figure 4-35) on repair link (2) and slide back.
b. Remove hook (1).

INSTALLATION

a. Insert hook (1).
b. Slide retaining nut (3) on repair link (2) forward.
c. Tighten retaining nut (3).

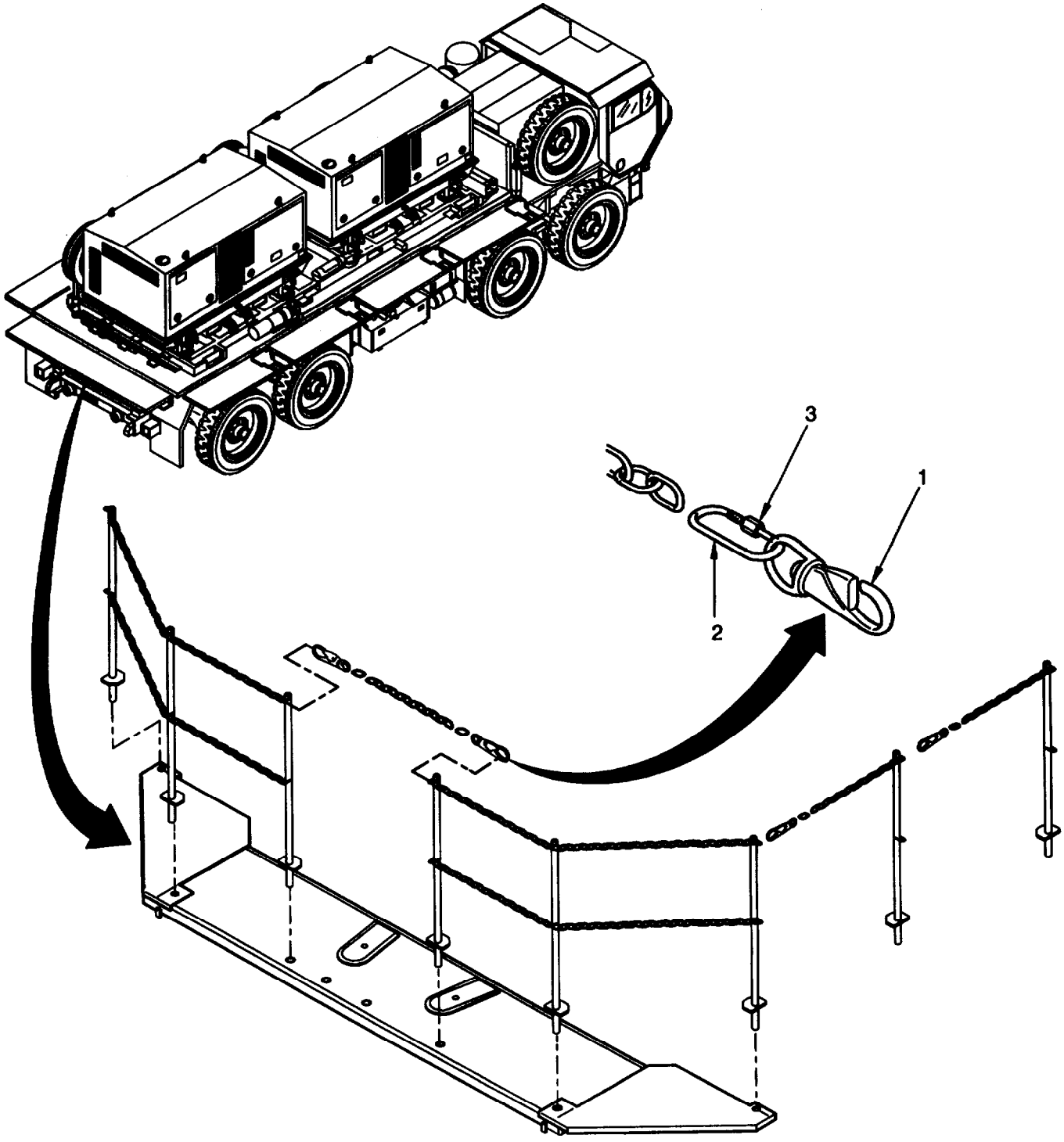


Figure 4-35 Stanchion and Chain Assembly Maintenance.

4.22 U.S. STANDARD GROUNDING ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Inspect c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Bit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

One

REMOVAL

a. Remove nut (6, figure 4-36), serrated washer (4), washer (3), and grounding cable (6) from second stud from the bottom of the grounding bus (2). Loosely install washer (3), serrated washer (4), and nut (5) on grounding stud.
b. Remove nut (11), washer (12), grounding cable (6), washer (13), and U.S. standard grounding connector (14) from bracket (16).
C. Remove three bolts (7), serrated washers (8), washers (9), clamps (10), and grounding cable (6) from power distribution unit (1).

INSPECT

Inspect for corrosion and damage.

TEST

Using multimeter check for continuity

INSTALLATION

WARNING

Ensure grounding cable and hardware is installed in theproper sequence to ensure proper grounding. Failure to observe this warning could result in severe personal injury or death.

a. Install U.S. standard grounding connector (14), washer (13), grounding cable (6), washer (12), and nut (11) on bracket (15) and tighten nut (11).
b. Remove nut (5) serrated washer (4), and washer (3) from second stud from the bottom of grounding bus (2).
c. Install grounding cable (6), washer (3), serrated washer (4), and nut (5) and tighten nut (5).
d. Install three clamps (10) and grounding cable (6) using washer (9), serrated washer (8), and bolts (7). Tighten bolts (7).

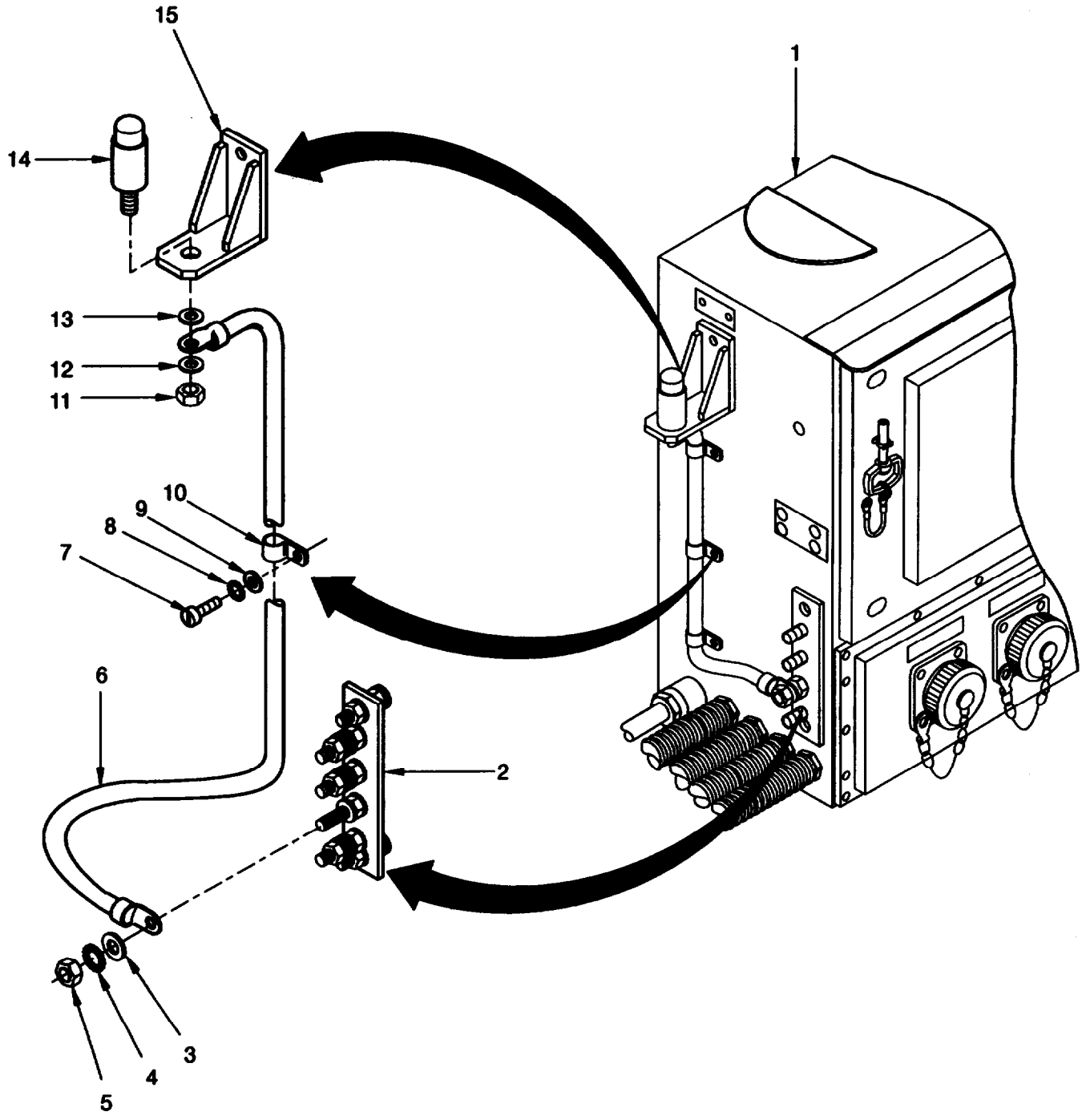


Figure 4-36 U.S. Standard Grounding Assembly Maintenance.

4.23 STORAGE BOX ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW,
paragraph 2.8.1.

Materials/Parts

Cable ties
(item 2, appendix E)

Personnel Required

Two

REMOVAL

a. Disconnect all electrical connections and cut cable ties.
b. Remove four bolts (1, figure 4-37), serrated washers (2), and nuts (3) from the end of the box (4) facing front of the truck.

WARNING

The box (4) must be supported during the remainder of the procedure to prevent severe personal injury or damage to electrical system.

c. With the aid of an assistant, slowly lower box (4) gradually and remove by sliding toward the rear of the truck

INSTALLATION

a. With the aid of an assistant, slide box (4) into place and align four holes in truck frame with four holes in the box (4).
b. Secure box (4) to frame using four bolts (1), serrated washers (2), and nuts (3). Tighten nuts (3).
c. Reconnect all electrical connections and secure with cable ties.

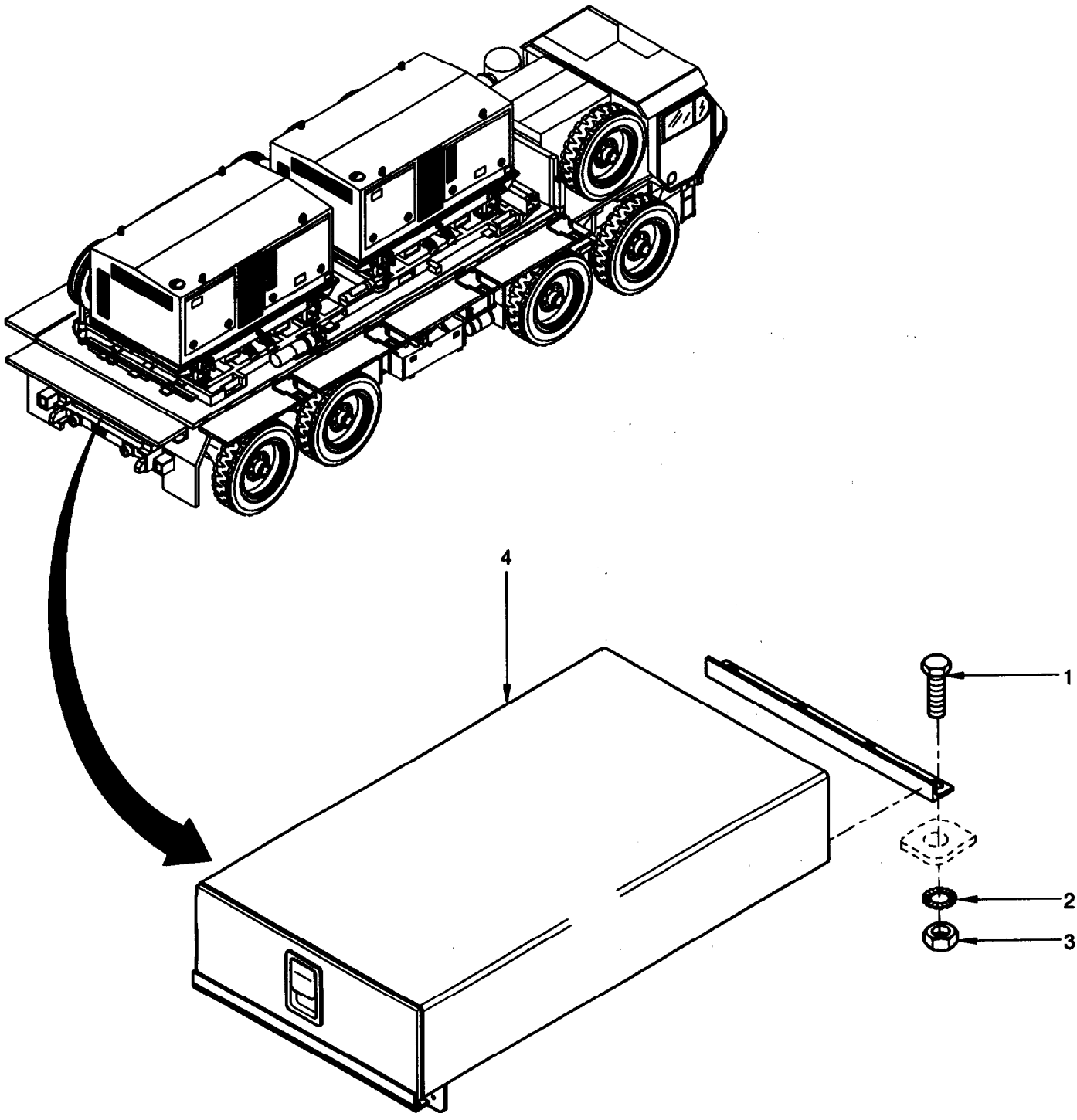


Figure 4-37 Storage Box Assembly Maintenance.

4.24 LIGHT INDICATOR ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables, before removing electrical or electronic assemblies or componenta.

REMOVAL

NOTE

This procedure is the same for all light indicators H1 to H9 and H11 (Example H1).

a. Remove stanchion by PDU (1, figure 4-38).
b. Open access door (2) and secure with prop (3).
C. Install stanchion.
d. Open indicator panel cover (4).
e. Record labeling and position of cables to bulb holder (6).
f. Remove cables from terminals.
g. Use a screwdriver to push in closure (7) first using your hand to support the bottom of the bulb holder (6) until they snap in, and remove bulb holder (6) with bulb (10).
h. Loosen screws (8) on base (9).
i. Unlock lamp cap (11, 12, 13) from front of panel, by turning counterclockwise.
j. Pull lamp cap (11, 12, 13) out of front of panel, and remove base (9) from back of panel.

INSTALLATION

CAUTION

Reinstall the same type of bulb holder that was removed.

a. Install lamp cap (11, 12, 13) into panel from the front and hold base (9) against panel from the roar.
b. Push lamp cap (11, 12, 13) into base (9) and turn clockwise to secure to base (9).
c. Tighten screws (8) on base (9).
d Clip bulb holder (6) with bulb (10) into base (9).
e. Noting correct labeling and position, install cables to terminals of bulb holder (6).
f. Remove stanchion.
g. Stow prop (3), close access door (2), indicator panel cover (4) and secure.
h. Install stanchion by PDU (1).

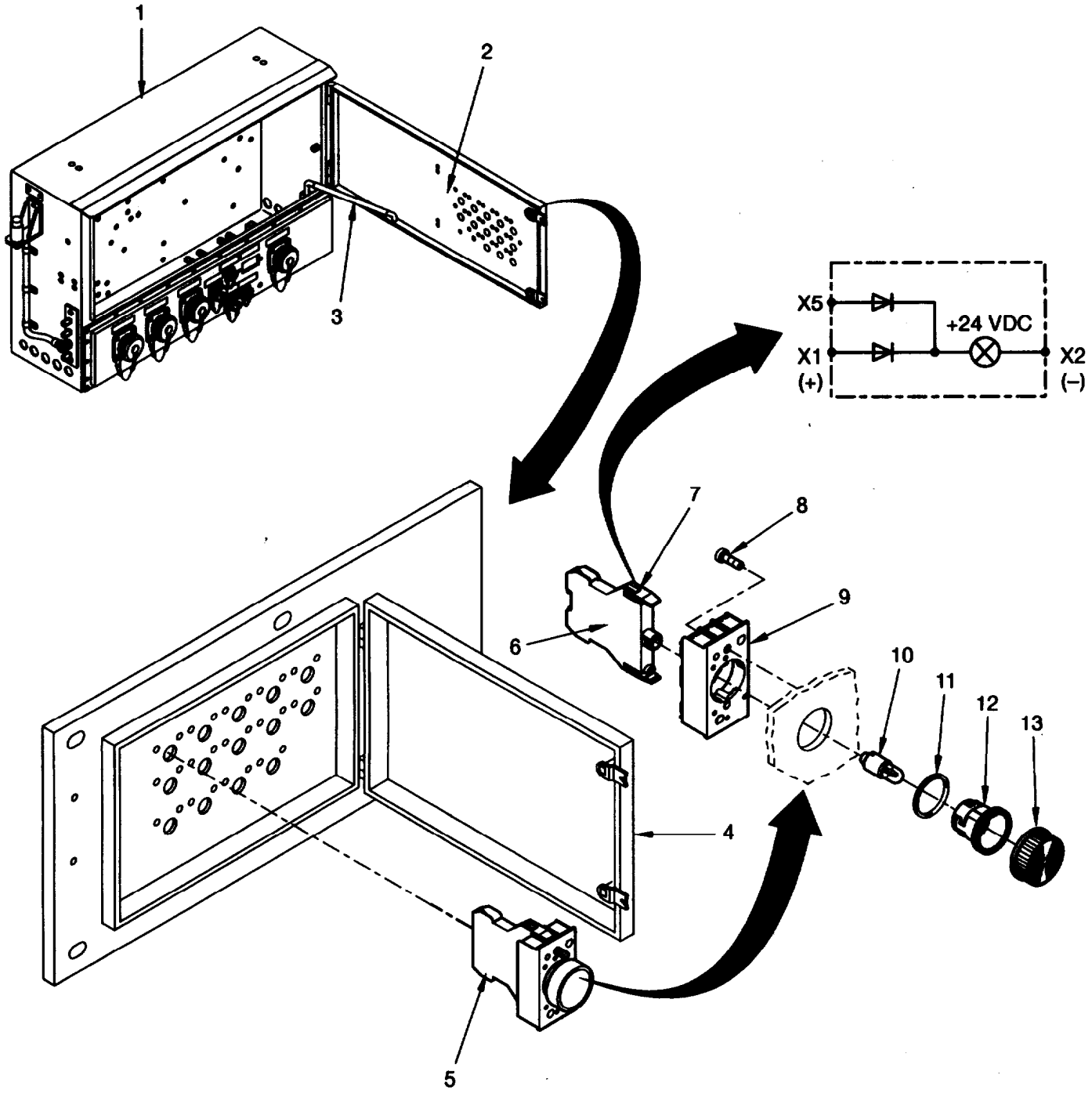


Figure 4-38 Light Indicator.

4.25 PUSHBUTTON SWITCH AND LIGHT INDICATOR MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for all pushbutton switches and indicators S1, S2/H10, S4, S5/H12 (Example S2/H10).

a Remove stanchion by PDU (1, figure 4-39).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Open indicator panel cover (4).
e. Record labeling and position of cables to bulb holder (7) and pushbutton (6).
f. Remove cables from terminals.
g. Use a screwdriver to push in upper and lower (8) closures first using your hand to support the bottom of the bulb holder (7) and pushbutton until they snap in. Remove bulb holder (7) with bulb (11) and pushbutton (6) from base (10).
h. Loosen screws (9) on base (10).

i. Unlock lamp cap with housing (13), ring (12), colored plate (14) and ring (15) on front of panel by turning counterclockwise.
j. Pull housing (13) out of front of panel. Remove base (10) from back of panel.

INSTALLATION

CAUTION

Reinstall the same type of bulb holder and pushbutton that was removed.

a. Insert housing (13) with colored plate (14) and rings (12,161 into front of panel and hold base (10) against panel from behind.
b. Push housing (13) and turn clockwise to secure to base (10).
c. Clip bulb holder (7) with bulb (111 into base (10).
d. Clip pushbutton (6) into base (10).
e. Install cables to terminals.
f. Remove stanchion.
g. Stow prop (3), close access door (2) and indicator panel cover (4) and secure.
h. Install stanchion by PDU (1).

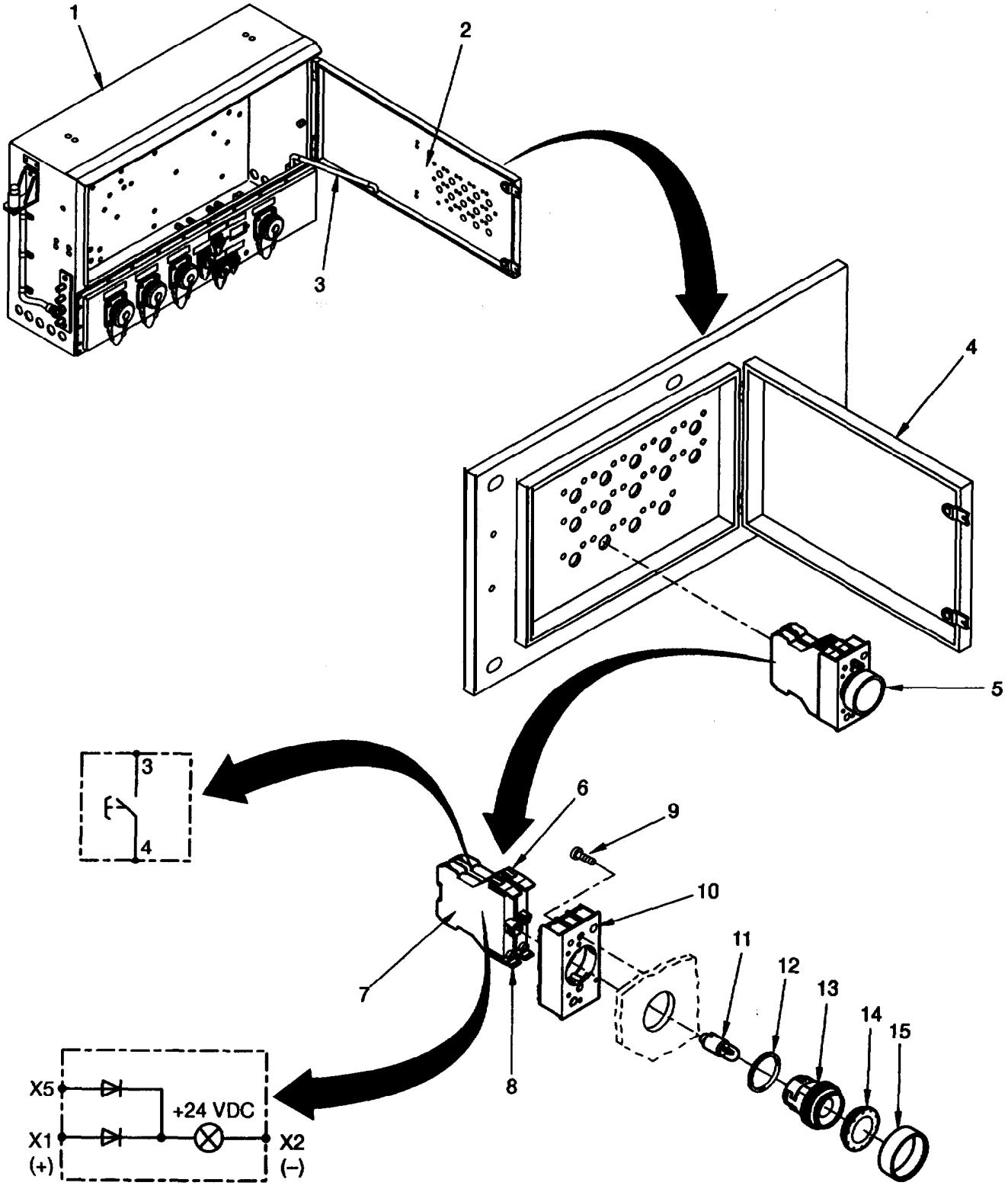


Figure 4-39 Pushbutton Switch with Light Indicator.

4.26 BRIGHTNESS CONTROL N7/R1 MAINTENANCE.

This task covers: a. Removal b. Test c. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
DC power supply, 24 VDC
Fork-Head screwdriver
(item 12, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

Solder
(item 7, appendix E)

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a Remove stanchion by PDU (1, figure 4-40).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Open indicator panel cover (4).

BRIGHTNESS CONTROL

a. Record labeling and position of cables, and remove cables from control board N7 (6).
b. Pull tabs (8) located on rearside lower portion of heat sink (7), and pull heat sink (7) down out of mounting bar.
c. Remove two nuts (6) from heat sink (7).
d Unsolder two pins (9) of power transistor on heat sink (7) and remove control board (5) from heat sink (transistor remains on heat sink).

POTENTIOMETER

a. Record labeling and position of cables, and unsolder cables from terminals of potentiometer R1 (15).
b. Remove cover cap (10) from knob (11).
c. Using fork-head screwdriver, remove slotted nut in knob (11).
d. Remove nut (12), and graduated dial (13).
e. Pull potentiometer R1 (15), and serrated lock washer (14), from the back of the front panel.

TEST

NOTE

For this test potentiometer R1 (15) must be connected to control board (5) complete with heat sink (7) power transistor.

Use DC power supply to check brightness control:

a. Connect 24 VDC to terminal 2 (+) and terminal 1(-).
b. Set multimeter for DC voltage and connect between terminal 4 and terminal 1.
c. Turn potentiometer from full left to full right position. Multimeter must display 0 - 24 VDC.

INSTALLATION

BRIGHTNESS CONTROL

a. Place control board (5) on heat sink (7).
b. Install two nuts (6) on heat sink (7).
c. Solder to pins (9) of power transistor on control board (5).
d. Place heat sink (7) on mounting bar.

POTENTIOMETER

a. Install potentiometer R1 (15) and serrated lock washer (14) into panel from behind.
b. Install graduated dial (13) onto shaft and secure potentiometer with nut (12).

NOTE

Turn potentiometer shaft all the way counterclockwise, and set knob pointer to zero on graduated dial (OFF position).

C. Install knob (11) onto shaft, position and secure with internal slotted nut using fork-head screwdriver.
d. Place cover cap (10) on knob (11).
e. Solder cables on potentiometer R1 (15).
f. Remove stanchion.
g. Stow prop (3), close access door (2) and indicator panel cover (4) and secure.
h. Install stanchion by PDU (1).

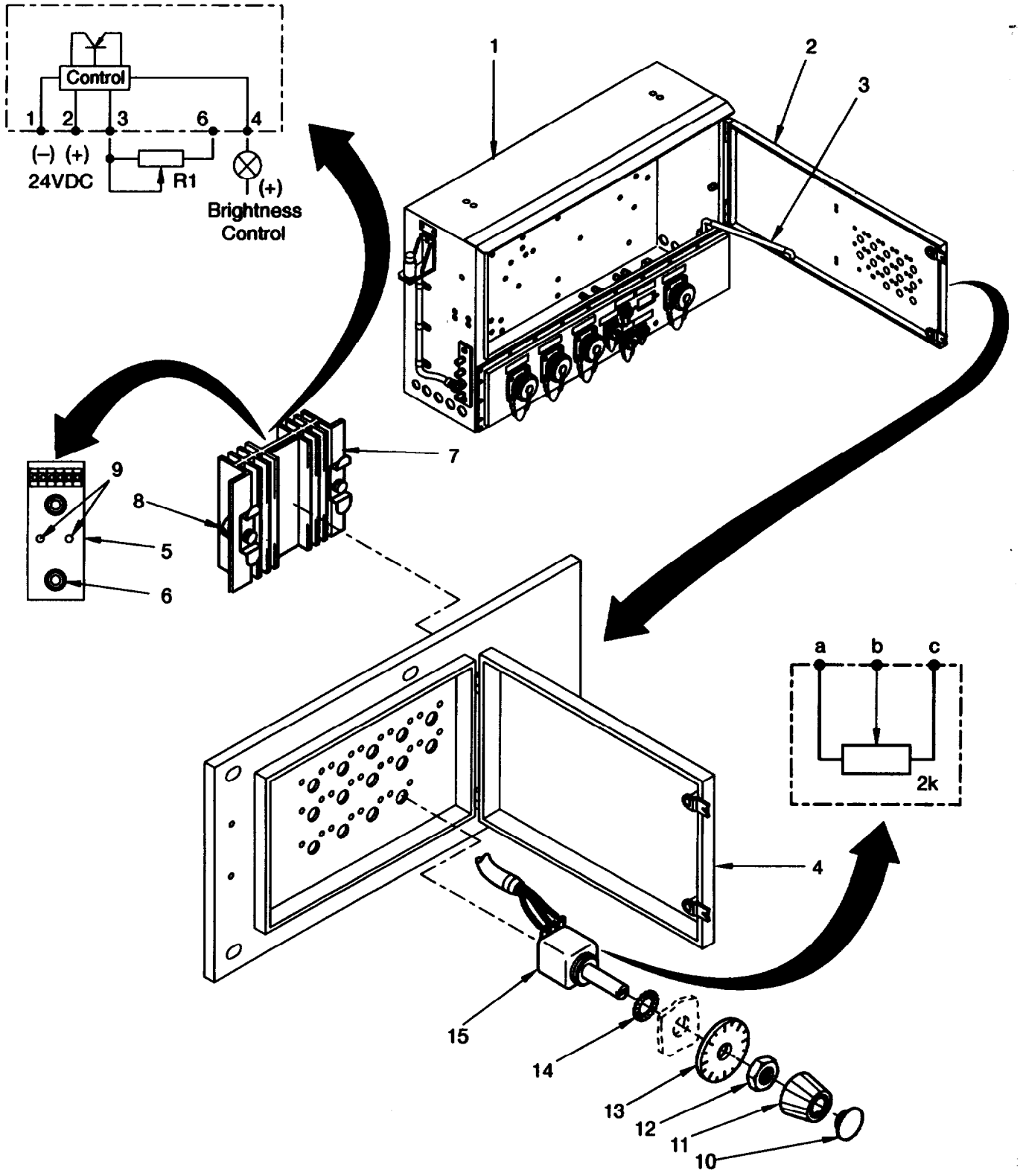


Figure 4-40 Brightness Control N7/R1.

4.27 CONTACTOR PROTECTIVE RESISTOR MAINTENANCE.

This task covers: a. Removal b. Test C. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

- This procedure is the same for all resistors R3 to R6 (Example R3).
- The resistor serves as a protective resistor for the coil, when the contactor is excited.

a. Remove stanchion by PDU (1, figure 4-41).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.

NOTE

To replace any one of these resistors, all resistors to the right of the one to be replaced must be removed first ot allow access to rear cable connection.

d. Remove cables 119 through 127 on the bottom of power contactors K4, K5, K6. Refer to paragraph 5.10 and remove cables from power contactors K4, K5, K6.

e. Remove nut (4), serrated lock washer (5), washer (6), and teflon washer (7).
f. Remove screw (13), washer (12), cable (14), and nut (10) from front cable connector (8).
g. Slide resistor R3 (11) as far forward as possible and remove screw (13), lock washer (12), cable (14), and nut (10) from rear cable connector (9).
h. Remove resistor R3 (11).

TEST

Use a multimeter to check the resistance.
Resistance must be 7.4 Ohm.

INSTALLATION

CAUTION

The resistor is made of ceramic. Be careful not to damage it during installation.

a. Install cable (14) on rear cable connector (9) of resistor R3 (11) and secure with screw (13), lock washer (12), and nut (10).
b. Install cable (14) on front cable connector (8) and secure with screw (13), lock washer (12), and nut (10).
c. Install teflon washer (7), washer (6), serrated lock washer (6), and nut (4).
d. Refer to paragraph 5.10 and install cables 119 through 127 on power contactor K4, K5, K6.
e. Remove stanchion.
f. Stow prop (3) close access door (2) and secure.
g. Install stanchion by PDU (1).

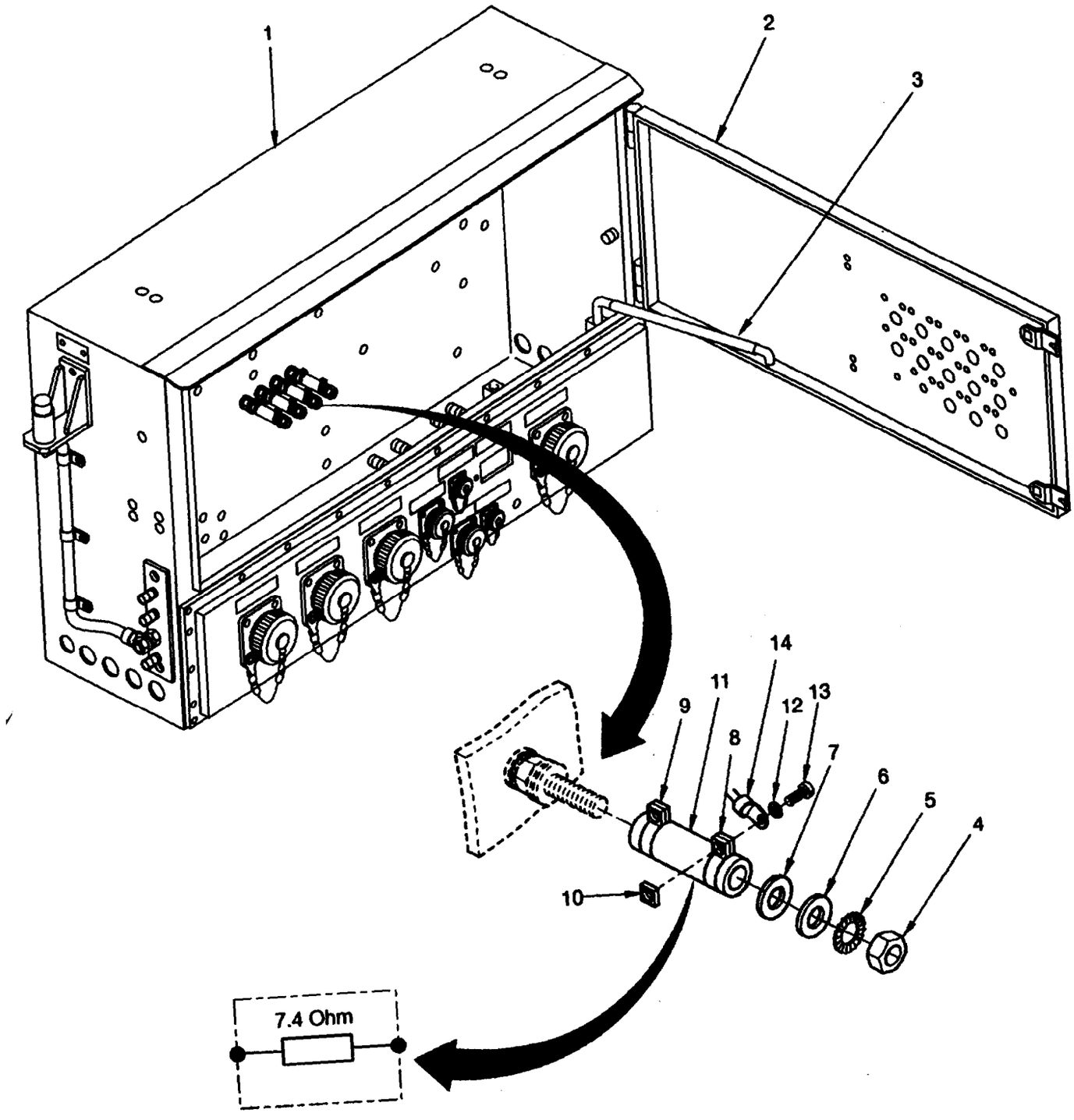


Figure 4-41 Contactor Protective Resistor.

4.28 CURRENT TRANSFORMER MAINTENANCE.

This task covers: a. Removal b. Test C. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produces lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

NOTE

This procedure is the same for all transformers T1 to T12 with resistors R21 to R32 (Example TB1/R21).

REMOVAL

a. Remove stanchion by PDU (1, figure 4-42).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Remove two screws (4), serrated lock washer (5), washer (6) and protective cover (7).
e. Remove screw (8), serrated lock washer (9), washer (10) and cable 79 end (11) from bus bar (12).
f . Remove cable 79 (11) from contactor K3. Refer to paragraph 5.10.
g. Remove cable 79 (11) through center of current transformer T1 (9).
h. Record labeling and position of cables to current transformer (13).
i. Loosen two screws (14), serrated lock washers (15), cable clamps (16), and remove cables from current transformer T1 (13).
j. Remove screws (17), serrated lock washers (18), washers (19), and current transformer (13) with resistor R21 (20).

k. Remove two nuts (21). two serrated washers (22) and resistor R21 (20).

NOTE

This procedure is the same for all resistors R21 to R32 (Example R21) and transformers T1 to T12 (Example T1).

TEST

a. Test resistor R21 (20):

(1) Remove screw (14), lock washer (15), cable clamp (16) and cable.

(2) Use a multimeter to check resistor R21 (20). Resistance must be 1.5 Ohm.

NOTE

The current transformer, installed on a conductor, transforms the present value of current in this conductor in a defined linear ratio of 150:1.

The voltage drop at the appropriate connected resistor is the equivalent of the present value of current in the conductor. Following the formula below, a current of 50 A in the conductor will cause a voltage drop of:

$$U = \frac{1A \times 1_{x}[A] \times 1.5\ Ohm}{150A} = \frac{1\ A \times 50\ A \times 1.5\ Ohm}{150A} = \frac{1 \times 50\ A \times 1.5\ Ohm}{150} = \frac{75V}{150} = 0.5\ V$$

b. Test transformer T1 (13):

(1) Ensure good contact for cables of resistor R21 (20).

(2) Connect a multimeter at terminals of R21 (20) to measure AC voltage.

(3) Slide a suitable conductor through opening in transformer T1 (13) and connect to a suitable AC power supply.

(4) Switch on power supply, set a current of 50 A and read the indicated AC voltage on multimeter.

INSTALLATION

a. When replacing current transformer T1 (13), install two screws (25), two serrated lock washers (24) on current transformer and screw on nuts (23).

b. Place resistor R21 (20) with plate on current transformer T1 (13).

c. Install two serrated lock washers (22) and screw on two nuts (21). Tighten nuts (21).

d Install current transformer T1 (13) and resistor R21 (20), screws (17), serrated lock washers (18), and washers (19).

e. Insert cable 79 end (11) through center of current transformer T1 (13).

f. Install cables to current transformer T1 (13), using two screws (14), two serrated lock washers (15), and two cable clamps (16).

g. Install cable 79 end (11), washer (10), serrated lock washer (9) and screw (8) on bus bar (12).

h. Install cable 79 end (11) to contactor K3. Refer to paragraph 5.10.

i. Install protective cover (7) and secure with screw (4), serrated lock washer (5) and washer (6).

j. Remove stanchion.

k. Stow prop (3), close access door (2) and secure.

l. Install stanchion by PDU (1).

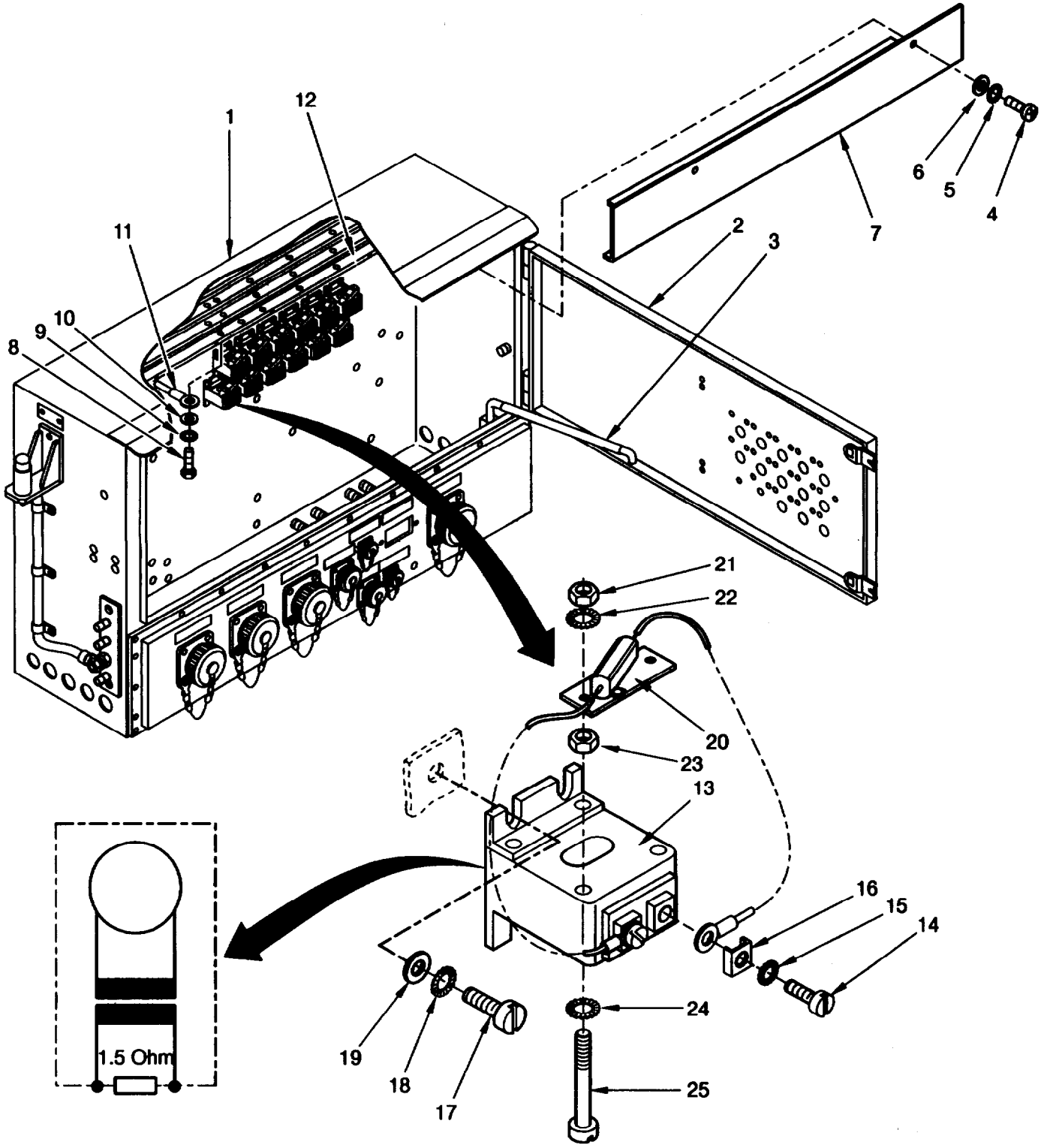


Figure 4-42 Current Transformer.

4.29 AUXILIARY CONTACTORS MAINTENANCE (EXCEPT K20 AND K21).

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
DC power supply, 24 VDC

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for all auxiliary contactors K8, K9, K10, K11, K12, K15, K16, K17, K18 and K19.

a. Remove stanchion by PDU (1, figure 4-43).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling and position of cables of auxiliary contactor (4), loosen screws, and disconnect cables.
e. Use a screwdriver to push locking element (6) on auxiliary contactor (4) in direction of arrow, tilt auxiliary contactor upward, and remove from mounting bar (7).

INSPECTION

Visually inspect for damage or discoloration due to heat.

TEST

a Connect 24 VDC power supply to terminal A1 (+) and A2 (-).

b. Check operation of auxiliary contactor (4). Contactor must activate reliably in the range 19-24 VDC.

CAUTION

Do not operate plunger (5) by hand while power supply is installed.

c. Disconnect power supply.

d Operate plunger (5) manually to the energized position. Using multimeter perform continuity check as indicated in figure 4-43.

e. Check auxiliary contactors (time pulse relays) K16, K17, K18, and K19 as follows:

(1) Briefly applying +24 VDC to terminal A1 (+) will cause the contactor to switch to energize.

(2) Briefly applying +24 VDC to terminal E1 (+) will cause the contact to reset to the de-energized position.

INSTALLATION

a Insert auxiliary contactor (4) into top of mounting bar (7) and push in at the bottom.

b. Install cables for auxiliary contactor (4) and tighten screws.

c. Remove stanchion.

d Stow prop (3), close access door (2) and secure.

e. Install stanchion by PDU (1).

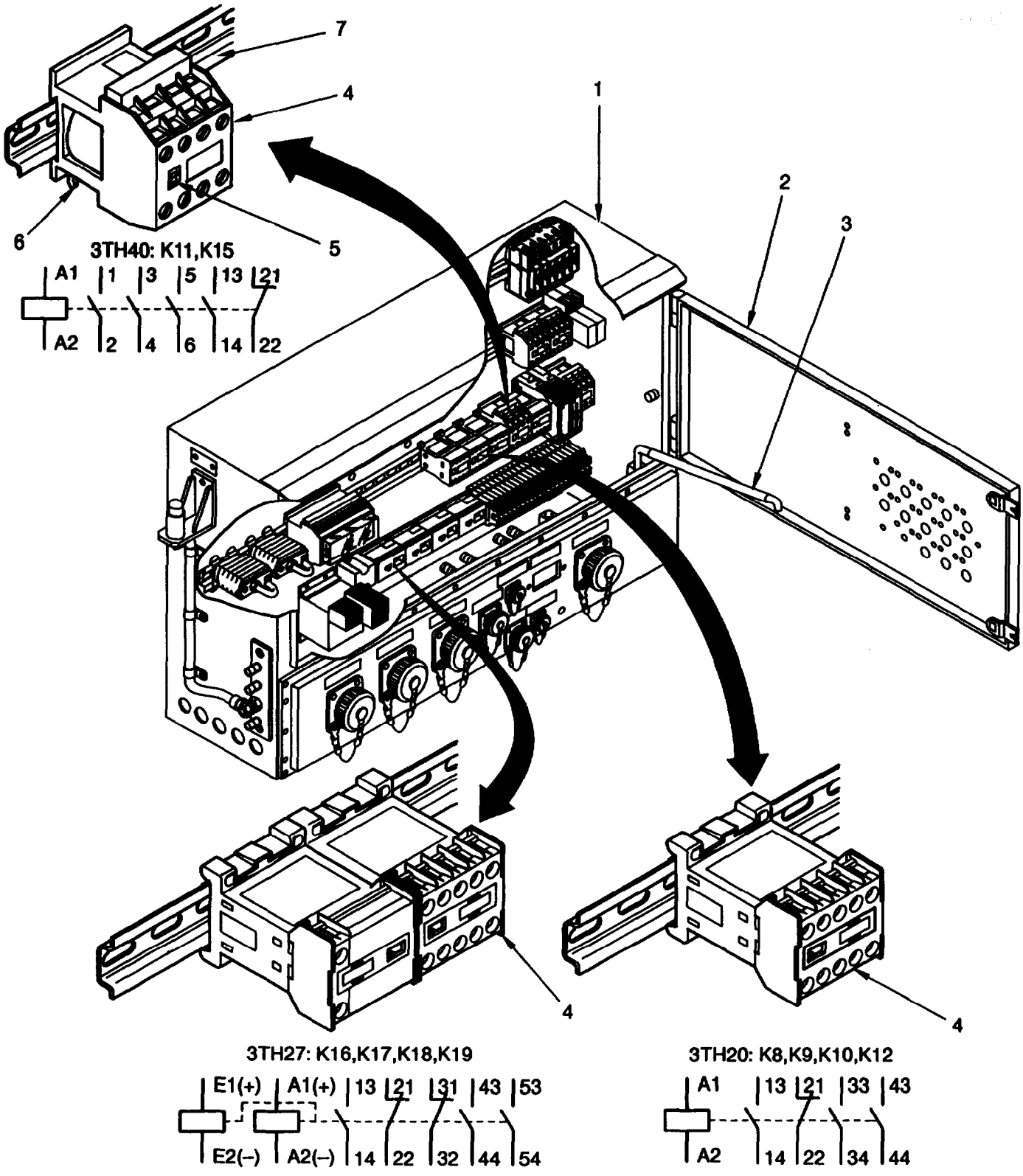


Figure 4-43 Auxiliary Contactors (except K20, K21).

4.30 AUXILIARY CONTACTORS K20 AND K21 MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Bit (item 3, appendix B)
DC power supply, 220 VDC

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for auxiliary contactors K20 and K21.

a Remove stanchion by PDU (1, figure 4-44).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling and position of cables of auxiliary contactor (4), loosen screws, and disconnect cables.
e. Use a screwdriver to push locking element (6) on auxiliary contactor (4) in direction of arrow, tilt auxiliary contactor upward, and remove from mounting bar (7).

INSPECTION

Visually inspect for damage or discoloration due to heat.

TEST

a. Connect 220 VDC power supply to terminal A1 (+) and A2 (-).
b. Check operation of auxiliary contactor (4). Contactor must activate reliably in the range 190-230 VDC.

CAUTION

Do not operate plunger (5) by hand while power supply is installed.

c. Disconnect power supply.
d. Operate plunger (5) manually to the energized position.
e. Using multimeter perform continuity check as indicated in figure 4-44.

INSTALLATION

a. Insert auxiliary contactor (4) into top of mounting bar (7) and push in at the bottom.
b. Install cables for auxiliary contactor (4) and tighten screws.
c. Remove stanchion.
d. Stow prop (3), close access door (2) and secure.
e. Install stanchion by PDU (1).

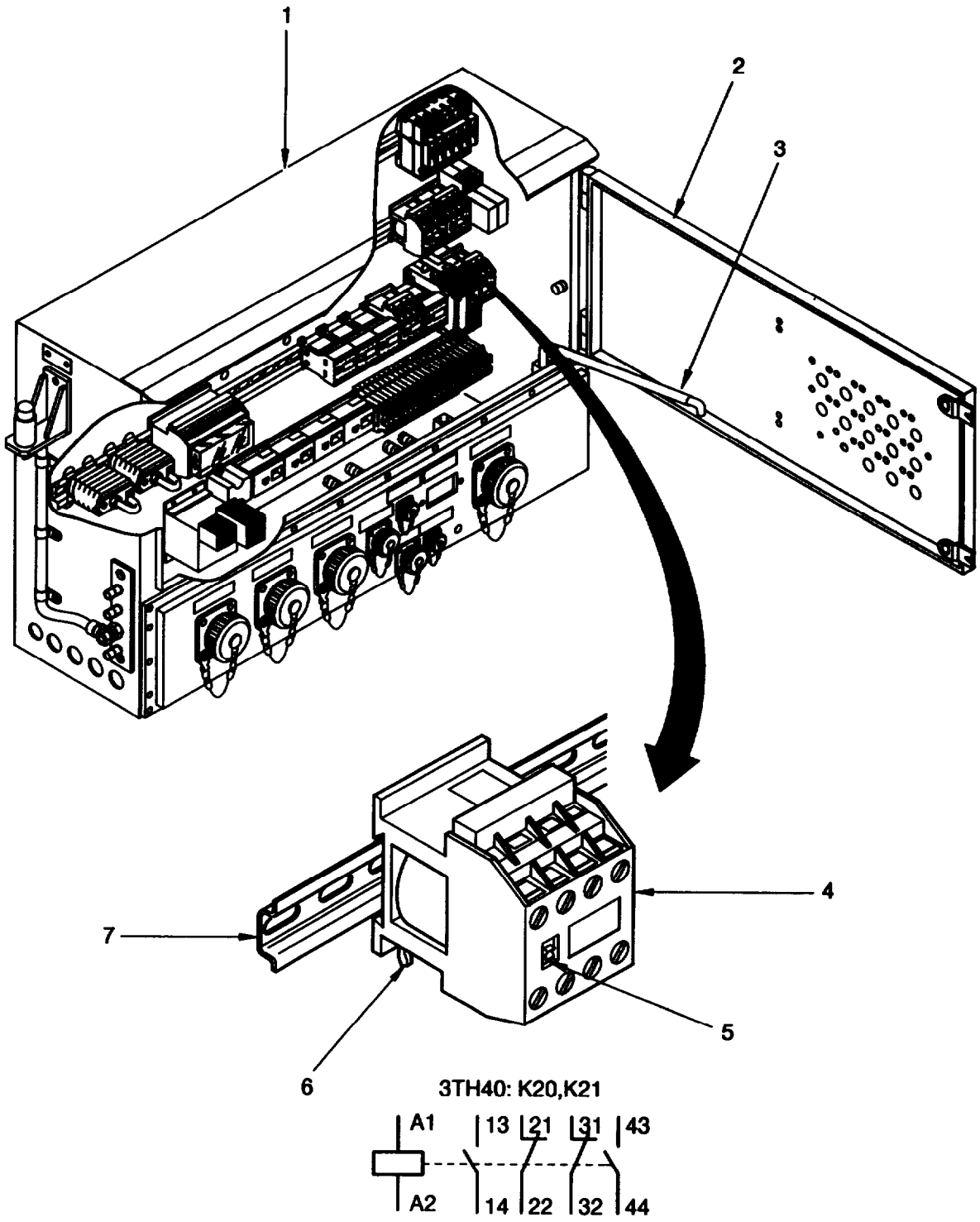


Figure 4-44 Auxiliary Contactor- K20, K21.

4.31 AC/DC TRANSFORMER/RECTIFIER MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
AC-Power Supply, 208 VAC/400 Hz

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for AC/DC transformers V3 and V4.

a. Remove stanchion by PDU (1, figure 4-45).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling and position of cables of AC/DC transformer V3 (4) or V4 (5), loosen screws and remove cables.
e. Use a screwdriver to push locking element (6) on AC/DC transformer in direction of arrow, tilt AC/DC transformer upward, and remove from mounting bar (7).

INSPECTION

Inspect AC/DC transformer for damage or discoloration due to heat.

TEST

a Connect power 208 VAC supply to AC/DC transformer inputs.

b. Use multimeter to check the following voltages at transformers V3 (3) and V4 (4):

(1) Input voltage, phase to phase, at V4 (4): 208 VAC

(2) output voltage: approximately 180 VDC

INSTALLATION

a Insert AC/DC transformer V3 (4) or V4 (5) into top of mounting bar (7) and push in at the bottom.

b. Install cables and tighten screws

c. Remove stanchion.

d Stow prop (3), close access door (2) and secure.

e. Install stanchion by PDU (1).

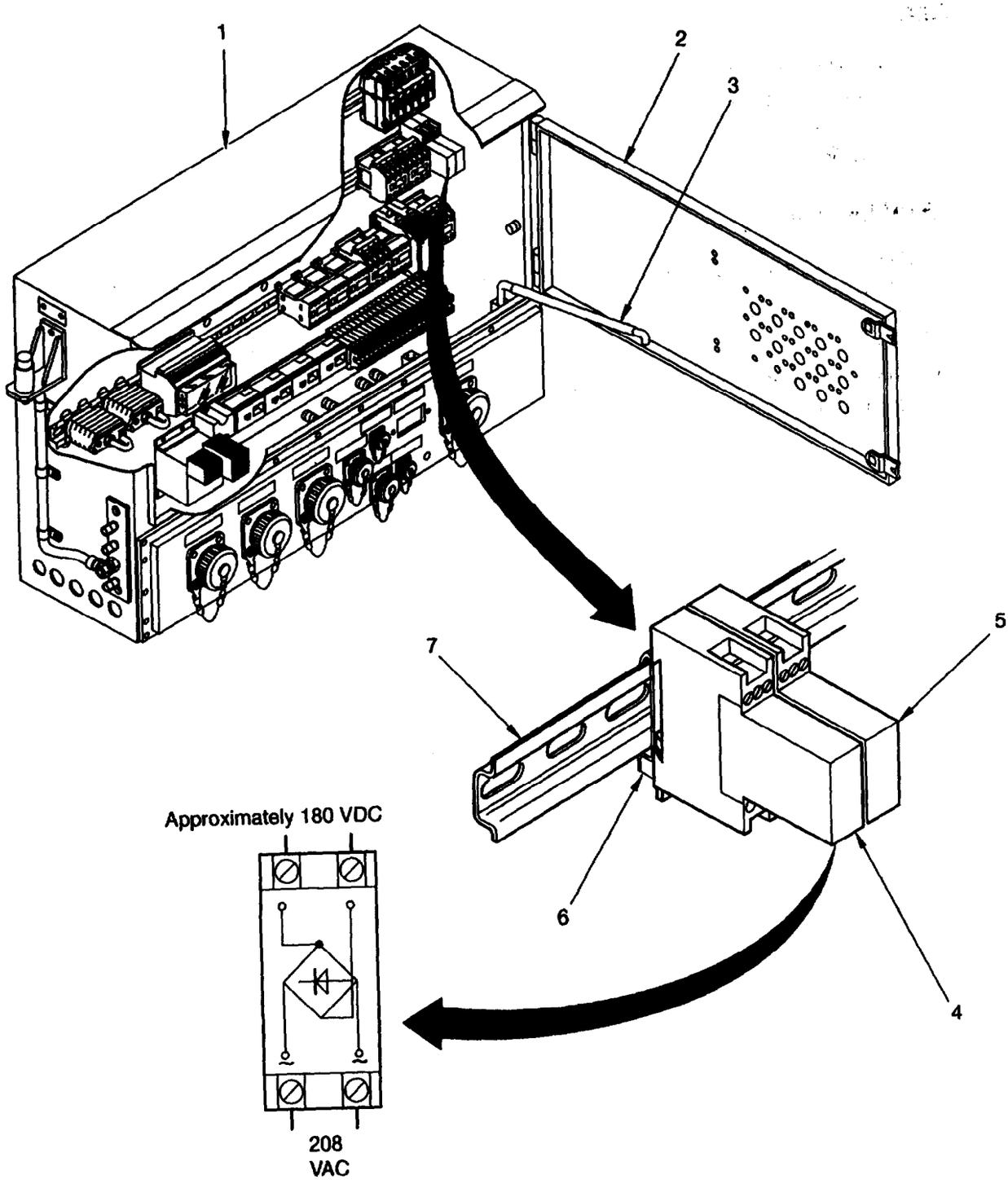


Figure 4-45 AC/DC Transformer:

4.32 CIRCUIT BREAKER MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- The Generator Sets 150 kW produce lethal voltages.
- Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.
- Wear protective gloves when performing any work on main assemblies of the EPP III.

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for all circuit breakers F1 (10), F2 (11), F7 (12), F8 (13) (Example F1).

a. Remove stanchion by PDU (1, figure 4-46).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Remove screws (4), serrated lock washers (5), washers (6) and protective cover (7).
e. Record labeling and position of cables on circuit breaker F1 (10), loosen screws and remove cables.
f. Use a screwdriver to push locking element (8) on circuit breaker F1 (10) in direction of arrow, tilt circuit breaker F1 (10) upward and remove from mounting bar (8).

INSPECTION

Inspect for damage and discoloration due to heat.

TEST

Use multimeter to check continuity resistance. Continuity must be present when breaker is actuated; resistance must be infinity when breaker is not actuated.

INSTALLATION

a. Insert circuit breaker F1 (10) into top of mounting bar (9) and push in at the bottom.
b. Install cables on circuit breaker F1 (10) and tighten screws.
c. Install protective cover (7) and secure with screw (4), serrated lock washer (5) and washer (6).
d. Remove stanchion.
e. Stow prop (3), close access door (2) and secure.
f. Install stanchion by PDU (1).

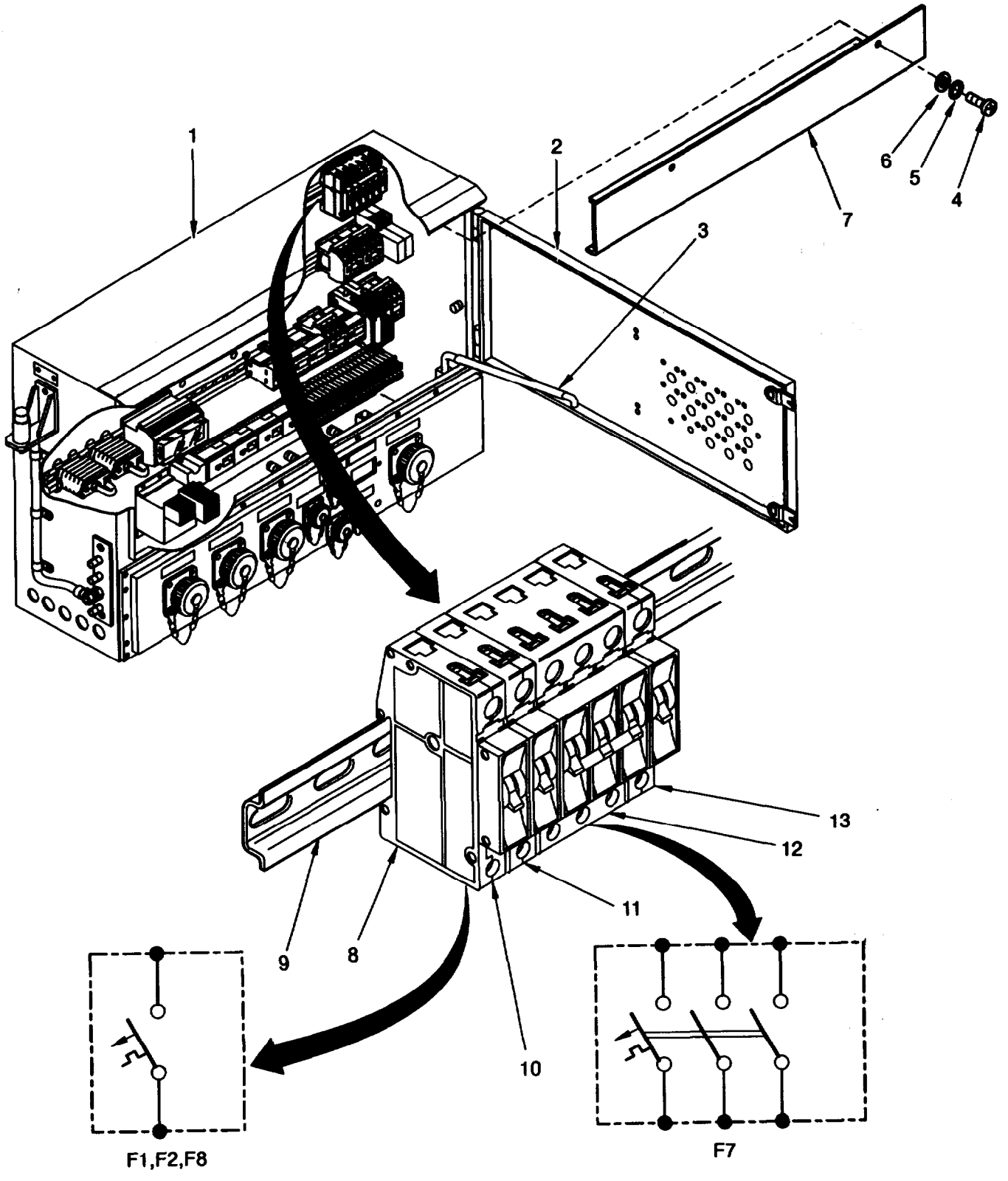


Figure 4-46 Circuit Breakers.

4.33 CABINET ILLUMINATION S5/H11MAINTENANCE.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 4-47).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.

SWITCH 85

a. Record labeling and position of cables of switch S5 (4), loosen screws and remove cables.
b. Remove screws (5), serrated lock washers (6) and switch S5 (4).

ILLUMINATION H11

a. Insert screwdriver in slot on cover (11), turn slot and remove cover (11) off lamp base (7).
b. Remove bulb (12) and unplug two cables from lamp base (7).
c. Remove two nuts (10), serrated lock washers (9), washers (8) and lamp base (7).

INSTALLATION

SWITCH S5

a. Install switch S5 (4) with serrated lock washers (6) and screws (5).
b. Install cables to switch S5 (4) and tighten screws.

ILLUMINATION H11

a. Install lamp base (7), washers (8), serrated lock washers (9) and nuts (10). Tighten nuts.
b. Install bulb (12) and cable to lamp base (7).
c. Install cover (11).
d. Remove stanchion.
e. Stow prop (3), close access door (2) and secure.
f. Install stanchion by PDU (1).

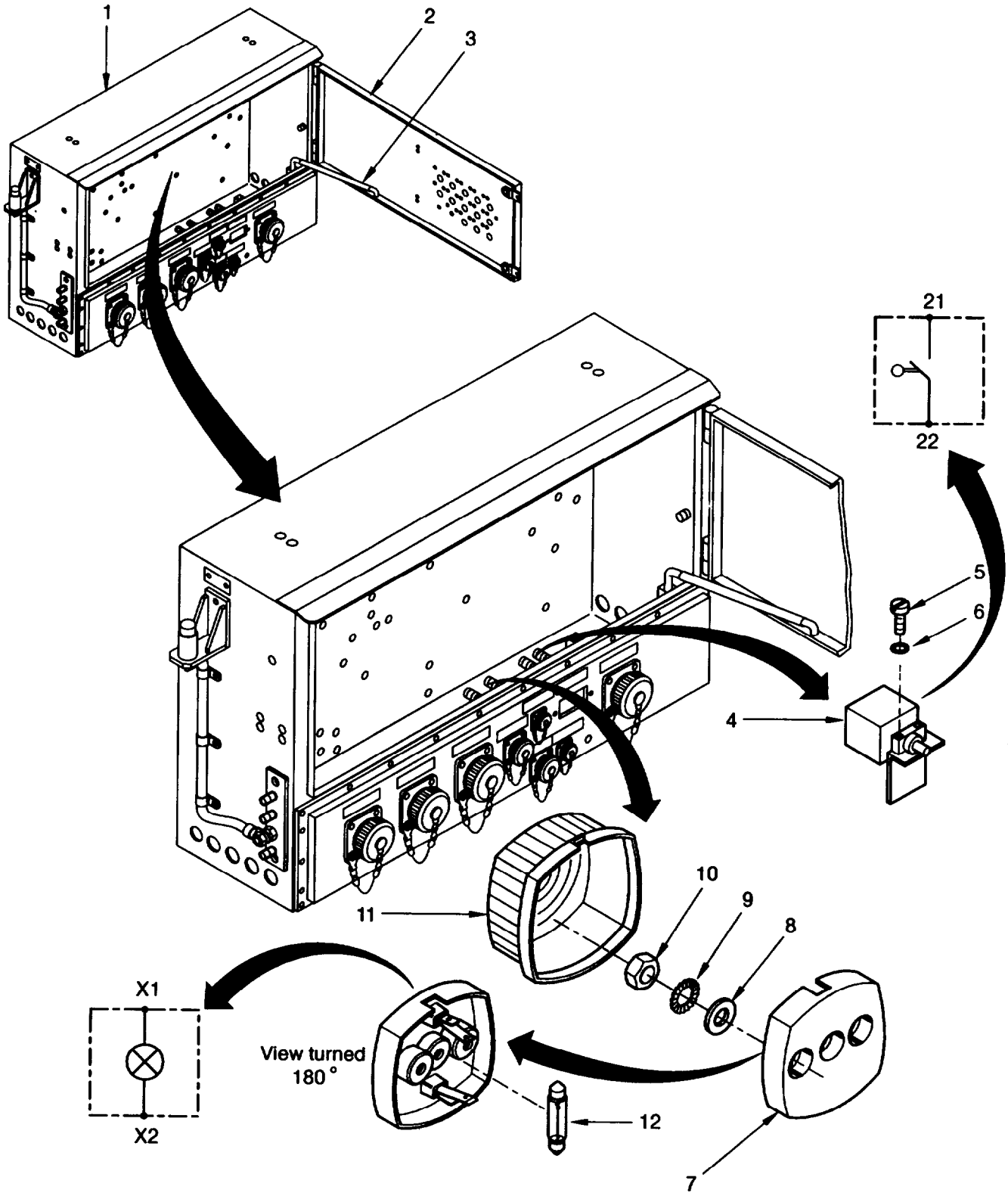


Figure 4-47 Cabinet illumination S5/H11.

4.34 LOAD BANK PROCEDURES (AVTRON 150 kW RESISTIVE)

This task covers: a. Operating b. Shutdown

INITIAL SETUP

Tools

Load Bank
(item 23, appendix)

Equipment Conditions

Reference
Generator Set 150 kW, shutdown paragraph 2.5.2.

Materials/Parts

None

Personnel Required

Two

WARNING

- **Potential 208VAC shock hazard, Do not disconnect or connected control or power cables while generator set 1 or 2 is running.**
- **Always install protective covers on control and power cables when cables are disconnected.**

CAUTION

- **Load bank is configured for 120/208 volt, 3-phase, 400 Hz condition, make sure generator set matches this configuration.**

CAUTION

- **Never exceed the rated voltage, as this will cause the load bank to overheat.**
- **Do not apply DC voltages, as the contractors do not have arc blowout magnets.**
- **Do not exceed the 30 kW rating on the PU-789 or PU-804 30 kW** generator set.

OPERATING PROCEDURE

1. Set-up load bank

   a. Set all switches on the EPP III/EPU junction box to OFF.

   b. Set all switches on the load bank to OFF.

   c. Connect load bank cables L1, L2, L3, and LO to EPP III/EPU junction box. Connect power and control cables of generator set to junction box. Connect all ground cables to earth ground.

2. Start generator set.

   a. Adjust voltage and frequency to rated values.

   b. Close the "AC circuit interrupter" on the generator set.

3. At EPP-III-EPU junction box, set ICC, CRG, or ECS ON/OFF switch to ON.

   a. Observe that the INPUT POWER indicator on the side of junction box is illuminated.

   b. Observe that the appropriate shelter indicator is illuminated.

   c. Observe that the appropriate GENERATOR ONLINE indicator is illuminated.

   d. If indicators in a. through c. above do not illuminate, check to insure all switches are in the on position, all cables are tight, and no lamps are burned out.

4. At load bank:

   a. Set BLOWER/CONTROL POWER switch on the load bank to ON.

   b. Set POWER switch on digital display panel to ON at the load bank.

   c. Select desired load using KW LOAD STEPS switches.

CAUTION

- **Do not apply instantaneous (one step) loads greater than 50 kW on the EPP III 150 kW generator set.**
- **Do not exceed the 30 kW rating on the PU-789/PU-804 30 kW generator set.**

   d. Apply load by turning MASTER LOAD to ON.

   e. Observe function display for appropriate indication.

   f. Operate each of the 150 kW generator sets for approximately 30 minutes after reaching 100 percent load.

   g. If the appropriate indications are not displayed, check and insure that all switches are in the correct position and all cables are tight. Refer to the appropriate maintenance procedures.

5. At generator set:

   a. Observe voltage, frequency, and load meters for proper indications.

   b. If proper indications are not present on any meter, refer to the appropriate maintenance procedures.

SHUTDOWN PROCEDURE

1. Set MASTER LOAD switch on load bank to OFF.
2. Open “AC Circuit Interrupter” on generator set.
3. After a 30-second cool down, turn BLOWER/CONTROL POWER switch on load bank to OFF.
4. Set all remaining switches on the load bank to OFF.
5. Set all switches on the EPP-III/EPU junction box to OFF.
6. Shut down generator set.
7. Disconnect load bank cables L1, L2, L3, LO and generator power and control cables from EPP III/EPU junction box. Disconnect all ground cables.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Subject Index		Page
Section I. Repair Parts; Tools; Special Tools; Test, Measurement and Diagnostic Equipment (TMDE); and Support Equipment		5-2
5.1	Common Tools and Equipment	5-2
5.2	Special Tools, TMDE, and Support Equipment	5-2
5.3	Repair Parts	5-2
Section II. Troubleshooting		5-3
5.4	General	5-3
Section III. Maintenance Procedures		5-9
5.5	General	5-9
5.6	PDU Power Cable, One Phase Maintenance	5-10
5.7	Control Cable Assembly, PDU to Generator Set 150 kW, Maintenance	5-15
5.8	Power Cable (ECS Power Set) Maintenance	5-20
5.9	Control Cable Maintenance	5-25
5.10	Contactor Assemblies Maintenance	5-30
5.11	Diode Assembly Maintenance	5-33
5.12	Electronic Module Al Assembly Maintenance	5-35
5.13	Time Relay K14 Maintenance	5-38
5.14	Wipe Relay K13 Maintenance	5-41
5.15	Internal Power Supply V5/T13 Maintenance	5-44
5.16	PDU Electronic Assembly N6 Maintenance	5-47
5.17	Connection Panel Maintenance	5-53

Section L REPAIR PARTS; TOOLS; SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

5.1 COMMON TOOLS AND EQUIPMENT,

A list of recommended tools and test equipment required to maintain the Electric Power Plant III is contained in Appendix B, SECTION III.

5.2 SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

For special tools refer to appendix F.

5.3 REPAIR PARTS.

For repair parts refer to appendix F.

Section II. TROUBLESHOOTING

6.4 GENERAL,

The symptom index for EPP III lists faults associated with PDU assembly operation. Figures 5-1 through 5-10 provide a go/no-go flowchart for each malfunction. Each malfunction listed includes a reference to the applicable figure that contains a chart to help you determine probable causes and corrective actions to take. The symptom index cannot list all faults that may occur, or all possible tests or inspections and corrective actions. If a malfunction is not listed or cannot be corrected by the corrective actions listed, notify the next higher level of maintenance for assistance.

WARNING

- **Potential 150kw/208 VAC kw shock hazard with failure to adhere to this warning. Contact with this high power could result in death or severe injury. If the removal of one generator from the EPP III is required, replace it with an extra generator if available. If the EPP III must be operated with only one generator installed, insure that all cables for the removed generator have the protective caps properly installed prior to starting the remaining generator set.**
- **Prior to energizing the equipment the operator must check for exposed electrical terminals.**
- **Always install protective covers on control and power cables when cables are not connected.**
- **Be sure to observe all Warning labels on equipment.**
- **Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator** set **1 or 2 is running.**

SYMPTOM INDEX

NO POWER TO ECS OR RS although Generator is Operating Normally.	Figure 5-1
Power Distribution Unit NOT OPERATING although Generator is Operating Normally	Figure 5-2
Overload Shutdown of ECS or RS Load although Generator is Operating Normally.	Figure 5-3
CANNOT SWITCH OVER from Generator 1 or 2 to Commercial Power Converter.	Figure 5-4
CANNOT SWITCH OVER from Commercial Power Converter to Generator Operation.	Figure 5-5

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

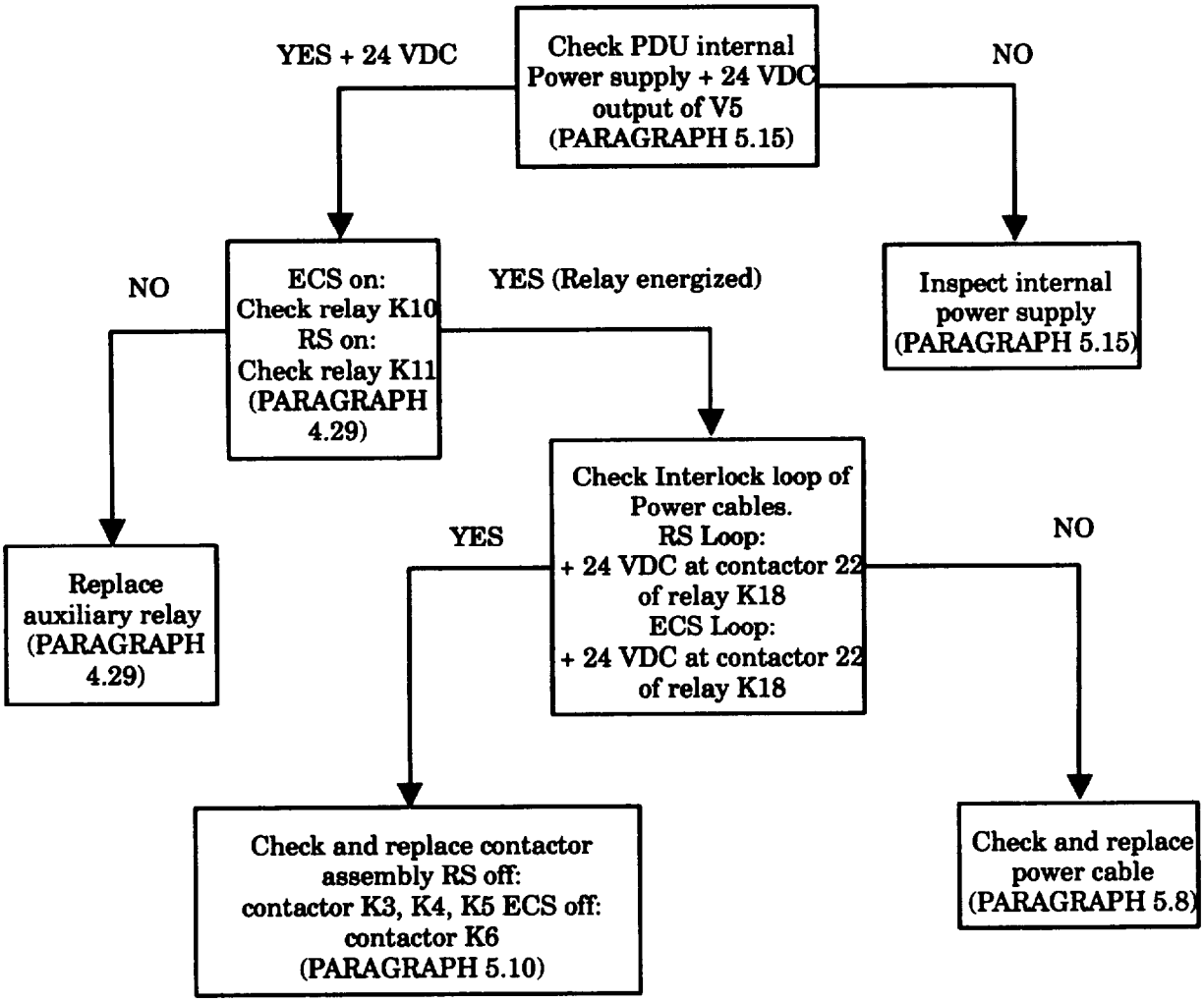


Figure 5-1 ***No Power to ECS or RS although Generator is Operating Normally.***

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORE ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

NOTE

Under normal operating conditions, power supply V5/T13 provides internal power. V1/V2 act as buffers.

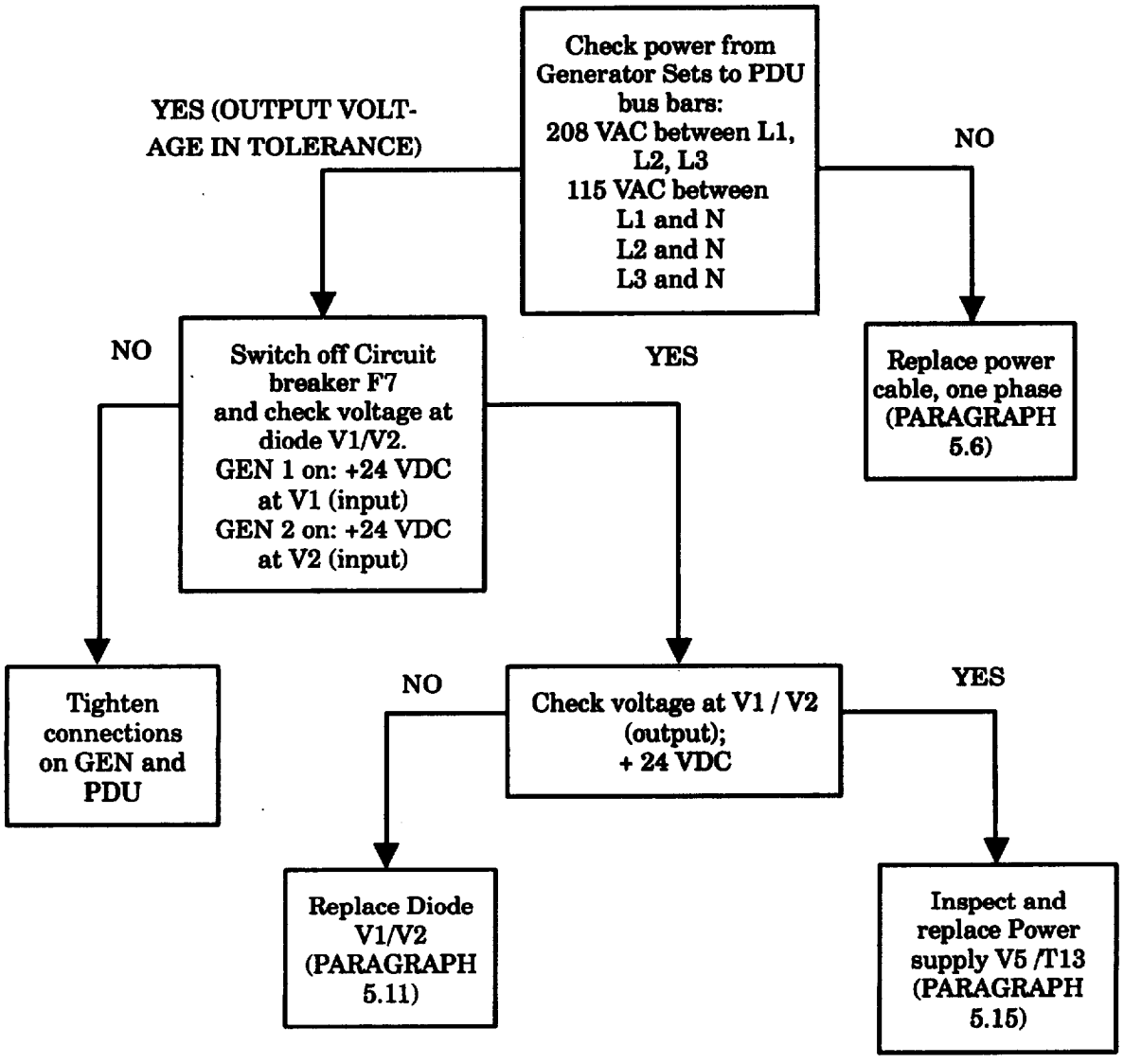


Figure 5-2 Power Distribution Unit Not Operating although Generator is Operating Normally.

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

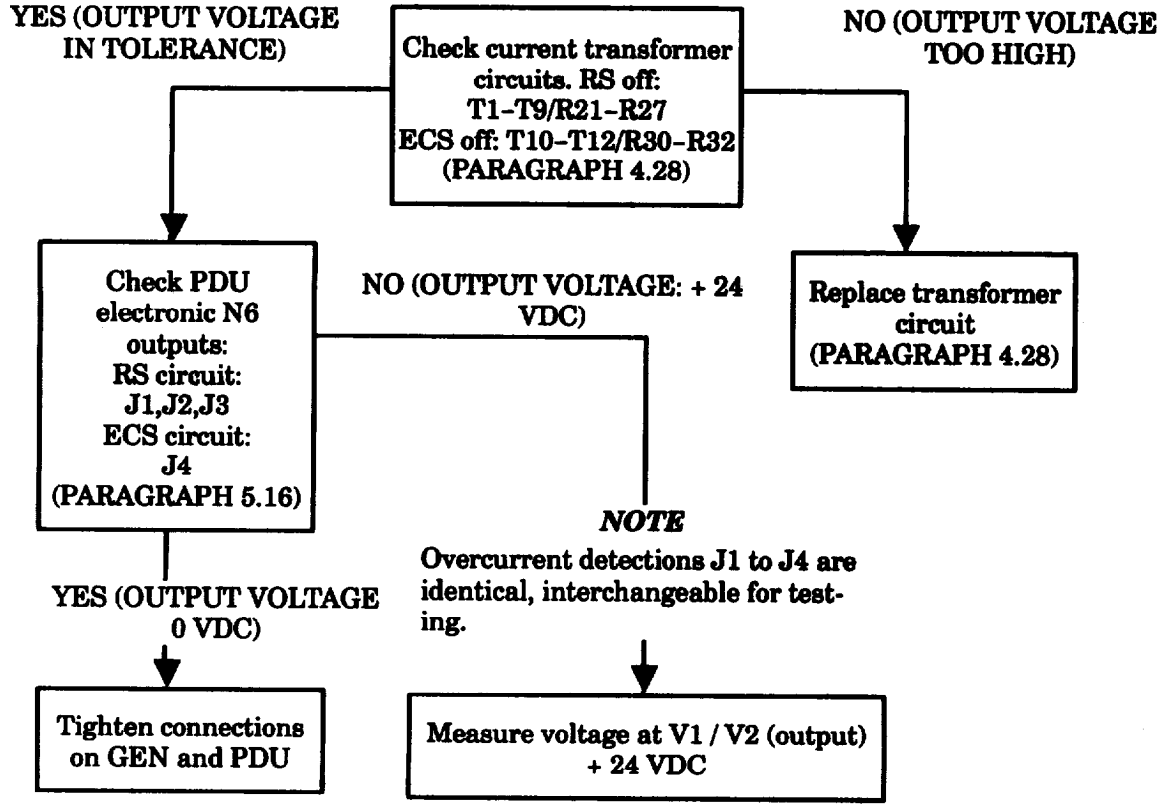


Figure 5-3 Power Distribution Unit Not Operating although Generator is Operating Normally.

WARNING
DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORE ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

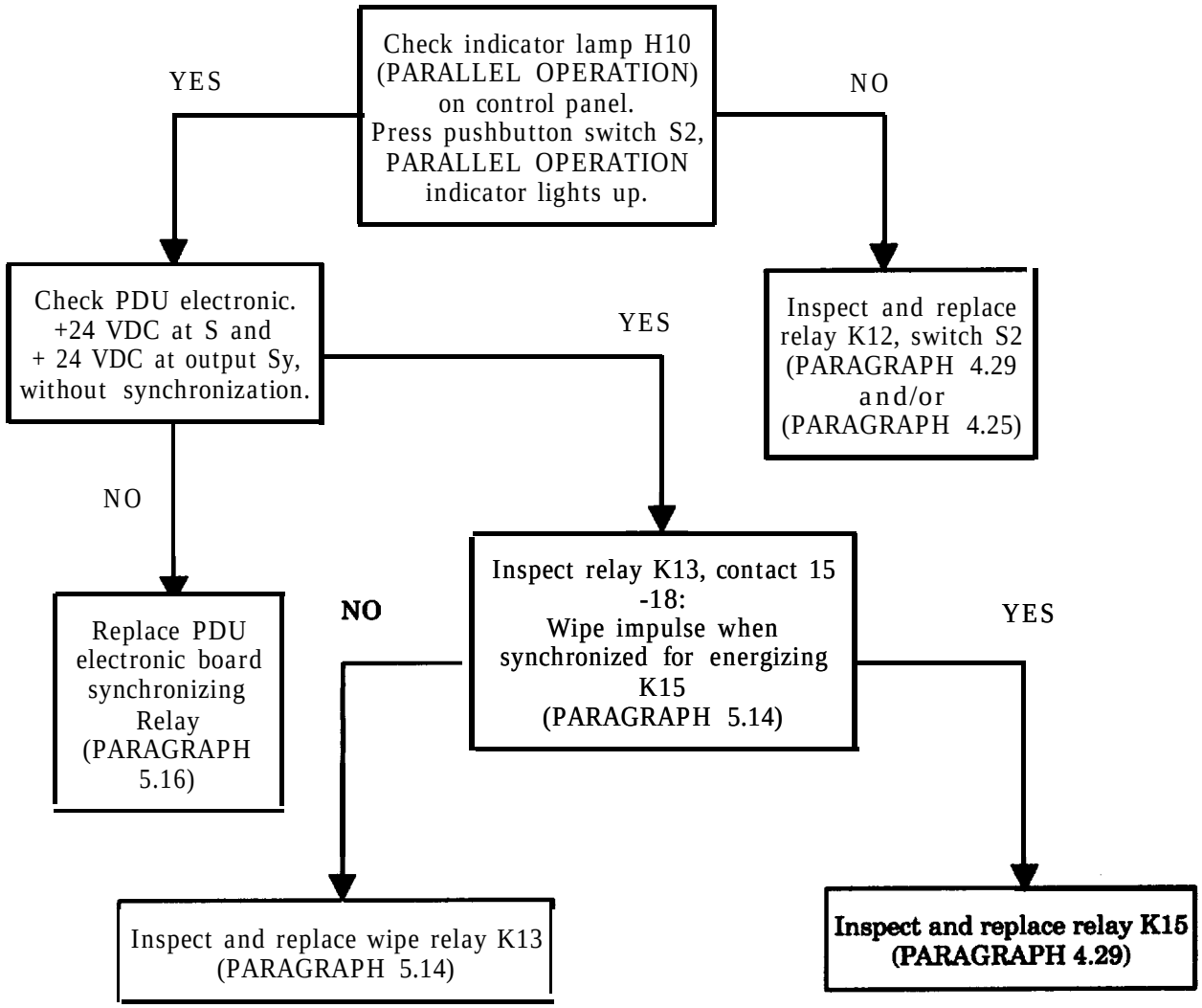


Figure 5-4 Cannot Switch Over from Generator 1 or 2 to Commercial Power Converter

WARNING

DANGEROUS VOLTAGE EXISTS ON LIVE CIRCUITS. ALWAYS OBSERVE SAFETY PRECAUTIONS AND NEVER WORK ALONE. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

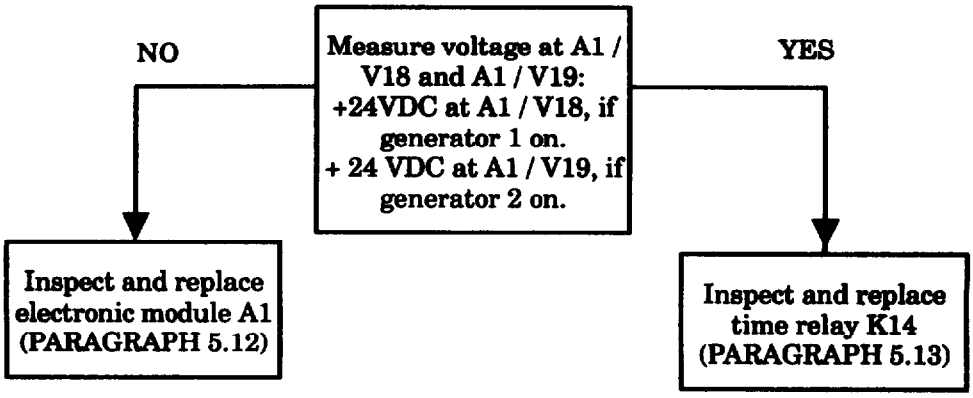


Figure 5-5 Cannot Switch Over from Commercial Power Converter to Generator Operation.

Section III. MAINTENANCE PROCEDURES

5.5 GENERAL.

This section will provide authorized unit level maintenance instructions for EPP III and its components. Each major component will be covered under its own paragraph heading. Each paragraph will be further divided into specific maintenance tasks, as directed by the Maintenance Allocation Chart (MAC). These tasks will include inspection on unit level, removal and installation, as applicable. Step by step instructions and spot illustrations will guide personnel through each maintenance task.

WARNING

- Potential 150/208 VAC kw shock hazard with failure to adhere to this warning. Contact with this high power could result in death or severe injury. If the removal of one generator from the EPP III is required, replace it with an extra generator if available. If the EPP III must be operated with only one generator installed, insure that all cables for the removed generator have the protective caps properly installed prior to starting the remaining generator set.
- Prior to energizing the equipment the operator must check for exposed electrical terminals.
- Always install protective covers on control and power cables when cables are not connected.
- Be sure to observe all Warning labels on equipment.
- Potential 208 VAC shock hazard. Do not disconnect or connect control or power cables while generator set 1 or 2 is running.

WARNING

- The Generator Sets 160 kW produce lethal voltages.
- Turn off power to the EPP ID or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work,
- Wear protective gloves when performing any work on main assemblies of the EPP III.

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

NOTE

Secure all screws and nuts (except those on electrical connections) with Loctite 243.

6.6 PDU POWER CABLE, ONE PHASE MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Repair e. IInstallation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit
(item 3, appendix B)
High voltage tester
Wrench, shop manufactured
(item 10, appendix B)
Circlip pliers
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 26.1.

Materials/Parts

Cable ties
(item 2, appendix E)
Lubricant
(item 6, appendix E)

Personnel Required

Two

WARNING

- **The Generator Sets 160 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 160 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

NOTE

The Power Distribution Unit must be reomved before this maintenance. Refer to paragraph 4.19.

REMOVAL

NOTE

This procedure is the same for all one-phase PDU Power Cables.

a. Remove stanchion by PDU (1, figure 5-6).
b. Open access door (2) and secure with prop (3).
C. Install stanchion.
d. Remove screws (4), serrated lock washer (5), washer (6), and protective cover (7).
e. Remove screw (8), serrated lock washer (9), washer (10), and cables (11,12) from appropriate bus bar (15).
f. Cut cable ties from cable bundles.
g Using the shop manufactured wrench, remove nut (13) from appropriate corrugated hose (14), and remove from cables (11,12).
h. Remove corrugated hose (14) and cables (11,121 from PDU (1).

INSPECTION

a. Check that cable is in good external condition.
b. Check that protective covers, lanyards and cable ties (16, 17, and 18, figure 5-7) are in good condition. Replace if damaged.

TEST

Using a high voltage tester:

a. Test voltage: 1000 V for 1 minute between wire and ground. The tester must not activate.
b. Use multimeter to test for continuity.

REPAIR

a. Remove lugs (11, figure 5-7) from cables (9, 10).
b. Using two wrenches, unscrew locked screw connection (1).
c. Grasp connector and pull cables (9,10) and parts (5 to 8) and (12, 13) out of corrugated hose (15). Assembled parts (2 to 4) then fall from corrugated hose (14).

NOTE

Do not disassemble components (2 to 4) unless one of the components is damaged.

d. Remove snap rings (2), collar (3) and union (4) from cables (9, 10).
e. Assemble components (2 to 4) if they are disassembled.
f. Cut seven new cables (9,10).
g Remove components (5,6,7) from cable to be changed.
h. Slide component (7) and shrinkable sleeving (8) over cables (9, 10).
i. Crimp seven cables (9,10) into component (6).
j. Slide shrinkable sleeving (8) over the end of component (6) and shrink on shrinkable sleeving (8).
k. Assemble components (5,6,7) of receptacle.

CAUTION

The corrugated hose (15) has a kinked section. Insert cable carefully to prevent damage.

1. Using lubricant, guide cable completely through components (2,3,4) and corrugated hose (15) until component (5) is firmly seated in the union (4).
m. Using two wrenches screw locked screw connection (1).
n. Place appropriate label (14) and transparent heat shrink tubing on right position and shrink on corrugated hose (15).

INSTALLATION

a. Install appropriate corrugated hose and cable on PDU (1).
b. Install nut (13) on appropriate corrugated hose(14) by sliding along cable.
c. Using the shop manufactured wrench tighten nut (13).
d. Slide insulation tube (13, figure 5-7) from inside PDU (1, figure 5-6) over cables (9, 10) until tubing is seated half inside the PDU and half outside on corrugated hose (14, figure 5-6).
e. Install cable lugs (11, figure 5-7) to cables (9, 10):
   (1) Crimp a cable lug (11) on stripped part of four cables (9).
   (2) Crimp a cable lug (11) on stripped part of cable (10).
f. Slide transparent shrinkable sleevings (12) over lugs (11) and shrink on.
g. Install screw (8), serrated lock washer (9), washer (10), and cable (11, 12) on bus bar (15). Tighten screw (8).
h. Install protective cover (7) and secure with screw (4), serrated lock washer (5) and washer (6).
i. Bundle cables with cable ties.
j. Remove stanchion.
k. Stow prop (3), close access door (2) and secure.
1. Install stanchion by PDU (1).
m. Install cable to Generator Set 150 kW. Refer to paragraph 4.17, figure 4-20.
n, Connect load bank to generator set and perform procedures in paragraph 4..34.

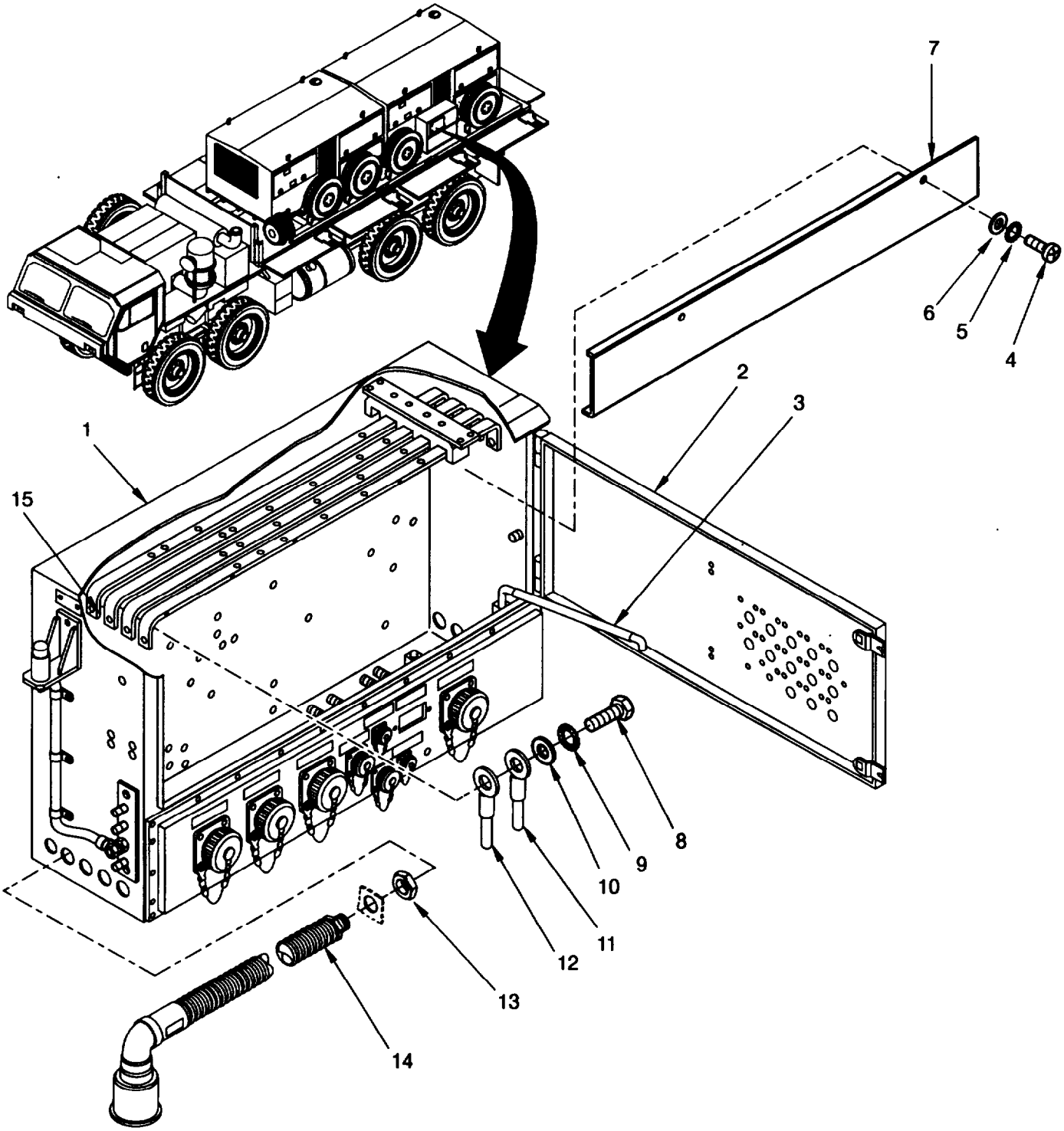


Figure 5-6 PDU Power Cable, One Phase.

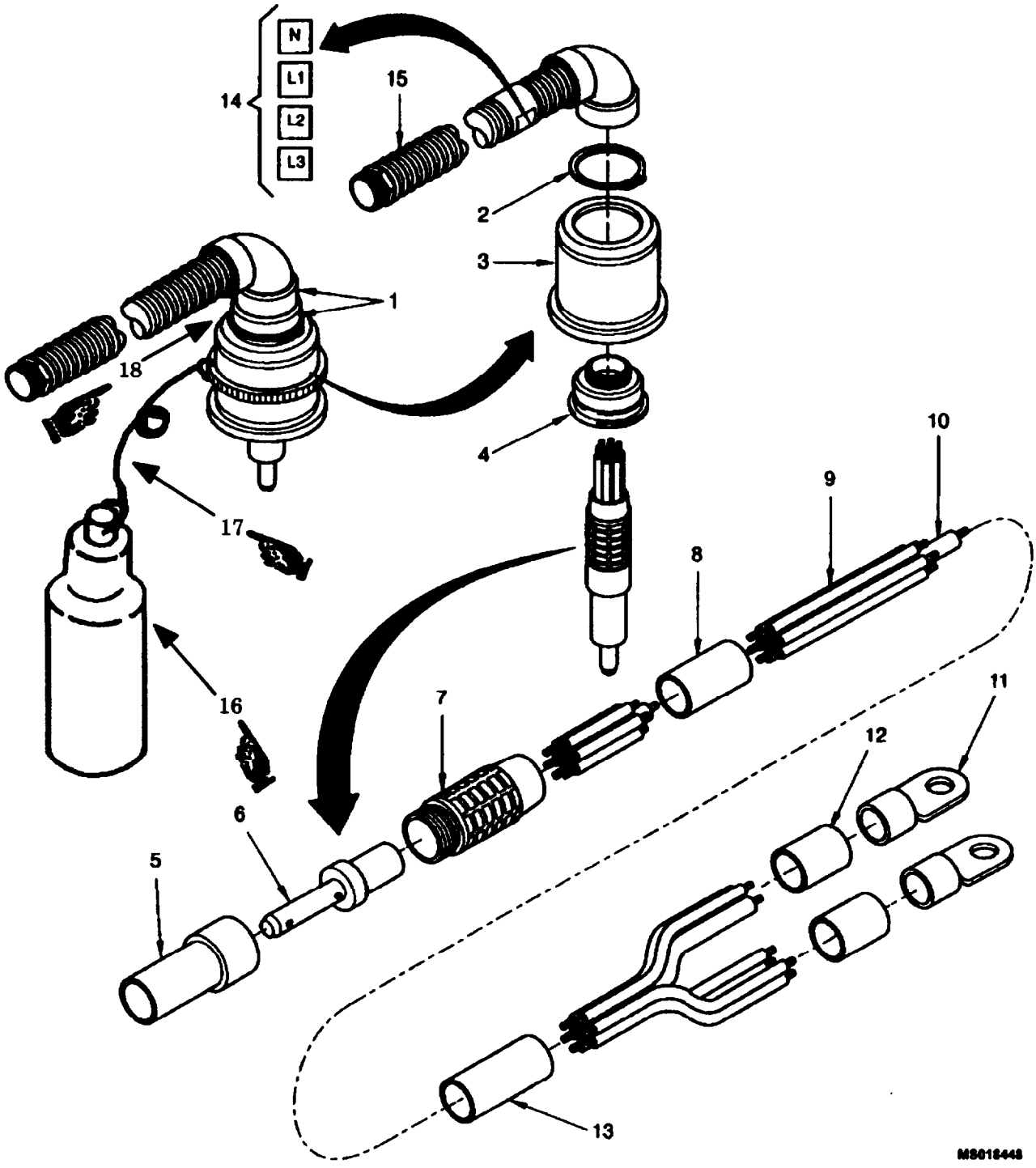


Figure 5-7 Protective Casing and Power Cable Assembly.

5.7 CONTROL CABLE ASSEMBLY, PDU TO GENERATOR SET 160 KW, MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test
d. Repair e. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
High voltage tester
Insulation tester
Wrench, shop manufactured (item 10, appendix B)
Load Bank (item 23, appendix B)

Materials/Parts

Cable ties (item 2, appendix E)
Solder (item 7, appendix E)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Personnel Required

Two

WARNING

- The **Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 160 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

NOTE

The Power Distribution Unit must be removed before this maintenance. Refer to paragraph 4.19.

REMOVAL

NOTE

This procedure is the same for both cable assemblies control, PDU to Generator Set 150 kW.

a Remove stanchion by PDU (1, figure 5-8).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Refer to paragraph 5.17, and remove connection panel (4) as instructed.
e. Record labeling and position of cables on appropriate terminal strip, loosen screws and disconnect cable.
f. Using the shop manufactured wrench, remove nut (5) from cable (6). Remove cable from PDU (1).

INSPECTION

Check that cable is in good condition.

TEST

Using a high voltage/insulation tester:
a. Test voltage: 1000 V for 1 minute between wire and ground. The tester must not activate. Use multimeter to test for continuity (see table 5-1).
b. Test insulation: 100 V between each wire A-Y and ground. The insulation resistance must be ≥200 MOhm.

REPAIR

CAUTION

If the wires in the cable are changed during repair procedures tags should be transferred from the old to the new wires to indicate where wires are to be reconnected.

a. Remove cap (7, figure NO TAG), and remove chain assembly by cutting cable tie (11).
b. Cut cable tie (11) and molded body (10) from cable (6).
c. Remove collar (9) from plug (8).

CAUTION

Record labeling and position of all wires before unsoldering from plug (8).

d. Unsolder wires from plug (8).
e. Solder wires to plug (8).
f. Install collar (9) in plug (8).
g. Install shrinkable sleeving (12) with cable marker at position.
h. Install molded body (10).
i. Install cap (7) and attach chain assembly using new cable tie (11).

INSPECTION

a. Install cable (6) in PDU (1) securing with nut (5) using the shop manufactured wrench.
b. Install cables on terminal strip.
c. Install connection panel (4) with rubber flap. Refer to paragraph 5.17.
d. Remove stanchion by PDU (1).
e. Stow prop (3), close access door (2) and secure.
f. Install stanchion by PDU (1).
g. Install cable to Generator Set 160 kW. Refer to paragraph 4.19.
h. Connect load bank to generator set and perform procedures in paragraph 4.34.

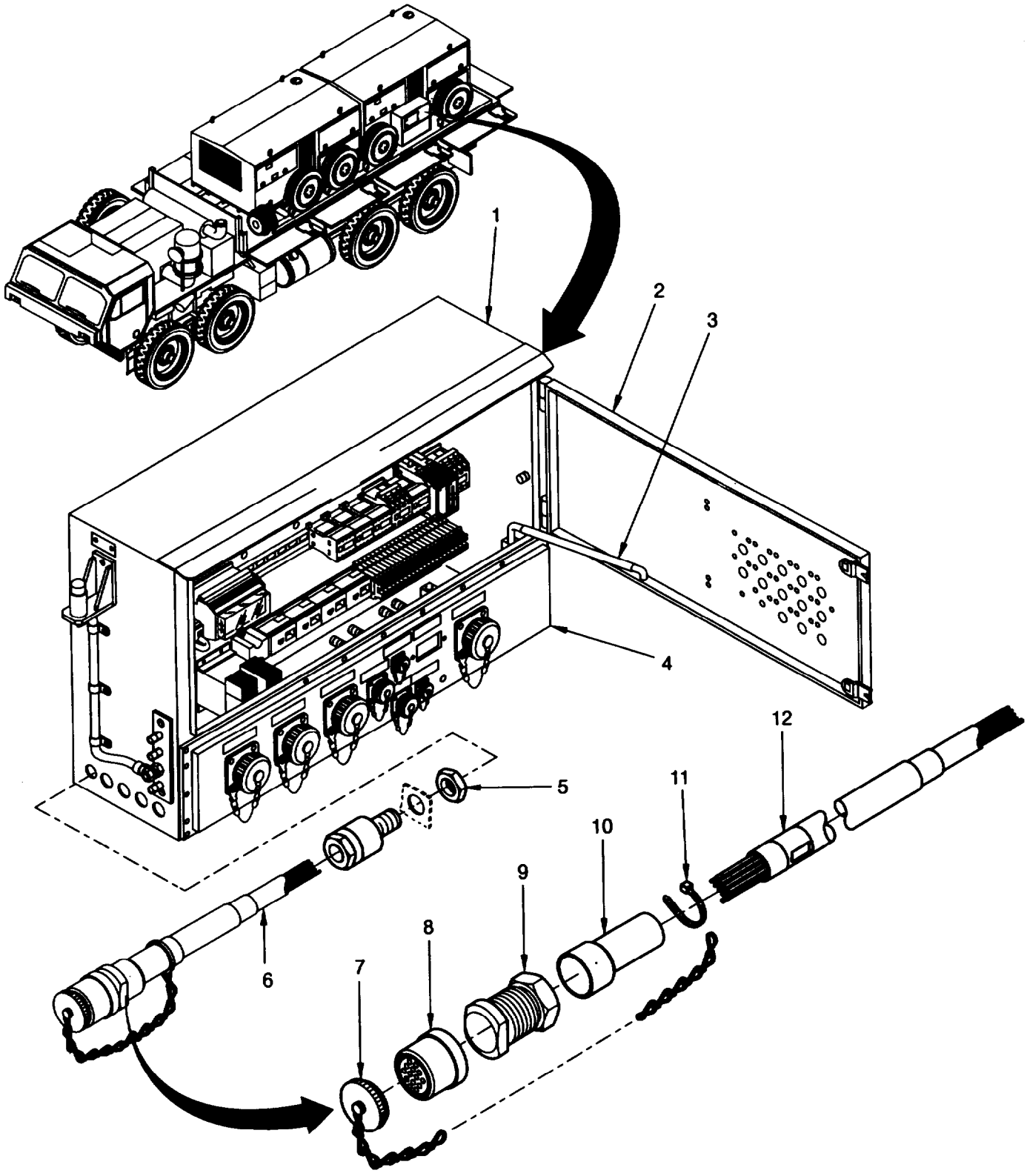


Figure 5-8 Control Cable Assembly, PDU to Generator Set 150 kW.

Table 5-1 wiring Layout for Cable Assembly Control, PDU to Generator Set 160 kW.

Conductor Pair No.	Plug Contacts	Conductor Color	97.50 in. (2500 mm) cable		64.35 in. I1650 mm) cable	
			Cable No.	PDU Terminal	Cable No.	PDU Terminal
5	A	wt/gr	0	0	0	0
4	B	wt/br/or	47	4	49	4
4	C	Wt/vio	48	5	50	5
12	D	wt/bk/gn	60	2	61	2
12	E	wt/bk/ye	65	3	66	3
11	F	Wt/bk/vio	140	14	141	14
10	G	wt/or	141	15	140	15
9	H	wt/gn	75	9	76	12
8	J	wt/bk/rd	76	10	75	13
8	K	wt/bk/gr	72	7	74	7
7	L	wt/rd	45	8	46	8
7	M	wt/bl	71	6	73	6
6	N	wt/br/rd	1	1	111	1
6	P	wt/br/gr	142	16	143	16
*1	R	wt/br	144	18	144	18
*1	S	wt/bk	145	19	145	19
*1	T	shield	146	20	146	20
5	U	wt/bk/br	143	17	142	17
*3	X	wt/br/vio	77	11	78	9
*3	Y	wt/br/bl	78	12	77	10
*3	Z	shield	147	13	147	11
RESERVED						
*2		wtbr/ye				
*2		wt/br/gn				
*2		shield				
9		wt/ye				
10		wt/bk/or				
11		wt/bk/bl				
UNOCCUPIED CONTACTS						
a,b,c,d,e,f,v,W						

NOTE

* shielded conductors

5.8 POWER CABLE (ECS POWER SET) MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Repair e. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
High voltage tester
Insulation tester
Resistance tester
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/ Parts

Solder (item 7, appendix E)

Personnel Required

TWO

WARNING

- **The Generator Sets 160 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for all power cables.

a. Swing cable drum into operating position and lock in place.
b. Refer to paragraph 4.13 for removal of cable from cable drum.

INSPECTION

Inspect plugs and entire cable surface for external damage. Plug pins and sockets must show no charring, and must not be broken. Plug housing threads must be undamaged. Cable length is approximately 95.12 ft (29 ml.

TEST

a. Using the high voltage tester perform test as follows:
Apply 1000 V test voltage for 1 minute each:
From main contacts A, C, G, E to ground (plug housing),
From main contacts A, C, G, E to each other,
From control circuit contacts B, D, H, F to ground (plug housing),
From control circuit contacts B, D, H, F to each other,
From main contacts A, C, G, E to control circuit contacts B, D, H, F.

b. Short circuit the main contacts and control circuit contacts to each other. The high voltage tester must not activate.

c. Perform insulation test at 100 V (see step a. above). Insulation resistance must be ≤ 200 MOhm.

d. Using the resistance tester perform test as follows:

Main circuits	Plug pins	Resistance
	A - A	≤ 15.5 mOhm
	C - C	≤ 15.5 mOhm
	G - G	≤ 15.5 mOhm
	E - E	≤ 31 mOhm
Control circuits	B - B	≤ 245 mOhm
	D - D	≤ 245 mOhm
	H - H	≤ 490 mOhm
	F - F	≤ 490 mOhm

e. Check shield resistance between two plugs and external shielding: ≤ 24 mOhm, measured at plug contact tongues.

REPAIR

a. Unscrew plugs (1, 10, figure 5-9) on EPP III and ECS ends.
First separate plug parts (13 to 15), then part (231, then remaining parts (16 to 22).

NOTE

All unions are left hand threaded.

b. Unsolder cable conductors from plug pins.

c. Remove plug parts from cable.

NOTE

- Description of installation of power cable at EPP III end.
- For all parts, note installation position (conical).

d. Cut cable (9) to a length of 95.12 ft (29 m). Strip cable conductors and shield at both ends.
e. At EPP III socket end, pull heat shrink tubing (6) with 5.19 x 2.36 inch (132 x 60 mm) rubber flap (7) over cable.
f. Unscrew EPP III plug (1) with all parts.
g. Solder parts (11) and (12) to cable conductors (see table 6-2).
h. Pull parts (23, 22, 21, 20, 19) over cable, in that order.
i. Pull cold shrink tubing (4) over cable so that draw cord faces toward the cable.
j. Pull parts (18, 17, 16, 16, 14) over cable, in that order.
k. Insert pins (11) and (12) into part (13) as shown in table 6-2. Note installation position.
l. Slide part (14) onto part (13).
m. Place part (16) into part (14).
n. Slide part (16) into part (14) and screw onto part (13).
o. Place cable shield over part (16) and press onto part (17).
p. Slide part (18) over part (17) and screw onto part (16).
q. Slide cold shrink sleeve onto part (18) and pull drawcord backward. This places the sleeve over the cable.
r. Screw parts (19) and (16) together.
s. Place part (20) in part (19).
t. Slide part (21) into part (19).
u. Slide part (22) into part (19).
v. Screw parts (23) and (19) together.
w. Install hose clamp (3).
x. Shrink heat shrink tubing (2) over hose clamp (3).
y. Position two heat shrink tubing-s (6) with labels (8).
z. Position heat shrink tubing (6) with 5.19 x 2.36 inch (132 x 60 mm) rubber flap (7) on EPP III plug end.
aa. Assemble ECS plug end in the same procedure as EPP III end.
ab. Test cable as indicated in steps above.

INSTALLATION

CAUTION

Cable should be installed so chafe pad is located under the cable clamp on the drum.

a. Refer to paragraph 4.13 for installation of cable on cable drum.

Table 5-2 Power Cable Wiring Layout.

Signal	Plug pin	Conductor No.	Color
Prime Power A (L1)	A	1	wt
	A	4	wt
Prime Power B (L2)	C	2	wt/rd
	C	5	wt/rd
Prime Power C (L3)	G	3	wt/bk
	G	6	wt/bk
Prime Power Neutral (N)	E	7	wt/br
Enable	B	8	wt/or
	B	11	wt/bl
Prime Power Enable	D	9	wt/ye
	D	12	wt/vio
Safety Ground	H	10	wt/gn
Safety Ground	F	18	wt/gr
General Shield	Housing		silver/metallic

b. Connect load bank to generator set and perform procedures in paragraph 4.34.

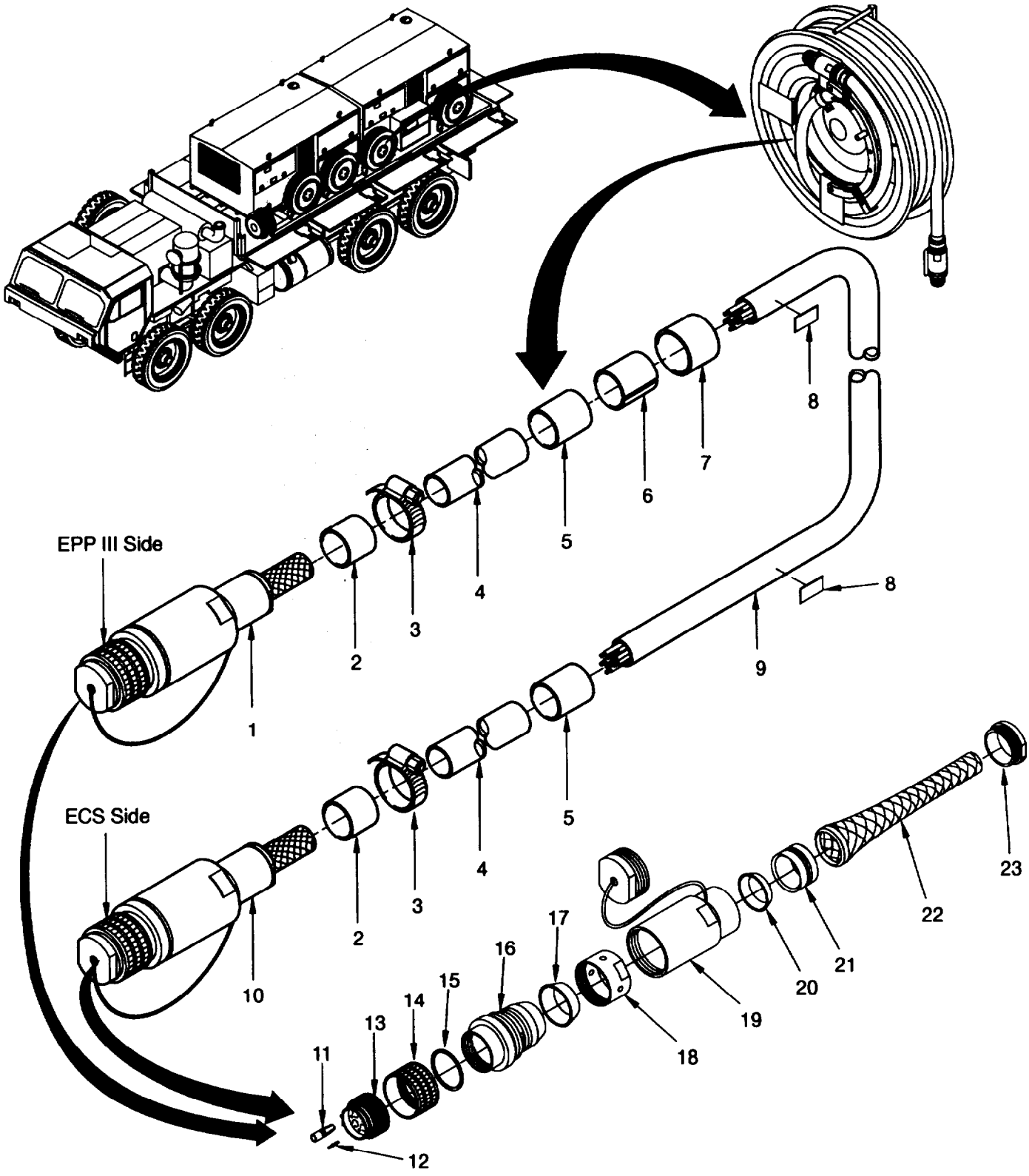


Figure 5-9 Power Cable (ECS Power Cable Set).

5.9 CONTROL CABLE MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Repair e. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
High voltage tester
Insulation tester
Resistance tester
Load Bank (item 23, appendix B)

Materials/Parts

Solder (item 7, appendix E)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Personnel Required

TWO

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

NOTE

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

For removal of cable from cable drum, refer to paragraph 4.15.

INSPECTION

Check plugs and the entire outer surface of the cable for external damage. Plug pins and sockets must not be charred or broken. Plug housing threads must be undamaged. Cable length is approximately 104.98 ft (32 m).

TEST

Using the high voltage tester perform test as follows:

a. Apply 1000 V test voltage for 1 minute each:
From contacts E, A, B, C, D, J, Q, V, Z, Y, X, W, R, K, S, L, M, F, G, H, T, U, N, D to ground (plug housing). The tester must not activate.

b. Insulation test at 100 V test voltage:
Check between ground and contacts E to P. Insulation resistance must be $\geq$ 200 MOhm.

Using the resistance tester perform test as follows:
Contacts E, A, C, D, J, Q, V, Z, Y, X, W, R, K, S, L, M, F, Q, H, H, T, U, N, P.
Continuity resistance for these plug pins must be $\leq$ 850 mOhm.

c. Check shield resistance: $\leq$ 82 mOhm, between the two plugs via outer shielding, measured at plug contact tongues.

REPAIR

a. Unscrew plugs (1,8, Figure NO TAG) at EPP III and ECS plug ends: disassemble plug parts (9 to 11), then part (18) and remaining parts (12 to 17).

NOTE

All unions are left hand threaded.

b. Unsolder cable conductors from plug pins.

C. Remove plug parts from cable.

NOTE

- Description of installation of control cable on EPP III end.
- For all parts, note installation position (conicall.

d. Cut cable (6) to a length of 104.98 ft (32 m). Strip cable conductors and shielding at both ends. Remove copper foil from shield.

e. At EPP III plug end, pull heat shrink tubing (3) with 2.73 x 1.95 inch (70 x 50 mm) rubber flap (4) over cable.

f. Unscrew EPP III plug (1) with all parts.

g Pull parts (18,17, 16,15,14,13, 12, 11 and 10) over cable, in that order.

h. Solder on part (9) (see table 5-3).

i. Place insulator around solder joints and cable conductors on part (1).

j. Slide part (10) onto part (11).

k. Slide parts (10 and 11) and screw onto part (9).
l. Place cable shield over part (11) and push onto part (12).
m. Push part (13) over part (12) and screw onto part (11).
n. Screw parts (14) and (11) together.
o Place part (16) in part (14).
p. Slide part (16) into part (14).
q. Slide part (17) into part (14).
r. Screw parts (18) and (14) together.
s. Position heat shrink tubings (2, 7) with labels (6).
t. Position heat shrink tubing (4) with 2.73 x 1.95 inch (70 x 50 mm) rubber flap (3) on EPP III plug end.
u Assembly of ECS plug end is the same procedure as EPP III end.
v Test cable as indicated in steps above.

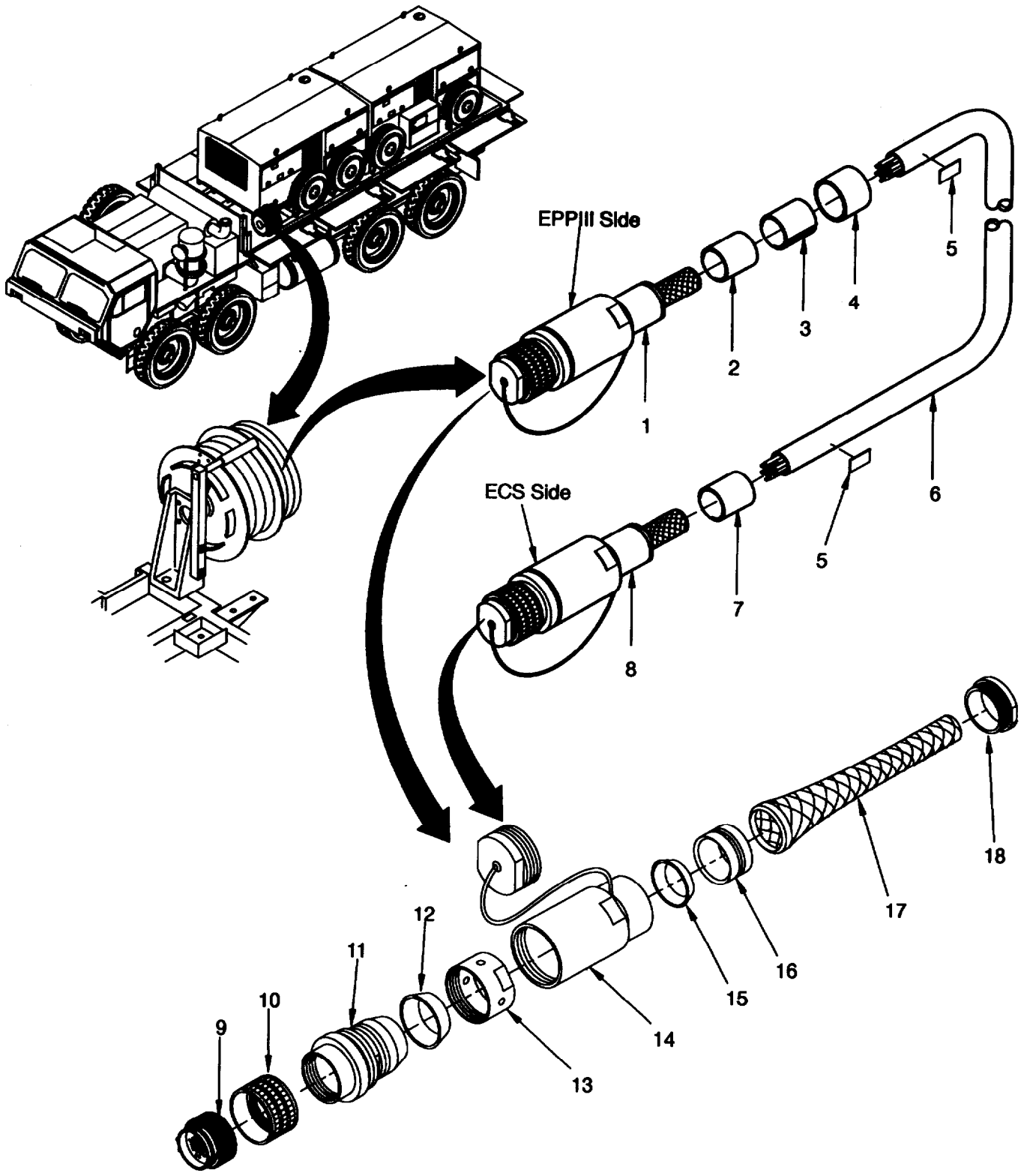


Figure 5-10 Control Cable.

Table 6-3 Control Cable, wiring Layout.

Signal	Plug pin	Conductor No.	Color	Note
Spare	E	1a	**wt/or**	Conductor pair 1
Spare	A	1b	wt/bk/or	
Spare	B	2a	**wt/bk/vio**	Conductor pair 2
Spare	C	2b	wt/bk/bl	
Spare	D	3a	wt/bk/gn	Conductor pair 3
Spare	J	3b	wt/bk/ye	
+24V Control	**Q**	4a	wt/br/or	Conductor pair 4
Spare	V	4B	**Wt/vio**	
Spare	Z	5A	wt/gr	Conductor pair 5
Spare	Y	5b	wt/bk/br	
Fault Indicator	X	6a	wt/br/gr	Conductor pair 6
Spare	W	6b	wt/br/rd	
ECS on / off	R	7a	Wt/bl	Conductor pair 7
Spare	K	7b	wt/rd	
+24V Control	S	8a	wt/bk/rd	Conductor pair 8
Return (-24V)	L	8b	wt/bk/gr	
Commo (Sound Power)	M	9a	wt/gn	Conductor pair 9
Low Fuel Indicator	F	9b	wt/ye	
Gen. 1 on Line Indicator	G	10a	wt/br	Conductor pair 10
Gen. 2 on Line Indicator	H	10b	wt/bk	
RS on / off	T	11a	wt/br/bl	Conductor pair 11
Emergency Shut Down	U	11b	wt/br/vio	
Commo Sound	N	12a	wt/br/ye	Conductor pair 12
Battle Short	P	12b	wt/br/gn	

General shielding on plug housing

All conductor pairs are twisted

INSTALLATION

CAUTION

Cable should be installed so chafe pad is located under the cable dump on the drum.

a. For installation of cable on cable drum, refer to paragraph 4.15.

b. Connect load bank to generator set and perform procedures in paragraph 4.34.

5.10 CONTACTOR ASSEMBLIES MAINTENANCE.

This task covers: a. Removal b. Test C. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit
(item 3, appendix B)
DC power supply, 24 VDC

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials

None

Personnel Required

Two

WARNING

- The Generator Sets 150 kW produce lethal voltages.
- **Turn** off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.
- Wear protective gloves when performing any work on main assemblies of the EPP III.

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for all light indicators H1 to H9 and H11 (Example H1).

a. Remove stanchion by PDU (1, figure 5-11).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Remove six protective caps (5) with a short turn of each cap screw closure.
e. Remove nut (6), serrated lock washers (7), cables (8), washers (9) and screws (10).
f. Record labeling and position of cables and remove cables from all terminals of contactor K3 (14).
g. Remove two nuts (11), serrated lockwashers (12), washers (13), and contactor K3 (14).

TEST

a Remove diode V8 from terminal Al of coil (4).
b. Connect 24 VDC power supply to terminal A1 (+) and A2 (-) of contactor.
c. Check coil (4) of contactor K3 (14) as follows: Vary voltage in range of approximately 19-24 VDC. Contactor must activate reliably.

CAUTION

Do not operate plunger (16) by hand while power supply is installed.

d. Disconnect power supply.
e. Using multimeter to check main and auxiliary contacts for continuity as indicated in figure 6-11. Operate plunger (16) manually to energized position.
f. Use multimeter to check diode V8 for continuity. Resistance must be infinity in reverse direction and less than 0.3 Ohm in forward direction.
g. Attach diode V8 to terminal Al of coil (4).

INSTALLATION

a Place contactor K3 (14) in cabinet and install with two nuts (11), serrated lock washers (12), and washers (13).
b. Install cables on terminals of auxiliary contacts and coil (4).
c. Install diode V8 on terminal of coil (4) in correct position.
d. Install six cables (8) using screws (10), washers (9), serrated lock washers (7), and nuts (6). Tighten nuts (6).
e. Install six protective caps (5) in place, and fasten with a short turn of each cap screw closure.
f. Remove stanchion.
g. Stow prop (3), close access door (2) and secure.
h. Install stanchion by PDU (1).

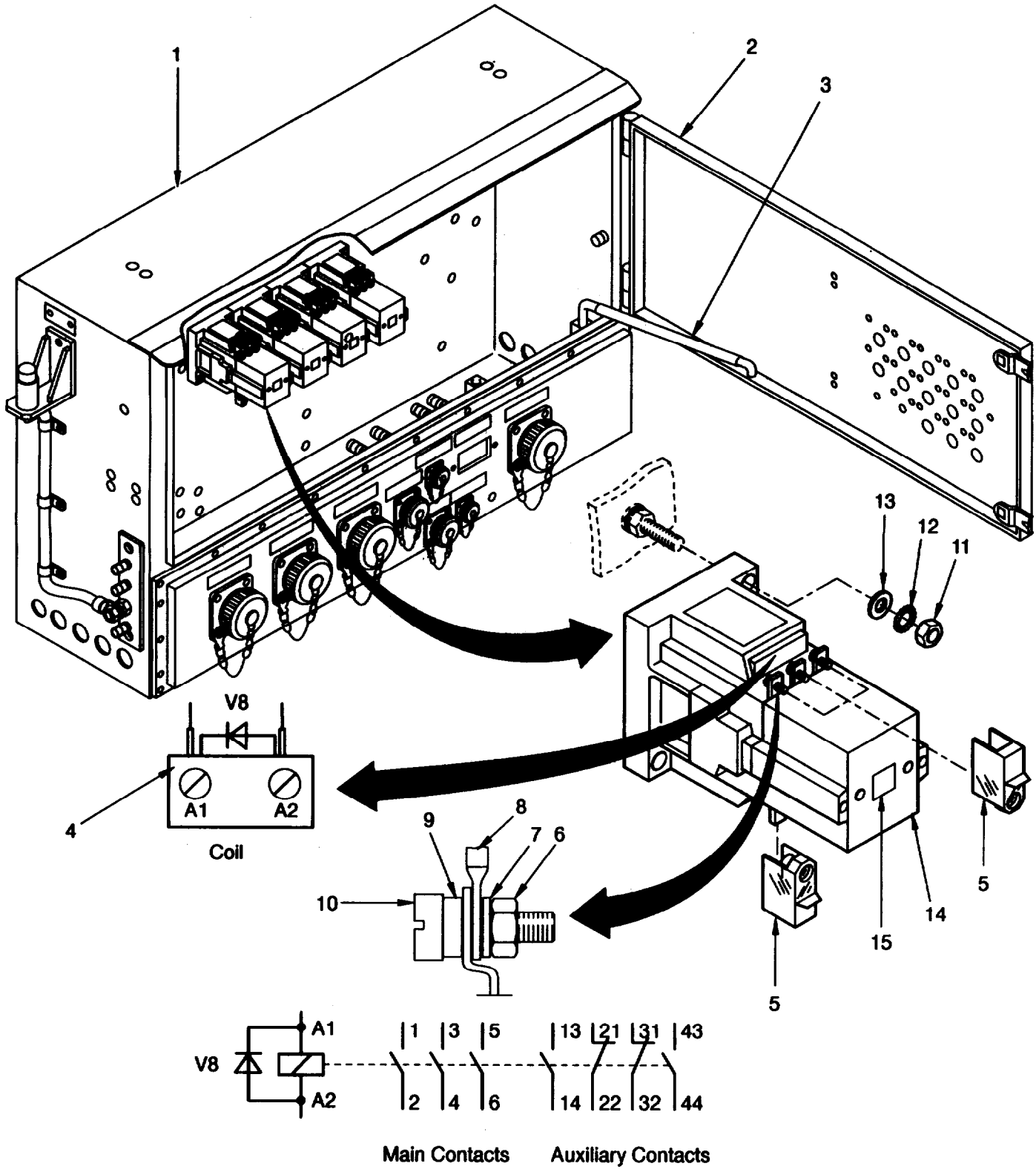


Figure 5-11 Contactor Assemblies.

5.11 DIODE ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Test C. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
(item 2, appendix B)
Automotive Fuel and Electrical System Repair,
Tool Bit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set
150 kW, paragraph 2.8.1.

Materials/Parts

Thermoconductive paste (item 8, appendix E)

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

NOTE

This procedure is the same for diodes V1 and V2.

a. Remove stanchion by PDU (1, figure 5-12).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling and position of cables on heat sink (7).
e. Remove screws (4, 6) and integrated washers, and cables.
f. Unscrew diode (5) from heat sink (7).

TEST

Use multimeter to check continuity resistance between connections of diode (5). Resistance must be infinity in the reverse direction of the diode, and less than 0.3 Ohm in the forward direction.

INSTALLATION

a. Install diode (5) into heat sink (7), first coating contact surface with thermoconductive paste.
b. Install cables on heat sink (7) with screws (4, 6) and integrated washers.

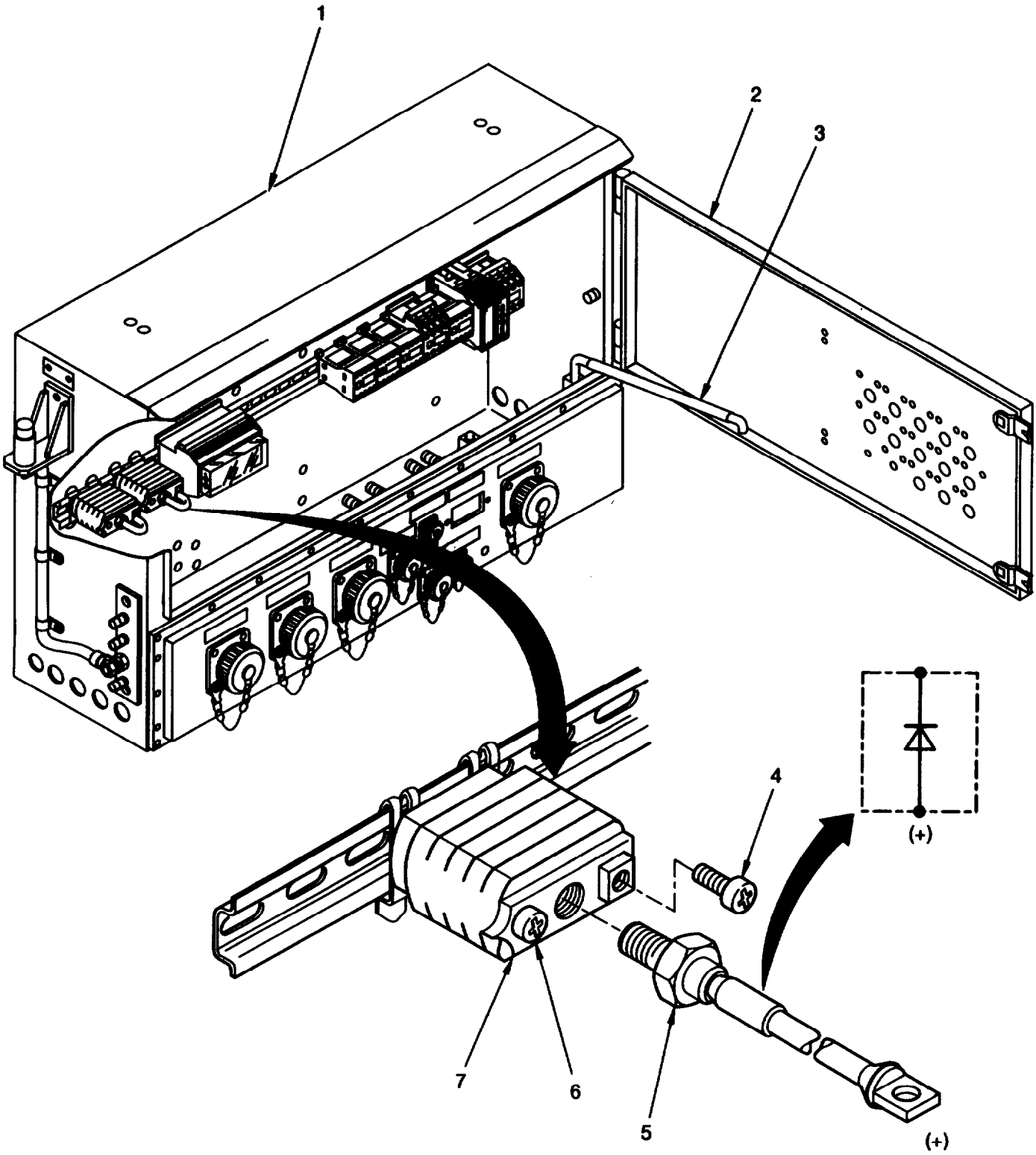


Figure 5-12 Diode Assembly.

5.12 ELECTRONIC MODULE Al ASSEMBLY MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test
b. Repair e. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Bit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Bit (item 3, appendix B)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

Solder (item 7, appendix E)

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, ,removal, disassembly, or assembly work**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 5-13).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling and position of cables 116, 117, and 118 from K3 contactor and remove cables. Refer to paragraph 5.10.
e. Record labeling and position of cables and remove cables from electronic module A1 (8).
f. Push in tab on bottom of electronic module A1 (8) and lift out electronic module.

INSPECTION

Visually inspect electronic module Al (8) assembly for broken wires and discoloration due to excessive heat.

TEST

a Using multimeter check continuity resistance for each diode V12 to V19 (5) without removing diodes. Resistance must be infinity in reverse direction, and less than 0.3 Ohm in forward direction.

b. Check shorting jumpers (6, 7) between terminals 9/11 and 13/15.

REPAIR

a Pull off cover (4).

b. Unsolder diodes V12 to V19 (5). Record the positions.

c. Solder new diodes V12 to V19 (5).

d. Install cover (4).

INSTALLATION

a. Push in tab on bottom of electronic module A1 (8) and set on mounting bar.

b. Install cables on electronic module A1 (8).

c. Install cables 116, 117, and 118 on contactor K3. Refer to paragraph 5.10.

d. Remove stanchion.

e. Stow prop (3), close access door (2) and secure..

f. Install stanchion by PDU (1).

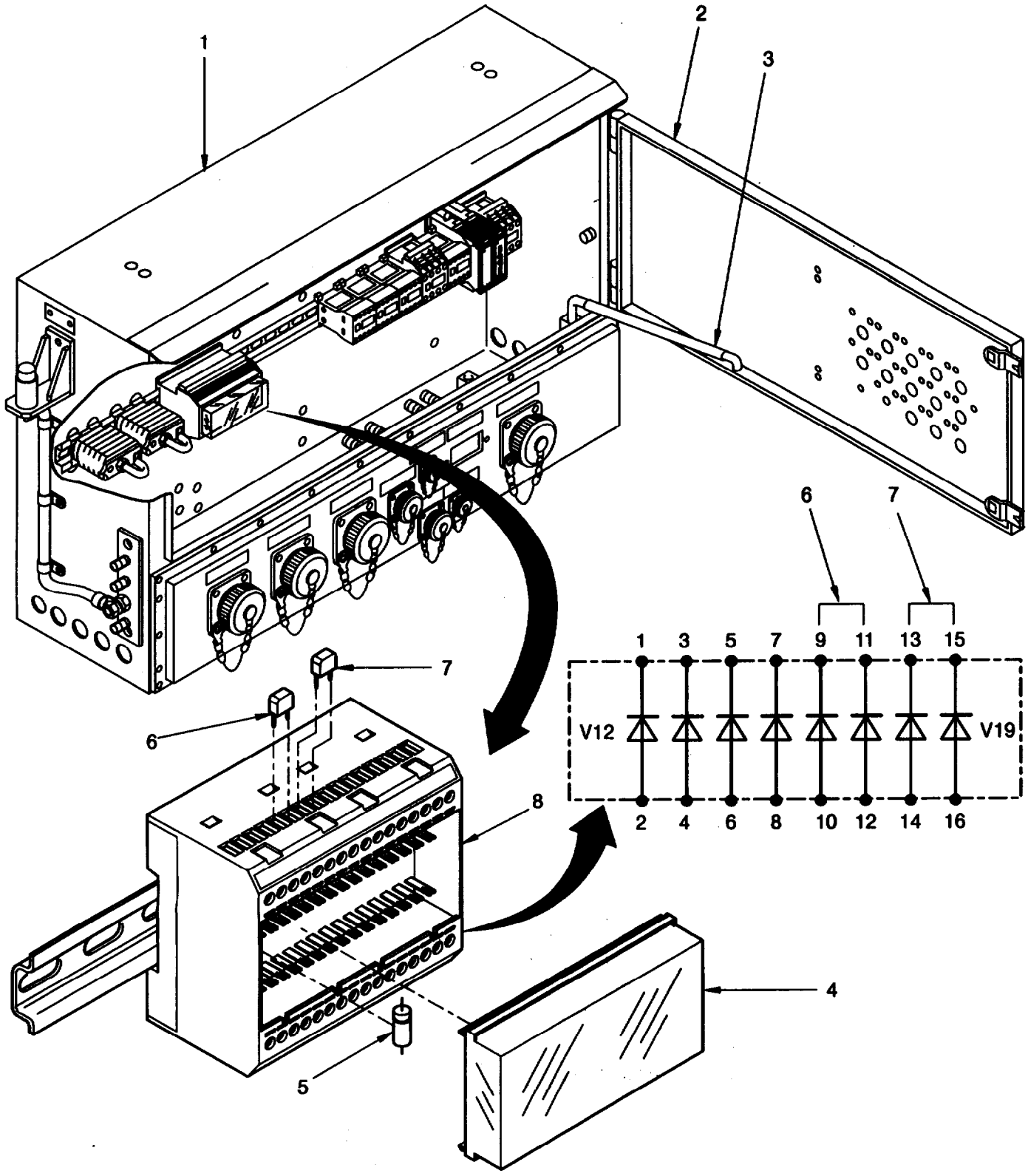


Figure 5-13 Electronic Module A1 Assembly.

5.13 TIME RELAY K14 MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
DC power supply, 24 VDC
Stop watch

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kw before performing any installation removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 5-14).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Record labeling of cables from time relay K14 (8) and remove cables:
e. Push out snap mount lock (7) with screwdriver; tilt time relay K14 (8) and remove from mounting bar.

INSPECTION

Visually inspect time relay for discoloration due to heat.

TEST

a. Connect DC power supply to terminal Al (+) and A2 (-) on time relay.
b. Set multimeter for continuity testing, and connect to terminals 15 and 16 of time relay K14 (8) to check relay contact.
c. Check time relay function as follows (time relay wipes with a response delay):

(1) Preset time t, begins when voltage U = +24 VDC is applied.

(2) When t_1 has elapsed, relay contact R switches to on position for preset time to. Then the contact resets to the off position (see time diagram).

(3) Cut off voltage U = +24 VDC before t_1 or t_2 has elapsed. The relay contact will immediately switch back into the off position.

(4) Use a stop watch with second hand to check the length of t_1 and t_2 Times t_1 and t_2 must each be 0.5 second.

NOTE

If necessary, extend time setting for inspection purposes (e.g. 10 second code).

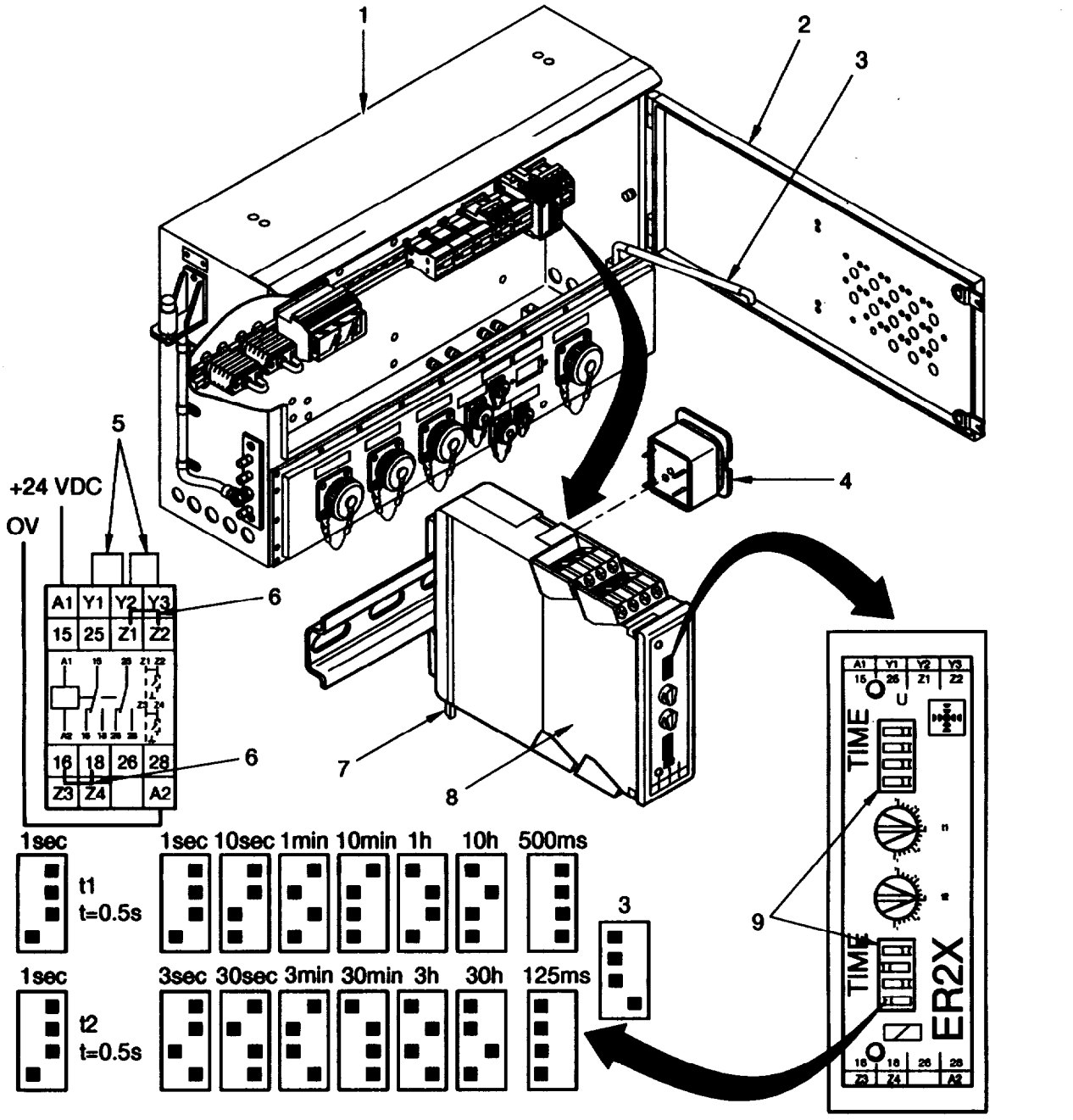
INSTALLATION

a. Hook time relay K14 (8) into the mounting bar and push on.
b. Install cables to time relay K14 (8).

NOTE

Make sure that jumpers (6, 6) are connected, and time settings are correct.

c. Connect jumpers (5, 6) and cables, and set timing codes t_1 = 1 sec and t_2 = 1 sec. Set switching time to 5 (= 0.5 sec delay) with t_1 potentiometer, and to 5 (= 0.5 sec delay) with t_2 potentiometer.
d. Remove stanchion.
e. Stow prop (2), close access door (3) and secure.
f. Install stanchion by PDU (1).



Configuration	Value
Power supply (4)	24 VDC
Jumpers,cable (5)	Y1 – Y2 – Y3 = 0.5 sec Impulse
Jumpers,wires (6)	Z1 – Z2 = 1 sec Time range t_1 Z3 – Z4 = 1 sec Time range t_2
Time adjustment (9)	$t_1 = t_2 = 0.5$ sec
Utilized contact	15 – 16

Time Diagram

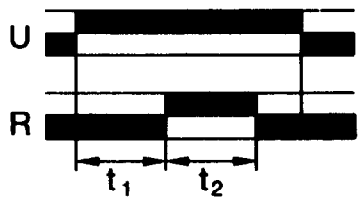


Figure 5-14 The Relay K14.

5.14 WIPE RELAY K13 MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
DC power supply, 24 VDC

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a Remove stanchion by PDU (1, figure 5-15).
b. Open access door (2) and secure with prop (3).
c Install stanchion.
d. Record labeling and position of cables from wipe relay K13 (6), and remove cables.
e. Push in snap mount lock (5) with a screw driver, tilt wipe relay K13 (6) and remove from mounting bar.

INSPECTION

Visually inspect wipe relay for discoloration due to heat.

TEST

a. Connect DC power supply to terminal A1 (+) and A2 (-) of wipe relay.
b. Set multimeter to continuity test setting and connect to terminals 15 and 18 of wipe relay to check relay contact.
c. Check wipe relay operation (wipe relay wipes with a response delay):

(1) When voltage U = +24 VDC is applied, relay contact R switches immediately to the on position and time t begins.

(2) When time t has elapsed, the relay drops back to the off position (see also time diagram on the relay).

(3) Cut off voltage U = +24 VDC before time t has elapsed. Relay contact will immediately fall back into the off position.

INSTALLATION

a. Hook wipe relay (6) into the mounting bar and push on.

b. Install cables to wipe relay K13 (6).

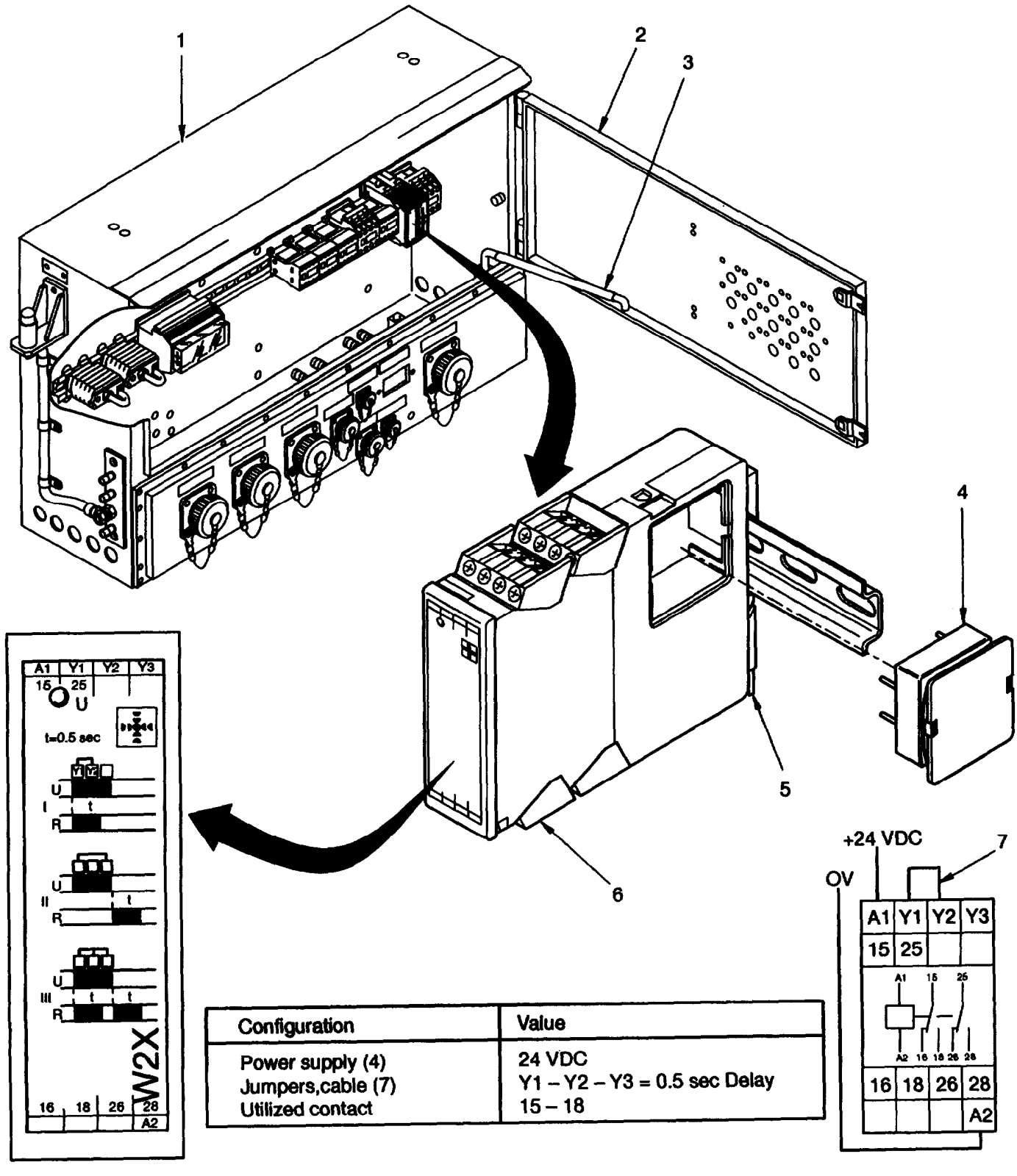
NOTE

Make sure that jumper (7) is connected.

c. Remove stanchion.

d. Stow prop (3), close access door (2) and secure.

e. Install stanchion by PDU (1).



Configuration	Value
Power supply (4) Jumpers,cable (7) Utilized contact	24 VDC Y1 – Y2 – Y3 = 0.5 sec Delay 15 – 18

Figure 5-15 Wipe Relay K13.

5.15 INTERNAL POWER SUPPLY V5/T13 MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
AC Power Supply, 208 VAC/3-/400 Hz

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

Two

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing and installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 5-16).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.

RECTIFIER V5

a. Refer to paragraph 5.17 and remove rubber flap and connection panel.
b. Record labeling and position of cables 116, 117, and 118 from contactor K3 and remove cables. Refer to paragraph 5.10.
c. Record labeling and position of cables of rectifier V5 (7), loosen screw and remove cables.
d. Remove two screws (4), serrated lock washers (5), washers (6) and rectifier V5 (7). Tag and remove cables from rectifier V5 (7).

TRANSFORMER T13

a. Record labeling and position of cables of transformer T13 (8), loosen screws and remove cables.
b. Remove four nuts (9), serrated lock washers (10), washers (11) and transformer TM (8).

INSPECTION

Inspect transformer and rectifier for discoloration due to overheating.

TEST

NOTE

For this test transformer T13 must be connected to rectifier V5 as shown in figure 5-16.

a. Connect 208 VAC power supply to transformer inputs.
Use the multimeter to check the following voltages:

(1) Input voltage to transformer T13 (8): 208 VAC phase to phase.

(2) Output VOLTAGE age of transformer T13: approximately 20 VAC phase to phase.

(3) Input voltage to rectifier V5 (6): Same as step (2).

(4) Output voltage of rectifier V5 approximately 26 VDC.

INSTALLATION

RECTIFIER V5

a Install rectifier V5 (7) using two screws (4), serrated lock washers (5) and washers (6).
b. Install cables to rectifier V5 (7) and tighten screws.

TRANSFORMER T13

a Install transformer T13 (8) using four nuts (9), serrated lock washers (10) and washers (11).
b. Install cables to transformer T13 (8) and tighten screws,
c. Refer to paragraph 5.17 and install connection panel (12) with rubber flap.
d. Install cables 116,117, and 118 on K3 contactor. Refer to paragraph 5.10.
e. Remove stanchion.
f. Stow prop (3), close access door (2) and secure.
g. Install stanchion by PDU (1).

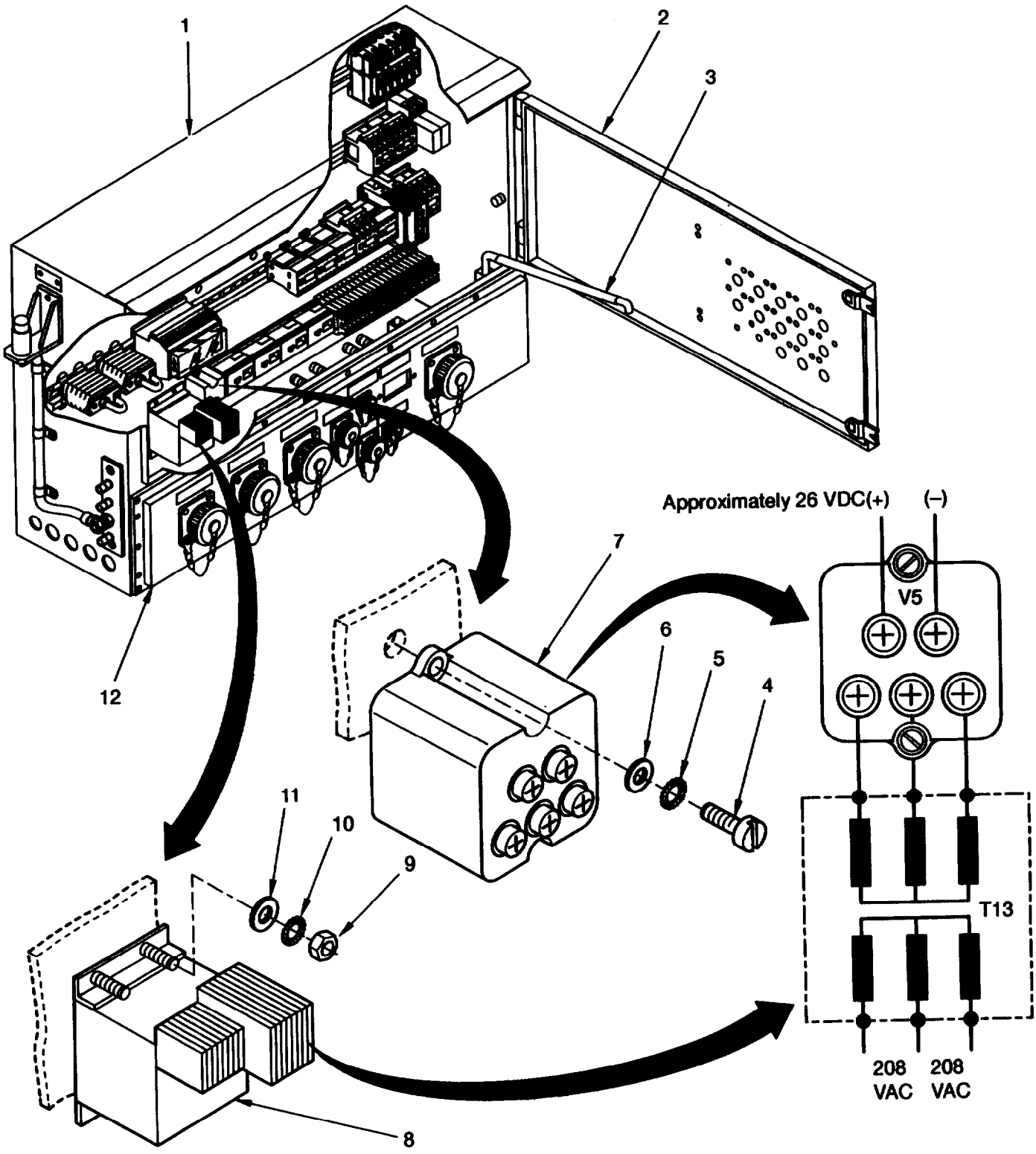


Figure 5-16 Internal Power Supply V5/T13.

6.16 PDU ELECTRONIC ASSEMBLY N6 MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
AC Power supply, 208 VAC, 400 Hz
DC Power supply, 24 VDC
AC Power supply, 0-10 VAC, 400 Hz
Load Bank (item 23, appendix B)

Equipment Conditions

Reference
Shut down Cenerator Set 150 kW, paragraph 2.8.1.

Materials/Parts

None

Personnel Required

TWO

WARNING

- The Generator Sets 160 kW produce lethal voltages.
- Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.
- Wear protective gloves when performing any work on main assemblies of the EPP III.

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 5-17).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.
d. Remove screws (4), serrated lock washers (5), washers (6), and protective cover (7).
e. Unscrew screws (8), serrated lock washers (9), washers (10).
f. Remove angle pieces (11), panel (12), and pull out boards (13,14,15, 16 and 17):
   Overcurrent detection 54 'IT1313-./02
   Overcurrent detection 53 'lT1313-./02
   Overcurrent detection 52 IT1313-./02
   Overcurrent detection J1 TT1313-./02
   Synchronizing relay TJX308-./0l
g. Record labeling and position of cables (18), loosen screws and disconnect cables.

h. Loosen four nuts (20) and remove PDU electronic N6 (19).

NOTE

The four overcurrent detection boards are identical and interchangeable with one another.

INSPECTION

Inspect for damage and discoloration due to heat.

TEST

a. Test PDU electronic assembly N6 (19) with test equipment in accordance to figure 6-38.

b. Use multimeter to check the following voltages:

(1) 24 VDC operating voltage between (+) and 0 V.

NOTE

Step (2) applies only to operation with commercial power converter.

(2) 24 VDC voltage between +S and 0 V when K12 is excited, i.e. synchronization on. (Relay K13 must be energized): +24 VDC between Sy and 0 V.

(3) 208 VAC at all times between R' and S'.

NOTE

The current transformer, installed on a conductor, transforms the present value of current in this conductor in a defined linear ratio of 150:I.

The voltage drop at the appropriate connected resistor is the equivalent of the present value of current in the conductor. Following the formula below a current of 50 A in the conductor will cause a voltage drop of:

$$U = \frac{1\ A \times 1_x[A] \times 1.5\ Ohm}{150A} = \frac{1\ A \times 50\ A \times 1.5\ Ohm}{150A} = \frac{1 \times 50\ A \times 1.5\ Ohm}{150} = \frac{75\ V}{150} = 0.5\ V$$

(4) Adjust voltage at inputs R, S, T and check overload release
Release must occur as follows:
At 1.2 times rated value J_L= 156 A, with a delay of < 2.5 seconds.
At 1.8 times rated value J_L= 234 A, with a delay of < 1.5 seconds.

When overload release occurs, the following relays are set:
Release at J1: + 24V DC between J1 and AK (relay K16 energized)
Release at J2: + 24V DC between J2 and AK (relay K17 energized)
Release at J3: + 24V DC between J3 and AK (relay K18 energized)
Release at J4: + 24V DC between J4 and AK (relay K19 energized)

INSTALLATION

a. Install PDU electronic assembly N6 (19) with four nuts (20).
b. Install boards (13, 14, l5, l6 and 17) following to figure 5-17.

NOTE

The overcurrent detection boards are identical and interchangeable with one another.

c. Install panel (12), angle pieces (11), washers (10), serrated lock washers (9) and screws (8).
d. Install protective cover (7) and secure with screw (4), serrated lock washer (5) and washer (6).
e. Remove stanchion.
f. Stow prop (3), close access door (2) and secure.
g. Install stanchion by PDU (1).
h. Connect load bank to generator set and perform procedures in paragraph 4.34. ■

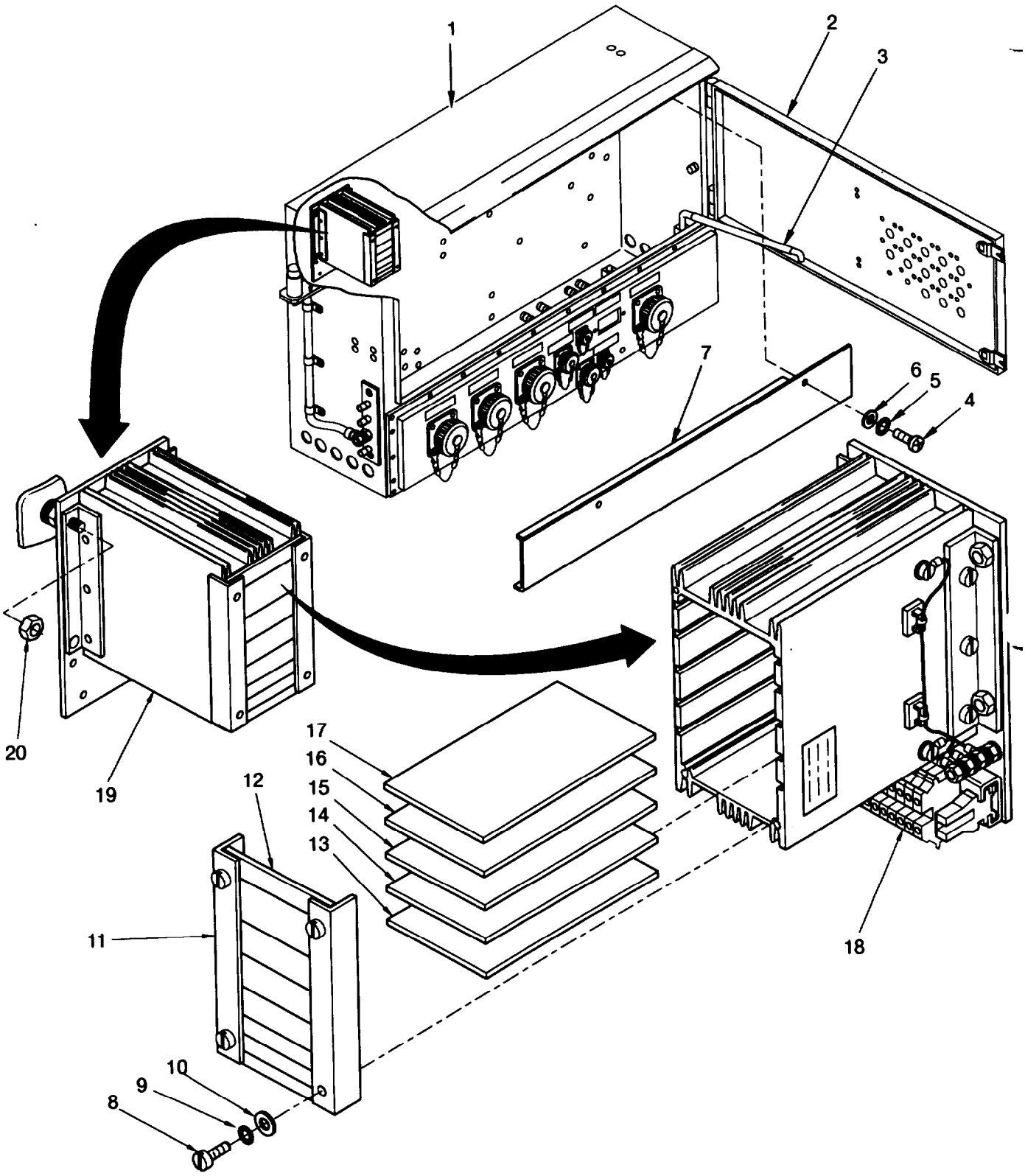


Figure 5-17 PDU Electronic Assembly N6.

CAUTION

AU potentiometers (1) are preset, and must not be adjusted.

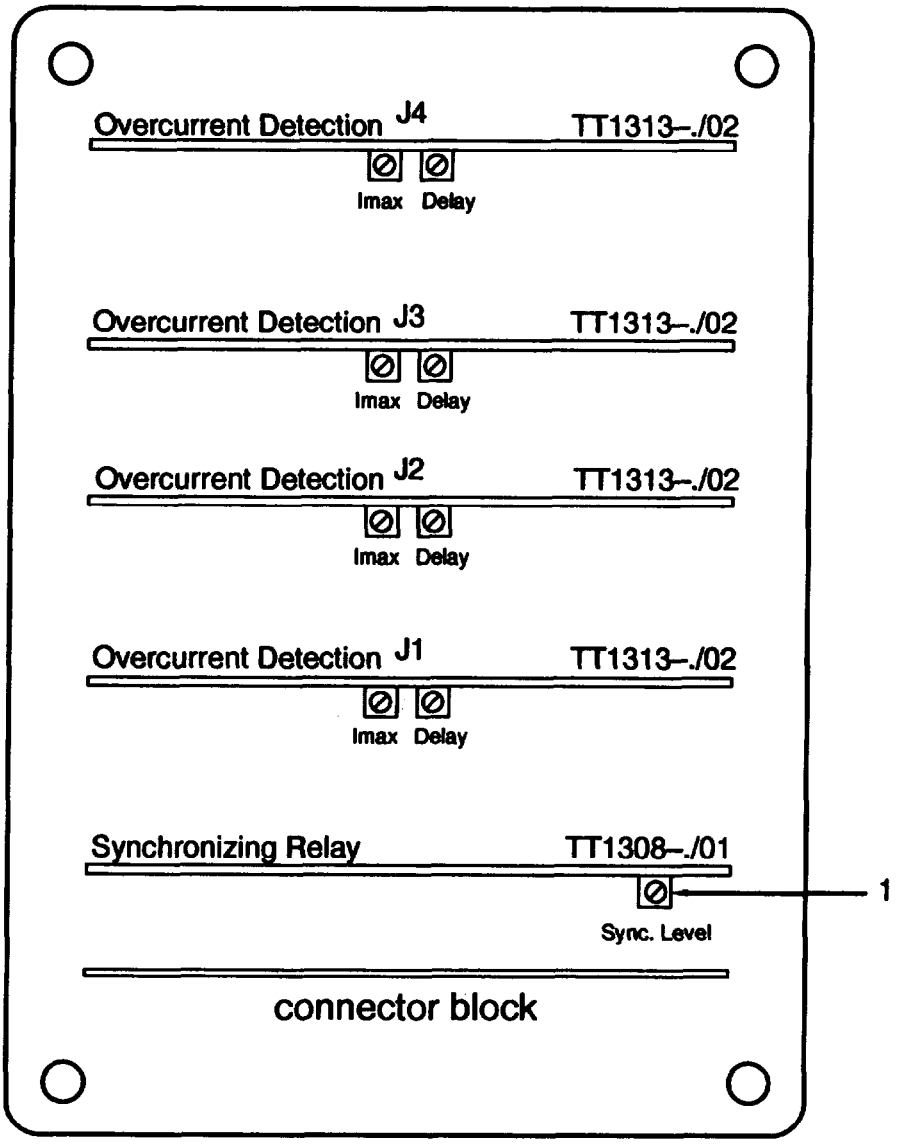


Figure 5-18 PDU Electronic Assembly N6, Front Panel.

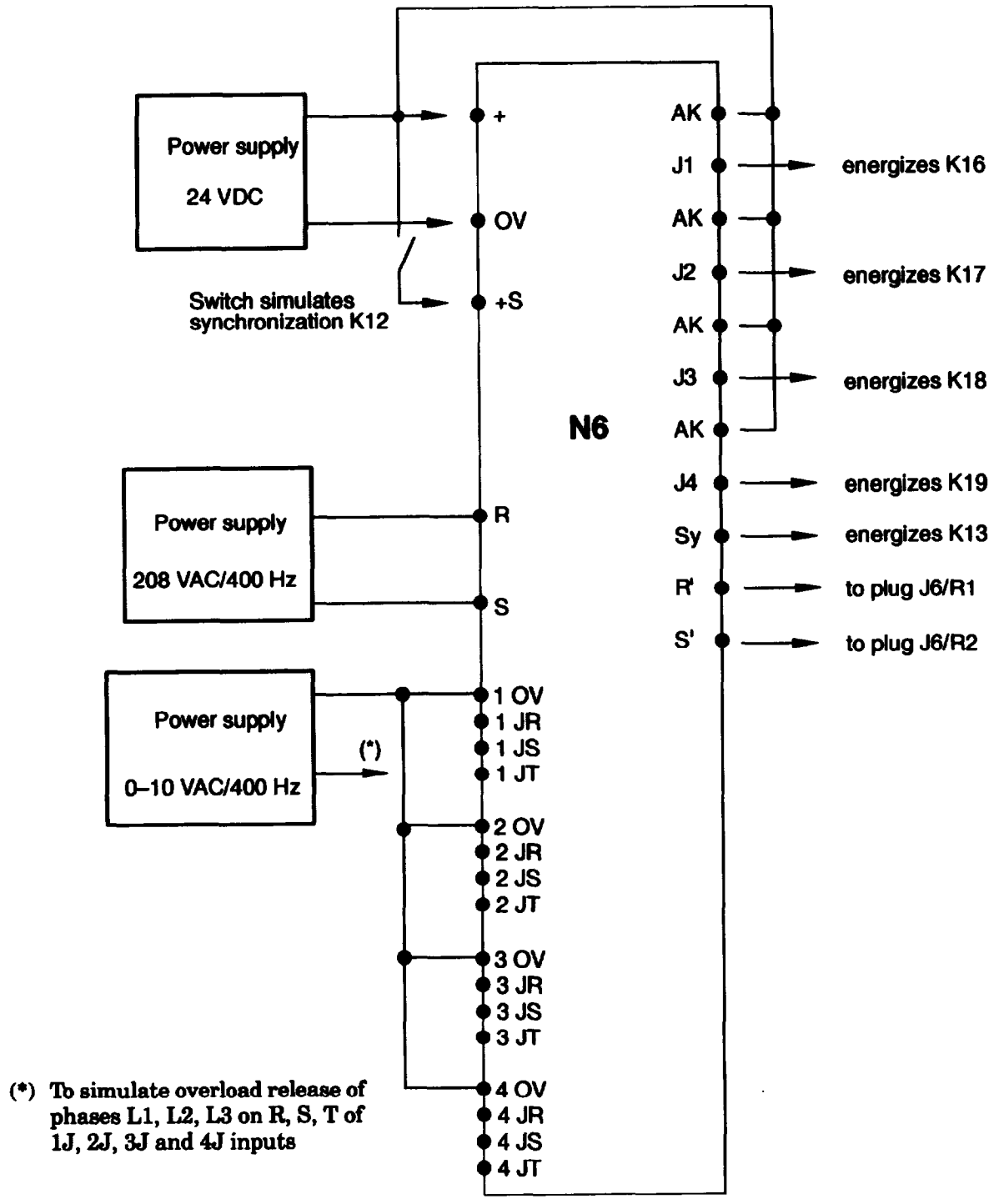


Figure 5-19 PDU Electronic Assembly N6, Test Connections.

5.17 CONNECTION PANEL MAINTENANCE.

This task covers: a. Removal b. Inspection c. Test d. Repair e. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit (item 2, appendix B)
Automotive Fuel and Electrical System Repair, Tool Kit (item 3, appendix B)
Removal tool 1 (item 20, appendix B)
Removal tool 2 (item 21, appendix B)

Materials/Parts

Cable ties (item 2, appendix E)
Solder (item 7, appendix E)

Equipment Conditions

Reference
Shut down Generator Set 150 kW, paragraph 2.8.1.

Personnel Required

TWO

WARNING

- **The Generator Sets 150 kW produce lethal voltages.**
- **Turn off power to the EPP III or Generator Set 150 kW before performing any installation, removal, disassembly, or assembly work.**
- **Wear protective gloves when performing any work on main assemblies of the EPP III.**

CAUTION

Label all cables before removing electrical or electronic assemblies or components.

REMOVAL

a. Remove stanchion by PDU (1, figure 5-20).
b. Open access door (2) and secure with prop (3).
c. Install stanchion.

CONNECTION PANEL

NOTE

This procedure is the same for all receptacles.

a. Remove four screws (5), eight serrated lock washers (6,8), rubber flap (7), and four spacers (9).
b. Remove 22 screws (13), serrated lock washers (15), washers (14) and swing connection panel (4) over lifting ring.
c. Remove two plastic cap nuts (11), protective cover (12) and two spacers (10) from back of connection panel (4).

RECEPTACLES J1 TO J4

NOTE

This procedure is the same for receptacles J1 to J4.

a. Remove nut (12, figure 5-21), serrated lock washer (13), washer (14) and grounding cable (15) from grounding stud.
b. Remove screw (8), serrated lock washer (9), washer (10) and the long cable (11) from the appropriate bus bar.
c. Refer to paragraph 5.10 and remove three short power cables from the appropriate contactors K3 to K6.

CAUTION

Record position of pins (20,21) on receptacle J1 to J4 before removal.

d. Rush small pins (20) out of receptacle (22).
e. Remove screws (25), washers (24), nuts (16), serrated lock washers (17), washers (18), and remove receptacle (22,23) and gasket (19) from connection panel.

NOTE

The cable with pin cannot be reused.

f. Rush pins (21) out of receptacle (22).

RECEPTACLE J5

a Remove heat shrink insulation from all cables on receptacle (29).
b. Record labeling and position of cables and unsolder connections to receptacle (29) from outside to inside.
c. Remove screws (26), washers (27), nuts (33), serrated lock washers (32), washers (31) and remove receptacle (28,29) and gasket (30) from connection panel.

RECEPTACLE J6 AND VARISTORS R12, R13

a. Record labeling and position of receptacle (37).
b. Using removal tool 1 and 2 push pins with cables out of receptacle (37) from the back.
c. Remove cable of resistor R12 (22, figure 5-20) from pin J6-R1 and cable of resistor R13 (23) from J6-S2 of receptacle (37, figure 5-21).
d. Remove nut (41), serrated lock washer (40), washer (39), screws (34), washer (36) and receptacle (36,37) and gasket (38).

e. Remove nut (16, figure 5-20), serrated lock washer (17), washer (18), and cable (28) of resistors R12 (22) and cable (28) of resistor R13 (23) from grounding stud.

RECEPTACLE J7

a. Record labeling and position of cables on receptacle contacts (61, figure 21). Unsolder and remove cables.

b . Remove nut (55), ring (56) and receptacle contacts (61).

c. &move four nuts (59), screws (50), washers (51), serrated lock washers (68) and washers (67).

d. Remove the receptacle (52,53) and gasket (54) from outside of connection panel and fiber insulator (60) from inside of connection panel.

RECEPTACLE J11 AND VARISTOR R14

a. Record labeling and position of cables on receptacle (66) and remove cables.

b. Remove one end of varistor R14 (27, figure 5-20) noting position (other end is 31).

c. Remove screw (62, figure 5-21), cover (63) and gasket (64).

d. Remove screws (65), washer (67), serrated lock washers (68), nuts (69), and receptacle (66).

RECEPTACLE J12 AND VARISTOR R11

a. Loosen screw on receptacle (70) and remove cable of resistor R11 (24, figure 5-20) and remaining cable.

b. Remove nut (19), serrated lock washer (20), washer (21), and cable of resistor R11(30) from grounding stud.

c. Remove nut (72, figure 5-21), receptacle (70) and gasket (71).

RECEPTACLE J20 AND VARISTORS R7, R8

a. Record labeling and position of cables on receptacle (46, figure 5-21).
b. Remove cable of resistor R7 (25, figure 5-20) and cable of resistor R8 (26) from pin J20-A of receptacle (45, figure 5-21).
c. Push pins with cables out of receptacle.
d. Remove screws (42), washers (43), nuts (49), serrated lock washers (48), washers (47) and remove receptacle (44,45) and gasket (46).
e. Remove nut (16, figure 5-20), serrated lock washer (17), washer (18), and cable (29) of resistor R7 (25), and cable (29) of resistor R8 (26) from grounding stud.

INSPECTION

Inspect receptacles, cables and varistors for damage and discoloration due to excessive heat. A damaged varistor is generally short cicuited and must be replaced.

TEST

NOTE

- Varistors protect electric circuits from being damaged by high voltage peaks (i. e. lightnings). Presence of high energetic pulses causes varistors to decrease their normally high resistance and change to a conductive status until the voltage peaks become harmless.
- For resistors R7 (25, figure 5-20), R8 (26), R11 (24), R12 (22), R13 (23) and R14 (27) the test procedure is the same.

a. Use multimeter and check resistance. If measured resistance is less than 1 MOhm the varistor is defective and must be replaced.

REPAIR

NOTE

This procedure is the same for receptacle J1 to J4.

a Cut new cables to length and strip both ends of cables as instructed in Appendix G. Install new pins, cable marker, lugs and new heat shrinks. Number the heat shrinks accordingly.
b. Solder cable into connector.

INSTALLATION

RECEPTACLE J1 TO J4

a. Install receptacle (22,23, figure 5-21), gasket (19) and cable on connection panel using screw (25), washer (24), nut (16), serrated lock washer (17), and washer (18).
b. Install three short power cables to contactor K3 to K6 in the order in which they were removed. Refer to paragraph 5.10.
c. Install the long power cable (11) to appropriate bus bar using screw (8), serratedlock washer (9) and washer (10). Tighten screw (8).
d Insert small pins (20) in receptacle (22). Refer to figure 6-22.
e. Install grounding cable (15) using nut (12), serrated lock washer (13), and washer (14). Tighten nut (12).

RECEPTACLE J5

a. Install receptacle (28,29) and gasket (30) on connection panel using screw (26), washer (27, 31), serrated lock washer (32) and nut (33).
b. Install heat shrink insulation prior to soldering all cables to receptacle (29).
c. Solder cables to receptacle (29). Refer to figure 6-22 and table 6-4.

RECEPTACLE J6 AND VARISTORS R12, R13

a. Install receptacle (36,37) and gasket (38) on connection panel using nut (41), serrated lock washer (40), washer (39,35) and screw (34). Tighten screw (34).
b. Install cables and the cable of resistor R12 (22, figure 5-20) in pin J6-R1 and the cable of resistor R13 (23) in pin J6-S2 of receptacle (37, figure 6-21) respectively Refer to figure 6-23.
c. Install cable of resistor R12 (28, figure 5-20), and cable of resistor R13 (29) on grounding stud using washer (18), serrated lock washer (17) and nut (16). Tighten nut (16).

RECEPTACLE J7

a. Install receptacle (52,53, figure 5-21), gasket (64) and fiber insulator (60) with four nuts,(59), screws (50), washers (51,57), and serrated lock washers (68). Tighten nuts (69).
b. Install receptacle contacts (61), ring (66) and secure with nut (55). Refer to figure 5-23.
c. Solder cables to receptacle contacts (61).

RECEPTACLE J11 AND VARISTOR R14

a. Install receptacle (60,66) using two screws (65), washers (67), serrated lock washers (68) and nuts (69). Tighten nuts (69).
b. Install cover (63) with gasket (64) and screw (62).
c. Install varistor R14 (27, figure 5-20) and cables. Refer to figure 5-23.

RECEPTACLE J12 AND VARISTOR R11

a. Install receptacle (70,71, figure 5-21) with nut (72). Tighten nut (72).
b. Install cables and cable of resistor R11(24, figure 5-20) on receptacle.
c. Install cable (30) of resistor R11(24) on grounding stud using washer (21), serrated lock washer (20) and nut (19). Refer to figure 6-23.

RECEPTACLE J20 AND VARISTORS R7, R8

a. Install receptacle (44,45, figure 5-21) and gasket on connection panel (46) using screws (42), washers (43), washers (47), serrated lock washers (48) and nuts (49). Tighten nuts (49).
b. Install cables and cable of resistor R7 (25, figure 5-20) and cable of resistor R8 (26) to pin J20-A of receptacle (46, figure 5-21).
c. Install cable (29) of resistor R7 (25, figure 5-20), and cable (29) of R8 (26) on grounding stud using washer (21), serrated lock washer (20) and nut (19). Refer to figure 5-23.

CONNECTION PANEL

a. Install protective cover (12, figure 5-20) with plastic cap nuts (11), into spacers (10).
b. Install panel (4) using washers (15), serrated lock washers (14), and screws (13).
c. Install four screws (S), eight serrated lock washers (6,8) and rubber flap (7) into four spacers (9) to panel (4).
d. Remove stanchion.
e. Stow prop (3), close access door (2) and secure.
f. Install stanchion by PDU (1).

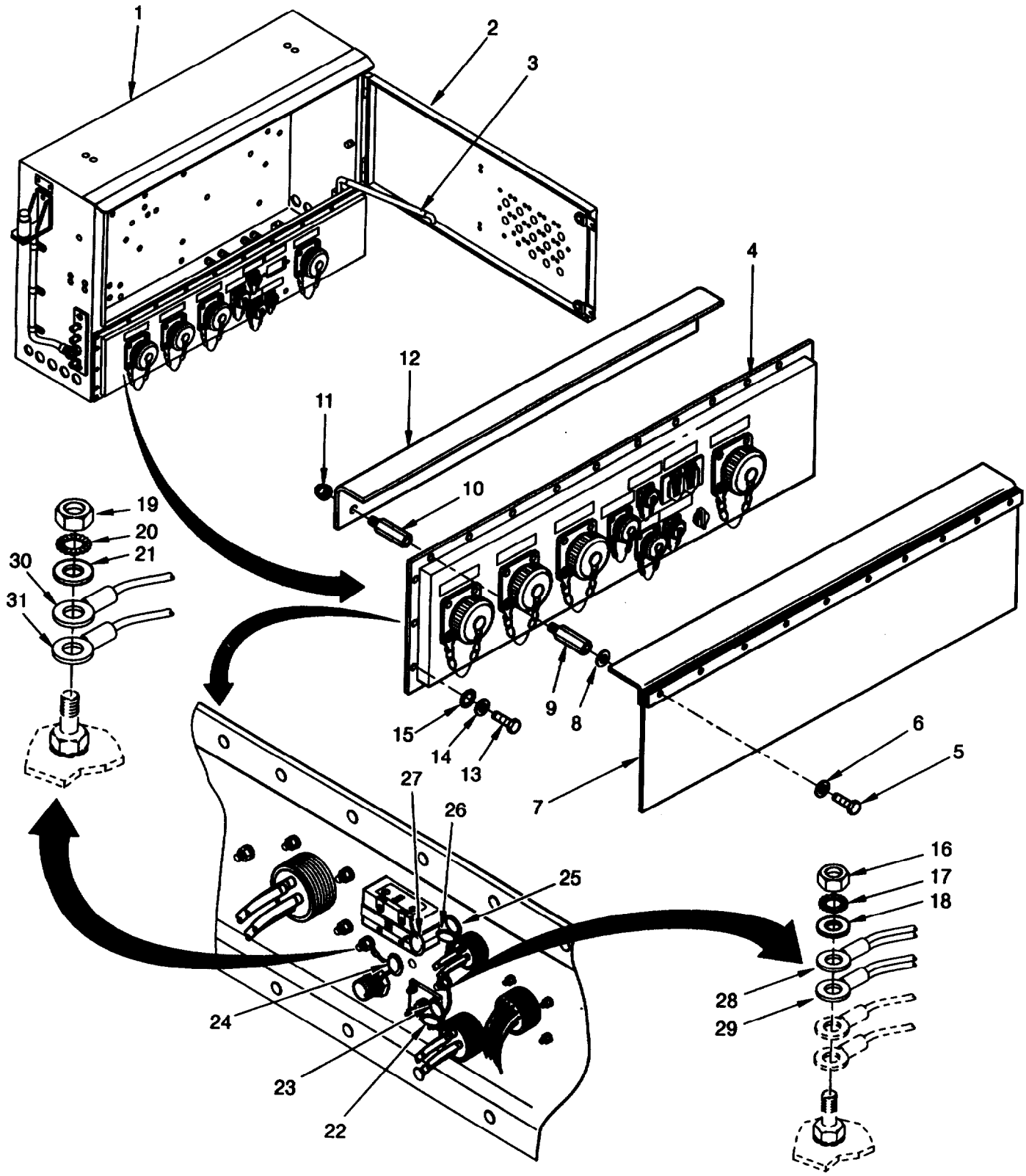


Figure 5-20 Connection Panel Receptacles and Varistors.

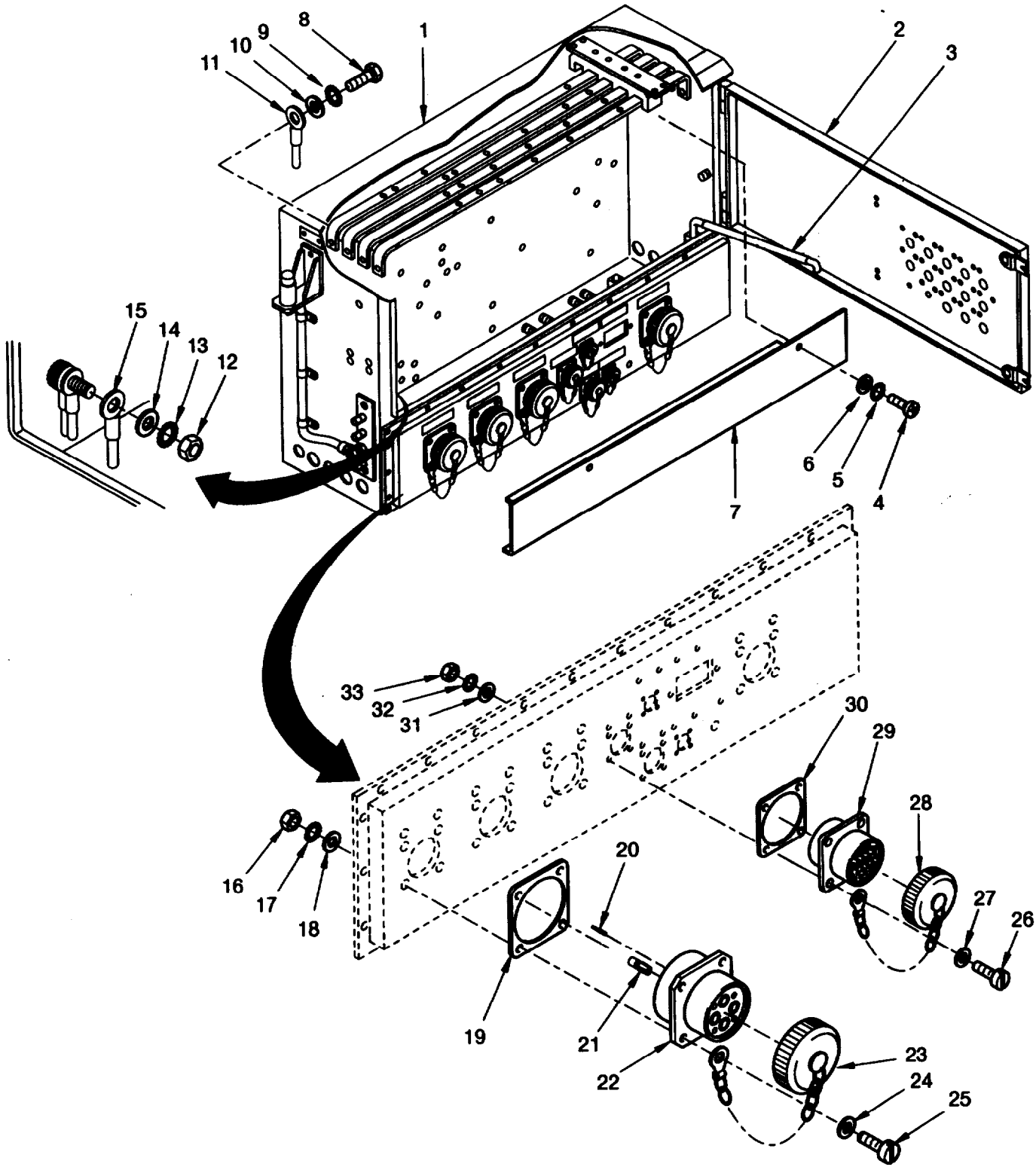


Figure 5-21 Connection Panel, Receptacles J1 to J5 (sheet 1 of 2).

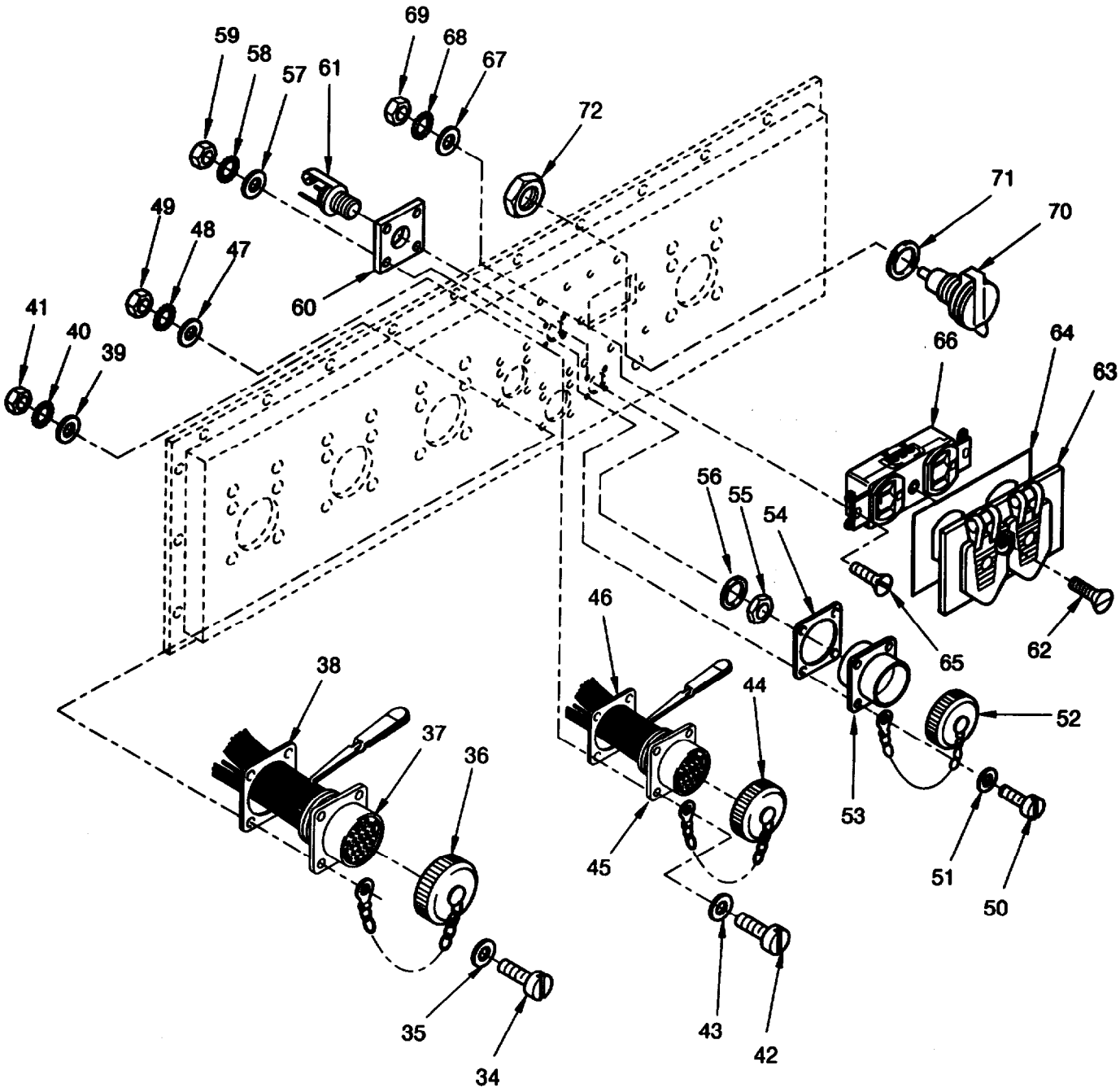


Figure 5-21 Connection Panel, Receptacles J6, J7, J11, J12 and J20 (sheet 2 of 2).

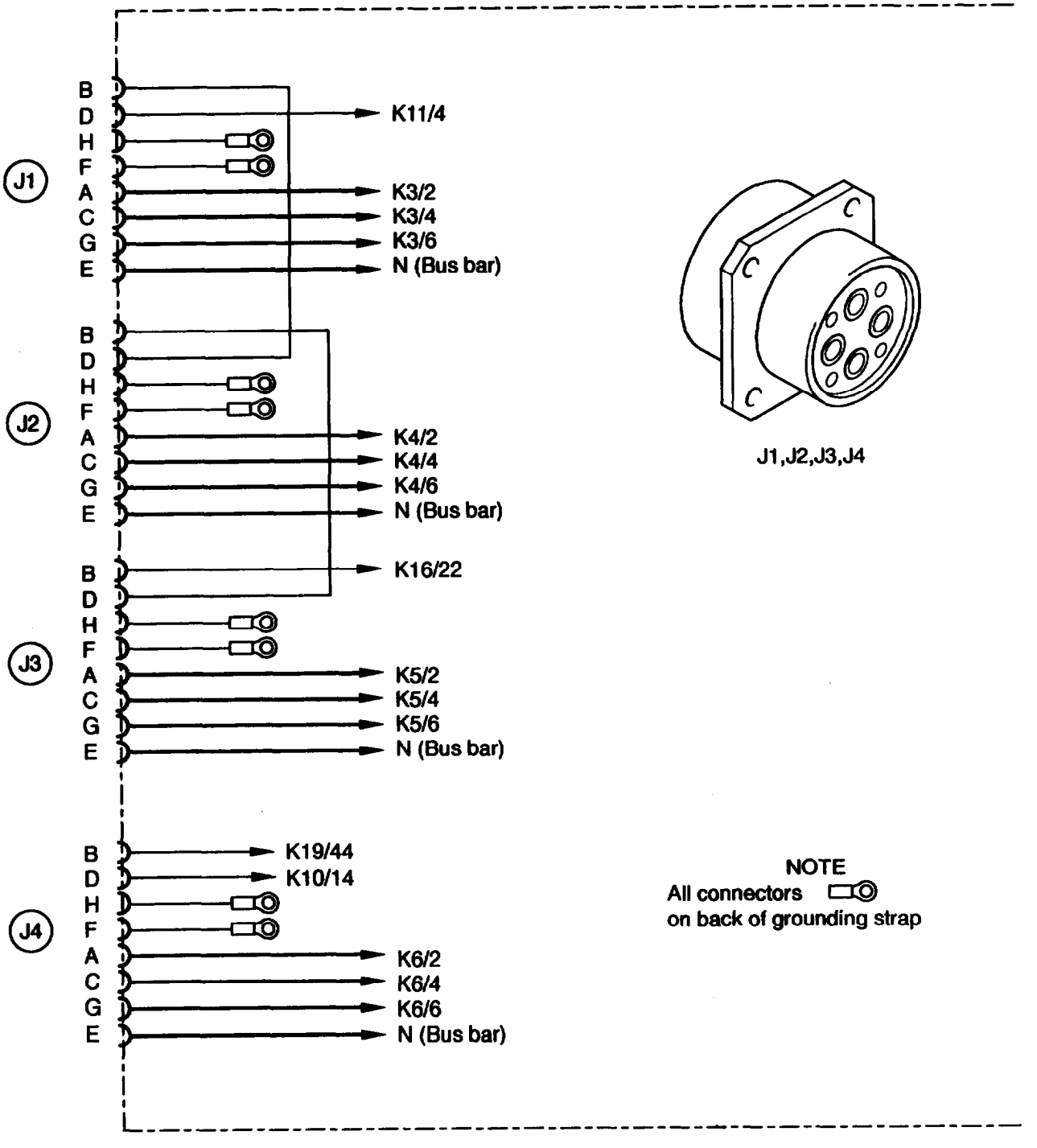


Figure 5-22 Connection Panel, Connection Diagram, Receptacles J1 to J4.

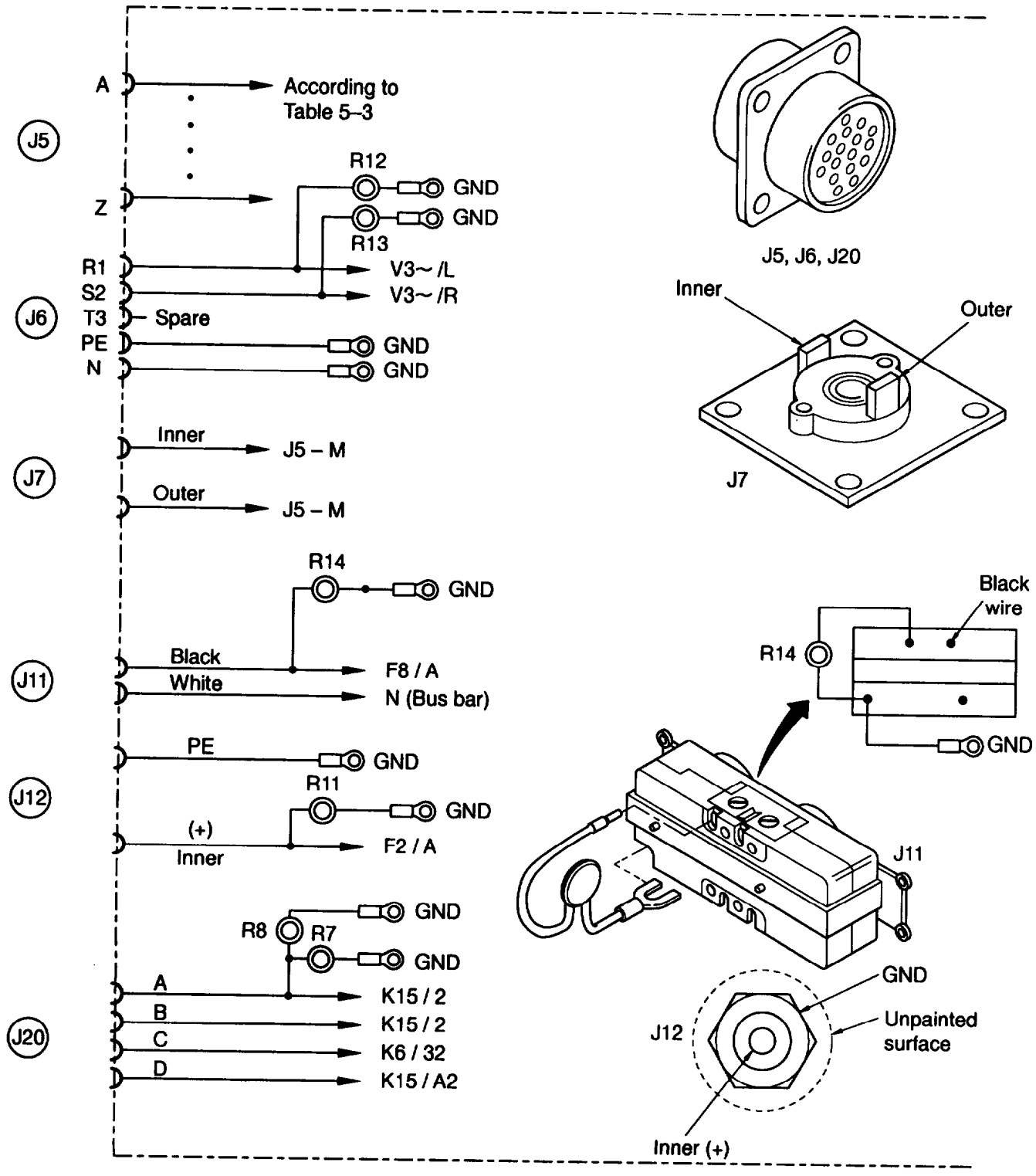


Figure 5-23 Connection Panel, Connection Diagmm, Receptacles J5 to J7, J11, J12, J20.

APPENDIX A
REFERENCES

A.1 SCOPE.

This appendix lists all forms, regulations, pamphlets, specifications, standards, technical manuals, and field manuals referenced in this manual.

A.2 FORMS.

Recommended Changes to Publications and Blank Forms	DA Form 2028
Recommended Changes to DA Publications	DA Form 2028-2
Depreservation Guide for Vehicles and Equipment.	DA Form 2258
Equipment Inspection and Maintenance Worksheet	DA Form 2404
Report of Discrepancy	SF 364
Product Quality Deficiency Report	SF 368

A.3 ARMY REGULATIONS.

Dictionary of United States Army Terms	AR 310-25

A.4 DEPARTMENT OF THE ARMY PAMPHLETS.

The Army Maintenance Management System (TAMMS)	DA PAM 738-750

A.5 MILITARY SPECIFICATIONS.

Preservation, Methods of	MIL-P-116
Barrier Materials, Transparent, Flexible, Heat Sealable	MIL-B-22191
Generator Sets, Mobile Electric Power; Packaging of.	MIL-G-28554

A.6 MILITARY STANDARDS.

Abbreviations for Use on Drawings, and in Specifications, Standards and Technical Documents	MIL-STD-12
Marking for Shipment and Storage	MIL-STD-129
Standard Requirements for Soldered Electrical and Electronic Assemblies	MIL-STD-2000

A.7 TECHNICAL MANUALS.

Procedure of Destruction of Equipment to Prevent Enemy Use	TM 750-244-3
Operator, Unit, and Direct Support Maintenance Manual, Generator Set, Diesel Engine Driven, Skid Mounted, 150 kW, 400 Hz, Alternating Current	TM 9-6115-668-13
Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools), Electrical Generator Assembly, 150 kW 400 HZ	TM 9-6115-668-23P

A.8 FIELD MANUALS.

Electrical Power Generation in the Field	FM 20-31
First Aid for Soldiers	FM 21-11

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B.1 THE ARMY MAINTENANCE MAC.

a. This introduction (section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

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 levels, which are shown in the MAC in column (4) as:

Unit - includes two sub columns, C (operator/crew) and O (unit) maintenance.
Direct Support - includes an F sub column.
General Support - includes an H sub column.
Depot - includes an D sub column.

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

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

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 detect early minor, or intermittent faults 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, that is, to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical 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 specified parameters.

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

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment 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. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, sealing, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an 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, align, calibrate or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, 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 required by maintenance standards in appropriate technical publications (i.e. TM, DMWR). Overhaul in 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 equipment/components.

B.3 EXPLANATION OF COLUMNS IN THE MAC, SECTION II. Below are listed and defined column entries for Section II, Maintenance Allocation Chart:

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

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

c. Column 3 - Maintenance Function. Column 3 lists the functions to be performed on the items listed in column 2. These functions, are defined in paragraph B.2 above.

d. Column 4 - Maintenance Level. Column 4 specifies, by the listing of a "work time" figure in the appropriate sub column(s), the lowest level of maintenance authorized to perform the function listed in Column 3. The figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate "work time" 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, trouble-shooting 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 MAC. The sub columns of Column 4 are as follows:

C.. . Operator or Crew
O.. . Unit Maintenance
F . . . Direct Support Maintenance
H.. . General Support Maintenance
D.. . Depot Maintenance

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

f. Column 6 - Remarks. This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in section IV.

B.4 EXPLANATION OF COLUMNS IN TOOL AND TEST REQUIREMENT, SECTION III. Below are listed the column entries for this chart.

a. Column 1 - Reference Code. The numbers in this column coincide with the numbers used in Column 5 of the MAC. The numbers indicated the applicable tool or test equipment for the maintenance function(s).

b. Column 2 - Maintenance Level. The codes in this column indicate the maintenance level(s) allocated for the tool or test equipment.

c. Column 3 - Nomenclature. This column lists the noun name and nomenclature of the test equipment or tool required to perform the maintenance function.

d. Column 4 - National/NATO Stock Number. This column lists the National/NATO Stock Number (NSN) of a specific tool or test equipment.

e. Column 5 - Tool Number. This column lists the manufacturer's part number or tool followed by the Contractor And Government Entity (CAGE) Code (5 digit) in parentheses.

B.5 EXPLANATION OF COLUMNS IN REMARKS, SECTION IV. This two column chart provides definition and information of the reference codes in the MAC:

a. Column 1 - Reference Code. This code refers to the appropriate letter code in Section II, Column 5.

b. Column 2 - Remarks. This column provides the required explanatory information necessary to clarify items appearing in Section II, Column 5.

Section II. MAINTENANCE ALLOCATION CHART (MAC)
FOR
EPP III

(1)	(2)	(5)	(4)					(5)	(6)
			MAINTENANCE LEVEL						
			UNIT		DS	GS	DEPOT	TOOLS AND	
GROUP NUMBER	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D	EQUIPMENT	REMARKS
00	Electric Power Plant III	Inspect	.5					34	B
		Service	.5	.5				1,2,3	A,B
		Test		.5	.5			2,3,7,8,9, 11-19	A
		Repair			1.0			1-24	C,L
		Overhaul					300	1-24	D,H,J
01	Cable Drum Assembly, ECS Power	Inspect	.1						
		Service	.2	.2				2,3	A,B
		Rem/Inst		2.0				2,3	B
		Replace		2.0				2,3,4,5	B
		Repair		2.0				2,3	B,L
0101	Drum, Cable	Inspect	.1						
		Rem/Inst		2.0				2,3,4,5	B
		Repair			2.0			2,3	C
0102	Cable Assembly, ECS Power	Inspect	.1						
		Test			.5			2,3,7,8,9	C,G
		Replace			2.5			2,3	C
		Repair					3.0	2,3,7,8,9	D
02	Power Distribution Unit	Inspect	.2						
		Service		.5				2,3,7,8,9	A,B
		Test		.5	.5			1,2,3,7-19,23	B,C
		Adjust			1.5				E,M
		Rem/Inst		2.5	2.5			2,3	B,C
		Repair		1.5	3.2			1,2,3,7-19,23	B,C,L
0201	PDU Accessory Parts	Inspect	.2						
		Test		.5	1.0			1,2,3,7-19,23	B,C
		Rem/Inst		1.0	1.0			2,3	B,C
		Repair		1.0	1.5			1,2,3,7-19,23	B,C,L
020101	Protective Casing Assembly	Rem/Inst			.5			2,3	C
		Repair			.8			2,3	C
020102	Power Cable Assembly, One Phase	Test			.3			2,3,7,8,9	C,G
		Replace			2.5			2,3	C
		Repair					3.0	2,3,7,8,9	D
020103	Cable Assembly, Control	Test			.3			7,8,9	C,G
		Replace			2.5			2,3	C
		Repair					3.0	2,3,7,8,9	D

SECTION II. MAINTENANCE ALLOCATION CHART (MAC)
FOR
EPP III

(1)	(2)	(5)	(4)					(5)	(6)
			MAINTENANCE LEVEL						
			UNIT		DS	GS	DEPOT	TOOLS AND	
GROUP NUMBER	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D	EQUIPMENT	REMARKS
0202	PDU Control Panel	Inspect	.1						
		Test		.5	1.0			1,2,3	B,C,G
		Rem/Inst		1.0	1.0			2,3,4,5	B,C
		Repair		1.0	1.5			2,3,4,5	B,C,L
020201	Light Indicator Assembly	Test		.2				7,8,9	B,G
		Rem/Inst		.2				1,2,3,7,8,9	B
		Repair		.5				1,2,3,7,8,9	B
020202	Push Button Switch	Test		.2				7,8,9	B,G
		Rem/Inst		.2				1,2,3,7,8,9	B
		Repair		.5				1,2,3,7,8,9	B
0203	PDU Connecting Panel	Inspect	.2						
		Test		.5	1.0			7,8,9	B,C,G
		Rem/Inst		1.0	1.0			2,3	B,C
		Repair		1.0	1.5			2,3,7,8,9	B,C,L
0204	PDU Housing Assembly	Inspect		.2					
		Test		.5	1.0			2,3,7-11, 14-19	B,C,G
		Rem/Inst		1.0	1.0			2,3	B,C
		Repair		1.0	1.5			2,3,7-11, 14-19	B,C,L
020401	Wiring, PDU	Test			1.5			2,3,7-11, 14-19	C,G
		Replace			2.0			2,3	C
		Repair			2.0			2,3,7-11, 14-23	C
020402	Electronic Module Assembly	Test			1.0			2,3,7,8,9	C
		Rem/Inst			1.5			2,3,7,8,9	C
		Repair			2.0			2,3,7-11, 14-19	C
020403	Time Relay Assembly	Test			.5			2,3,7,8,9	C
		Rem/Inst			.5			2,3	C
		Adjust			.3			2,3,7,8,9	C,M
		Repair			.5			2,3,7,8,9	C
020404	Housing, PDU Cabinet	Inspect		.2					
		Service		.5				2,3	A,B
		Rem/Inst		20.0	25.0			2,3	B,C
		Repair		10.0	10.0			2,3	B,C

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
EPP III

(1)	(2)	(5)	(4) MAINTENANCE LEVEL					(5)	(6)
			UNIT		DS	GS	DEPOT		
GROUP NUMBER	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D	TOOLS AND EQUIPMENT	REMARKS
0205	PDU Electronic Assembly	Test			1.0			7,8,9	C
		Adjust			.5			2,3,7,8,9	C
		Rem/Inst			2.5			2,3,7,8,9	C
		Repair			2.5		3.0	2,3,7,8,9	C,D,L
03	Cable Drum Assembly, Power	Inspect	.1					2,3	
		Service	.2	.2				2,3	A,B
		Rem/Inst		2.0				2,3	B
		Repair		2.0				2,3	B,L
0301	Cable Assembly, Power	Inspect	.1						
		Test			.5			7,8,9	C,G
		Replace			2.5			2,3	C
		Repair					3.0	2,3,7,8,9	D
04	Cable Drum Assembly, Control	Inspect	.1						
		Service	.2	.2				2,3	A,B
		Rem1Inst		2.0				2,3	B
		Repair		2.0				2,3	B,L
0401	Cable Assembly, Control	Inspect	.1						
		Test			.5			2,3,7,8,9	C,G
		Replace			2.5			2,3	C
		Repair					3.0	2,3,7,8,9	D
05	Pallet Frame Assembly	Inspect	.1						
		Service		.5				2	A,B
		Rem/Inst		3.5				2	B
		Replace		20.0				2	B
		Repair		10.0	15.0			2	B,C,F
0501	Swinging Device Assembly	Inspect	.2						
		Service		.2				2	B
		Rem/Inst		1.5				2	B
		Repair		2.0	2.0			2	B,C
06	Truck, Cargo	Inspect	.1						
		Service	.2	.2				2	A,B
		Rem/Inst		2.0				2	B
		Replace		5.0				2	B
		Repair		2.5				2	B
0601	Wring Harness	Inspect	.2						
		Test		1.0				2,3,7,8,9	B,G
		Rem/Inst		2.5				2,3,7-11-19, 23	B
		Repair		2.0				2,3,7-16,19	B

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR EPP III

TOOL OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	O, D	Lamp Extractor		505.14.0001
2	O, F, D	Tool Kit, Auto	5180-00-177-7033	SC5180-90-CL-N26
3	O, E D	Tool Kit, Fuel/Elec	5180-00-754-0655	SC5180-91-CL-R13-HR
4	F	Torque Wrench 14.7-92.12 Ft-lb (20-125 Nm)		
5	F	Torque Wrench 36.85-221.10 Ft-lb (50-300 Nm)		
6	F	Guide Mandrel		505.27.0094
7	F	High Voltage Tester 1000 V		
8	F	Insulation Tester 100 V		
9	F	Resistance Tester 0 - 1 ohm		
10	F	Wrench, Shop Manufactured 1.61 in. (41 mm)		505.09.0063
11	F	DC Power Supply 0-24VDC		
12	F	Fork-Head Screw Driver		505.38.0011
13	F	Stop Watch		
14	F	DC Power Supply 190 - 230 VDC		
15	F	AC Power Supply 208 VAC/3-/400 HZ		
16	F	AC Power Supply 0- 10VAC		
17	F	Switch		
18	F	Crimp Tool Set, Hydraulic		505.38.0003
19	F	Circlip Pliers		505.299001
20	F	Removal Tool 1		505.14.0012
21	F	Removal Tool 2		505.14.0014
22	F	Removal Tool 3		505.14.0010
23	F,D	Load Bank		Avtron K675A
24	O,F,D	Lift Harness		505.42.0001
25	F,D	Resistor, 1000 ohms 0.25		525.17.0301
26	F,D	Wrench, Socket		505.38.0010
27	F,D	XY Printer, RS 3200	6625-01-438-6968	
28	O,F,D	Wrench, Oil Filter		67 600 47 111
29	O,F,D	Mandrel		190200

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR EPP III

TOOL OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONALSTOCK NUMBER	TOOL NUMBER
1	O, D	Lamp Extractor		505.14.0001
2	O, P, D	Tool Kit, Auto	5180-00-177-7033	SC5180-90-CL-N26
3	O, F, D	Tool Kit, Fuel/Elec	5180-00-754-0655	SC5180-91-CL-R13-HR
4	F	Torque Wrench 14.7-92.12 Ft-lb (20-125 Nm)		
5	F	Torque Wrench 36.85-221.10 Ft-lb (50-300 Nm)		
6	F	Guide Mandrel		505.27.0004
7	F	High Voltage Tester 1000 V		
8	F	Insulation Tester 100 V		
9	F	Resistance Tester 0 - 1 ohm		
10	F	Wrench, Shop Manufactured 1.61 in. (41 mm)		505.09.0063
11	F	DC Power Supply 0-24 VDC		
12	F	Fork-Head ScrewDriver		505.38.0011
13	F	Stop Watch		
14	F	DC Power Supply 190-230 VDC		
15	F	AC Power Supply 208 VAC/3~/400 HZ		
16	F	AC Power Supply 0- 10 VAC		
17	F	Switch		
18	F	Crimp Tool Set, Hydraulic		505.38.0003
19	F	Circlip Pliers		505.29.0001
20	F	Removal Tool 1		505.14.0012
21	F	Removal Tool 2		506.14.0014
22	F	Removal Tool 3		505.14.0010
23	F,D	Load Bank		Avtron K675A
24	O,F,D	Lift Harness		505.42.0001
25	F,D	Resistor, 1000 ohms 0.25		525.17.0301
26	F,D	Wrench, Socket		505.38.0010
27	F,D	XY Printer, RS 3200	6625-01-438-6968	
28	O,F,D	Wrench, Oil Filter		67 600 47 111
29	O,F,D	Mandrel		190200

Section IV. REMARKS FOR EPP III

REFERENCE CODE	REMARKS
A	Preventive Maintenance Checks and Services (PMCS)
B	Unit Maintenance Instructions
C	Direct Support Maintenance Instructions
D	Depot Maintenance Work Requirement (DMWR)
E	In Accordance with Procedures in Applicable TM
F	Weld and Straighten
G	Continuity Test
H	Test Pressure Output
I	Visual Inspection
J	Voltage Test
K	Operational Test
L	Repair by Replacement of Sub-Assemblies/Components
M	Adjust to Specifications in Applicable TM

APPENDIX C
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

Section I. INTRODUCTION

C.1 Scope.

This appendix lists components of the end item and basic issue items for the electric power plant III to help you inventory the items for safe and efficient operation of the equipment.

C.2 General.

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

C.2.1 Section II, Components of End Item. This listing is for information purposes only, and is not authority to requisition replacements. There are no components of end item for the electric power plant III.

C.2.2 Section III, Basic Issue Items. These essential items are required to place the (enter name of end item) in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the electric power plant III during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

C.3 EXPLANATION OF COLUMNS.

C.3.1 Column (1), Illus Number. Column (1), Illus Number, gives you the number of the item illustrated.

C.3.2 Column (2), National Stock Number. Column (2), National Stock Number, identifies the stock number of the item to be used for requisitioning purposes.

C.3.3 Column (3) Description and Usable On Code. Column (3), Description and Usable On Code, identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (Commercial and Government Entity Code) (in parenthesis) and the part number.

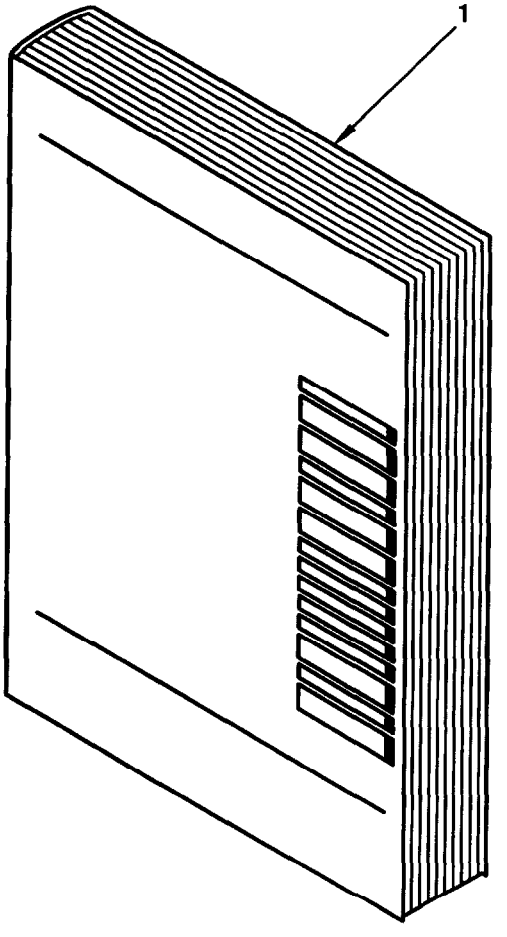
C.3.4 Column (4), U/M (unit of measure). Column (4), U/M (unit of measure), indicates how the item is issued for the National Stock Number shown in column two.

C.3.5 Column (5), Qty Rqr (quantity required). Column (5), Qty Rqr, indicates the quantity required.

Section II. COMPONENTS OF END ITEM

(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	(4) U/M	(5) Qty Rqr
		This section is not applicable to the electric power plant III		

Section III. BASIC ISSUE ITEMS



(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	(4) U/M	(5) Qty Rqr
1		Manual, Technical TM 9-6115-669-13&P	EA	1

APPENDIX D

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

D.1 Scope.

This appendix lists additional items you are authorized for the support of the electric power plant ID.

D.2 General.

This list identifies items that do not have to accompany the equipment and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D.3 Explanation of Listing.

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequency by item name. If the item you require differs between serial numbers of the same model, effective serial numbers are shown in the last line of the description. If item required differs for different models of this equipment, the model is shown under the “Usuable on” heading in the description column.

Section IL ADDITIONAL AUTHORIZED ITEMS LIST

(1) National Stock Number	(2) Description CAGEC and Part Number Usuable on Code	(3) U/I	(4) Qty Recm
7240-00-222-3088	CAN, GASOLINE, MILITARY (80372) 42-D-1280	EA	1

APPENDIX E

EXPENDABLE AND DURABLE ITEMS LIST

Section I. INTRODUCTION

E.1 Scope.

This appendix lists expandable and durable items that you will need to operate and maintain the electric power plant III. This listing is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-790, Expandable/Durable Items (except medical, class V repair parts, and heraldic items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

E.2 Explanation of Columns.

E.2.1 Column 1, Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g., "Use cleaning cloth, Item 3, Appendix E").

E.2.2 Column 2, Level. This column identifies the lowest level of maintenance that requires the item.

E.2.3 Column 3, National stock number. This is the national stock number assigned to the item which you can use to requisition it.

E.2.4. Column 4, Item name, description, Commercial and Government Entity Code (CAGEC), and part number. This provides the other information you need to identify the item.

E.2.5 Column 5, Unit of Measure. This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Section II. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
1	O	100.06.0003	Lubricating Grease	AR
2	F		Cable Ties	AR
3	F		Loctite 243	AR
4	F	5100102025	Terminal Grease	AR
5	F	100.06.007	Copper Paste	AR
6	O, F		Lubricant	AR
7	F	3439-00-974-1873	Solder, Tin Alloy, SN60WRAP2,1 Lb. Spool	AR
8	F		Thermoconductive Paste	AR

APPENDIX F
UNIT AND DIRECT SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

F-1 SCOPE.

This RPSTL lists and authorizes spares and repair parts; special tools, special Test, Measurement, and Diagnostic Equipment, (TMDE); and other special support equipment required for performance of operator, unit, and direct support maintenance of the Electrical Power Plant III. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by Source, Maintenance and Recoverability (SMR) codes.

F-2 GENERAL.

In addition to Section I, Introduction, the Repair Parts and Special Tools List is divided into the following sections:

F-2.1 Section II, Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed by item name in FIG. BULK at. the end of the section.

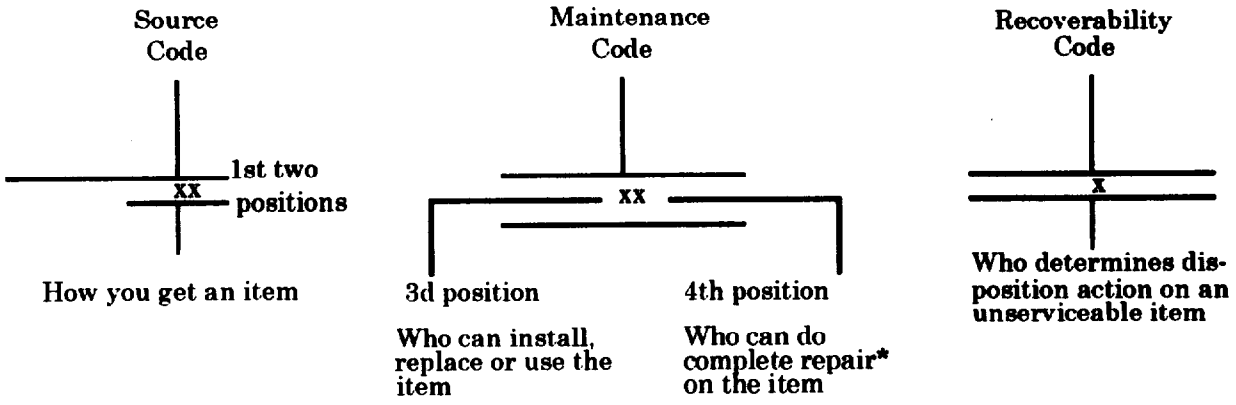
F-2.2 Section III, - Special Tools List. A list of special tools, special TMDE, and other special support equipment, authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE (UOC) column) for the performance of maintenance.

F-2.3 Section IV, - Cross-reference Indexes. A list, in alphanumeric sequence, of all reference designators appearing on the illustrations; a list, in National Item Identification Number (NIIN) sequence, of all National Stock Numbers (NSN) appearing in the listings; a list, in alphanumeric sequence, of all part numbers appearing in the listing; and a list in figure and item number sequence. Reference designators, national stock numbers, and part numbers are cross-referenced to each illustration/figure and item number appearance. The figure and item number index lists figure and item numbers in alphanumeric sequence and cross-references NSN. CAGEC and part numbers.

F-3 EXPLANATION OF COLUMNS (SECTIONS II AND III).

F-3.1 Item No. (Column (1)). Indicates the number used to identify items called out in the illustration.

F-3.2 SMR Code (Column (2)). The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

F-3.2.1 Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

Code	Explanation
PA PB PC** PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these codes. They are authorized to the maintenance level indicated by the code entered in the 3d position of the SMR code.

**Note: Items coded PC are subject to deterioration.

Code	Explanation
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.
MO- (Made at Unit/AVUM Level) MF- (Made at DS/AVUM Level) MH- (Made at GS Level) ML- (Made at Specialized Repair Act (SRA)) MD- (Made at Depot)	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the Bulk Material group of the repair parts list in this manual. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AO- (Assembled by Unit AVUM Level) AF- (Assembled by DS AVUM Level) AH- (Assembled by GS Level) AL- (Assembled by SRA) AD- (Assembled by Depot)	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3d position code of the SMR code authorizes you to replace the item. but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.

XA- Do not requisition an "XA" - coded item. Order its next higher assembly. (Also, refer to the NOTE below.)

XB- If an “XB” item is not available from salvage, order it using the CAGEC and part number given.

XC- Installation drawing, diagram, instruction sheet., field service drawing, that is identified by manufacturer's part number.

XD- Item is not stocked. Order an “XD” -coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded “XA” or those aircraft support Items restricted by requirements of AR 700-42.

F-3.2.2 Maintenance Code. Maintenance codes tells you the level(s) of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR Code as follows:

F-3.2.2.1 Maintenance Code Third Position. Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance.

Code	Application/Explanation
C	-Crew or operator maintenance done within unit, or aviation unit maintenance.
O	-Unit or aviation unit level can remove, replace, and use the item.
F	-Direct support or aviation intermediate level can remove, replace, and use the item.
H	-General support level can remove, replace, and use the item.
L	-Specialized repair activity can remove, replace, and use the item.
D	-Depot level can remove, replace, and use the item.

F-3.2.2.2 Maintenance Code Fourth Position. The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest, maintenance level with the capability to do complete repair (i.e., perform all authorized repair functions). (NOTE: Some limited repair may be done on the item at the lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes). This position will contain one of the following maintenance codes.

Code	Application/Explanation
O	-Unit is the lowest level that, can do complete repair of the item.
F	-Direct support or aviation intermediate is the lowest level that can do complete repair of the item.
H	-General support is the lowest level that can do complete repair of the item.
L	-Specialized repair activity (designate the specialized repair activity) is the lowest level that can do complete repair of the item.
D	-Depot is the lowest level that can do complete repair of the item.
Z	-Nonreparable. No repair is authorized.
B	-No repair is authorized. (No parts or special tools are authorized for the maintenance of "B" coded item). However, the item may be reconditioned by adjusting, lubricating. etc., at the user level.

F-3.2.3 Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

Recoverability Codes	Application/Explanation
Z	-Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in 3d position of SMR Code.
O	-Reparable item. When uneconomically reparable, condemn and dispose of the item at unit or aviation unit level.
F	-Reparable item. When uneconomically reparable condemn and dispose of the item at the direct support or aviation intermediate level.
H	-Reparable item. When uneconomically reparable, condemn and dispose of the item at. the general support level.
D	-Reparable item. When beyond lower level repair capability, return to depot.. Condemnation and disposal of item not authorized below depot level.
L	-Reparable item. Condemnation and disposal not. authorized below specialized repair activity (SRA).
A	-Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value. critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

F-3.2.4 CAGEC (Column (3)). The Commercial and Government Entity Code (CAGEC) is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

F-3.2.5 Part Number (Column (4)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government, activity), which controls the design and characteristics of the item by means or its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the part ordered.

F-3.2.6 Description and Usable On Code (UOC) (Column (5)). This column includes the following information:

a. The Federal item name and, when required, a minimum description to identify the item.

b. The statement “END OF FIGURE” appears just below the last item description in Column 5 for a given figure in both Section II and Section III

F-3.2.7 QTY (Column (6)). The QTY (quantity per figure column) indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group. or an assembly. A "V' appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

F-4 EXPLANATION OF COLUMNS (SECTION IV).

F-4.1 Reference Designator Index.

F4.1.1 Reference Designator Column. Reference Designators in this index are listed in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

F-4.1.2 FIG. Column. This column lists the number of the figure where the item is identified/located in Section II.

F-4.1.3 Item Column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

F-4.2 National Stock Number (NSN) Index.

F-4.2.1 Stock Number Column. This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN.

(i.e., 5305-01-674-1467). When using this column to locate an item, ignore the first 4 digits of the NSN.
NIIN

However, the complete NSN should be used when ordering items by stock number.

F-4.2.2 FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

F-4.2.3 Item Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

F-4.3 Part Number Index. Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

F-4.3.1 CAGEC Column. The Commercial and Government. Entity Code (CAGEC) is used to identify the manufacturer, distributor, or Government agency. etc., that, supplies the item.

F-4.3.2 Part Number Column. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards. and inspection requirements to identify an item or range of items.

F-4.3.3 Stock Number Column. This column lists the NSN for the associated part, number and manufacturer identified in the PART NUMBER and CAGEC columns to the left.

F-4.3.4 FIG. Column. This column lists the number of the figure where the item is identified/ located in Section II and III.

F-4.3.5 Item Column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent. figure number column.

F-4.4 FIGURE AND ITEM NUMBER INDEX.

F-4.4.1 FIG. Column. The column lists the number of the figure where the item is identified/ located in Section II and III.

F-4.4.2 Item Column. The item number is that number assigned to the item as it. appears in the figure referenced in the adjacent figure number column.

F-4.4.3 Stock Number Column. This column lists the NSN for the item.

F-4.4.4 CAGEC Column. The Commercial and Government, Entit.y Code (CAGEC) is used to identify the manufacturer, distributor, or Government agency, etc.. that supplies the item.

F-4.4.5 Part Number Column. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

F-5 SPECIAL INFORMATION.

F-5.1 Usable on Code. The usable on code appears in the lower left corner of the DESCRIPTION AND USABLE ON CODE (UOC) column heading. Usable on codes are shown as "UOC..." on the next line below the last line of the applicable item description/nomenclature. The UOC entry begins at the left, edge of the column. Uncoded items are applicable to all models. Identification of the usable on codes used in this manual are:

Code	Used on
FLN	015.05.0011

F-5.2 Fabrication Instructions. Bulk materials required to manufacture items are listed in the BULK MATERIALS functional group of this RPSTL. Part numbers for bulk materials are also referenced in the DESCRIPTION AND UOC column of the line item entry for the item to be manufactured/fabricated.

F-5.3 Index Numbers. Items which have the word Bulk in the figure column will have an index number shown in the item no. column. This index number is used as a cross-reference between the National Stock Number/Part Number Index and bulk materials list in Section II.

F-6 HOW TO LOCATE REPAIR PARTS.

F-6.1 WHEN NATIONAL STOCK NUMBER OR PART NUMBER IS NOT KNOWN.

F-6.1.1 First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

F-6.1.2 Second. Find the figure covering the assembly group or subassembly group to which the item belongs.

F-6.1.3 Third. Identify the item on the figure and use the Figure and Item Number Index to find the NSN.

F-6.2 WHEN NATIONAL STOCK NUMBER OR PART NUMBER IS KNOWN.

F-6.2.1 First. Using the National Stock Number or Part Number Index, find the pertinent, National Stock Number or Part Number. The NSN index is in National Item Identification Number (NIIN) sequence (see F-4.2.1). The part numbers in the Part, Number index are listed in ascending alphanumeric sequence (see F-4.3). Both indexes cross-reference you to the illustration/figure and item number of item for which you are looking.

F-6.2.2 Second. Turn to the figure and item number, verify that the item is the one for which you are looking, then locate the item number in the repair parts list for the figure.

F-7 ABBREVIATIONS.

ABBREVIATIONS	EXPLANATION
A	AMPERE
AC	ALTERNATING CURRENT
AP	ATTACHING PART
AR	AS REQUIRED
AS	DRIVING SIDE
BL	BLUE
BR	BROWN
D	DIAMETER
DC	DIRECT CURRENT
ES	EXCITER SIDE
FIG	FIGURE
GRD	GROUND
HZ	HERTZ
INC	INCORPORATED
KOHM	KILOOHM
KW	KILO WATT
L	LITER
LH	LEFT HAND
M	METER
MM	MILLIMETER
MV	MILLIVOLT
N	NEUTRAL
NI	NOT ILLUSTRATED
NO	N U M B E R
NR	NUMBER
NSN	NATIONAL STOCK NUMBER
PDU	POWER DISTRIBUTION UNIT
PH	PHASE
QTY	QUANTITY
RH	RIGHT HAND
SEC	SECONDS
SW	BLACK
UF	MICRO FARAD
V	VOLT
VA	VOLTAMPERE
W	WATT
W	WHITE

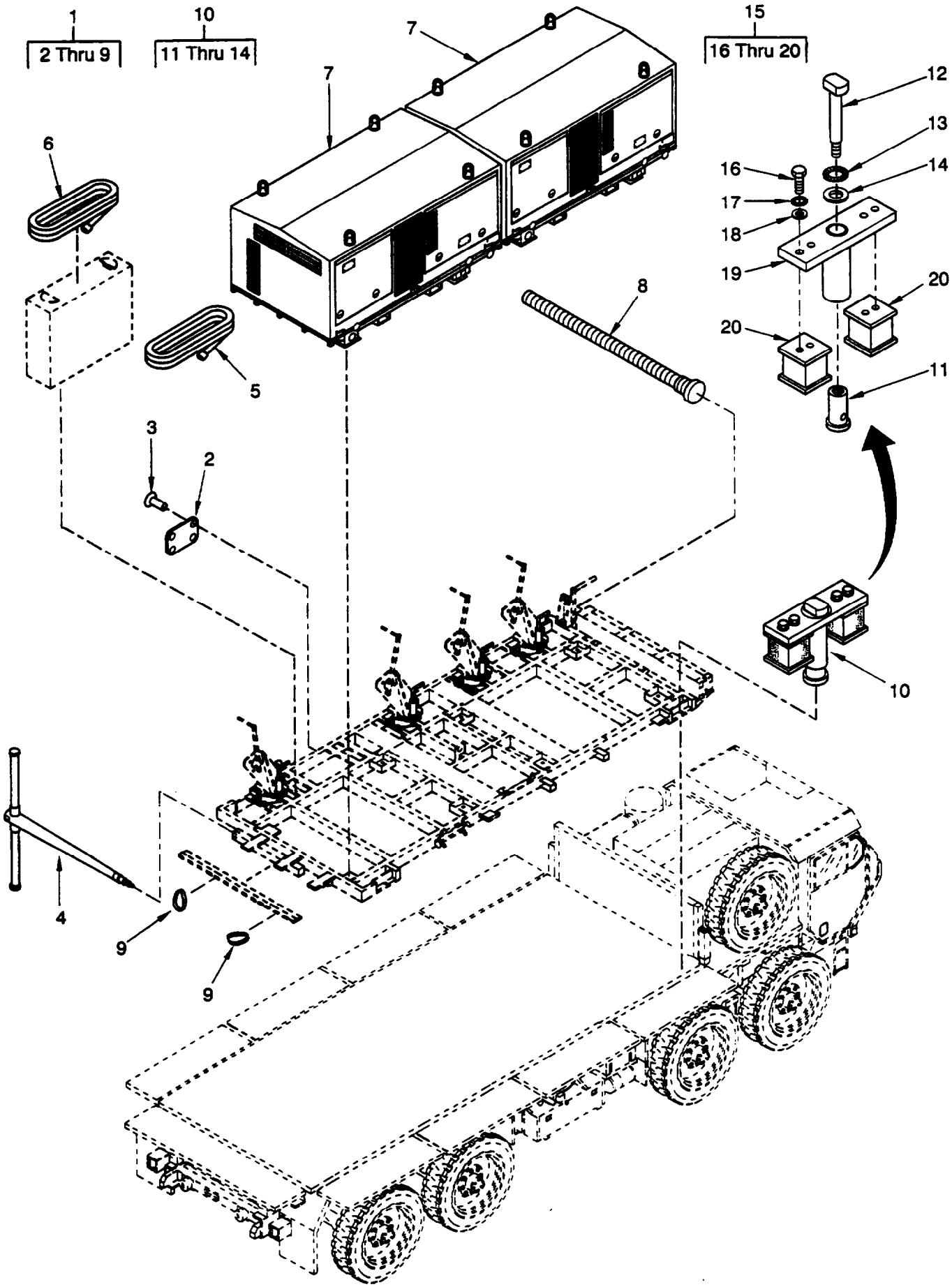


Figure F-1. Electrical Power Plant, 2x150 KW 400 Hz, Loading Pack, Patriot (EPP III)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 00 ELECTRICAL POWER PLANT, 2X150KW/400HZ,LOADING PACK, PATRIOT (EPP III)	
F-1	1	PEFDD	6115-01-374-5038	97403	13230E5400	ELECTRICAL POWER PLANT, 2X150KW/400HZ,LOADING PACK, EPP III	1
F-1	2	XBOZZ		D0857	405.01.0266	PLATE,IDENTIFICATION (ELECTRICAL POWER PLANT)	1
F-1	3	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-1	4	PAOZZ	5975-12-120-0006	D8376	644000	ROD,GROUND	1
F-1	5	MOOZZ		D8376	416150	GROUNDING CABLE ASSEMBLY,59.04 FEET (15M) LONG,16 SQUARE	1
F-1	6	PAOZZ	6150-12-156-9125	D8376	5995-416300	LEAD,ELECTRICAL 98.4 FEET (30M) LONG,16 SQUARE	2
F-1	7	PDOFD	6115-12-337-8494	D0857	010.04.0037	GENERATOR SET,DIESEL,150KW400HZ, LOADING PACK,PATRIOT (FOR BREAKDOWN SEE TM9-6118-668-23P)	2
F-1	8	XBOOO		D0857	355.02.0175	EXHAUST DUCT ASSEMB LY	4
F-1	9	XBOZZ		D0857	020.08.0003	STRAP	2
F-1	10	PAOFF	5340-12-345-5876	D0857	160.31.0223	BRACKET,MOUNTING	4
F-1	11	XBFZZ		D0857	040.09.0013	BUSHING,THREADED	1
F-1	12	XBFZZ		D0857	040.09.0082	BOLT,RETAINING	1
F-1	13	PAFZZ	5310-12-197-1393	D8286	DIN6798-A28-FST	WASHER,LOCK	1
F-1	14	PAFZZ	5310-01-454-3908	80204	B1822BH240N	WASHER,FLAT 25.86MM ID X 43.69MM OD X 4.05MM THK	1
F-1	15	XBFZZ		D0857	460.06.0016	BRACKET ASSEMBLY,PALLET MOUNTING	1
F-1	16	PAFZZ	5305-01-465-9613	80204	B18231B10025	SCREW,CAP,HEXAGON HEAD MM L	4
F-1	17	PAFZZ	5310-12-124-0893	D8286	DIN6798-A10,5-FST	WASHER,LOCK	4
F-1	18	PAFZZ	5310-01-265-6333	80204	B1822BH100N	WASHER,FLAT 11 MM ID X 20 MM OD X 2 MM THK	4
F-1	19	XBFZZ		D0857	310.10.0101	BRACKET,PALLET MOUNTING	1
F-1	20	PAFZZ	5342-12-324-4151	D0857	460.04.0002	MOUNT,RESILIENT	2
						END OF FIGURE	

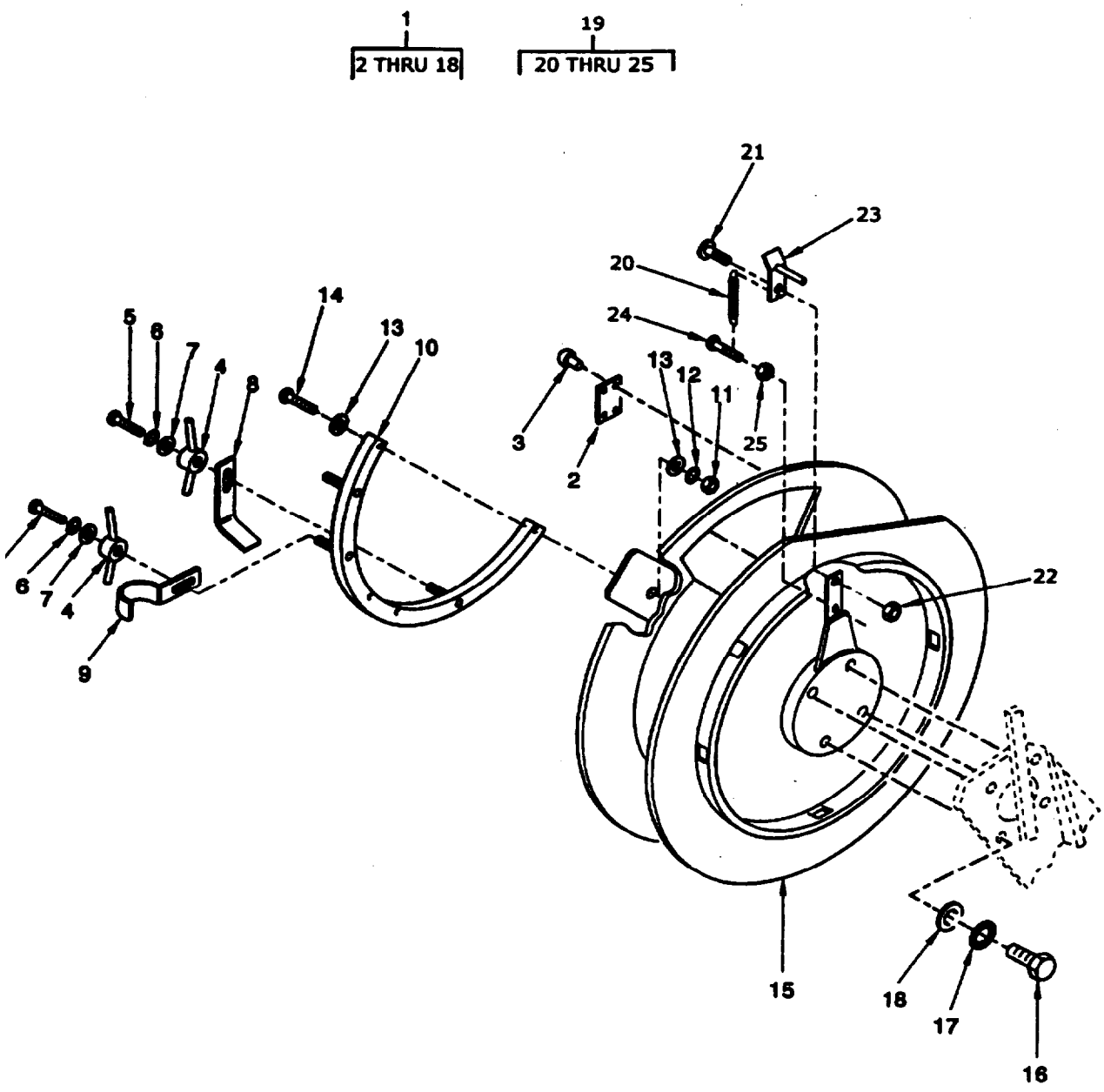


Figure F-2. Cable Drum Assembly (ECS - Power Cable Set)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 01 **CABLE DRUM ASSEMBLY** **(ECS-POWER CABLE SET)**	
F-2	1	XBOFF		D0857	480.02.0027	CABLE DRUM ASSEMBLY (ECS-POWER CABLE SET)	1
F-2	2	XBOZZ		D0857	405.01.0262	PLATE,IDENTIFICATION (CABLE DRUM ASSEMBLY)	1
F-2	3	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-2	4	PAOZZ	5310-12-345-5270	D0857	285.06.0034	NUT,PLAIN,WING	2
F-2	5	PAOZZ	5305-12-181-9556	D8286	DIN933-M8X12-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-2	6	PAOZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	2
F-2	7	PAOZZ	5310-12-154-6605	D8286	DIN9021-B8,4-A4-70	WASHER,FLAT	2
F-2	8	PAOZZ	5340-12-345-9125	D0857	160.31.0208	CLAMP,CABLE,ELECTRICAL	1
F-2	9	PAOZZ	5340-12-345-9126	D0857	160.31.0209	CLAMP,CABLE,ELECTRICAL	1
F-2	10	PBOZZ	5340-12-345-9130	D0857	160.31.0210	CLAMP,CABLE,ELECTRI	1
F-2	11	PAOZZ	5310-12-155-0596	D8286	DIN934-M6-A4-70	NUT,PLAIN,HEXAGON	4
F-2	12	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	4
F-2	13	PAOZZ	5310-12-174-8311	D8286	DIN125-A6,4-A4-70	WASHER,FLAT	8
F-2	14	PAOZZ	5305-12-197-8223	D8286	DIN933-M6X40-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-2	15	XBOFF		D0857	480.02.0047	DRUM,CABLE	1
F-2	16	PAOZZ	5305-12-169-1296	D8286	DIN933-M16X40-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-2	17	PAOZZ	5310-12-131-4169	D8286	DIN6798-A17-FST	WASHER,LOCK	4
F-2	18	PAOZZ	5310-12-172-6828	D8286	DIN125-B17-140HV-A4	WASHER,FLAT	4
F-2	19	PAOZZ	5340-12-347-7090	D0857	480.06.0001	LOCKING KIT 600	1
F-2	20	PAOZZ	5360-12-345-5373	D0857	093.04.0147	SPRING,HELICAL,EXTENTION	1
F-2	21	PAOZZ	5305-12-345-5877	D0857	040.09.0088	SCREW,SHOULDER	1
F-2	22	PAOZZ	5310-12-151-6661	D8286	DIN934-M10-A4-70	NUT,PLAIN,HEXAGON	1
F-2	23	PAOZZ	5340-12-346-6909	D0857	160.31.0256	WRENCH,RATCHET,SPEC	1
F-2	24	PAOZZ	5305-12-332-3308	D8286	DIN933-M5X25-A4-70	SCREW,CAP,HEXAGON H EAD	1
F-2	25	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	1
						END OF FIGURE	

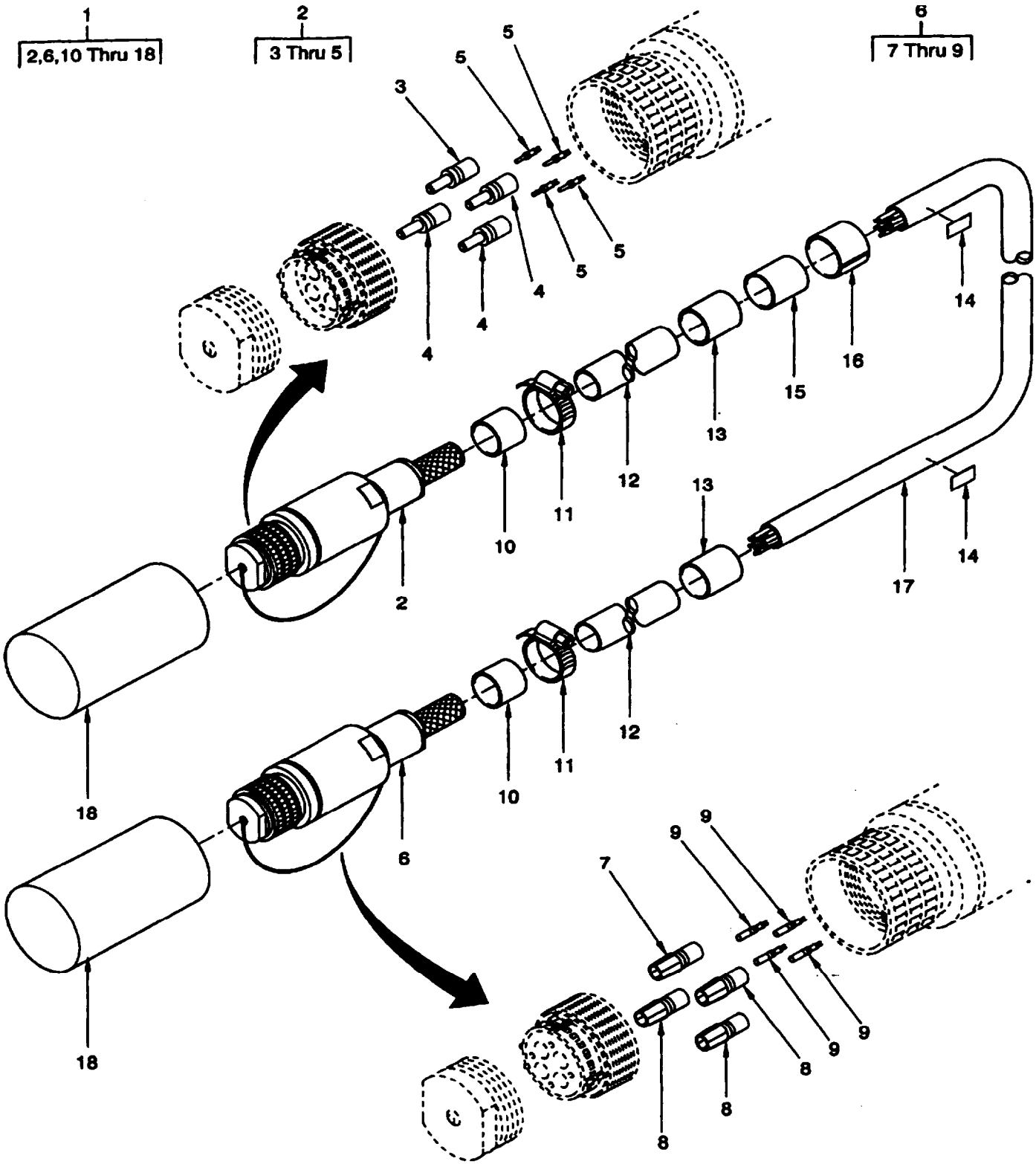


Figure F-3. Cable Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0101 **CABLE DRUM ASSEMBLY**	
F-3	1	PAFDD	6150-12-343-3738	D0857	180.01.0148	CABLE ASSEMBLY,SPECIAL PURPOSE (MAKE FROM ITEM 2 THRU ITEM 17 OF THIS FIGURE)	1
F-3	2	PADDD	5935-01-453-1426	77820	91-522536-08P	CONNECTOR,RECEPTACLE	1
F-3	3	PADZZ	5935-01-444-6795	77820	10-113180-01P	CONNECTOR,PLUG,ELECTRICAL	1
F-3	4	PADZZ	5999-01-455-8948	77820	10-497226-032	CONTACT,ELECTRICAL	3
F-3	5	PADZZ	5999-01-457-3111	77820	10-407118-122	CONTACT,ELECTRICAL	4
F-3	6	PADDD	5935-01-453-1425	77820	91-522536-08S	CONNECTOR,RECEPTACLE	1
F-3	7	PADZZ	5935-01-444-6797	77820	10-113180-01S	CONNECTOR,RECEPTACLE	1
F-3	8	PADZZ	5999-01-457-3130	77820	10-497227-032	CONTACT,ELECTRICAL	3
F-3	9	PADZZ	5935-01-444-6798	77820	10-305880-12S	CONNECTOR,RECEPTACLE	4
F-3	10	MDDZZ		D0857	115.04.0039-1.755 INCH	TUBE,HEATSHRINKING (MAKE FROM (D8527) P/N 324-09010) 1.755 INCH (45MM) REQUIRED	2
F-3	11	PADZZ	4730-12-195-3414	D8773	TORRO40-60/9-C6W1	CLAMP,HOSE	2
F-3	12	MDDZZ		D0857	115.04.0018-8.97 INCH	TUBE,HEAT SHRINKING (MAKE FROM (C7365) P/N PST 8408-18) 8.97 INCH (230MM) REQUIRED	2
F-3	13	MDDZZ		D0857	115.04.0006-2.73 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D9477) P/N VG95343T05B012M) 2.73 INCH (70M0M) REQUIRED	2
F-3	14	PADZZ	9905-12-321-6623	D0857	405.05.0001	BAND,MARKER	2
F-3	15	MDDZZ		D0857	115.04.0007-3.9 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 301-0508-0) 3.9 INCH (100MM) REQUIRED	1
F-3	16	MDDZZ		D0857	250.03.0003-5.07 X2.34 INCH	MAT,RUBBER (MAKE FR OM (D0857) P/N 250.03.0003) 5.07X2.34 INCH (132X60MM) REQUIRED	1
F-3	17	MDDZZ		D0857	180.01.0031-95.12 FT	CABLE,UVLEX-T-400/4 3 (MAKE FROM (D0857) P/N 180.01.0031) 95.12 FT (29M) REQUIRED	1
F-3	18	PAOZZ	8105-12-323-8359	D0857	060.20.0015	SACK,SHIPPING	8
						END OF FIGURE	

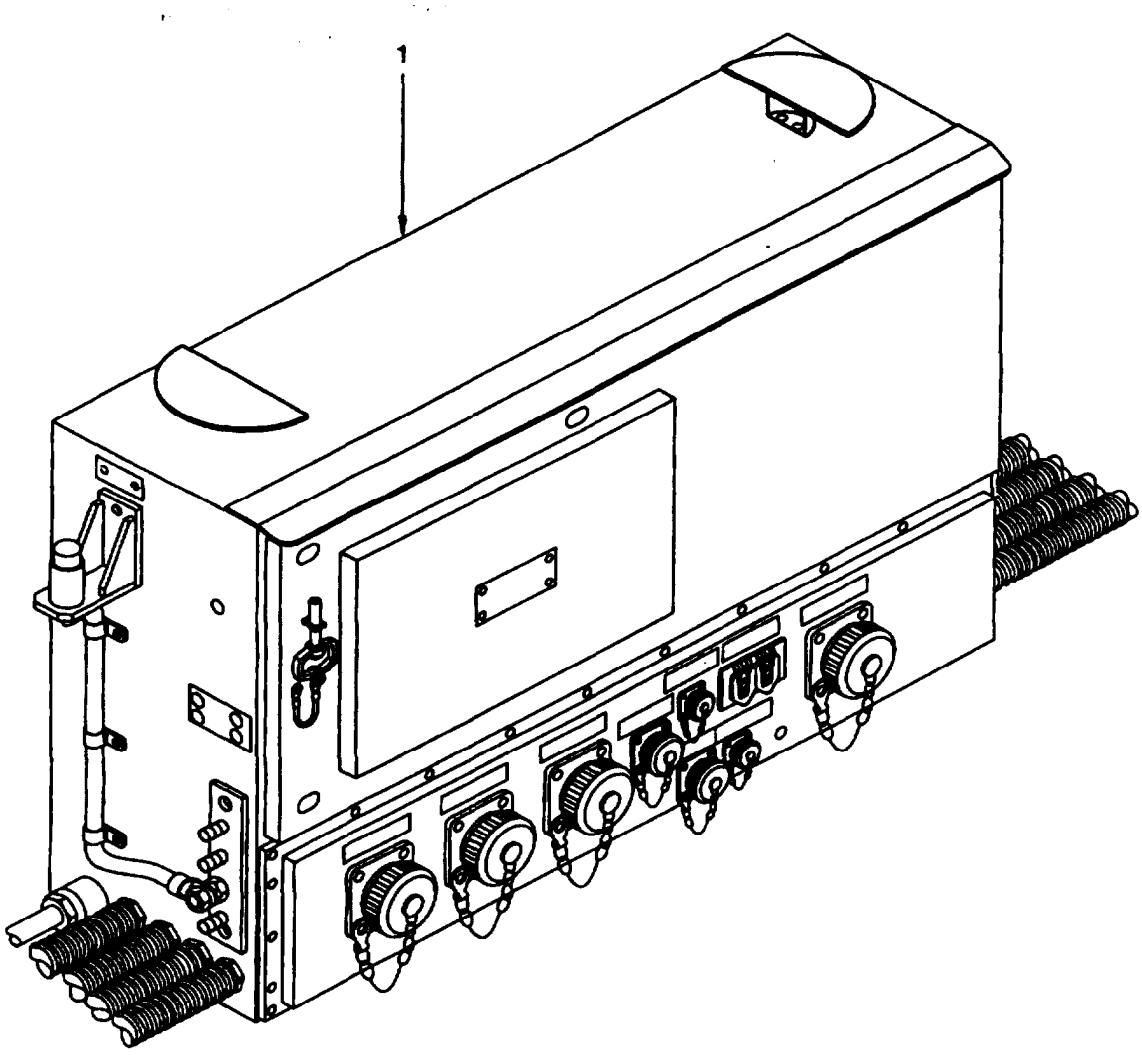


Figure F-4. Power Distribution Unit Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 02 **POWER DISTRIBUTION UNIT ASSEMBLY**	
F-4	1	PBFFF	5840-12-341-7003	D0857	420.02.0078	POWER DISTRIBUTION-UNIT ASSEMBLY . . . . . . **END OF FIGURE**	1

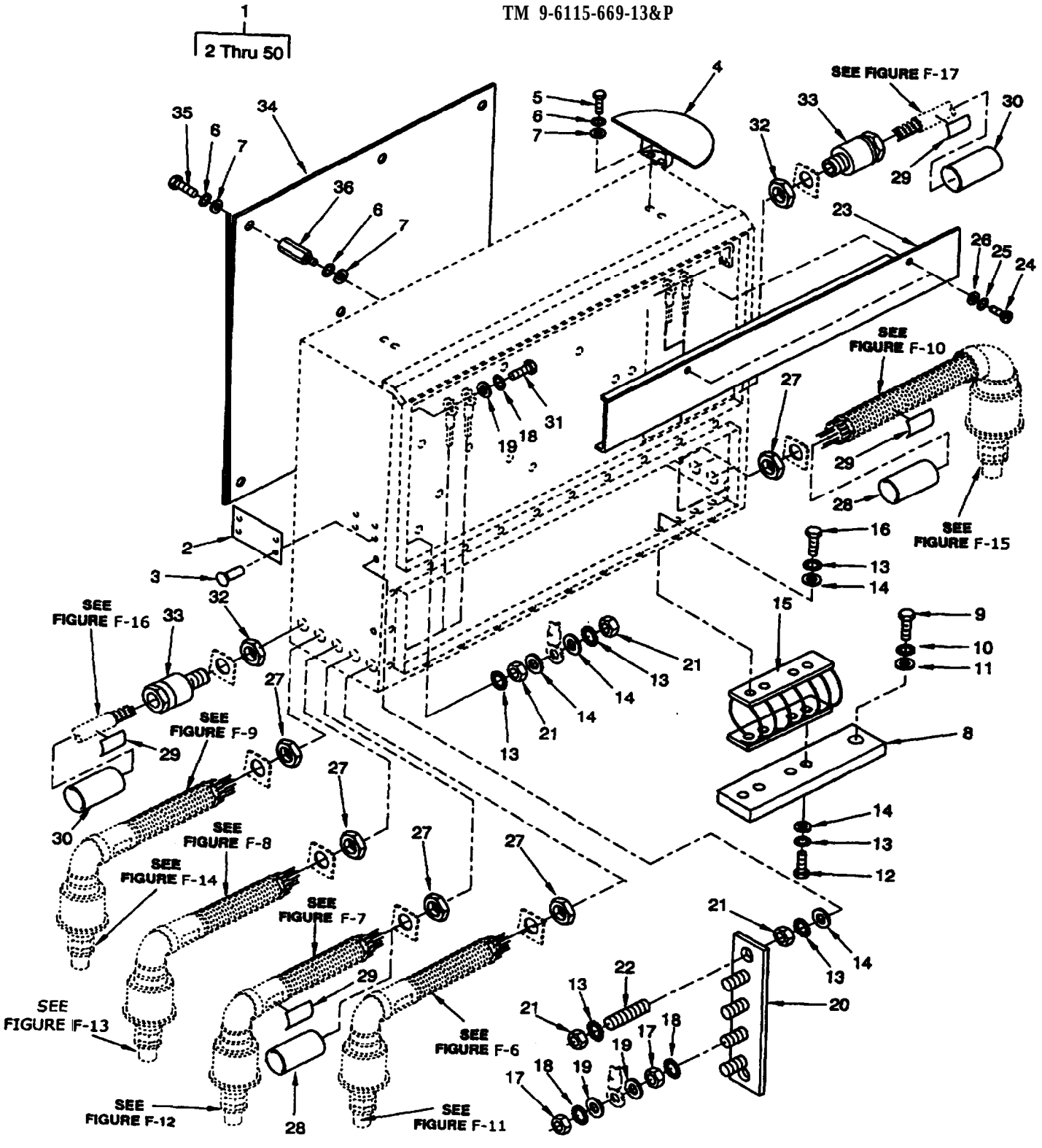


Figure F-5. Power Distribution Unit (Accessory parts)
Sheet 1 of 2

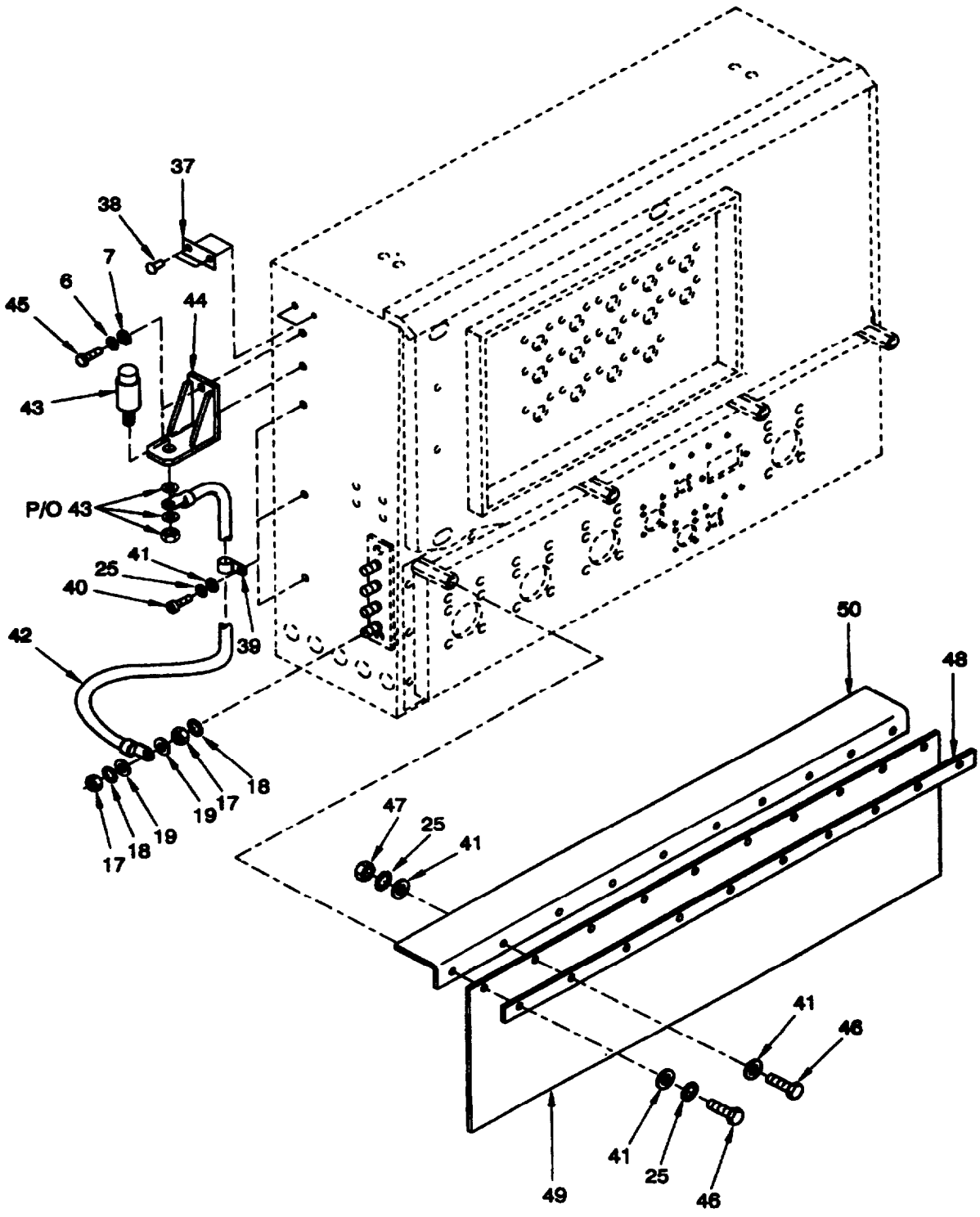


Figure F-5. Power Distribution Unit (Accessory parts)
Sheet 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0201 **POWER DISTRIBUTION UNIT** **ASSEMBLY, PDU-ACCESSORY PARTS**	
F-5	1	XBFFF		D0857	420.02.0078F-5	PDU-ACCESSORY PARTS	1
F-5	2	XBOZZ		D0857	405.01.0271	PLATE,IDENTIFICATION (POWER DISTRIBUTION CABINET ASSEMBLY)	1
F-5	3	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-5	4	PAOFF	8130-12-345-5878	D0857	160.31.0191	HOLDER,CABLE REEL	2
F-5	5	PAOZZ	5305-12-164-0313	D8286	DIN933-M6X16-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-5	6	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	28
F-5	7	PAOZZ	5310-12-174-8311	D8286	DIN125-A6,4-A4-70	WASHER,FLAT	28
F-5	8	PAFFF	5340-12-345-5616	D0857	310.09.0012	PLATE,MOUNTING	4
F-5	9	PAFZZ	5305-12-193-2211	D8286	DIN933-M12X55-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-5	10	PAFZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-5	11	PAFZZ	5310-01-454-3901	80204	B1822BH120R	WASHER,FLAT	4
F-5	12	PAFZZ	5305-12-179-5136	D8286	DIN933-M8X35-A4-70	SCREW,CAP,HEXAGON HEAD	16
F-5	13	PAFZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	40
F-5	14	PAFZZ	5310-12-154-1380	D8286	DIN125-B8,4-140HV-A4	WASHER,FLAT	38
F-5	15	PAFZZ		C7401	G3 110-06 G2	SHOCK ABSORBER,DIRECT ACTION	4
F-5	16	PAFZZ	5305-12-156-3727	D8286	DIN933-M8X30-A4-70	SCREW,CAP,HEXAGON HEAD	16
F-5	17	PAOZZ	5310-12-151-6661	D8286	DIN934-M10-A4-70	NUT,PLAIN,HEXAGON	8
F-5	18	PAOZZ	5310-12-124-0893	D8286	DIN6798-A10,5-FST	WASHER,LOCK	16
F-5	19	PAOZZ	5310-12-189-7275	D8286	DIN125-B10,5-140HV-A4	WASHER,FLAT	16
F-5	20	PAOFF	5940-12-322-4546	D0857	160.32.0002	BUS,CONDUCTOR	1
F-5	21	PAOZZ	5310-12-154-3038	D8286	DIN934-M8-A4-70	NUT,PLAIN,HEXAGON	8
F-5	22	PAOZZ	5305-12-329-6389	D8286	DIN913-M8X50-A4-70	SETSCREW	2
F-5	23	PAOZZ	5975-12-345-7461	D0857	060.20.0098	PROTECTIVE COVER,SP	1
F-5	24	PAOZZ	5305-12-160-0628	D8286	DIN84-M5X16-A4-70	SCREW,MACHINE	2
F-5	25	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	15
F-5	26	PAOZZ	5310-12-189-6396	D8286	DIN9021-B5,3-A4-70	WASHER,FLAT	2
F-5	27	PAFZZ	5975-12-167-8243	D9803	229M	LOCKNUT,ELECTRICAL	8
F-5	28	MFFZZ		D0857	115.04.0052-2.73 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N305-50819) 2.73 INCH (70MM) REQUIRED	8
F-5	29	PAOZZ	9905-12-321-6623	D0857	405.05.0001	BAND,MARKER	10
F-5	30	MFFZZ		D0857	115.04.0053-2.73 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N305-25419) 2.73 INCH (70MM) REQUIRED	2
F-5	31	PAFZZ	5305-12-166-7145	D8286	DIN933-M10X20-A4-70	SCREW,CAP,HEXAGON HEAD	8
F-5	32	PAFZZ	5975-12-154-3980	D9803	221M	LOCKNUT,ELECTRICAL	2
F-5	33	PAFZZ	5975-12-324-4930	D9788	184/PG21Z22	STUFFING TUBE	2
F-5	34	PAOZZ	5340-12-345-7678	D0857	310.18.0046	COVER,ACCESS	1
F-5	35	PAOZZ	5305-12-161-4351	D8286	DIN933-M6X12-A4-70	BOLT,MACHINE	13
F-5	36	PAFZZ	5340-12-345-5730	C0882	68.31.702	STANDOFF,THREADED, SPACING	9
F-5	37	XBODD		97403	13211E6730	PLATE,IDENTIFICATION (GROUND)	1
F-5	38	XBOZZ	5305-00-253-5614	96906	MS21318-20	SCREW,DRIVE	2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-5	39	PAOZZ	5340-00-598-0146	96906	MS21919WDG6	CLAMP,LOOP	3
F-5	40	PAOZZ	5305-12-158-4224	D8286	DIN84-M5X10-A4-70	SCREW,MACHINE	3
F-5	41	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140HV-A4	WASHER,FLAT	19
F-5	42	PAOZZ	6150-12-346-3279	D0857	180.01.0160	LEAD,ELECTRICAL	1
F-5	43	PAOZZ	5935-01-465-5826	97403	13229E9952	CONNECTOR ASSEMBLY, ELECTRICAL	1
F-5	44	PAOZZ	5999-01-465-7536	97403	13229E9948	HOLDER,CONTACT	1
F-5	45	PAOZZ	5305-12-166-4213	D8286	DIN933-M6X25-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-5	46	PAOZZ	5305-12-166-4231	D8286	DIN933-M5X20-A4-70	SCREW,CAP,HEXAGON HEAD	10
F-5	47	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	6
F-5	48	PAOZZ	5340-12-345-5831	D0857	160.32.0031	PLATE,MOUNTING	1
F-5	49	PAOZZ	5935-12-345-7277	D0857	060.20.0094	COVER AND GUARD,ELECTRICAL CONNECTOR	1
F-5	50	PAOZZ	5340-12-345-5832	D0857	160.03.0080	BRACKET,ANGLE	1
						END OF FIGURE	

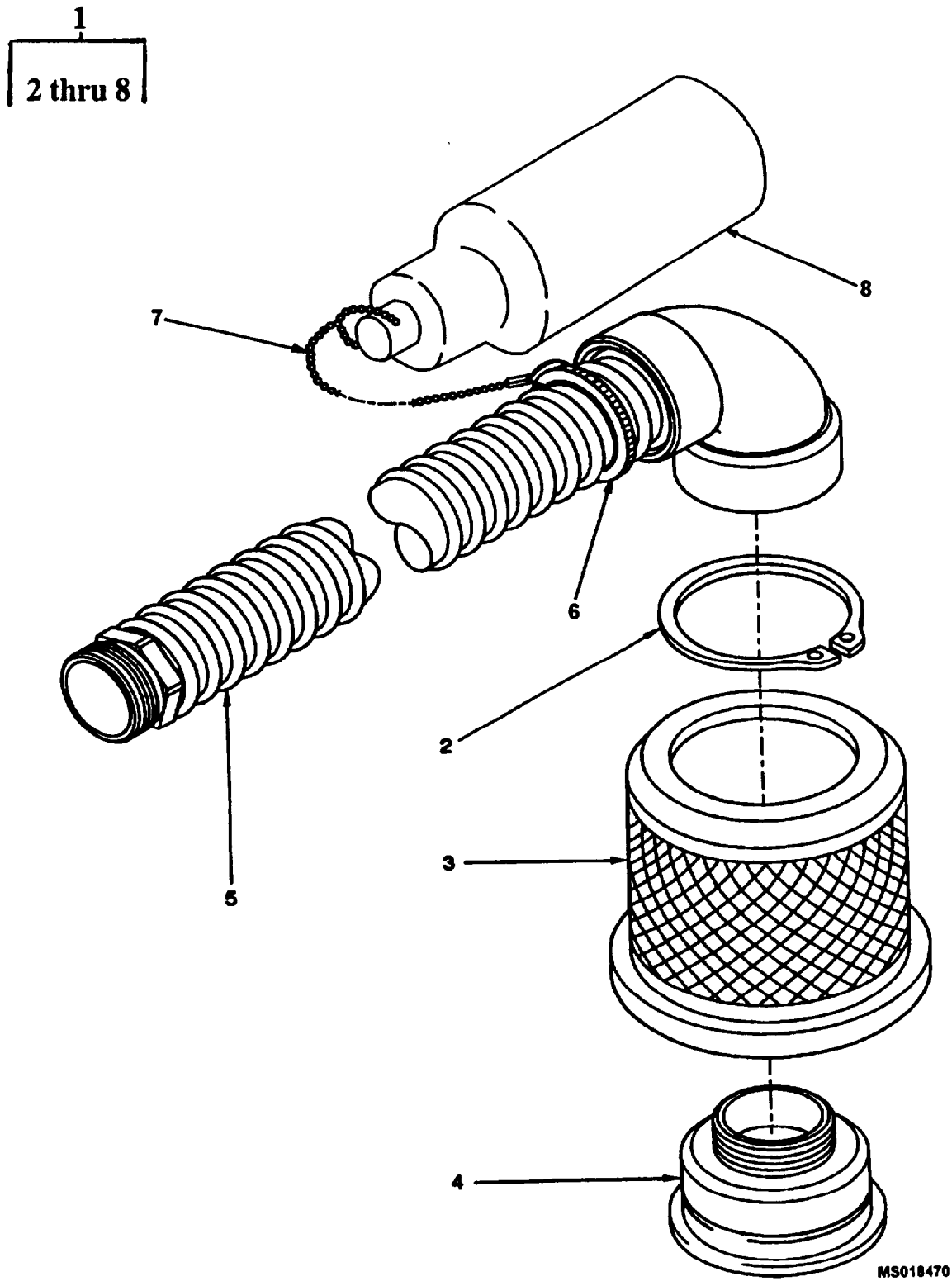


Figure F-6. Protective Casing Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020101 **POWER DISTRIBUTION** **UNIT ASSEMBLY, PROTECTIVE CASING**	
F-6	1	XBFFF	5975-12-343-4088	D0857	115.02.0006	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-6	2	PAFZZ	5325-12-126-3416	D8286	DIN471-62X2	RING,RETAINING	1
F-6	3	PAFZZ	4730-12-323-9430	D0857	110.02.0006	NUT,UNION	1
F-6	4	PAFZZ	4730-12-323-9431	D0857	110.02.0007	ADAPTER,STRAIGHT,TUBE TO BOSS	1
F-6	5	PAFZZ	5975-12-323-9432	D0857	115.02.0007	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-6	6	PAOZZ	5975-01-048-2922	96906	MS3367-6-0	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	1
F-6	7	PBFZZ		D0857	160.09.0008	CHAIN ASSEMBLY	1
F-6	8	PBFZZ		D0857	060.22.0029	CAP,PROTECTIVE,DUST,AND MOISTURE SEAL	1
						END OF FIGURE	

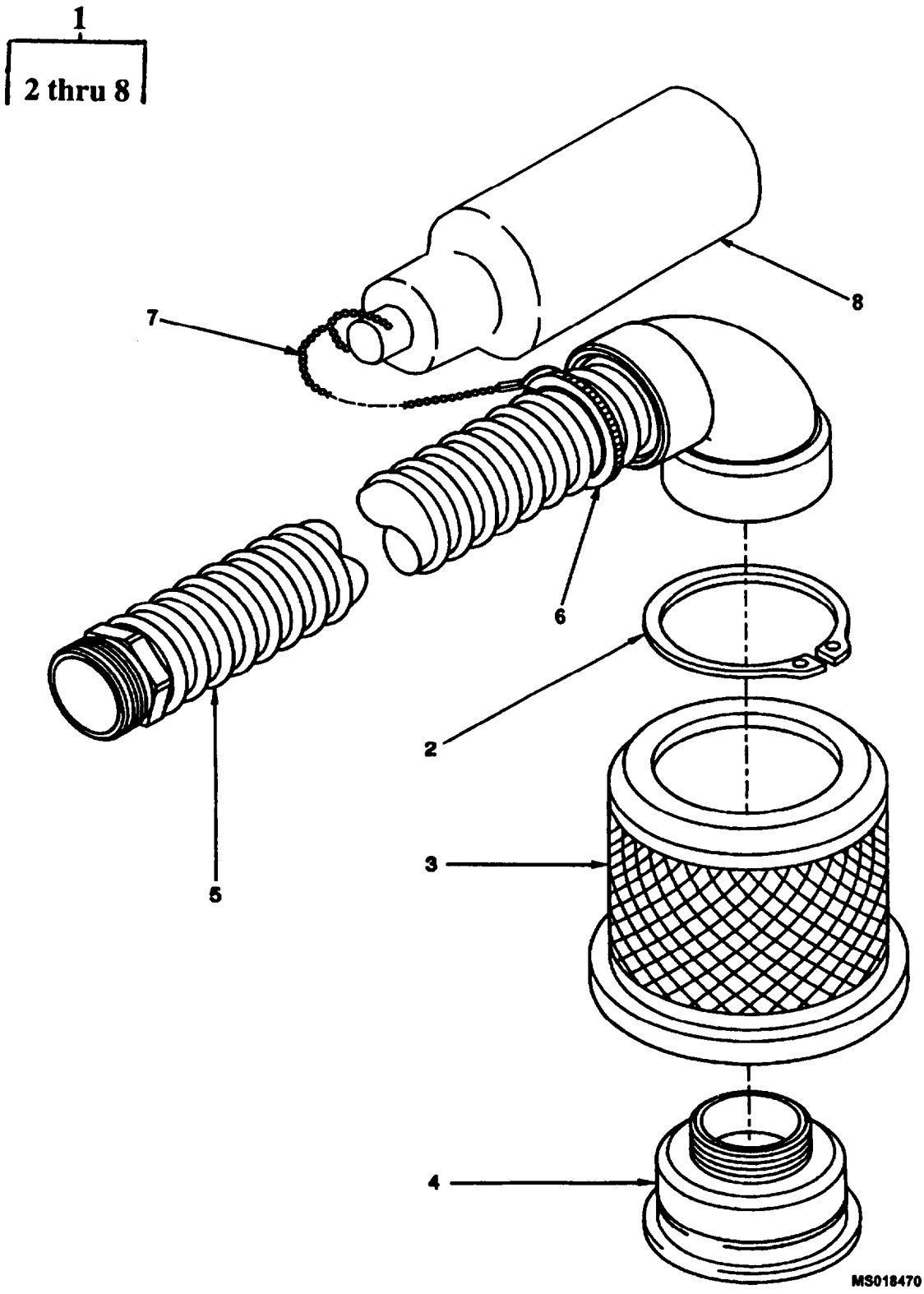


Figure F-7. Protective Casing Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020101A **POWER DISTRIBUTION** **UNIT ASSEMBLY, PROTECTIVE CASING**	
F-7	1	XBFFF	5975-12-343-4089	D0857	115.02.0010	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-7	2	PAFZZ	5325-12-126-3416	D8286	DIN471-62X2	RING,RETAINING	1
F-7	3	PAFZZ	4730-12-323-9430	D0857	110.02.0006	NUT,UNION	1
F-7	4	PAFZZ	4730-12-323-9431	D0857	110.02.0007	ADAPTER,STRAIGHT,TUBE TO BOSS	1
F-7	5	PAFZZ	5975-12-323-9433	D0857	115.02.0011	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-7	6	PAFZZ	5975-01-048-2922	96906	MS3367-6-0	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	1
F-7	7	PBFZZ		D0857	160.09.0008	CHAIN ASSEMBLY	1
F-7	8	PBFZZ		D0857	060.22.0029	CAP,PROTECTIVE,DUST,AND MOISTURE SEAL	1
						END OF FIGURE	

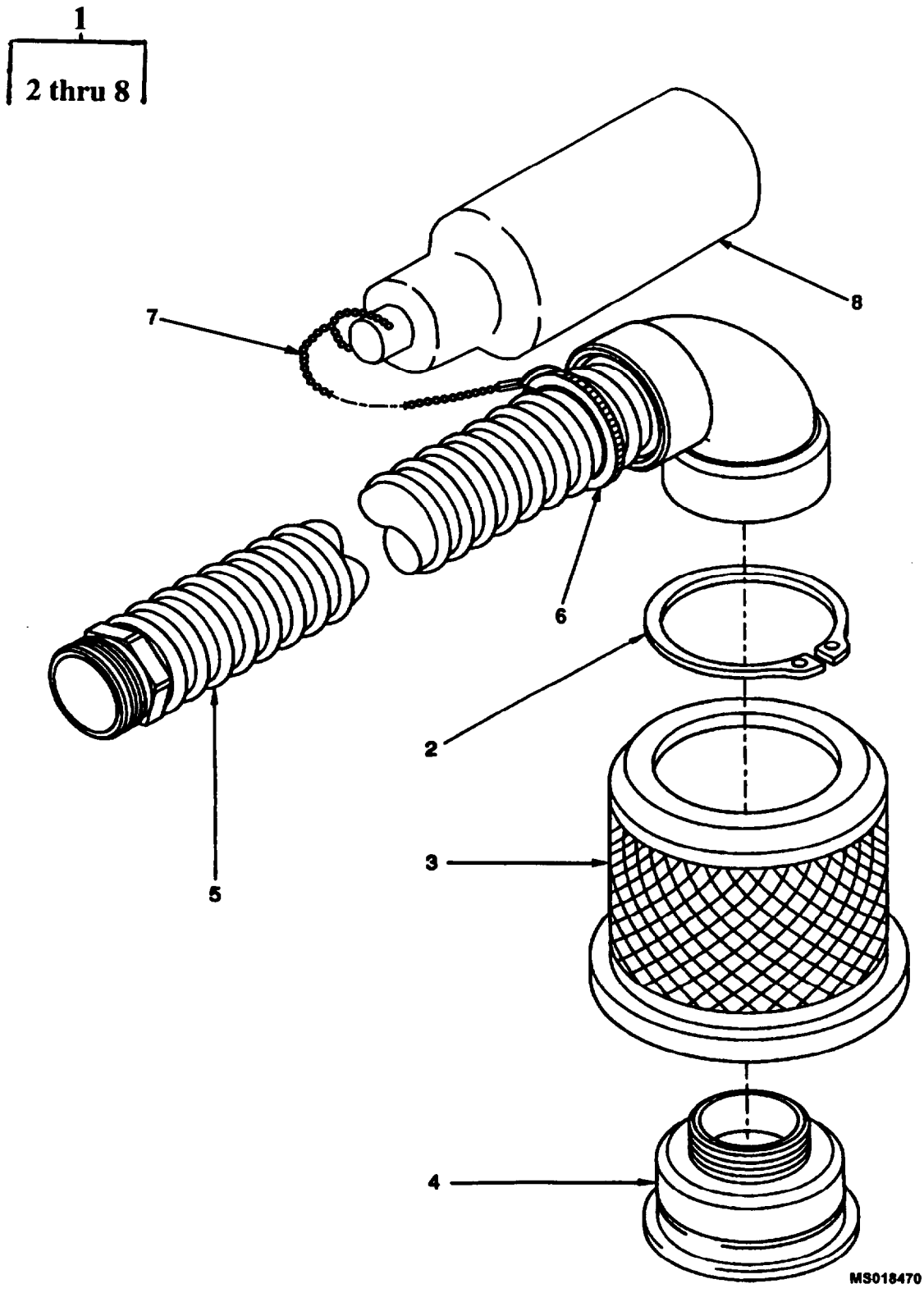


Figure F-8. Protective Casing Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020101B **POWER DISTRIBUTION** **UNIT ASSEMBLY, PROTECTIVE CASING**	
F-8	1	XBFFF	5975-12-343-4087	D0857	115.02.0012	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-8	2	PAFZZ	5325-12-126-3416	D8286	DIN471-62X2	RING,RETAINING	1
F-8	3	PAFZZ	4730-12-323-9430	D0857	110.02.0006	NUT,UNION	1
F-8	4	PAFZZ	4730-12-323-9431	D0857	110.02.0007	ADAPTER,STRAIGHT,TUBE TO BOSS	1
F-8	5	PAFZZ	5975-12-323-9434	D0857	115.02.0013	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-8	6	PAFZZ	5975-01-048-2922	96906	MS3367-6-0	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	1
F-8	7	PBFZZ		D0857	160.09.0008	CHAIN ASSEMBLY	1
F-8	8	PBFZZ		D0857	060.22.0029	CAP,PROTECTIVE,DUST,AND MOISTURE SEAL	1
						END OF FIGURE	

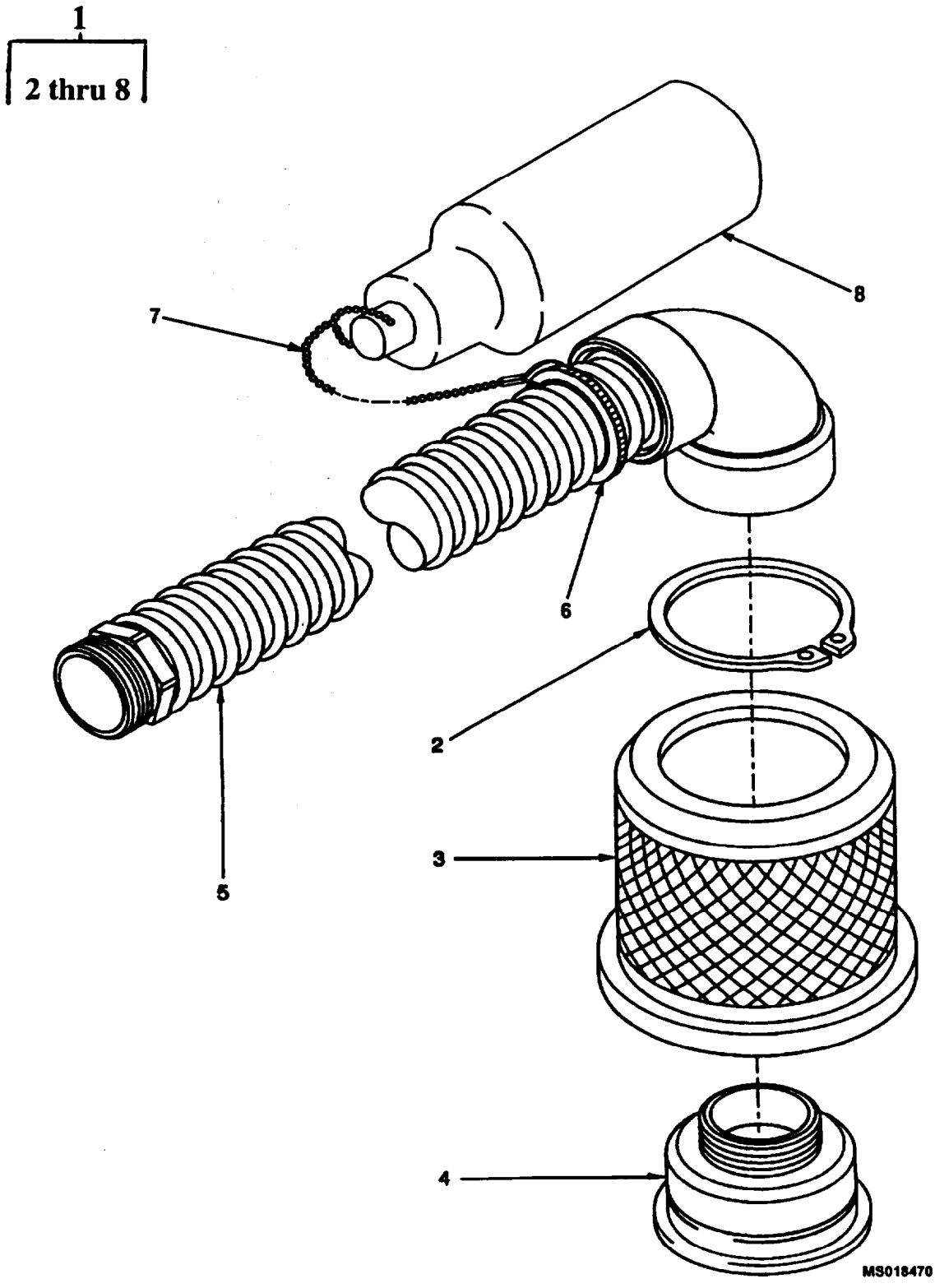


Figure F-9. Protective Casing Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020101C **POWER DISTRIBUTION** **UNIT ASSEMBLY, PROTECTIVE CASING**	
F-9	1	XBFFF	5975-12-343-4090	D0857	115.02.0014	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-9	2	PAFZZ	5325-12-126-3416	D8286	DIN471-62X2	RING,RETAINING	1
F-9	3	PAFZZ	4730-12-323-9430	D0857	110.02.0006	NUT,UNION	1
F-9	4	PAFZZ	4730-12-323-9431	D0857	110.02.0007	ADAPTER,STRAIGHT,TUBE TO BOSS	1
F-9	5	PAFZZ	5975-12-323-9435	D0857	115.02.0015	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-9	6	PAFZZ	5975-01-048-2922	96906	MS3367-6-0	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	1
F-9	7	PBFZZ		D0857	160.09.0008	CHAIN ASSEMBLY	1
F-9	8	PBFZZ		D0857	060.22.0029	CAP,PROTECTIVE,DUST,AND MOISTURE SEAL	1
						END OF FIGURE	

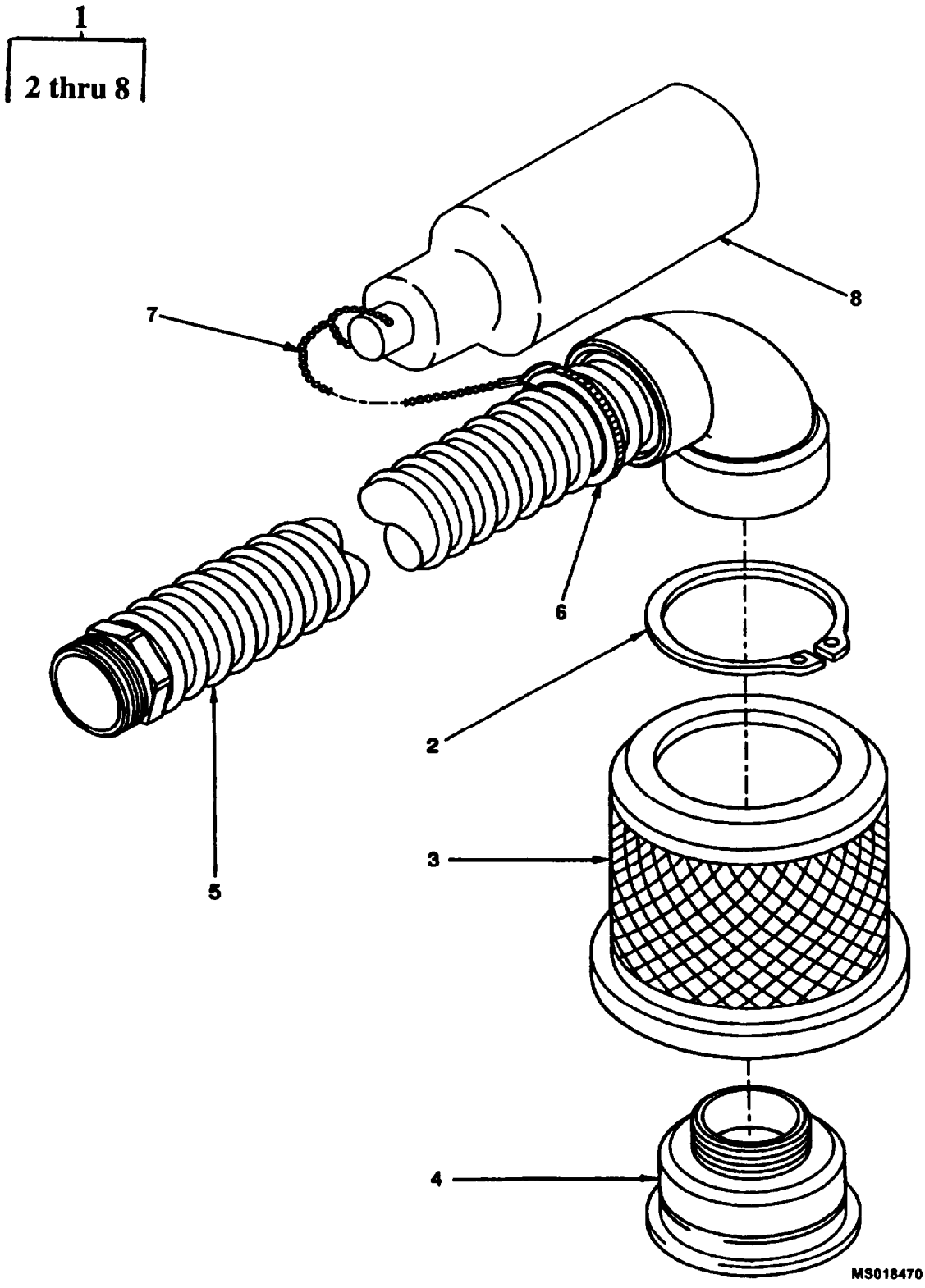


Figure F-10. Protective Casing Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020101D **POWER DISTRIBUTION** **UNIT ASSEMBLY, PROTECTIVE CASING**	
F-10	1	XBFFF	5975-12-343-4086	D0857	115.02.0016	CONDUIT ASSEMBLY,METAL,FLEXIBLE	4
F-10	2	PAFZZ	5325-12-126-3416	D8286	DIN471-62X2	RING,RETAINING	1
F-10	3	PAFZZ	4730-12-323-9430	D0857	110.02.0006	NUT,UNION	1
F-10	4	PAFZZ	4730-12-323-9431	D0857	110.02.0007	ADAPTER,STRAIGHT,TUBE TO BOSS	1
F-10	5	PAFZZ	5975-12-323-9436	D0857	115.02.0017	CONDUIT ASSEMBLY,METAL,FLEXIBLE	1
F-10	6	PAFZZ	5975-01-048-2922	96906	MS3367-6-0	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	1
F-10	7	PBFZZ		D0857	160.09.0008	CHAIN ASSEMBLY	1
F-10	8	PBFZZ		D0857	060.22.0029	CAP,PROTECTIVE,DUST ,AND MOISTURE SEAL	1
						END OF FIGURE	

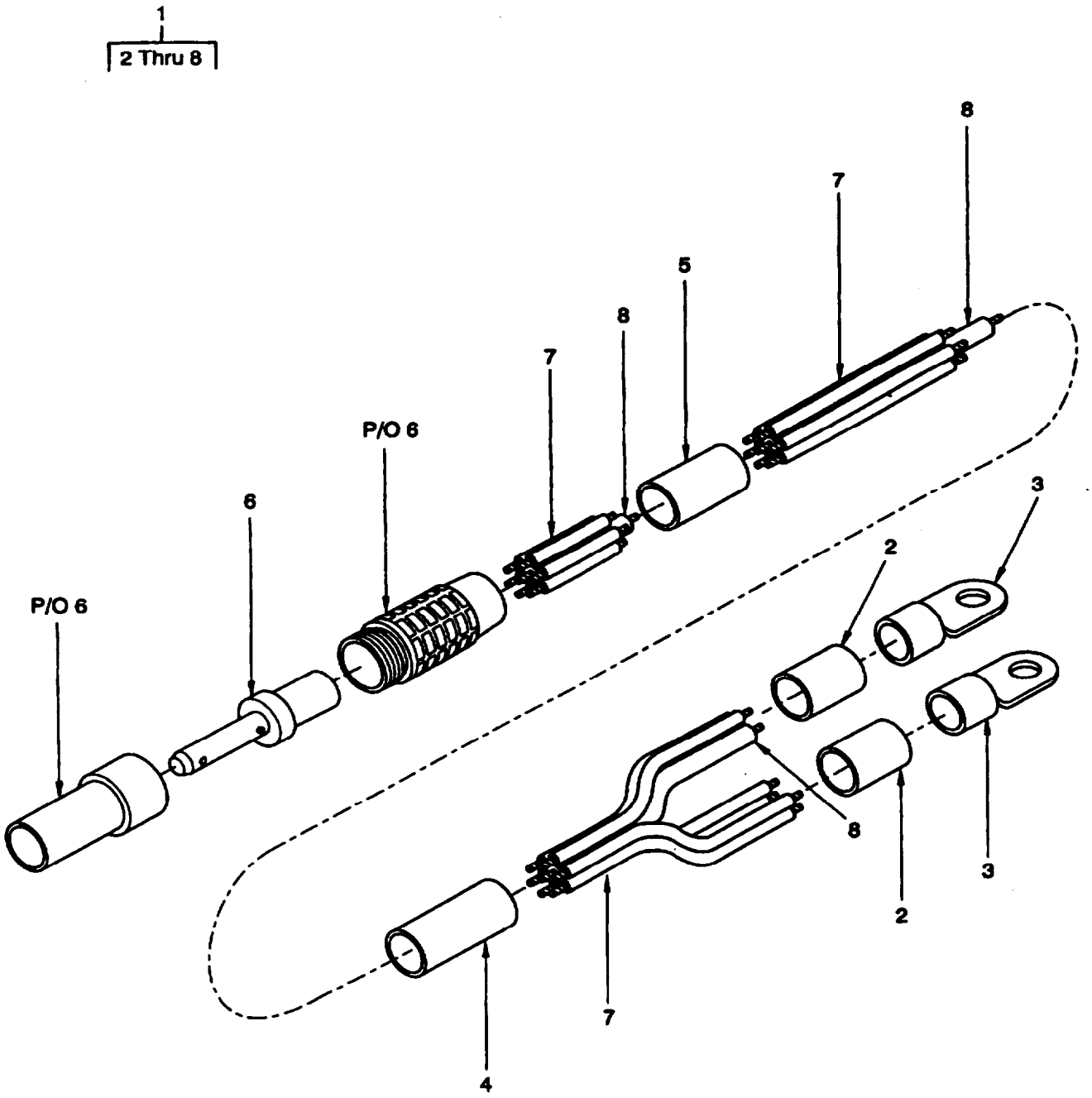


Figure F-11. Power Cable Assembly, One Phase

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020102 **POWER DISTRIBUTION CABLE ASSEMBLY, ONE PHASE**	
F-11	1	PAFDD	6150-12-343-3731	D0857	180.01.0143	CABLE ASSEMBLY,SPECIAL PURPOSE	2
F-11	2	MDDZZ		D0857	115.04.0053-1.95 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-25419) 1.95 INCH (50MM) REQUIRED	2
F-11	3	PADZZ	5940-12-140-5134	D2096	RSQ7144A10-95	TERMINAL,LUG	2
F-11	4	MDDZZ		D0857	175.03.0029-5.85 INCH	TUBE,INSULATION (MAKE FROM (D0857) P/N 175.03.0029) 5.85 INCH (150MM) REQUIRED	1
F-11	5	MDDZZ		D0857	115.04.0019-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-25400) 9.75 INCH (250MM) REQUIRED	1
F-11	6	PAOZZ	5935-12-324-0512	D0857	455.06.0019	JACK,TIP	1
F-11	7	MDDZZ		D0857	180.03.0025-118. 95 INCH	CABLE,25 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 25,00 "F" WHT) 118.95 INCH (3050MM) REQUIRED	6
F-11	8	MDDZZ		D0857	180.03.0026-118. 95 INCH	CABLE,35 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 35,00 "F" WHT) 118.95 INCH (3050MM) REQUIRED	1
						END OF FIGURE	

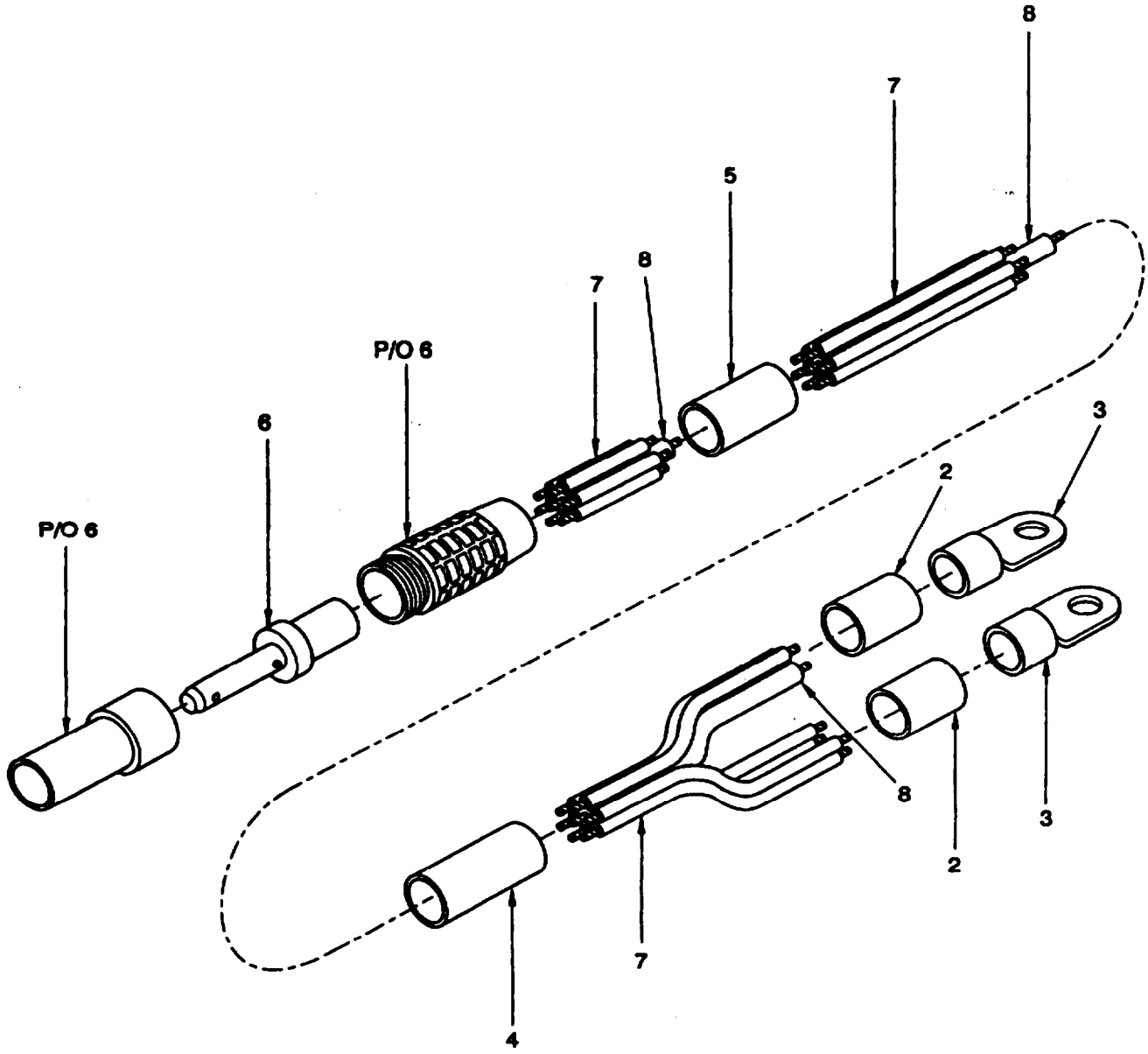


Figure F-12. Power Cable Assembly, One Phase

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020102A **POWER DISTRIBUTION CABLE** **UNIT ASSEMBLY, ONE PHASE**	
F-12	1	PAFDD	6150-12-343-3734	D0857	180.01.0142	CABLE ASSEMBLY,SPECIAL PURPOSE, ONE PHASE (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-12	2	MDDZZ		D0857	115.04.0053-1.95 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N305-25419) 1.95 INCH (50MM) REQUIRED	2
F-12	3	PADZZ	5940-12-140-5134	D2096	RSQ7144A10-95	TERMINAL,LUG	2
F-12	4	MDDZZ		D0857	175.03.0029-5.85 INCH	TUBE,INSULATION (MA KE FROM (D0857) P/N 175.03.0029) 5.85 INCH (150MM) REQUIRED	1
F-12	5	MDDZZ		D0857	115.04.0019-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-25400) 9.75 INCH (250MM) REQUIRED	1
F-12	6	PADZZ	5935-12-324-0512	D0857	455.06.0019	JACK,TIP	1
F-12	7	MDDZZ		D0857	180.03.0025-111. 15 INCH	CABLE,25 QUADRAT (M AKE FROM (83873) P/N NOMEX155-U 25,00 "F" WHT) 111.15 INCH (2850MM) REQUIRED	6
F-12	8	MDDZZ		D0857	180.03.0026-111. 15 INCH	CABLE,35 QUADRAT (M AKE FROM (83873) P/N NOMEX155-U 35,00 "F" WHT) 111.15 INCH (2850MM) REQUIRED	1
						END OF FIGURE	

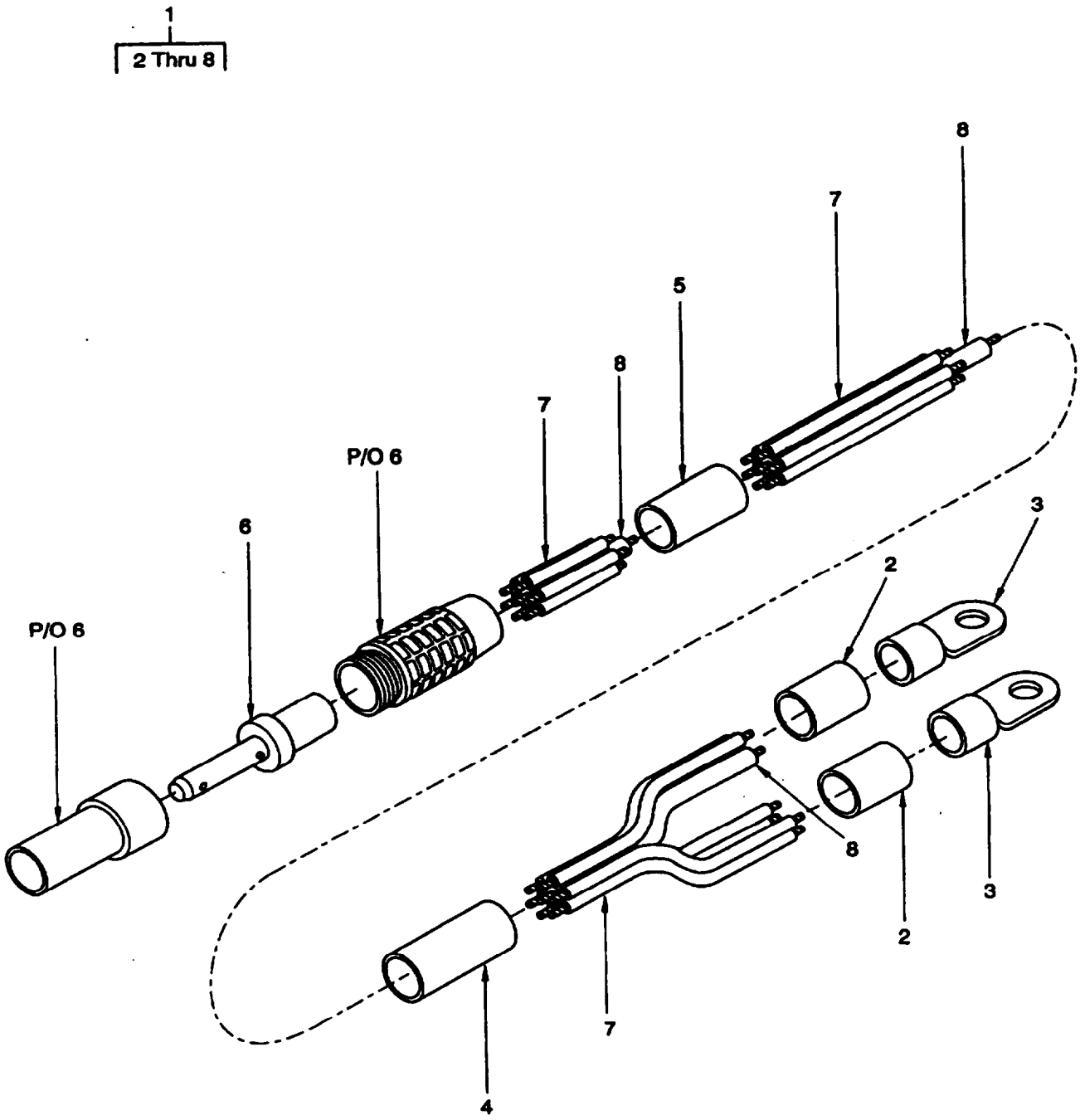


Figure F-13. Power Cable Assembly, One Phase

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020102B **POWER DISTRIBUTION** **UNIT ASSEMBLY, CABLE ASSY,** **ONE PHASE**	
F-13	1	PAFDD	6150-12-343-3735	D0857	180.01.0141	CABLE ASSEMBLY,SPECIAL PURPOSE, ONE PHASE (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-13	2	MDDZZ		D0857	115.04.0053-1.95 INCH	SLEEVING,SHRINKABLE(MAKE FROM (D8527) P/N305-25419) 1.95 INCH (50MM) REQUIRED	2
F-13	3	PADZZ	5940-12-140-5134	D2096	RSQ7144A10-95	TERMINAL,LUG	2
F-13	4	MDDZZ		D0857	175.03.0029-5.85 INCH	TUBE,INSULATION (MAKE FROM (D0857) P/N 175.03.0029) 5.85 INCH (150MM) REQUIRED	1
F-13	5	MDDZZ		D0857	115.04.0019-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-25400) 9.75 INCH (250MM) REQUIRED	1
F-13	6	PADZZ	5935-12-324-0512	D0857	455.06.0019	JACK,TIP	1
F-13	7	MDDZZ		D0857	180.03.0025-107. 25 INCH	CABLE,25 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 25,00 "F" WHT) 107.25 INCH (2750MM) REQUIRED	6
F-13	8	MDDZZ		D0857	180.03.0026-107. 25 INCH	CABLE,35 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 35,00 "F" WHT) 107.25 INCH (2750MM) REQUIRED	1
						END OF FIGURE	

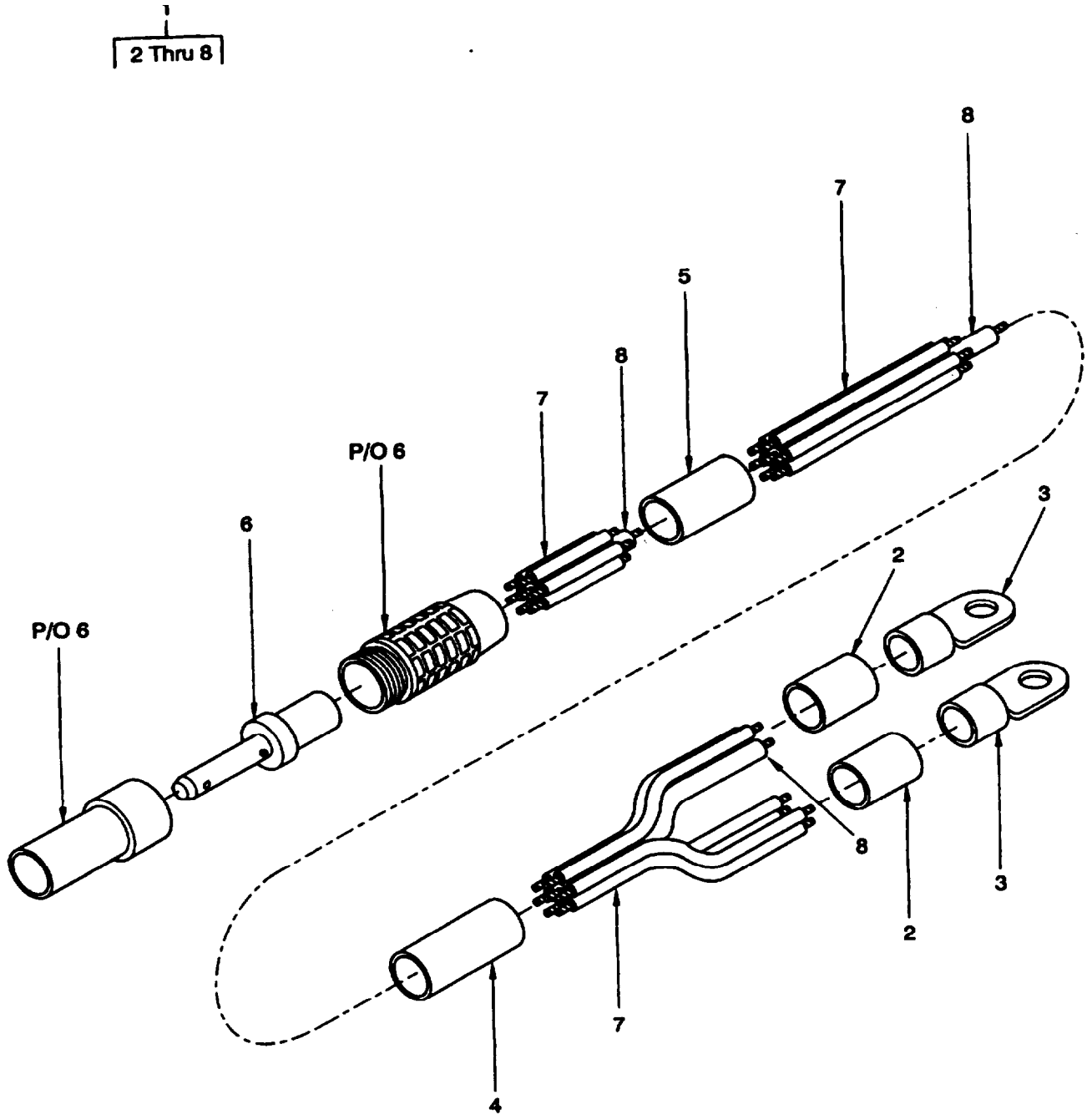


Figure F-14. Power Cable Assembly, One Phase

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020102C **POWER DISTRIBUTION** **UNIT ASSEMBLY, ONE PHASE**	
F-14	1	PAFDD	6150-12-343-3732	D0857	180.01.0144	CABLE ASSEMBLY,SPECIAL PURPOSE, ONE PHASE (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-14	2	MDDZZ		D0857	115.04.0053-1.95 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N305-25419) 1.95 INCH (50MM) REQUIRED	2
F-14	3	PADZZ	5940-12-140-5134	D2096	RSQ7144A10-95	TERMINAL,LUG	2
F-14	4	MDDZZ		D0857	175.03.0029-5.85 INCH	TUBE,INSULATION (MAKE FROM (D0857) P/N 175.03.0029) 5.85 INCH (150MM) REQUIRED	1
F-14	5	MDDZZ		D0857	115.04.0019-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-25400) 9.75 INCH (250MM) REQUIRED	1
F-14	6	PADZZ	5935-12-324-0512	D0857	455.06.0019	JACK,TIP	1
F-14	7	MDDZZ		D0857	180.03.0025-99.4 5 INCH	CABLE,25 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 25,00 "F" WHT) 99.45 INCH (2550MM) REQUIRED	6
F-14	8	MDDZZ		D0857	180.03.0026-99.4 5 INCH	CABLE,35 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 35,00 "F" WHT) 99.45 INCH (2550MM) REQUIRED	1
						END OF FIGURE	

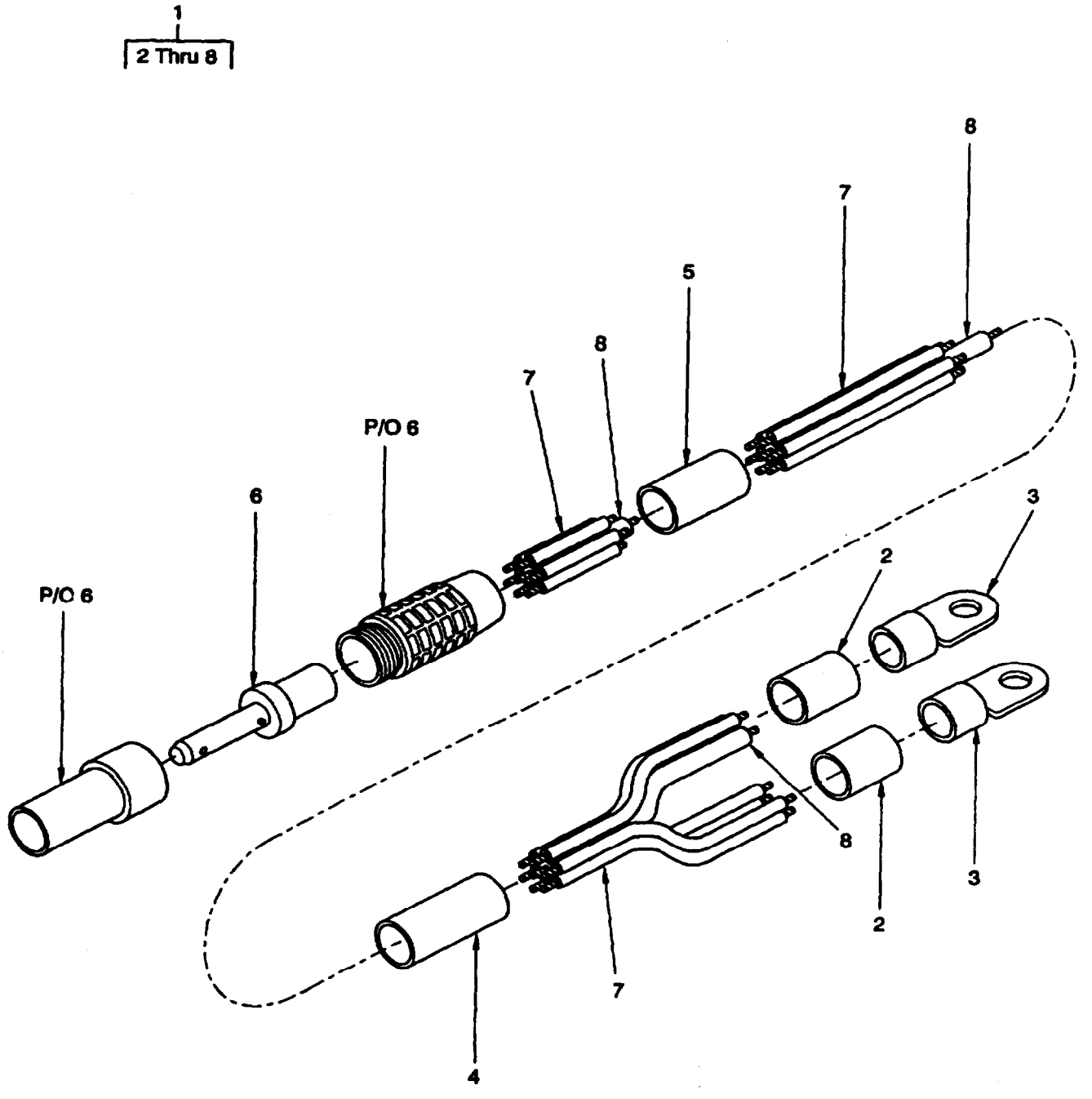


Figure F-15. Power Cable Assembly, One Phase

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020102D **POWER DISTRIBUTION** **UNIT CABLE ASSEMBLY, ONE PHASE**	
F-15	1	PAFDD	6150-12-343-3737	D0857	180.01.0140	CABLE ASSEMBLY,SPECIAL PURPOSE, ONE PHASE (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-15	2	MDDZZ		D0857	115.04.0053-1.95 INCH	SLEEVING,SHRINKABLE(MAKE FROM (D8527) P/N305-25419) 1.95 INCH (50MM) REQUIRED	2
F-15	3	PADZZ	5940-12-140-5134	D2096	RSQ7144A10-95	TERMINAL,LUG	2
F-15	4	MDDZZ		D0857	175.03.0029-5.85 INCH	TUBE,INSULATION (MAKE FROM (D0857) P/N 175.03.0029) 5.85 INCH (150MM) REQUIRED	1
F-15	5	MDDZZ		D0857	115.04.0019-9.75 INCH	SLEEVING,SHRINKABLE(MAKE FROM (D8527) P/N 305-25400) 9.75 INCH (250MM) REQUIRED	1
F-15	6	PADZZ	5935-12-324-0512	D0857	455.06.0019	JACK,TIP	1
F-15	7	MDDZZ		D0857	180.03.0025-97.5 INCH	CABLE,25 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 25,00"F" WHT) 97.5 INCH (2500MM) REQUIRED	6
F-15	8	MDDZZ		D0857	180.03.0026-97.5 INCH	CABLE,35 QUADRAT (MAKE FROM (83873) P/N NOMEX155-U 35,00 "F" WHT) 97.5 INCH (2500MM) REQUIRED	1
						END OF FIGURE	

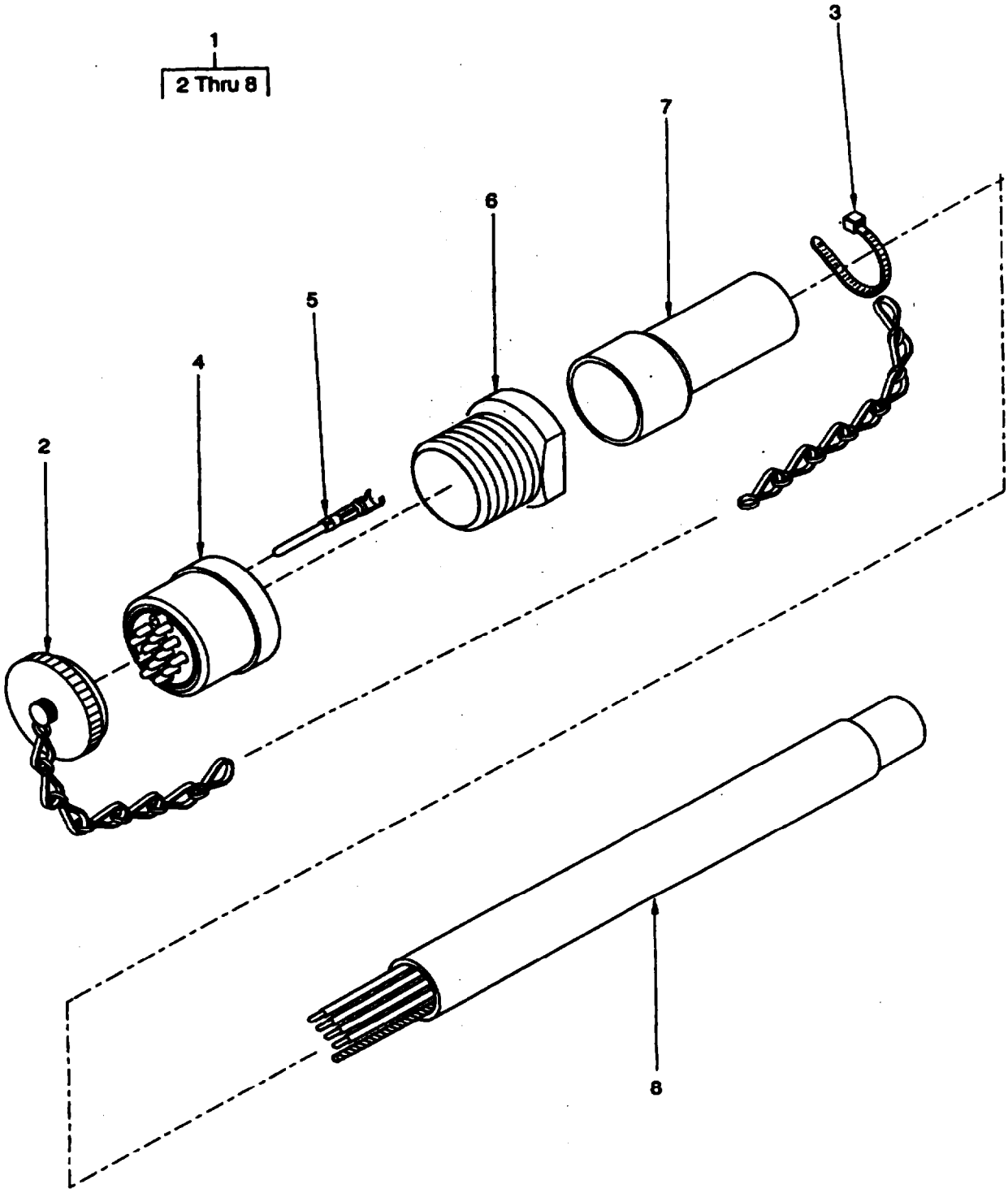


Figure F-16. Cable Assembly, Control PDU to Generator Set

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020103 **POWER DISTRIBUTION** **UNIT CABLE ASSEMBLY** **CONTROL PDU TO** **GENERATOR SET**	
F-16	1	PAFDD	6150-12-343-3733	D0857	180.01.0058	CABLE ASSEMBLY,SPECIAL PURPOSE, CONTROL PDU TO GENERATOR SET (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-16	2	PAOZZ	5935-12-302-8607	D9477	VG96912V3-24A	COVER,ELECTRICAL CONNECTOR (WITH CHAIN)	1
F-16	3	PAOZZ	5975-12-161-4591	D8527	T18R	STRAP,TIEDOWN,ELECTRICAL	1
F-16	4	PAFZZ	5935-14-374-6627	77820	SJTG06RT24-29P01 4	CONNECTOR,PLUG,ELECTRICAL	1
F-16	5	PADZA	5999-00-243-6500	81349	M39029-58-363	CONTACT,ELECTRICAL	29
F-16	6	PADZZ		77820	SQ42415-069	HOUSING,ELECTRONIC	1
F-16	7	PADZZ	5970-12-319-4845	D1973	202K174-25/225-0	INSULATION SLEEVING	1
F-16	8	MDDZZ		D0857	180.01.0111-97.5 INCH	CABLE,SCREENED,UVLE X-T-44 (MAKE FROM (D0277) P/N 44148905) 97.5 INCH (25050MM) REQUIRED	1
						END OF FIGURE	

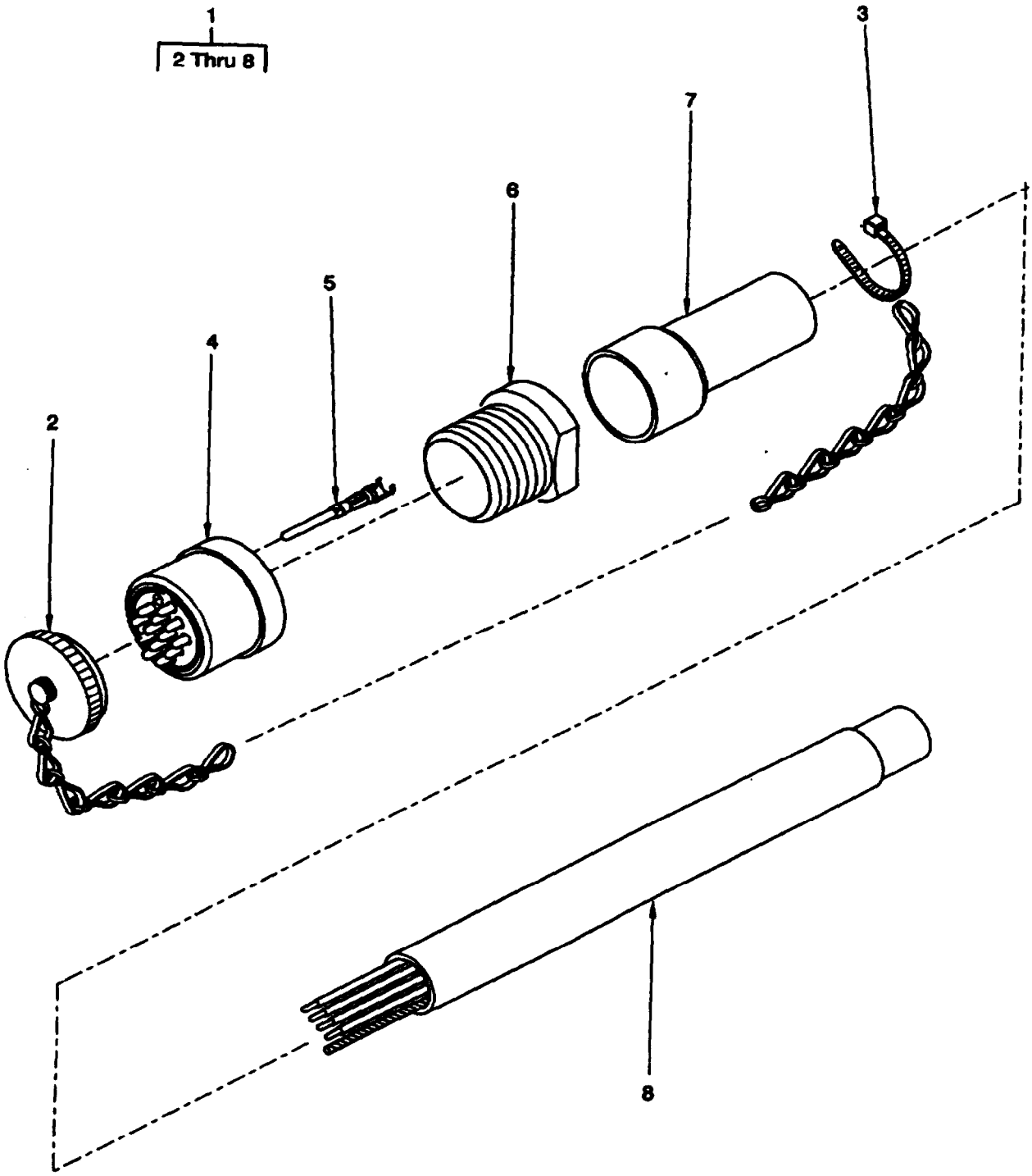


Figure F-17. Cable Assembly, Control PDU to Generator Set

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020103A **POWER DISTRIBUTION** **UNIT CABLE ASSEMBLY** **SPECIAL PURPOSE CONTROL**	
F-17	1	PAFDD	6150-12-343-3736	D0857	180.01.0050	CABLE ASSEMBLY,SPECIAL PURPOSE CONTROL (MAKE FROM ITEM 2 THRU ITEM 8 OF THIS FIGURE)	1
F-17	2	PAOZZ	5935-12-302-8607	D9477	VG96912V3-24A	COVER,ELECTRICAL CONNECTOR (WITH CHAIN)	1
F-17	3	PAOZZ	5975-12-161-4591	D8527	T18R	STRAP,TIEDOWN,ELECTRICAL	1
F-17	4	PAFZZ	5935-14-374-6627	77820	SJTG06RT24-29P014	CONNECTOR,PLUG,ELECTRICAL	1
F-17	6	PADZZ		77820	SQ42415-069	HOUSING,ELECTRONIC	1
F-17	7	PADZZ	5970-12-319-4845	D1973	202K174-25/225-0	INSULATION SLEEVING	1
F-17	8	MDDZZ		D0857	180.01.0111-64.35 INCH	CABLE,SCREENED,UVLEX-T-44 (MAKE FROM (D0277) P/N 44148905) 64.35 INCH (1650MM) REQUIRED	1
						END OF FIGURE	

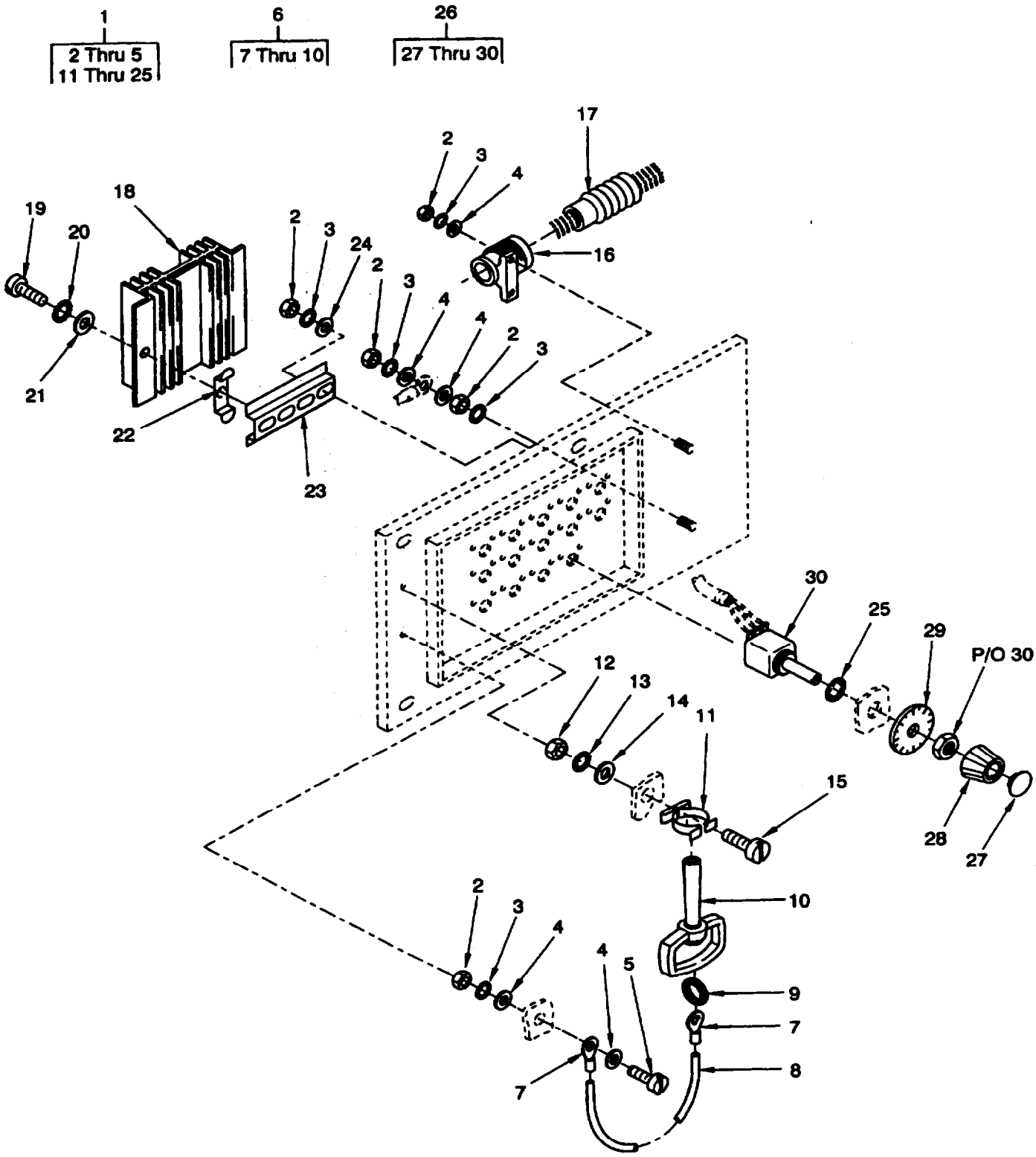


Figure F-18. Power Distribution Unit (Control Panel)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0202 **POWER DISTRIBUTION** **UNIT ASSEMBLY** **PDU-CONTROL PANEL**	
F-18	1	XBFFF		D0857	420.02.0078F- 6	PDU-CONTROL PANEL	1
F-18	2	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	7
F-18	3	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	7
F-18	4	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140H V-A4	WASHER,FLAT	6
F-18	5	PAOZZ	5305-12-160-0628	D8286	DIN84-M5X16-A4-7 0	SCREW,MACHINE	1
F-18	6	PAOOO	5120-12-345-5617	D0857	030.06.0007	KEY,MACHINE,SPECIAL	1
F-18	7	PAOZZ	5940-12-152-5352	D9477	VG96933T13A023A	TERMINAL,LUG	2
F-18	8	MOOZZ		D0857	430.06.0001-21.8 4 INCH	CORD,TWISTED (MAKE FROM (D0857) P/ N 430.06.0001) 21.84 INCH (560MM) REQUIRED	1
F-18	9	PAOZZ	5365-12-161-2303	D8978	2585STGEHNI	RING,CONNECTING,ROUND	1
F-18	10	PAOZZ	5120-12-156-9265	C2285	1004-01	WRENCH,SOCKET	1
F-18	11	PAOZZ	5999-12-321-5963	D0857	435.07.0006	CLIP,ELECTRICAL	1
F-18	12	PAOZZ	5310-12-151-2287	D8286	DIN934-M3-A4-70	NUT,PLAIN,HEXAGON	1
F-18	13	PAOZZ	5310-12-131-5576	D8286	DIN6798-A3,2-FST	WASHER,LOCK	1
F-18	14	PAOZZ	5310-12-151-7821	D8286	DIN125-B3,2-A4-7 0	WASHER,FLAT	1
F-18	15	PAOZZ	5305-12-151-7827	D8286	DIN84-M3X10-A4-7 0	SCREW,MACHINE	1
F-18	16	PAOZZ	5975-12-321-5160	D8527	167-12169	BUSHING,ELECTRICAL	1
F-18	17	MOOZZ		D0857	115.02.0004-20.6 7 INCH	PROTECTIVE TUBE,NS-21 (MAKE FROM (D8527) P/N 167-11169) 20.67 INCH (530MM) REQUIRED	1
F-18	18	PAOZZ	6210-12-347-0499	D0857	335.03.0018	CONTROL,ELECTRIC LIGHT	1
F-18	19	PAOZZ	5305-12-151-8366	D8286	DIN84-M4X10-A4-7 0	SCREW,MACHINE	2
F-18	20	PAOZZ	5310-01-407-4764	62380	152.269	WASHER,LOCK	2
F-18	21	PAOZZ	5310-12-158-2236	D8286	DIN125-B4,3-A4-7 0	WASHER,FLAT	2
F-18	22	PAOZZ	5340-12-322-4544	D8527	181-55800	CLIP,SPRING TENSION	2
F-18	23	XBFZZ		D0857	320.10.0001-5.85	RAIL,BEARING (MAKE FROM (D8857) P/	
F-18	24	PAOZZ	5310-12-189-6396	D8286	DIN9021-B5,3-A4- 70	WASHER,FLAT	2
F-18	25	PAOZZ	5310-12-164-8912	D9532	S10A3P	WASHER,SPRING TENSION	1
F-18	26	PAOFF	5905-12-345-9368	D0857	315.04.0001	RESISTOR,VARIABLE,NONWIRE WOUND, NONPRECISION	1
F-18	27	PAOZZ	5355-12-320-1709	C7080	24H516	CAP,CONTROL BUTTON	1
F-18	28	PAOZZ	5355-12-321-6622	C7080	24H504	KNOB (INCLUDES MOUNTING HARDWARE)	1
F-18	29	PAOZZ	5355-12-196-2809	C7080	20H446	DIAL,SCALE	1
F-18	30	PAOZZ		C7505	63304-000	RESISTOR,VARIABLE 2,2 KOHM, WITH SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

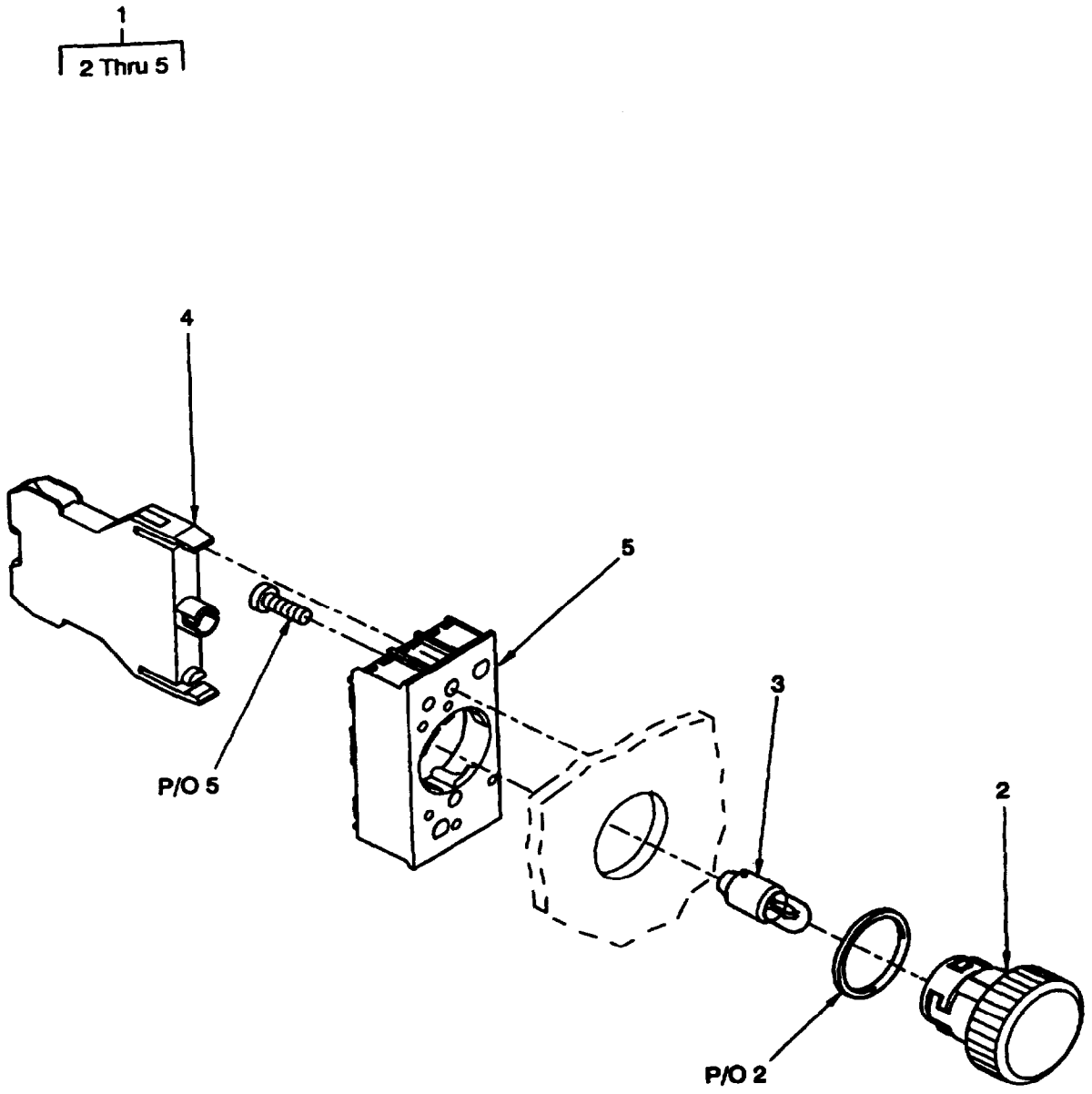


Figure F-19. Light Indicator Assembly, Red

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020201 **POWER DISTRIBUTION** **UNIT ASSEMBLY** **LIGHT INDICATOR ASSY, RED**	
F-19	1	XBOOO		D0857	255.04.0003	LIGHT INDICATOR ASSEMBLY,RED	1
F-19	2	PAOZZ	6210-12-324-6218	D1149	3SB1001-6BC06	LIGHT,INDICATOR RED	1
F-19	3	PAOZZ	6240-12-120-7952	D1149	3SX1344	LAMP,INCANDESCENT	1
F-19	4	PAOZZ	6210-12-334-8769	D1149	3SB1400-2P	LIGHT,INDICATOR	1
F-19	5	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

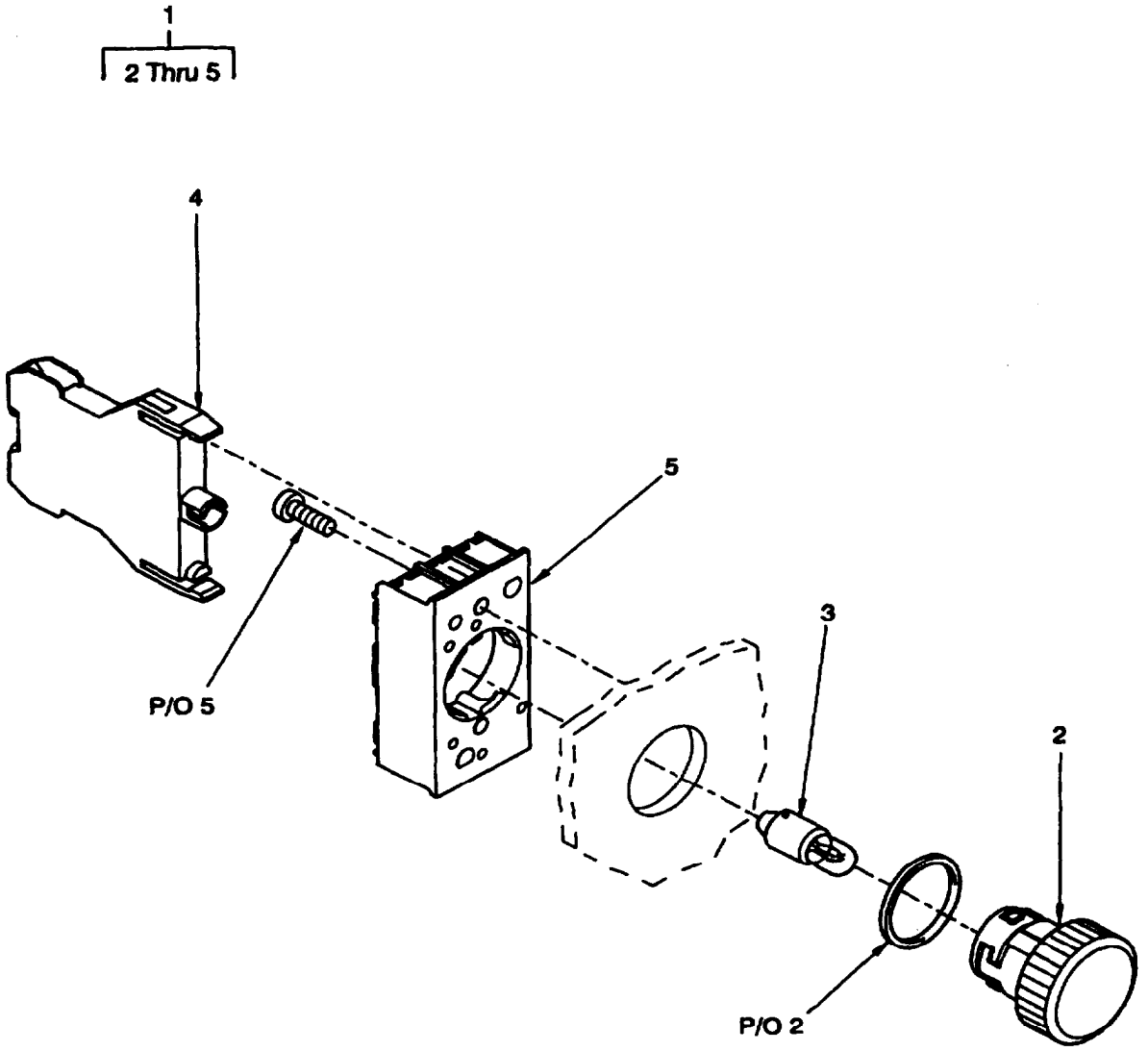


Figure F-20. Light Indicator Assembly, White

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020201A **POWER DISTRIBUTION** **UNIT ASSEMBLY LIGHT INDICATOR** **WHITE**	
F-20	1	XBOOO		D0857	255.04.0007	LIGHT INDICATOR ASSEMBLY,WHITE	1
F-20	2	PAOZZ	6210-12-330-8064	D1149	3SB1001-6BG06	LENS,LIGHT WHITE	1
F-20	3	PAOZZ	6240-12-120-7952	D1149	3SX1344	LAMP,INCANDESCENT	1
F-20	4	PAOZZ	6210-12-334-8769	D1149	3SB1400-2P	LIGHT,INDICATOR	1
F-20	5	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

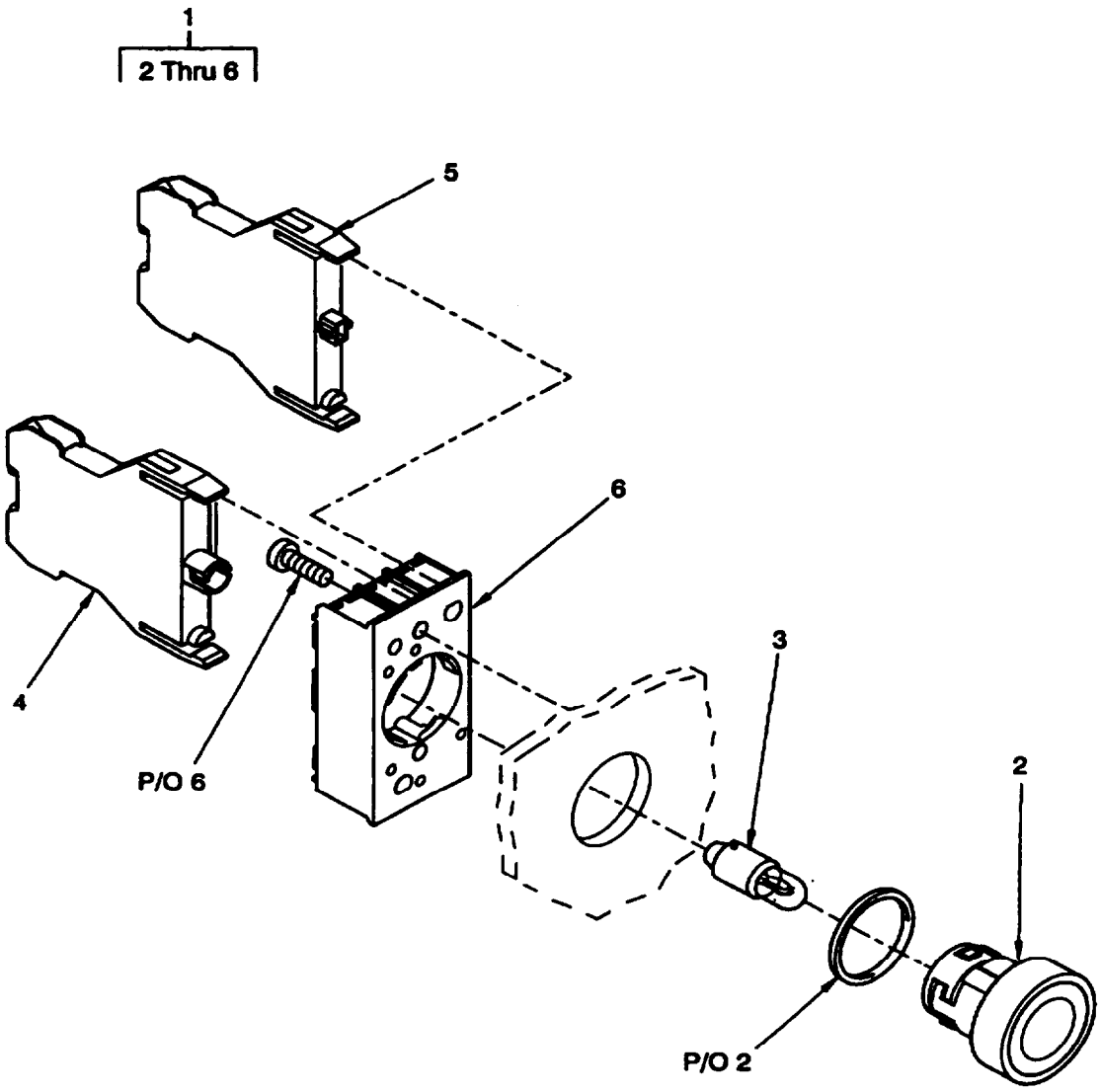


Figure F-21. Push Sutton Switch and Indicator Assembly, White

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020201B **POWER DISTRIBUTION** **UNIT ASSEMBLY, PUSH BUTTON** **SWITCH AND INDICATOR ASSY, WHITE** **PUSH BUTTON SWITCH**	
F-21	1	XBOOO		D0857	390.30.0015	PUSH BUTTON SWITCH AND INDICATOR ASSEMBLY,WHITE	1
F-21	2	PAOZZ	6210-12-307-8055	D1149	3SB1000-0AG01	SWITCH,PUSH WHITE	1
F-21	3	PAOZZ	6240-12-120-7952	D1149	3SX1344	LAMP,INCANDESCENT	1
F-21	4	PAOZZ	6210-12-334-8769	D1149	3SB1400-2P	LIGHT,INDICATOR	1
F-21	5	PAOZZ	5930-12-195-4529	D1149	3SB1400-0B	SWITCH,PUSH	1
F-21	6	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

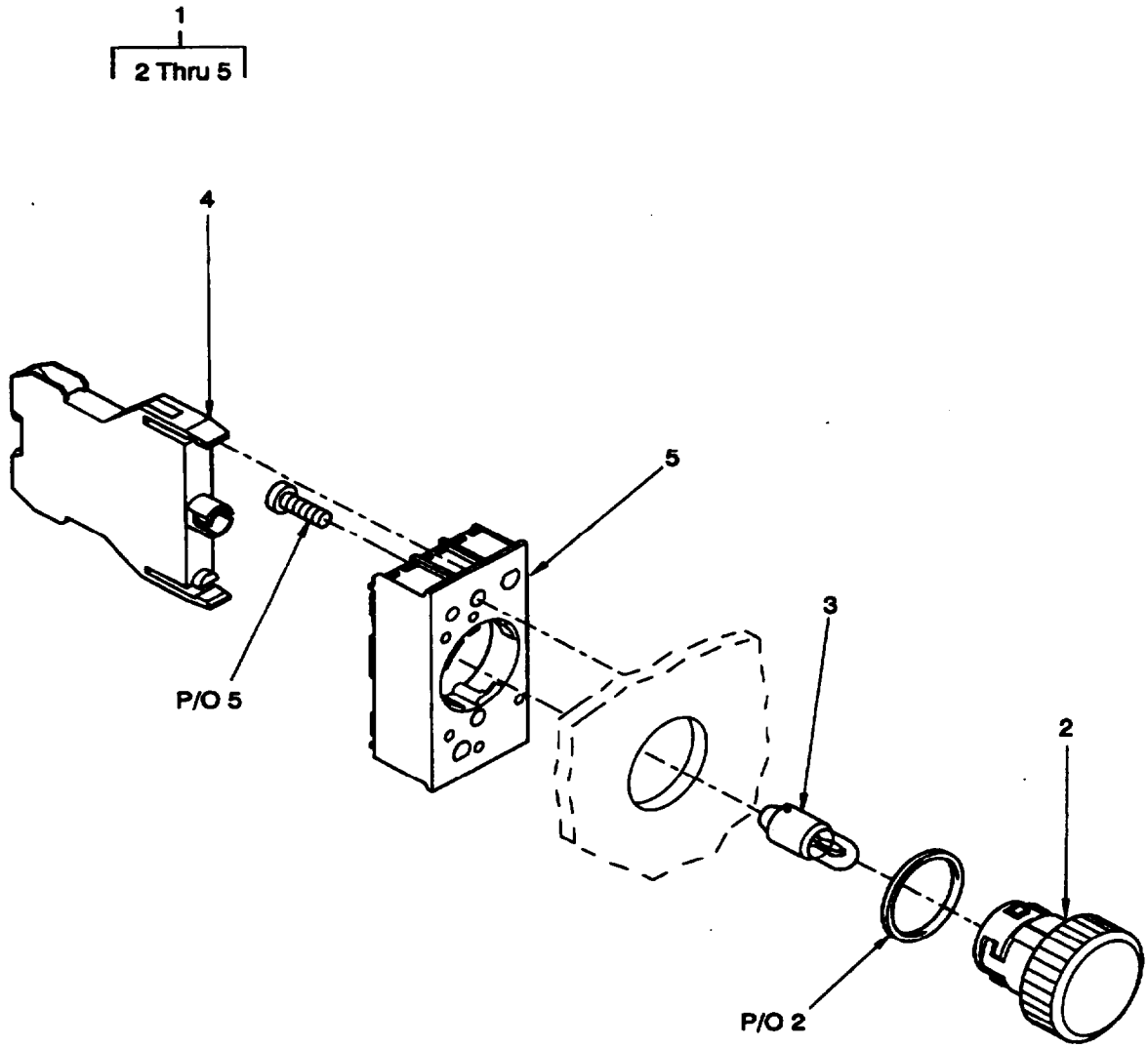


Figure F-22. Light Indicator Assembly, Yellow

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020201C **POWER DISTRIBUTION** **UNIT ASSEMBLY LIGHT INDICATOR** **ASSEMBLY, YELLOW**	
F-22	1	XBOOO		D0857	255.04.0004	LIGHT INDICATOR ASSEMBLY,YELLOW	1
F-22	2	PAOZZ	6220-01-462-4370	0ACF4	3SB1001-6BD06	LIGHT,INDICATOR YELLOW	1
F-22	3	PAOZZ	6240-12-120-7952	D1149	3SX1344	LAMP,INCANDESCENT	1
F-22	4	PAOZZ	6210-12-334-8769	D1149	3SB1400-2P	LIGHT,INDICATOR	1
F-22	5	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

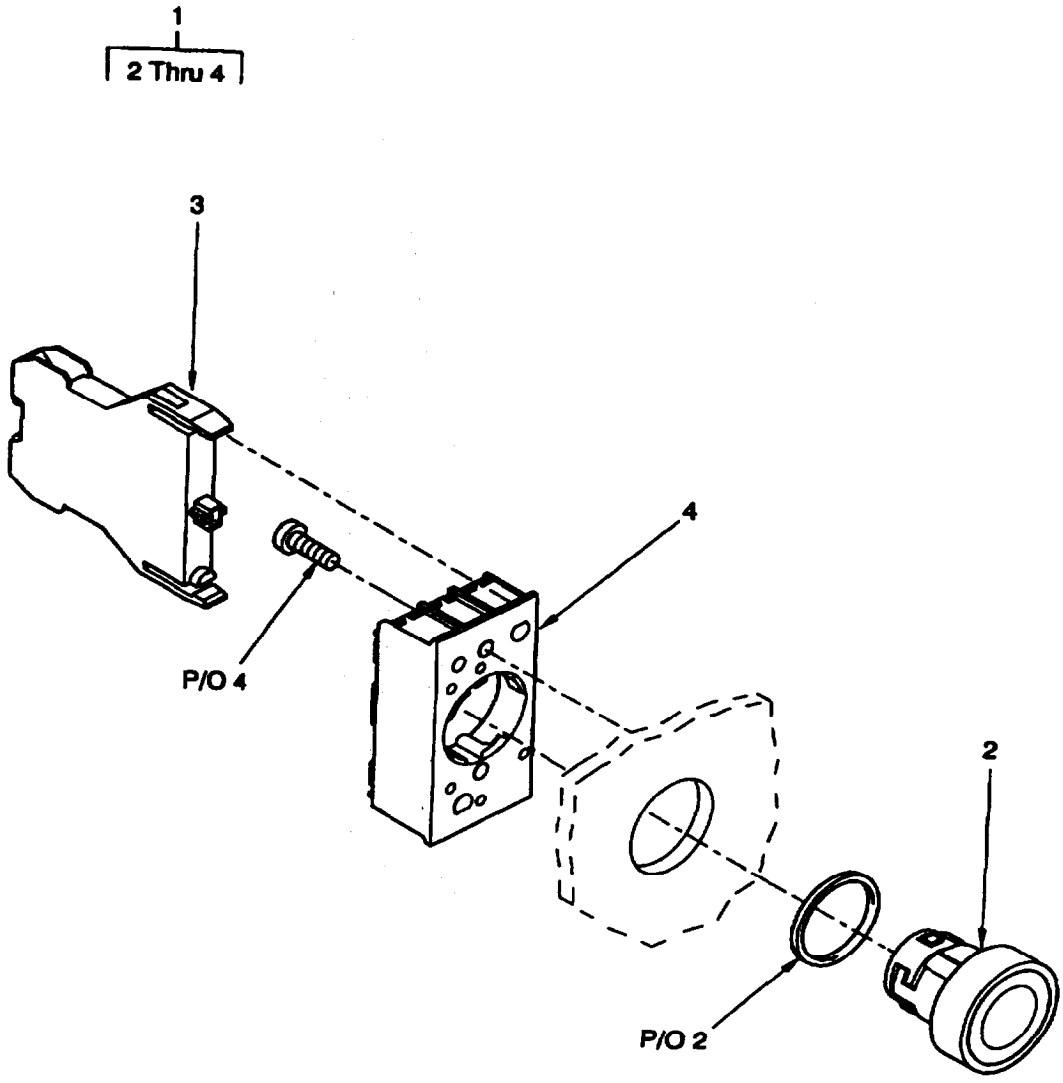


Figure F-23. Push Button Switch Assembly, Red

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020202 **POWER DISTRIBUTION** **UNIT ASSEMBLY** **PUSH BUTTON SWITCH** **ASSEMBLY, RED**	
F-23	1	XBOOO		D0857	390.30.0018	PUSH BUTTON SWITCH ASSEMBLY,RED	1
F-23	2	PAOZZ	6210-12-301-6455	D1149	3SB1000-0AC01	SWITCH,PUSH RED	1
F-23	3	PAOZZ	5930-12-195-4529	D1149	3SB1400-0B	SWITCH,PUSH	1
F-23	4	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

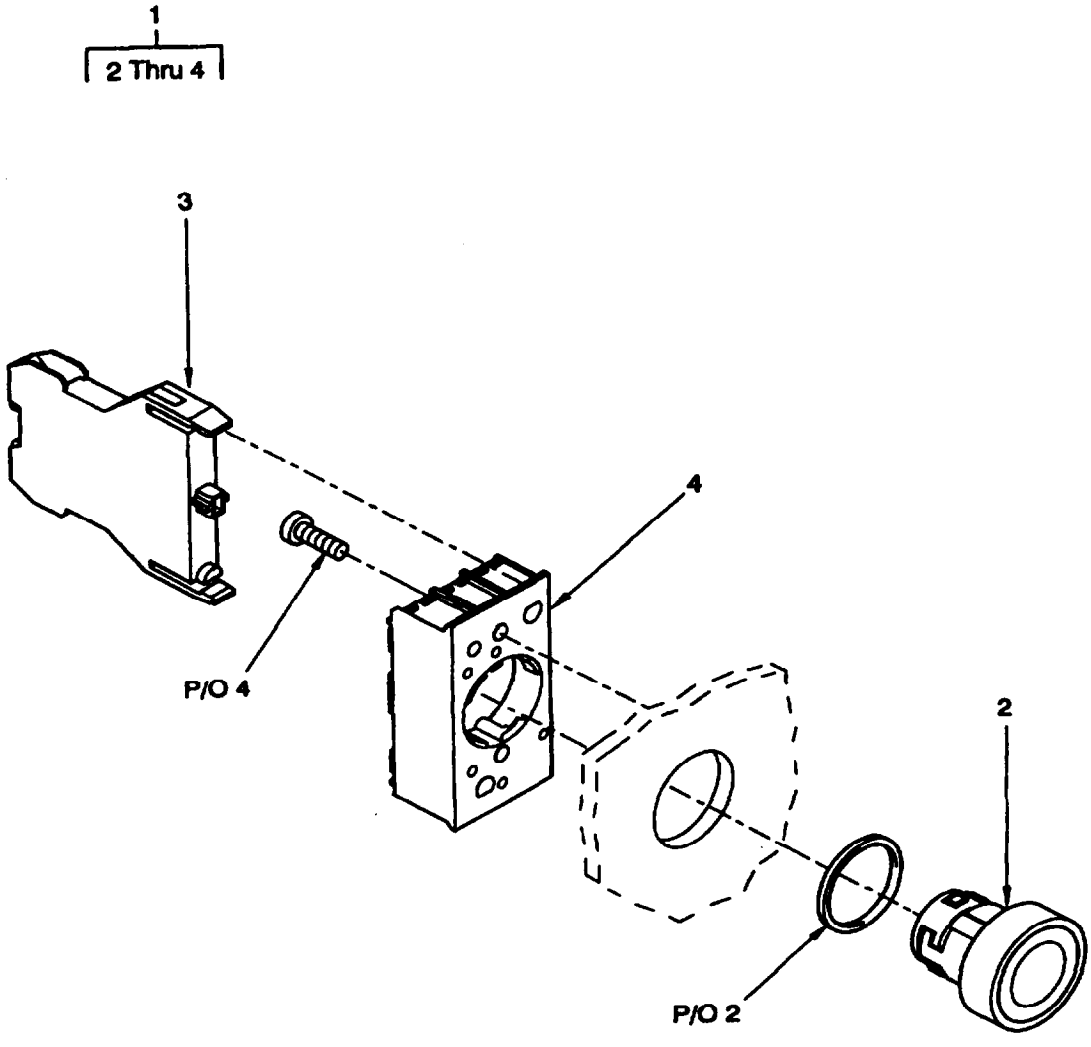


Figure F-24. Push Button Switch Assembly, Black

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020202A **POWER DISTRIBUTION UNIT** **ASSEMBLY, PUSH BUTTON SWITCH,** **BLACK**	
F-24	1	XBOOO		D1149	3SB1202-0AB01	PUSH BUTTON SWITCH ASSEMBLY,BLACK	1
F-24	2	PAOZZ	5930-12-321-6621	D1149	3SB1000-0AB01	PUSH BUTTON BLACK	1
F-24	3	PAOZZ	5930-12-195-4529	D1149	3SB1400-0B	SWITCH,PUSH	1
F-24	4	PAOZZ	5930-12-198-2562	D1149	3SB1902-1AC	RETAINER,ELECTRICAL,SWITCH (INCLUDES MOUNTING HARDWARE)	1
						END OF FIGURE	

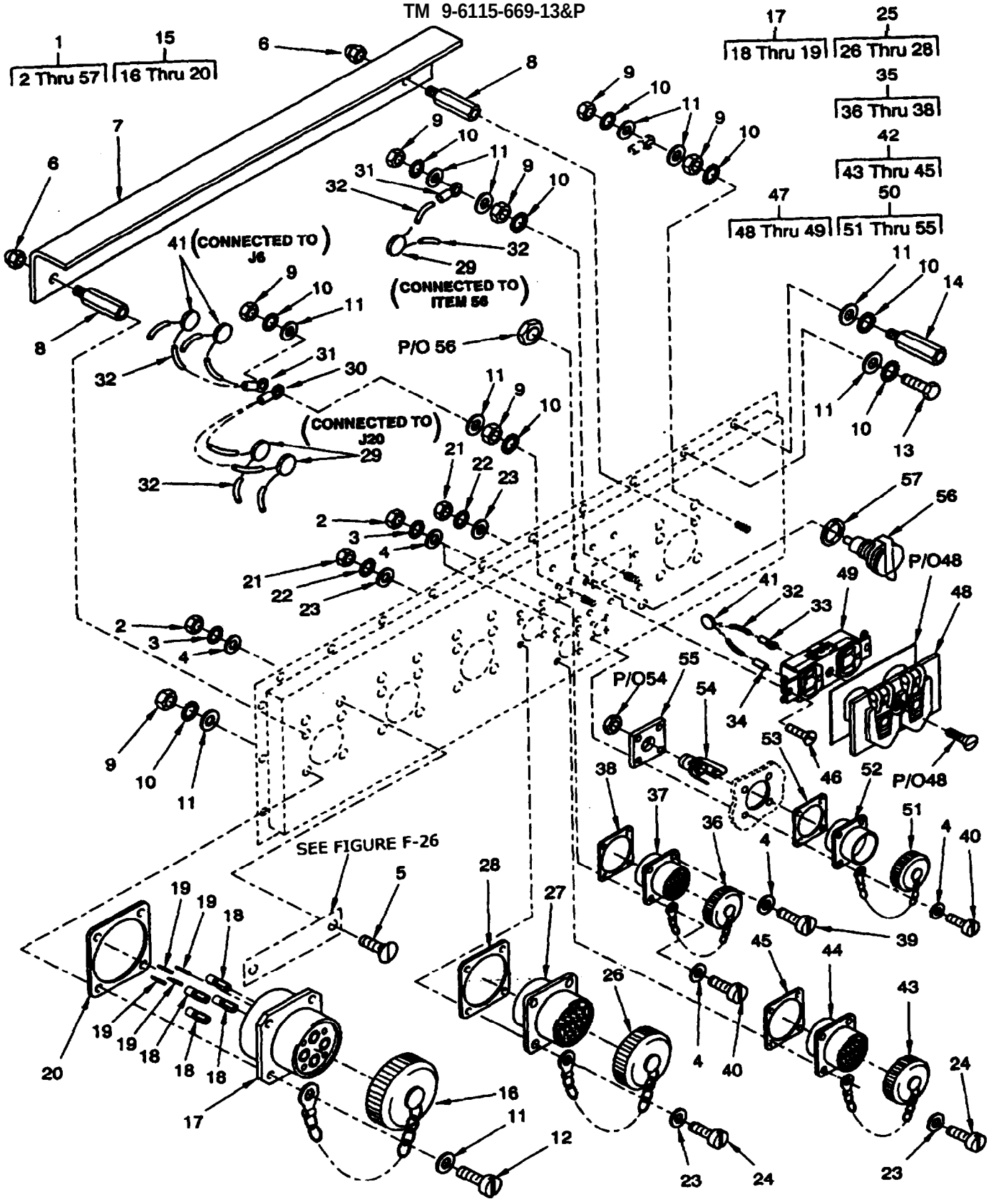


Figure F-25. Power Distribution Unit (Connecting Panel)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0203 **POWER DISTRIBUTION UNIT** **ASSEMBLY, PDU-CONNECTING PANEL**	
F-25	1	XBFFF		D0857	420.02.0078F- 7	PDU-CONNECTING PANEL	1
F-25	2	PAOZZ	5310-12-151-2287	D8286	DIN934-M3-A4-70	NUT,PLAIN,HEXAGON	28
F-25	3	PAOZZ	5310-12-131-5576	D8286	DIN6798-A3,2-FST	WASHER,LOCK	28
F-25	4	PAOZZ	5310-12-151-7821	D8286	DIN125-B3,2-A4-70	WASHER,FLAT	36
F-25	5	PAOZZ	5305-12-151-7827	D8286	DIN84-M3X10-A4-70	SCREW,MACHINE	20
F-25	6	PAOZZ	5310-12-316-5546	C7080	16H767	NUT,PLAIN,CAP	2
F-25	7	XBOZZ		D0857	060.20.0097	COVER,PROTECTION	1
F-25	8	PAOZZ	5340-12-345-5051	C0882	5.15.501	STANDOFF,THREADED,SPACING	2
F-25	9	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	22
F-25	10	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	48
F-25	11	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140HV-A4	WASHER,FLAT	64
F-25	12	PAOZZ	5305-12-151-8155	D8286	DIN84-M5X20-A4-70	SCREW,MACHINE	16
F-25	13	PAFZZ	5305-12-166-4222	D8286	DIN933-M5X16-A4-70	SCREW,CAP,HEXAGON HEAD	22
F-25	14	PAFZZ	5340-12-345-5731	C0882	68.31.701	STANDOFF,THREADED,SPACING	4
F-25	15	PAFFF	5935-12-345-9369	D0857	455.11.0004	CONNECTOR,RECEPTACLE,ELECTRICAL	1
F-25	16	PAOZA	5935-01-338-8789	77820	10-524916-409	COVER,ELECTRICAL CONNECTOR	1
F-25	17	PAFFF	5935-01-192-8928	18876	MIS-20045/2-020	CONNECTOR,RECEPTACLE	1
F-25	18	PAFZZ	5935-01-444-6795	77820	10-113180-01P	CONNECTOR,PLUG,ELECTRICAL	4
F-25	19	PAFZZ	5935-01-444-6796	77820	10-305880-12P	CONNECTOR,PLUG,ELECTRICAL	4
F-25	20	PAFZZ	5999-12-345-6401	D0857	455.14.0119	SHIELDING GASKET,ELECTRONIC	1
F-25	21	PAOZZ	5310-12-151-7866	D8286	DIN934-M4-A4-70	NUT,PLAIN,HEXAGON	10
F-25	22	PAOZZ	5310-01-407-4764	62380	152.269	WASHER,LOCK	10
F-25	23	PAOZZ	5310-12-158-2236	D8286	DIN125-B4,3-A4-70	WASHER,FLAT	18
F-25	24	PAOZZ	5305-12-154-5885	D8286	DIN84-M4X16-A4-7	SCREW,MACHINE	8
F-25	25	PAFFF	5935-12-345-9370	D0857	455.11.0005	CONNECTOR,RECEPTACLE	1
F-25	26	PAOZA	5935-01-338-8790	77820	10-524916-249	COVER,ELECTRICAL CONNECTOR	1
F-25	27	PAFZA	5935-01-346-8624	77820	21-900167-1	CONNECTOR,RECEPTACLE	1
F-25	28	PAFZZ	5999-12-345-6402	D0857	455.14.0120	SHIELDING GASKET,ELECTRONIC	1
F-25	29	PAFZZ	5905-12-183-3398	D1180	Q69-X3021	RESISTOR,VOLTAGE SENSITIVE	1
F-25	30	PAFZZ	5940-12-326-8023	D2096	RSY7108A5-2.5	TERMINAL,LUG	1
F-25	31	PAFZZ		D2096	RSY7117A5-1	TERMINAL,LUG	2
F-25	32	MFFZZ		D0857	175.03.0002-1.17 INCH	TUBE,INSULATION (MAKE FROM (D0857) P/N 175.03.0002) 1.17 INCH (30MM) REQUIRED	12
F-25	33	PAFZZ	5940-12-345-4667	D2096	RSY7104C4-1	TERMINAL,LUG	1
F-25	34	PAFZZ	5940-12-300-1350	D0857	170.01.0002	FERRULE,ELECTRICAL	1
F-25	35	PAFFF	5935-12-345-9371	D0857	455.11.0008	CONNECTOR,RECEPTACLE	1
F-25	36	PAFZZ	5935-14-375-1456	F0225	8500-27D	COVER,ELECTRICAL CONNECTOR	1
F-25	37	PAFZZ	5935-12-190-4958	D9422	8.51.02R16-8S-50	CONNECTOR,RECEPTACLE	1
F-25	38	PAFZZ	5999-12-345-6403	D0857	455.14.0123	SHIELDING GASKET,ELECTRONIC	1
F-25	39	PAFZZ	5305-12-151-7955	D8286	DIN84-M3X12-A4-70	SCREW,MACHINE	3
F-25	40	PAOZZ	5305-12-151-7862	D8286	DIN84-M3X16-A4-70	SCREW,MACHINE	5
F-25	41	PAFZZ	5905-12-321-4870	C4750	Q69-X3230	RESISTOR,VOLTAGE SENSITIVE	1
F-25	42	PAFFF	5935-12-345-9373	D0857	455.11.0006	CONNECTOR,RECEPTACLE	1
F-25	43	PAOZZ	5935-14-412-5727	D9422	8.45.40.0031.002	COVER,ELECTRICAL CONNECTOR	1
F-25	44	PAFZZ	5935-14-384-5119	F0225	8-47-48A1-00N2-02	CONNECTOR,RECEPTACLE	1
F-25	45	PAFZZ	5999-12-345-6404	D0857	455.14.0121	SHIELDING GASKET,ELECTRONIC	1

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-25	46	PAFZZ	5305-12-171-6738	D8286	DIN963-M4X16-A4-70	SCREW,MACHINE	2
F-25	47	PAFFF	5935-12-345-9372	D0857	455.11.0002	CONNECTOR,RECEPTACLE	1
F-25	48	PAOZA	5935-00-716-3297	58536	AA55558-01	CONNECTOR,RECEPTACLE	1
F-25	49	PAFZZ		81348	WO596/12-1/5252I	CONNECTOR,RECEPTACLE	1
F-25	50	PAFFF	5935-12-345-9374	D0857	455.11.0007	CONNECTOR,RECEPTACLE	1
F-25	51	PAOZZ	5935-14-348-8709	F0225	8500-07D	COVER,ELECTRICAL CONNECTOR	1
F-25	52	PAFZZ	5935-14-468-1680	F0225	8500-23	SPACER,SLEEVE	1
F-25	53	PAFZZ	5999-12-345-6405	D0857	455.14.0122	SHIELDING GASKET,ELECTRONIC	1
F-25	54	PAFZZ	5935-12-324-0191	D9171	KLBM3	JACK,TIP (WITH ATTACHING PARTS)	1
F-25	55	PAFZZ	5970-12-324-4296	D0857	310.16.0002	INSULATOR,PLATE	1
F-25	56	PAFZZ	5935-12-121-7285	D8095	8JB 001 946-001	CONNECTOR,RECEPTACLE (WITH MOUNTING HARDWARE)	1
F-25	57	PAFZZ	5330-12-156-4515	D8286	DIN7603-A18X22-AL	GASKET	1
						END OF FIGURE	

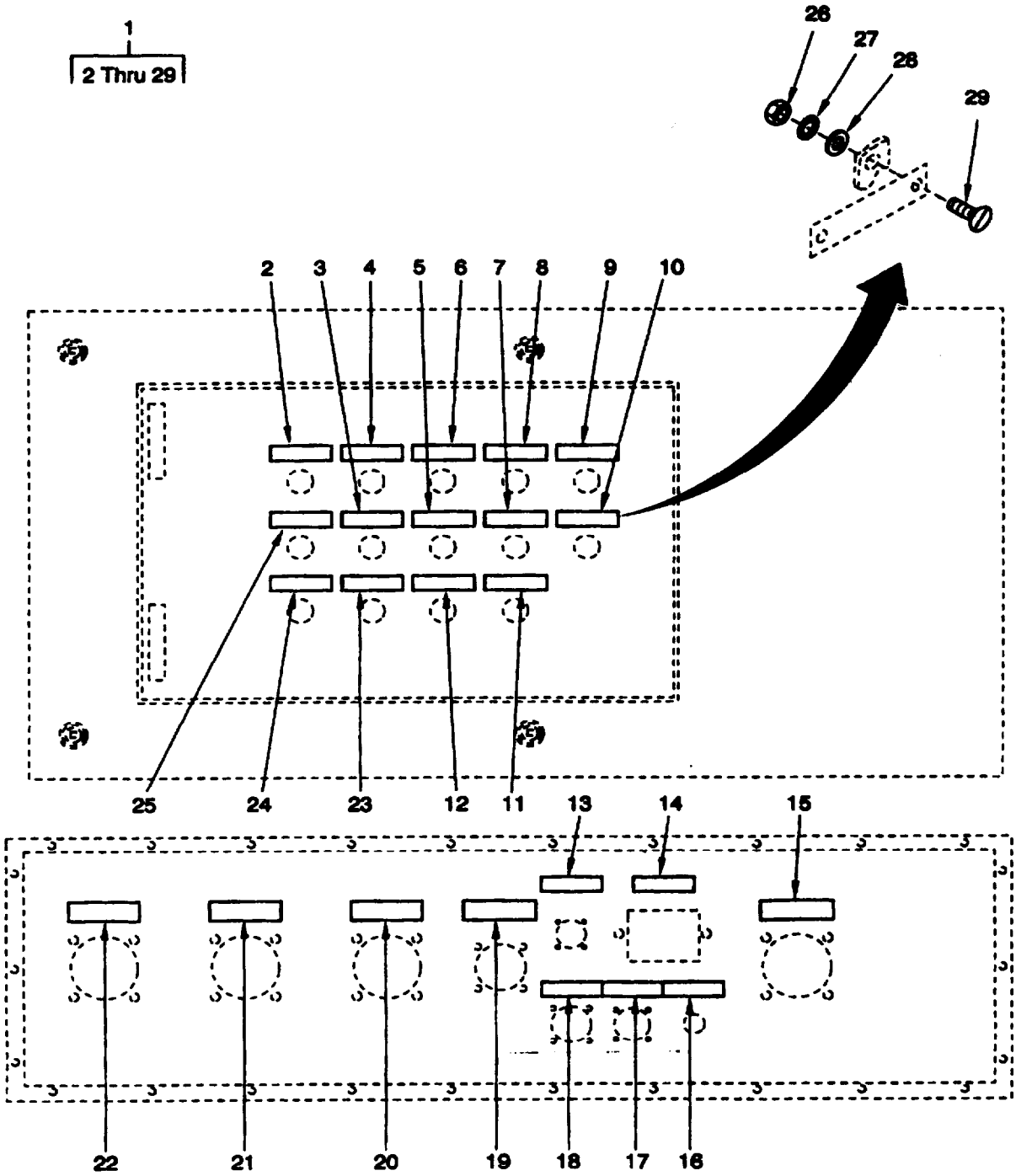


Figure F-26. Designantion Plate Set

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020301 **POWER DISTRIBUTION** **UNIT ASSEMBLY** **DESIGNATION PLATE SET**	
F-26	1	XBOOO		D0857	405.01.0243	DESIGNATION PLATE SET	1
F-26	2	PAOZZ	9905-12-345-5540	D0857	405.01.0225	PLATE,DESIGNATION (OVERLOAD-J1-RS1)	1
F-26	3	PAOZZ	9905-12-345-5541	D0857	405.01.0221	PLATE,DESIGNATION (POWER ON-J2-RS2)	1
F-26	4	PAOZZ	9905-12-345-5542	D0857	405.01.0226	PLATE,DESIGNATION (OVERLOAD-J2-RS2)	1
F-26	5	PAOZZ	9905-12-345-5543	D0857	405.01.0222	PLATE,DESIGNATION (POWER ON-J3-RS3)	1
F-26	6	PAOZZ	9905-12-345-5544	D0857	405.01.0227	PLATE,DESIGNATION (OVERLOAD-J3-RS3)	1
F-26	7	PAOZZ	9905-12-345-5545	D0857	405.01.0223	PLATE,DESIGNATION (POWER ON-J4-ECS)	1
F-26	8	PAOZZ	9905-12-345-5546	D0857	405.01.0228	PLATE,DESIGNATION (OVERLOAD-J4-ECS)	1
F-26	9	PAOZZ	9905-12-345-5547	D0857	405.01.0229	PLATE,DESIGNATION (OVERLOAD RESET)	1
F-26	10	PAOZZ	9905-12-345-5548	D0857	405.01.0224	PLATE,DESIGNATION (PARALLEL OPERATION)	1
F-26	11	PAOZZ	9905-12-345-5521	D0857	405.01.0218	PLATE,DESIGNATION (PANEL DIMMER)	1
F-26	12	PAOZZ	9905-12-345-5514	D0857	405.01.0242	PLATE,DESIGNATION (BATTLE SHORT)	1
F-26	13	PAOZZ	9905-12-345-5549	D0857	405.01.0232	PLATE,DESIGNATION (J20-PARALLEL CONVERTER CONTROL)	1
F-26	14	PAOZZ	9905-12-345-5550	D0857	405.01.0077	PLATE,DESIGNATION (J11 120V 400HZ)	1
F-26	15	PAOZZ	9905-12-345-5551	D0857	405.01.0233	PLATE,DESIGNATION (J4-ECS 208V 400HZ)	1
F-26	16	PAOZZ	9905-12-345-5552	D0857	405.01.0309	PLATE,DESIGNATION (J12 24V)	1
F-26	17	PAOZZ	9905-12-345-5553	D0857	405.01.0230	PLATE,DESIGNATION (J7-PHONE JACK)	1
F-26	18	PAOZZ	9905-12-345-5554	D0857	405.01.0231	PLATE,DESIGNATION (J6-PARALLEL CONVERTER SIGNAL)	1
F-26	19	PAOZZ	9905-12-345-5555	D0857	405.01.0234	PLATE,DESIGNATION (J5-CONTROL)	1
F-26	20	PAOZZ	9905-12-345-5556	D0857	405.01.0235	PLATE,DESIGNATION (J3-RS3 208V 400HZ)	1
F-26	21	PAOZZ	9905-12-345-5557	D0857	405.01.0236	PLATE,DESIGNATION (J2-RS2 208V 400HZ)	1
F-26	22	PAOZZ	9905-12-345-5558	D0857	405.01.0237	PLATE,DESIGNATION (J1-RS1 208V 400HZ)	1
F-26	23	PAOZZ	9905-12-345-5519	D0857	405.01.0219	PLATE,DESIGNATION (PARALLEL OPERATION ON)	1
F-26	24	PAOZZ	9905-12-345-5522	D0857	405.01.0215	PLATE,DESIGNATION (LAMP TEST)	1
F-26	25	PAOZZ	9905-12-345-5559	D0857	405.01.0220	PLATE,DESIGNATION (POWER ON-J1-RS1)	1
F-26	26	PAOZZ	5310-12-151-2287	D8286	DIN934-M3-A4-70	NUT,PLAIN,HEXAGON	28
F-26	27	PAOZZ	5310-12-131-5576	D8286	DIN6798-A3,2-FST	WASHER,LOCK	28
F-26	28	PAOZZ	5310-12-151-7821	D8286	DIN125-B3,2-A4-70	WASHER,FLAT	23
F-26	29	PAOZZ	5305-12-151-7827	D8286	DIN84-M3X10-A4-70	SCREW,MACHINE	28
						END OF FIGURE	

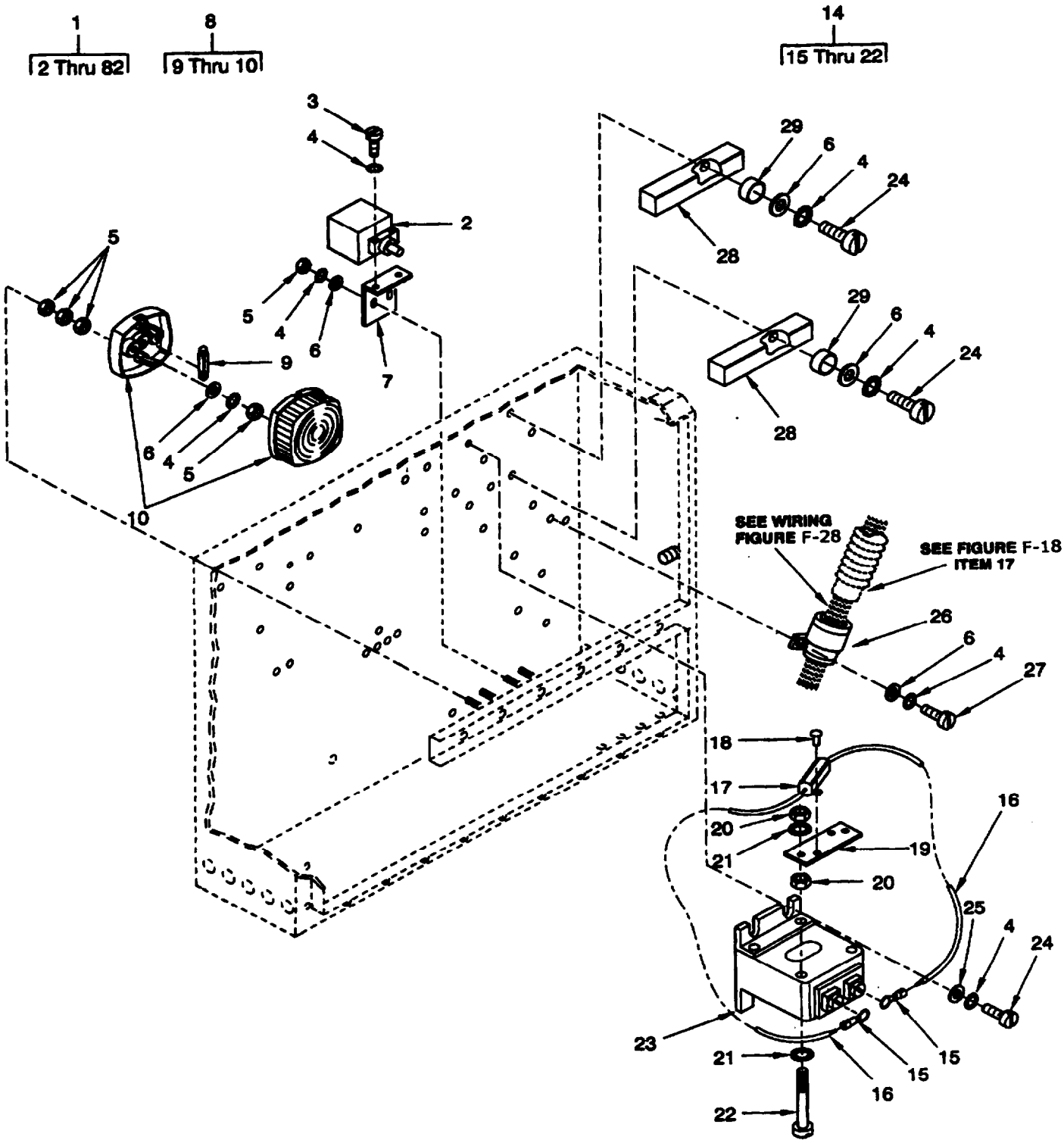


Figure F-27. Power Distribution Unit Assembly
Sheet 1 of 4

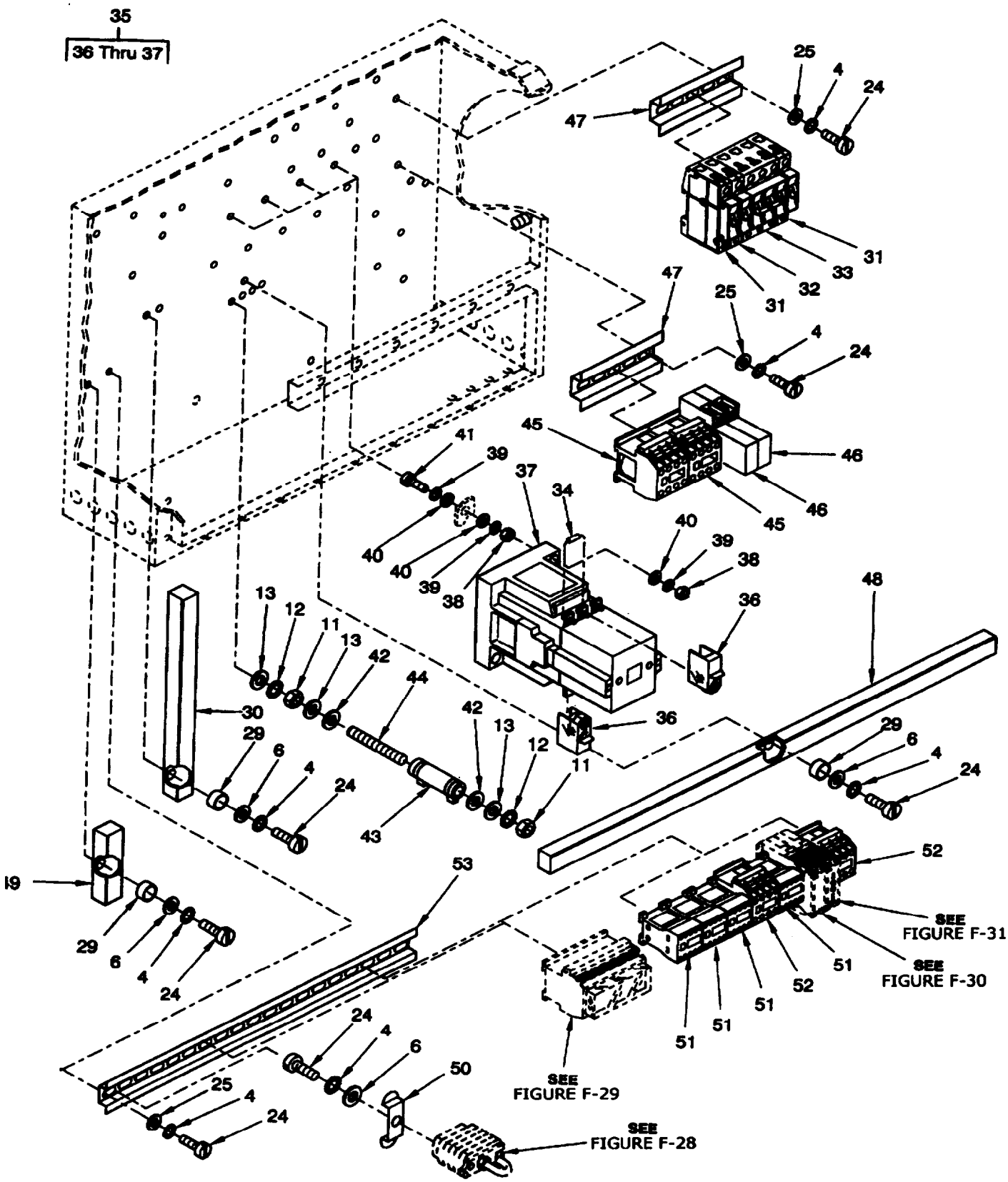


Figure F-27. Power Distribution Unit Assembly
Sheet 2 of 4

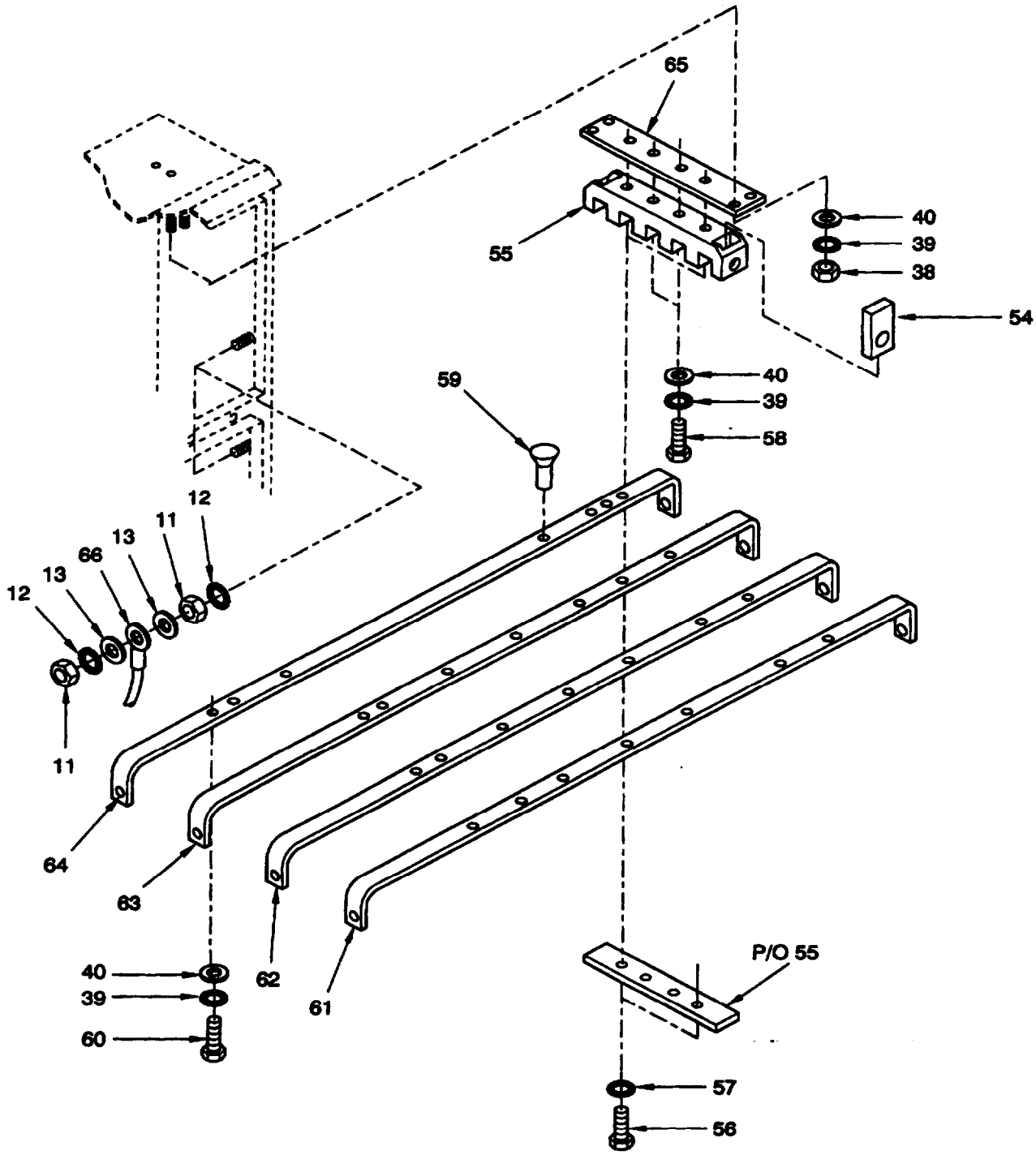


Figure F-27. Power Distribution Unit Assembly
Sheet 3 of 4

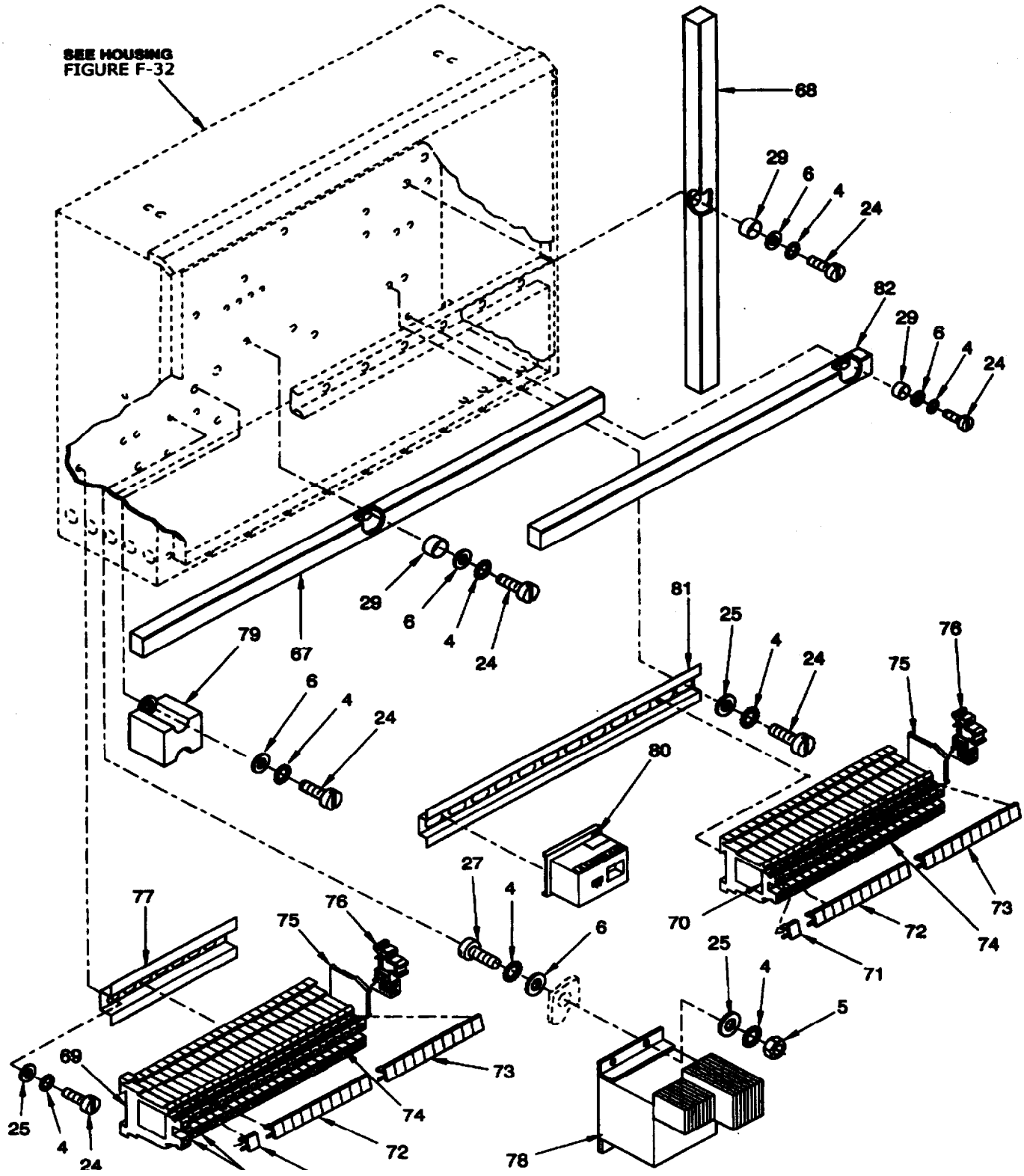


Figure F-27. Power Distribution Unit Assembly
Sheet 4 of 4

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0204 **POWER DISTRIBUTION UNIT** **ASSEMBLY, 150KW**	
F-27	1	XBFFF		D0857	420.02.0078F- 8	POWER DISTRIBUTION UNIT ASSEMBLY, 150KW	1
F-27	2	PAOZZ	5930-12-316-5562	D1149	3SE3020-1A	SWITCH,SENSITIVE	1
F-27	3	PAOZZ	5305-12-151-7786	D8286	DIN84-M4X12-A4-70	SCREW,MACHINE	4
F-27	4	PAOZZ	5310-01-407-4764	62380	152.269	WASHER,LOCK	71
F-27	5	PAOZZ	5310-12-151-7866	D8286	DIN934-M4-A4-70	NUT,PLAIN,HEXAGON	14
F-27	6	PAOZZ	5310-12-158-2236	D8286	DIN125-B4,3-A4-70	WASHER,FLAT	36
F-27	7	PAOZZ	5340-12-321-5035	D0857	160.03.0004	BRACKET,ANGLE	1
F-27	8	PAOFF	6220-12-321-5686	D0857	235.07.0002	LAMP ASSEMBLY	1
F-27	9	PAOZZ	6240-12-120-7948	I9006	EN60809-809-IEC-4110-24V	LAMP,INCANDESCENT	1
F-27	10	PAFZZ	6220-12-321-5686	D8095	2PF003057-041	LIGHT,MARKER,CLEARANCE	1
F-27	11	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	12
F-27	12	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	12
F-27	13	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140HV-A4	WASHER,FLAT	16
F-27	14	PAOFF	5905-12-345-9375	D0857	525.14.0023	RESISTOR ASSEMBLY	1
F-27	15	PAOZZ	5940-12-144-9623	D2096	RSY7104A4-1	TERMINAL,LUG	2
F-27	16	MFFZZ		D0857	180.03.0008-2.15 INCH	WIRE,ELECTRICAL (MAKE FROM (83873) P/N NOMEX155-U 1.00 "F" WHT) 2.15 INCH (55 MM) REQUIRED	2
F-27	17	PAOZZ	5905-12-340-0961	C7080	63E736	RESISTOR,FIXED,WIRE WOUND 1,5 OHM 20W	1
F-27	18	PAFZZ	5320-12-319-7472	D2040	0317-3006	RIVET,BLIND	2
F-27	19	PAOZZ	5905-12-345-5879	D0857	310.07.0024	HOLDER,RESISTOR	1
F-27	20	PAOZZ	5310-12-144-6201	D8286	DIN934-M3-8-A2P	NUT,PLAIN,HEXAGON	4
F-27	21	PAOZZ	5310-12-131-5576	D8286	DIN6798-A3,2-FST	WASHER,LOCK	4
F-27	22	PAOZZ		D8286	DIN84-M3X40-4.8-A2P	SCREW,MACHINE	2
F-27	23	PAOZZ	5950-12-347-2007	D0857	260.04.0061	TRANSFORMER,CURRENT	1
F-27	24	PAOZZ	5305-12-151-8366	D8286	DIN84-M4X10-A4-70	SCREW,MACHINE	57
F-27	25	PAOZZ	5310-12-188-7408	D8286	DIN9021-4,3-140HV-A4	WASHER,FLAT	37
F-27	26	PAOZZ	5975-12-321-5160	D8527	167-12169	BUSHING,ELECTRICAL	1
F-27	27	PAOZZ	5305-12-154-5885	D8286	DIN84-M4X16-A4-7	SCREW,MACHINE	6
F-27	28	XBOZZ		D0857	375.01.0001-5.85 INCH	CABLE DUCT WITH COVER (MAKE FROM (D1169) P/N HG60025) 5.85 INCH (150MM) REQUIRED	2
F-27	29	PAOZZ	5310-12-173-3063	D1169	M5164	WASHER,RECESSED	20
F-27	30	XBOZZ		D0857	375.01.0001-14.43 INCH	CABLE DUCT WITH COVER (MAKE FROM (D1169) P/N HG60025) 14.43 INCH (370MM) REQUIRED	1
F-27	31	PAOZZ		D1149	5SX2116-6	CIRCUIT BREAKER AUTOMATIC FUSE,16A	1
F-27	32	PAOZZ	5945-01-441-5015	D0857	390.11.0084	RELAY,ELECTROMAGNETIC	1
F-27	33	PAOZZ		D1149	5SX2306-7	CIRCUIT BREAKER AUTOMATIC FUSE,6A, THREE POLE	1
F-27	34	PAOZZ	5961-01-204-6187	14936	RG3G	SEMICONDUCTOR DEVIC E,DIODE	1
F-27	35	PAOOO	5945-12-345-9127	D0857	390.31.0010	RELAY,ELECTROMAGNET IC	1
F-27	36	PAOZZ	5970-12-323-9976	D1180	3TX6506-3B	INSULATION HOOD,INS ULATOR	6
F-27	37	PAOZZ		D1149	3TB5017-0BZ9	CONTACT,ELECTRICAL	1
F-27	38	PAOZZ	5310-12-155-0596	D8286	DIN934-M6-A4-70	NUT,PLAIN,HEXAGON	24
F-27	39	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	56
F-27	40	PAOZZ	5310-12-174-8311	D8286	DIN125-A6,4-A4-70	WASHER,FLAT	56

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-27	41	PAOZZ	5305-12-173-0477	D8286	DIN84-M6X40-A4-70	SCREW,MACHINE	8
F-27	42	PAOZZ	5310-12-345-4101	C0882	3.03.059	WASHER,FLAT	8
F-27	43	PAOZZ	5905-12-324-2997	D1149	3TY1304-0Z	RESISTOR,FIXED,WIRE WOUND,7,4 OHM	1
F-27	44	MFFZZ		D0857	320.03.0028-4.095 INCH	ROD,THREADED (MAKE FROM (D8286) P/N DIN975-M5-A4-70) 4.095 INCH (105MM) REQUIRED	4
F-27	45	PAOZZ	5945-12-342-1711	D1149	3TH4022-0BM4	RELAY,ELECTROMAGNETIC	1
F-27	46	PAOZZ	5961-12-324-1594	D0493	2949428	RECTIFIER,SEMICONDUCTOR DEVICE, EG17-G/220-/1	1
F-27	47	XBOZZ		D0857	320.10.0001-5.85 INCH	RAIL,BEARING (MAKE FROM (D8857) P/N 1175.0) 5.85 INCH (150MM) REQUIRED	2
F-27	48	XBOZZ		D0857	375.01.0003-32.526 INCH	CABLE DUCT WITH COV ER (MAKE FROM (D1169) P/N HG80040) 32.526 INCH (834MM) REQUIRED	1
F-27	49	XBOZZ		D0857	375.01.0001-4.485 INCH	CABLE DUCT WITH COV ER (MAKE FROM (D1169) P/N HG60025) 4.485 INCH (115MM) REQUIRED	1
F-27	50	PAOZZ	5340-12-322-4544	D8527	181-55800	CLIP,SPRING TENSION	4
F-27	51	PAOZZ	5945-12-321-5419	D1149	3TH2031-0DB4	RELAY,ELECTROMAGNET IC	1
F-27	52	PAOZZ	5945-12-342-1713	D1149	3TF4011-0BB4	RELAY,ELECTROMAGNET IC	1
F-27	53	XBOZZ		D0857	320.10.0001-31.2 INCH	RAIL,BEARING (MAKE FROM (D8857) P/N 1175.0) 31.2 INCH (800MM) REQUIRED	1
F-27	54	XBFZZ		D0857	310.12.0095	PLATE	2
F-27	55	XBFZZ		D0857	160.31.0217	HOLDER,BUS BAR (TWO-PART)	2
F-27	56	PAFZZ	5305-12-192-3945	D8286	DIN84-M6X45-4.8-A2P	SCREW,MACHINE	4
F-27	57	PAFZZ	5310-12-153-8971	D9532	S6A3P	WASHER,SPRING TENSI ON	4
F-27	58	PAFZZ	5305-12-167-7933	D8286	DIN84-M6X16-A4-70	SCREW,MACHINE	4
F-27	59	XBFZZ		D8286	DIN660-4X16-SF-CU	RIVET	8
F-27	60	PAFZZ	5305-12-164-0313	D8286	DIN933-M6X16-A4-70	SCREW,CAP,HEXAGON H EAD	20
F-27	61	XBFZZ		D0857	310.17.0010	BUS BAR	1
F-27	62	XBFZZ		D0857	310.17.0005	BUS BAR	1
F-27	63	XBFZZ		D0857	310.17.0006	BUS BAR	1
F-27	64	XBFZZ		D0857	310.17.0003	BUS BAR	1
F-27	65	XBFZZ		D0857	160.32.0008	LEDGE	2
F-27	66	PAOZZ	6150-12-323-9971	D0857	020.03.0022	LEAD,ELECTRICAL	2
F-27	67	XBFZZ		D0857	375.01.0001-32.526 INCH	CABLE DUCT WITH COVER (MAKE FROM (D1169) P/N HG60025) 32.526 INCH (834MM) REQUIRED	1
F-27	68	XBFZZ		D0857	375.01.0001-26.637 INCH	CABLE DUCT WITH COVER (MAKE FROM (D1169) P/N HG60025) 26.637 INCH (683MM) REQUIRED	1
F-27	69	PAOZZ	5940-12-312-1738	D0493	0442011	TERMINAL BOARD USLKG 10	1
F-27	70	PAOZZ	5940-12-322-4545	D0493	0441012	TERMINAL BOARD USLKG 4	3
F-27	71	PAOZZ		D0493	1051032/0	LABEL ZB 6,LGS: "0"	2
F-27	72	PAOZZ	5940-12-321-7360	D0493	1051016 LGS:1-10	MARKER STRIP,TERMIN ZB 6,LGS: "1 THROUGH 10"	2
F-27	73	PAOZZ	5940-12-321-7361	D0493	1051016 LGS:11-20	MARKER STRIP,TERMIN ZB 6,LGS: "11 THROUGH 20"	2
F-27	74	PAOZZ	5940-12-305-3106	D0493	3004016	TERMINAL BOARD UK 5	1
F-27	75	XBOZZ	5970-12-305-2562	D0493	3003020	INSULATOR,PLATE D-UK 4/10	2
F-27	76	PAOZZ	5340-12-300-3541	D0493	1201442	CONNECTING PIECE E/UK	2
F-27	77	XBFZZ		D0857	320.10.0001-6.825 INCH	RAIL,BEARING (MAKE FROM (D8857) P/N 1175.0) 6.825 INCH (175MM) REQUIRED	1
F-27	78	PAOZZ	5950-12-345-5708	D0857	470.04.0017	TRANSFORMER,POWER 3PH,500VA/400HZ, TYPE S3U60B	1

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-27	79	PAOZZ	5961-12-167-9896	D0024	SKD50/04A3	RECTIFIER,SEMICONDU CTOR DEVICE, UNITIZED,TYPE SKD50/04A3	1
F-27	80	PAOZZ	5945-12-342-1709	D1149	3TH2722-0BB4	RELAY,ELECTROMAGNET IC	1
F-27	81	XBFZZ		D0857	320.10.0001-19.8 9 INCH	RAIL,BEARING (MAKE FROM(D8857) P/N 1175.0) 19.89 INCH (510MM) REQUIRED	1
F-27	82	XBFZZ		D0857	375.01.0001-23.0 1 INCH	CABLE DUCT WITH COV ER (MAKE FROM (D1169) P/N HG60025) 23.01 INCH (590MM) REQUIRED	1
						END OF FIGURE	

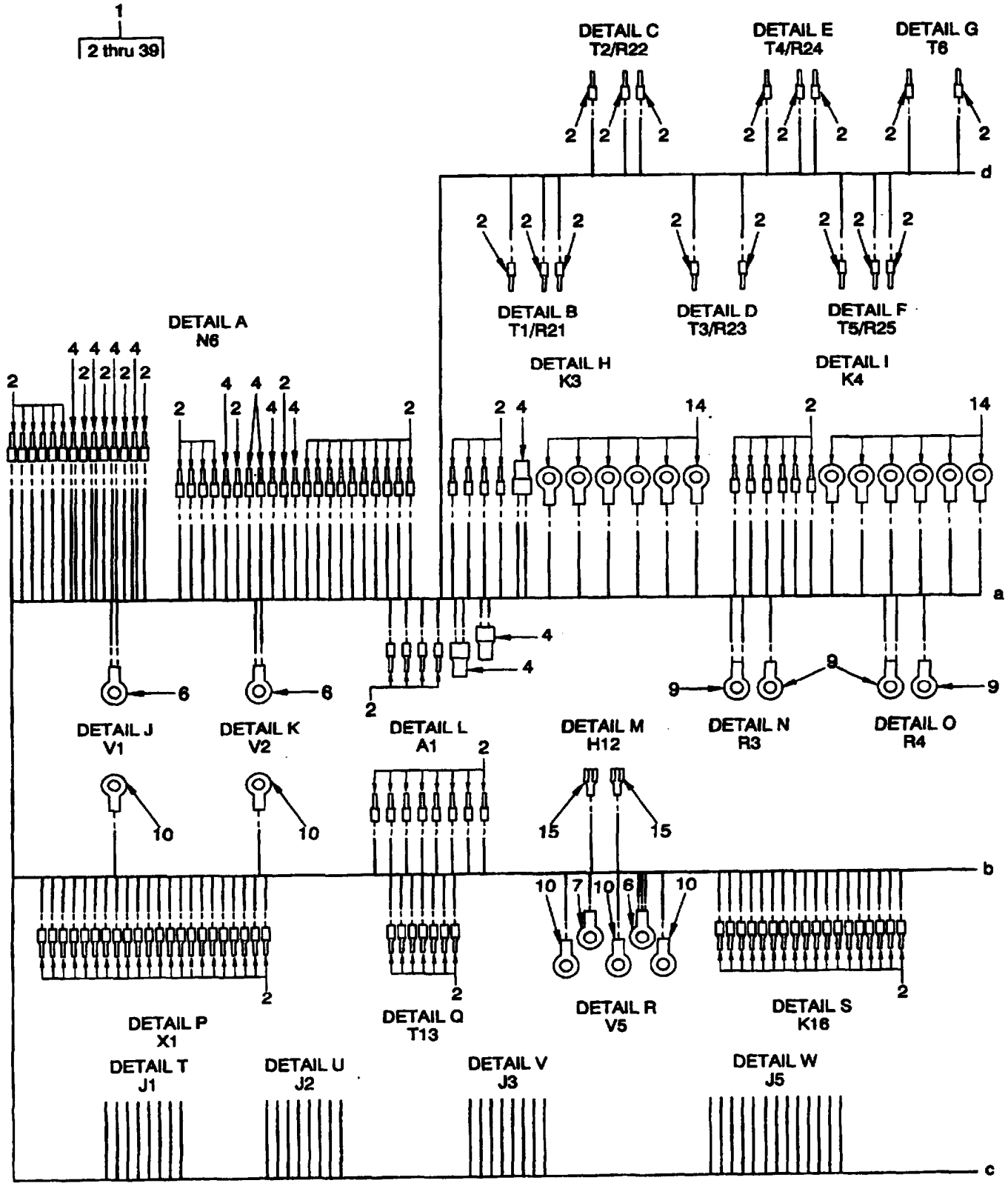


FIgure F-28. Wiring, PDU Assembly
Sheet 1 of 46

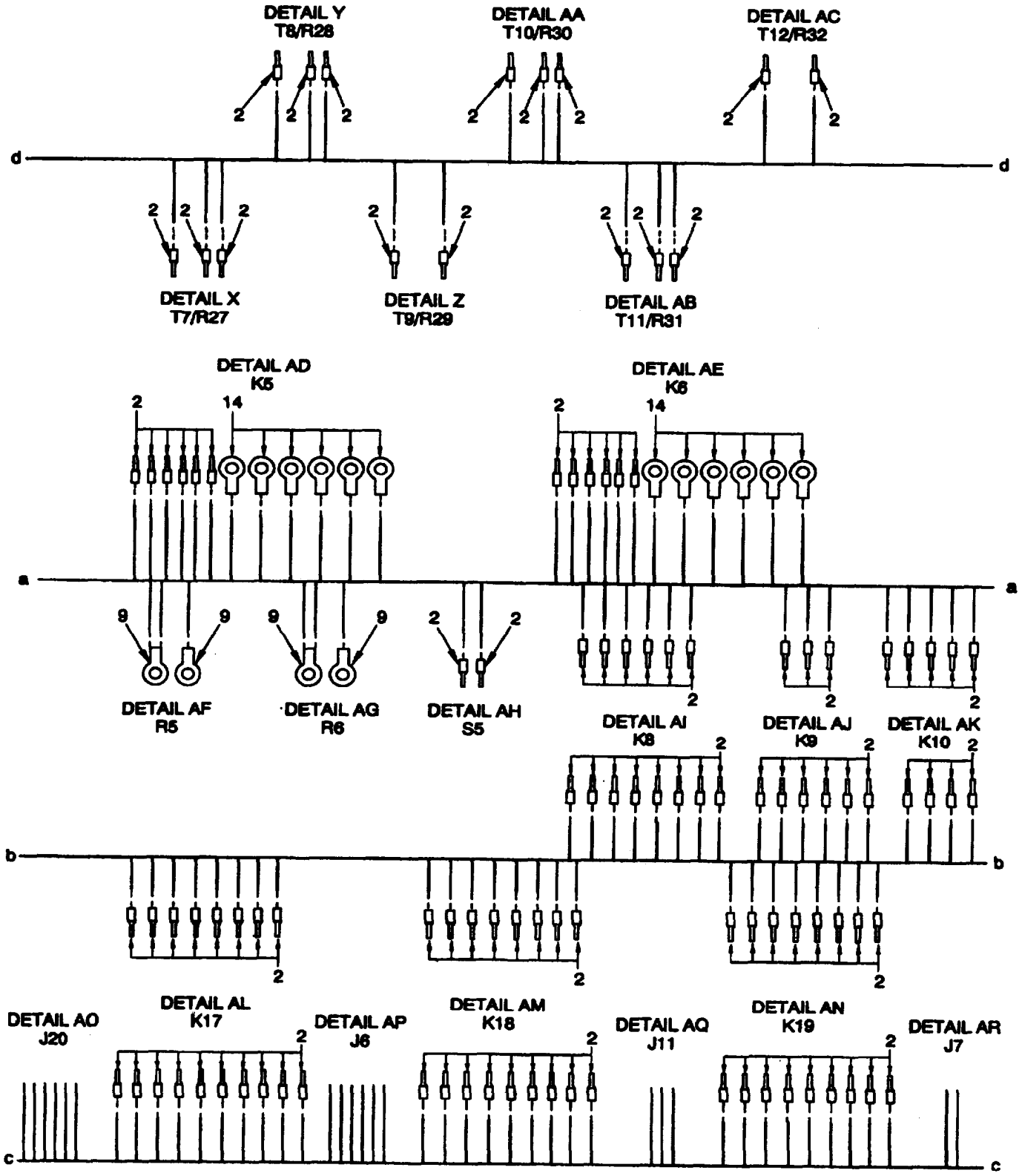


Figure F-28. Wiring, PDU Assembly
Sheet 2 of 46

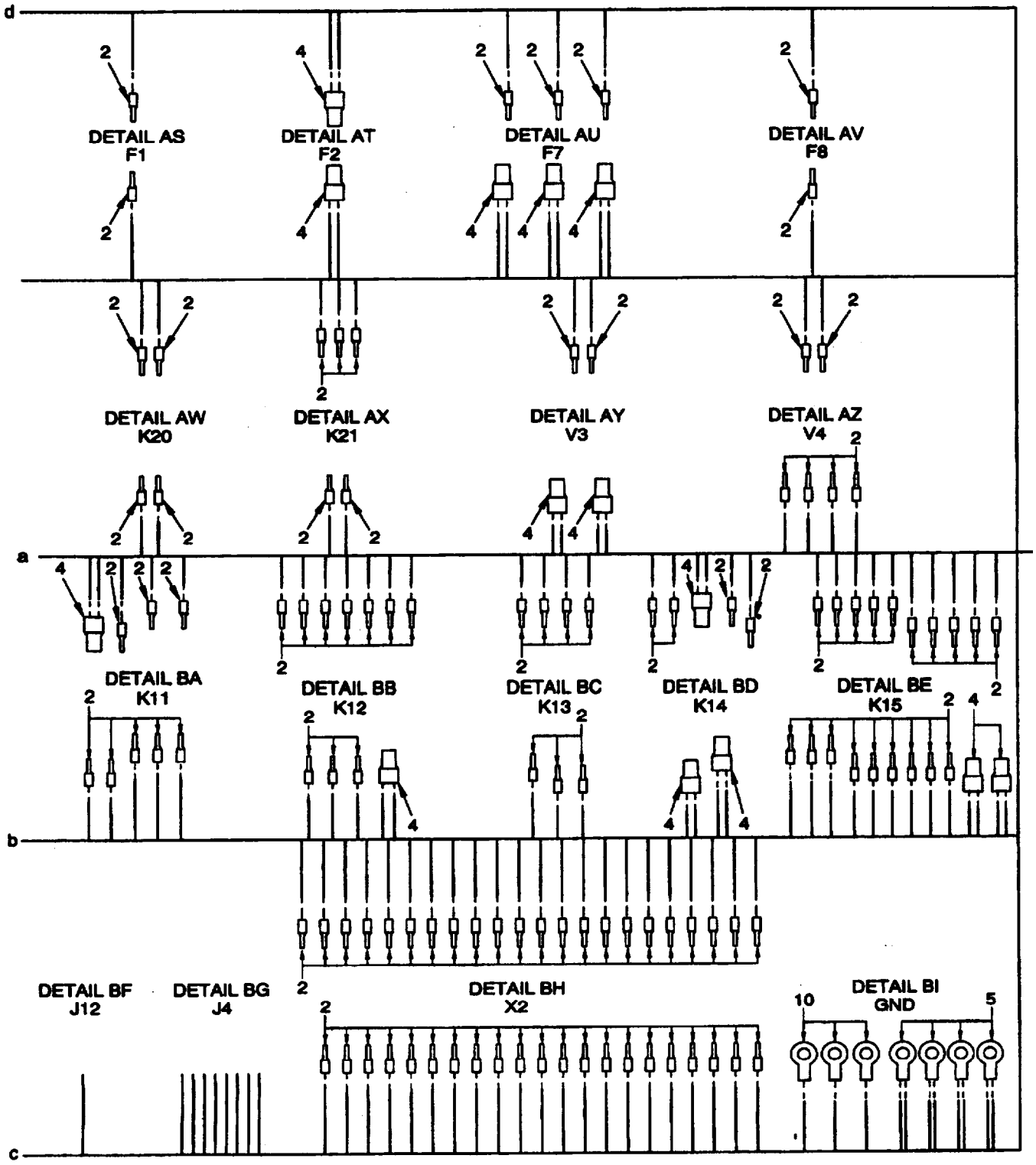


Figure F-28. WIRING, PDU Assembly
Sheet 3 of 46

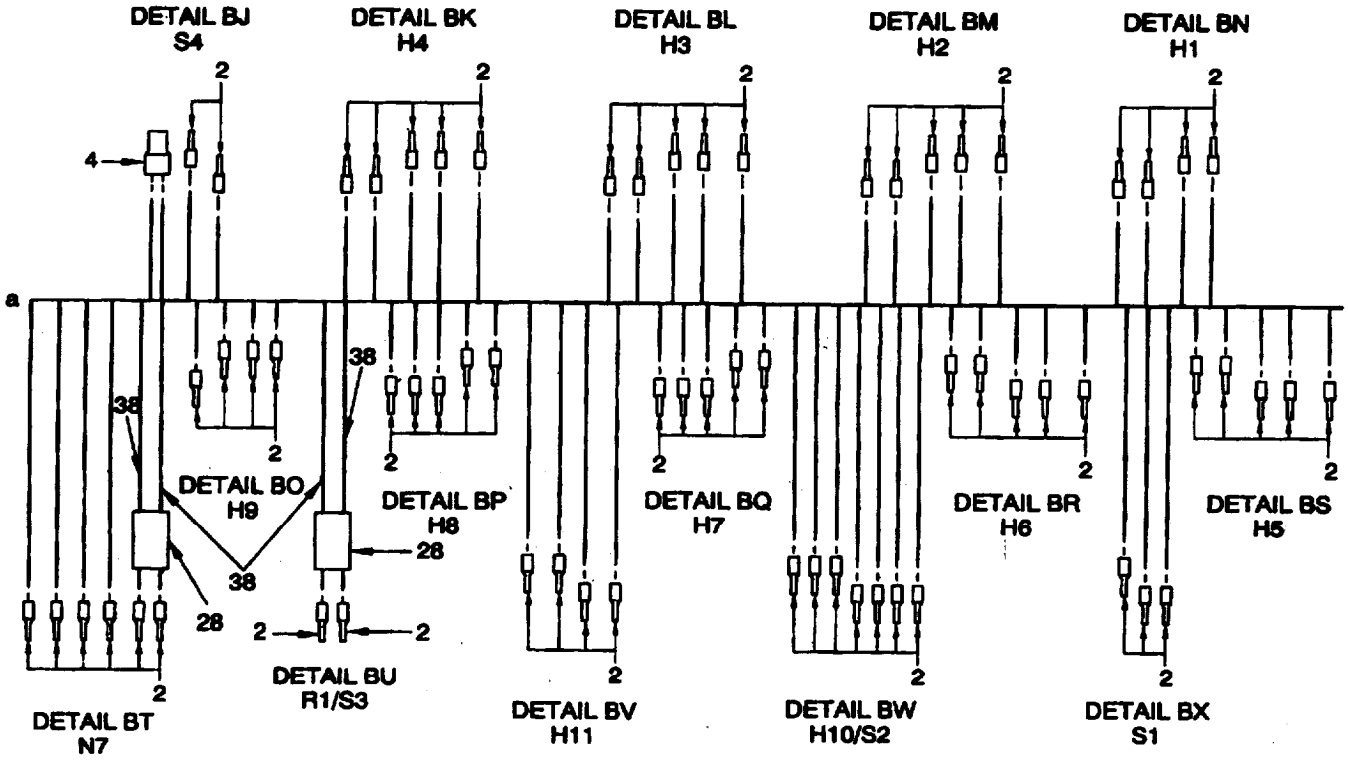


Figure F-28. Wiring, PDU Assembly
Sheet 4 of 46

DETAIL A
N6

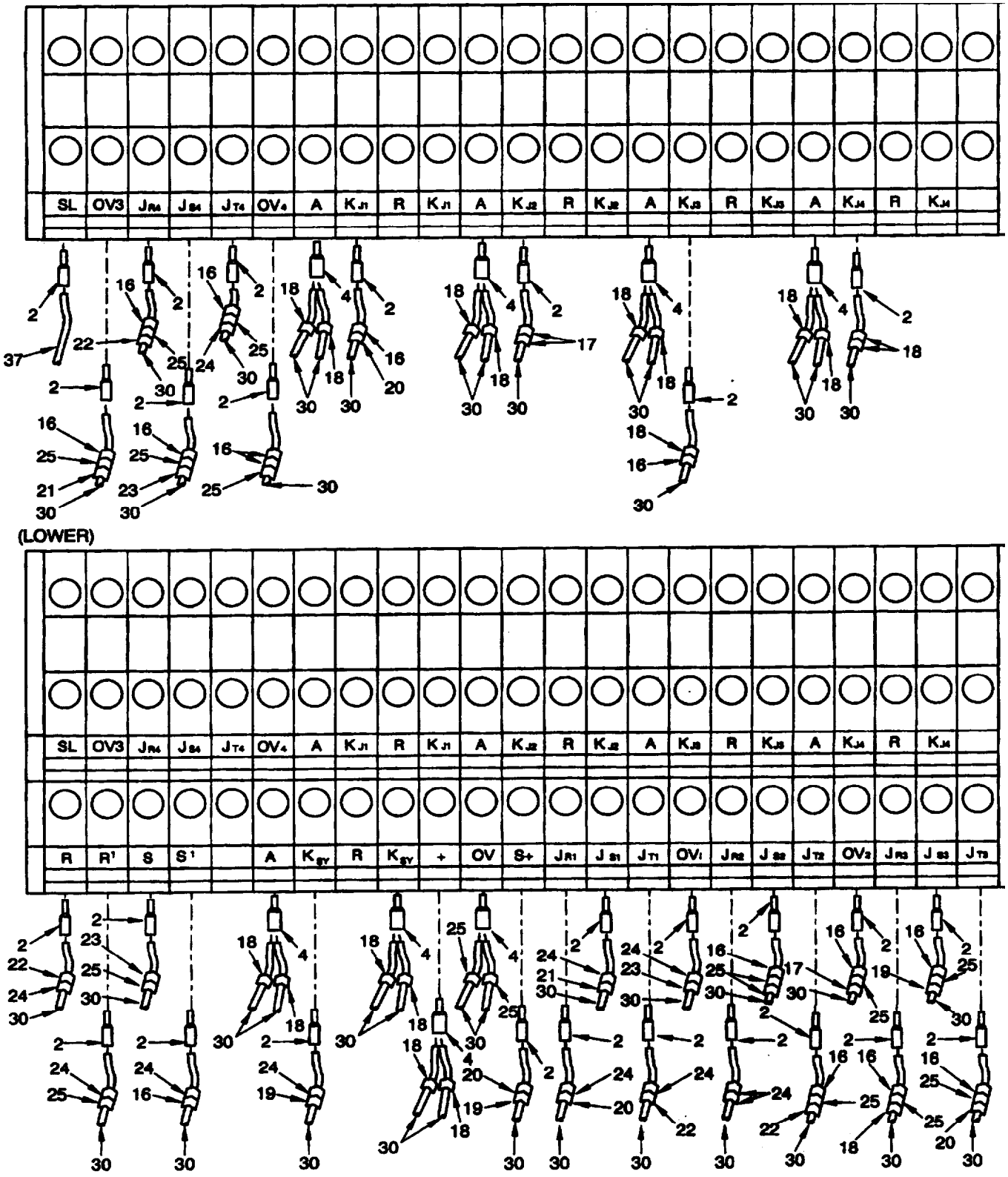


Figure F-28. Wiring, PUD Assembly
sheet 5 of 46

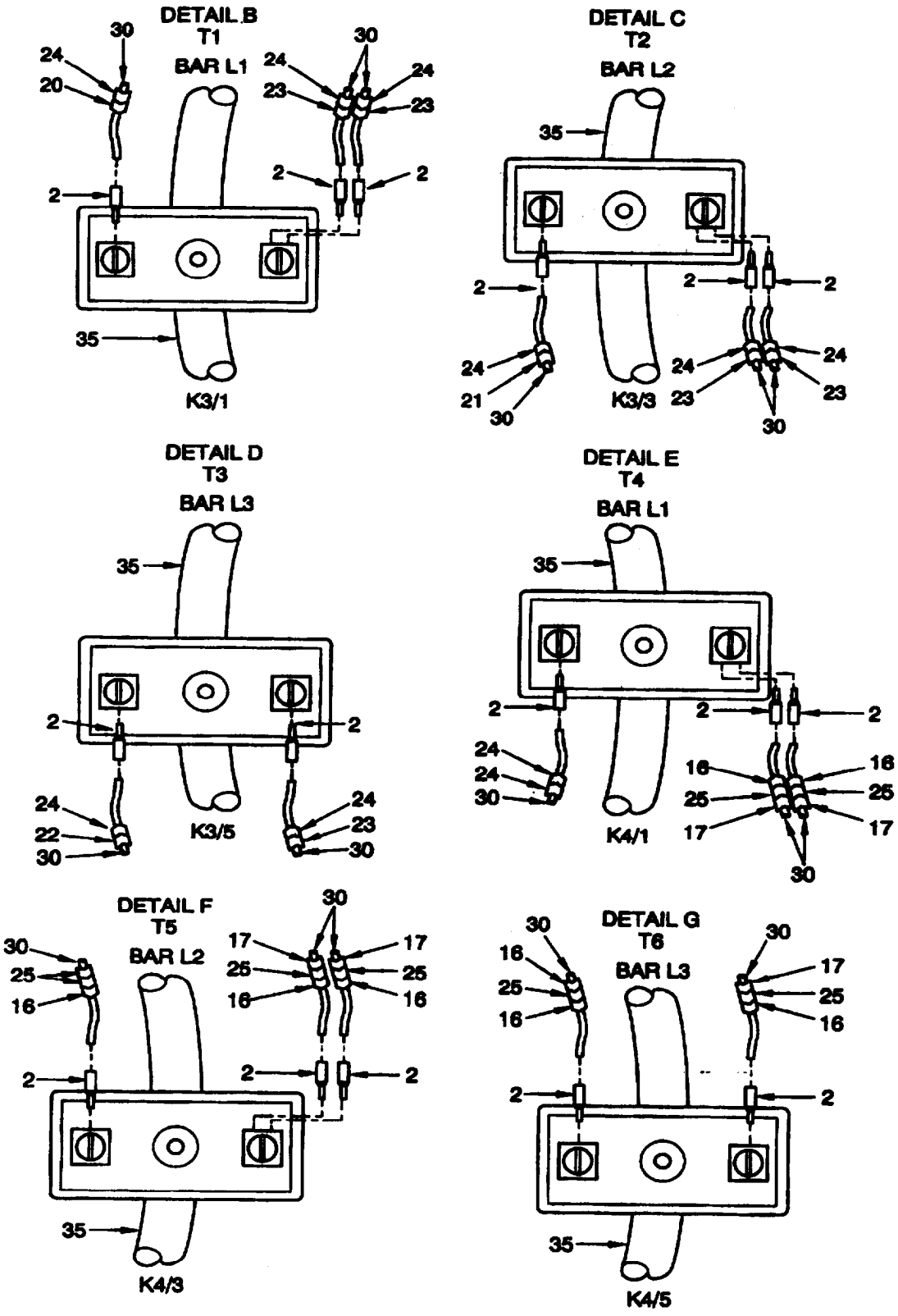


Figure F-28. Wiring, PDU Assembly

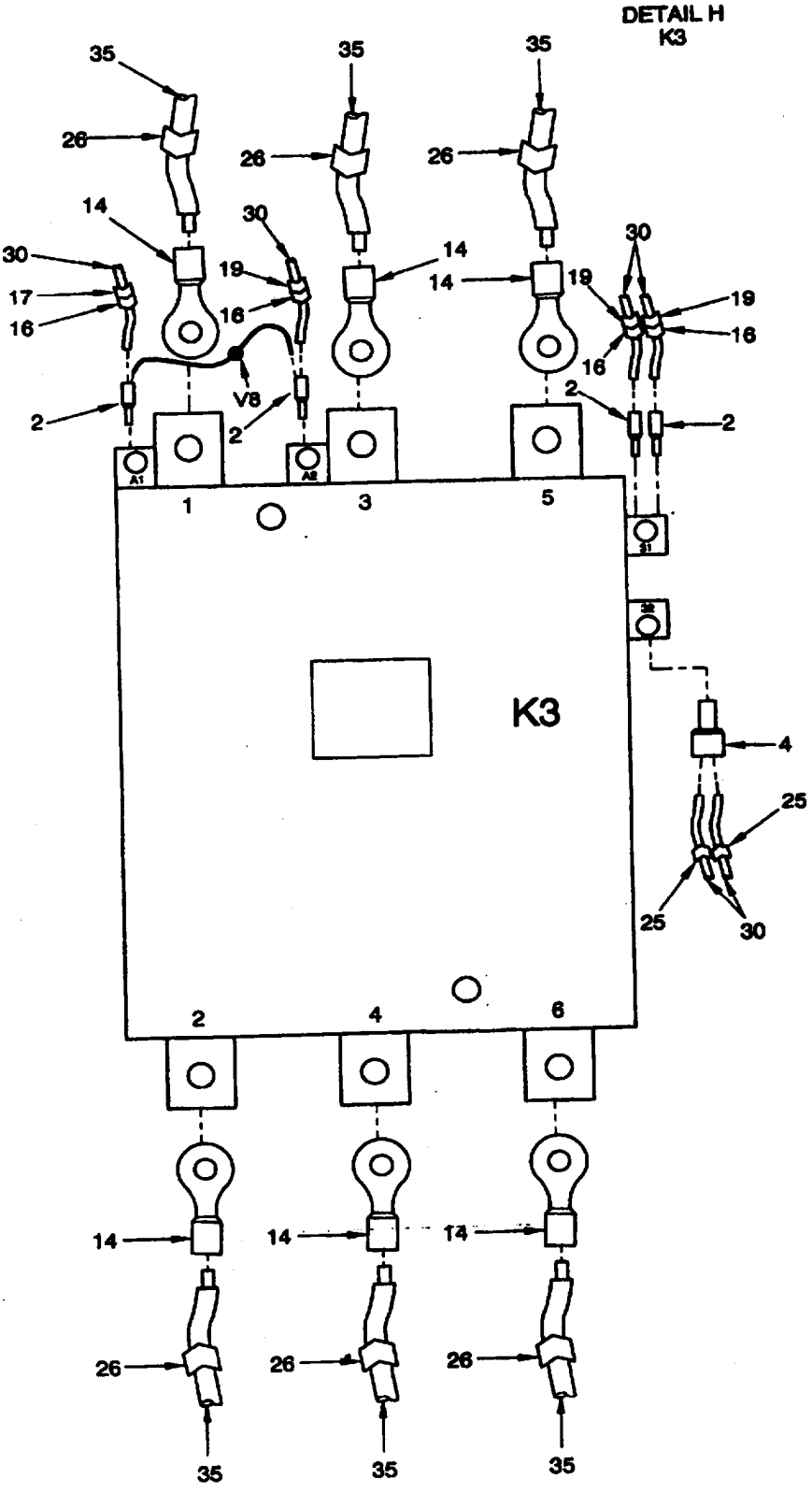
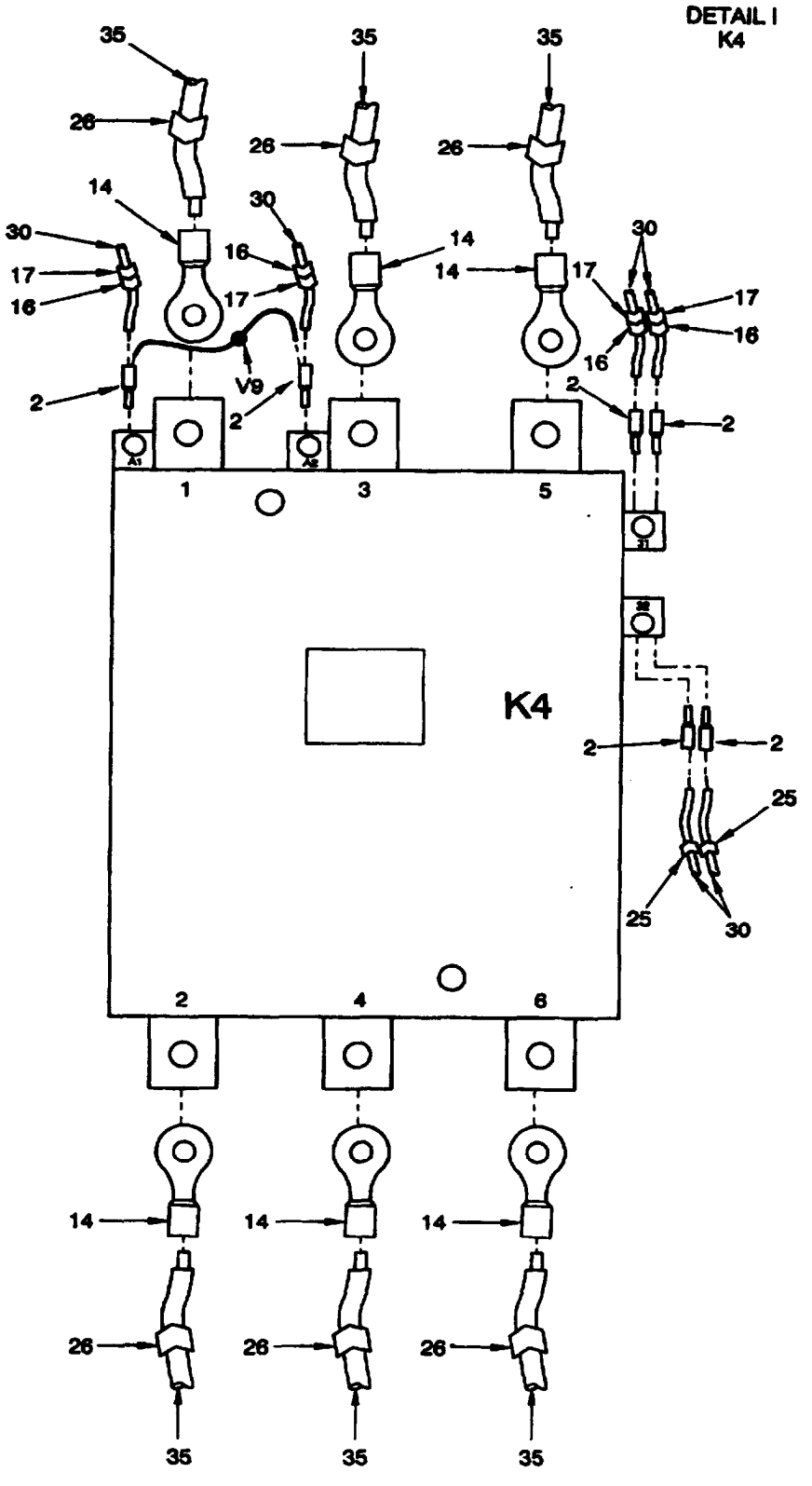


Figure F-29. Wiring, PDU Assembly
SHEET 7 of 46



423

Figure F-28. Wiring, PDU Assembly
Sheet 8 of 46

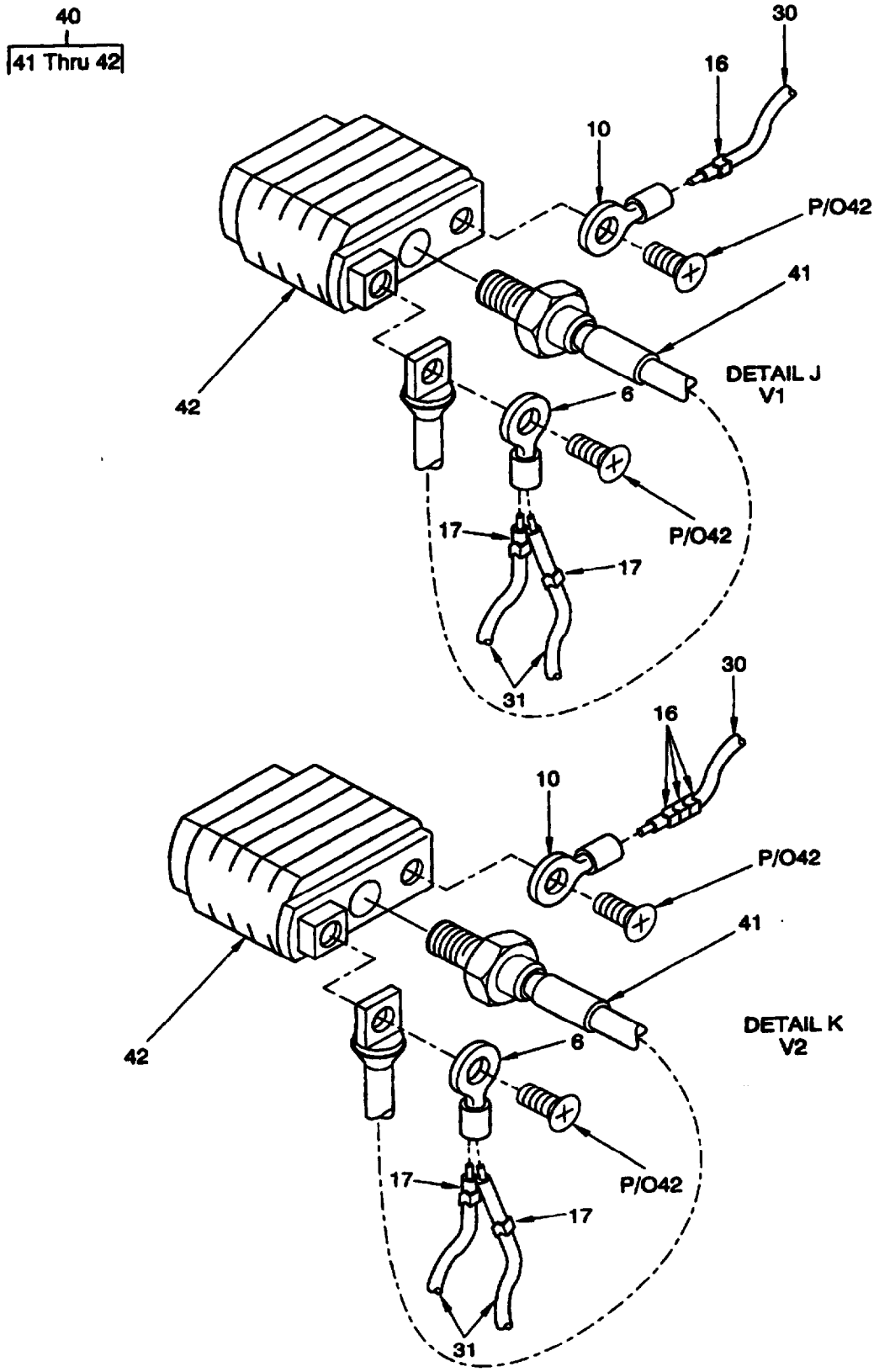


Figure F-28. Wiring, PDU Assembly
Sheet 9 of 46

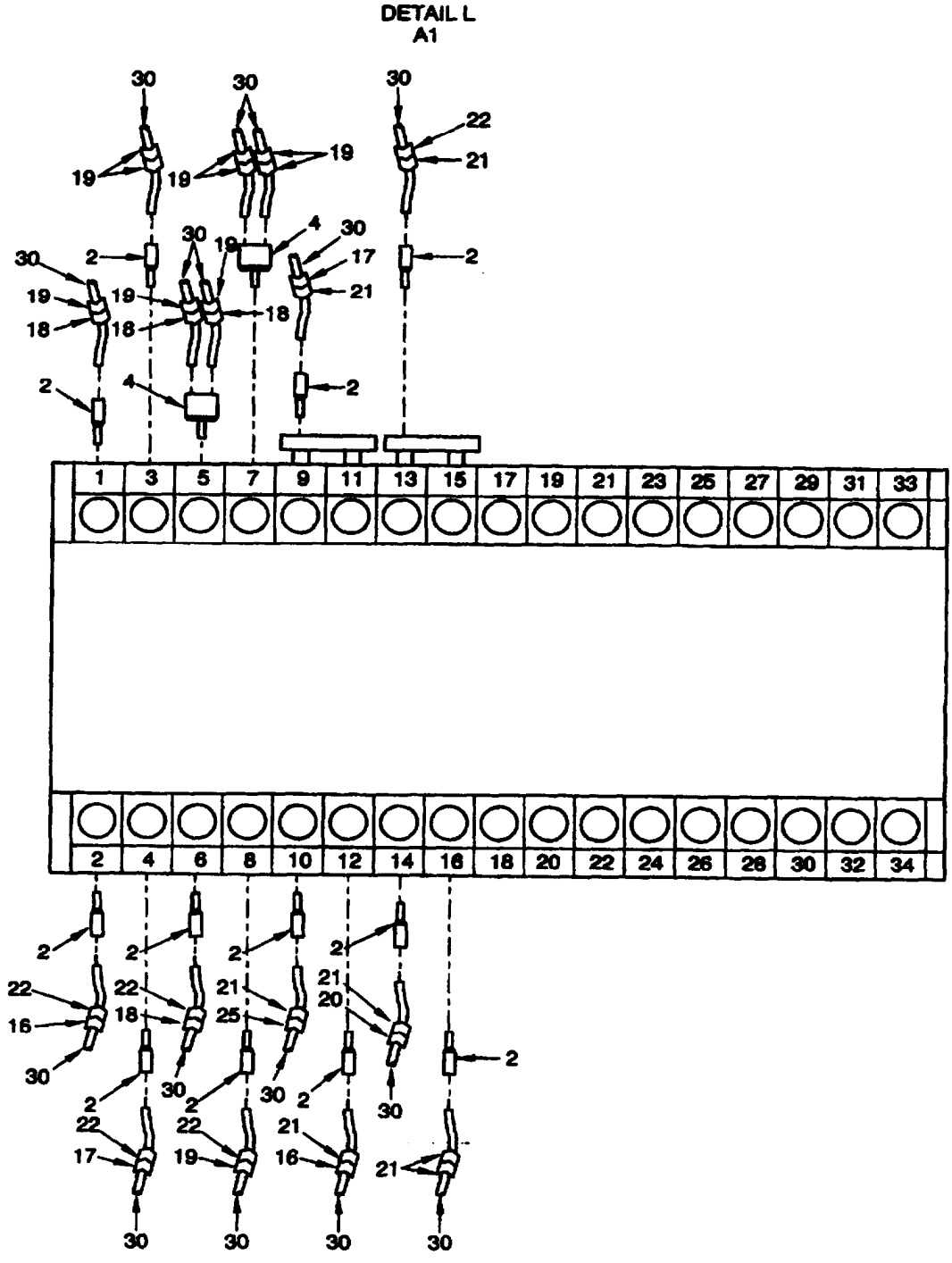


Figure F-28. Wiring, PDU Assembly
Sheet 10 of 46

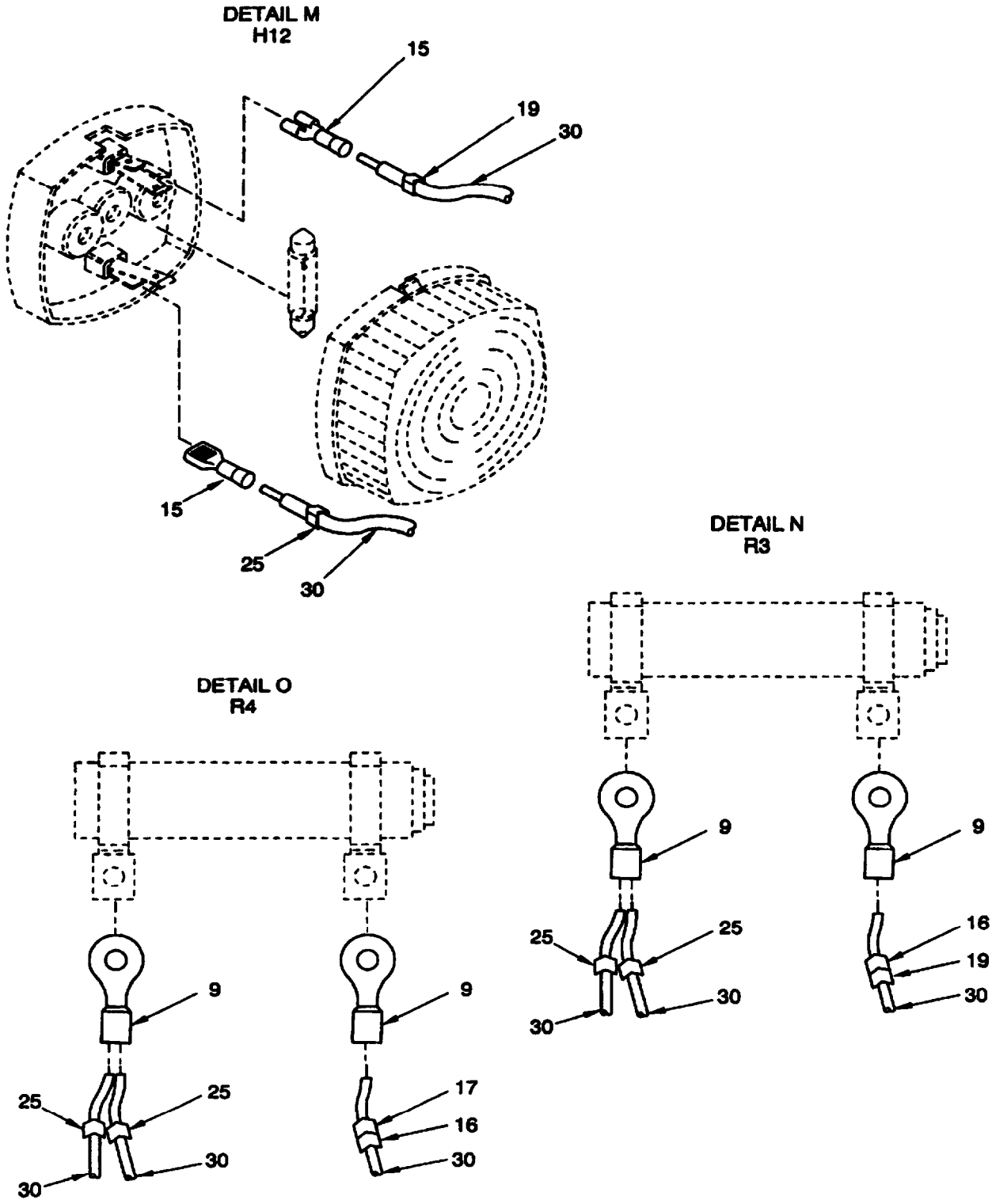


Figure F-28. Wiring, PDU Assembly
Sheet 11 of 46

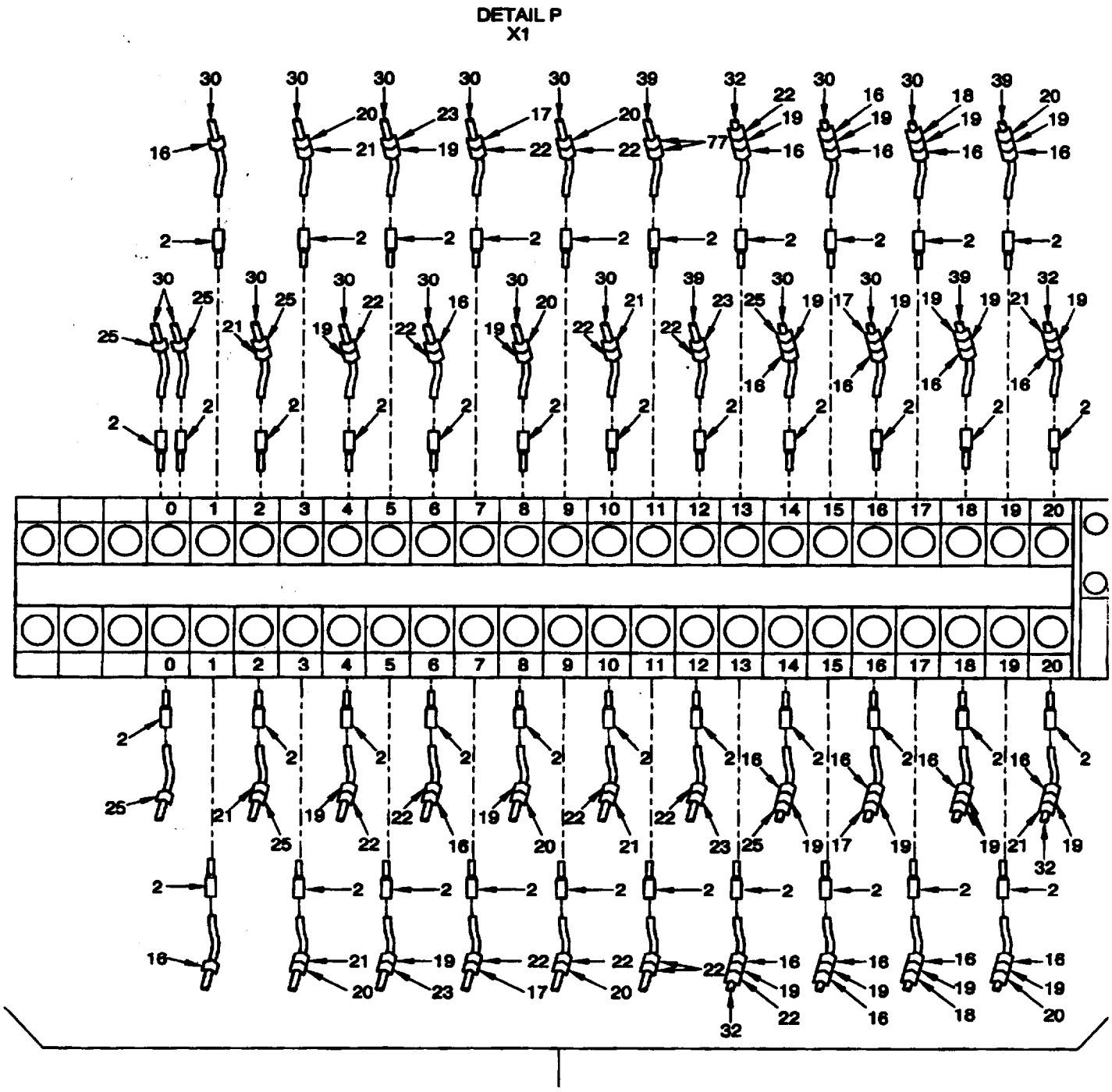


Figure F-16

Figure F-28. Wiring, PDU Assembly
Sheet 12 of 46

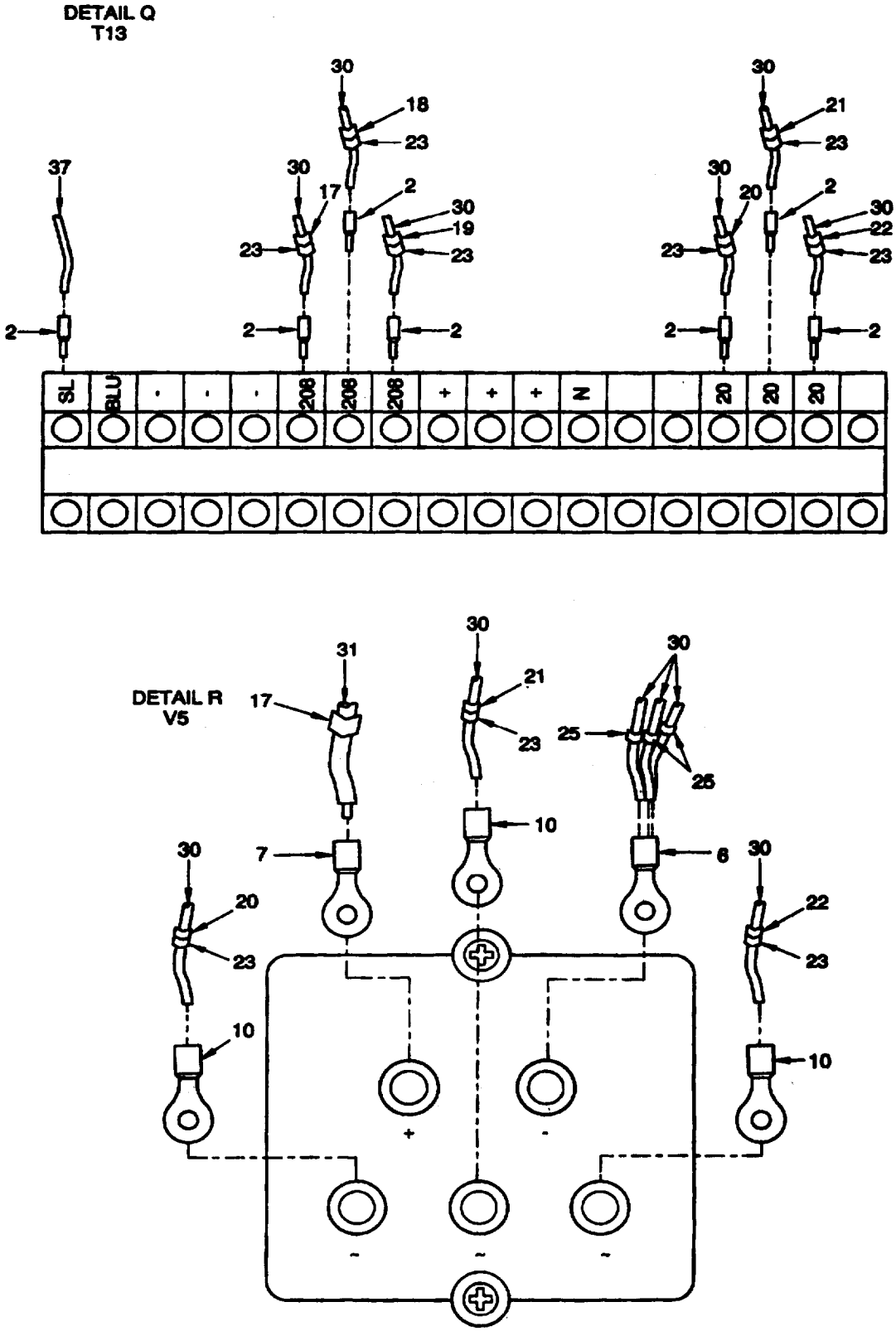


Figure F-28. Wiring, PDU Assembly
Sheet 13 of 46

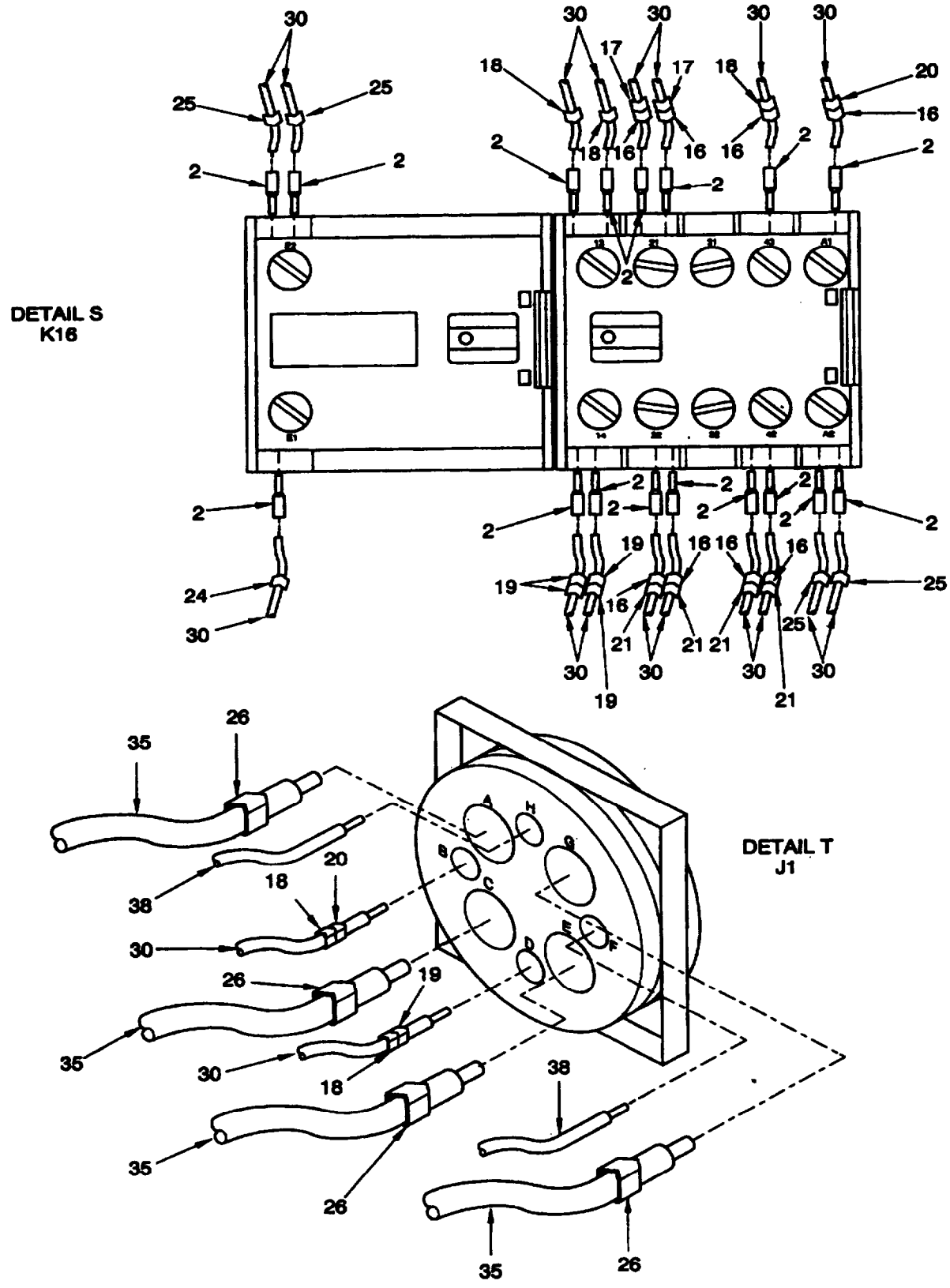


Figure F-28. Warning, PDU Assembly
Sheet 14 of 46

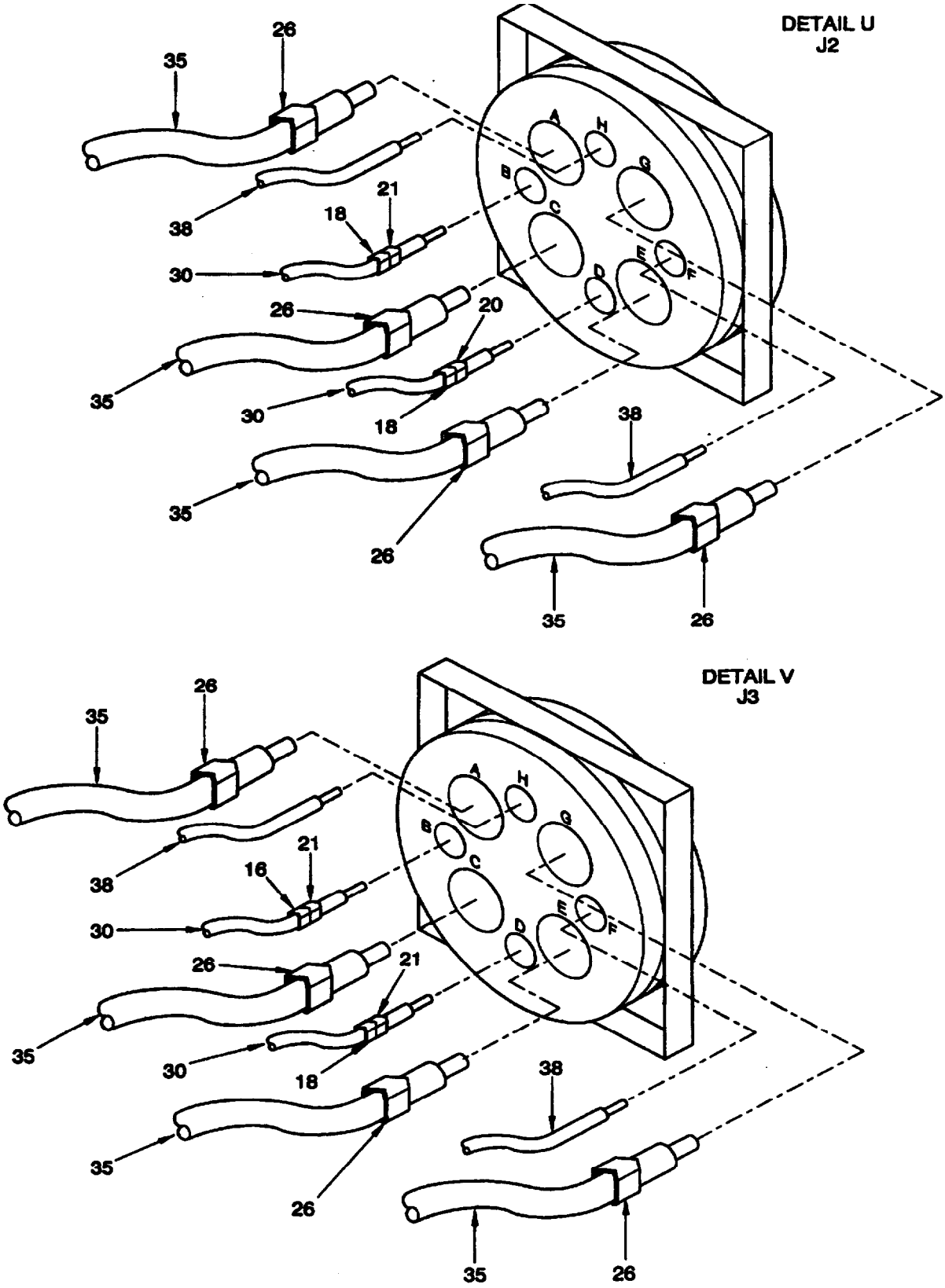


Figure F-28. Wiring, PDU Assembly
Sheet 15 of 46

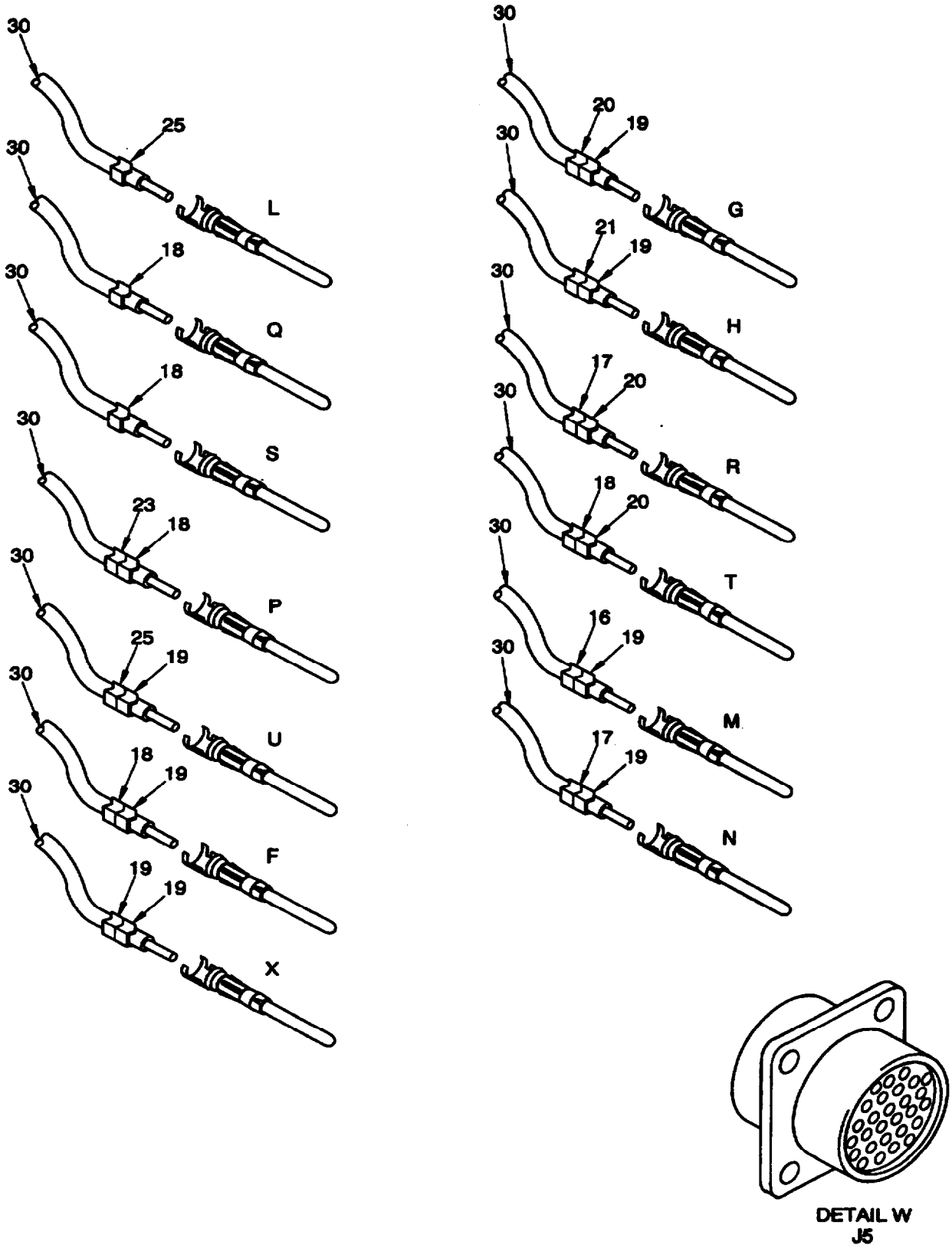


Figure F-28. Wiring, PDU Assembly
Sheet 16 of 46

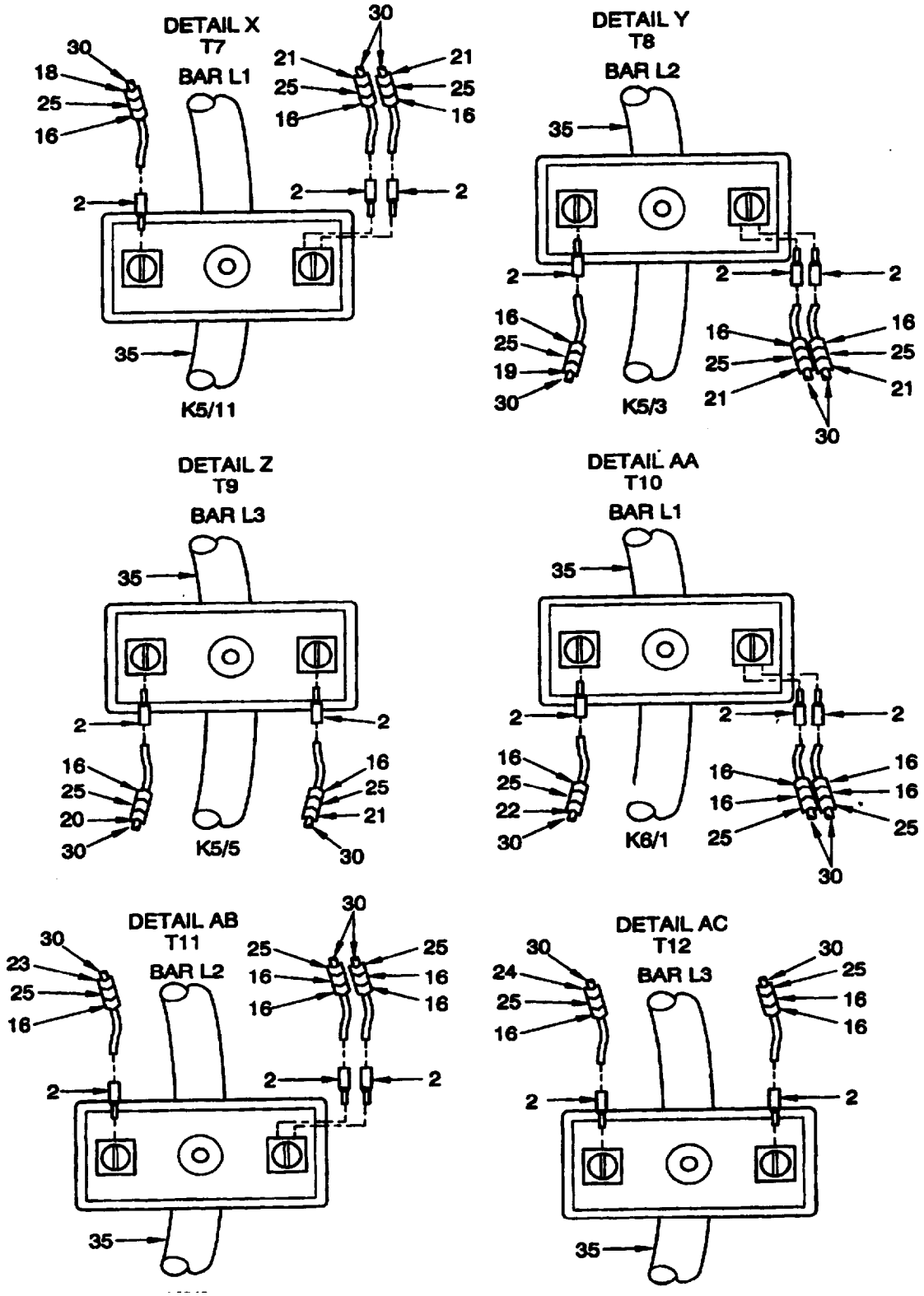


Figure F-28. Wiring, PDU Assembly
Sheet 17 of 46

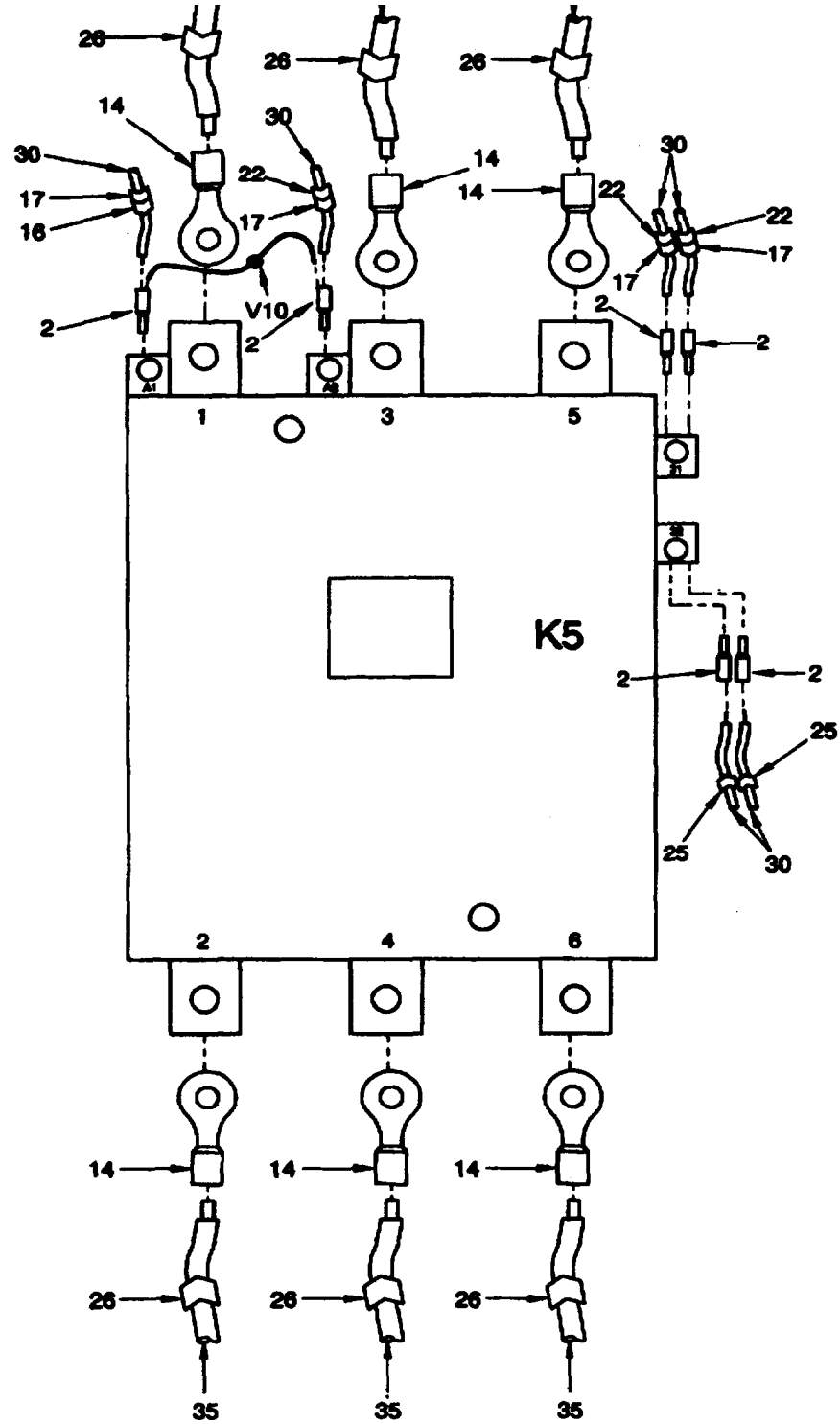


Figure F-28. Wiring, PDU Assembly
Sheet 18 of 46

434

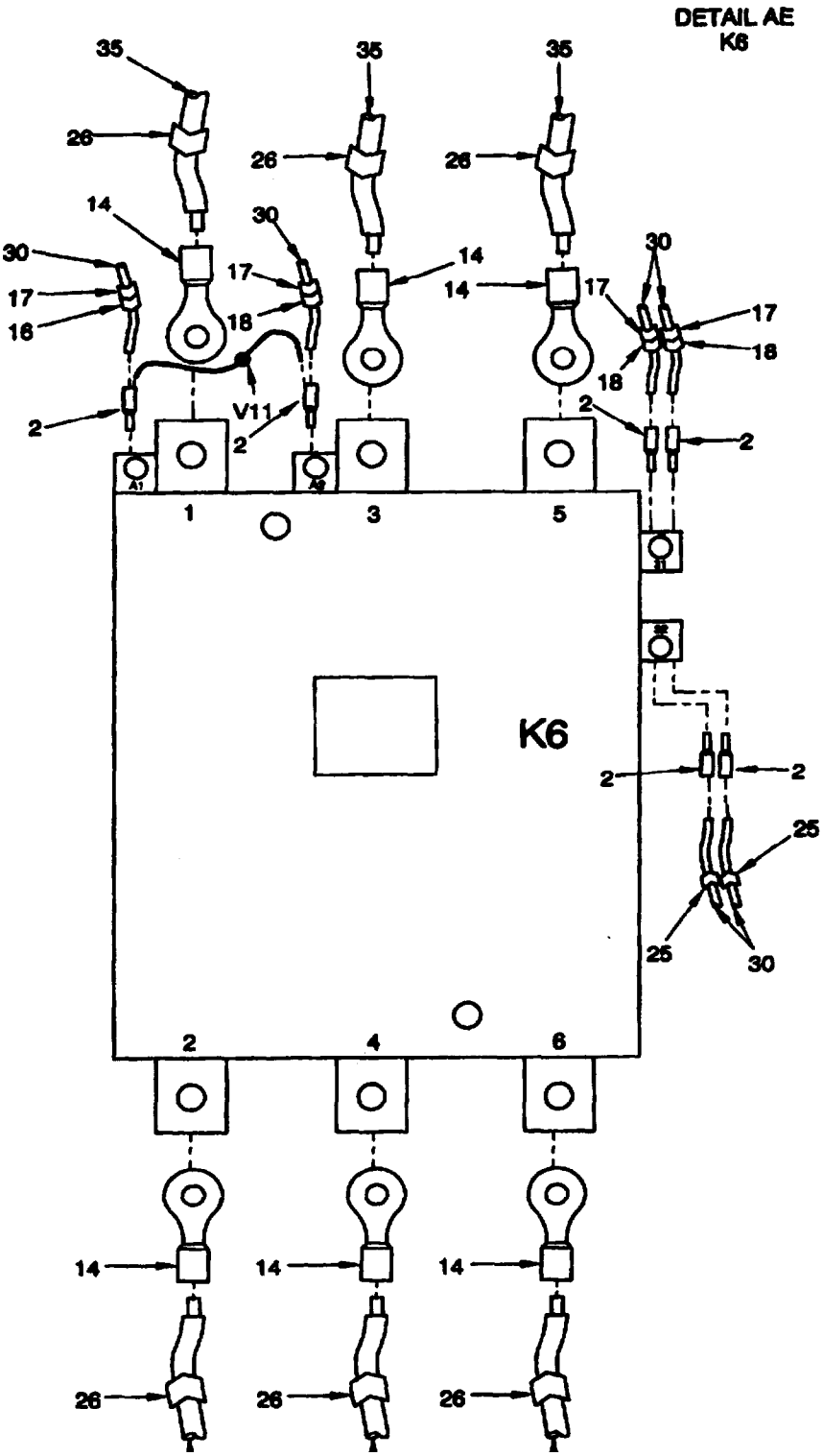


Figure F-28. Wiring, PDU Assembly
Sheet 19 of 46

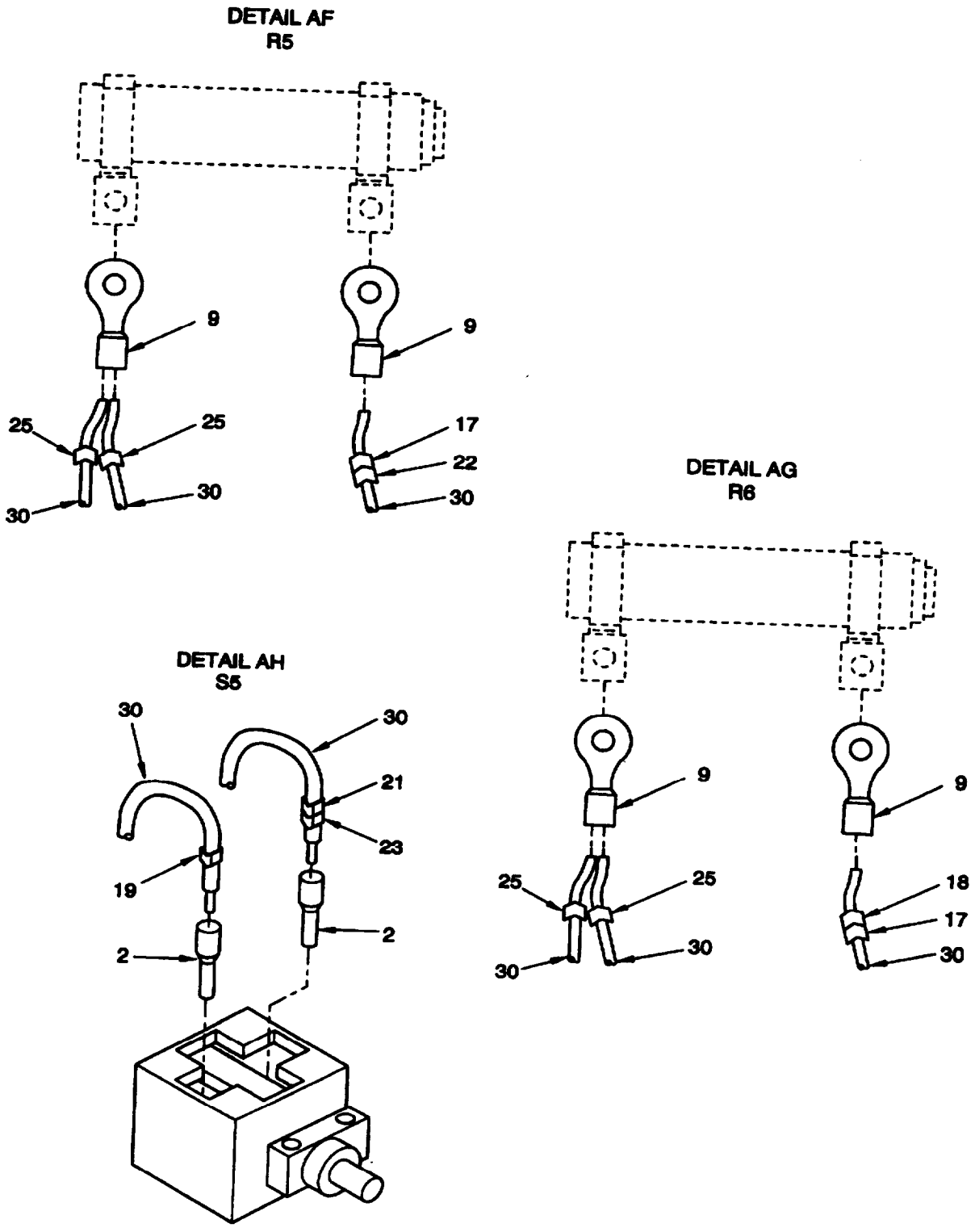


Figure F-28. Wiring, PDU Assembly
Sheet 20 of 46

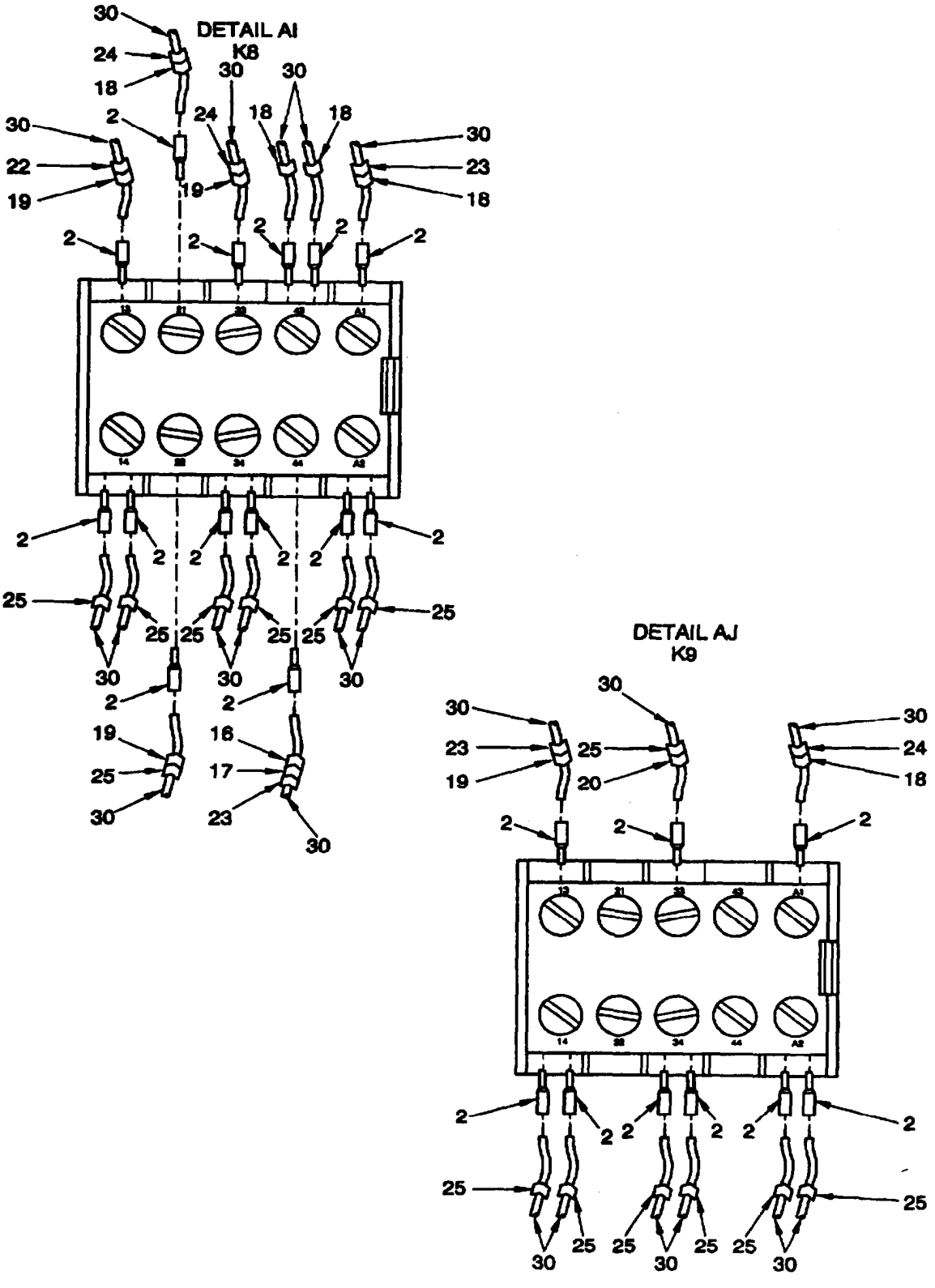


Figure F-28. Wiring, PDU Assembly
Sheet 21 of 46

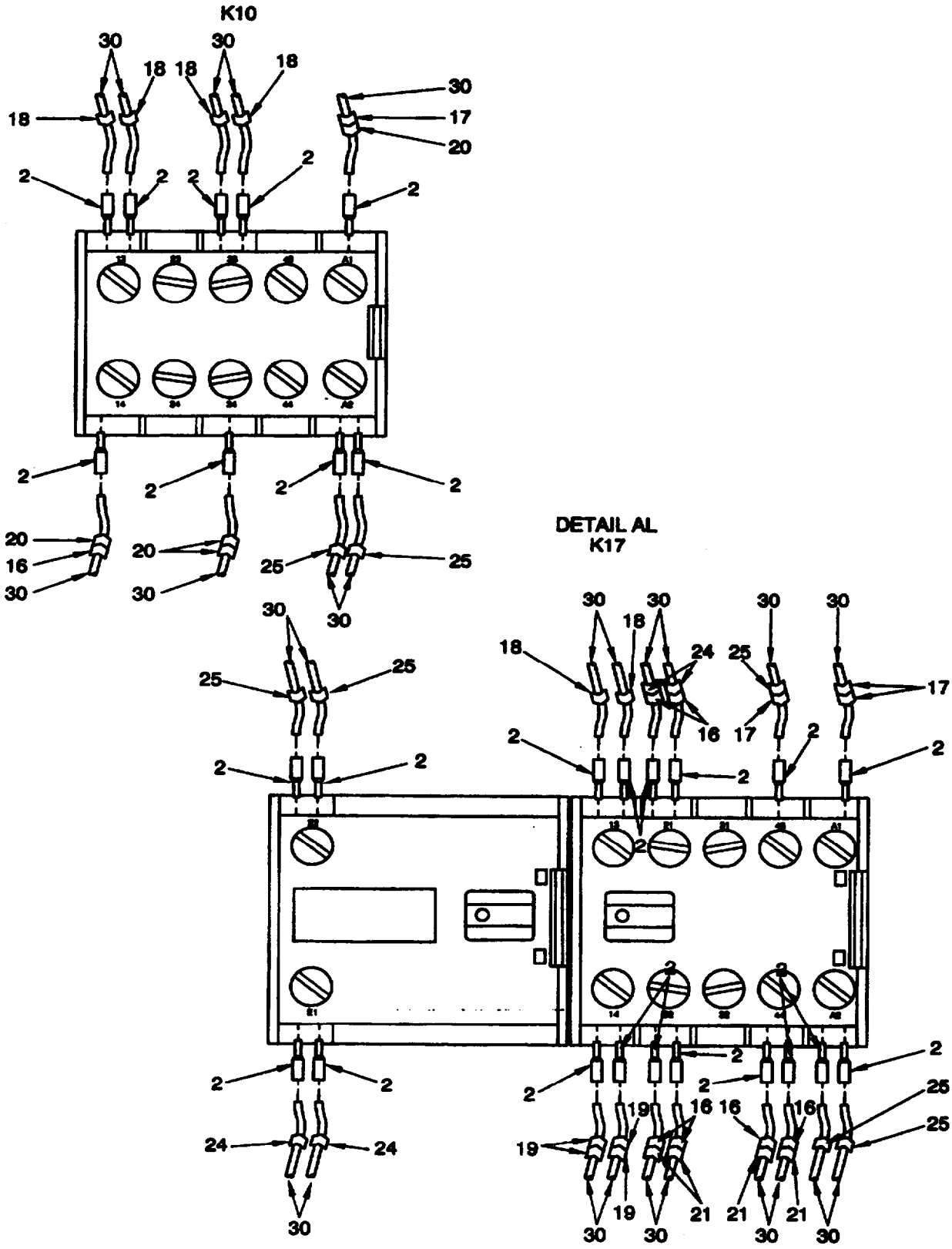


Figure F-28. Wiring, PDU Assembly
Sheet 22 of 46

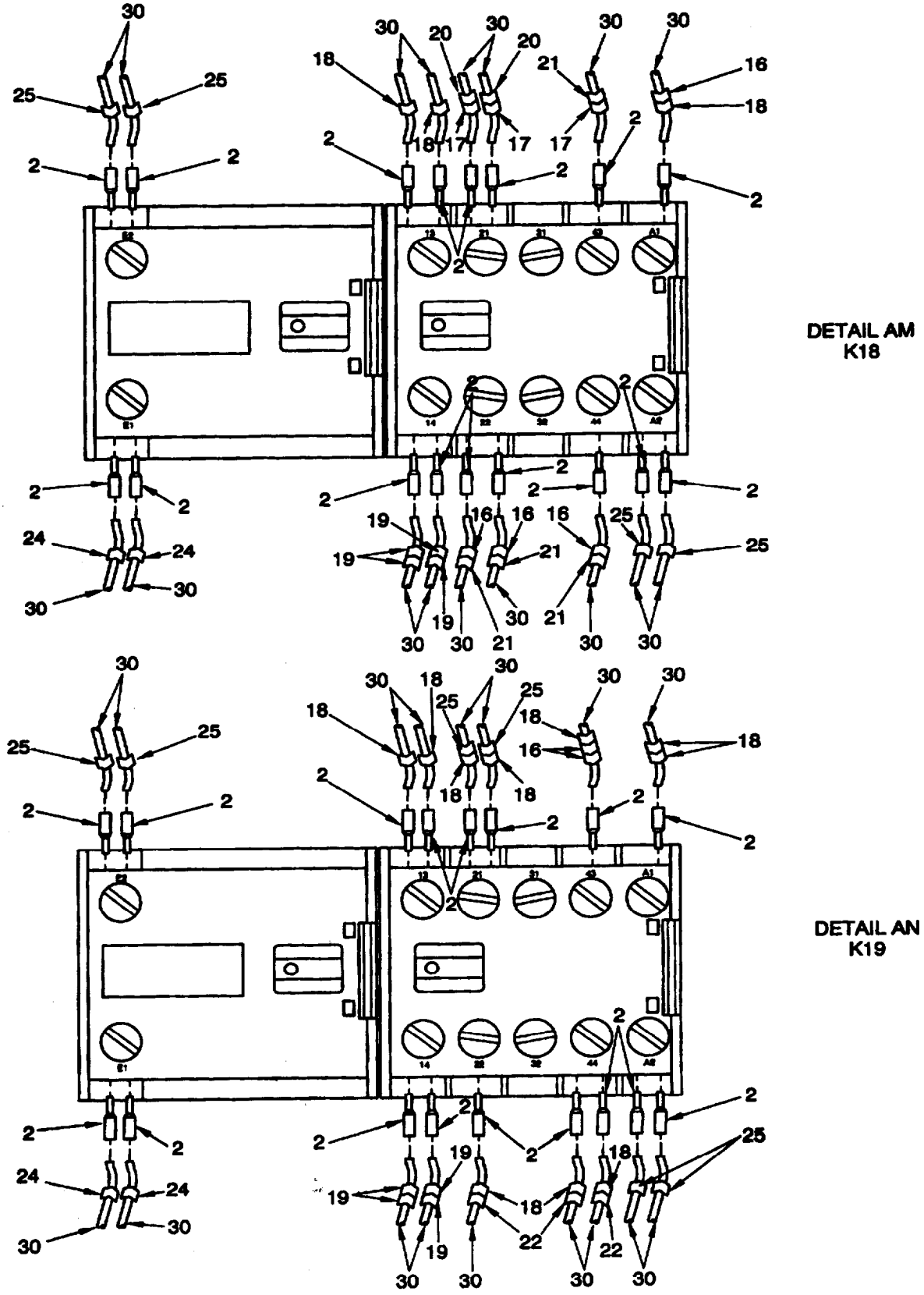


Figure F-28. Wiring, PDU Assembly
Sheet 23 of 46

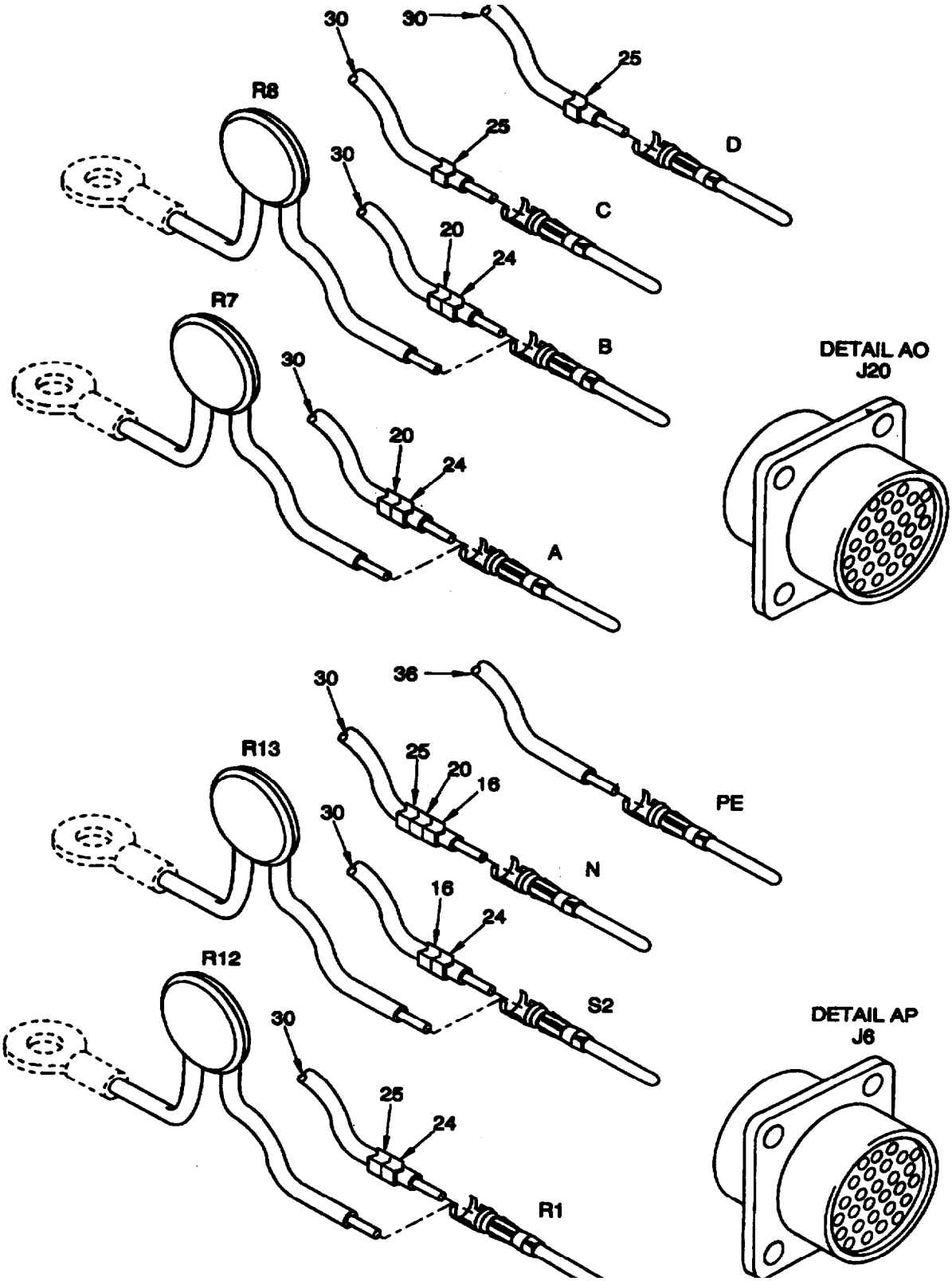


Figure F-28. Wiring, PDU Assembly

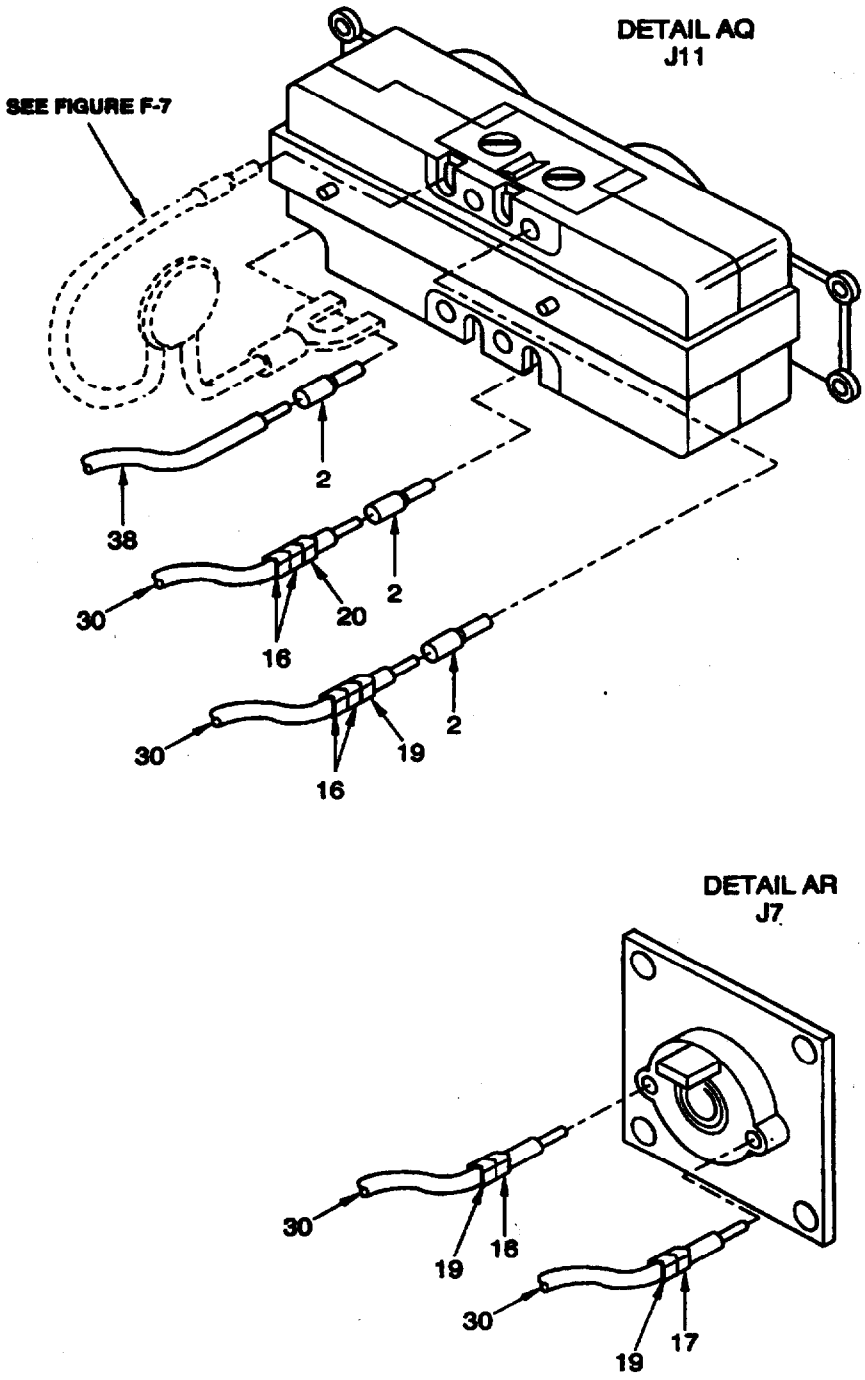


Figure F-28. Wiring, PDU Assembly
Sheet 25 of 46

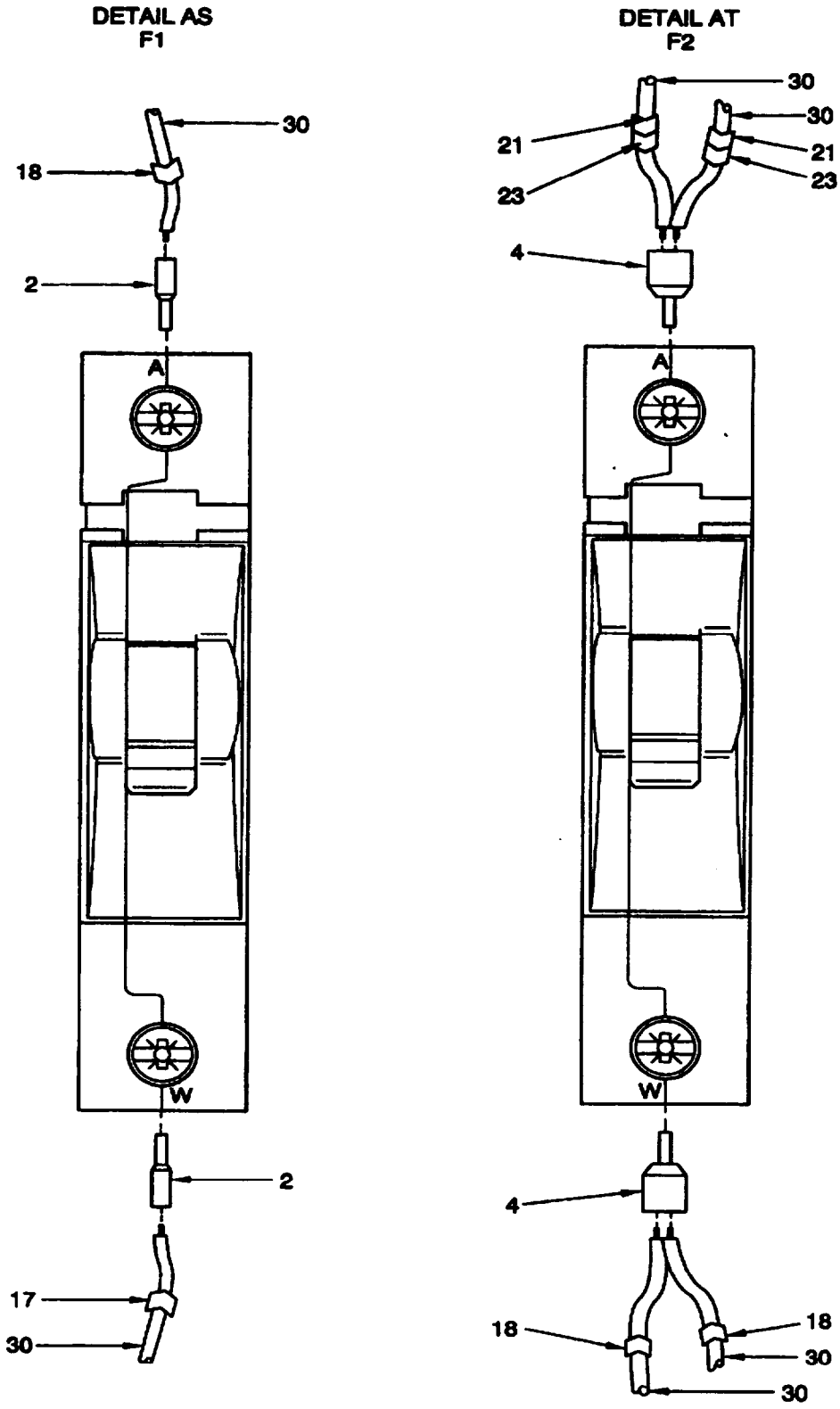


Figure F-28. Wiring, PDU Assembly
Sheet 26 of 46

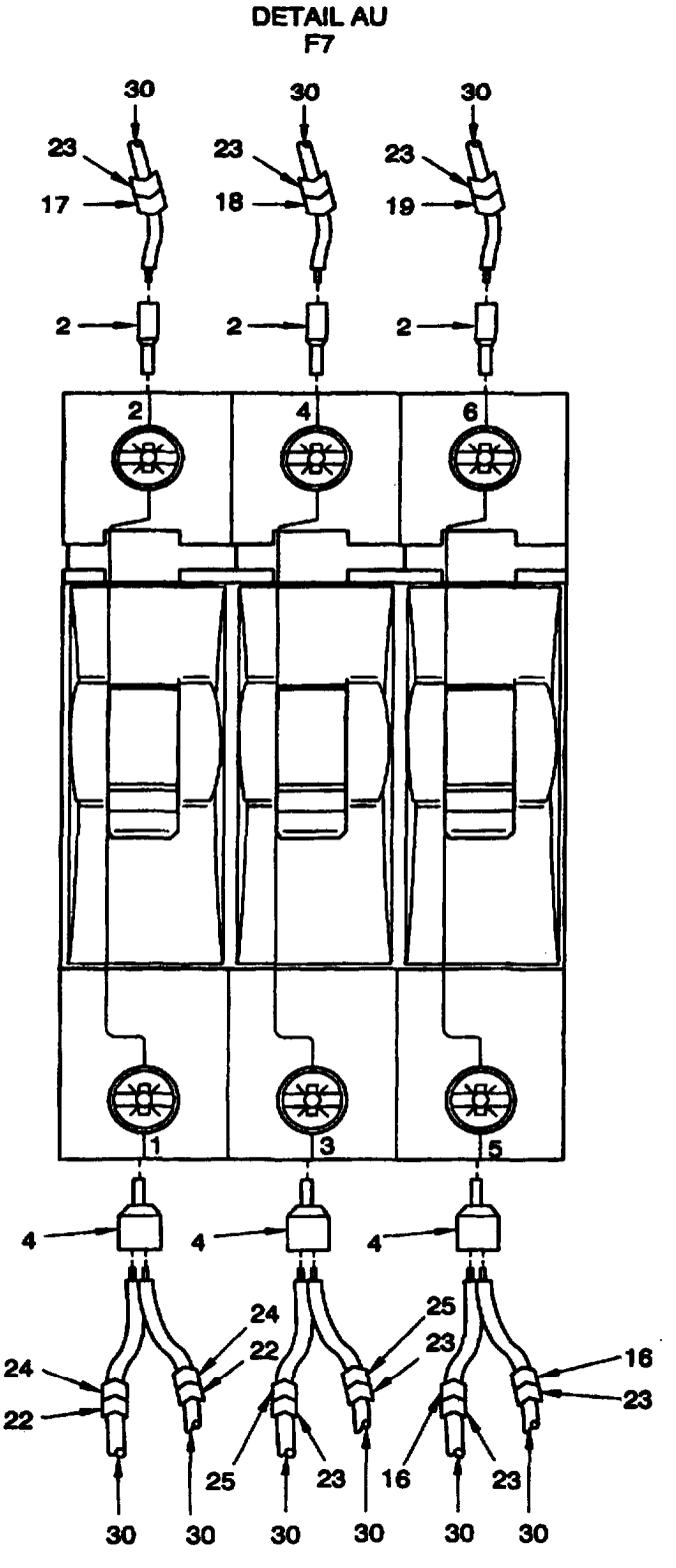


FIGURE F-28. Wiring, PDU Assembly
Sheet 27 of 46

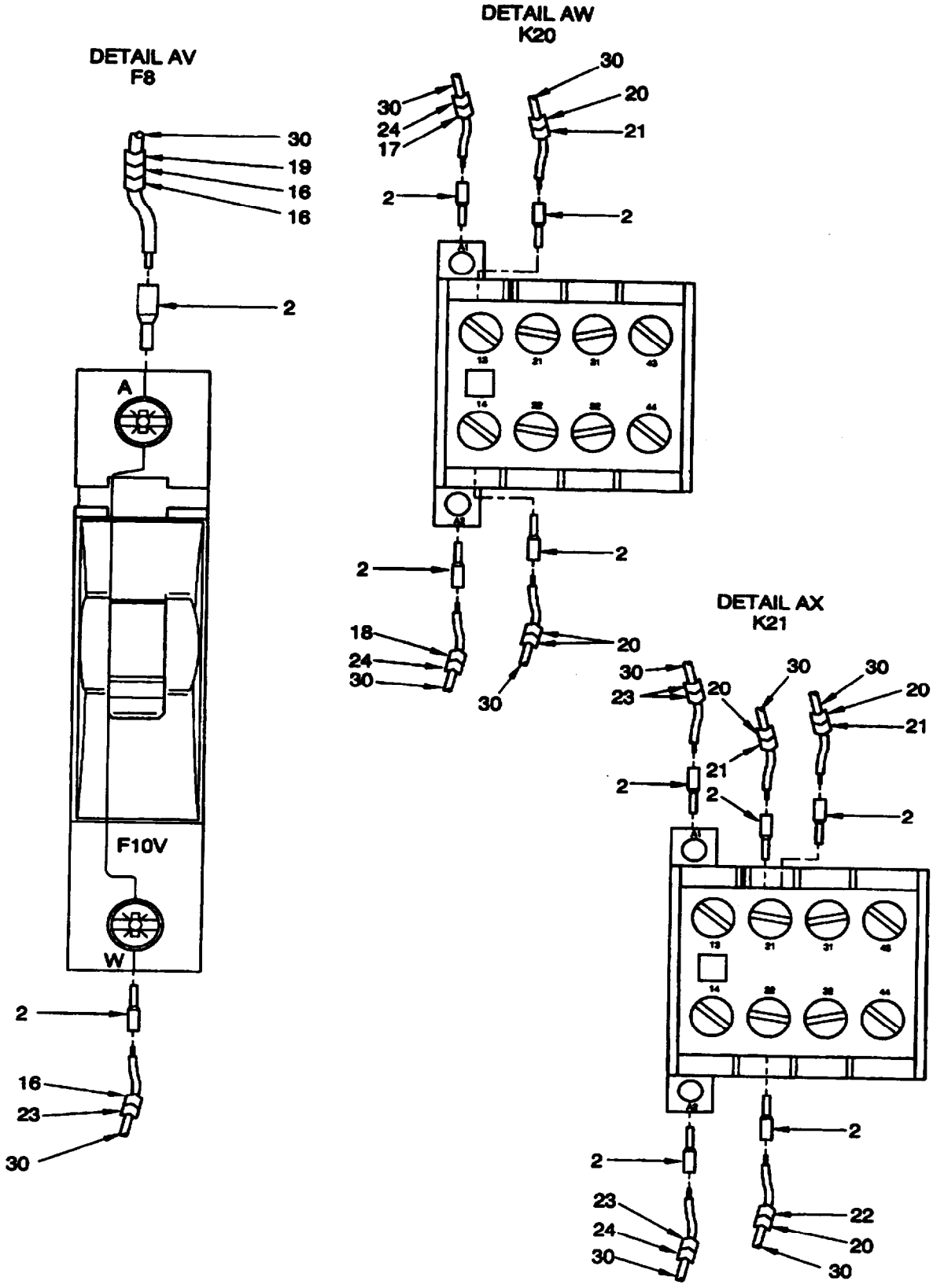


Figure F-28. Wiring, PDU Assembly
Sheet 28 of 46

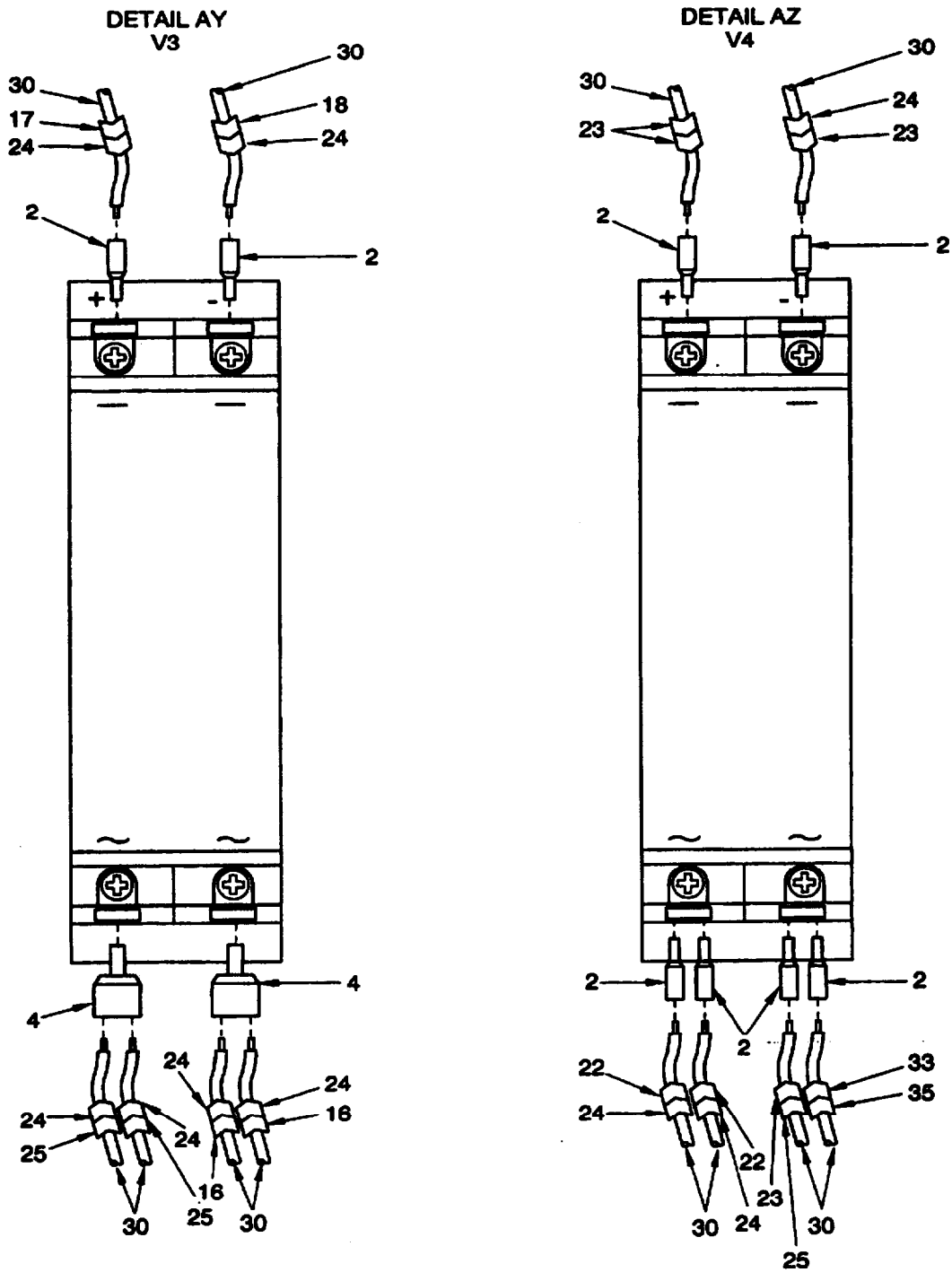


Figure F-28. Wiring, PDU Assembly
Sheet 29 o f48

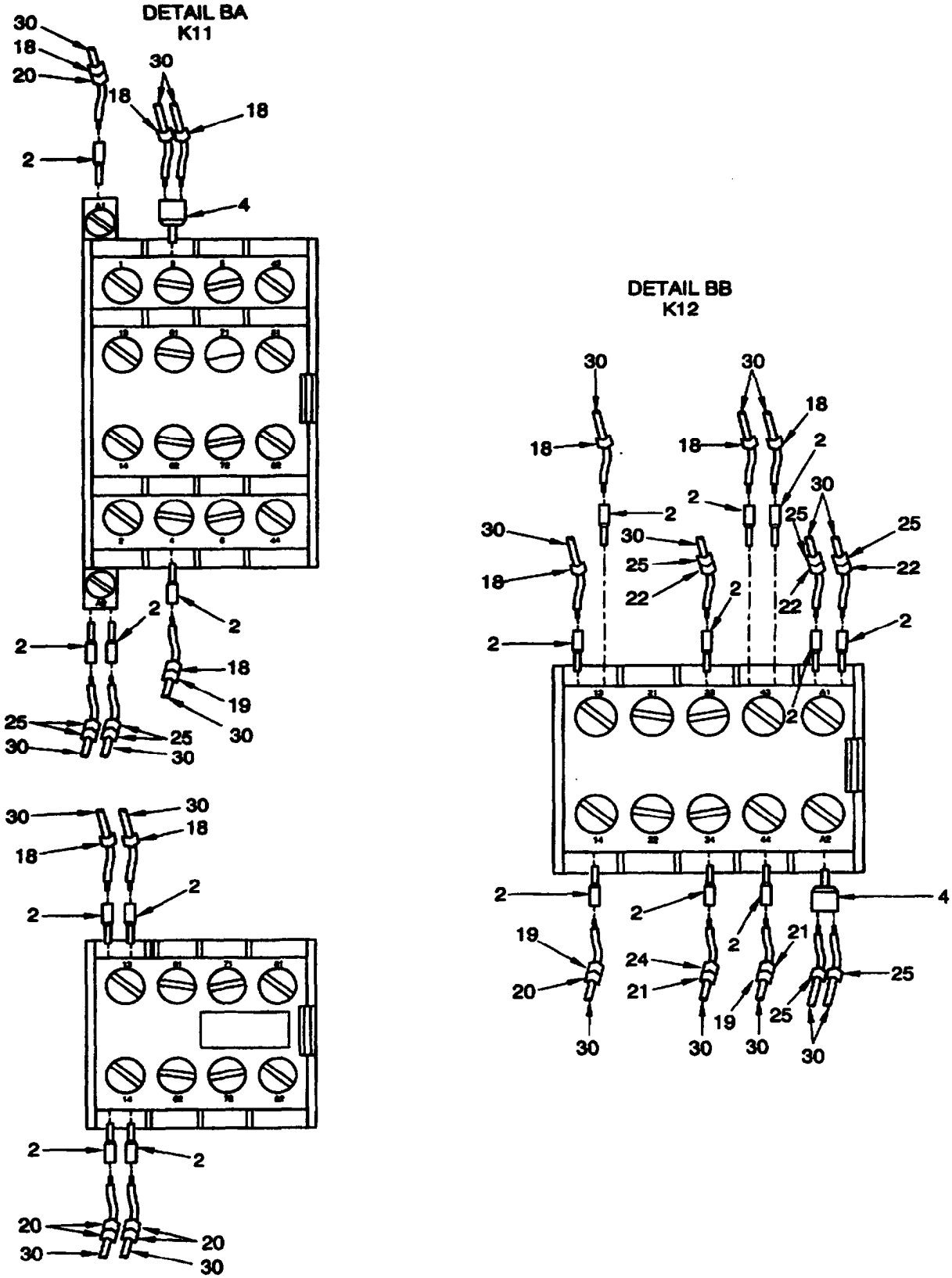


Figure F-28. Wiring, PDU Assembly
Sheet 30 of 46

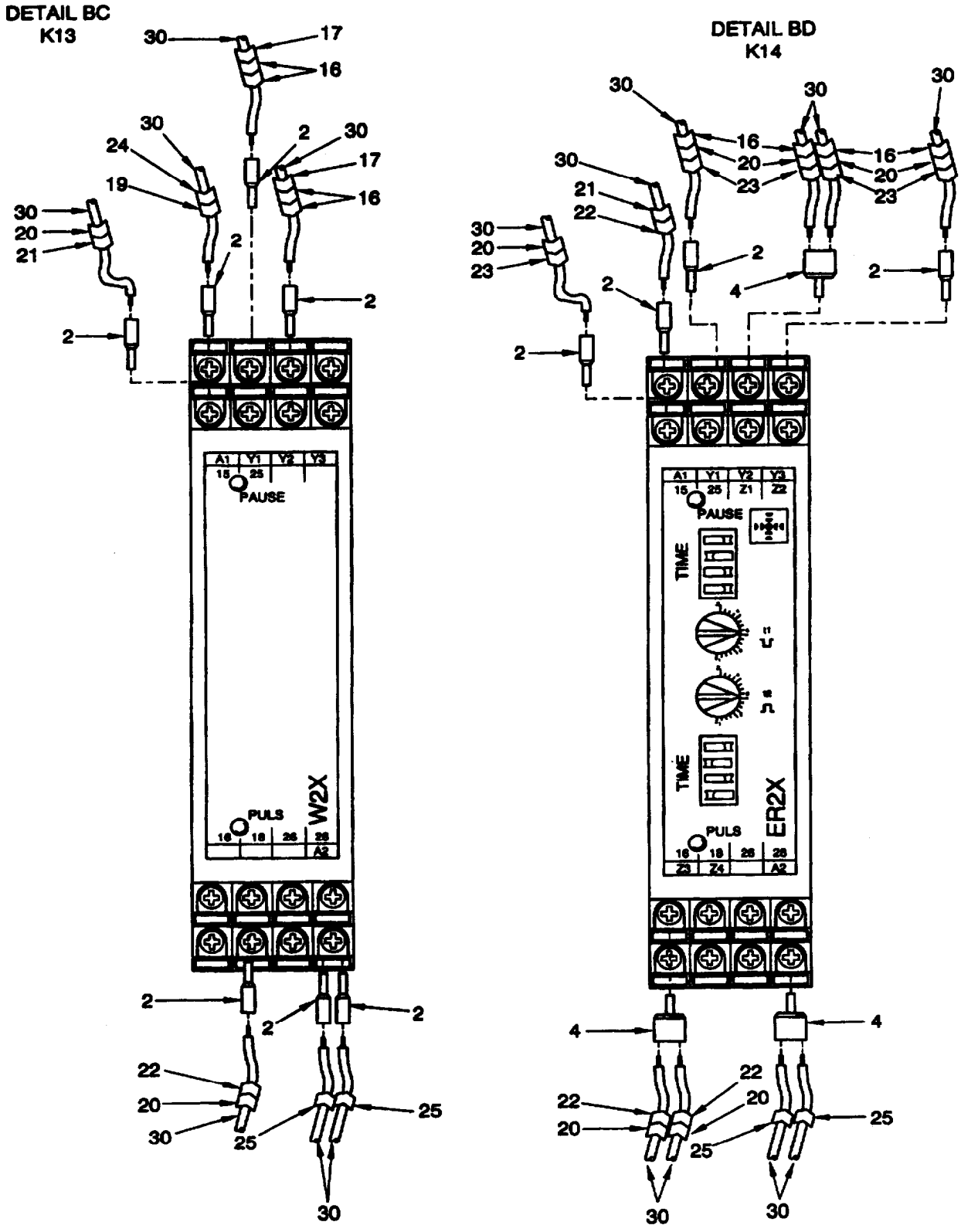


Figure F-28. Wiring,PDU Assembly
Sheet 31 of 46

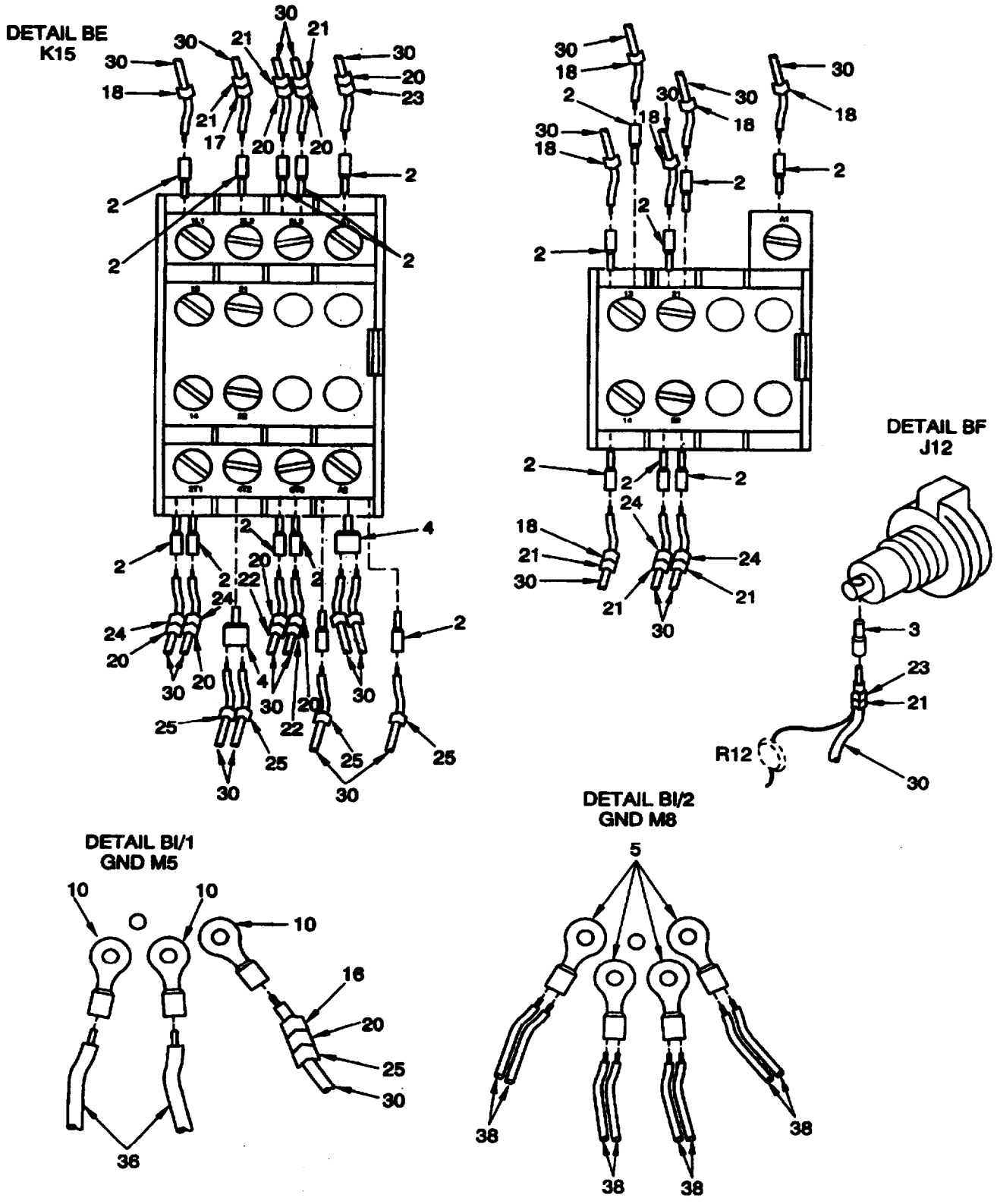


Figure F-28. Wiring, PDU Assembly
Sheet 32 of 46

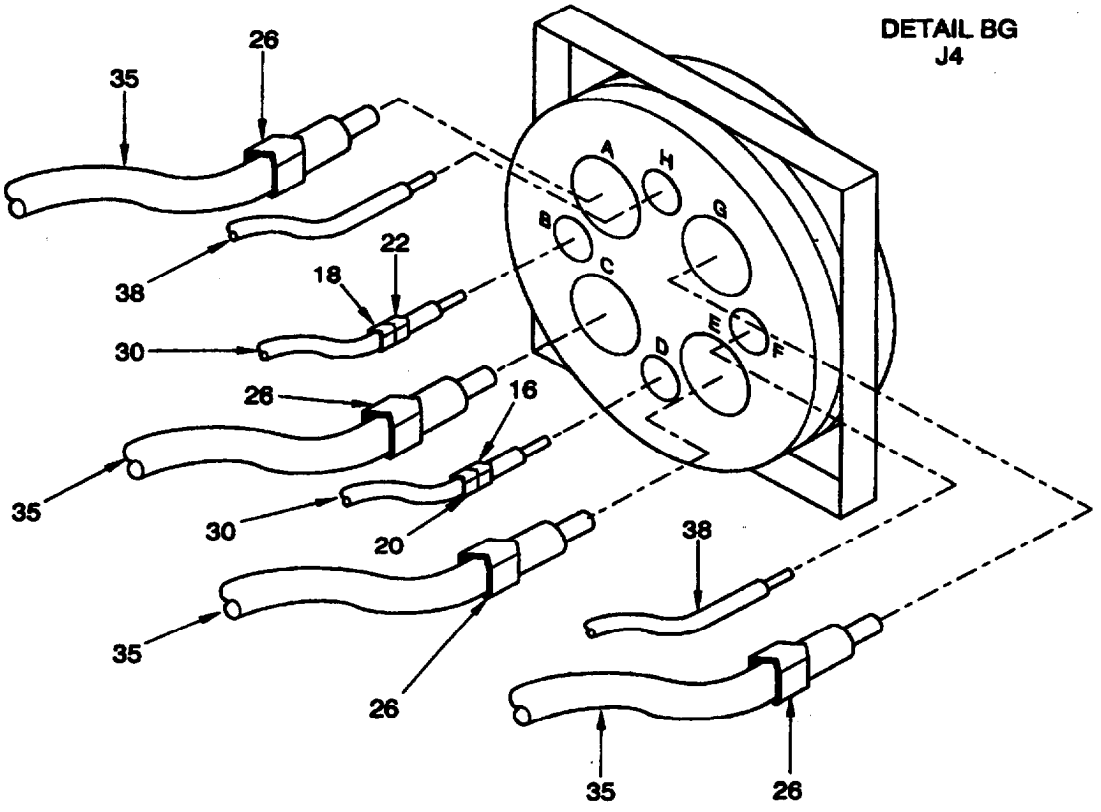
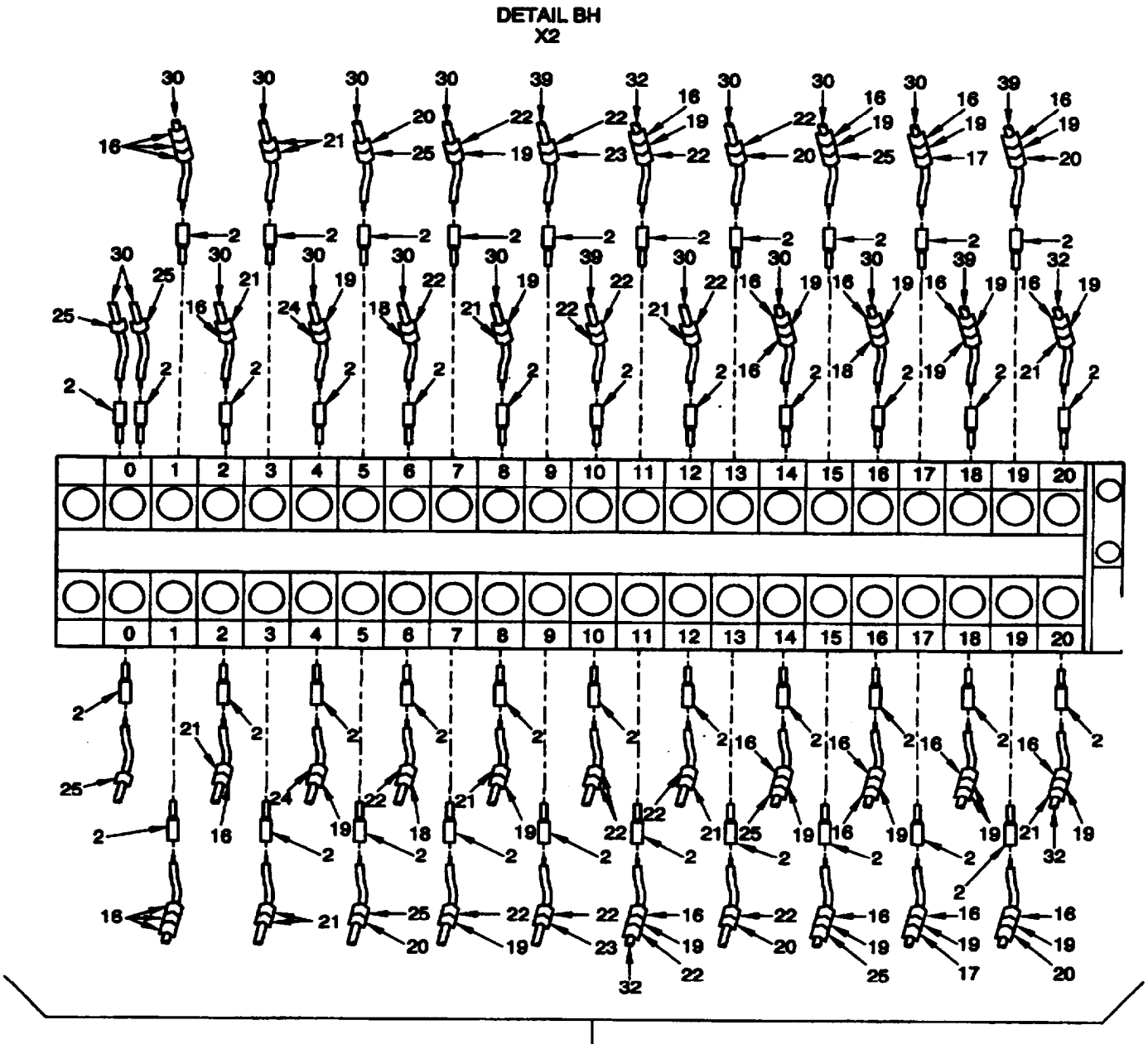


Figure F-28. Wiring, PDU Assembly
Sheet 33 of 46



From Control Cable Assembly
Figure F-17

Figure F-28. Wring, PDU Assembly
Sheet 34 of 46

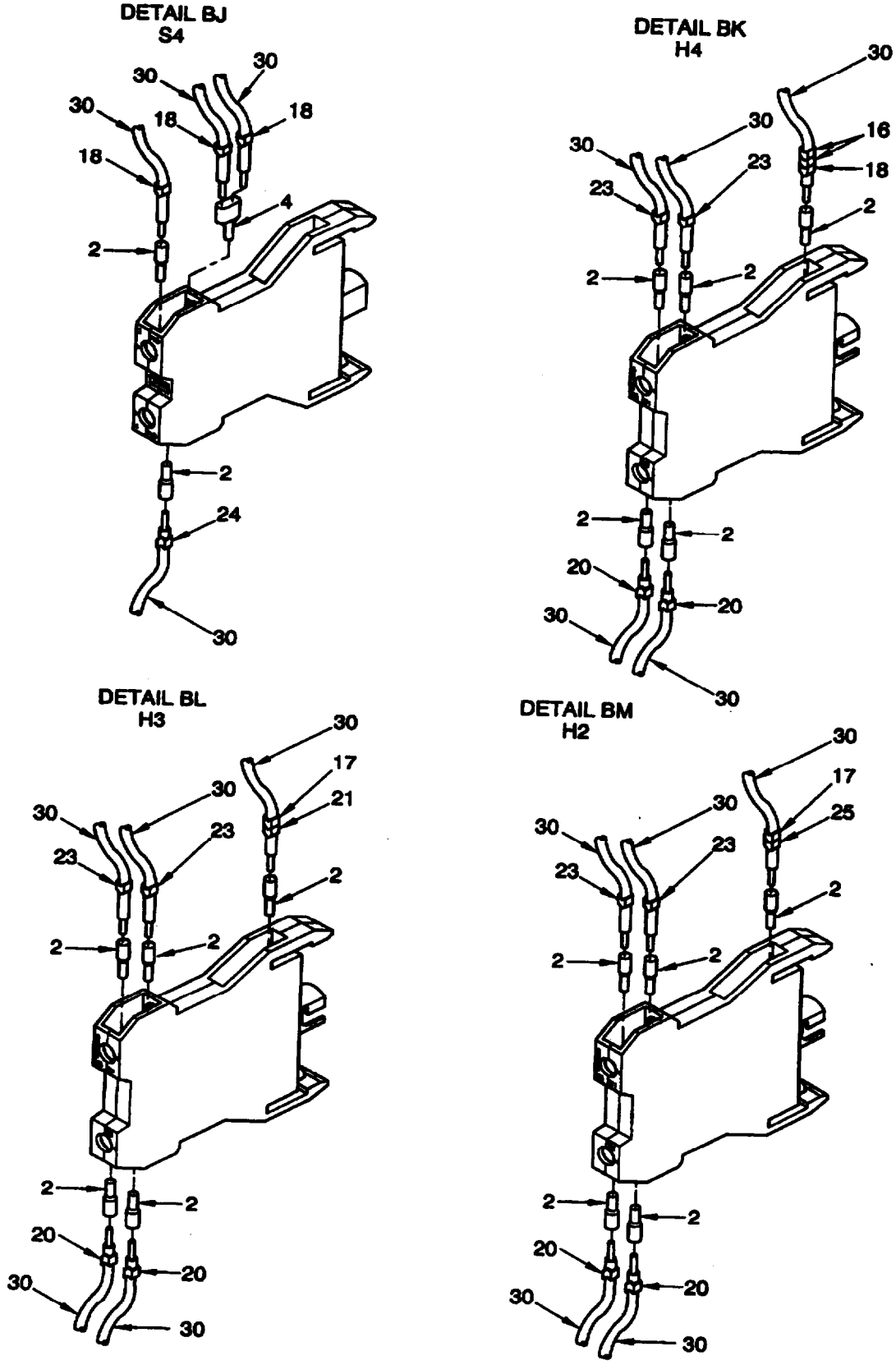


Figure F-28. Wiring. PDU Assembly
Sheet 35 of 46

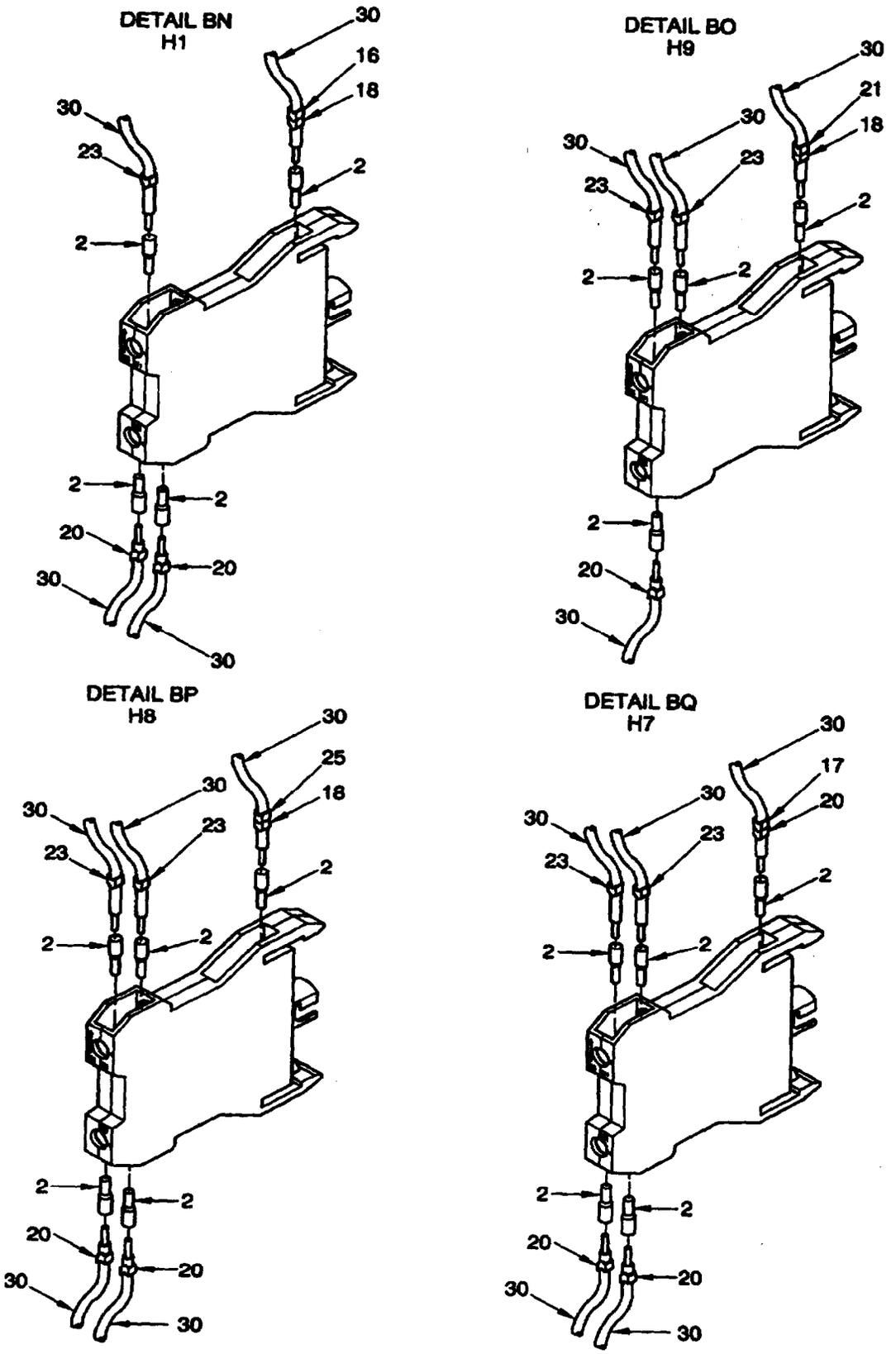


Figure F-28. Wiring, PDU Assembly
Sheet 36 of 46

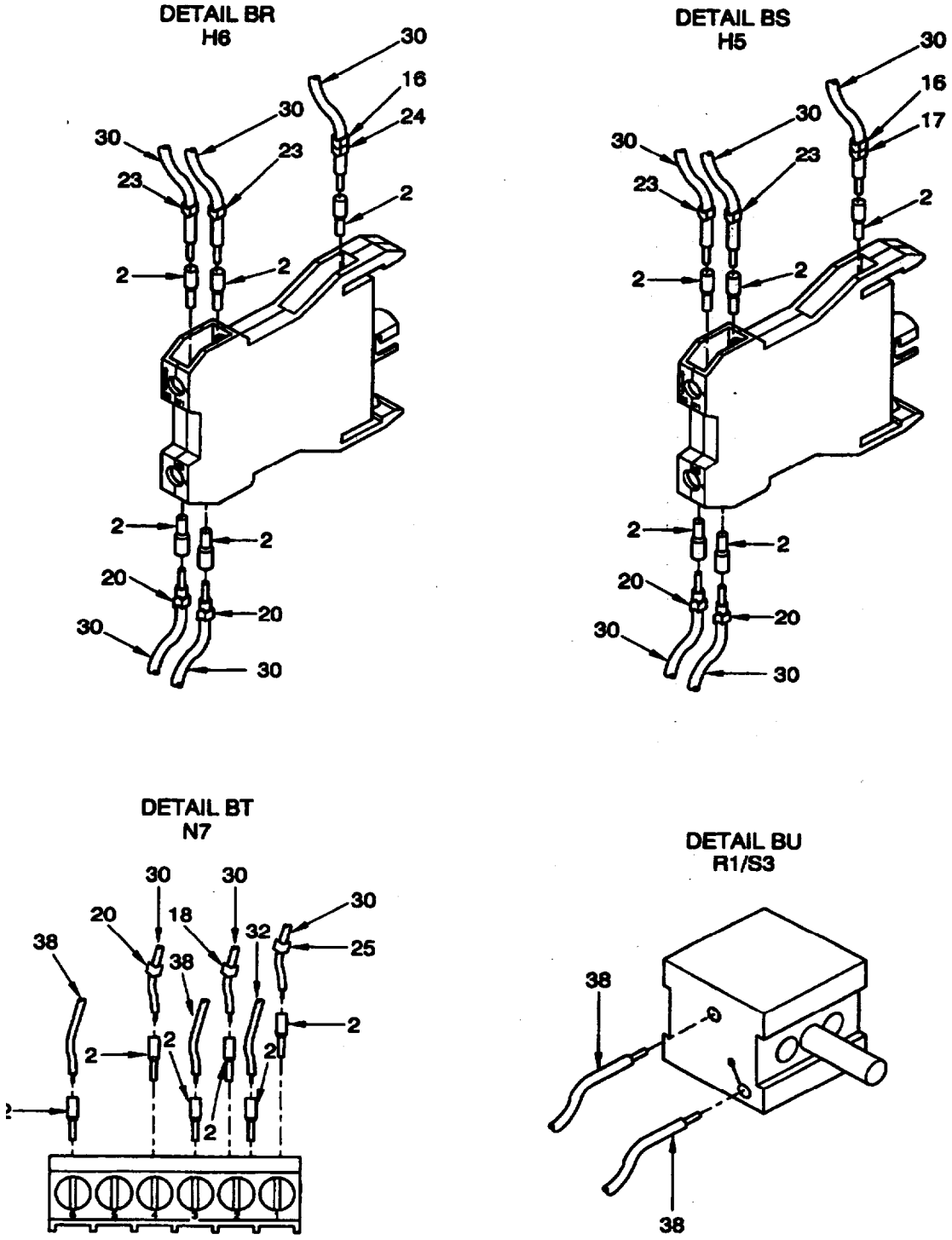


Figure F-28. Wiring, PDU, Assembly
Sheet 37 of 46

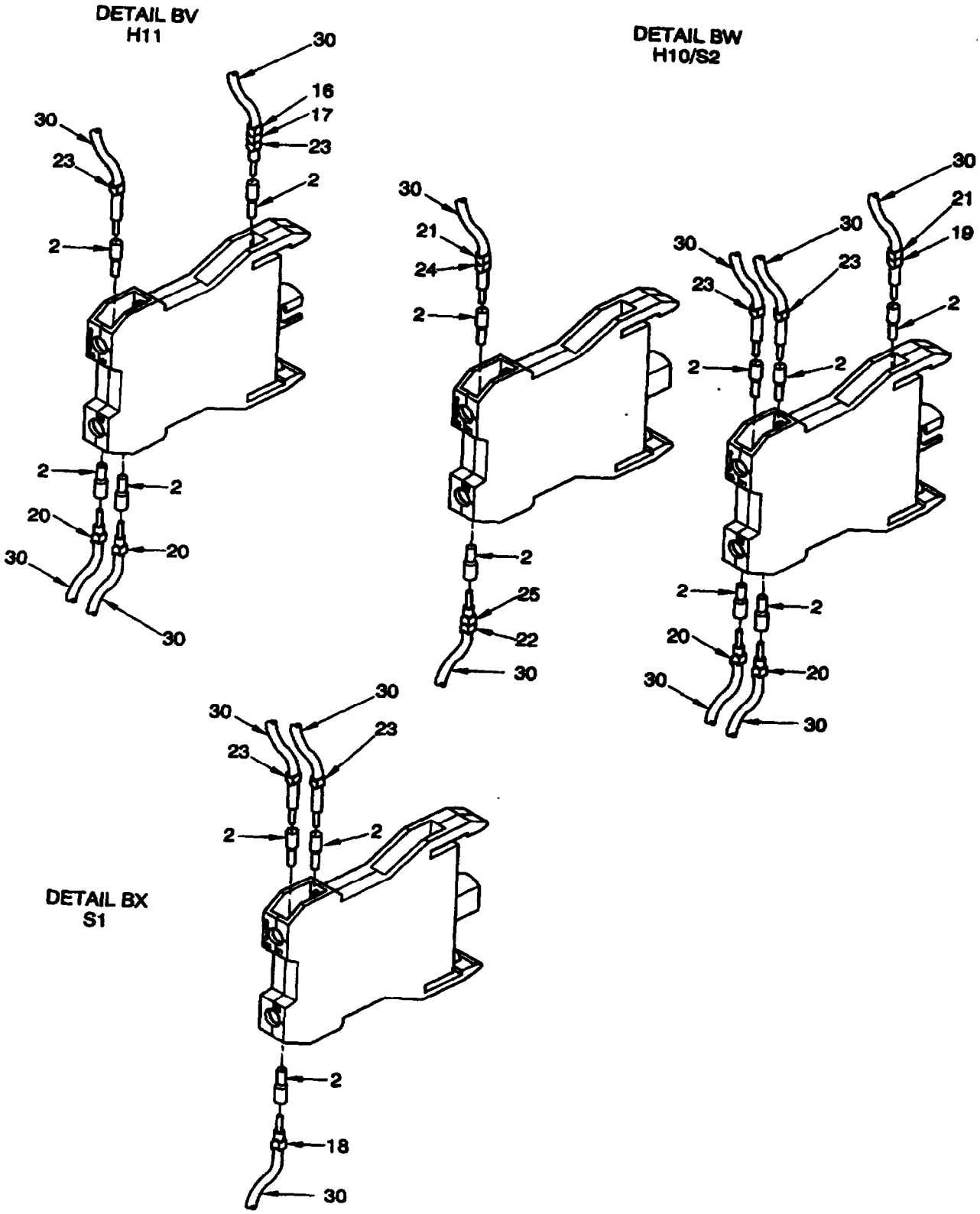


Figure F-28. Wiring, PDU Assembly
Sheet 38 of 46

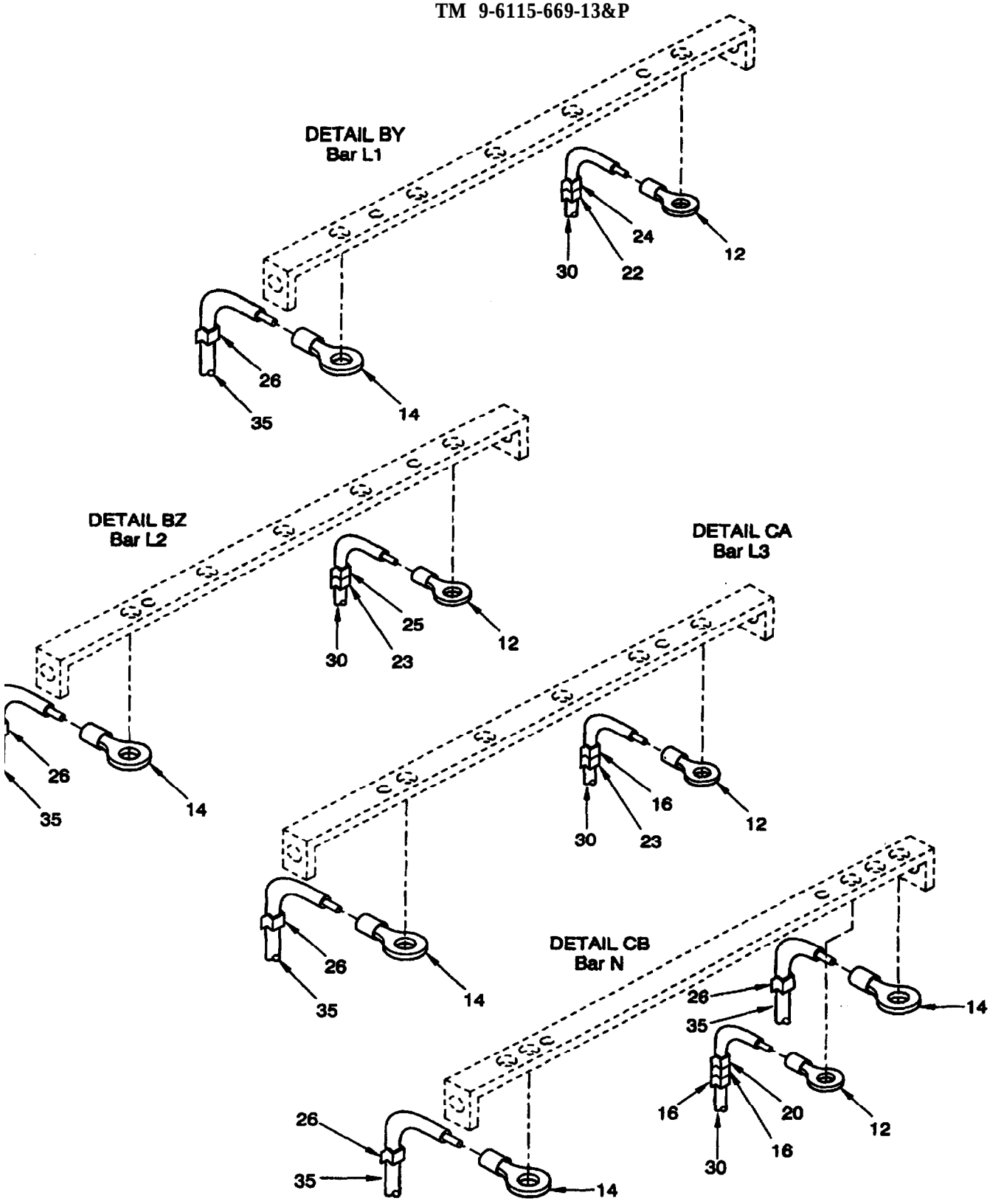


Figure F-28. Wiring, PDU Assembly
Sheet 39 of 46

Fig. F-28.-Wire List Table

WIRE REF NO.	FIQ F-28. ITEM NO. WIRE MARKING	FROM	FIG. F-28. ITEM NO.	TO	FIG. F-28. ITEM NO.	FIG. F-28. ITEM NO.	WIRE COLOR	WIRE LENGTH	UOC
0	25	X2/0	2	K11/A2	2	30	WHT	7.80	F
0	25	K11/A2	2	K10/A2	2	30	WHT	8.58	
0	25	K10/A2	2	K9/A2	2	30	WHT	8.58	FL
0	25	K9/A2	2	K9/34	2	30	WHT	7.80	FLN
0	25	K9/34	2	K9/14	2	30	WHT	7.80	FLN
0	25	K9/14	2	K9/A2	2	30	WHT	7.80	FLN
0	25	K8/A2	2	K8/34	2	30	WHT	7.80	FLN
0	25	K8/34	2	K8/14	2	30	WHT	7.80	FLN
0	25	K9/l4	2	K19/A2	2	30	WHT	32.75	FLN
0	25	K19/A2	2	K18/A2	2	30	WHT	10.92	FLN
0	25	K18/A2	2	K17/A2	2	30	WHT	10.92	FLN
0	25	K17/A2	2	K16/A2	2	30	WHT	10.92	FLN
0	25	K16/A2	2	K19/E2	2	30	WHT	39.00	FLN
0	25	K19/E2	2	K18/E2	2	30	WHT	10.14	FIN
0	25	K19/E2	2	K17/E2	2	30	WHT	10.14	FLN
0	25	K17/E2	2	K16/E2	2	30	WHT	10.14	FLN
0	25	X 2 / 0	2	K12/A2	4	30	WHT	7.02	FIN
0	25	K12/A2	4	K13/A2	2	30	WHT	8.19	FLN
0	25	K13/A2	2	K14/A2	4	30	WHT	8.19	FLN
0	25	K14/A2	4	K15/4	4	30	WHT	8.97	FLN
0	25	K15/4	4	K15/A2	2	30	WHT	8.97	FLN
0	25	Kl5/A2	4	J5/L	SOLDER	30	WHT	50.70	FL
0	25	K15/A2	4	J20/D	SOLDER	30	WHT	50.70	F
0	25	X1/0	2	V5/-	6	30	WHT	17.55	FL
0	25	V5/-	6	K16/E2	2	30	WHT	7.80	FLN
0	25	V5/-	8	H12/-	15	30	WHT	31.20	FLN
0	25	X1/0	2	N6/0V	4	30	WHT	14.04	FLN
0	25	N6/0V	4	K3/32	4	30	WHT	19.50	FLN
0	25	K3/32	4	R3/LO	8	30	WHT	13.65	FLN
0	25	R3/LO	9	R4/LO	9	30	WHT	6.24	FLN
0	25	R4/LO	9	R5/LO	9	30	WHT	6.24	FLN
0	25	R5/LO	8	R6/LO	9	30	WHT	624	FLN
0	25	R6/LO	9	K4/32	2	30	WHT	13.66	FIN
0	25	K4/32	2	K5/32	2	30	WHT	17.55	FLN
0	25	K5/32	2	K6/32	2	30	WHT	17.55	FLN
0	25	K6/32	2	J20/C	SOLDER	30	WHT	64.35	FLN
0	25	K15/A2	2	N7/1	2	30	WHT	54.60	FLN
1	16	X1/1	2	V1/-	10	30	WHT	7.80	FLN
2	17	F1/W	2	V2/+	6	30	WHT	44.85	FLN
2	17	V2/+	5	V1/+	6	31	WHT	10.92	FLN
2	17	V1/+	5	V5/+	7	31	WHT	25.35	FLN
3	18	F1/A	2	F2/W	4	30	WHT	19.50	FLN
3	18	F2/W	4	N6/AK(J4)	4	30	WHT	46.80	FLN
3	18	N6/AK(J4)	4	NW/AK(J3)	4	30	WHT	10.53	
3	18	N6/AK(J3)	4	N6/AK(J2)	4	30	WHT	10.53	FLN
3	18	N6/AK(J2)	4	N6/AK(J1)	4	30	WHT	10.53	FLN
3	18	N6/AK(J1)	4	N6/AK(SY)	4	30	WHT	9.75	FLN
3	18	N6/AK(SY)	4	N6/+	4	30	WHT	9.75	
3	18	N6/+	4	K16/13	2	30	WHT	29.25	
3	18	K16/13	2	K17/13	2	30	WHT	9.75	FLN

Figure F-28. Wiring, PDU Assembly
Sheet 40 of 46

Fig. F-28. - Wire, List Table

WIRE REF NO.	FIQ. F-28. ITEM No. WIRE MARKING	FROM	FIG. F-28. ITEM No.	TO	FIG. F-28. ITEM NO.	FIG. F-28. ITEM NO.	WIRE COLOR	WIRE LENQTH	UOG
3	18	Kl7/13	2	K18/13	2	30	WHT	9.75	FLN
3	18	K18/13	2	K19/13	2	30	WHT	9.75	FLN
3	18	K19/13	2	K8/43	2	30	WHT	33.15	FLN
3	18	K8/43	2	K10/13	2	30	WHT	9.75	FLN
3	18	Kl0/13	2	K10/33	2	30	WHT	8.19	FLN
3	18	K10/33	2	K11/13	2	30	WHT	10.92	FLN
3	18	K11/13	2	K11/3	4	30	WHT	11.70	FLN
3	18	K11/3	4	J5/Q	SOLDER	30	WHT	76.05	FLN
3	18	K11/3	4	J5/S	SOLDER	30	WHT	76.05	FLN
3	18	K11/3	4	K12/13	2	30	WHT	9.75	FLN
3	18	K12/13	2	K12/43	2	30	WHT	9.75	FLN
3	18	K12/43	2	K15/13	2	30	WHT	11.70	FLN
3	18	K15/13	2	K15/21	2	30	WHT	11.70	FLN
3	18	K15/21	2	K15/A1	2	30	WHT	11.70	FLN
3	18	S4/3	2	S1/4	2	30	WHT	25.35	FLN
3	18	N7/2	2	S4/3	4	30	WHT	15.60	FLN
3	18	S4/3	4	K15/1	2	30	WHT	50.70	FLN
4	19	S5/22	2	H12/+	15	30	WHT	13.26	FLN
5	20	N7/4	2	H4/X2	2	30	WHT	15.60	FLN
5	20	H4/X2	2	H3/X2	2	30	WHT	3.90	FLN
5	20	H3/X2	2	H2/X2	2	30	WHT	3.90	FLN
5	20	H2/X2	2	H1/X2	2	30	WHT	3.90	FLN
5	20	H1/X2	2	H5/X2	2	30	WHT	5.07	FLN
5	20	H5/X2	2	H6/X2t	2	30	WHT	3.90	FLN
5	20	H6/X2	2	H10/X2	2	30	WHT	5.07	FLN
5	20	H10/X2	2	H11/X2	2	30	WHT	3.90	FLN
5	20	H11/X2	2	H7/X2	2	30	WHT	5.07	FLN
5	20	H7/X2	2	H8/X2	2	30	WHT	3.90	FLN
5	20	H8/X2	2	H9/X2	2	30	WHT	3.90	FLN
8	23	S1/3	2	H10/X1	2	30	WHT	3.90	FLN
8	23	H10/X1	2	H11/X1	2	30	WHT	3.90	FLN
8	23	S1/3	2	H5/X1	2	30	WHT	5.85	FLN
8	23	H5/X1	2	H6/X1	2	30	WHT	3.90	FLN
8	23	H6/X1	2	H7/X1	2	30	WHT	3.90	FLN
8	23	H7/X1	2	H6/X1	2	30	WHT	3.90	FLN
8	23	H8/X1	2	H9/X1	2	30	WHT	3.90	FLN
8	23	H9/X1	2	H4/X1	2	30	WHT	8.19	FLN
8	23	H4/X1	2	H3/X1	2	30	WHT	3.90	FLN
8	23	H3/X1	2	H2/X1	2	30	WHT	3.90	FLN
8	23	H2/X1	2	H1/X1	2	30	WHT	3.90	FLN
9	24	S4/4	2	K19/E1	2	30	WHT	66.30	FLN
9	24	K19/E1	2	K18/E1	2	30	WHT	10.53	FLN
9	24	Kl8/E1	2	K17/E1	2	30	WHT	10.53	FIN
9	24	K17/E1	2	K18/E1	2	30	WHT	10.53	FLN
12	16,17	H5/X5	2	K16/21	2	30	WHT	63.85	FLN
12	16,17	K16/21	2	K3/A1	2	30	WHT	63.18	FLN
13	16,18	H1/X5	2	K16/43	2	30	WHT	85.80	FLN
14	16,19	R3/UP	9	K3/31	2	30	WHT	53.43	FLN
14	16,19	K3/31	2	K3/A2	2	30	WHT	5.07	FLN
15	16,20	N6/AK(J1)	2	K16/A1	2	30	WHT	31.20	FLN

Figure F-28. Wiring, PDU Assembly

Fig. F-28. - Wire List Table

WIRE REF NO.	FIG. F-28. ITEM NO. WIRE MARKING	FROM	FIG. F-28. ITEM No.	TO	FIG. F-28. ITEM No.	FIG. F-28. ITEM No.	WIRE COLOR	WIRE LENGTH	UOC
15	16,21	K16/22	2	J3/B	SOLDER	30	WHT	39.00	F
16	16,21	K16/22	2	K16/44	2	30	WHT	7.80	
16	16,21	K16/44	2	K17/22	2	30	WHT	9.75	F
16	16,21	K17/22	2	K17/44	2	30	WHT	7.80	FLN
16	16,21	K17/44	2	K18/22	2	30	WHT	9.75	FLN
16	16,21	K18/22	2	K18/44	2	30	WHT	7.80	FLN
19	16,24	H6/X5	2	K17/21	2	30	WHT	52.65	FLN
19	16,24	K17/21	2	K4/A1	2	30	WHT	54.60	FLN
20	17,25	H2/X5	2	K17/43	2	30	WHT	78.00	FLN
21	17,16	R4/UP	9	K4/31	2	30	WHT	46.80	FLN
21	17,16	K4/31	2	K4/A2	2	30	WHT	5.07	FLN
22	17	N6/AK(J2)	2	K17/A1	2	30	WHT	34.32	FLN
25	17,20	H7/X5	2	K18/21	2	30	WHT	66.30	FLN
25	17,20	K18/21	2	K5/A1	2	30	WHT	45.24	FLN
26	17,21	H3/X5	2	K18/43	2	30	WHT	70.20	FLN
27	17,22	R5/UP	9	K5/31	2	30	WHT	42.90	FLN
27	17,22	K5/31	2	K5/A2	2	30	WHT	5.07	FLN
30	18,25	H8/X5	2	K19/21	2	30	WHT	62.40	FLN
30	18,25	K19/21	2	K6/A1	2	30	WHT	37.05	FLN
31	18,16	N6/AK(J3)	2	K18/A1	2	30	WHT	38.22	FLN
32	18,17	R6/UP	9	K6/31	2	30	WHT	37.05	FLN
32	18,17	K6/31	2	K6/A2	2	30	WHT	5.07	F
33	18	N6/AK(J4)	2	K19/A1	2	30	WHT	42.90	
34	18,19	K11/4	2	J1/D	SOLDER	30	WHT	70.20	FL
35	18,20	J1/B	SOLDER	J2/D	SOLDER	30	WHT	9.75	FLN
36	18,21	J2/B	SOLDER	J3/D	SOLDER	30	WHT	9.75	FLN
37	18,22	K19/22	2	K19/44	2	30	WHT	7.80	FLN
37	18,22	K19/44	2	J4/B	SOLDER	30	WHT	7.80	FLN
38	18,23	K8/A1	2	J5/P	SOLDER	30	WHT	79.95	FLN
39	18,24	K8/21	2	K9/A1	2	30	WHT	10.14	FLN
40	19,25	K8/22	2	J5/U	SOLDER	30	WHT	70.20	FLN
41	19,16	J5/M	SOLDER	J7	SOLDER	30	WHT	11.70	FLN
42	19,17	J5/N	SOLDER	J7	SOLDER	30	WHT	11.70	FLN
43	19,18	A1/1	2	A1/5	4	30	WHT	6.24	FLN
43	19,18	A1/5	4	J5/F	SOLDER	30	WHT	81.90	FLN
44	19	A1/3	2	A1/7	4	30	WHT	6.24	FLN
44	19	A1/7	4	K19/14	2	30	WHT	44.85	FLN
44	19	K19/14	2	K18/14	2	30	WHT	9.75	FLN
44	19	K18/14	2	K17/14	2	30	WHT	9.75	FLN
44	19	K17/14	2	K16/14	2	30	WHT	9.75	FLN
44	19	K16/14	2	J5/X	SOLDER	30	WHT	42.90	FLN
45	19,20	X1/8	2	J5/G	SOLDER	30	WHT	91.65	FLN
46	19,21	X2/8	2	J5/H	SOLDER	30	WHT	58.50	F
47	19,22	K8/13	2	X1/4	2	30	WHT	31.20	F
48	19,23	K9/13	2	X1/5	2	30	WHT	33.15	FLN
49	19,24	K8/33	2	X2/4	2	30	WHT	29.25	FLN
50	20,25	K9/33	2	X2/5	2	30	WHT	27.30	FLO
51	20,16	K10/14	2	J4/D	SOLDER	30	WHT	54.60	FI
52	20,17	K10/A1	2	J5/R	SOLDER	30	WHT	78.00	FL
53	20,18	K11/A1	2	J5/T	SOLDER	30	WHT	76.05	FLN

Figure F-28. Wiring, PDU Assembly
Sheet of 42 of 46

Fig. F-28. - Wire List Table

WIRE REF NO.	FIG. F-28. ITEM NO. WIRE MARKING	FROM	FIG. F-28. ITEM NO.	TO	FIG. F-28. ITEM NO.	FIG. F-28. ITEM NO.	WIRE COLOR	WIRE LENGTH	UOC
54	20,19	K12/14	2	N6/S+	2	30	WHT	42.90	FIN
55	20	K10/34	2	K11/14	2	30	WHT	8.36	FLN
55	20	K11/14	2	K20/14	2	30	WHT	28.47	FLN
56	20,21	K20/13	2	K21/21	2	30	WHT	11.70	FLN
56	20,21	K21/21	2	K15/5	2	30	WHT	21.45	FLN
56	20,21	K15/5	2	K13/15	2	30	WHT	10.92	FLN
57	20,22	K21/22	2	K15/6	2	30	WHT	21.46	FLN
57	20,22	K15/6	2	K14/16	4	30	WHT	9.75	FLN
57	20,22	K14/16	4	K13/18	2	30	WHT	7.80	FLN
58	20,23	K14/15	2	K15/A1	2	30	WHT	8.58	FLN
59	20,24	K15/2	2	J20/A	SOLDER	30	WHT	50.70	FLN
59	20,24	K15/2	2	J20/B	SOLDER	30	WHT	50.70	FLN
60	21,25	A1/l0	2	X1/J2	2	30	WHT	14.82	FLN
61	21,16	A1/l2	2	X2/2	2	30	WHT	23.01	FLN
62	21,17	K15/3	2	A1/9	2	30	WHT	28.08	FLN
63	21,18	H9/X5	2	K15/14	2	30	WHT	56.55	FLN
64	21,19	H10/X5	2	K12/44	2	30	WHT	70.20	FLN
65	21,20	A1/14	2	X1/3	2	30	WHT	14.43	FLN
66	21	A1/l6	2	X2/3	2	30	WHT	23.40	FLN
67	21,22	K14/A1	2	A1/l3	2	30	WHT	25.35	FLN
68	21,23	F2/A	4	S5/21	2	30	WHT	56.55	FLN
68	21,23	F2/A	4	J12/+	3	30	WHT	74.10	FLN
69	21,24	S2/3	2	K15/22	2	30	WHT	64.35	FLN
69	21,24	K15/22	2	12/34	2	30	WHT	12.87	FLN
70	22,25	S2/4	2	K12/A1	2	30	WHT	64.35	FLN
70	22,25	K12/A1	2	K12/l33	2	30	WHT	8.97	FLN
71	22,16	A1/2	2	X1/6	2	30	WHT	12.48	FLN
72	22,17	A1/4	2	X1/7	2	30	WHT	12.48	FLN
73	22,18	A1/6	2	X2/6	2	30	WHT	24.57	FLN
74	22,18	A1/8	2	X2/7	2	30	WHT	24.57	FLN
75	22,20	X1/9	2	X2/13	2	30	WHT	33.93	FLN
76	22,21	X1/10	2	X2/12	2	30	WHT	33.54	FLN
77	22	X1/11	2	X2/10	2	39	WHT	32.76	FLN
78	22,23	X1/12	2	X2/9	2	39	BRN	32.76	FLN
79	22,24	BARL1	12	F7/1	4	30	WHT	23.40	FLN
79	22,24	F7/1	4	V4/-	2	30	WHT	18.33	FLN
79	22,24	V4/-	2	N6/R	2	30	WHT	38.22	FLN
79	26	BAR L1	14	K3/1	14	35	WHT	15.99	FLN
79	26	BAR L1	14	K4/1	14	35	WHT	15.99	FLN
79	26	BAR L1	14	K5/1	14	35	WHT	15.99	FLN
79	25	BAR L1	14	K6/1	14	35	WHT	15.99	FLN
80	23,25	BAR L2	12	F7/3	4	30	WHT	21.45	FLN
80	23,25	F7/3	4	V4/-	2	30	WHT	17.55	FLN
80	23.25	V4/-	2	N6/S	2	30	WHT	37.05	FLN
80	26	BAR L2	14	K3/3	14	35	WHT	14.43	FLN
80	26	BAR L2	14	K4/3	14	35	WHT	14.43	FLN
80	26	BAR L2	14	K5/3	14	35	WHT	14.43	FLN
80	26	BAR L2	14	K6/3	14	35	WHT	14.43	FLN
81	23,16	BAR L3	12	F7/5	4	30	WHT	19.50	FLN
81	23.16	F7/5	4	F8/W	2	30	WHT	4.29	FLN

Figure F-28. Wiring, PDU Assembly

Fig. F-28.-Wire List Table

WIRE REF NO.	FIG. F-28. ITEM NO. WIRE MARKING	FROM	FIG. F-28. ITEM No.	TO	FIG. F-28. ITEM No.	FIG. F-28. ITEM No.	WIRE COLOR	WIRE LENGTH	UOC
81	26	BAR L3	14	K3/5	14	35	WHT	12.87	F
81	26	BAR L3	14	K4/5	14	35	WHT	12.87	
81	26	BAR L3	14	K5/5	14	35	WHT	12.87	FL
81	26	BAR L3	14	K6/5	14	35	WHT	12.87	FLN
82	23,17	F7/2	2	T13/1U2	2	30	WHT	54.60	FLN
83	23,18	F7/4	2	T13/1V2	2	w	WHT	54.60	FLN
84	23,19	F7/6	2	T13/1W2	2	30	WHT	54.60	FLN
85	23,20	T13/2U1	2	V5/-	10	30	WHT	8.97	FLN
86	23,21	T13/2V1	2	V5/-	10	30	WHT	8.97	FLN
87	23,2	T13/2W1	2	V5/-	10	30	WHT	8.97	FLN
88	23	V4/+	2	K21/A1	2	30	WHT	8.58	FLN
89	23,24	V4/-	2	K21/A2	2	30	WHT	18.33	FLN
90	24,25	V3-/L	4	N6/R	2	30	WHT	37.05	FLN
90	24,25	V3-/L	4	J6/R1	SOLDER	30	WHT	66.30	FLN
91	24,16	V3-/R	4	NW/S	2	30	WHT	37.05	FLN
91	24,16	V3/R	4	J6/S2	SOLDER	30	WHT	86.30	FLN
92	24,17	V3/+	2	K20/A1	2	30	WHT	9.75	FLN
93	24,18	V3/-	2	K20/JA2	2	30	WHT	21.45	FLN
94	24,19	N6/AKSy	2	K13/A1	2	30	WHT	33.93	FLN
95	24,20	T1/L	2	N6/JR1	2	30	WHT	20.67	FLN
96	24,21	T2/L	2	N6/JS1	2	30	WHT	21.84	FLN
97	24,22	T3/L	2	NS/JT1	2	30	WHT	23.40	F
98	24,23	T1/K	2	NS/OV1	2	30	WHT	22.23	
98	24,23	T2/K	2	T1/K	2	30	WHT	2.51	FL.
98	24,23	T3/K	2	T2/K	2	30	WHT	2.51	FLN
99	24	T4/L	2	N6/JR2	2	30	WHT	25.35	FLN
100	16,25	T5/L	2	N6/JS2	2	30	WHT	26.52	FLN
101	16,25	T6/L	2	N6/JT2	2	30	WHT	28.08	FLN
102	16,.25,17	T6/K	2	T5/K	2	30	WHT	2.51	FLN
102	16,25,17	T5/K	2	T4/K	2	30	WHT	2.51	FLN
102	16,25,17	T4/K	2	N6/OV2	2	30	WHT	27.30	FLN
103	16,25,18	T7/L	2	N6/JR3	2	30	WHT	30.03	FLN
104	16,25,19	T8/L	2	N6/JS3	2	30	WHT	31.20	FLN
105	16,25,20	T9/L	2	N6/JT3	2	30	WHT	32.37	FLN
106	16,25,21	T9/K	2	T8/K	2	30	WHT	2.51	FLN
106	16,25,21	T8/K	2	T7/K	2	30	WHT	2.51	FLN
106	16,25,21	T7/K	2	N6/OV3	2	30	WHT	35.10	FLN
107	16,25,22	T10/L	2	N6/JR4	2	30	WHT	38.22	FLN
108	16,25,23	T11/L	2	N6/JS4	2	30	WHT	39.39	FLN
109	16,25,24	T12/L	2	N6/JT4	2	30	WHT	40.56	FLN
110	16,25	T12/K	2	T11/K	2	30	WHT	2.51	FLN
110	16,2	T11/K	2	T10/K	2	30	WHT	2.51	FLN
110	16,25	T10/K	2	N6/OV4	2	30	WHT	39.00	F
111	16	V2/-	10	X2/1	2	30	WHT	28.86	F
112	16,17	K13/Y1	2	K13/Y2	2	30	WHT	7.80	FLN
113	16,18	H4/X5	2	K19/43	2	30	WHT	66.30	FLN
114	16,19	F8/A	2	J11/BLK	2	30	WHT	76.05	FLN
115	16,20	BAR N	12	J11/WHT	2	30	WHT	72.15	Fl
115	26	BAR N	14	J1/E	SOLDER	35	WHT	58.50	FLN
115	26	BARN	14	J2/E	SOLDER	35	WHT	58.50	FLN

Figure F-28. Wiring, PDU Assembly
Sheet 44 of 46

Fig F-28. - Wire List Table

WIRE REF NO.	FIG. F-28. ITEM No. WIRE MARKING	FROM	FIG. F-28. ITEM NO.	To	FIG. F-28. ITEM NO.	FIG. F-28. ITEM NO.	WIRE COLOR	WIRE LENGTH	UOC
115	26	BARN	14	J3/E	SOLDER	35	WHT	66.30	FLN
115	26	BARN	14	J4/E	SOLDER	35	WHT	52.65	FLN
116	26	K3/2	14	J1/A	SOLDER	35	WHT	27.30	FLN
117	26	K3/4	14	J1/C	SOLDER	35	WHT	27.30	FLN
118	26	K3/6	14	J1/G	SOLDER	35	WHT	27.30	FLN
119	26	K4/2	14	J2/A	SOLDER	35	WHT	27.30	FLN
120	26	K4/4	14	J2/C	SOLDER	35	WHT	27.30	FLN
121	28	K4/6	14	J2/G	SOLDER	35	WHT	27.30	FIN
122	26	K5/2	14	J3/A	SOLDER	35	WHT	27.30	FIN
123	26	K5/4	14	J3/C	SOLDER	35	WHT	27.30	FLN
124	26	K5/6	14	J3/G	SOLDER	35	WHT	27.30	FLN
125	26	K6/2	14	J4/A	SOLDER	35	WHT	27.30	FLN
126	26	K6/4	14	J4/C	SOLDER	35	WHT	27.30	FLN
127	26	K6/6	14	J4/G	SOLDER	35	WHT	27.30	FIN
128	16,17,23	H11/X5	2	K8/44	2	30	WHT	70.20	FLN
140	16,19,25	X1/14	2	X2/15	2	30	WHT	33.54	FLN
141	16,19	X1/15	2	X2/14	2	30	WHT	33.15	FLN
142	16,19,17	X1/l6	2	X2/17	2	30	WHT	33.15	FLN
143	16,19,18	X1/17	2	X2/16	2	30	WHT	33.15	FLN
144	16,19	X1/18	2	X2/18	2	39	WHT	33.54	FLN
145	16,19,20	X1/19	2	X2/19	2	39	BRN	33.54	FLN
146	16,19,21	X1/20	2	X2/20	2	32	BLK	2.73	FLN
147	16,19,22	X1/13	2	X2/11	2	32	BLK	2.73	FLN
150	16,20,25	J6/N	SOLDER	GND MS	10	30	WHT	5.46	FLN
158	16,20,23	K14/Y1	2	K14/Y2	4	30	WHT	7.80	FLN
158	16,20,23	K14/Y2	4	K14/Y3	2	30	WHT	7.80	FLN
NONE		J1/F	SOLDER	GND M8	5	38	YEL/GRN	17.55	FLN
NONE		J1/H	SOLDER	GND M8		38	YEL/GRN	17.56	FLN
NONE		J11/GND	2	GND M5	10	36	YEL/GRN	5.46	FLN
NONE		J2/F	SOLDER	GND M8	5	38	YEL/GRN	21.45	FLN
NONE		J2/H	SOLDER	GND M8		38	YEL/GRN	21.45	FLN
NONE		J3/F	SOLDER	GND M8	5	38	YEL/GRN	28.35	FIN
NONE		J3/H	SOLDER	GND M8		38	YEL/GRN	25.35	FLN
NONE		J4/F	SOLDER	GND M8	5	38	YEL/GRN	40.95	FLN
NONE		J4/H	SOLDER	GND M8		38	YEL/GRN	40.95	FLN
NONE		J6/PE	SOLDER	GND M5	10	36	YEL/GRN	5.46	FLN
NONE		R1/A	SOLDER	N7/6	2	38	WHT	15.60	FLN
NONE		R1/b,c	SOLDER	N7/3	2	38	BRN	15.60	FLN
NONE		SHIELD	SOLDER	N7/2	2	32	BLK	2.73	FLN
NONE		N6/SL	2	KL/PE	2	37	YEL/GRN	13.65	FIN
NONE		T13/SL	2	KL/PE	2	37	YEL/GRN	15.60	FLN

Figure F-28. Wiring, PDU Assembly

Fig F-28.-Wire List Table

WIRE REF NO.	FIG. F-28. ITEM NO. WIRE MARKING	FROM	FIG. F-28. ITEM NO.	TO	FIG. F-28. ITEM NO.	FIG. F-28. ITEM NO.	WIRE COLOR	WIRE LENGTH	UOC
0	25	J9/1/A	SOLDER	X1/0	2	CABLE	WHT/GRY	97.50	F'
1	16	J9/1/N	SOLDER	X1/1	2	CABLE	WHT/BRN/RED	97.50	
45	19,20	J9/1/L	SOLDER	X1/8	2	CABLE	WHT/RED	97.50	F.
47	19,22	J9/1/B	SOLDER	X1/4	2	CABLE	WHT/BRN/ORA	97.50	FLN
48	19,23	J9/1/C	SOLDER	X1/5	2	CABLE	WHT/VIO	97.50	FLN
60	21,25	J9/1/D	SOLDER	X1/2	2	CABLE	WHT/BLK/GRN	97.50	FLN
65	21,20	J9/1/E	SOLDER	X1/3	2	CABLE	WHT/BLK/YEL	97.50	FLN
71	22,16	J9/1/M	SOLDER	X1/6	2	CABLE	WHT/BLU	97.50	FLN
72	22,17	J9/1/K	SOLDER	X1/7	2	CABLE	WHT/BLK/GRY	97.50	FLN
75	22,20	J9/1/H	SOLDER	X1/9	2	CABLE	WHT/GRN	97.50	FLN
76	22,21	J9/1/J	SOLDER	X1/10	2	CABLE	WHT/BLK/RED	97.50	FLN
77	22	J9/1/X	SOLDER	X1/11	2	CABLE	WHT/BRN/VIO	97.50	FLN
78	22,23	J9/1/Y	SOLDER	X1/12	2	CABLE	WHT/BRN/BLU	97.50	FLN
140	16,19,25	J9/1/F	SOLDER	X1/14	2	CABLE	WHT/BLK/VIO	97.50	FLN
141	16,19	J9/1/G	SOLDER	X1/15	2	CABLE	WHT/ORA	97.50	FLN
142	16,19,17	J9/1/P	SOLDER	X1/16	2	CABLE	WHT/BRN/GRY	97.50	FLN
143	16,19,18	J9/1/U	SOLDER	X1/17	2	CABLE	WHT/BLK/BRN	97.50	FLN
144	16,19	J9/1/R	SOLDER	X1/18	2	CABLE	WHT/BRN	97.50	FLN
145	16,19,20	J9/1/S	SOLDER	X1/19	2	CABLE	WHT/BLK	97.50	FLN
146	16,19,21	J9/1/T	SOLDER	X1/20	2	32	SHIELD	2.73	FLN
147	16,19,22	J9/1/Z	SOLDER	X1/13	2	32	SHIELD	2.73	FLN
0	25	J9/2/A	SOLDER	X2/0	2	CABLE	WHT/GRY	64.35	
46	19,21	J9/2/L	SOLDER	X2/8	2	CABLE	WHT/RED	64.35	FL
49	19,24	J9/2/B	SOLDER	X2/4	2	CABLE	WHT/BRN/ORA	64.35	FLN
50	20,25	J9/2/C	SOLDER	X2/5	2	CABLE	WHT/VIO	64.35	FLN
61	21,16	J9/2/D	SOLDER	X2/2	2	CABLE	WHT/BLK/GRN	64.35	FLN
66	21	J9/2/E	SOLDER	X2/3	2	CABLE	WHT/BLK/YEL	64.35	FLN
73	22,18	J9/2/M	SOLDER	X2/6	2	CABLE	WHT/BLU	64.35	FLN
74	22,19	J9/2/K	SOLDER	X2/7	2	CABLE	WHT/BLK/GRY	64.35	FLN
75	22,20	J9/2/J	SOLDER	X2/13	2	CABLE	WHT/BLK/RED	64.35	FLN
76	22,21	J9/2/H	SOLDER	X2/12	2	CABLE	WHT/GRN	64.35	FLN
77	22	J9/2/Y	SOLDER	X2/10	2	CABLE	WHT/BRN/BLU	64.35	FLN
78	22,23	J9/2/X	SOLDER	X2/9	2	CABLE	WHT/BRN/VIO	64.35	FLN
111	16	J9/2/N	SOLDER	X2/1	2	CABLE	WHT/BRN/RED	64.35	FLN
140	16,19,25	J9/2/G	SOLDER	X2/15	2	CABLE	WHT/ORA	64.35	FLN
141	16,19	J9/2/F	SOLDER	X2/14	2	CABLE	WHT/BLK/VIO	64.35	FLN
142	16,19,17	J9/2/U	SOLDER	X2/17	2	CABLE	WHT/BLK/BRN	64.35	FLN
143	16,19,18	J9/2/P	SOLDER	X2/16	2	CABLE	WHT/BRN/GRY	64.35	FLN
144	16,19	J9/2/R	SOLDER	X2/18	2	CABLE	WHT/BRN	64.35	FLN
145	16,19,20	J9/2/S	SOLDER	X2/19	2	CABLE	WHT/BLK	64.35	FLN
146	16,19,21	J9/2/T	SOLDER	X2/20	2	32	SHIELD	64.35	FLN
147	16,19,22	J9/2/Z	SOLDER	X2/11	2	32	SHIELD	64.35	F'

Figure F-28. Wiring, PDU Assembly
Sheet 46 of 46

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020401 **UNIT ASSEMBLY, WIRING**	
F-28	1	XBFFF		D0857	9-073-003-0015	WIRING,POWER DISTRIBUTION UNIT ASSEMBLY	1
F-28	2	PAFZZ	5940-12-335-8520	D0857	170.01.0006	FERRULE,ELECTRICAL	422
F-28	3	PAFZZ	5940-12-338-8596	D8857	901916	FERRULE,ELECTRICAL	1
F-28	4	PAFZZ	5940-12-345-6187	D0857	170.01.0027	FERRULE,ELECTRICAL	30
F-28	5	PAFZZ	5940-12-149-8636	D2096	RSY7121A8-10	TERMINAL,LUG	4
F-28	6	PAFZA	5940-12-143-7570	D2096	RSY7112A5-6	TERMINAL,LUG	7
F-28	7	PAFZZ	5940-12-318-3014	D2096	RSQ7108A5-2,5	TERMINAL,LUG	1
F-28	8	PAFZZ	5940-12-152-5351	D2096	RSQ7155A4-6	TERMINAL,LUG	1
F-28	9	PAFZZ	5940-12-144-9623	D2096	RSY7104A4-1	TERMINAL,LUG	9
F-28	10	PAFZZ	5940-12-146-8497	D2096	RSY7105A5-1	TERMINAL,LUG	10
F-28	11	PAFZZ	5940-12-326-8023	D2096	RSY7108A5-2.5	TERMINAL,LUG	1
F-28	12	PAFZZ	5940-12-144-9875	D2096	RSY7158A6-1	TERMINAL,LUG	4
F-28	13	PAFZZ	5940-12-145-0065	D2096	RSY7115A8-6	TERMINAL,LUG	1
F-28	14	PAFZZ	5940-12-348-4364	D2096	RSY7136A6-50	TERMINAL,LUG	40
F-28	15	PAFZZ	5940-12-154-2214	D2096	RSP7500F6,3-1	TERMINAL,QUICK DISCONNECT	1
F-28	16	PAFZZ	5975-12-173-1194	D0857	405.11.0005	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 1	172
F-28	17	PAFZZ	5975-12-173-1195	D0857	405.11.0006	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 2	70
F-28	18	PAFZZ	5975-12-173-1196	D0857	405.11.0007	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 3	128
F-28	19	PAFZZ	5975-12-173-1197	D0857	405.11.0008	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 4	102
F-28	20	PAFZZ	5975-12-173-1198	D0857	405.11.0009	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 5	104
F-28	21	PAFZZ	5975-12-173-1199	D0857	405.11.0010	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 6	78
F-28	22	PAFZZ	5975-12-173-1200	D0857	405.11.0011	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 7	66
F-28	23	PAFZZ	5975-12-173-1201	D0857	405.11.0012	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 8	98
F-28	24	PAFZZ	5975-12-186-2519	D0857	405.11.0013	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 9	86
F-28	25	PAFZZ	5975-12-173-1193	D0857	405.11.0014	SLEEVE,MARKER,CABLE,PA1/3 YELLOW/ BLACK 0	166
F-28	26	PAFZZ	5975-12-345-5137	D0857	405.11.0015	SLEEVE,MARKER,CABLE,PA3/6 YELLOW PLAIN	34
F-28	27	PAFZZ		D8527	111-01960	STRAP,TIEDOWN,ELECTRICAL CABLE, T18RW	25
F-28	28	MFFZZ		D0857	115.04.0052	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 305-50819) AS REQUIRED	1
F-28	29	MFFZZ	4720-12-346-2901	D0857	175.03.0029	HOSE,NONMETALLIC (MAKE FROM (D0857) P/N 175.03.0029) AS REQUIRED	V
F-28	30	MFFZZ		D0857	180.03.0003	WIRE,ELECTRICAL (MAKE FROM (83873) P/N NOMEX155-U 1.50 "F" WHT) AS REQUIRED	V
F-28	31	MFFZZ		D0857	180.03.0004	WIRE,ELECTRICAL(MAKE FROM (83873) P/N NOMEX155-U 2.50 "F" WHT) AS REQUIRED	V
F-28	32	MFFZZ		D0857	180.03.0006	WIRE,ELECTRICAL (MAKE FROM (83873) P/N NOMEX155-U 0.75 "F" WHT) AS REQUIRED	V
F-28	33	MFFZZ		D0857	180.03.0025	CABLE,SPECIAL PURPOSE (MAKE FROM (83873) P/N NOMEX155-U 25.00 "F" WHT) AS REQUIRED	V

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-28	34	MFFZZ		D0857	180.03.0026	CABLE,SPECIAL PURPOSE (MAKE FROM (83873) P/N NOMEX155-U 35.00 "F" WHT) AS REQUIRED	V
F-28	35	MFFZZ		D0857	180.03.0027	CABLE,SPECIAL PURPOSE (MAKE FROM (83873) P/N NOMEX155-U 50.00 "F" WHT) AS REQUIRED	V
F-28	36	MFFZZ		D0857	180.06.0031	CABLE,ELECTRICAL (MAKE FROM (D1230) P/N 5DA2388-5) AS REQUIRED	V
F-28	37	MFFZZ		D0857	180.06.0033	CABLE,ELECTRICAL (MAKE FROM (D1230) P/N 5DA2377-5) AS REQUIRED	V
F-28	38	MFFZZ		D0857	180.06.0057	WIRE,ELECTRICAL(MAKE FROM (D1230) P/N 5DA2387-5) AS REQUIRED	V
F-28	39	MFFZZ		D0857	180.05.0051	CABLE,DATA TRANSMIS SION (MAKE FROM (C3033) P/N LIYCY2X0,75GR) AS REQUIRED	V
F-28	40	PAFFF	5961-12-345-9049	D0857	085.05.0001	SEMICONDUCTOR DEVICE,DIODE	1
F-28	41	PAFZZ	5961-12-166-2899	D0024	SKN45/12	SEMICONDUCTOR DEVICE,DIODE	1
F-28	42	PAFZZ	5999-12-301-8979	D0024	K5-M8	HEAT SINK,ELECTRICAL-ELECTRONIC COMPONENT	1
						END OF FIGURE	

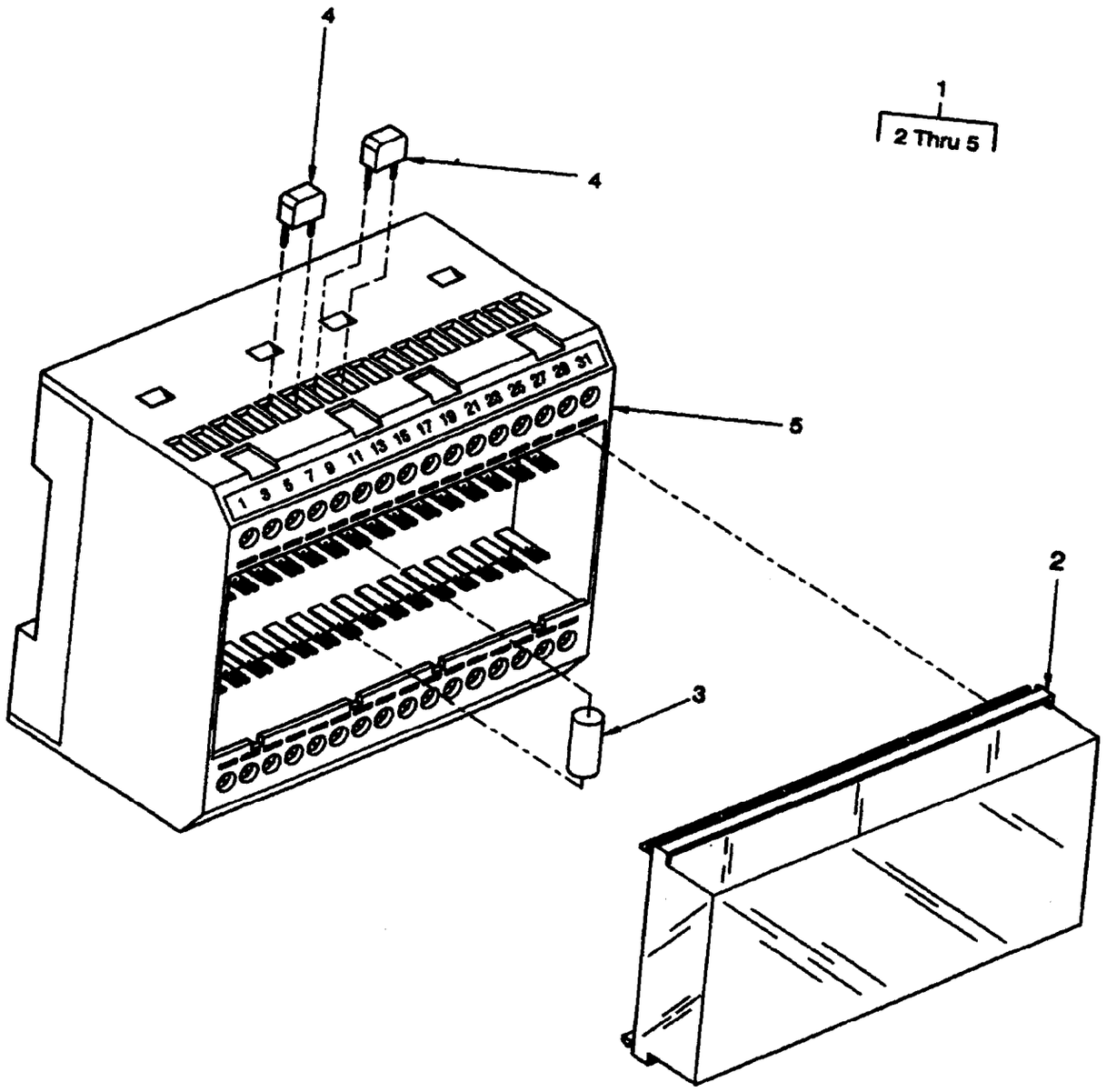


Figure F-29. Electronic Module Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020402 **POWER DISTRIBUTION** **UNIT ASSEMBLY** **ELECTRONIC MODULE**	
F-29	1	XBFFF		D0857	085.05.0033	ELECTRONIC MODULE ASSEMBLY	1
F-29	2	XBFZZ		D0493	2945406	HOOD,CLEAR,EMG90-H15MM CLEAR	1
F-29	3	PAFZZ	5961-01-204-6187	14936	RG3G	SEMICONDUCTOR DEVICE,DIODE	1
F-29	4	PAFZZ	6150-12-312-1631	D0493	1401158	BUS,CONDUCTOR	2
F-29	5	PAFZZ	5940-12-342-1712	D0493	2946269	TERMINAL BOX EMG90-B17	1
						END OF FIGURE	

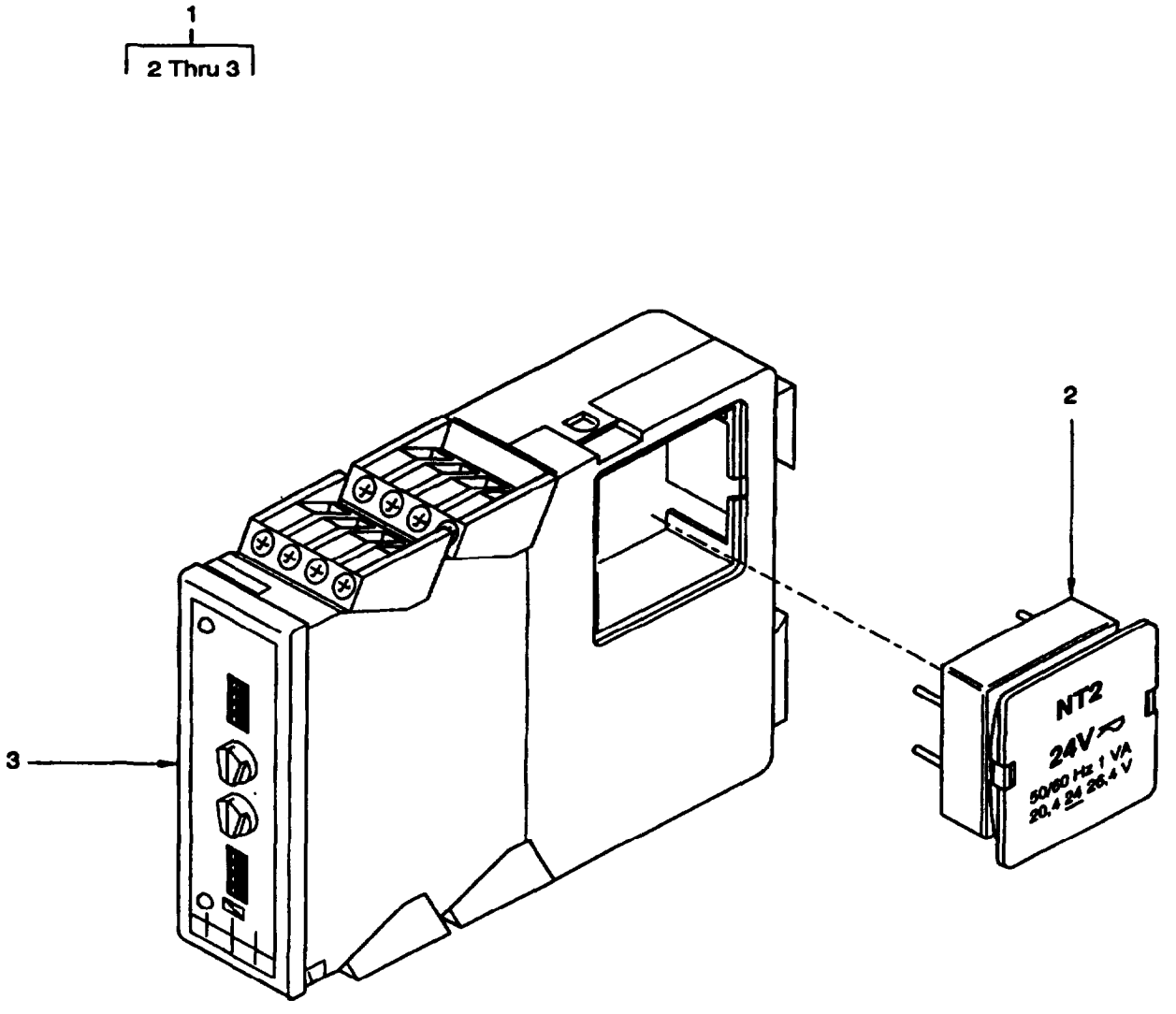


Figure F-30. Time Relay Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020403 **POWER DISTRIBUTION UNIT** **TIME RELAY ASSEMBLY**	
F-30	1	PBFFF	5945-12-345-9128	D0857	390.33.0012	RELAY,ELECTROMAGNETIC	1
F-30	2	PAFZZ	5945-12-323-1118	C7136	NT2-24V	RELAY,ELECTROMAGNETIC	1
F-30	3	PAFZZ	5945-12-345-8271	C7136	W2X	RELAY,ELECTROMAGNETIC	1
						END OF FIGURE	

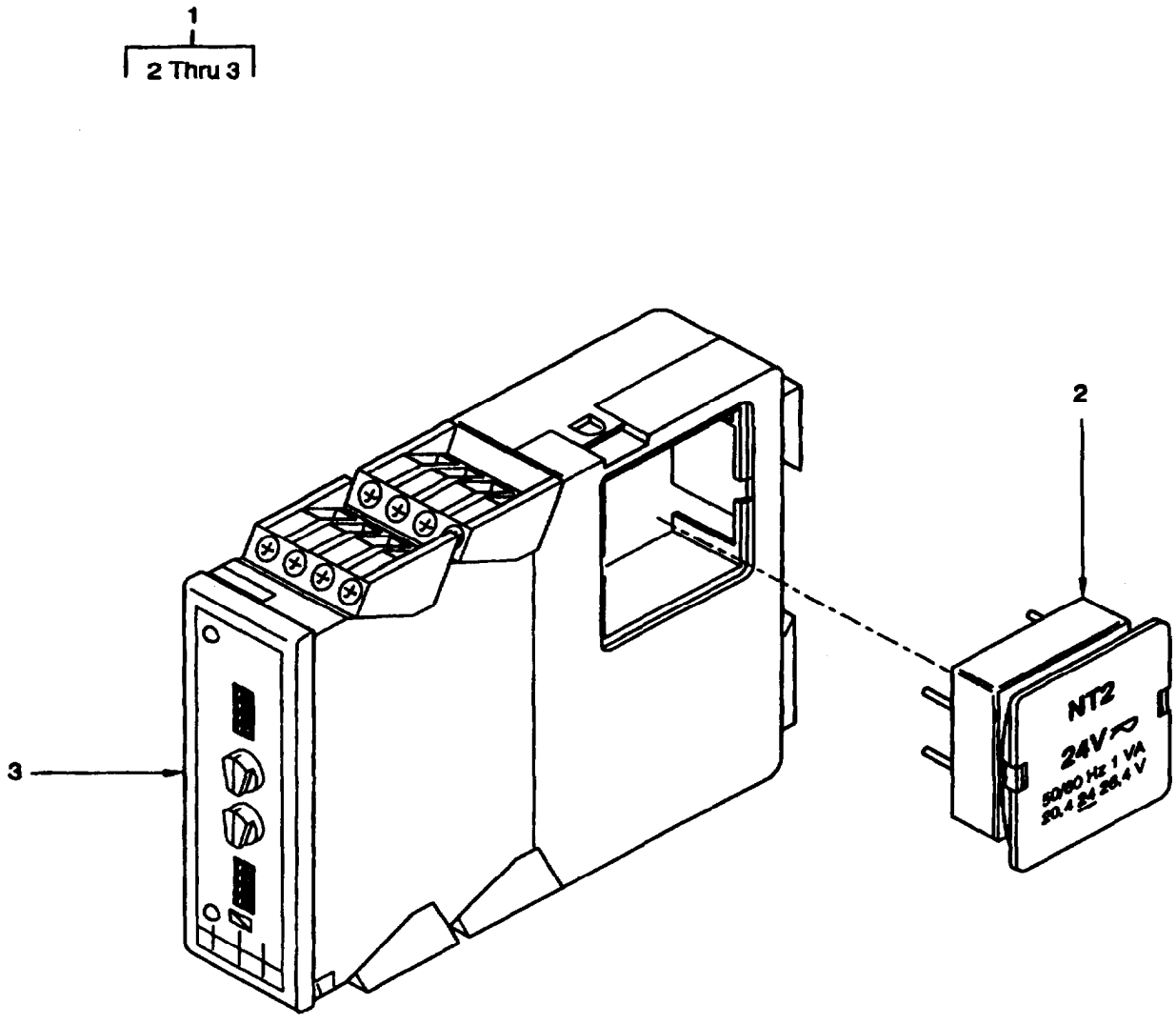


Figure F-31. Time Relay Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020403A **POWER DISTRIBUTION** **UNIT, TIME RELAY ASSEMBLY**	
F-31	1	PBFFF	5945-12-345-9129	D0857	390.33.0013	RELAY,ELECTROMAGNETIC	1
F-31	2	PAFZZ	5945-12-323-1118	C7136	NT2-24V	RELAY,ELECTROMAGNETIC	1
F-31	3	PAFZZ		C7136	ER2X	RELAY,ELECTROMAGNETIC	1
						END OF FIGURE	

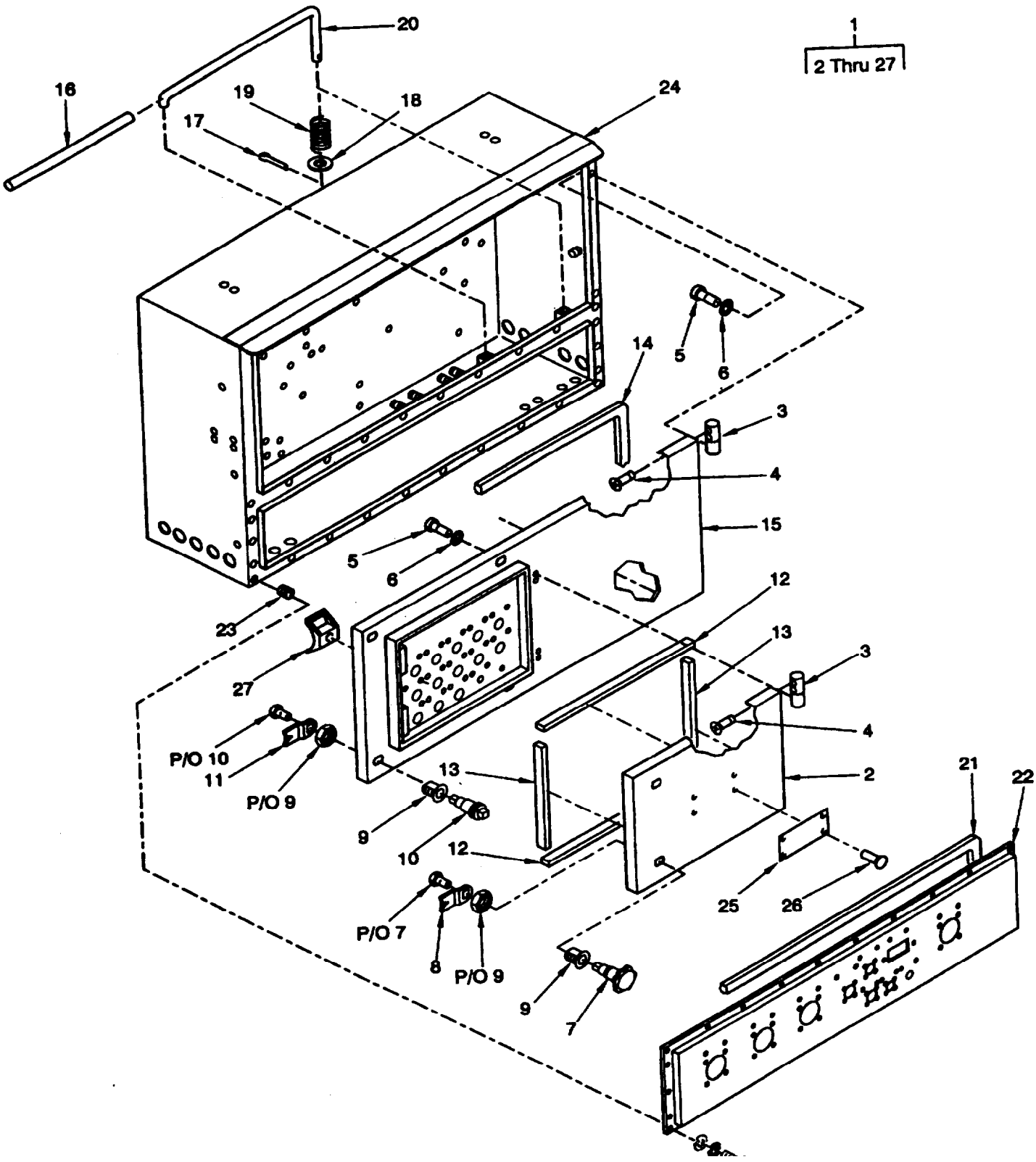


Figure F-32. Housing Assembly, PDU - Cabinet, 150KW

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 020404 **POWER DISTRIBUTION** **UNIT ASSEMBLY,HOUSING, PDU** **CABINET, 150KW**	
F-32	1	XBOFF		D0857	420.01.0156	HOUSING ASSEMBLY,PDU-CABINET,150KW	1
F-32	2	XBFZZ		D0857	485.02.0006	FLAP DOOR,PDU-CABINET	1
F-32	3	PAOZZ	5340-12-323-9416	D0857	160.14.0001	HINGE,BUTT	4
F-32	4	PAOZZ	5305-12-327-5431	D8286	DIN965-M5X6-A4-70-H	SCREW,MACHINE	8
F-32	5	PAOZZ	5305-12-166-7453	D8286	DIN84-M5X8-A4-70	SCREW,MACHINE	8
F-32	6	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	8
F-32	7	PAOZZ	5340-12-323-9439	C2285	1000-U138	GRIP,HANDLE	2
F-32	8	PAOZZ	5340-12-323-9440	C2285	1000-225	BUTTON,DOOR	2
F-32	9	PAOZZ	5340-12-323-9420	C2285	1000-U134	LOCK,FLUSH	6
F-32	10	PAOZZ	5340-12-323-9418	C2285	1000-U135	GRIP,HANDLE	4
F-32	11	PAOZZ	5340-12-323-9419	C2285	1000-179	BUTTON,DOOR	4
F-32	12	MOOZZ		D0857	065.02.0031-21.45 INCH	RUBBER SPONGE (MAKE FROM (D8905) P/N 421A329) 21.45 INCH (550MM) REQUIRED	2
F-32	13	MOOZZ		D0857	065.02.0031-13.65 INCH	RUBBER SPONGE (MAKE FROM (D8905) P/N 421A329) 13.65 INCH (350MM) REQUIRED	2
F-32	14	MOOZZ		D0857	065.02.0010-113.1 INCH	HF-SEALING,RUBBER (MAKE FROM (C3394) P/N NK-120-2534-0000) 113.1 INCH (2900MM) REQUIRED	1
F-32	15	XBFZZ		D0857	485.02.0014	DOOR,PDU-CABINET	1
F-32	16	MOOZZ		D0857	115.04.0001-7.41 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D9477) P/N VG95343T05A007A) 7.41 INCH (190MM) REQUIRED	1
F-32	17	PAOZZ	5315-12-311-6063	D8286	DIN94-1,2X10-ST-A3P	PIN,COTTER	1
F-32	18	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140HV-A4	WASHER,FLAT	1
F-32	19	PAOZZ	5360-12-345-3955	C3224	50/5/3	SPRING,HELICAL,COMPRESSION	1
F-32	20	PAOZZ	5340-12-324-4154	D0857	160.30.0003	EYE HOOK	1
F-32	21	MOOZZ		D0857	065.02.0010-93.6 INCH	HF-SEALING,RUBBER (MAKE FROM (C3394) P/N NK-120-2534-0000) 93.6 INCH (2400MM) REQUIRED	1
F-32	22	XBFZZ		D0857	495.01.0004	PANEL,ELECTRICAL CO NNECTING	1
F-32	23	PAFZZ	5310-12-324-5340	C7370	433054	NUT,PLAIN,BLIND RIVET	26
F-32	24	XBFZZ		D0857	420.01.0157	HOUSING	1
F-32	25	XBOZZ		D0857	405.01.0252	PLATE,DESIGNATION (ATTENTION)	1
F-32	26	XBOZZ		D8286	DIN7337-A3X10-AL-LEG-BK-ST-A3P	RIVET,BLIND	4
F-32	27	PAOZZ	5975-12-161-1864	D8527	151-25219	MOUNTING BASE,TIEDOWN	5
						END OF FIGURE	

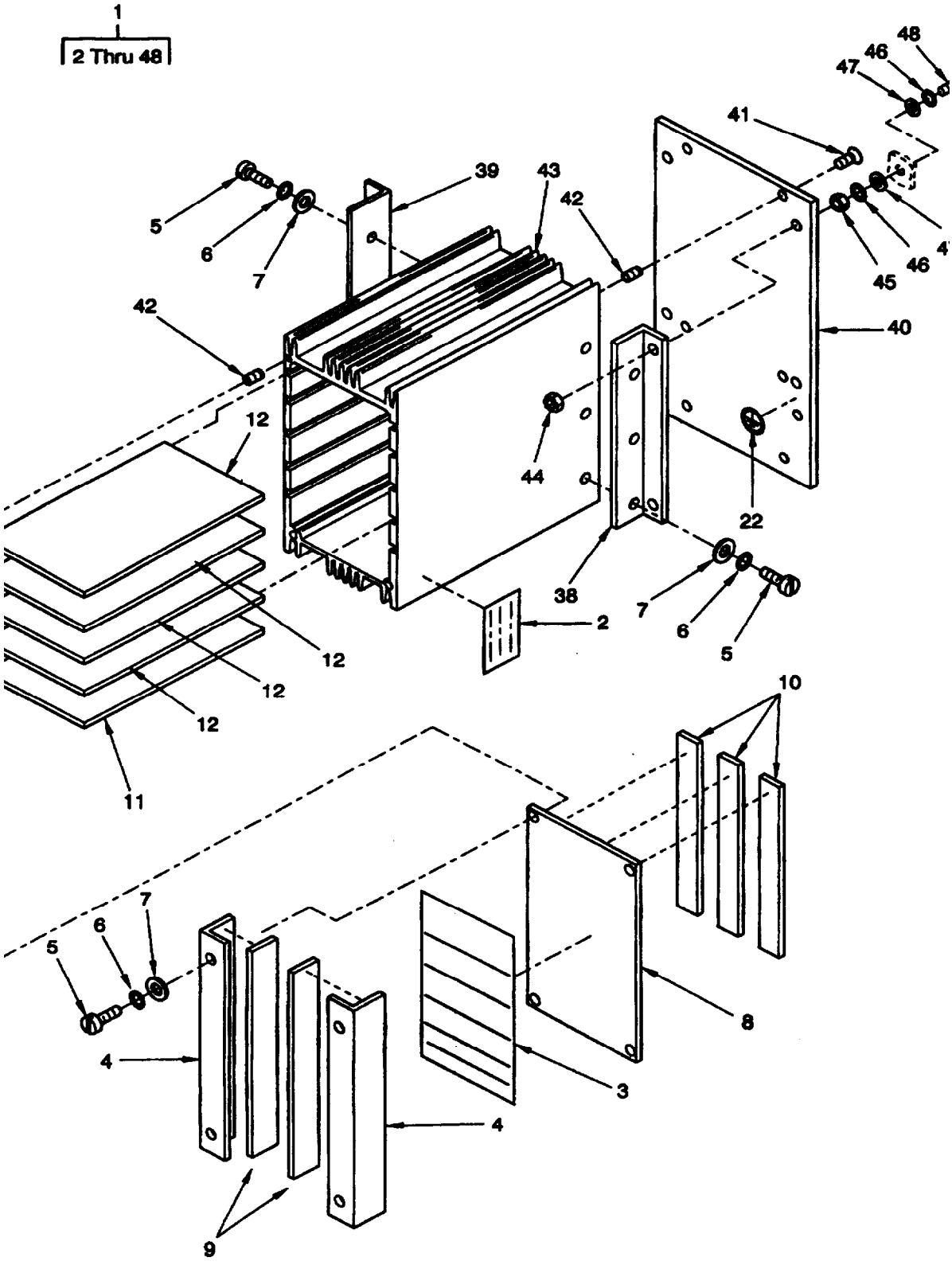


Figure F-33. PDU-Electronic Assembly, Type 3.522
Sheet 1 of 2

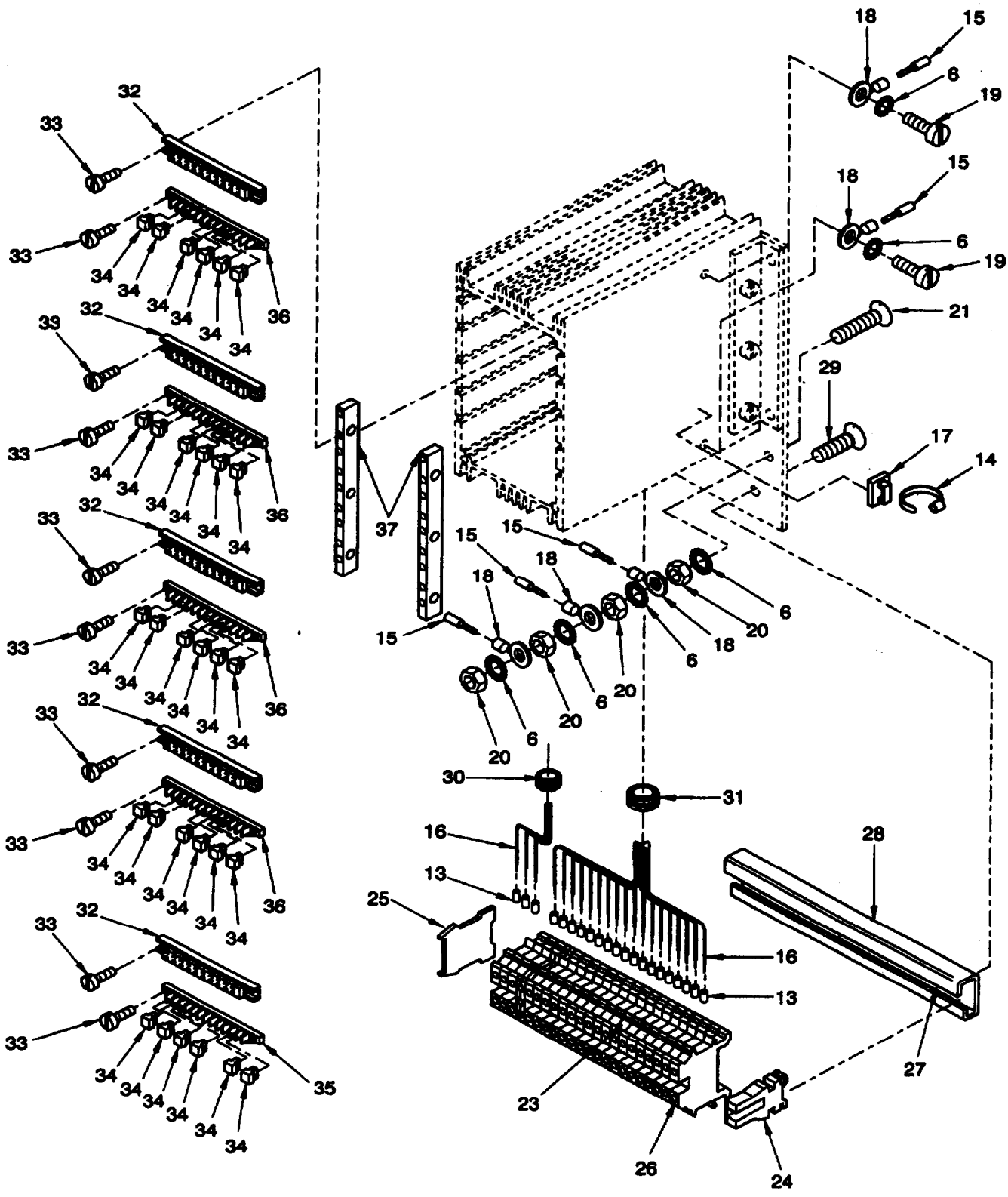


Figure F-33. PDU-Electronic Assembly, Type 3.522,
Sheet 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0205 POWER DISTRIBUTION ELECTRONIC ASSEMBLY, TYPE 3.522	
F-33	1	XBFDD		C1672	08970	PDU-ELECTRONIC ASSEMBLY,TYPE 3.522	1
F-33	2	XBDZZ	7690-12-346-3320	C1672	08832	MARKER,IDENTIFICATION (PDU-ELECTRONIC ASSEMBLY)	1
F-33	3	XBDZZ		C1672	08939	LABEL (COVER DESCRIPTION)	1
F-33	4	XBDZZ	5340-12-345-9918	C1672	08831	RUNNER	2
F-33	5	PAFZZ	5305-12-154-5885	D8286	DIN84-M4X16-A4-7	SCREW,MACHINE	10
F-33	6	PAFZZ	5310-12-145-9279	D8286	DIN127-B4-NRST	WASHER,LOCK	16
F-33	7	PAFZA	5310-12-143-6103	D8286	DIN125-A4,3-NRST	WASHER,FLAT	10
F-33	8	XBFZZ	5340-12-345-9765	C1672	08836	COVER,ACCESS	1
F-33	9	MFFZZ		C1672	08819	RUBBER SPONGE,NO. 15,7.02 INCH (180MM) LONG	2
F-33	10	MFFZZ		C1672	08821	FOAM RUBBER,5.85 INCH (150MM) LONG	3
F-33	11	PAFDD	5998-12-345-9645	C1672	08744	CIRCUIT CARD ASSEMBLY,TYPE TT1308-2/01B	1
F-33	12	PAFDD	5998-12-345-9649	C1672	08780	CIRCUIT CARD ASSEMBLY,TYPE TT1313-1/02B	4
F-33	13	PADZZ	5940-12-307-2513	C1672	08823	SLEEVE,MARKER,CABLE	44
F-33	14	PAFZZ	5340-12-345-9764	C1672	04401	STRAP,RETAINING	2
F-33	15	MFFZZ		C1672	08816	WIRE,TEFLON PTFE (MAKE FROM (D1427) P/N TX20-1932/54) AS REQUIRED	V
F-33	16	MFFZZ		C1672	08815	WIRE,W/SW (MAKE FROM (83873) P/N NOMEX155-U) AS REQUIRED	V
F-33	17	PAFZZ	5975-12-196-6091	C1672	06782	MOUNTING BASE,TIEDOWN	2
F-33	18	PAFZZ	5940-12-334-9384	C2029	A1543R	TERMINAL,LUG	5
F-33	19	PAFZZ	5305-12-151-7838	D8286	DIN84-M4X8-A4-70	SCREW,MACHINE	2
F-33	20	PAFZZ	5310-12-151-7866	D8286	DIN934-M4-A4-70	NUT,PLAIN,HEXAGON	4
F-33	21	PAFZZ	5305-12-186-5383	D8286	DIN963-M4X25-A4-70	SCREW,MACHINE	1
F-33	22	XBFZZ		C1672	08817	LABEL (GRD)	1
F-33	23	PADZZ	7690-12-345-9111	C1672	08938	MARKER SET,IDENTIFICATION	1
F-33	24	PADZZ		C1672	03645	COVER,ELECTRICAL CONNECTOR	2
F-33	25	PADZZ		C1672	03065	COVER,PROTECTIVE,DUST AND MOISTURE SEAL	1
F-33	26	PADZZ		C1672	03655	COVER,ELECTRICAL CONNECTOR	23
F-33	27	XBDZZ		C1672	08317	NUT,CLINCH,H1272 M4-ZN	2
F-33	28	MDDZZ		C1672	08837	RAIL,BEARING (MAKE FROM (D0493) P/N 1201015) 5.655 INCH (145MM) REQUIRED	1
F-33	29	PADZZ	5305-12-164-4487	D8286	DIN963-M4X6-A4-70	SCREW,MACHINE	2
F-33	30	PADZZ	5325-12-345-9209	C1672	08602	GROMMET,NONMETALLIC	1
F-33	31	PADZZ	5325-12-345-9206	C1672	08606	GROMMET,NONMETALLIC	1
F-33	32	PADZZ	5935-12-175-1468	C0426	V42254-B2435-D325	CONNECTOR,RECEPTACLE	5
F-33	33	PADZZ	5305-12-166-7494	D8286	DIN84-M2.5X10-A4-70	SCREW,MACHINE	20
F-33	34	PADZZ	5935-12-331-8958	C1672	07518	POLARIZING KEY,ELECTRICAL CONNECTOR	30
F-33	35	PADZZ		C1672	07757	CONTACT,ELECTRICAL CODED AT PIN 1 THROUGH 4,11 AND 12	1
F-33	36	PADZZ		C1672	07757	CONTACT,ELECTRICAL CODED AT PIN 3, 4 AND 7 THROUGH 10	4
F-33	37	PADZZ	5340-12-345-9917	C1672	08828	RUNNER	2
F-33	38	XBDZZ		C1672	08826	BRACKET,HOUSING A	1
F-33	39	XBDZZ		C1672	08827	BRACKET,HOUSING B	1
F-33	40	XBDZZ		C1672	08825	PLATE,MOUNTING	1

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-33	41	PADZZ	5305-12-166-9469	D8286	DIN963-M4X10-A4-70	SCREW,MACHINE	4
F-33	42	PADZZ	5325-12-134-8753	D8286	DIN8140-AM4X8-A2	INSERT,SCREW THREAD	8
F-33	43	XBDZZ		C1672	08818	HOUSING	1
F-33	44	PAFZZ	5310-12-179-8028	D8286	DIN985-M5-A4-70	NUT,SELF-LOCKING,HEXAGON	4
F-33	45	PAFZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	4
F-33	46	PAFZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	8
F-33	47	PAFZZ	5310-12-175-0041	D8286	DIN125-B5,3-140H V-A4	WASHER,FLAT	8
F-33	48	PAFZZ	5305-12-332-3308	D8286	DIN933-M5X25-A4-70	SCREW,CAP,HEXAGON HEAD	4
						END OF FIGURE	

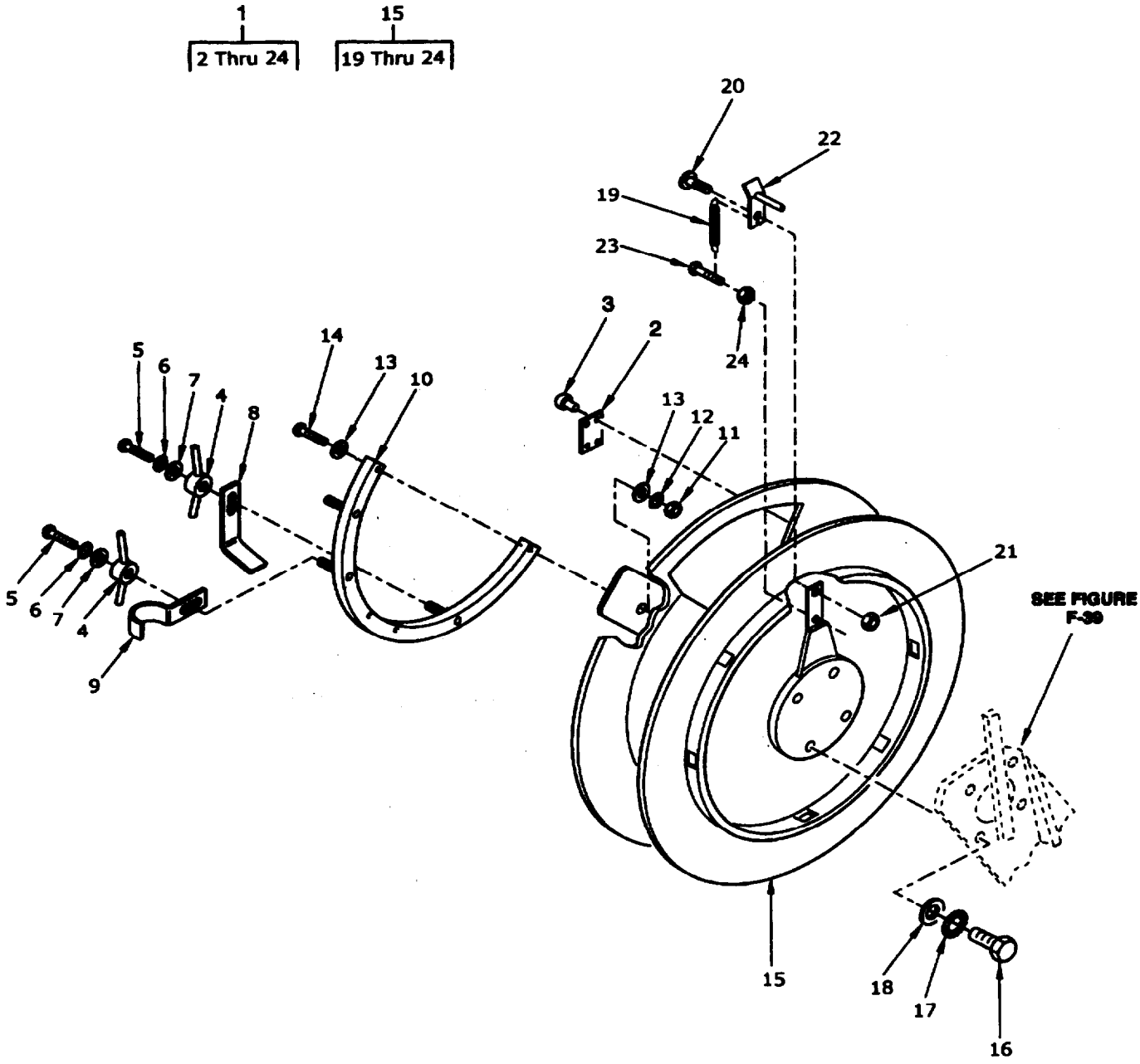


Figure F-34. Cable Drum Assembly (Power Cable Set)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 03 **CABLE DRUM ASSEMBLY** **(POWER CABLE SET)**	
F-34	1	XBOFF		D0857	480.02.0026	CABLE DRUM ASSEMBLY(POWER CABLE SET)	3
F-34	2	XBOZZ		D0857	405.01.0261	PLATE,IDENTIFICATION (CABLE DRUM ASSEMBLY)	1
F-34	3	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-34	4	PAOZZ	8105-12-323-8359	D0857	060.20.0015	SACK,SHIPPING	2
F-34	5	PAOZZ	5310-12-345-5270	D0857	285.06.0034	NUT,PLAIN,WING	2
F-34	6	PAOZZ	5305-12-181-9556	D8286	DIN933-M8X12-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-34	7	PAOZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	2
F-34	8	PAOZZ	5310-12-154-6605	D8286	DIN9021-B8,4-A4-70	WASHER,FLAT	2
F-34	9	PAOZZ	5340-12-345-9125	D0857	160.31.0208	CLAMP,CABLE,ELECTRICAL	1
F-34	10	PAOZZ	5340-12-345-9126	D0857	160.31.0209	CLAMP,CABLE,ELECTRICAL	1
F-34	11	PAOZZ	5340-12-345-9130	D0857	160.31.0210	CLAMP,CABLE,ELECTRICAL	1
F-34	12	PAOZZ	5310-12-155-0596	D8286	DIN934-M6-A4-70	NUT,PLAIN,HEXAGON	4
F-34	13	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	4
F-34	14	PAOZZ	5310-12-174-8311	D8286	DIN125-A6,4-A4-70	WASHER,FLAT	8
F-34	15	PAOZZ	5305-12-197-8223	D8286	DIN933-M6X40-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-34	16	XBOZZ		D0857	480.02.0046	DRUM,CABLE,TYPE KT600/116-SO	1
F-34	17	PAOZZ	5305-12-169-1296	D8286	DIN933-M16X40-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-34	18	PAOZZ	5310-12-131-4169	D8286	DIN6798-A17-FST	WASHER,LOCK	4
F-34	19	PAOZZ	5310-12-172-6828	D8286	DIN125-B17-140HV-A4	WASHER,FLAT	4
F-34	20	PAOZZ	5360-12-345-5373	D0857	093.04.0147	SPRING,HELICAL,EXTENSION	1
F-34	21	PAOZZ	5305-12-345-5877	D0857	040.09.0088	SCREW,SHOULDER	1
F-34	22	PAOZZ	5310-12-151-6661	D8286	DIN934-M10-A4-70	NUT,PLAIN,HEXAGON	1
F-34	23	PAOZZ	5340-12-346-6909	D0857	160.31.0256	WRENCH,RATCHET,SPECIAL	1
F-34	24	PAOZZ	5305-12-332-3308	D8286	DIN933-M5X25-A4-70	SCREW,CAP,HEXAGON HEAD	1
F-34	25	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	1
						END OF FIGURE	

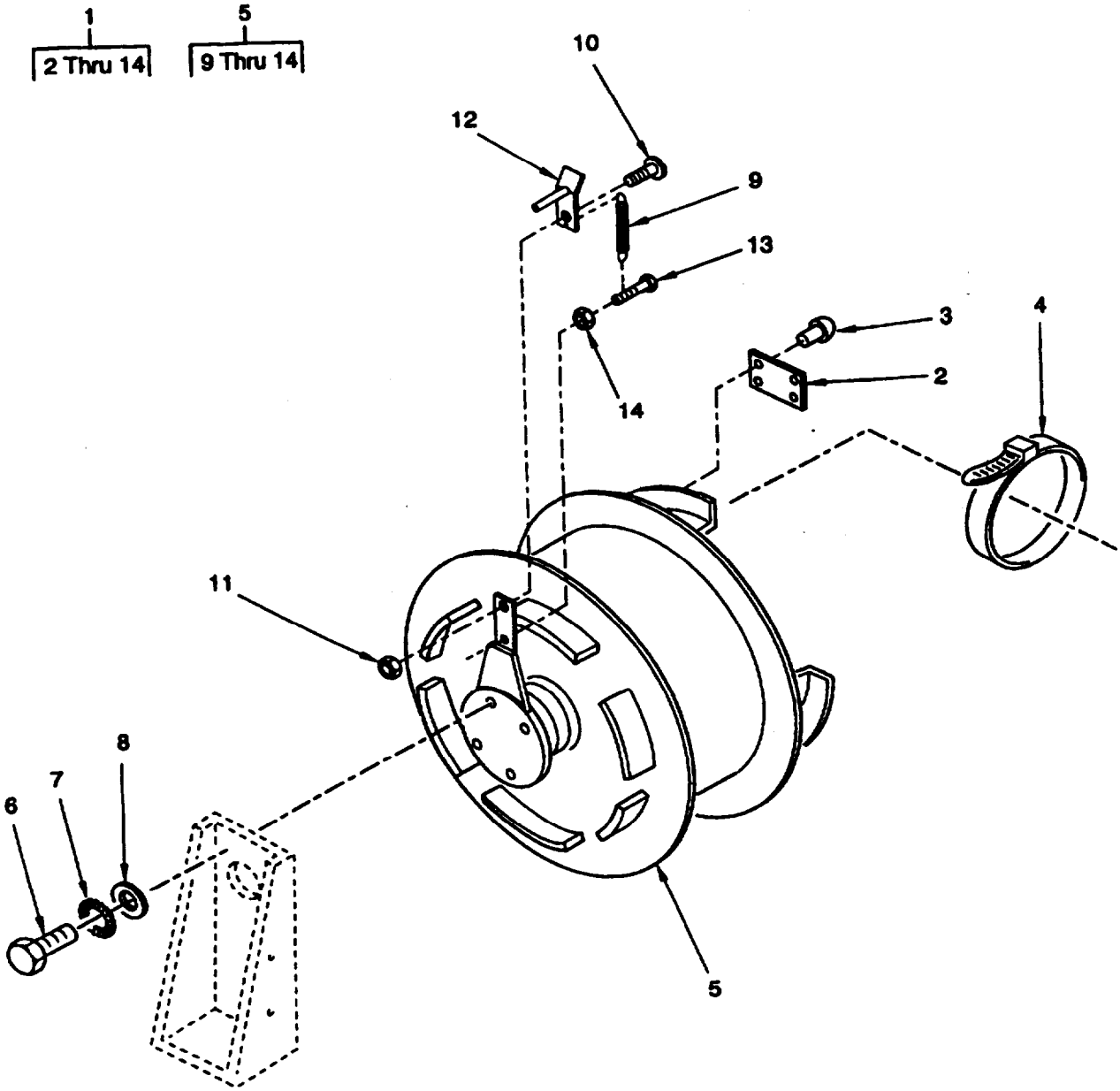


Figure F-35. Cable Drum Assembly (Control Cable)

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 04 **CABLE DRUM ASSEMBLY** **(CONTROL CABLE SET)**	
F-35	1	XBOFF		D0857	480.02.0025	CABLE DRUM ASSEMBLY (CONTROL CABLE SET)	1
F-35	2	XBOZZ		D0857	405.01.0260	PLATE,IDENTIFICATION (CABLE DRUM ASSEMBLY)	1
F-35	3	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-35	4	PAOZZ	5340-12-323-9441	D1089	10006000	STRAP,WEBBING	1
F-35	5	XBOZZ		D0857	480.02.0034	DRUM,CABLE,TYPE KT300/292-SO	1
F-35	6	PAOZZ	5305-01-457-3723	80204	B18235B12035N	BOLT,MACHINE	2
F-35	7	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-35	8	PAOZZ	5310-01-454-5913	80204	B1822BH120N	WASHER,FLAT	2
F-35	9	PAOZZ	5360-12-345-5373	D0857	093.04.0147	SPRING,HELICAL,EXTENSION	1
F-35	10	PAOZZ	5305-12-345-5877	D0857	040.09.0088	SCREW,SHOULDER	1
F-35	11	PAOZZ	5310-12-151-6661	D8286	DIN934-M10-A4-70	NUT,PLAIN,HEXAGON	1
F-35	12	PAOZZ	5340-12-346-6909	D0857	160.31.0256	WRENCH,RATCHET,SPECIAL	1
F-35	13	PAOZZ	5305-12-332-3308	D8286	DIN933-M5X25-A4-70	SCREW,CAP,HEXAGON HEAD	1
F-35	14	PAOZZ	5310-12-154-3112	D8286	DIN934-M5-A4-70	NUT,PLAIN,HEXAGON	1
						END OF FIGURE	

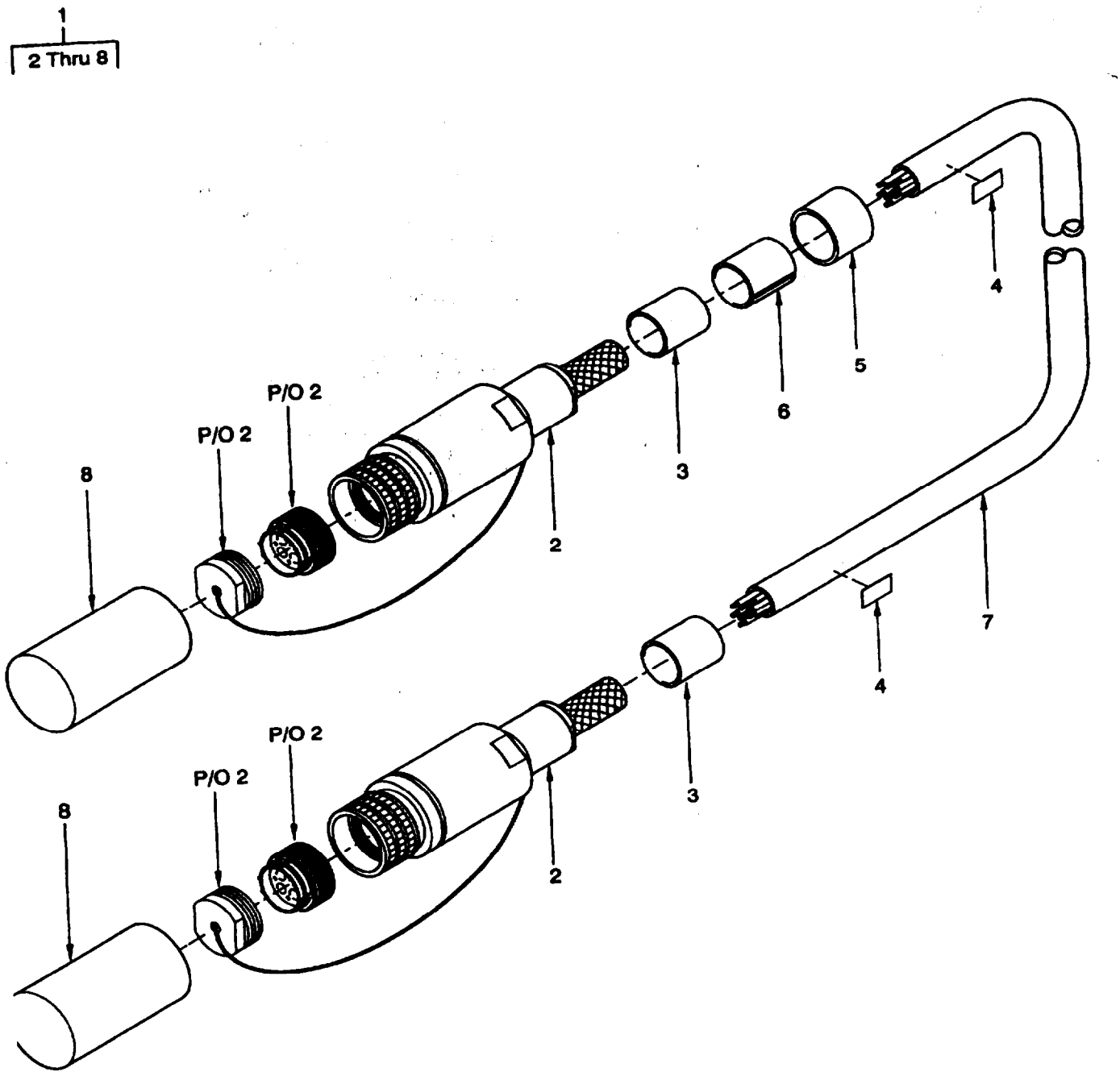


Figure F-36. Control Cable Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0401 **CABLE DRUM ASSEMBLY** **CONTROL CABLE**	
F-36	1	PAFDD	6150-12-343-3739	D0857	180.01.0149	CABLE ASSEMBLY,SPECIAL PURPOSE (MAKE FROM ITEM 2 THRU ITEM 7 OF THIS FIGURE)	1
F-36	2	PADZZ	5935-01-182-8884	18876	MIS-20045/1-015	CONNECTOR,PLUG,ELEC TRICAL	2
F-36	3	MDDZZ		D0857	115.04.0008-2.73 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N 301-0254-3) 2.73 INCH (70MM) REQUIRED	2
F-36	4	PADZZ	9905-12-321-6623	D0857	405.05.0001	BAND,MARKER TYPE 5 50X225	2
F-36	5	MFFZZ		D0857	115.04.0009-3.51 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D0531) P/N 083271-0) 3.51 INCH (90MM) REQUIRED	1
F-36	6	MDDZZ		D0857	250.03.0003-2.73 X1.95 INCH	MAT,RUBBER (MAKE FR OM (D0857) P/N 250.03.0003) 2.73X1.95 INCH (70X50MM) REQUIRED	1
F-36	7	MDDDD		D0857	180.01.0030-104. 96 FT	CABLE,SCREENED,UVLE X-T-44 (MAKE FROM (D0277) P/N 44148905) 104.96 FT (32M2) REQUIRED	1
F-36	8	PAOZZ	8105-12-323-8359	D0857	060.20.0015	SACK,SHIPPING	2
						END OF FIGURE	

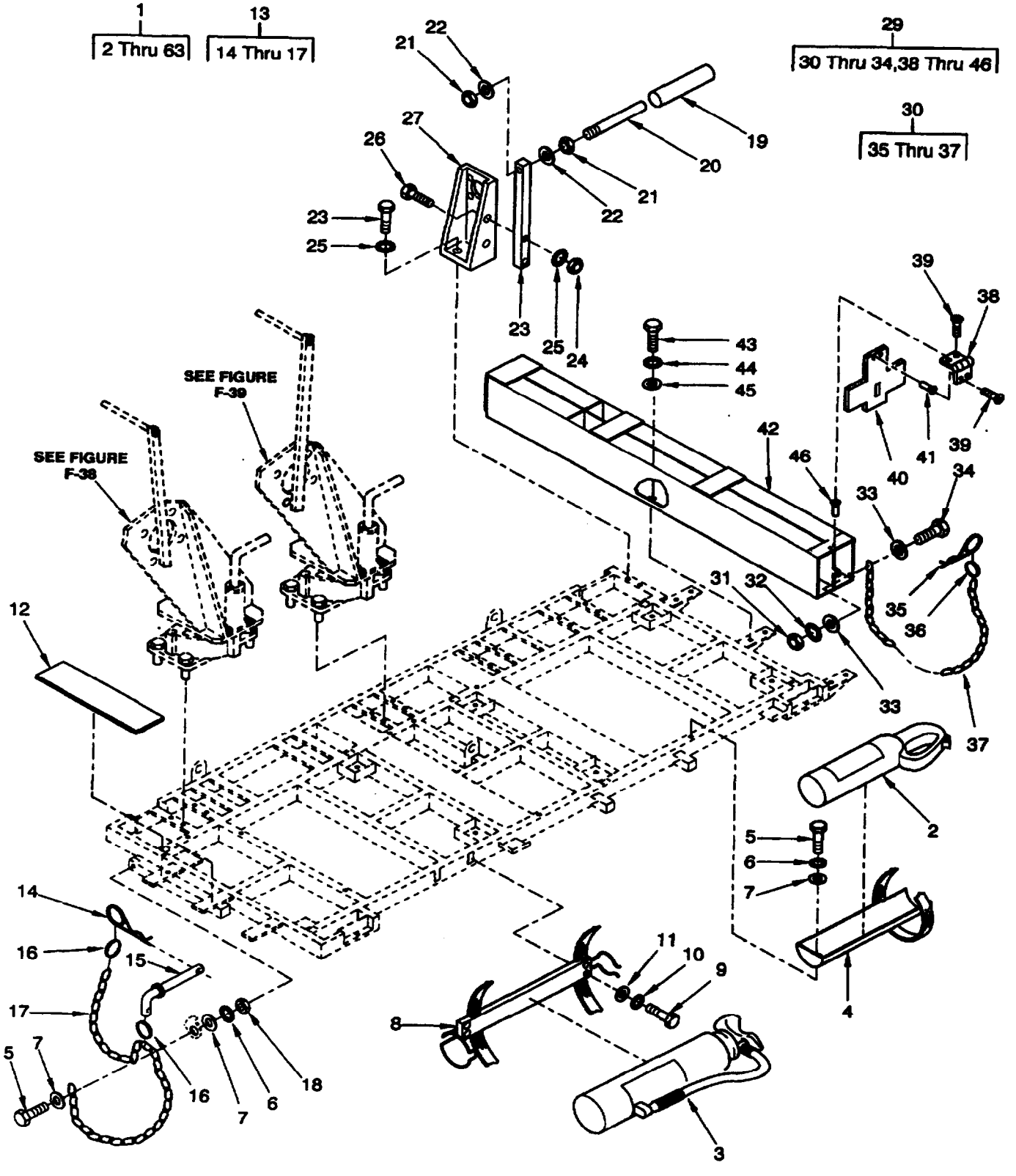


Figure F-37. Pallet Frame Assembly
Sheet 1 of 2

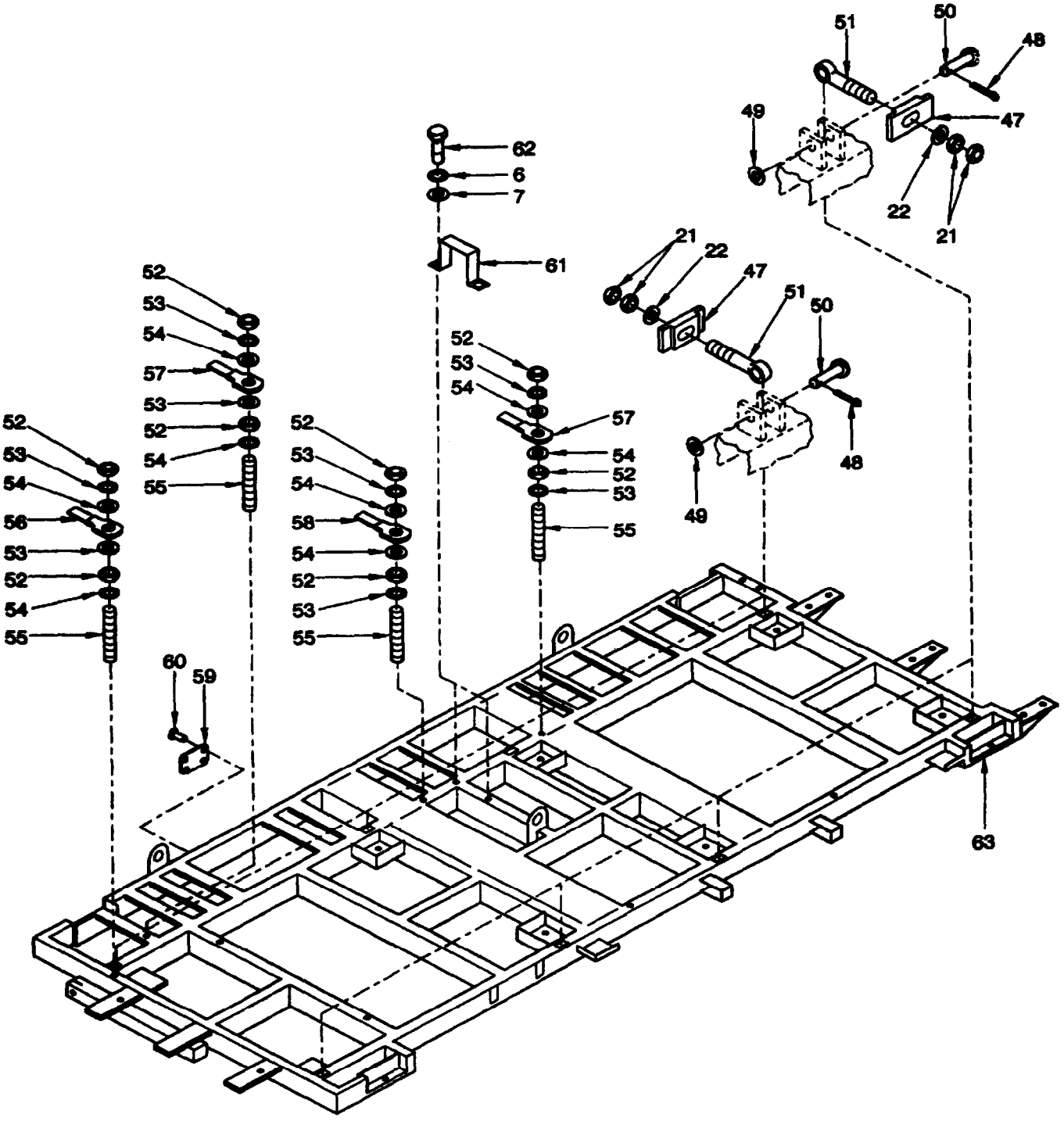


Figure F-37. Pallet Frame Assembly
Sheet at 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 05 **PALLET FRAME ASSEMBLY**	
F-37	1	XBOOO		D0857	330.04.0009	PALLET FRAME ASSEMBLY	1
F-37	2	PAOZZ	4210-12-345-5374	D0857	505.08.0004	EXTINGUISHER,FIRE	1
F-37	3	PAOZZ	4210-12-163-9176	D1724	4200017	EXTINGUISHER,FIRE	1
F-37	4	PAOZZ	4210-12-345-5618	D0857	160.27.0003	BRACKET,FIRE EXTINGUISHER	1
F-37	5	PAOZZ	5305-12-164-0313	D8286	DIN933-M6X16-A4-70	SCREW,CAP,HEXAGON HEAD	3
F-37	6	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	5
F-37	7	PAOZZ	5310-12-174-8311	D8286	DIN125-A6,4-A4-70	WASHER,FLAT	6
F-37	8	PAOZZ	4210-12-124-9662	D9478	TL4210-0034FIG1-6KG	BRACKET,FIRE EXTINGUISHER	1
F-37	9	PAOZZ	5305-12-166-4209	D8286	DIN933-M8X16-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-37	10	PAOZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	4
F-37	11	PAOZZ	5310-12-154-1380	D8286	DIN125-B8,4-140HV-A4	WASHER,FLAT	4
F-37	12	XBOZZ		D0857	060.20.0099-11.7X3.9 INCH	COVER,PROTECTION	1
F-37	13	XBOOO		D0857	040.09.0020	CHECK BOLT ASSEMBLY	1
F-37	14	PAOZZ	5315-12-323-8845	C0812	47333	PIN,LOCK	1
F-37	15	PAOZZ	5315-12-323-8356	D0857	040.09.0003	PIN,STRAIGHT,HEADED	1
F-37	16	PAOZZ	5365-12-161-2303	D8978	2585STGEHNI	RING,CONNECTING,ROUND	2
F-37	17	MOOZZ		81348	RR-C-271TYPE II CLASS 2	CHAIN SIZE 5,DOUBLE-LOOP,11.00 L, TYPE II,CL 2	1
F-37	18	PAOZZ	5310-01-418-2337	80204	B18241B120	NUT,PLAIN,HEXAGON	1
F-37	19	MOOZZ		D0857	115.04.0058-10.53 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N ITCS-A-30/8-BLACK) 10.53 INCH (270MM) REQUIRED	1
F-37	20	PAOZZ	5306-12-323-9426	D0857	160.19.0013	ROD,THREADED END	1
F-37	21	PAOZZ	5310-01-454-3919	80204	B18246B16	NUT,PLAIN,HEXAGON	16
F-37	22	PAOZZ	5310-01-454-3899	80204	B1822BH160R	WASHER,FLAT	16
F-37	23	PAOZZ	5340-12-345-9194	D0857	160.19.0017	PIVOT SHAFT ASSEMBLY	1
F-37	24	PAOZZ	5310-12-151-6713	D8286	DIN934-M12-A4-70	NUT,PLAIN,HEXAGON	2
F-37	25	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-37	26	PAOZZ	5305-12-193-2211	D8286	DIN933-M12X55-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-37	27	XBOZZ		D0857	160.31.0016	CARRIER II,CABLE DRUM	1
F-37	28	PAOZZ	5305-12-179-7416	D8286	DIN933-M12X40-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-37	29	XBOOO		D0857	035.04.0035	HOUSING ASSEMBLY,EXHAUST DUCTS	1
F-37	30	MOOZZ		D0857	430.07.0001	CHAIN ASSEMBLY (MAKE FROM ITEM 35 THRU ITEM 37 OF THIS FIGURE)	1
F-37	31	PAOZZ	5310-01-418-2337	80204	B18241B120	NUT,PLAIN,HEXAGON	1
F-37	32	PAOZZ	5310-12-124-0889	D8286	DIN6798-A5,3-FST	WASHER,LOCK	1
F-37	33	PAOZZ	5310-12-175-0041	D8286	DIN125-B5,3-140HV-A4	WASHER,FLAT	2
F-37	34	PAOZZ	5305-12-166-4222	D8286	DIN933-M5X16-A4-70	SCREW,CAP,HEXAGON HEAD	1
F-37	35	PAOZZ	5315-12-323-8845	C0812	47333	PIN,LOCK	1
F-37	36	PAOZZ	5365-12-161-2303	D8978	2585STGEHNI	RING,CONNECTING,ROUND	1
F-37	37	MOOZZ		81348	RR-C-271 TYPE II CLASS 2	CHAIN,SIZE 5,DOUBLE-LOOP,8.00 L, TYPE II,CLASS 2 (MAKE FROM (81348) P/N RR-C-271 TYPE II CLASS 2) 8.00 INCH REQUIRED	1
F-37	38	PAOZZ	5340-01-465-4400	97403	13230E5435	HINGE,ACCESS DOOR	1
F-37	39	PAOZZ	5305-01-435-5809	80204	B1867BA050160	SCREW,MACHINE	4
F-37	40	PAOZZ		97403	13230E5414	DOOR,ACCESS	1
F-37	41	PAOZZ	5310-01-466-0254	97403	13230E5436-1	NUT,PLAIN,BLIND RIVET	2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-37	42	XBOZZ		D0857	035.04.0034	HOUSING,EXHAUST DUCTS	1
F-37	43	PAOZZ	5306-01-455-2101	80204	B18235B06016N	BOLT,MACHINE	6
F-37	44	PAOZZ	5310-12-124-0890	D8286	DIN6798-A6,4-FST	WASHER,LOCK	6
F-37	45	PAOZZ	5310-12-189-6422	D8286	DIN9021-B6,4-A4-70	WASHER,FLAT	6
F-37	46	PAOZZ	5310-01-466-0254	97403	13230E5436-1	NUT,PLAIN,BLIND RIVET	2
F-37	47	XBOZZ		D0857	160.19.0052	PLATE,MOUNTING	8
F-37	48	PAOZZ	5315-01-454-7324	97403	13230E6659-1	PIN,COTTER	8
F-37	49	PAOZZ	5310-01-436-4438	80204	B1822BH140R	WASHER,FLAT	8
F-37	50	PAOZZ	5315-12-345-5271	D0857	040.13.0009	PIN,STRAIGHT,HEADED	8
F-37	51	PAOZZ	5306-12-323-4982	D8286	DIN444-BM16X130-A4-70	BOLT,EYE	8
F-37	52	PAOZZ	5310-12-151-6661	D8286	DIN934-M10-A4-70	NUT,PLAIN,HEXAGON	8
F-37	53	PAOZZ	5310-12-124-0893	D8286	DIN6798-A10,5-FST	WASHER,LOCK	8
F-37	54	PAOZZ	5310-12-189-7275	D8286	DIN125-B10,5-140 HV-A4	WASHER,FLAT	8
F-37	55	PAOZZ	5305-12-345-5375	D8286	DIN913-M10X50-A4-70	SETSCREW	4
F-37	56	PAOZZ	6150-12-323-9974	D0857	020.03.0011	LEAD,ELECTRICAL	1
F-37	57	PAOZZ	6150-12-322-2522	D0857	020.03.0006	LEAD,ELECTRICAL	2
F-37	58	PAOZZ	6150-12-323-9975	D0857	020.03.0016	LEAD,ELECTRICAL	1
F-37	59	XBOZZ		D0857	405.01.0267	PLATE,IDENTIFICATION (PALLET FRAME ASSEMBLY)	1
F-37	60	XBOZZ		D8286	DIN7337-A3X6-AL-LEG.-BK-ST-A3P	RIVET,BLIND	4
F-37	61	PAOZZ	5340-12-345-5880	D0857	160.03.0017	BRACKET,MULTIPLE ANGLE	1
F-37	62	PAOZZ	5305-12-166-4219	D8286	DIN933-M6X10-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-37	63	XBOZZ		D0857	330.04.0016	PALLET FRAME	1
						END OF FIGURE	

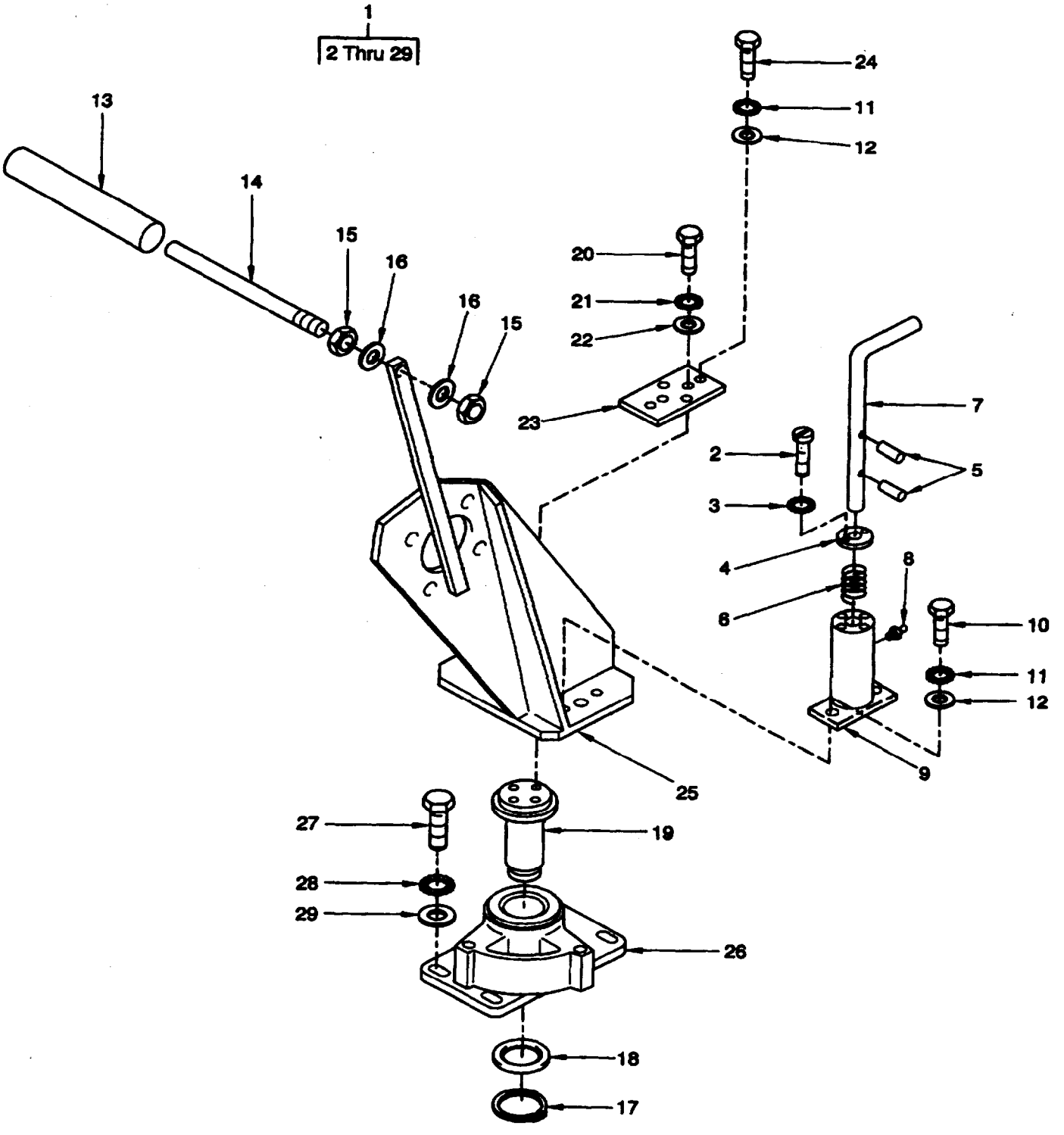


Figure F-38. Swinging Device Assembly Drum

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0501 **PALLET FRAME ASSEMBLY** **SWINGING DEVICE ASSEMBLY,** **CABLE DRUM**	
F-38	1	XBOOO		D0857	505.32.0007	SWINGING DEVICE ASSEMBLY,CABLE DRUM	1
F-38	2	PAOZZ	5305-12-151-8366	D8286	DIN84-M4X10-A4-70	SCREW,MACHINE	2
F-38	3	PAOZZ	5310-01-407-4764	62380	152.269	WASHER,LOCK	2
F-38	4	PAOZZ	5365-12-324-0675	D0857	395.25.0002	SPACER,PLATE	1
F-38	5	PAOZZ	5315-12-126-7162	D8286	DIN7-6M6X28-ST	PIN,STRAIGHT,HEADLESS	2
F-38	6	PAOZZ	5360-12-323-8770	C3224	74/4/3	SPRING,HELICAL,COMPRESSION	1
F-38	7	PAOZZ	5315-12-323-8357	D0857	040.09.0006	PIN,STRAIGHT,HEADED	1
F-38	8	PAOZZ	4730-12-125-0311	D8286	DIN71412-AM10X1	FITTING,LUBRICATION	1
F-38	9	PAOZZ	5340-12-345-9195	D0857	160.28.0022	LEVER ASSEMBLY,MANUAL	1
F-38	10	PAOZZ	5305-12-156-5563	D8286	DIN933-M8X25-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-38	11	PAOZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	4
F-38	12	PAOZZ	5310-12-154-1380	D8286	DIN125-B8,4-140HV-A4	WASHER,FLAT	4
F-38	13	MOOZZ		D0857	115.04.0058-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N ITCS-A-30/8-BLACK) 9.75 INCH (250MM) REQUIRED	1
F-38	14	PAOZZ	5306-12-323-9427	D0857	160.19.0018	ROD,THREADED END	1
F-38	15	PAOZZ	5310-12-154-3019	D8286	DIN934-M16-A4-70	NUT,PLAIN,HEXAGON	2
F-38	16	PAOZZ	5310-12-172-6828	D8286	DIN125-B17-140HV-A4	WASHER,FLAT	2
F-38	17	PAOZZ		64678	000471 010 001	RING,RETAINING	1
F-38	18	PAOZZ	5310-12-323-9614	D0857	395.04.0115	WASHER,RECESSED	1
F-38	19	PAOZZ	3040-12-346-0213	D0857	040.09.0005	AXLE,SHOULDERED	1
F-38	20	PAOZZ	5305-12-151-8285	D8286	DIN933-M12X35-A4-70	SCREW,CAP,HEXAGON H EAD	4
F-38	21	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-38	22	PAOZZ	5310-12-174-8361	D8286	DIN125-B13-140HV-A4	WASHER,FLAT	4
F-38	23	XBOZZ		D0857	310.10.0001	PLATE,PRESSURE	1
F-38	24	PAOZZ	5305-12-179-5136	D8286	DIN933-M8X35-A4-70	SCREW,CAP,HEXAGON H EAD	2
F-38	25	XBOZZ		D0857	160.31.0032	CARRIER III,CABLE D RUM	1
F-38	26	XBOZZ		D0857	435.09.0001	MOUNT	1
F-38	27	PAOZZ	5305-12-151-8286	D8286	DIN933-M12X45-A4-70	SCREW,CAP,HEXAGON H EAD	4
F-38	28	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-38	29	PAOZZ	5310-12-195-9098	D8286	DIN9021-B13-A4-70	WASHER,FLAT	4
						END OF FIGURE	

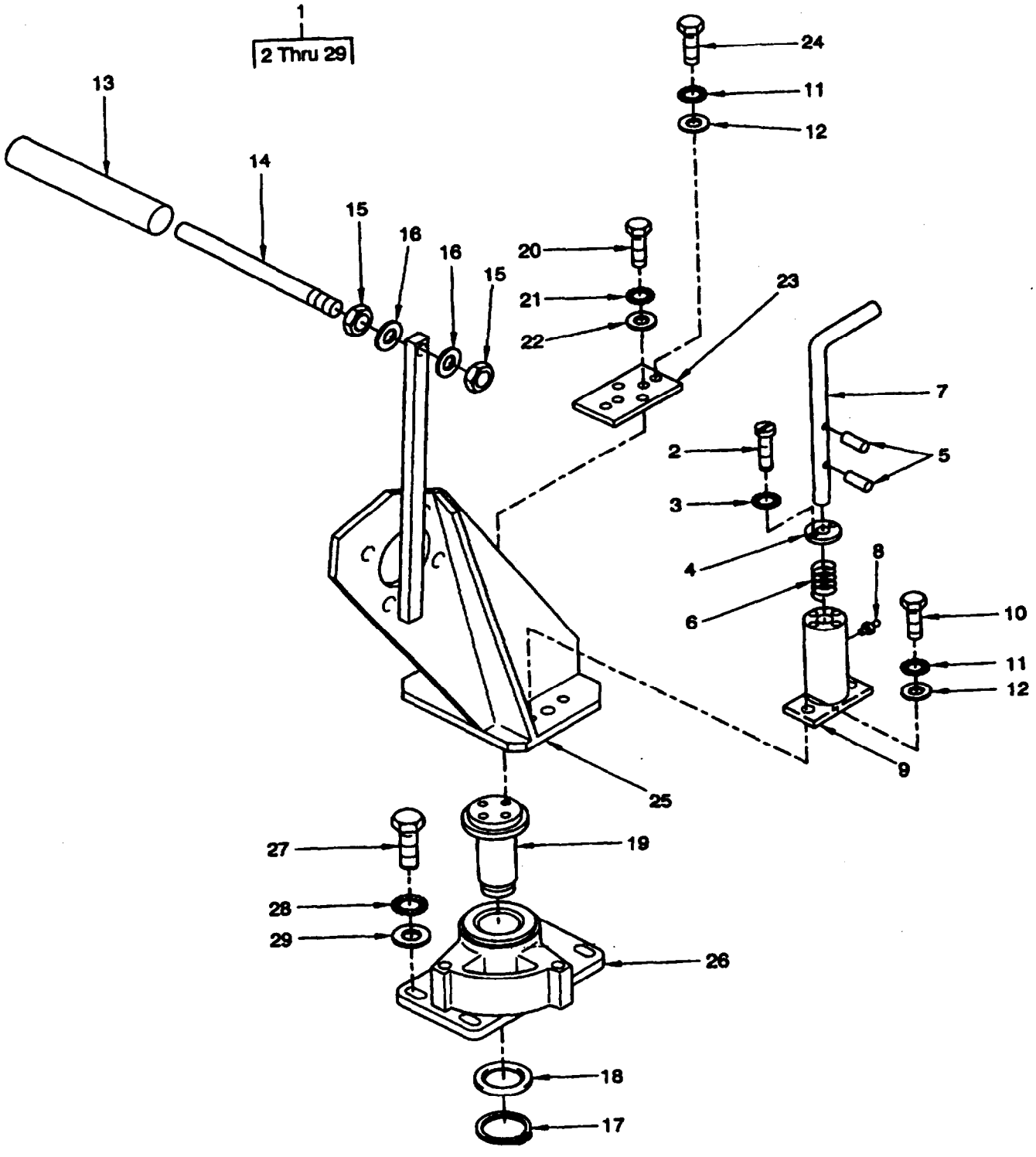


Figure F-39. Swinging Device Assembly, Cable Drum

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0501A **PALLET FRAME ASSEMBLY** **SWINGING DEVICE, CABLE DRUM**	
F-39	1	XBOOO		D0857	505.32.0006	SWINGING DEVICE ASSEMBLY,CABLE DRUM	3
F-39	2	PAOZZ	5305-12-151-8366	D8286	DIN84-M4X10-A4-70	SCREW,MACHINE	2
F-39	3	PAOZZ	5310-01-407-4764	62380	152.269	WASHER,LOCK	2
F-39	4	PAOZZ	5365-12-324-0675	D0857	395.25.0002	SPACER,PLATE	1
F-39	5	PAOZZ	5315-12-126-7162	D8286	DIN7-6M6X28-ST	PIN,STRAIGHT,HEADLESS	2
F-39	6	PAOZZ	5360-12-323-8770	C3224	74/4/3	SPRING,HELICAL,COMPRESSION	1
F-39	7	PAOZZ	5315-12-323-8357	D0857	040.09.0006	PIN,STRAIGHT,HEADED	1
F-39	8	PAOZZ	4730-12-125-0311	D8286	DIN71412-AM10X1	FITTING,LUBRICATION	1
F-39	9	PAOZZ	5340-12-345-9195	D0857	160.28.0022	LEVER ASSEMBLY,MANUAL	1
F-39	10	PAOZZ	5305-12-156-5563	D8286	DIN933-M8X25-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-39	11	PAOZZ	5310-12-124-0892	D8286	DIN6798-A8,4-FST	WASHER,LOCK	4
F-39	12	PAOZZ	5310-12-154-1380	D8286	DIN125-B8,4-140HV-A4	WASHER,FLAT	4
F-39	13	MOOZZ		D0857	115.04.0058-9.75 INCH	SLEEVING,SHRINKABLE (MAKE FROM (D8527) P/N ITCS-A-30/8-BLACK) 9.75 INCH (250MM) REQUIRED	1
F-39	14	PAOZZ	5306-12-323-9427	D0857	160.19.0018	ROD,THREADED END	1
F-39	15	PAOZZ	5310-12-154-3019	D8286	DIN934-M16-A4-70	NUT,PLAIN,HEXAGON	2
F-39	16	PAOZZ	5310-12-172-6828	D8286	DIN125-B17-140HV-A4	WASHER,FLAT	2
F-39	17	PAOZZ		64678	000471 010 001	RING,RETAINING	1
F-39	18	PAOZZ	5310-12-323-9614	D0857	395.04.0115	WASHER,RECESSED	1
F-39	19	PAOZZ	3040-12-346-0213	D0857	040.09.0005	AXLE,SHOULDERED	1
F-39	20	PAOZZ	5305-12-151-8285	D8286	DIN933-M12X35-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-39	21	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-39	22	PAOZZ	5310-12-174-8361	D8286	DIN125-B13-140HV-A4	WASHER,FLAT	4
F-39	23	XBOZZ		D0857	310.10.0001	PLATE,PRESSURE	1
F-39	24	PAOZZ	5305-12-179-5136	D8286	DIN933-M8X35-A4-70	SCREW,CAP,HEXAGON HEAD	2
F-39	25	XBOZZ		D0857	160.31.0004	CARRIER III,CABLE DRUM	1
F-39	26	XBOZZ		D0857	435.09.0001	MOUNT	1
F-39	27	PAOZZ	5305-12-151-8286	D8286	DIN933-M12X45-A4-70	SCREW,CAP,HEXAGON HEAD	4
F-39	28	PAOZZ	5310-12-124-0894	D8286	DIN6798-A13-FST	WASHER,LOCK	4
F-39	29	PAOZZ	5310-12-195-9098	D8286	DIN9021-B13-A4-70	WASHER,FLAT	4
						END OF FIGURE	

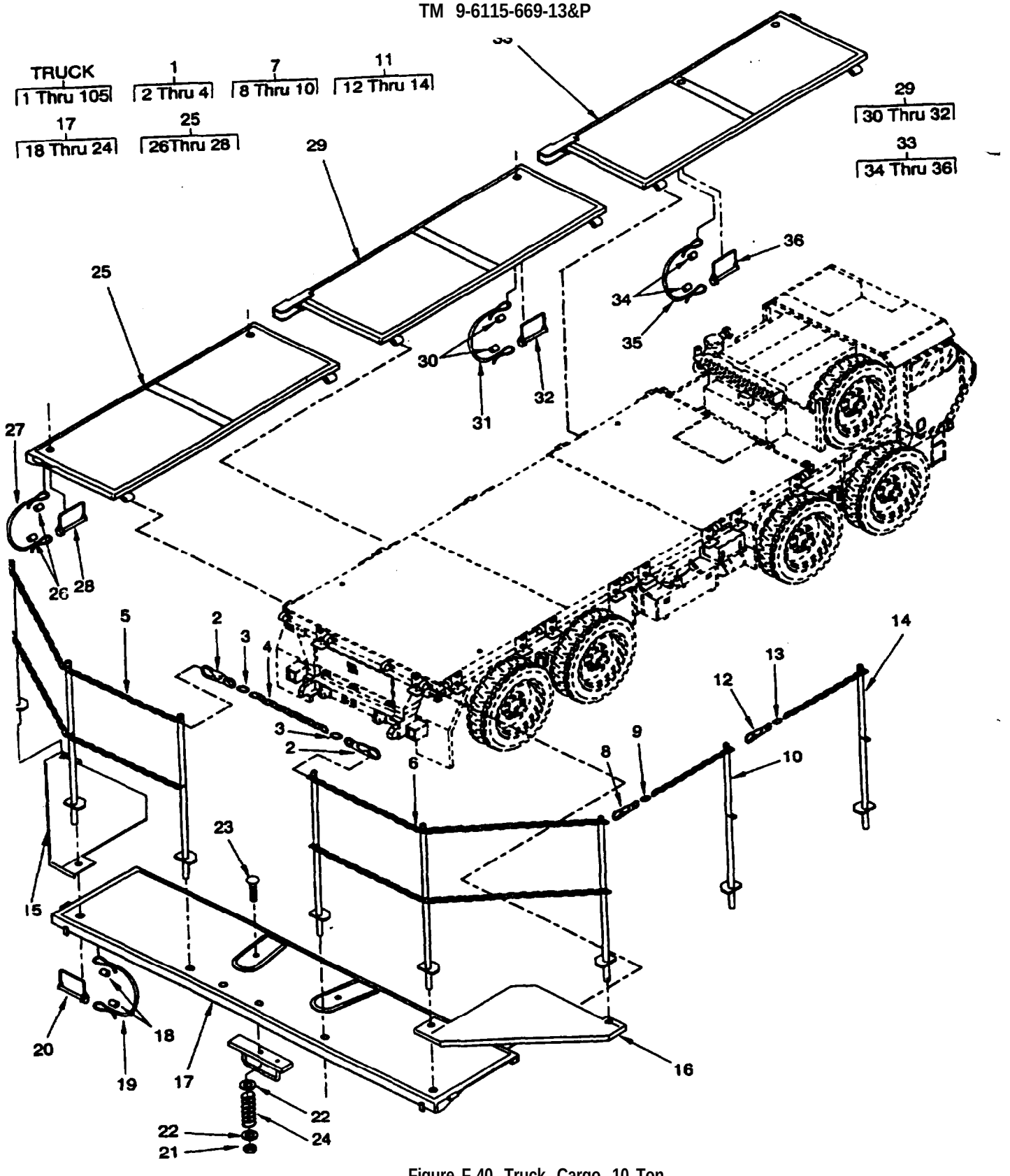


Figure F-40. Truck, Cargo, 10 Ton
Sheet 1 of 3

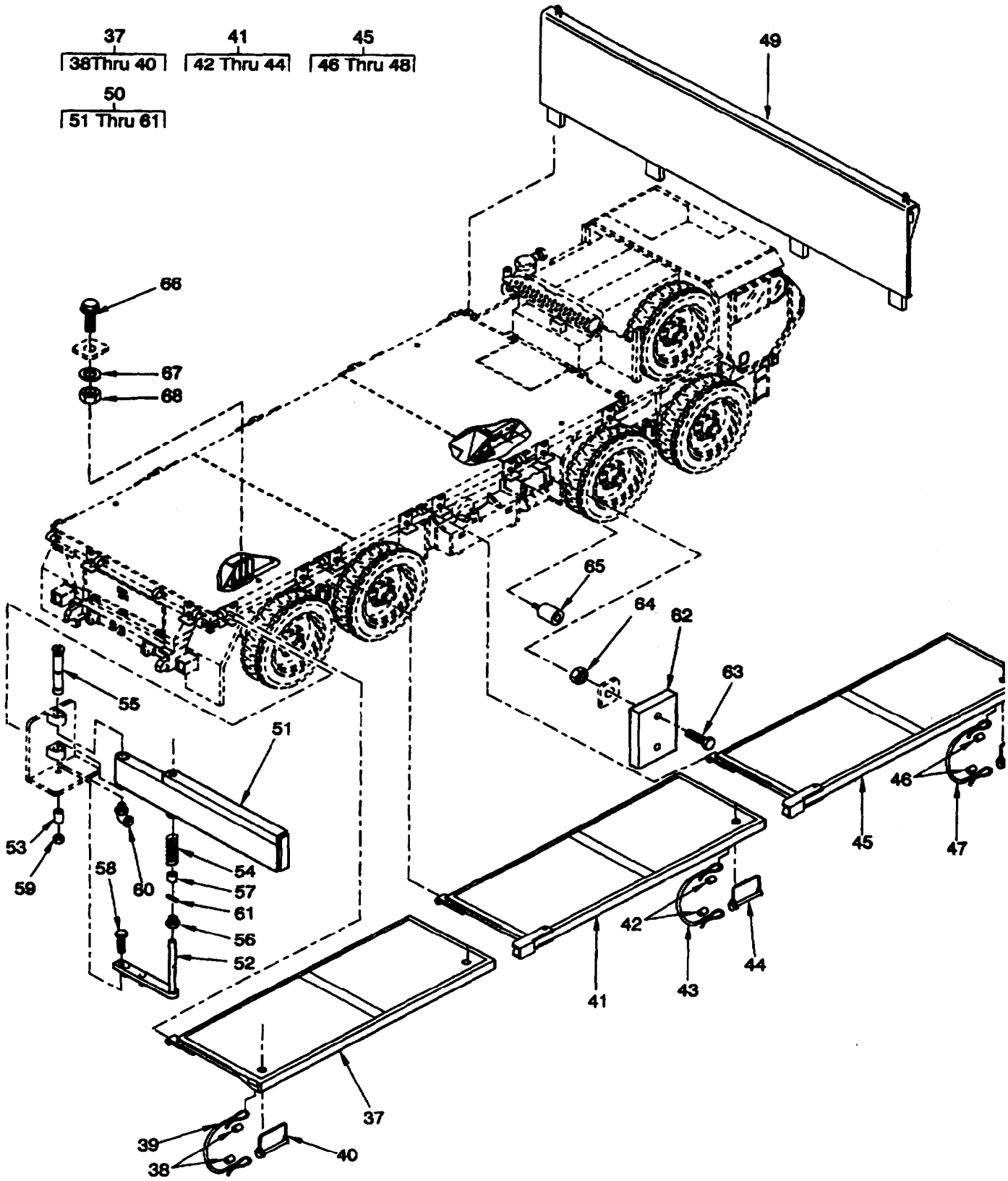


Figure F-40. Truck, Cargo, 10 Ton
Sheet 2 of 3

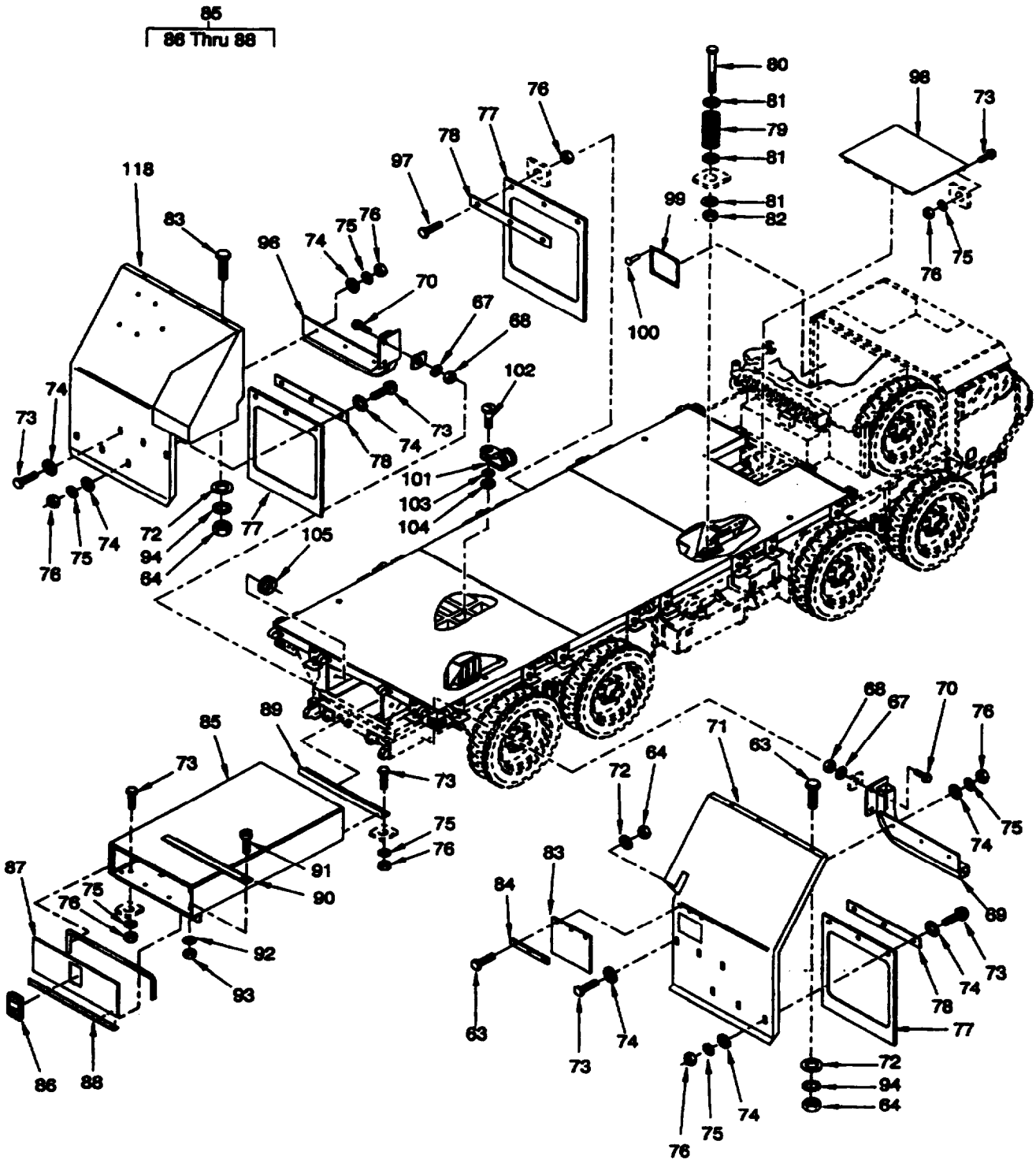


Figure F-40. Truck, Cargo, 10 Ton
Sheet 3 of 3

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 06 **TRUCK, CARGO, 10 TON**	
F-40	1	PAOOO		97403	13230E5441	CHAIN ASSEMBLY,SING LE LEG	2
F-40	2	PAOZZ	5340-01-459-3135	97403	13225E8668-4	SNAP,HOOK	2
F-40	3	PAOZZ	3020-01-030-9496	91340	13206E7400-30	CHAIN,ROLLER	2
F-40	4	PAFZZ		81348	RR-C-271TYPE1CLASS4	CHAIN,WELDED .188 DIA NOMINAL PROOF COIL,ZINC COATED,28 LINKS, TYPE I,CLASS 4	1
F-40	5	PAOFF	2040-01-457-8025	97403	13230E5440-1	STANCHION,HANDRAIL REAR,LH (NOT INTERCHANGEABLE WITH RH)	1
F-40	6	PAOFF	2040-01-457-8097	97403	13230E5440-2	STANCHION,HANDRAIL REAR,RH (NOT INTERCHANGEABLE WITH LH)	1
F-40	7	PAOFF	2040-01-457-8430	45152	5HR690	STANCHION,HANDRAIL SIDE,REAR (NOT INTERCHANGEABLE WITH ITEM 11)	2
F-40	8	PAOZZ	5340-01-459-3135	97403	13225E8668-4	SNAP,HOOK	2
F-40	9	PAOZZ	3020-01-030-9496	91340	13206E7400-30	CHAIN,ROLLER	2
F-40	10	PAFZZ		81348	RR-C-271TYPE1CLASS4	CHAIN,WELDED .188 DIA NOMINAL PROOF COIL,ZINC COATED,56 LINKS, TYPE I,CLASS 4	2
F-40	11	PAOFF	2040-01-457-8097	97403	13230E5442-2	STANCHION,HANDRAIL SIDE,CENTER AND FRONT (NOT INTERCHANGEABLE WITH ITEM 7)	6
F-40	12	PAOZZ	5340-01-459-3135	97403	13225E8668-4	SNAP,HOOK	2
F-40	13	PAOZZ	3020-01-030-9496	91340	13206E7400-30	CHAIN,ROLLER	2
F-40	14	PAFZZ		81348	RR-C-271TYPE1CLASS4	CHAIN,WELDED .188 DIA NOMINAL PROOF COIL,ZINC COATED,60 LINKS, TYPE I,CLASS 4	2
F-40	15	PAFZZ	5680-01-455-6130	97403	13230E5454-2	PANEL,STRUCTURAL	1
F-40	16	PAFZZ	5680-01-455-6129	97403	13230E5454-1	PANEL,STRUCTURAL	1
F-40	17	XBFFF		97403	13230E5392	GATE,REAR,ASSEMBLY	1
F-40	18	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	8
F-40	19	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	V
F-40	20	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	4
F-40	21	PAOZZ	5310-99-797-1816	80204	B18.2.2	NUT,PLAIN,SLOTTED,HEAD	2
F-40	22	PAOZZ	5310-00-146-7074	80205	NAS1149C0563B	WASHER,FLAT	4
F-40	23	PAOZZ	5306-00-753-6996	96906	MS35751-43	BOLT,SQUARE NECK	2
F-40	24	PAOZZ		81346	ASTM A 229	SPRING,FLAT .4375 OD X 1.00 L X .041 DIA WIRE	2
F-40	25	XBFFF		97403	13230E5421	GATE,REAR,ROADSIDE,ASSEMBLY	1
F-40	26	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	4
F-40	27	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE,TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2: 005) 10.00 INCH REQUIRED	2
F-40	28	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	2
F-40	29	XBFFF		97403	13230E5420	GATE,CENTER,ROADSIDE,ASSEMBLY	2
F-40	30	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	2
F-40	31	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	1
F-40	32	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	1
F-40	33	XBFFF		97403	13230E5419	GATE,FORWARD,ROADSIDE,ASSEMBLY	1
F-40	34	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	4

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-40	35	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE,TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	2
F-40	36	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	2
F-40	37	XBFFF		97403	13230E5396	GATE,REAR,CURBSIDE, ASSEMBLY	1
F-40	38	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	4
F-40	39	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	2
F-40	40	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	2
F-40	41	XBFFF		97403	13230E5395	GATE,CENTER,CURBSIDE,ASSEMBLY	2
F-40	42	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	2
F-40	43	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	1
F-40	44	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	1
F-40	45	XBFFF		97403	13230E5394	GATE,FORWARD,CURBSIDE,ASSEMBLY	1
F-40	46	PAOZZ	4030-00-062-7780	10001	60A5A16-3	SWAGING SLEEVE,WIRE ROPE	4
F-40	47	MOOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B,1/8 DIA X 10.00 L (MAKE FROM (81349) P/N M83420/2-005) 10.00 INCH REQUIRED	2
F-40	48	PAOZZ	5315-01-183-4150	50620	516-22LP	PIN,STRAIGHT,HEADED	2
F-40	49	XBFFF		97403	13230E5393	GATE ASSEMBLY,FRONT	1
F-40	50	XBFFF		97403	NO NUMBER	SUPPORT,ARMATURE ASSEMBLY	18
F-40	51	PAOZZ	6125-01-456-5770	97403	13230E5448	SUPPORT,ARMATURE	1
F-40	52	PAOZZ	3040-01-457-9329	97403	13230E5450	LEVER ASSEMBLY,MANUAL	1
F-40	53	PAOZZ	5365-01-454-5322	97403	13230E5449	SPACER,SLEEVE	1
F-40	54	PAOZZ	5360-01-454-5318	97403	13230E5452	SPRING,FLAT	1
F-40	55	PAOZZ	5315-01-454-6807	97403	13230E5446	PIN,SHOULDER,HEADLESS	1
F-40	56	PAOZZ	4730-01-457-9935	97403	13230E5447	COUPLING,TUBE	1
F-40	57	PAOZZ	5365-01-454-5325	97403	13230E5451	SPACER,SLEEVE	1
F-40	58	PAOZZ	5305-00-531-1097	96906	MS35308-365	SCREW,CAP,HEXAGON HEAD	1
F-40	59	PAOZZ	5310-00-059-9264	96906	MS21045C6	NUT,SELF-LOCKING,HEXAGON	1
F-40	60	PAOZZ	4730-00-172-0034	96906	MS15003-6	FITTING,LUBRICATION	1
F-40	61	PAOZZ	5315-00-841-4442	96906	MS16562-224	PIN,SPRING	1
F-40	62	XBFZZ		97403	13230E5430	BLOCK,STOP	5
F-40	63	PAOZZ	5305-00-225-3843	80204	B1821BH025C100N	SCREW,CAP,HEXAGON HEAD	21
F-40	64	PAOZZ		80204	ANSI B18.2.2	NUT,PLAIN,HEXAGON .250-20UNC-3A, STEEL,ZINC PLATED	21
F-40	65	PAOZZ		97403	13230E5431	MOUNT,RESILIENT	20
F-40	66	PAOZZ	5305-01-454-6309	97403	13230E5439-1	SCREW,CAP,HEXAGON HEAD	6
F-40	67	PAOZZ	5310-01-454-3892	80204	B1822BH200R	WASHER,FLAT	8
F-40	68	PAOZZ	5310-00-763-8922	96906	MS51967-24	NUT,PLAIN,HEXAGON	8
F-40	69	XBOFF		97403	13230E5444	BRACE,FENDER,CURBSIDE	1
F-40	70	PAOZZ	5305-01-454-6326	97403	13230E5439-2	SCREW,CAP,HEXAGON HEAD	4
F-40	71	XBOFF		97403	13230E5402	FENDER,REAR,CURBSIDE	1
F-40	72	PAOZZ	5310-00-419-6566	88044	AN960XC416	WASHER,FLAT	14
F-40	73	PAOZZ	5306-00-226-4827	80204	B1821BH031C100N	BOLT,MACHINE	16
F-40	74	PAOZZ	5310-00-146-7074	80205	NAS1149C0563B	WASHER,FLAT	6
F-40	75	PAOZA	5310-00-926-5882	96906	MS35338-164	WASHER,LOCK	16
F-40	76	PAOZZ		30554	88-22790-2	NUT,PLAIN,HEXAGON .3125-18UNC-3A, STEEL,ZINC PLATED	28
F-40	77	PAOZZ	2540-01-131-6242	97403	13230E5405	GUARD,SPLASH,VEHICU LAR	4
F-40	78	PAOZZ		97403	13230E5398	STRAP,RETAINING	4
F-40	79	PAOZZ	5360-01-454-5329	97403	13230E5438	SPRING,FLAT	4
F-40	80	PAOZZ	5305-01-465-3067	80204	B1821BH062C650N	SCREW,CAP,HEXAGON HEAD, .625-11UNC-2A X 6.50 L,STEEL,ZINC PLATED	4
F-40	81	PAOZZ	5310-00-167-0809	80205	NAS1149C1290R	WASHER,FLAT	12

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
F-40	82	PAOZZ		30554	88-22790-5	NUT,PLAIN,HEXAGON .625-11UNC-3A, STEEL,ZINC PLATED	4
F-40	83	PAOZZ	2540-01-202-5776	97403	13230E5404	GUARD,SPLASH,VEHICU LAR	1
F-40	84	PAOZZ	5340-01-205-3550	97403	13230E5406	STRAP,RETAINING	1
F-40	85	XBFFF		97403	13230E5415	BOX,STORAGE	1
F-40	86	PAOZZ	5340-01-137-6992	94222	64-10-301-40	CATCH,FLUSH	1
F-40	87	PAOFF	5330-01-456-7449	97403	13230E6417	GASKET	V
F-40	88	PAOZZ	5340-01-453-2928	58536	AA55593-12D	HINGE,BUTT	1
F-40	89	XBFZZ		97403	13230E5433	ANGLE,SUPPORT,BOX	2
F-40	90	XBFZZ		97403	13230E6416	BRACKET,BOX	1
F-40	91	PAFZZ		97403	13218E0493-347PS	SCREW,MACHINE .164-32 X .50 L	4
F-40	92	PAFZA	5310-00-926-5882	96906	MS35338-164	WASHER,LOCK	4
F-40	93	PAFZZ	5310-00-763-8922	96906	MS51967-24	NUT,PLAIN,HEXAGON	4
F-40	94	PAOZA	5310-00-926-5882	96906	MS35338-164	WASHER,LOCK	8
F-40	95	XBOFF		97403	13230E5403	FENDER,REAR,ROADSIDE	1
F-40	96	XBOFF		97403	13230E5401	BRACE,FENDER,ROADSIDE	1
F-40	97	PAOZZ	5306-00-226-4829	80204	B1821BH031C125N	BOLT,MACHINE	6
F-40	98	XBFZZ		97403	13230E5391	COVER,ACCESS	1
F-40	99	PAFZZ	9905-01-455-6128	97403	13230E5389	PLATE,INSTRUCTION	1
F-40	100	PAFZZ	5320-00-582-3304	96906	MS20600AD4W2	RIVET,BLIND	4
F-40	101	PAOZZ	5340-00-291-5347	96906	MS21919WDG8	CLAMP,LOOP	12
F-40	102	PAOZZ	5305-00-984-6211	96906	MS35206-264	SCREW,MACHINE	12
F-40	103	PAOZZ	5310-00-045-3296	96906	MS35338-43	WASHER,LOCK	12
F-40	104	PAOZZ	5310-00-934-9758	96906	MS35649-202	NUT,PLAIN,HEXAGON	12
F-40	105	PAOZZ	5325-00-270-8889	96906	MS35489-81	GROMMET,NONMETALLIC	2
						END OF FIGURE	

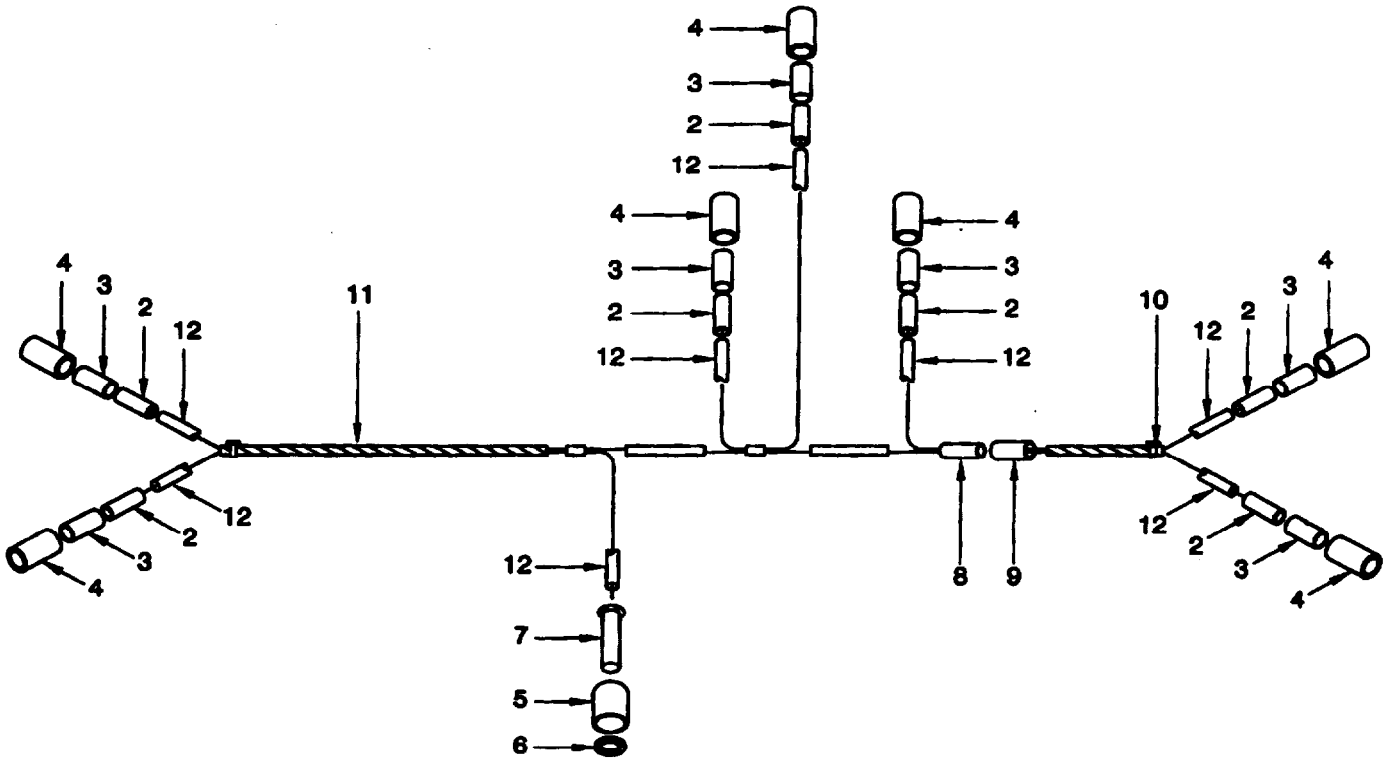


Figure F-41. WIRING HARNESS
SHEET 1 OF 2

Fig. F-41 Wire List Table

WIRE REF N.	FIG. F-41 ITEM NO. WIRE MARKING	FROM	FIG. F-41 ITEM No.	TO	FIG. F-41 ITEM No.	FIG. F-41 ITEM NO.	WIRE COLOR	WIRE LENGTH	UOC
1		A1	2	S1	9	12		34.00	FIN
2		A2	2	S1	8	12		34.00	FLN
3		S1	9	S1	9	12		16.00	FIN
4		S1	9	B1	7	12		22.00	FLN
5		S1	9	C1	2	12		13.50	FLN
B		S1	9	D1	2	12		13.50	FIN
7		S1	9	E1	2	12		11.50	PLN
8		S1	9	S1	9	12		16.00	PIN
9		S1	9	F1	2	12		48.00	FIN
10		S1	9	F2	2	12		48.00	FLN

Figure F-41. Wiring Harness
Sheet 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0601 **TRUCK, CARGO, 10 TON** **WIRING HARNESS**	
F-41	1	XBOFF		97403	13230E5458	WIRING HARNESS	1
F-41	2	PAOZZ	5940-00-399-6676	11083	3M6018	TERMINAL ASSEMBLY FEMALE	7
F-41	3	PAOZZ	5970-00-833-8562	19207	8338562	INSULATOR,BUSHING	7
F-41	4	PAOZZ	5935-00-833-8561	19207	8338561	SHELL,ELECTRICAL CONNECTOR	7
F-41	5	PAOZZ	5935-00-691-5591	97403	13207E6498-2	SHELL,ELECTRICAL CONNECTOR	1
F-41	6	PAOZZ	5310-00-833-8567	97403	13207E6455-1	WASHER,SLOTTED	1
F-41	7	PAOZA	5999-00-057-2929	19204	572929	CONTACT,ELECTRICAL	1
F-41	8	PAOZA	5970-00-149-7292	81349	M23053/5-214-C	INSULATION SLEEVING,ELECTRICAL	V
F-41	9	PAOZZ	5935-01-456-9277	63590	CCS-DY-1414	CONNECTOR,PLUG,ELECTRICAL,14AWG, TYPE II,CLASS 1,KIND CU,STYLE A	3
F-41	10	PAOZZ	5975-00-074-2072	96906	MS3367-1-9	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	2
F-41	11	PAOZZ	5970-01-465-9972	81349	M-47325-B	TAPE,INSULATION,ELECTRICAL	V
F-41	12	MFFZZ		81349	M16878/4BKE9	WIRE,ELECTRICAL INSULATED,14 AWG (MAKE FROM (81349) P/N M16878/ 4BKE9) AS REQUIRED	V
						END OF FIGURE	

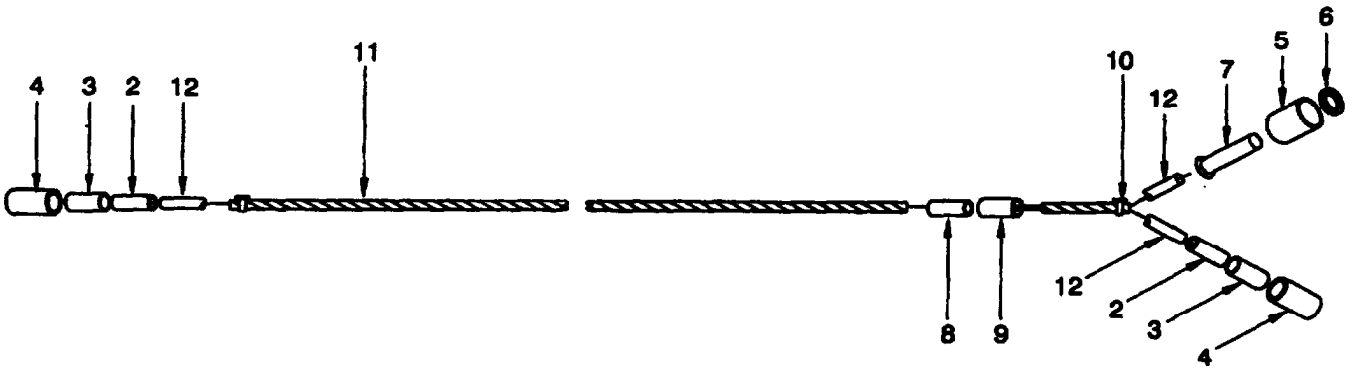


Figure F-42. Wiring Harness
Sheet 1 of 2

Flg. F-42 - Wire List Table

WIRE REF NO	ITEM NO. WIRE MARKING	FROM	Fig. F-42 ITEM No.	To	Fig. F-42 ITEM No.	Fig. F-42 ITEM No.	WIRE COLOR	WIRE LENGTH	UOC
1		A1	2	S1	9	12		241.00	FLN
2		S1	9	B1	2	12		4.00	FLN
3		S1	9	B2	2	12		4.00	FLN

Figure F-42. Wiring Harness
Sheet 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0601A **TRUCK, CARGO, 10 TON**	
F-42	1	XBOFF		97403	13230E5457	WIRING HARNESS	1
F-42	2	PAOZZ	5940-00-399-6676	11083	3M6018	TERMINAL ASSEMBLY FEMALE	2
F-42	3	PAOZZ	5970-00-833-8562	19207	8338562	INSULATOR,BUSHING	2
F-42	4	PAOZZ	5935-00-833-8561	19207	8338561	SHELL,ELECTRICAL CONNECTOR	2
F-42	5	PAOZZ	5935-00-572-9180	97403	13207E6498-1	SHELL,ELECTRICAL CONNECTOR	1
F-42	6	PAOZZ	5310-00-833-8567	97403	13207E6455-1	WASHER,SLOTTED	1
F-42	7	PAOZA	5999-00-057-2929	19204	572929	CONTACT,ELECTRICAL	1
F-42	8	PAOZA	5970-00-149-7292	81349	M23053/5-214-C	INSULATION SLEEVING,ELECTRICAL	V
F-42	9	PAOZZ	5935-01-456-9277	63590	CCS-DY-1414	CONNECTOR,PLUG,ELECTRICAL,14 AWG, TYPE II,CLASS 1,KIND CU,STYLE A	1
F-42	10	PAOZZ	5975-00-074-2072	96906	MS3367-1-9	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	2
F-42	11	PAOZZ	5970-01-465-9972	81349	M-47325-B	TAPE,INSULATION,ELECTRICAL	V
F-42	12	MFFZZ		81349	M16878/4BKE9	WIRE,ELECTRICAL INSULATED,14 AWG (MAKE FROM (81349) P/N M16878/ 4BKE9) AS REQUIRED	V
						END OF FIGURE	

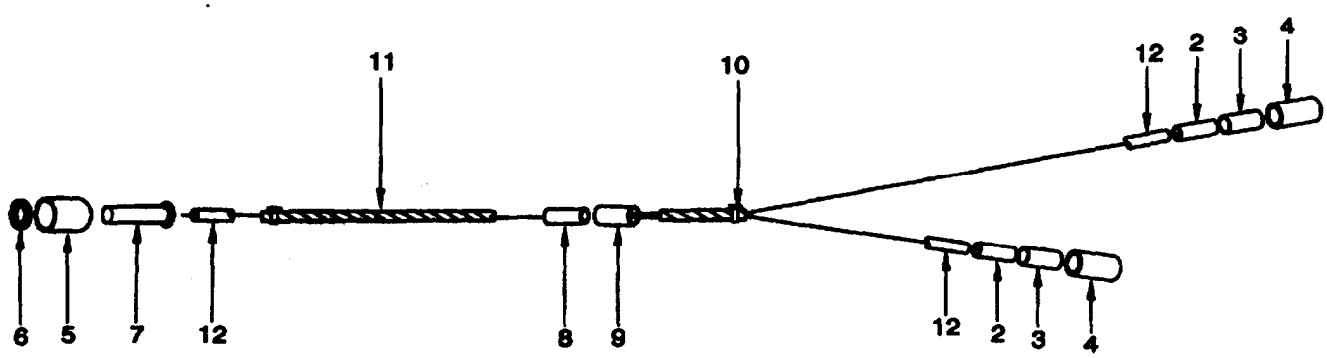


Figure F-43. Wiring Harness
Sheet 1 of 2

Fig. F-43. - Wire List Table

WIRE REF No.	FIG. F-43 ITEM NO. WIRE MARKING	FROM	FIG. F-43 ITEM No.	TO	FIG. F-43 ITEM No.	FIG. F-43 ITEM No.	WIRE COLOR	WIRE LENGTH	UOC
1		A1	7	S1	9	12		34.00	PLN
2		S1	9	B2	2	12		30.00	PLN
3		S1	8	B1	2	12		88.00	PLN

Figure F-43. Wiring Harness
Sheet 2 of 2

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 0601B **TRUCK, CARGO, 10 TON** **WIRING HARNESS**	
F-43	1	XBOFF		97403	13230E5456	WIRING HARNESS	1
F-43	2	PAOZZ	5940-00-399-6676	11083	3M6018	TERMINAL ASSEMBLY FEMALE	2
F-43	3	PAOZZ	5970-00-833-8562	19207	8338562	INSULATOR,BUSHING	2
F-43	4	PAOZZ	5935-00-833-8561	19207	8338561	SHELL,ELECTRICAL CONNECTOR	2
F-43	5	PAOZZ	5935-00-572-9180	97403	13207E6498-1	SHELL,ELECTRICAL CONNECTOR	1
F-43	6	PAOZZ	5310-00-833-8567	97403	13207E6455-1	WASHER,SLOTTED	1
F-43	7	PAOZA	5999-00-057-2929	19204	572929	CONTACT,ELECTRICAL	1
F-43	8	PAOZA	5970-00-149-7292	81349	M23053/5-214-C	INSULATION SLEEVING,ELECTRICAL	V
F-43	9	PAOZZ	5935-01-456-9277	63590	CCS-DY-1414	CONNECTOR,PLUG,ELECTRICAL,14 AWG, TYPE II,CLASS 1,KIND CU,STYLE A	1
F-43	10	PAOZZ	5975-00-074-2072	96906	MS3367-1-9	STRAP,TIEDOWN,ELECTRICAL COMPONENTS	2
F-43	11	PAOZZ	5970-01-465-9972	81349	M-47325-B	TAPE,INSULATION,ELECTRICAL	V
F-43	12	MFFZZ		81349	M16878/4BKE9	WIRE,ELECTRICAL INSULATED,14 AWG (MAKE FROM (81349) P/N M16878/ 4BKE9) AS REQUIRED	V
						END OF FIGURE	

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 98 **BULK-MATERIAL LIST**	
BULK	2	PAFZZ		D0277	44148905	CABLE,SCREENED UVLEX-T-44	V
BULK	3	PAFZZ		83873	NOMEX155-U 35,00 "F" WHT	CABLE,SPECIAL PURPOSE	V
BULK	4	PAFZZ		83873	NOMEX155-U 25,00 "F" WHT	CABLE,SPECIAL PURPOSE	V
BULK	5	PAFZZ		83873	NOMEX155-U 50,00 "F" WHT	CABLE,SPECIAL PURPOSE	V
BULK	6	PAFZZ	6145-12-324-1302	C3033	LIYCY2X0,75GR	CABLE,SPECIAL PURPO SE	V
BULK	7	PAFZZ		D0857	180.01.0031	CABLE,SPECIAL PURPO SE, 7XAWG4+6XAWG16	V
BULK	8	PAOZZ		81348	RR-C-271TYPE II CLASS 2	CHAIN	V
BULK	9	PAOZZ	4020-12-345-9346	D0857	430.06.0001	CORD,TWISTED	V
BULK	10	PAOZZ	5999-12-346-1472	C3394	NK-120-2534-0000	HF-SEALING,6,4X12	V
BULK	11	PAFZZ	4720-12-346-2901	D0857	175.03.0029	HOSE,NONMETALLIC	V
BULK	12	PAFZZ	5970-12-155-6862	D9477	VG95343T05A010A	INSULATION SLEEVING ,ELECTRICAL	V
BULK	13	PAFZZ	5970-12-195-4249	D9477	VG95343T05A012A	INSULATION SLEEVING ,ELECTRICAL	V
BULK	14	PAFZZ	5970-12-159-1000	D9477	VG95343T05A007A	INSULATION SLEEVING ,ELECTRICAL	V
BULK	15	PAFZZ	5970-12-151-4348	D8527	305-25419	INSULATION SLEEVING ,ELECTRICAL	V
BULK	16	PAFZZ	5970-12-182-6865	D8527	305-50819	INSULATION SLEEVING ,ELECTRICAL	V
BULK	17	PAFZZ	5970-12-179-1846	D0531	083 271-0	INSULATION SLEEVING ,ELECTRICAL	V
BULK	18	PAFZZ	5970-12-151-4348	D8527	301-0254-3	INSULATION SLEEVING ,ELECTRICAL	V
BULK	19	PAFZZ	5970-12-345-4826	D8527	324-09010	INSULATION SLEEVING ,ELECTRICAL	V
BULK	20	PAOZZ		D0857	250.03.0003	MAT,RUBBER,BLACK	V
BULK	21	PAOZZ		D0857	060.20.0099	MAT,RUBBER	V
BULK	22	PAOZZ	5975-12-306-5074	D8527	167-11169	PROTECTIVE TUBE,NS- 21	V
BULK	23	PAOZZ	5975-12-345-6734	D1169	HNG75037	RACEWAY,NONMETALLIC	V
BULK	24	PAOZZ	5975-12-345-6735	D1169	HNG75050	RACEWAY,NONMETALLIC	V
BULK	25	PAFZZ	5940-99-119-4382	D0493	1201015	RAIL,ASSEMBLY	V
BULK	26	PAOZZ	5306-12-307-7568	D8286	DIN975-M5-A4-70	ROD,CONTINUOUS THREAD	V
BULK	27	PAFZZ	5970-12-182-6865	D9477	VG95343T05B012M	SLEEVING,SHRINKABLE ,ELECTRICAL	V
BULK	28	PAFZZ		D8527	ITCS-A-30/8-BLACK	SLEEVING,SHRINKABLE	V
BULK	29	PAOZZ		D8905	421A329	SPONGE RUBBER	V
BULK	30	PAFZZ	9520-12-322-7018	D8857	1175.0	SUPPORT,RAIL	V
BULK	31	PAFZZ		C7365	PST 8408-18	TUBE,COLD SHRINKING	V
BULK	32	PAFZZ	4720-12-345-7673	D0857	175.03.0002	TUBING,NONMETALLIC	V
BULK	33	PAOZZ		81349	M83420/2-005	WIRE ROPE,FLEXIBLE, TYPE 1, COMPOSITION B	V
BULK	34	PAFZZ	6145-12-173-2964	D1230	5DA2377-5	WIRE,ELECTRICAL	V
BULK	35	PAFZZ	6145-12-173-2971	D1230	5DA2387-5	WIRE,ELECTRICAL	V
BULK	36	PAFZZ	6145-12-173-4812	D1230	5DA2388-5	WIRE,ELECTRICAL	V
BULK	37	PAFZZ		83873	NOMEX155-U	WIRE,ELECTRICAL	V
BULK	38	PAFZZ		83873	NOMEX155-U 0.75 "F" WHT	WIRE,ELECTRICAL	V
BULK	39	PAFZZ	6145-01-456-0874	83873	NOMEX155-U 1.00 "F" WHT	WIRE,ELECTRICAL	V
BULK	40	PAFZZ	6145-01-456-0876	83873	NOMEX155-U 1.50 "F" WHT	WIRE,ELECTRICAL	V
BULK	41	PAFZZ	6145-01-456-0903	83873	NOMEX155-U 2.50 "F" WHT	WIRE,ELECTRICAL	V
BULK	42	PAFZZ	6145-12-345-8545	D1427	TX20-1932/54	WIRE,ELECTRICAL	V
BULK	43	MFFZZ		81349	M16878/4BKE9	WIRE,ELECTRICAL INSULATED,14 AWG (MAKE FROM (81349) P/N M16878/ 4BKE9) AS REQUIRED	V
BULK	44	PAFZZ	6145-00-295-2813	81349	M16878/4BKE9	WIRE, ELECTRICAL	V
						END OF FIGURE	

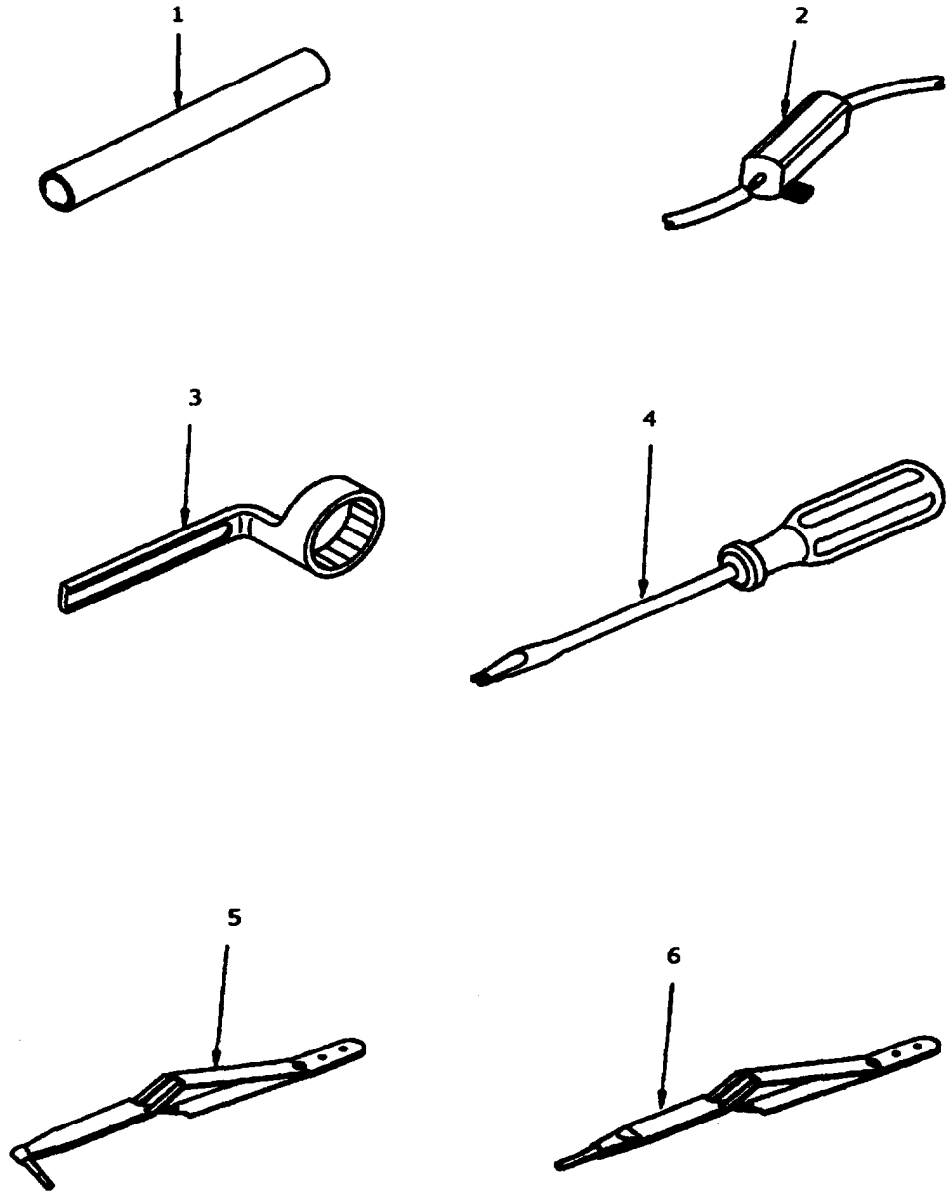


Figure F-45. Special Tools
Sheet 1 of 4

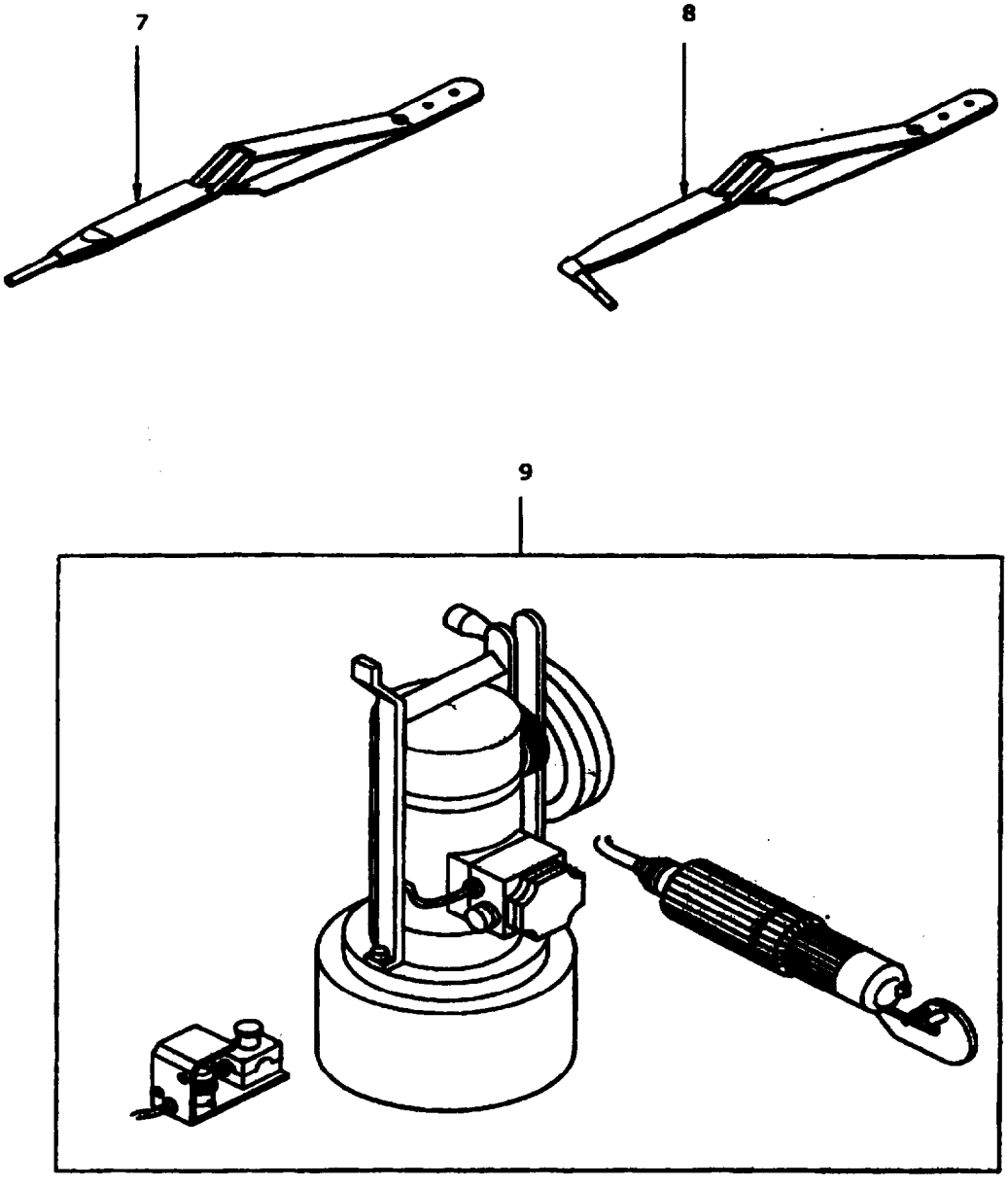


Figure F-45. Special Tools
Sheet 2 of 4

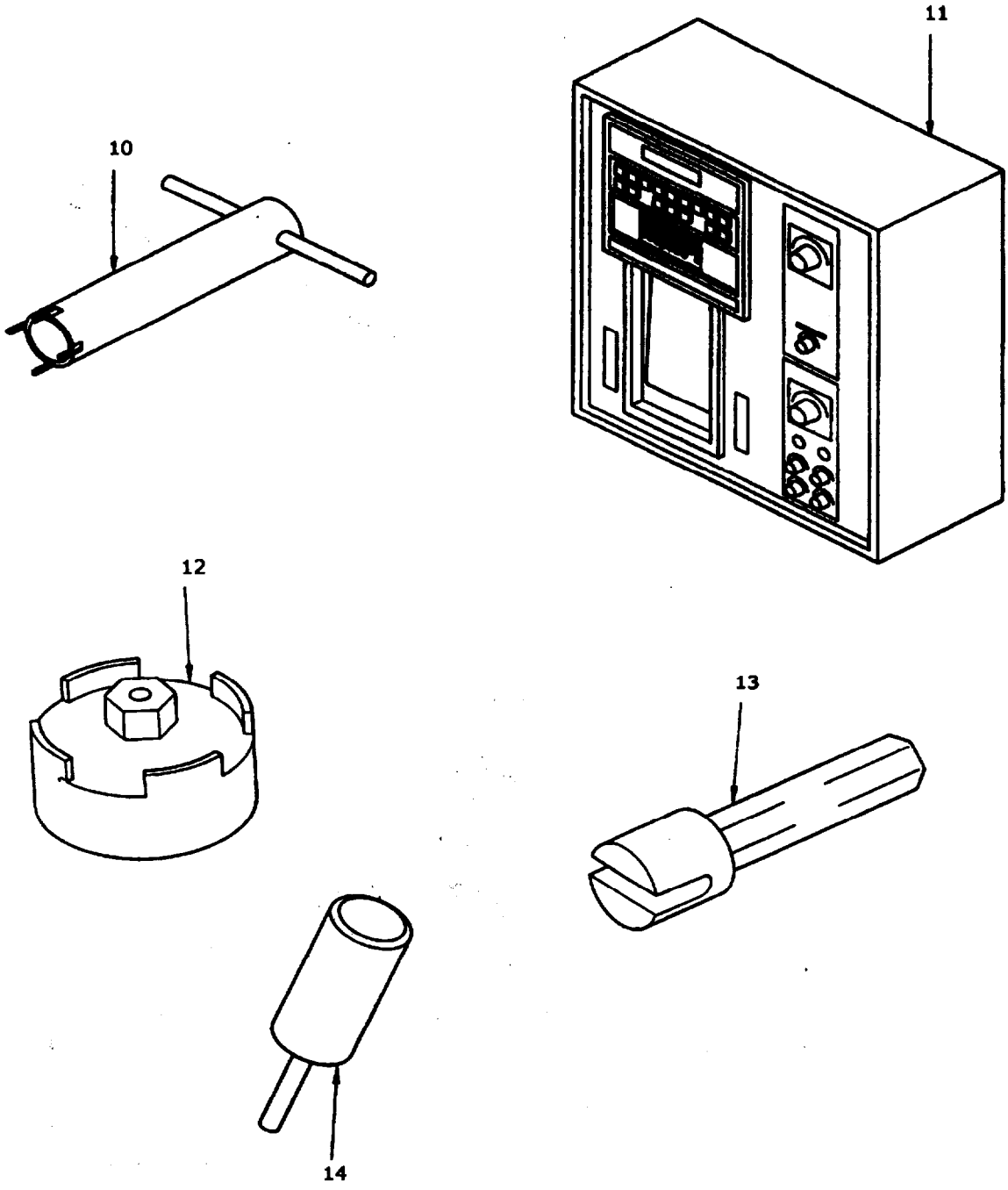


Figure F-45. Special Tools
Sheet 3 of 4

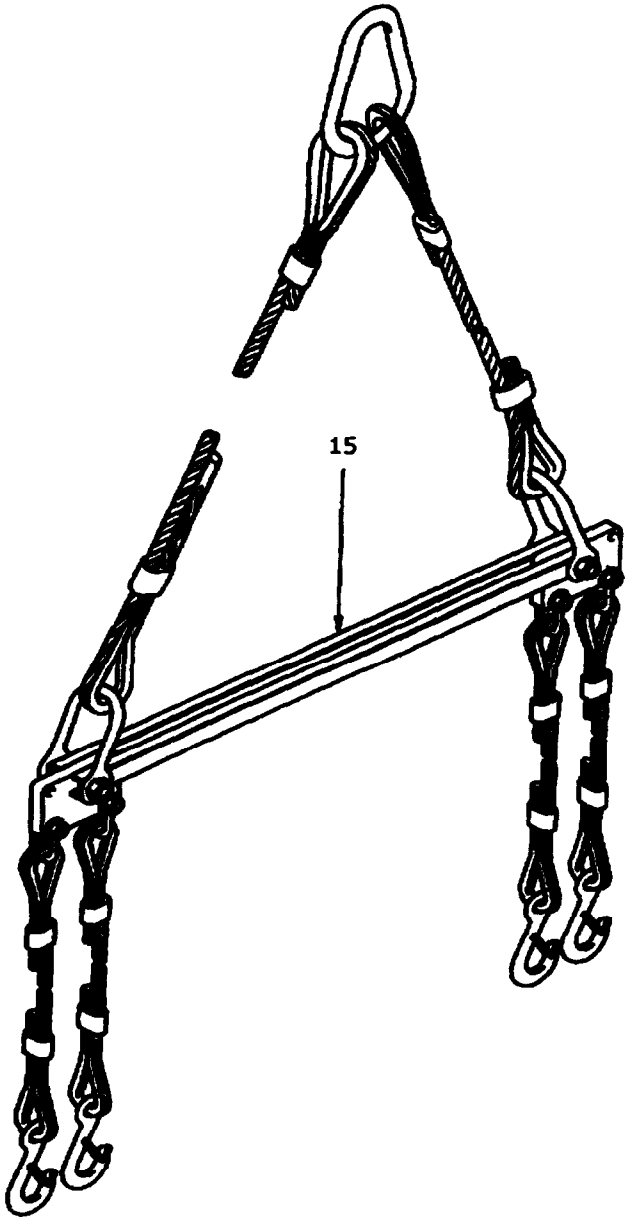


Figure F-45. Special Tools
Sheet 4 of 4

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY INC IN UNIT
						GROUP 99 **SPECIAL TOOLS AND TEST EQUIPMENT**	
F-45	1	PAOZZ	5120-12-319-6370	D9847	3SB1902-2AD	EXTRACTOR,LAMP	1
F-45	2	PDFZZ		D0857	525.17.0301	RESISTOR,FIXED 1000 OHMS,0.25 WATT	1
F-45	3	PEFZZ	5120-12-347-8071	D0857	505.09.0063	WRENCH,SHOP MANUFACTURED	1
F-45	4	PDFZZ		D0857	505.38.0011	FORK-HEAD,SCREWDRIVER	1
F-45	5	PDFZZ	5120-00-177-6966	96906	MS-27495-R20	REMOVER,ELECTRICAL	1
F-45	6	PDFZZ	5120-00-177-6967	96906	MS-27495-A20	INSERTER,ELECTRICAL	1
F-45	7	PDFZZ	5120-00-409-5206	81349	M81969/8-08	REMOVER,ELECTRICAL	1
F-45	8	PDFZZ	5120-00-018-0529	81349	M81969/8-07	INSERTER,ELECTRICAL	1
F-45	9	PEFZZ	5180-12-345-7460	D0857	505.38.0003	CRIMPING OUTFIT,HYDRAULIC	1
F-45	10	PEFZZ		D0857	505.38.0010	WRENCH,SOCKET,SHOP MANUFACTURED	1
F-45	11	PDFZZ	6625-01-438-6968	C1389	GOULD RS 3200	X-Y-PRINTER	1
F-45	12	PAOZZ	5120-12-347-5454	D8086	67 600 47 111	FILTER,FLUID	1
F-45	13	PDFZZ	5120-12-163-0535	D8400	190200	MANDREL,SPECIAL	1
F-45	14	PAFZZ	5120-12-346-3084	D0857	505.27.0004	MANDREL GUIDE	1
F-45	15	PBOFF		97403	13230E5460	SLING ASSEMBLY,GENERATOR SET, LIFTING	1
						END OF FIGURE	

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5120-00-018-0529	F-45	8
5310-00-045-3296	F-40	103
5999-00-057-2929	F-41	7
	F-42	7
	F-43	7
5310-00-059-9264	F-40	59
4030-00-062-7780	F-40	18
	F-40	26
	F-40	30
	F-40	34
	F-40	38
	F-40	42
	F-40	46
5975-00-074-2072	F-41	10
	F-42	10
	F-43	10
5310-00-146-7074	F-40	22
	F-40	74
5970-00-149-7292	F-41	8
	F-42	8
	F-43	8
5310-00-167-0809	F-40	81
4730-00-172-0034	F-40	60
5120-00-177-6966	F-45	5
5120-00-177-6967	F-45	6
5305-00-225-3843	F-40	63
5306-00-226-4827	F-40	73
5306-00-226-4829	F-40	97
5999-00-243-6500	F-16	5
5305-00-253-5614	F-5	38
5325-00-270-8889	F-40	105
5340-00-291-5347	F-40	101
6145-00-295-2813	BULK	44
5940-00-399-6676	F-41	2
	F-42	2
	F-43	2
5120-00-409-5206	F-45	7
5310-00-419-6566	F-40	72
5305-00-531-1097	F-40	58
5935-00-572-9180	F-42	5
	F-43	5
5320-00-582-3304	F-40	100
5340-00-598-0146	F-5	39
5935-00-691-5591	F-41	5
5935-00-716-3297	F-25	48
5306-00-753-6996	F-40	23
5310-00-763-8922	F-40	68
	F-40	93
5935-00-833-8561	F-41	4
	F-42	4
	F-43	4
5970-00-833-8562	F-41	3
	F-42	3
	F-43	3
5310-00-833-8567	F-41	6
	F-42	6
	F-43	6
5315-00-841-4442	F-40	61
5310-00-926-5882	F-40	75
	F-40	92
	F-40	94
5310-00-934-9758	F-40	104
5305-00-984-6211	F-40	102
3020-01-030-9496	F-40	13
	F-40	3
	F-40	9
5975-01-048-2922	F-10	6
	F-6	6
	F-7	6
	F-8	6
	F-9	6
2540-01-131-6242	F-40	77
5340-01-137-6992	F-40	86
5935-01-182-8884	F-36	2
5315-01-183-4150	F-40	20
	F-40	28
	F-40	32
	F-40	36
	F-40	40
	F-40	44
	F-40	48
5935-01-192-8928	F-25	17
2540-01-202-5776	F-40	83
5961-01-204-6187	F-27	34
	F-29	3
5340-01-205-3550	F-40	84
5310-01-265-6333	F-1	18
5935-01-338-8789	F-25	16
5935-01-338-8790	F-25	26
5935-01-346-8624	F-25	27
6115-01-374-5038	F-1	1
5310-01-407-4764	F-18	20
	F-25	22
	F-27	4
	F-38	3
	F-39	3
5310-01-418-2337	F-37	18
	F-37	31
5305-01-435-5809	F-37	39
5310-01-436-4438	F-37	49
6625-01-438-6968	F-45	11
5945-01-441-5015	F-27	32
5935-01-444-6795	F-25	18
	F-3	3
5935-01-444-6796	F-25	19
5935-01-444-6797	F-3	7
5935-01-444-6798	F-3	9
5935-01-453-1425	F-3	6
5935-01-453-1426	F-3	2
5340-01-453-2928	F-40	88
5310-01-454-3892	F-40	67
5310-01-454-3899	F-37	22
5310-01-454-3901	F-5	11
5310-01-454-3908	F-1	14
5310-01-454-3919	F-37	21
5360-01-454-5318	F-40	54
5365-01-454-5322	F-40	53
5365-01-454-5325	F-40	57
5360-01-454-5329	F-40	79
5310-01-454-5913	F-35	8
5305-01-454-6309	F-40	66
5305-01-454-6326	F-40	70
5315-01-454-6807	F-40	55
5315-01-454-7324	F-37	48
5306-01-455-2101	F-37	43
9905-01-455-6128	F-40	99
5680-01-455-6129	F-40	16
5680-01-455-6130	F-40	15
5999-01-455-8948	F-3	4
6145-01-456-0874	BULK	39
6145-01-456-0876	BULK	40
6145-01-456-0903	BULK	41
6125-01-456-5770	F-40	51
5330-01-456-7449	F-40	87
5935-01-456-9277	F-41	9
	F-42	9
	F-43	9
5999-01-457-3111	F-3	5
5999-01-457-3130	F-3	8
5305-01-457-3723	F-35	6
2040-01-457-8025	F-40	5
2040-01-457-8097	F-40	11
	F-40	6
2040-01-457-8430	F-40	7
3040-01-457-9329	F-40	52
4730-01-457-9935	F-40	56
5340-01-459-3135	F-40	12
	F-40	2
	F-40	8
6220-01-462-4370	F-22	2
5305-01-465-3067	F-40	80
5340-01-465-4400	F-37	38
5935-01-465-5826	F-5	43
5999-01-465-7536	F-5	44
5305-01-465-9613	F-1	16
5970-01-465-9972	F-41	11
	F-42	11
	F-43	11
5310-01-466-0254	F-37	41
	F-37	46
5975-12-120-0006	F-1	4
6240-12-120-7948	F-27	9
6240-12-120-7952	F-19	3
	F-20	3
	F-21	3
	F-22	3
5935-12-121-7285	F-25	56
5310-12-124-0889	F-18	3
	F-25	10
	F-27	12
	F-32	6
	F-33	46
	F-37	32
	F-5	25
5310-12-124-0890	F-27	39
	F-2	12
	F-34	13
	F-37	44
	F-37	6
	F-5	6
5310-12-124-0892	F-2	6
	F-34	7
	F-37	10
	F-38	11
	F-39	11
	F-5	13

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5310-12-124-0893	F-1	17
	F-37	53
	F-5	18
5310-12-124-0894	F-35	7
	F-37	25
	F-38	21
	F-38	28
	F-39	21
	F-39	28
	F-5	10
4210-12-124-9662	F-37	8
4730-12-125-0311	F-38	8
	F-39	8
5325-12-126-3416	F-10	2
	F-6	2
	F-7	2
	F-8	2
	F-9	2
5315-12-126-7162	F-38	5
	F-39	5
5310-12-131-4169	F-2	17
	F-34	18
5310-12-131-5576	F-18	13
	F-25	3
	F-26	27
	F-27	21
5325-12-134-8753	F-33	42
5940-12-140-5134	F-11	3
	F-12	3
	F-13	3
	F-14	3
	F-15	3
5310-12-143-6103	F-33	7
5940-12-143-7570	F-28	6
5310-12-144-6201	F-27	20
5940-12-144-9623	F-27	15
	F-28	9
5940-12-144-9875	F-28	12
5940-12-145-0065	F-28	13
5310-12-145-9279	F-33	6
5940-12-146-8497	F-28	10
5940-12-149-8636	F-28	5
5310-12-151-2287	F-18	12
	F-25	2
	F-26	26
5970-12-151-4348	BULK	15
	BULK	18
5310-12-151-6661	F-2	22
	F-34	22
	F-35	11
	F-37	52
	F-5	17
5310-12-151-6713	F-37	24
5305-12-151-7786	F-27	3
5310-12-151-7821	F-18	14
	F-25	4
	F-26	28
5305-12-151-7827	F-18	15
	F-25	5
	F-26	29
5305-12-151-7838	F-33	19
5305-12-151-7862	F-25	40
5310-12-151-7866	F-25	21
	F-27	5
	F-33	20
5305-12-151-7955	F-25	39
5305-12-151-8155	F-25	12
5305-12-151-8285	F-38	20
	F-39	20
5305-12-151-8286	F-38	27
	F-39	27
5305-12-151-8366	F-18	19
	F-27	24
	F-38	2
	F-39	2
5940-12-152-5351	F-28	8
5940-12-152-5352	F-18	7
5310-12-153-8971	F-27	57
5310-12-154-1380	F-37	11
	F-38	12
	F-39	12
	F-5	14
5940-12-154-2214	F-28	15
5310-12-154-3019	F-38	15
	F-39	15
5310-12-154-3038	F-5	21
5310-12-154-3112	F-18	2
	F-25	9
	F-27	11
	F-2	25
	F-33	45
	F-34	25
	F-35	14
	F-5	47
5975-12-154-3980	F-5	32
5305-12-154-5885	F-25	24
	F-27	27
	F-33	5
5310-12-154-6605	F-2	7
	F-34	8
5310-12-155-0596	F-27	38
	F-2	11
	F-34	12
5970-12-155-6862	BULK	12
5305-12-156-3727	F-5	16
5330-12-156-4515	F-25	57
5305-12-156-5563	F-38	10
	F-39	10
6150-12-156-9125	F-1	6
5120-12-156-9265	F-18	10
5310-12-158-2236	F-18	21
	F-25	23
	F-27	6
5305-12-158-4224	F-5	40
5970-12-159-1000	BULK	14
5305-12-160-0628	F-18	5
	F-5	24
5975-12-161-1864	F-32	27
5365-12-161-2303	F-18	9
	F-37	16
	F-37	36
5305-12-161-4351	F-5	35
5975-12-161-4591	F-16	3
	F-17	3
5120-12-163-0535	F-45	13
4210-12-163-9176	F-37	3
5305-12-164-0313	F-27	60
	F-37	5
	F-5	5
5305-12-164-4487	F-33	29
5310-12-164-8912	F-18	25
5961-12-166-2899	F-28	41
5305-12-166-4209	F-37	9
5305-12-166-4213	F-5	45
5305-12-166-4219	F-37	62
5305-12-166-4222	F-25	13
	F-37	34
5305-12-166-4231	F-5	46
5305-12-166-7145	F-5	31
5305-12-166-7453	F-32	5
5305-12-166-7494	F-33	33
5305-12-166-9469	F-33	41
5305-12-167-7933	F-27	58
5975-12-167-8243	F-5	27
5961-12-167-9896	F-27	79
5305-12-169-1296	F-2	16
	F-34	17
5305-12-171-6738	F-25	46
5310-12-172-6828	F-2	18
	F-34	19
	F-38	16
	F-39	16
5305-12-173-0477	F-27	41
5975-12-173-1193	F-28	25
5975-12-173-1194	F-28	16
5975-12-173-1195	F-28	17
5975-12-173-1196	F-28	18
5975-12-173-1197	F-28	19
5975-12-173-1198	F-28	20
5975-12-173-1199	F-28	21
5975-12-173-1200	F-28	22
5975-12-173-1201	F-28	23
6145-12-173-2964	BULK	34
6145-12-173-2971	BULK	35
5310-12-173-3063	F-27	29
6145-12-173-4812	BULK	36
5310-12-174-8311	F-27	40
	F-2	13
	F-34	14
	F-37	7
	F-5	7
5310-12-174-8361	F-38	22
	F-39	22
5310-12-175-0041	F-18	4
	F-25	11
	F-27	13
	F-32	18
	F-33	47
	F-37	33
	F-5	41
5935-12-175-1468	F-33	32
5970-12-179-1846	BULK	17
5305-12-179-5136	F-38	24
	F-39	24
	F-5	12
5305-12-179-7416	F-37	28

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5310-12-179-8028	F-33	44
5305-12-181-9556	F-2	5
	F-34	6
5970-12-182-6865	BULK	16
	BULK	27
5905-12-183-3398	F-25	29
5975-12-186-2519	F-28	24
5305-12-186-5383	F-33	21
5310-12-188-7408	F-27	25
5310-12-189-6396	F-18	24
	F-5	26
5310-12-189-6422	F-37	45
5310-12-189-7275	F-37	54
	F-5	19
5935-12-190-4958	F-25	37
5305-12-192-3945	F-27	56
5305-12-193-2211	F-37	26
	F-5	9
4730-12-195-3414	F-3	11
5970-12-195-4249	BULK	13
5930-12-195-4529	F-21	5
	F-23	3
	F-24	3
5310-12-195-9098	F-38	29
	F-39	29
5355-12-196-2809	F-18	29
5975-12-196-6091	F-33	17
5310-12-197-1393	F-1	13
5305-12-197-8223	F-2	14
	F-34	15
5930-12-198-2562	F-19	5
	F-20	5
	F-21	6
	F-22	5
	F-23	4
	F-24	4
5940-12-300-1350	F-25	34
5340-12-300-3541	F-27	76
6210-12-301-6455	F-23	2
5999-12-301-8979	F-28	42
5935-12-302-8607	F-16	2
	F-17	2
5970-12-305-2562	F-27	75
5940-12-305-3106	F-27	74
5975-12-306-5074	BULK	22
5940-12-307-2513	F-33	13
5306-12-307-7568	BULK	26
6210-12-307-8055	F-21	2
5315-12-311-6063	F-32	17
6150-12-312-1631	F-29	4
5940-12-312-1738	F-27	69
5310-12-316-5546	F-25	6
5930-12-316-5562	F-27	2
5940-12-318-3014	F-28	7
5970-12-319-4845	F-16	7
	F-17	7
5120-12-319-6370	F-45	1
5320-12-319-7472	F-27	18
5355-12-320-1709	F-18	27
5905-12-321-4870	F-25	41
5340-12-321-5035	F-27	7
5975-12-321-5160	F-18	16
5975-12-321-5160	F-27	26
5945-12-321-5419	F-27	51
6220-12-321-5686	F-27	10
	F-27	8
5999-12-321-5963	F-18	11
5930-12-321-6621	F-24	2
5355-12-321-6622	F-18	28
9905-12-321-6623	F-36	4
	F-3	14
	F-5	29
5940-12-321-7360	F-27	72
5940-12-321-7361	F-27	73
6150-12-322-2522	F-37	57
5340-12-322-4544	F-18	22
	F-27	50
5940-12-322-4545	F-27	70
5940-12-322-4546	F-5	20
9520-12-322-7018	BULK	30
5945-12-323-1118	F-30	2
	F-31	2
5306-12-323-4982	F-37	51
5315-12-323-8356	F-37	15
5315-12-323-8357	F-38	7
	F-39	7
8105-12-323-8359	F-34	4
	F-36	8
	F-3	18
5360-12-323-8770	F-38	6
	F-39	6
5315-12-323-8845	F-37	14
	F-37	35
5340-12-323-9416	F-32	3
5340-12-323-9418	F-32	10
5340-12-323-9419	F-32	11
5340-12-323-9420	F-32	9
5306-12-323-9426	F-37	20
5306-12-323-9427	F-38	14
	F-39	14
4730-12-323-9430	F-10	3
	F-6	3
	F-7	3
	F-8	3
	F-9	3
4730-12-323-9431	F-10	4
	F-6	4
	F-7	4
	F-8	4
	F-9	4
5975-12-323-9432	F-6	5
5975-12-323-9433	F-7	5
5975-12-323-9434	F-8	5
5975-12-323-9435	F-9	5
5975-12-323-9436	F-10	5
5340-12-323-9439	F-32	7
5340-12-323-9440	F-32	8
5340-12-323-9441	F-35	4
5310-12-323-9614	F-38	18
	F-39	18
6150-12-323-9971	F-27	66
6150-12-323-9974	F-37	56
6150-12-323-9975	F-37	58
5970-12-323-9976	F-27	36
5935-12-324-0191	F-25	54
5935-12-324-0512	F-11	6
	F-12	6
	F-13	6
	F-14	6
	F-15	6
5365-12-324-0675	F-38	4
	F-39	4
6145-12-324-1302	BULK	6
5961-12-324-1594	F-27	46
5905-12-324-2997	F-27	43
5342-12-324-4151	F-1	20
5340-12-324-4154	F-32	20
5970-12-324-4296	F-25	55
5975-12-324-4930	F-5	33
5310-12-324-5340	F-32	23
6210-12-324-6218	F-19	2
5940-12-326-8023	F-25	30
	F-28	11
5305-12-327-5431	F-32	4
5305-12-329-6389	F-5	22
6210-12-330-8064	F-20	2
5935-12-331-8958	F-33	34
5305-12-332-3308	F-2	24
	F-33	48
	F-34	24
	F-35	13
6210-12-334-8769	F-19	4
	F-20	4
	F-21	4
	F-22	4
5940-12-334-9384	F-33	18
5940-12-335-8520	F-28	2
6115-12-337-8494	F-1	7
5940-12-338-8596	F-28	3
5905-12-340-0961	F-27	17
5840-12-341-7003	F-4	1
5945-12-342-1709	F-27	80
5945-12-342-1711	F-27	45
5940-12-342-1712	F-29	5
5945-12-342-1713	F-27	52
6150-12-343-3731	F-11	1
6150-12-343-3732	F-14	1
6150-12-343-3733	F-16	1
6150-12-343-3734	F-12	1
6150-12-343-3735	F-13	1
6150-12-343-3736	F-17	1
6150-12-343-3737	F-15	1
6150-12-343-3738	F-3	1
6150-12-343-3739	F-36	1
5975-12-343-4086	F-10	1
5975-12-343-4087	F-8	1
5975-12-343-4088	F-6	1
5975-12-343-4089	F-7	1
5975-12-343-4090	F-9	1
5360-12-345-3955	F-32	19
5310-12-345-4101	F-27	42
5940-12-345-4667	F-25	33
5970-12-345-4826	BULK	19
5340-12-345-5051	F-25	8
5975-12-345-5137	F-28	26
5310-12-345-5270	F-2	4

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5310-12-345-5270	F-34	5
5315-12-345-5271	F-37	50
5360-12-345-5373	F-2	20
	F-34	20
	F-35	9
4210-12-345-5374	F-37	2
5305-12-345-5375	F-37	55
9905-12-345-5514	F-26	12
9905-12-345-5519	F-26	23
9905-12-345-5521	F-26	11
9905-12-345-5522	F-26	24
9905-12-345-5540	F-26	2
9905-12-345-5541	F-26	3
9905-12-345-5542	F-26	4
9905-12-345-5543	F-26	5
9905-12-345-5544	F-26	6
9905-12-345-5545	F-26	7
9905-12-345-5546	F-26	8
9905-12-345-5547	F-26	9
9905-12-345-5548	F-26	10
9905-12-345-5549	F-26	13
9905-12-345-5550	F-26	14
9905-12-345-5551	F-26	15
9905-12-345-5552	F-26	16
9905-12-345-5553	F-26	17
9905-12-345-5554	F-26	18
9905-12-345-5555	F-26	19
9905-12-345-5556	F-26	20
9905-12-345-5557	F-26	21
9905-12-345-5558	F-26	22
9905-12-345-5559	F-26	25
5340-12-345-5616	F-5	8
5120-12-345-5617	F-18	6
4210-12-345-5618	F-37	4
5950-12-345-5708	F-27	78
5340-12-345-5730	F-5	36
5340-12-345-5731	F-25	14
5340-12-345-5831	F-5	48
5340-12-345-5832	F-5	50
5340-12-345-5876	F-1	10
5305-12-345-5877	F-2	21
	F-34	21
	F-35	10
8130-12-345-5878	F-5	4
5905-12-345-5879	F-27	19
5340-12-345-5880	F-37	61
5940-12-345-6187	F-28	4
5999-12-345-6401	F-25	20
5999-12-345-6402	F-25	28
5999-12-345-6403	F-25	38
5999-12-345-6404	F-25	45
5999-12-345-6405	F-25	53
5975-12-345-6734	BULK	23
5975-12-345-6735	BULK	24
5935-12-345-7277	F-5	49
5180-12-345-7460	F-45	9
5975-12-345-7461	F-5	23
4720-12-345-7673	BULK	32
5340-12-345-7678	F-5	34
5945-12-345-8271	F-30	3
6145-12-345-8545	BULK	42
5961-12-345-9049	F-28	40
7690-12-345-9111	F-33	23
5340-12-345-9125	F-2	8
	F-34	9
5340-12-345-9126	F-2	9
	F-34	10
5945-12-345-9127	F-27	35
5945-12-345-9128	F-30	1
5945-12-345-9129	F-31	1
5340-12-345-9130	F-2	10
	F-34	11
5340-12-345-9194	F-37	23
5340-12-345-9195	F-38	9
	F-39	9
5325-12-345-9206	F-33	31
5325-12-345-9209	F-33	30
4020-12-345-9346	BULK	9
5905-12-345-9368	F-18	26
5935-12-345-9369	F-25	15
5935-12-345-9370	F-25	25
5935-12-345-9371	F-25	35
5935-12-345-9372	F-25	47
5935-12-345-9373	F-25	42
5935-12-345-9374	F-25	50
5905-12-345-9375	F-27	14
5998-12-345-9645	F-33	11
5998-12-345-9649	F-33	12
5340-12-345-9764	F-33	14
5340-12-345-9765	F-33	8
5340-12-345-9917	F-33	37
5340-12-345-9918	F-33	4
3040-12-346-0213	F-38	19
	F-39	19
5999-12-346-1472	BULK	10
4720-12-346-2901	BULK	11
	F-28	29
5120-12-346-3084	F-45	14
6150-12-346-3279	F-5	42
7690-12-346-3320	F-33	2
5340-12-346-6909	F-2	23
	F-34	23
	F-35	12
6210-12-347-0499	F-18	18
5950-12-347-2007	F-27	23
5120-12-347-5454	F-45	12
5340-12-347-7090	F-2	19
5120-12-347-8071	F-45	3
5940-12-348-4364	F-28	14
5935-14-348-8709	F-25	51
5935-14-374-6627	F-16	4
	F-17	4
5935-14-375-1456	F-25	36
5935-14-384-5119	F-25	44
5935-14-412-5727	F-25	43
5935-14-468-1680	F-25	52
5940-99-119-4382	BULK	25
5310-99-797-1816	F-40	21

STOCK NUMBER	FIG.	ITEM

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
AA55558-01	F-25	48
AA55593-12D	F-40	88
ANSI B18.2.2	F-40	64
AN960XC416	F-40	72
ASTM A 229	F-40	24
A1543R	F-33	18
B18.2.2	F-40	21
B1821BH025C100N	F-40	63
B1821BH031C100N	F-40	73
B1821BH031C125N	F-40	97
B1821BH062C650N	F-40	80
B1822BH100N	F-1	18
B1822BH120N	F-35	8
B1822BH120R	F-5	11
B1822BH140R	F-37	49
B1822BH160R	F-37	22
B1822BH200R	F-40	67
B1822BH240N	F-1	14
B18231B10025	F-1	16
B18235B06016N	F-37	43
B18235B12035N	F-35	6
B18241B120	F-37	18
	F-37	31
B18246B16	F-37	21
B1867BA050160	F-37	39
CCS-DY-1414	F-41	9
	F-42	9
	F-43	9
DIN125-A4,3-NRST	F-33	7
DIN125-A6,4-A4-70	F-27	40
	F-2	13
	F-34	14
	F-37	7
	F-5	7
DIN125-B10,5-140HV-A4	F-37	54
	F-5	19
DIN125-B13-140HV-A4	F-38	22
	F-39	22
DIN125-B17-140HV-A4	F-2	18
	F-34	19
	F-38	16
	F-39	16
DIN125-B3,2-A4-70	F-18	14
	F-25	4
	F-26	28
DIN125-B4,3-A4-70	F-18	21
	F-25	23
	F-27	6
DIN125-B5,3-140HV-A4	F-18	4
	F-25	11
	F-27	13
	F-32	18
	F-33	47
	F-37	33
	F-5	41
DIN125-B8,4-140HV-A4	F-37	11
	F-38	12
	F-39	12
	F-5	14
DIN127-B4-NRST	F-33	6
DIN444-BM16X130-A4-70	F-37	51
DIN471-62X2	F-10	2
	F-6	2
	F-7	2
	F-8	2
	F-9	2
DIN660-4X16-SF-CU	F-27	59
DIN6798-A10,5-FST	F-1	17
	F-37	53
	F-5	18
DIN6798-A13-FST	F-35	7
	F-37	25
	F-38	21
	F-38	28
	F-39	21
	F-39	28
	F-5	10
DIN6798-A17-FST	F-2	17
	F-34	18
DIN6798-A28-FST	F-1	13
DIN6798-A3,2-FST	F-18	13
	F-25	3
	F-26	27
	F-27	21
DIN6798-A5,3-FST	F-18	3
	F-25	10
	F-27	12
	F-32	6
	F-33	46
	F-37	32
	F-5	25
DIN6798-A6,4-FST	F-27	39
	F-2	12
	F-34	13
	F-37	44
	F-37	6
	F-5	6
DIN6798-A8,4-FST	F-2	6
	F-34	7
	F-37	10
	F-38	11
	F-39	11
	F-5	13
DIN7-6M6X28-ST	F-38	5
	F-39	5
DIN71412-AM10X1	F-38	8
	F-39	8
DIN7337-A3X10-AL-LEG-BK-ST-A3P	F-32	26
DIN7337-A3X6-AL-LEG.-BK-ST-A3P	F-1	3
	F-2	3
	F-34	3
	F-35	3
	F-37	60
	F-5	3
DIN7603-A18X22-AL	F-25	57
DIN8140-AM4X8-A2	F-33	42
DIN84-M2.5X10-A4-70	F-33	33
DIN84-M3X10-A4-70	F-18	15
	F-25	5
	F-26	29
DIN84-M3X12-A4-70	F-25	39
DIN84-M3X16-A4-70	F-25	40
DIN84-M3X40-4.8-A2P	F-27	22
DIN84-M4X10-A4-70	F-18	19
	F-27	24
	F-38	2
	F-39	2
DIN84-M4X12-A4-70	F-27	3
DIN84-M4X16-A4-7	F-25	24
	F-27	27
	F-33	5
DIN84-M4X8-A4-70	F-33	19
DIN84-M5X10-A4-70	F-5	40
DIN84-M5X16-A4-70	F-18	5
	F-5	24
DIN84-M5X20-A4-70	F-25	12
DIN84-M5X8-A4-70	F-32	5
DIN84-M6X16-A4-70	F-27	58
DIN84-M6X40-A4-70	F-27	41
DIN84-M6X45-4.8-A2P	F-27	56
DIN9021-B13-A4-70	F-38	29
	F-39	29
DIN9021-B5,3-A4-70	F-18	24
	F-5	26
DIN9021-B6,4-A4-70	F-37	45
DIN9021-B8,4-A4-70	F-2	7
	F-34	8
DIN9021-4,3-140HV-A4	F-27	25
DIN913-M10X50-A4-70	F-37	55
DIN913-M8X50-A4-70	F-5	22
DIN933-M10X20-A4-70	F-5	31

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
DIN933-M12X35-A4-70	F-38	20
	F-39	20
DIN933-M12X40-A4-70	F-37	28
DIN933-M12X45-A4-70	F-38	27
	F-39	27
DIN933-M12X55-A4-70	F-37	26
	F-5	9
DIN933-M16X40-A4-70	F-2	16
	F-34	17
DIN933-M5X16-A4-70	F-25	13
	F-37	34
DIN933-M5X20-A4-70	F-5	46
DIN933-M5X25-A4-70	F-2	24
	F-33	48
	F-34	24
	F-35	13
DIN933-M6X10-A4-70	F-37	62
DIN933-M6X12-A4-70	F-5	35
DIN933-M6X16-A4-70	F-27	60
	F-37	5
	F-5	5
DIN933-M6X25-A4-70	F-5	45
DIN933-M6X40-A4-70	F-2	14
	F-34	15
DIN933-M8X12-A4-70	F-2	5
	F-34	6
DIN933-M8X16-A4-70	F-37	9
DIN933-M8X25-A4-70	F-38	10
	F-39	10
DIN933-M8X30-A4-70	F-5	16
DIN933-M8X35-A4-70	F-38	24
	F-39	24
	F-5	12
DIN934-M10-A4-70	F-2	22
	F-34	22
	F-35	11
	F-37	52
	F-5	17
DIN934-M12-A4-70	F-37	24
DIN934-M16-A4-70	F-38	15
	F-39	15
DIN934-M3-A4-70	F-18	12
	F-25	2
	F-26	26
DIN934-M3-8-A2P	F-27	20
DIN934-M4-A4-70	F-25	21
	F-27	5
	F-33	20
DIN934-M5-A4-70	F-18	2
	F-25	9
	F-27	11
	F-2	25
	F-33	45
	F-34	25
	F-35	14
	F-5	47
DIN934-M6-A4-70	F-27	38
	F-2	11
	F-34	12
DIN934-M8-A4-70	F-5	21
DIN94-1,2X10-ST-A3P	F-32	17
DIN963-M4X10-A4-70	F-33	41
DIN963-M4X16-A4-70	F-25	46
DIN963-M4X25-A4-70	F-33	21
DIN963-M4X6-A4-70	F-33	29
DIN965-M5X6-A4-70-H	F-32	4
DIN975-M5-A4-70	BULK	26
DIN985-M5-A4-70	F-33	44
EN60809-809-IEC-4110-24V	F-27	9
ER2X	F-31	3
GOULD RS 3200	F-45	11
G3 110-06 G2	F-5	15
HNG75037	BULK	23
HNG75050	BULK	24
ITCS-A-30/8-BLACK	BULK	28
KLBM3	F-25	54
K5-M8	F-28	42
LIYCY2X0,75GR	BULK	6
M-47325-B	F-41	11
	F-42	11
	F-43	11
MIS-20045/1-015	F-36	2
MIS-20045/2-020	F-25	17
MS-27495-A20	F-45	6
MS-27495-R20	F-45	5
MS15003-6	F-40	60
MS16562-224	F-40	61
MS20600AD4W2	F-40	100
MS21045C6	F-40	59
MS21318-20	F-5	38
MS21919WDG6	F-5	39
MS21919WDG8	F-40	101
MS3367-1-9	F-41	10
	F-42	10
	F-43	10
MS3367-6-0	F-10	6
	F-6	6
	F-7	6
MS3367-6-0	F-8	6
	F-9	6
MS35206-264	F-40	102
MS35308-365	F-40	58
MS35338-164	F-40	75
	F-40	92
	F-40	94
MS35338-43	F-40	103
MS35489-81	F-40	105
MS35649-202	F-40	104
MS35751-43	F-40	23
MS51967-24	F-40	68
	F-40	93
M16878/4BKE9	BULK	43
	BULK	44
	F-41	12
	F-42	12
	F-43	12
M23053/5-214-C	F-41	8
	F-42	8
	F-43	8
M39029-58-363	F-16	5
M5164	F-27	29
M81969/8-07	F-45	8
M81969/8-08	F-45	7
M83420/2-005	BULK	33
	F-40	19
	F-40	27
	F-40	31
	F-40	35
	F-40	39
	F-40	43
	F-40	47
NAS1149C0563B	F-40	22
	F-40	74
NAS1149C1290R	F-40	81
NK-120-2534-0000	BULK	10
NO NUMBER	F-40	50
NOMEX155-U 0.75" F" WHT	BULK	38
NOMEX155-U 1.00" F" WHT	BULK	39
NOMEX155-U 1.50" F" WHT	BULK	40
NOMEX155-U 2.50" F" WHT	BULK	41
NOMEX155-U 25,00 "F" WHT	BULK	4
NOMEX155-U 35,00 "F" WHT	BULK	3
NOMEX155-U 50,00 "F" WHT	BULK	5
NOMEX155-U	BULK	37
NT2-24V	F-30	2
	F-31	2
PST 8408-18	BULK	31
Q69-X3021	F-25	29
Q69-X3230	F-25	41
RG3G	F-27	34
	F-29	3
RR-C-271 TYPE II CLASS 2	F-37	37

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
RR-C-271TYPE IIC LASS 2	BULK	8
	F-37	17
RR-C-271TYPE1CLASS4	F-40	10
	F-40	14
	F-40	4
RSP7500F6,3-1	F-28	15
RSQ7108A5-2,5	F-28	7
RSQ7144A10-95	F-11	3
	F-12	3
	F-13	3
	F-14	3
	F-15	3
RSQ7155A4-6	F-28	8
RSY7104A4-1	F-27	15
	F-28	9
RSY7104C4-1	F-25	33
RSY7105A5-1	F-28	10
RSY7108A5-2.5	F-25	30
	F-28	11
RSY7112A5-6	F-28	6
RSY7115A8-6	F-28	13
RSY7117A5-1	F-25	31
RSY7121A8-10	F-28	5
RSY7136A6-50	F-28	14
RSY7158A6-1	F-28	12
SJTG06RT24-29P014	F-16	4
	F-17	4
SKD50/04A3	F-27	79
SKN45/12	F-28	41
SQ42415-069	F-16	6
	F-17	6
S10A3P	F-18	25
S6A3P	F-27	57
TL4210-0034FIG1-6KG	F-37	8
TORRO40-60/9-C6W1	F-3	11
TX20-1932/54	BULK	42
T18R	F-16	3
	F-17	3
VG95343T05A007A	BULK	14
VG95343T05A010A	BULK	12
VG95343T05A012A	BULK	13
VG95343T05B012M	BULK	27
VG96912V3-24A	F-16	2
	F-17	2
VG96933T13A023A	F-18	7
V42254-B2435-D325	F-33	32
WO596/12-1/5252IW2X	F-25	49
000471 010 001	F-30	3
	F-38	17
	F-39	17
010.04.0037	F-1	7
020.03.0006	F-37	57
020.03.0011	F-37	56
020.03.0016	F-37	58
020.03.0022	F-27	66
020.08.0003	F-1	9
030.06.0007	F-18	6
03065	F-33	25
0317-3006	F-27	18
035.04.0034	F-37	42
035.04.0035	F-37	29
03645	F-33	24
03655	F-33	26
040.09.0003	F-37	15
040.09.0005	F-38	19
	F-39	19
040.09.0006	F-38	7
	F-39	7
040.09.0013	F-1	11
040.09.0020	F-37	13
040.09.0082	F-1	12
040.09.0088	F-2	21
	F-34	21
	F-35	10
040.13.0009	F-37	50
04401	F-33	14
0441012	F-27	70
0442011	F-27	69
060.20.0015	F-34	4
	F-36	8
	F-3	18
060.20.0094	F-5	49
060.20.0097	F-25	7
060.20.0098	F-5	23
060.20.0099-11.7 X3.9 INCH	F-37	12
060.20.0099	BULK	21
060.22.0029	F-10	8
	F-6	8
	F-7	8
	F-8	8
	F-9	8
065.02.0010-113.1 INCH	F-32	14
065.02.0010-93.6 INCH	F-32	21
065.02.0031-13.65 INCH	F-32	13
065.02.0031-21.45 INCH	F-32	12
06782	F-33	17
07518	F-33	34
07757	F-33	35
	F-33	36
083 271-0	BULK	17
08317	F-33	27
085.05.0001	F-28	40
085.05.0033	F-29	1
08602	F-33	30
08606	F-33	31
08744	F-33	11
08780	F-33	12
08815	F-33	16
08816	F-33	15
08817	F-33	22
08818	F-33	43
08819	F-33	9
08821	F-33	10
08823	F-33	13
08825	F-33	40
08826	F-33	38
08827	F-33	39
08828	F-33	37
08831	F-33	4
08832	F-33	2
08836	F-33	8
08837	F-33	28
08938	F-33	23
08939	F-33	3
08970	F-33	1
093.04.0147	F-2	20
	F-34	20
	F-35	9
10-113180-01P	F-25	18
	F-3	3
10-113180-01S	F-3	7
10-305880-12P	F-25	19
10-305880-12S	F-3	9
10-407118-122	F-3	5
10-497226-032	F-3	4
10-497227-032	F-3	8
10-524916-249	F-25	26
10-524916-409	F-25	16
1000-U134	F-32	9
1000-U135	F-32	10
1000-U138	F-32	7
1000-179	F-32	11
1000-225	F-32	8
10006000	F-35	4
1004-01	F-18	10
1051016 LGS:1-10	F-27	72
1051016 LGS:11-20	F-27	73
1051032/0	F-27	71
110.02.0006	F-10	3
	F-6	3
	F-7	3
	F-8	3
	F-9	3
110.02.0007	F-10	4
	F-6	4
	F-7	4
	F-8	4
	F-9	4
111-01960	F-28	27
115.02.0004-20.67 INCH	F-18	17
115.02.0006	F-6	1
115.02.0007	F-6	5
115.02.0010	F-7	1
115.02.0011	F-7	5
115.02.0012	F-8	1
115.02.0013	F-8	5
115.02.0014	F-9	1
115.02.0015	F-9	5
115.02.0016	F-10	1
115.02.0017	F-10	5
115.04.0001-7.41 INCH	F-32	16
115.04.0006-2.73	F-3	13

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
INCH		
115.04.0007-3.9I	F-3	15
NCH		
115.04.0008-2.73	F-36	3
INCH		
115.04.0009-3.51	F-36	5
INCH		
115.04.0018-8.97	F-3	12
INCH		
115.04.0019-9.75	F-11	5
INCH		
	F-12	5
	F-13	5
	F-14	5
	F-15	5
115.04.0039-1.75	F-3	10
5 INCH		
115.04.0052-2.73	F-5	28
INCH		
115.04.0052	F-28	28
115.04.0053-1.95	F-11	2
INCH		
	F-12	2
	F-13	2
	F-14	2
	F-15	2
115.04.0053-2.73	F-5	30
INCH		
115.04.0058-10.5	F-37	19
3 INCH		
115.04.0058-9.75	F-38	13
INCH		
	F-39	13
1175.0	BULK	30
1201015	BULK	25
1201442	F-27	76
13206E7400-30	F-40	13
	F-40	3
	F-40	9
13207E6455-1	F-41	6
	F-42	6
	F-43	6
13207E6498-1	F-42	5
	F-43	5
13207E6498-2	F-41	5
13211E6730	F-5	37
13218E0493-347PS	F-40	91
13225E8668-4	F-40	12
	F-40	2
	F-40	8
13229E9948	F-5	44
13229E9952	F-5	43
13230E5389	F-40	99
13230E5391	F-40	98
13230E5392	F-40	17
13230E5393	F-40	49
13230E5394	F-40	45
13230E5395	F-40	41
13230E5396	F-40	37
13230E5398	F-40	78
13230E5400	F-1	1
13230E5401	F-40	96
13230E5402	F-40	71
13230E5403	F-40	95
13230E5404	F-40	83
13230E5405	F-40	77
13230E5406	F-40	84
13230E5414	F-37	40
13230E5415	F-40	85
13230E5419	F-40	33
13230E5420	F-40	29
13230E5421	F-40	25
13230E5430	F-40	62
13230E5431	F-40	65
13230E5433	F-40	89
13230E5435	F-37	38
13230E5436-1	F-37	41
	F-37	46
13230E5438	F-40	79
13230E5439-1	F-40	66
13230E5439-2	F-40	70
13230E5440-1	F-40	5
13230E5440-2	F-40	6
13230E5441	F-40	1
13230E5442-2	F-40	11
13230E5444	F-40	69
13230E5446	F-40	55
13230E5447	F-40	56
13230E5448	F-40	51
13230E5449	F-40	53
13230E5450	F-40	52
13230E5451	F-40	57
13230E5452	F-40	54
13230E5454-1	F-40	16
13230E5454-2	F-40	15
13230E5456	F-43	1
13230E5457	F-42	1
13230E5458	F-41	1
13230E5460	F-45	15
13230E6416	F-40	90
13230E6417	F-40	87
13230E6659-1	F-37	48
1401158	F-29	4
151-25219	F-32	27
152.269	F-18	20
	F-25	22
	F-27	4
	F-38	3
	F-39	3
16H767	F-25	6
160.03.0004	F-27	7
160.03.0017	F-37	61
160.03.0080	F-5	50
160.09.0008	F-10	7
	F-6	7
	F-7	7
	F-8	7
	F-9	7
160.14.0001	F-32	3
160.19.0013	F-37	20
160.19.0017	F-37	23
160.19.0018	F-38	14
	F-39	14
160.19.0052	F-37	47
160.27.0003	F-37	4
160.28.0022	F-38	9
	F-39	9
160.30.0003	F-32	20
160.31.0004	F-39	25
160.31.0016	F-37	27
160.31.0032	F-38	25
160.31.0191	F-5	4
160.31.0208	F-2	8
	F-34	9
160.31.0209	F-2	9
	F-34	10
160.31.0210	F-2	10
	F-34	11
160.31.0217	F-27	55
160.31.0223	F-1	10
160.31.0256	F-2	23
	F-34	23
	F-35	12
160.32.0002	F-5	20
160.32.0008	F-27	65
160.32.0031	F-5	48
167-11169	BULK	22
167-12169	F-18	16
	F-27	26
170.01.0002	F-25	34
170.01.0006	F-28	2
170.01.0027	F-28	4
175.03.0002-1.17	F-25	32
INCH		
175.03.0002	BULK	32
175.03.0029-5.85	F-11	4
INCH		
	F-12	4
	F-13	4
	F-14	4
	F-15	4
175.03.0029	BULK	11
	F-28	29
180.01.0030-104.	F-36	7
96 FT		
180.01.0031-95.1	F-3	17
2 FT		
180.01.0031	BULK	7
180.01.0050	F-17	1
180.01.0058	F-16	1
180.01.0111-64.3	F-17	8
5 INCH		
180.01.0111-97.5	F-16	8
INCH		
180.01.0140	F-15	1
180.01.0141	F-13	1
180.01.0142	F-12	1
180.01.0143	F-11	1
180.01.0144	F-14	1
180.01.0148	F-3	1
180.01.0149	F-36	1
180.01.0160	F-5	42
180.03.0003	F-28	30
180.03.0004	F-28	31
180.03.0006	F-28	32
180.03.0008-2.15	F-27	16

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
INCH		
180.03.0025-107.	F-13	7
25 INCH		
180.03.0025-111.	F-12	7
15 INCH		
180.03.0025-118.	F-11	7
95 INCH		
180.03.0025-97.5	F-15	7
INCH		
180.03.0025-99.4	F-14	7
5 INCH		
180.03.0025	F-28	33
180.03.0026-107.	F-13	8
25 INCH		
180.03.0026-111.	F-12	8
15 INCH		
180.03.0026-118.	F-11	8
95 INCH		
180.03.0026-97.5	F-15	8
INCH		
180.03.0026-99.4	F-14	8
5 INCH		
180.03.0026	F-28	34
180.03.0027	F-28	35
180.05.0051	F-28	39
180.06.0031	F-28	36
180.06.0033	F-28	37
180.06.0057	F-28	38
181-55800	F-18	22
	F-27	50
184/PG21Z22	F-5	33
190200	F-45	13
2PF003057-041	F-27	10
20H446	F-18	29
202K174-25/225-0	F-16	7
	F-17	7
21-900167-1	F-25	27
221M	F-5	32
229M	F-5	27
235.07.0002	F-27	8
24H504	F-18	28
24H516	F-18	27
250.03.0003-2.73	F-36	6
X1.95 INCH		
250.03.0003-5.07	F-3	16
X2.34 INCH		
250.03.0003	BULK	20
255.04.0003	F-19	1
255.04.0004	F-22	1
255.04.0007	F-20	1
2585STGEHNI	F-18	9
	F-37	16
	F-37	36
260.04.0061	F-27	23
285.06.0034	F-2	4
	F-34	5
2945406	F-29	2
2946269	F-29	5
2949428	F-27	46
3.03.059	F-27	42
3M6018	F-41	2
	F-42	2
3M6018	F-43	2
3SB1000-0AB01	F-24	2
3SB1000-0AC01	F-23	2
3SB1000-0AG01	F-21	2
3SB1001-6BC06	F-19	2
3SB1001-6BD06	F-22	2
3SB1001-6BG06	F-20	2
3SB1202-0AB01	F-24	1
3SB1400-0B	F-21	5
	F-23	3
	F-24	3
3SB1400-2P	F-19	4
	F-20	4
	F-21	4
	F-22	4
3SB1902-1AC	F-19	5
	F-20	5
	F-21	6
	F-22	5
	F-23	4
	F-24	4
3SB1902-2AD	F-45	1
3SE3020-1A	F-27	2
3SX1344	F-19	3
	F-20	3
	F-21	3
	F-22	3
3TB5017-0BZ9	F-27	37
3TF4011-0BB4	F-27	52
3TH2031-0DB4	F-27	51
3TH2722-0BB4	F-27	80
3TH4022-0BM4	F-27	45
3TX6506-3B	F-27	36
3TY1304-0Z	F-27	43
3003020	F-27	75
3004016	F-27	74
301-0254-3	BULK	18
305-25419	BULK	15
305-50819	BULK	16
310.07.0024	F-27	19
310.09.0012	F-5	8
310.10.0001	F-38	23
	F-39	23
310.10.0101	F-1	19
310.12.0095	F-27	54
310.16.0002	F-25	55
310.17.0003	F-27	64
310.17.0005	F-27	62
310.17.0006	F-27	63
310.17.0010	F-27	61
310.18.0046	F-5	34
315.04.0001	F-18	26
320.03.0028-4.09	F-27	44
5 INCH		
320.10.0001-19.8	F-27	81
9 INCH		
320.10.0001-31.2	F-27	53
INCH		
320.10.0001-5.85	F-27	47
INCH		
320.10.0001-5.85	F-18	23
320.10.0001-6.82	F-27	77
5 INCH		
324-09010	BULK	19
330.04.0009	F-37	1
330.04.0016	F-37	63
335.03.0018	F-18	18
355.02.0175	F-1	8
375.01.0001-14.4	F-27	30
3 INCH		
375.01.0001-23.0	F-27	82
1 INCH		
375.01.0001-26.6	F-27	68
37 INCH		
375.01.0001-32.5	F-27	67
26 INCH		
375.01.0001-4.48	F-27	49
5 INCH		
375.01.0001-5.85	F-27	28
INCH		
375.01.0003-32.5	F-27	48
26 INCH		
390.11.0084	F-27	32
390.30.0015	F-21	1
390.30.0018	F-23	1
390.31.0010	F-27	35
390.33.0012	F-30	1
390.33.0013	F-31	1
395.04.0115	F-38	18
	F-39	18
395.25.0002	F-38	4
	F-39	4
405.01.0077	F-26	14
405.01.0215	F-26	24
405.01.0218	F-26	11
405.01.0219	F-26	23
405.01.0220	F-26	25
405.01.0221	F-26	3
405.01.0222	F-26	5
405.01.0223	F-26	7
405.01.0224	F-26	10
405.01.0225	F-26	2
405.01.0226	F-26	4
405.01.0227	F-26	6
405.01.0228	F-26	8
405.01.0229	F-26	9
405.01.0230	F-26	17
405.01.0231	F-26	18
405.01.0232	F-26	13
405.01.0233	F-26	15
405.01.0234	F-26	19
405.01.0235	F-26	20
405.01.0236	F-26	21
405.01.0237	F-26	22
405.01.0242	F-26	12
405.01.0243	F-26	1
405.01.0252	F-32	25
405.01.0260	F-35	2
405.01.0261	F-34	2
405.01.0262	F-2	2
405.01.0266	F-1	2
405.01.0267	F-37	59
405.01.0271	F-5	2
405.01.0309	F-26	16

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

PART NUMBER	FIG.	ITEM
405.05.0001	F-36	4
	F-3	14
	F-5	29
405.11.0005	F-28	16
405.11.0006	F-28	17
405.11.0007	F-28	18
405.11.0008	F-28	19
405.11.0009	F-28	20
405.11.0010	F-28	21
405.11.0011	F-28	22
405.11.0012	F-28	23
405.11.0013	F-28	24
405.11.0014	F-28	25
405.11.0015	F-28	26
416150	F-1	5
420.01.0156	F-32	1
420.01.0157	F-32	24
420.02.0078F- 6	F-18	1
420.02.0078F- 7	F-25	1
420.02.0078F- 8	F-27	1
420.02.0078F-5	F-5	1
420.02.0078	F-4	1
4200017	F-37	3
421A329	BULK	29
430.06.0001-21.8 4 INCH	F-18	8
430.06.0001	BULK	9
430.07.0001	F-37	30
433054	F-32	23
435.07.0006	F-18	11
435.09.0001	F-38	26
	F-39	26
44148905	BULK	2
455.06.0019	F-11	6
	F-12	6
	F-13	6
	F-14	6
	F-15	6
455.11.0002	F-25	47
455.11.0004	F-25	15
455.11.0005	F-25	25
455.11.0006	F-25	42
455.11.0007	F-25	50
455.11.0008	F-25	35
455.14.0119	F-25	20
455.14.0120	F-25	28
455.14.0121	F-25	45
455.14.0122	F-25	53
455.14.0123	F-25	38
460.04.0002	F-1	20
460.06.0016	F-1	15
470.04.0017	F-27	78
47333	F-37	14
	F-37	35
480.02.0025	F-35	1
480.02.0026	F-34	1
480.02.0027	F-2	1
480.02.0034	F-35	5
480.02.0046	F-34	16
480.02.0047	F-2	15
480.06.0001	F-2	19
485.02.0006	F-32	2
485.02.0014	F-32	15
495.01.0004	F-32	22
5.15.501	F-25	8
5DA2377-5	BULK	34
5DA2387-5	BULK	35
5DA2388-5	BULK	36
5HR690	F-40	7
5SX2116-6	F-27	31
5SX2306-7	F-27	33
50/5/3	F-32	19
505.08.0004	F-37	2
505.09.0063	F-45	3
505.27.0004	F-45	14
505.32.0006	F-39	1
505.32.0007	F-38	1
505.38.0003	F-45	9
505.38.0010	F-45	10
505.38.0011	F-45	4
516-22LP	F-40	20
	F-40	28
	F-40	32
	F-40	36
	F-40	40
	F-40	44
	F-40	48
525.14.0023	F-27	14
525.17.0301	F-45	2
572929	F-41	7
	F-42	7
	F-43	7
5995-416300	F-1	6
60A5A16-3	F-40	18
	F-40	26
	F-40	30
	F-40	34
	F-40	38
	F-40	42
	F-40	46
63E736	F-27	17
63304-000	F-18	30
64-10-301-40	F-40	86
644000	F-1	4
67 600 47 111	F-45	12
68.31.701	F-25	14
68.31.702	F-5	36
74/4/3	F-38	6
	F-39	6
8-47-48A1-00N2-0 2	F-25	44
8.45.40.0031.002	F-25	43
8.51.02R16-8S-50	F-25	37
8JB 001 946-001	F-25	56
8338561	F-41	4
	F-42	4
	F-43	4
8338562	F-41	3
	F-42	3
	F-43	3
8500-07D	F-25	51
8500-23	F-25	52
8500-27D	F-25	36
88-22790-2	F-40	76
88-22790-5	F-40	82
9-073-003-0015	F-28	1
901916	F-28	3
91-522536-08P	F-3	2
91-522536-08S	F-3	6

APPENDIX G

TORQUE LIMITS

G.1 BOLTS.

Bolt alloy: K18-8(A4)-70, DIN 931/933, in lengths up to 8 x nominal thread diameter (d) at room temperature, strength class 70 (normal), work-hardened.

NOTE

Coefficient of friction μ = 0.16

Coarse pitch thread	Tightening torque, ft-lb (Nm)
M5	3.5 (4.7)
M6	6 (8.2)
M8	14.5 (19.6)
M10	28.8 (39)
M12	49.4 (67)
M14	78.2 (106)
M16	119.5 (162)
M18	166 (225)
M20	233 (316)
M22	174 (236)
M24	224 (304)
M27	327 (443)
M30	446 (605)

G.2 STUDS.

Stud alloy: AlMg 3

Coarse pitch thread	Tightening torque, ft-lb (Nm)
M3	0.6 (0.8)
M4	1.5 (2.0)
M5	2.6 (3.5)

GLOSSARY

Section I. ABBREVIATIONS

COMMON ABBREVIATIONS.

The common abbreviations used in this manual are in accordance with MIL-STD-12D.

SPECIAL OR UNIQUE ABBREVIATIONS.

The following are abbreviations and symbols that are used in this manual and not listed in MIL-STD-12D.

AAL	additional authorization list
BII	basic issue item
°C	degrees Celsius
CAGE	commercial and government entity
CAGEC	commercial and government entity code
COEI	components of end item
CPC	corrosion prevention and control
CTA	common table of allowance
DOD	Department of Defense
EIR	equipment improvement recommendation
°F	degree Fahrenheit
Hz	hertz
JTA	joint table of allowances
kg	kilograms
kW	kilowatts
m	meter (metric measure)
MAC	maintenance allocation chart
MTOE	modification table of organization and equipment
Nm	newton meter
NSN	national stock number
PMCS	preventive maintenance checks and services
RPSTL	repair parts and special tools list
SMR	source, maintenance, and recoverability
TAMMS	The Army Maintenance Management System
TDA	table of distribution
TMDE	test, measurement, and diagnostic equipment
UOC	usable on code

Section II. DEFINITION OF UNUSUAL TERMS

UNUSUAL TERMS.

The following are terms that are used in this manual and not listed in the Army dictionary (AR 310-25.).

None.

A

Abbreviations, 1.7

AC/DC Transformer/Rectifier Maintenance, 4.31

Army Materiel, Destruction of to Prevent Enemy Use, 1.3

Auxiliary Contactors K20 and K21 Maintenance, 4.30

Auxiliary Contactors Maintenance (Except E20 and K21), 4.29

B

Battle Short Procedures, 2.7.6.7

Brightness Control N7/R1 Maintenance, 4.26

C

Cabinet Illumination S5iHll Maintenance, 4.33

Characteristics, Capabilities and Features of Equipment, 1.9

Circuit Breaker Maintenance, 4.32

Common Tools and Equipment, 4.1,5.1

Connection Panel Maintenance, 6.17

Construction, 1.11

Contactor Assemblies Maintenance, 6.10

Contactor Protective Resistor Maintenance, 4.27

Control Cable Assembly, PDU to Generator Set 150 kW, Maintenance, 6.7

Control Cable Drum Maintenance, 4.14

Control Cable Maintenance, 4.15,6.9

Cross-Reference List, Nomenclature, 1.6

Current Transformer Maintenance, 4.28

D

Data, Equipment, 1.12

Description, Functional, 1.14

Description, General, 1.13

Description, Major Components, 1.10

Destruction of Army Materiel to Prevent Enemy Use, 1.3

Diode Assembly Maintenance, 5.11

E

Electronic Module Al Assembly Maintenance, 6.12

Emergency Procedures, 2.7.5.6

EPP III Cabling Connections, Operator's, 2.3

EPP III Controls and Indicators, Operator's, 2.2

EPP III Fire Extinguishers, Operator's, 2.4

Equipment
Characteristics, Capabilities, and Features, 1.9
Data, 1.12

Equipment Improvement Recommendation, 1.5

F

Forms and Becords, Maintenance, 1.2

Functional Description, 1.14

G

Gen Set Controls and Indicators, Operator's, 2.1

General Description, 1.13

Generator Set 160 kW Maintenance, 4.17

Glossary, 1.8

I

Improvement Recommendation, Equipment, 1.6

Installation Instructions, 2.6.2

Internal Power Supply VspT13 Maintenance, 5.16

L

Light Indicator Assembly Maintenance, 4.24

List of Abbreviations, 1.7

List, Nomenclature Cross-Reference, 1.6
Load Bank Procedures 4.34
Location of Major Components, 1.10
Lubrication, Operator, 3.1

M

Maintenance
Forms and Records, 1.2
Operator, 3.3
Maintenance of
AC/DC Transformer/Rectifier 4.31
Auxiliary Contactors (Except K20 and K21), 4.29
Auxiliary Contactors K20 and K21,4.30
Brightness Control N7/B1, 4.26
Cabinet Illumination S5/H11, 4.33
Circuit Breaker, 4.32
Connection Panel, 6.17
Contactor Assemblies, 6.10
Contactor Protective Resistor, 4.27
Control Cable, 4.155.9
Control Cable Assembly, PDU to Generator Set 150 kW, 6.7
Control Cable Drum, 4.14
Current Transformer, 4.28
Diode Assembly, 6.11
Electronic Module Al Assembly, 5.12
Generator Set 150 kW, 4.17
Internal Power Supply V6/T13,6.15
Light Indicator Assembly, 4.24
Pallet Frame, 4.18
PDU Electronic Assembly N6, 6.16
PDU Power Cable, One Phase, 6.6
Power Cable, 4.13
Power Cable (ECS Power Set), 6.8
Power Cable Drum, 4.12
Power Cable Drum Locking Device, 4.10
Power Cable Drum Mount, 4.11
Power Distribution Unit, 4.19
Power Distribution Unit Connection Panel, 4.16
Pushbutton Switch and Light Indicator, 4.25
Stanchion and Chain Assembly, 4.21
Storage Box Assembly, 4.23
Swing Arm, 4.20
Time Relay K14,6.13
U.S. Standard Grounding Assembly, 4.22
Wipe Belay K13,6.14
Major Components, Description of, 1.10
Major Components, Location of, 1.10
Manuals, Belated Technical, 1.15
Materiel, of to Prevent Enemy Use, 1.3
Materiel, Service Upon Receipt of, 4.4
Movement, Preparation for, 2.8

N

Nomenclature Cross-Reference List, 1.6

O

Operating Procedures, 2.7
Operation Under Unusual Conditiones, Flame Glowplug System, 2.9.2
Operation Under Unusual Conditions, Extreme Cold, 2.9.3
Operations Under Unusual Conditions, Engine Preheating Assembly, 2.9.1
Operator
EPP III Cabling Connections, 2.3
EPP III Controls and Indicators, 2.2
EPP III Fire Extinguishers, 2.4
Gen Set Controls and Indicators, 2.1
Lubrication, 3.1
Maintenance, 3.3
PMCS Table, Introduction to, 2.5
Troubleshooting, 3.2

P

Pallet Frame Maintenance, 4.18
Parts,Bepair, 4.3, 5.3
PDU Electronic Assembly N6 Maintenance, 5.16
PDU Power Cable, One Phase Maintenance, 5.6
PMCS
Operator Table, Introduction to, 2.5
Unit Table, Introduction to, 4.7
Power Cable (ECS Power Set) Maintenance, 6.8
Power Cable Drum Locking Device Maintenance, 4.10
Power Cable Drum Maintenance, 4.12
Power Cable Drum Mount Maintenance, 4.11
Power Cable Maintenance, 4.13

Power Distribution Unit Maintenance, 4.19
Power Supply V5/T13, Internal, 5.15
Preparation for Movement, 2.8
Preparation for Storage and Shipment, 1.4
Procedures, Battle Short, 2.7.5.7
Procedures, Emergency, 2.7.5.6
Procedures, Operating, 2.7
Pushbutton Switch and Light Indicator Maintenance, 4.25

R

Recommendation, Equipment Improvement, 1.5
Records and Forms, Maintenance, 1.2
Related Technical Manuals, 1.15
Relay K13, Maintenance, 5.14
Relay K14, Maintenance, 5.13
Repair Parts, 4.3, 5.3

S

scope, 1.1
Service Upon Receipt of Materiel, 4.4
Special Tools, 4.2, 5.2
Stanchion and Chain Assembly Maintenance, 4.21
Storage Box Assembly Maintenance, 4.23
Support Equipment, 4.2, 5.2
Swing Arm Maintenance, 4.20

T

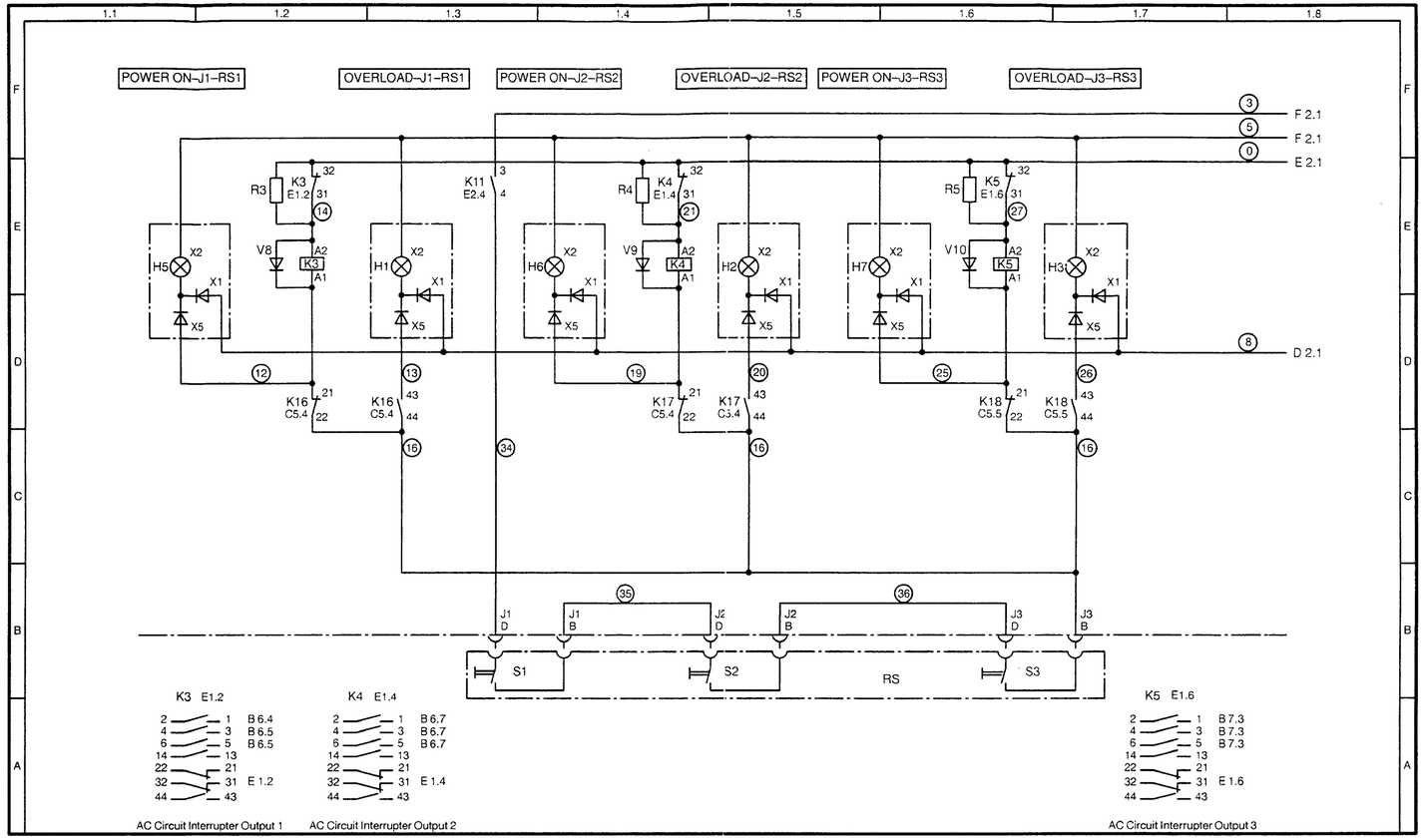
Technical Manuals, Related, 1.15
Test, Measurement and Diagnostic Equipment, 4.2, 5.2
Time Relay K14 Maintenance, 5.13
TMDE, 5.2
Tools and Equipment
  Common, 4.1, 5.1
  Special, 5.2
Troubleshooting, General, 5.4
Troubleshooting, Operator, General, 3.2
Troubleshooting, Unit, General, 4.8

U

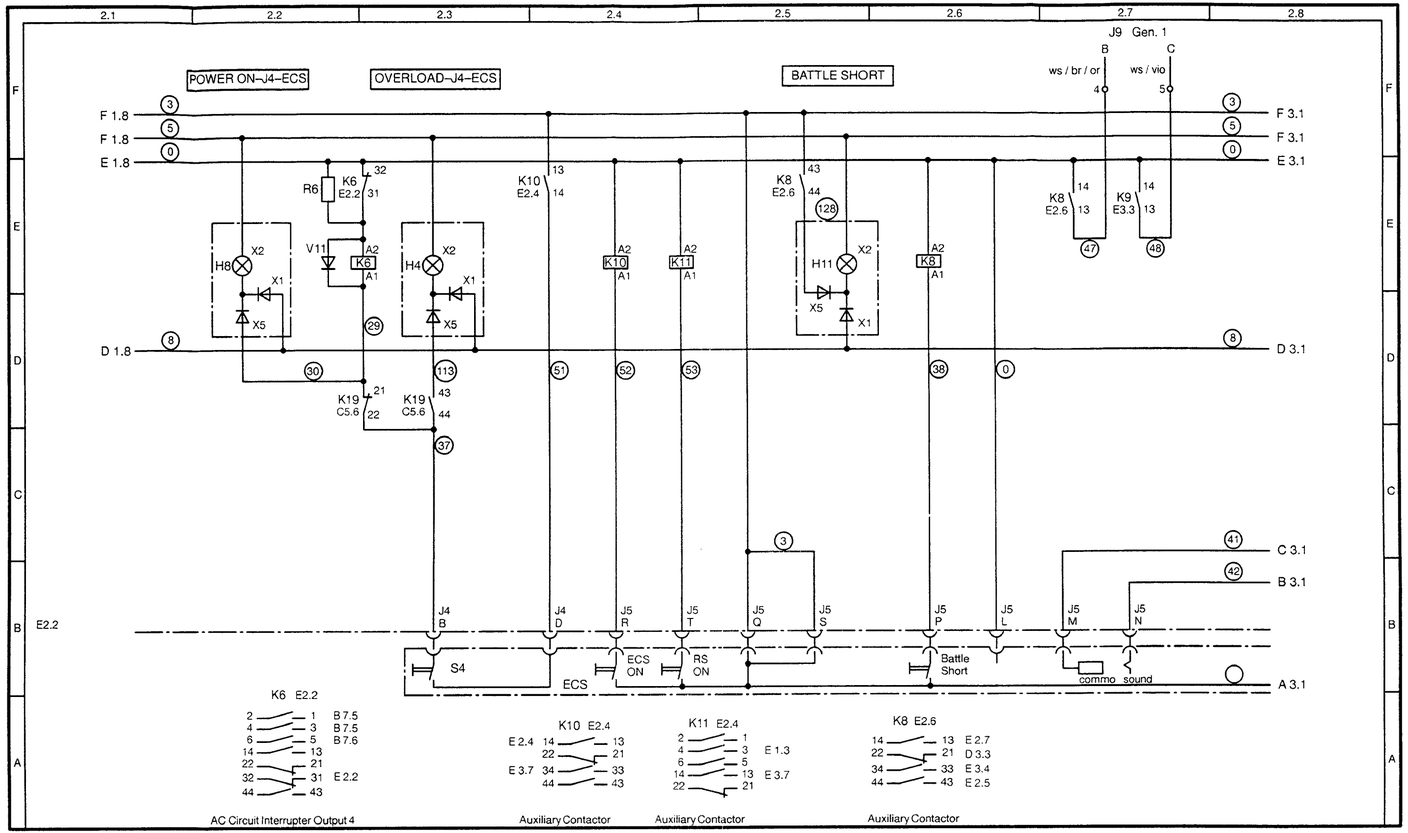
U.S. Standard Grounding Assembly Maintenance, 4.22
Unit PMCS, Table, Introduction to, 4.7
Unusual Conditions, Operation Under
  Engine Preheating Assembly, 2.9.1
  Extreme Cold, 2.9.3
  Flame Glowplug System, 2.9.2

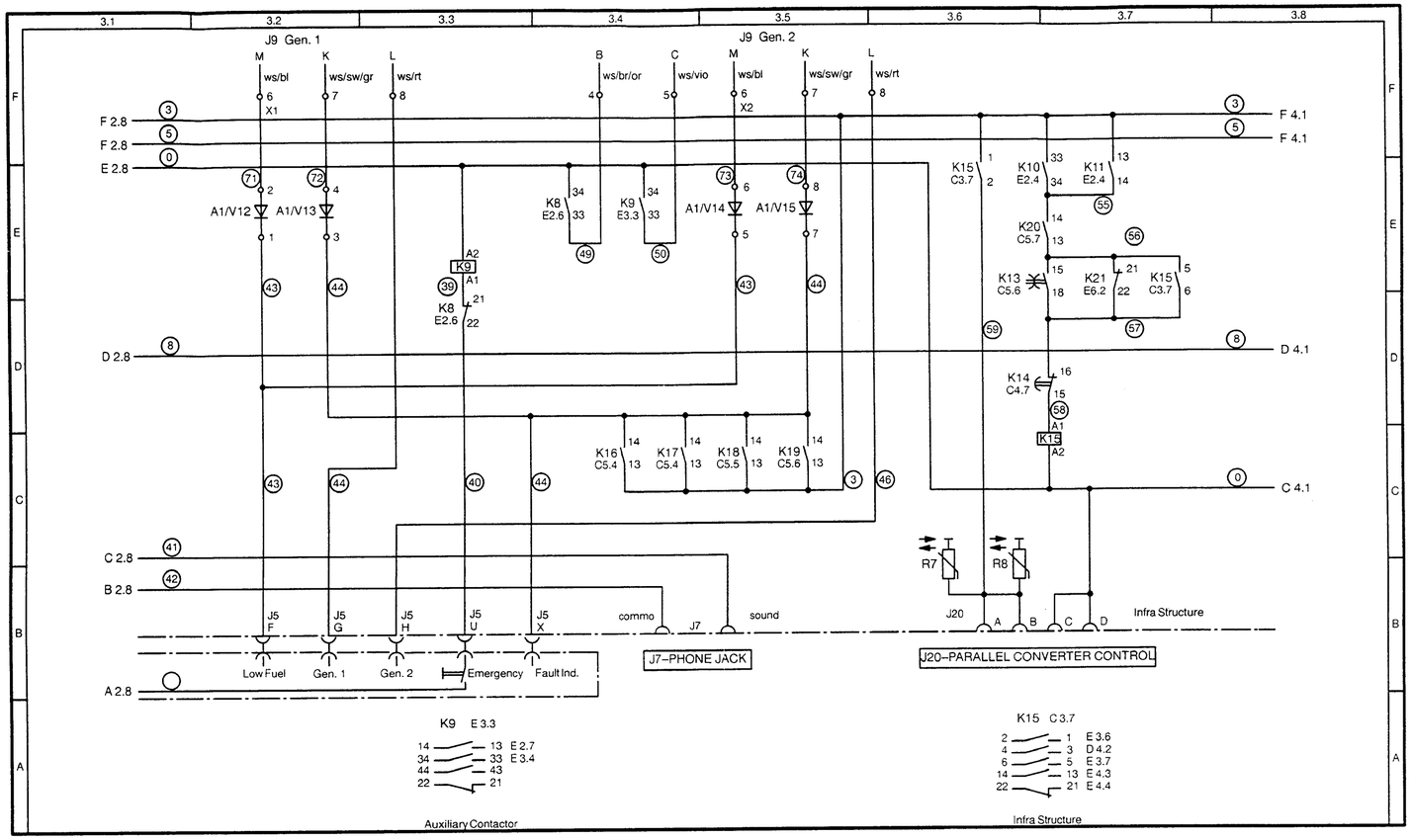
W

Wipe Relay K13 Maintenance, 5.14

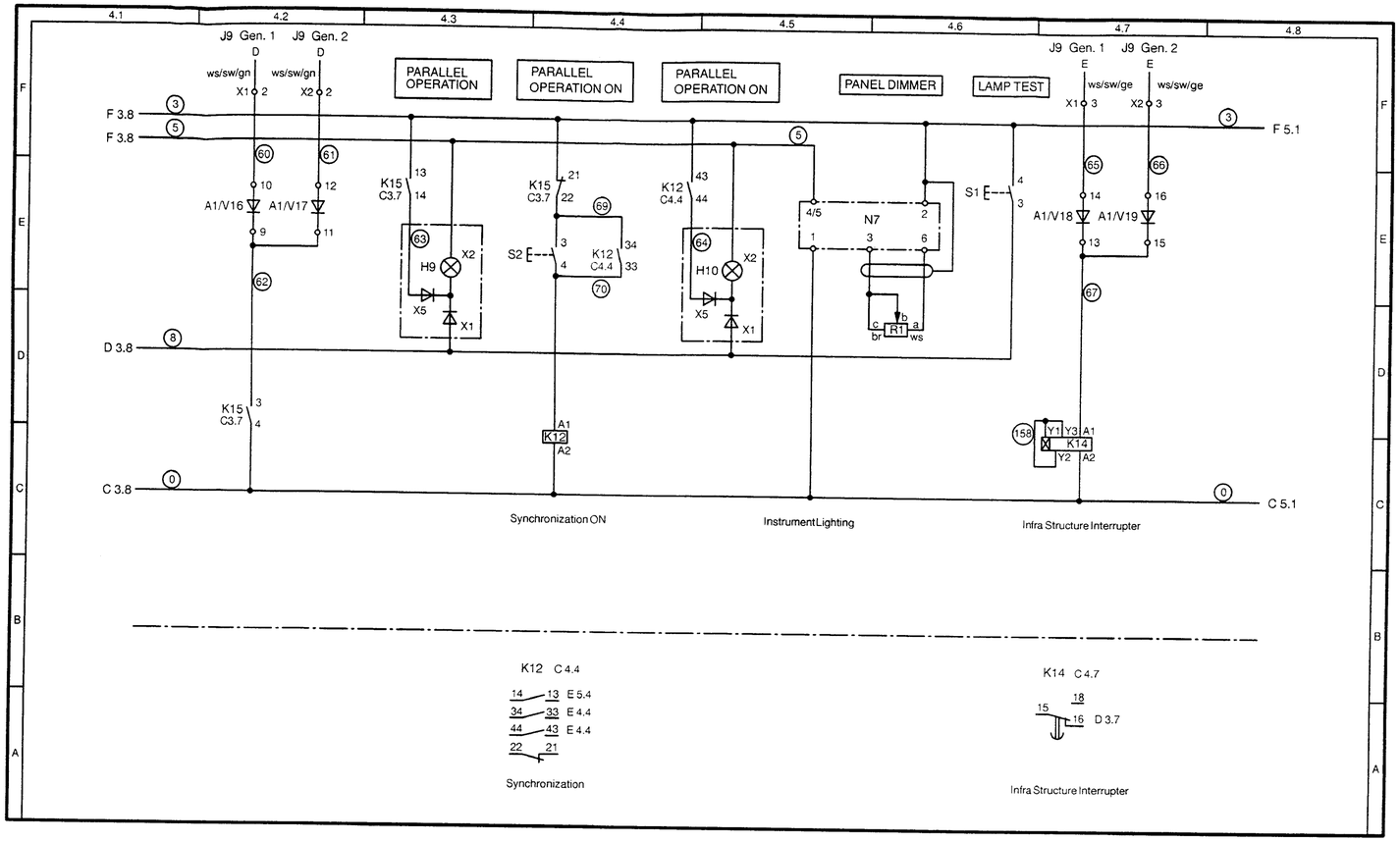


FO–1 Electric Power Plant III Wiring Diagram
(Sheet 1 of 8)

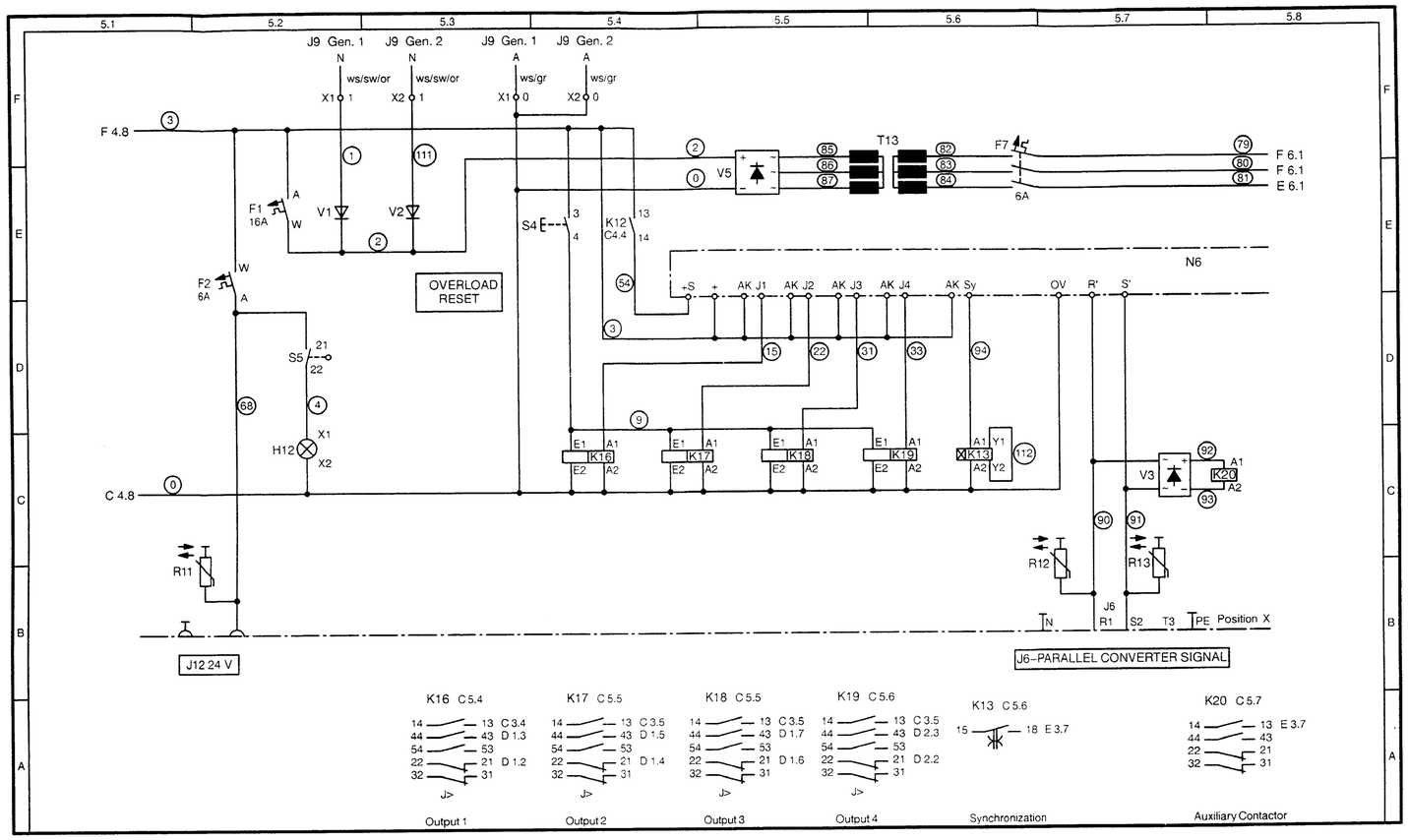

2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
F
E
D
C
B
A
J9 Gen. 1
B
C
ws / br / or
ws / vio
40
50
POWER ON-J4-ECS
OVERLOAD-J4-ECS
BATTLE SHORT
F 1.8
F 1.8
E 1.8
D 1.8
F 3.1
F 3.1
E 3.1
D 3.1
C 3.1
B 3.1
A 3.1
E2.2
R6
K6
E2.2
32
31
V11
A2
A1
H8
X2
X1
X5
H4
K10
E2.4
13
14
K10
K11
K8
E2.6
43
44
128
H11
K9
E3.3
47
48
29
30
113
51
52
53
38
0
K19
C5.6
21
22
K19
C5.6
43
44
37
J4
B
J4
D
J5
R
J5
T
J5
Q
J5
S
J5
P
J5
L
J5
M
J5
N
S4
ECS
ECS
ON
RS
ON
Battle
Short
commo
sound
K6 E2.2
2
4
6
14
22
32
44
1
3
5
13
21
31
43
B 7.5
B 7.5
B 7.6
E 2.2
AC Circuit Interrupter Output 4
K10 E2.4
E 2.4
E 3.7
14
22
34
44
13
21
33
43
Auxiliary Contactor
K11 E2.4
2
4
6
14
22
1
3
5
13
21
E 1.3
E 3.7
Auxiliary Contactor
K8 E2.6
14
22
34
44
13
21
33
43
E 2.7
D 3.3
E 3.4
E 2.5
Auxiliary Contactor



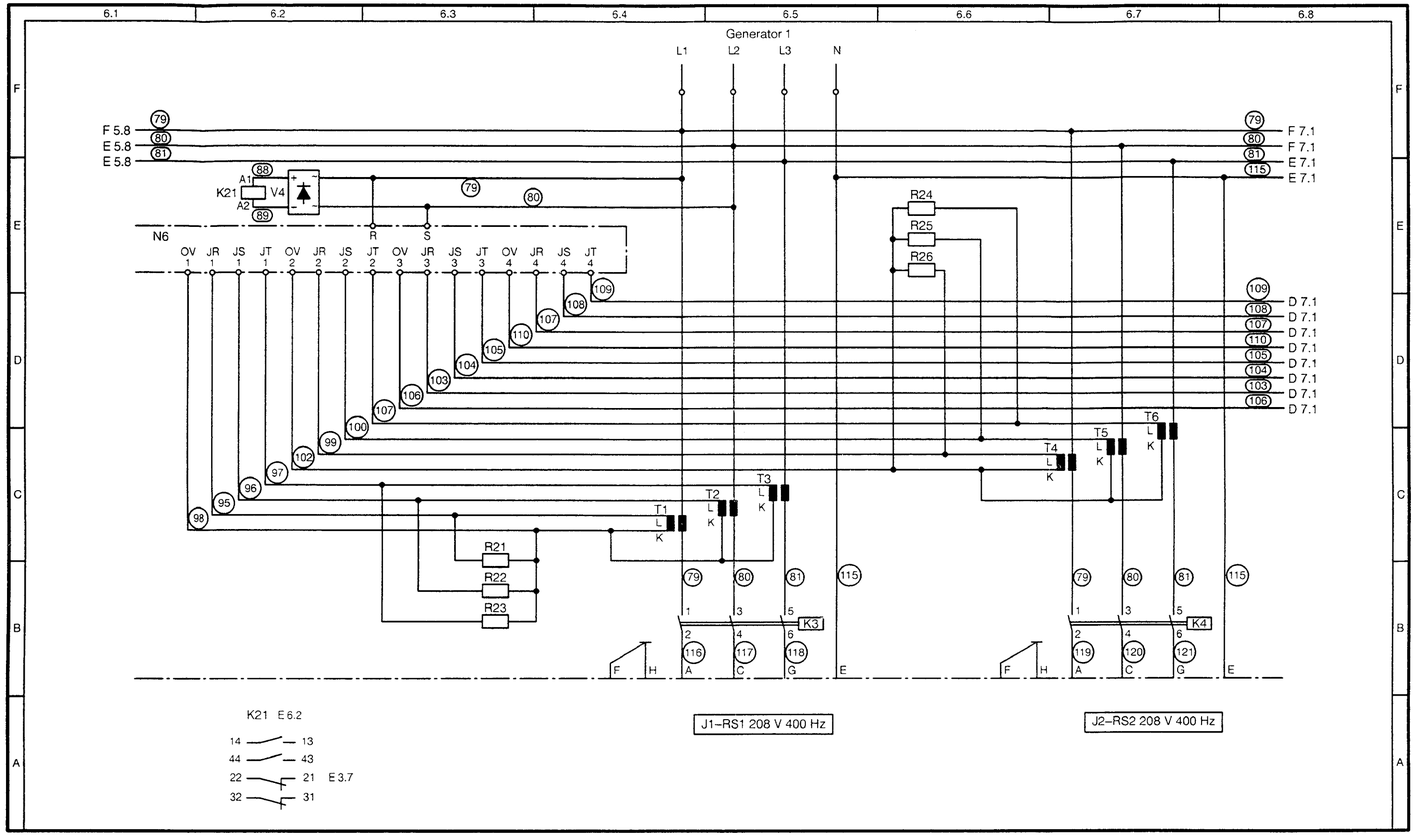
FO-1 Electric Power Plant III Wiring Diagram
(Sheet 3 of 8)



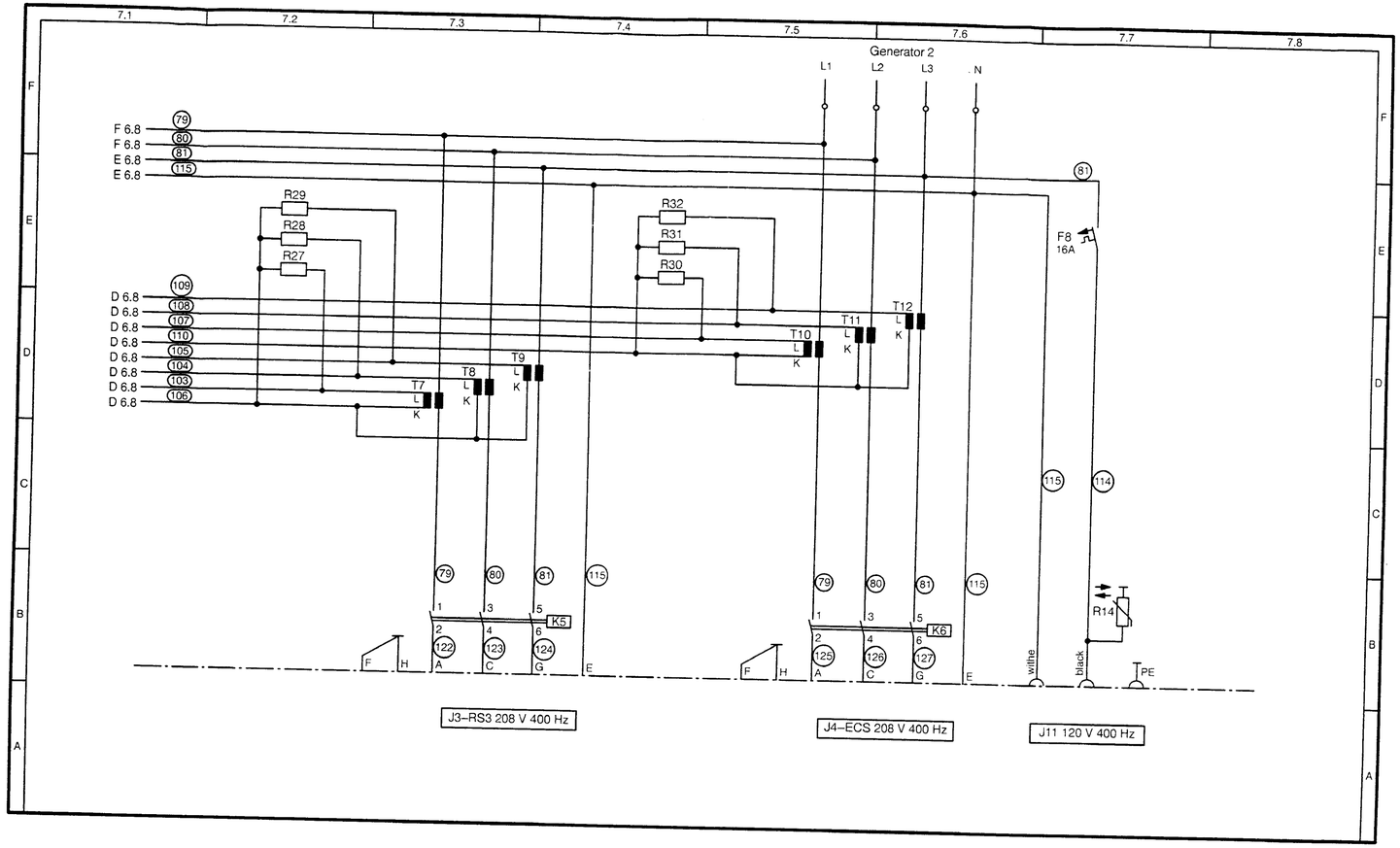
FO-1 Electric Power Plant III Wiring Diagram
(Sheet 1 of 2)



FO-1 Electric Power Plant III Wiring Diagram
(Sheet 5 of 8)

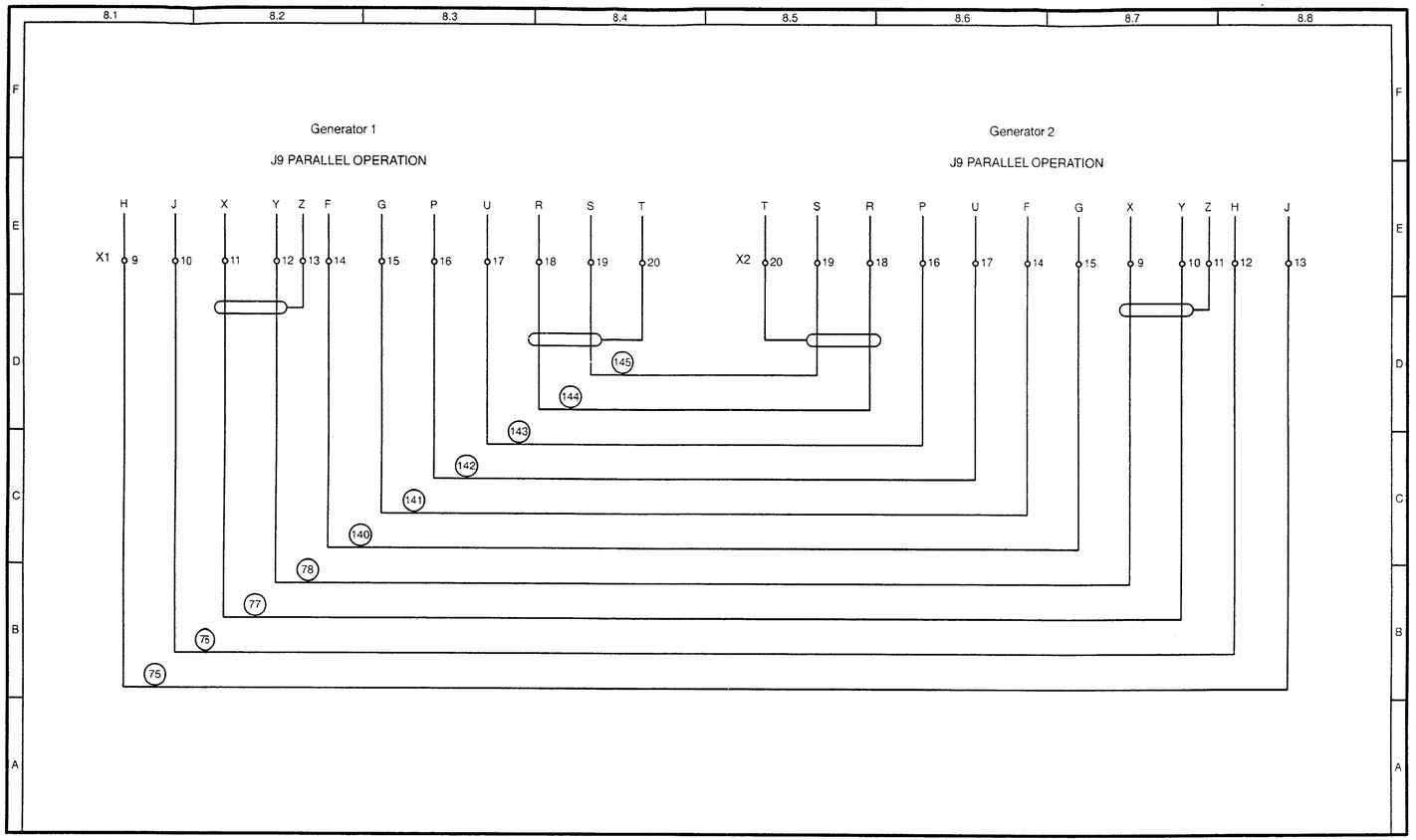


FO-1 Electric Power Plant III Wiring Diagram

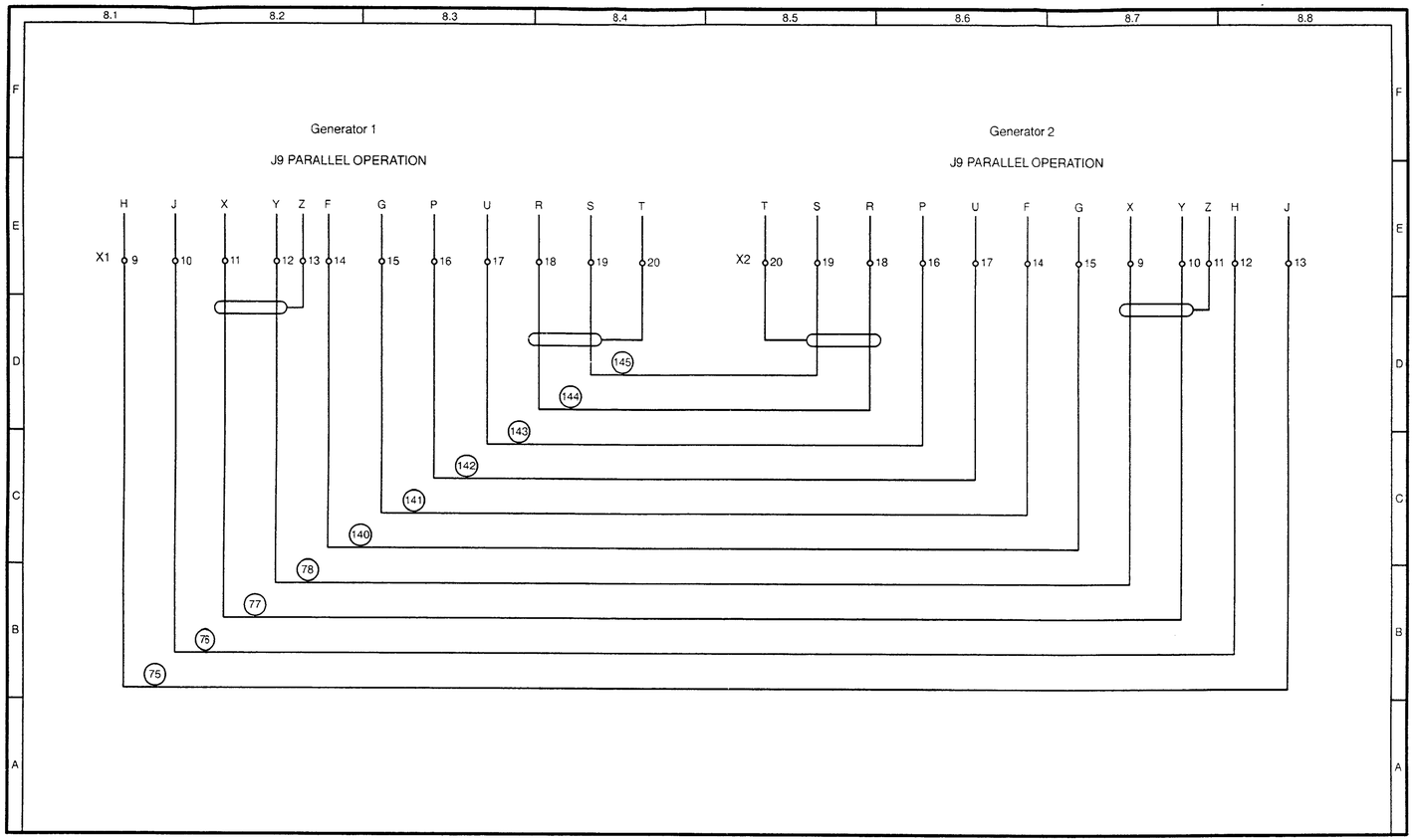


FO-1 Electric Power Plant III Wiring Diagram

(Sheet 7 of 8)



FO-1 Electric Power Plant III Wiring Diagram
(Sheet 8 of 8)



FO-1 Electric Power Plant III Wiring Diagram
(Sheet 8 of 8)

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
04896

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 256439, requirements for TM 9-6115-669-13&P.

*U. S. GOVERNMENT PRINTING OFFICE: 1998-633-280/60236

These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: 'Whomever" <whomever@avmaa27.army.mil>
To: AMSEL-LC-PUBS-CHG@CECOM3.MONMOUTH.ARMY.MIL

Subject: DA Form 2028

1. ***From:*** Joe Smith
2. *Unit:* home
3. ***Address:*** *4300* Park
4. ***City:*** Hometown
5. **St:** MO
6. ***Zip:*** *77777*
7. ***Date Sent:*** 19-OCT-93
8. ***Pub no:*** *55-2840-229-23*
9. ***Pub Title:*** *TM*
10. ***Publication Date:*** *04-JUL-85*
11. Change *Number: 7*
12. *Submitter Rank:* MSG
13. ***Submitter FName:*** Joe
14. *Submitter MName:* T
15. ***Submitter LName:*** *Smith*
16. ***Submitter Phone:*** 123-123-1234
17. ***Problem:*** **1**
18. *Page: 2*
19. *Paragraph: 3*
20. *Line: 4*
21. NSN: 5
22. *Reference: 6*
23. *Figure: 7*
24. *Table: 8*
25. *Item: 9*
26. *Total:* 123
27. **Text:**

This is the text for the problem below line 27.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC John DOE
CO A 3rd Engineer Bn
Ft. Leonardwood, MO 63108

DATE SENT 22 August 1992

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 1-1520-250-10	15 June 1992	Operator's manual MH60K Helicopter

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	

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

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

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

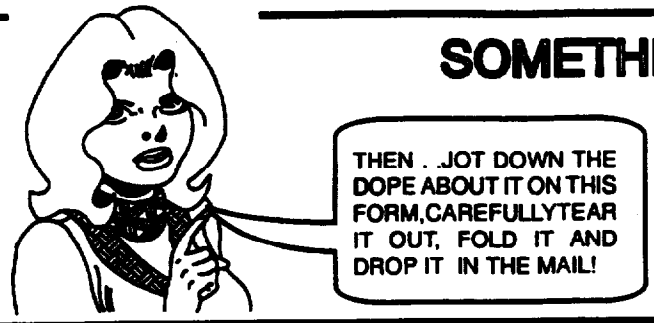
PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE, PFC (268) 317-7111

SIGN HERE

JOHN DOE John Doe

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-6115-669-13&P	JUNE 1998	ELECTRIC POWER PLANT III

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M verprint2, 1 Nov 80

P.S.- - IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION, MAKE A CARBON COPY OF THIS AND GIVE TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2 Reverse of DRSTS-M Overprint 2, 1 Nov 80

TEAR ALONG PERFORATED LINE

FILL IN YOUR UNITS ADDRESS

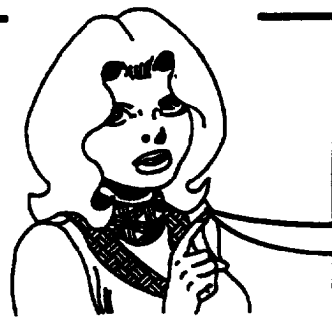
FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

COMMANDER
USACECOM AND FORT MONMOUTH
ATTN: AMSEL-LC-LEO-D-CS-CFO
FORT MONMOUTH NEW JERSEY 07703-5000

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



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

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-6115-669-13&P	JUNE 1998	ELECTRIC POWER PLANT III

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M verprint2, 1 Nov 80

P.S.- - IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION, MAKE A CARBON COPY OF THIS AND GIVE TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2 Reverse of DRSTS-M Overprint 2, 1 Nov 80

TEAR ALONG PERFORATED LINE

FILL IN YOUR UNITS ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

COMMANDER
USACECOM AND FORT MONMOUTH
ATTN: AMSEL-LC-LEO-D-CS-CFO
FORT MONMOUTH NEW JERSEY 07703-5000

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-6115-669-13&P	JUNE 1998	ELECTRIC POWER PLANT III

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M verprint2, 1 Nov 80

P.S.- - IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION, MAKE A CARBON COPY OF THIS AND GIVE TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2 Reverse of DRSTS-M Overprint 2, 1 Nov 80

TEAR ALONG PERFORATED LINE

FILL IN YOUR UNITS ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

COMMANDER
USACECOM AND FORT MONMOUTH
ATTN: AMSEL-LC-LEO-D-CS-CFO
FORT MONMOUTH NEW JERSEY 07703-5000

The Metric System and Equivalents

Linear Measure

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

Weights

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

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

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

Cubic Measure

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

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 075388-000