TECHNICAL MANUAL

OPERATOR, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL

FOR

DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (DISE) AND POWER DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (PDISE) CONSISTING OF

ELECTRICAL FEEDER SYSTEM M200, M200 A/P

(6150-01-208-9755), (6150-01-308-5672)

ELECTRICAL FEEDER SYSTEM M100, M100A/P

(6150-01-208-9754), (6150-01-308-5671)

ELECTRICAL DISTRIBUTION SYSTEM M40, M40A/P

(6150-01-208-9753), (6150-01-307-9446)

ELECTRICAL DISTRIBUTION SYSTEM M60, M60A/P

(6150-01-208-9752), (6150-01-307-9445)

ELECTRICAL UTILITY ASSEMBLY M46

(6150-01-208-9751)

*This manual and TM9-6150-226-23P supersedes TM 5-6150-226-13&P, 25 July 1988.

Headquarters, Department of the Army

30 May 1991

WARNING

HIGH VOLTAGE
is used in the operation of this equipment.
DEATH ON CONTACT
may result if personnel fail to observe safety precautions.
Never work on electrical equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.
The power supply to the equipment must be shut off before beginning to work on the equipment. The power source must be grounded at all times when equipment is in use or being worked on. Be careful not to contact high-voltage connections of 120/208 volts when installing or operating this equipment.
For artificial respiration, refer to FM 21-11, First Aid for Soldiers.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on supplier. Wires will be color coded to designate the phases. If the wire color coding cannot be determined, notify next higher level of maintenance to perform continuity test. Perform a continuity test to verify correct phase designations in accordance with identified color.

WARNING

High voltage is present in all the DISE and PDISE systems. Disconnect power from generator before servicing. Death or serious injury may result.

WARNING

High voltage is present in the DISE and PDISE systems. Do not submerge cable connections in water. Death or serious injury may result.

WARNING

High voltage is present in the DISE and PDISE systems. Do not attempt to decontaminate equipment with liquid chemicals while the power is on. Death or serious injury may result.

WARNING

GROUND FAULT CIRCUIT BREAKERS
are used in this equipment.
DEATH ON CONTACT
may result if personnel fail to observe safety precautions. Some of the 20-amp circuits on the DISE feeder and distribution centers use ground fault circuit breakers. The neutral and ground of some generator sets must be electrically connected with 6-gage wire for the ground fault circuit breakers to function properly. Failure to electrically connect the ground and neutral lugs may result in death or severe injury.

WARNING

HEAVY COMPONENTS
Components of this system are heavy and may be awkward to handle. Use correct lifting procedures and/or assistance from other personnel to avoid injury.

CHANGE

NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 1 July 1997

Operator, Unit and Direct Support Maintenance Manual
for
DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (DISE) and
POWER DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (PDISE)

CONSISTING OF
ELECTRICAL FEEDER SYSTEM M200, M200 A/P
(6150-01-206-9755), (6150-01-306-5672)

ELECTRICAL FEEDER SYSTEM M100, M100 A/P
(6150-01-206-9754), (6150-01-306-5671)

ELECTRICAL DISTRIBUTION SYSTEM M40, M40 A/P
(6150-01-206-9753), (6150-01-307-9446)

ELECTRICAL DISTRIBUTION SYSTEM M60, M60 A/P
(6150-01-206-9752), (6150-01-307-9445)

ELECTRICAL UTILITY ASSEMBLY M46
(6150-01-206-9751)

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General, United States Army
Chief of Staff

Official:

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CHANGE

NO. 3

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WASHINGTON, D.C., 26 July1996

Operator's, Unit, and Direct Support
Maintenance Manual
for

DISTRIBUTIONILLUMINATIONSYSTEMS,
ELECTRICAL(DISE)AND
POWERDISTRIBUTIONILLUMINATIONSYSTEMS,
ELECTRICAL(PDISE)CONSISTINGOF
ELECTRICALFEEDERSYSTEM
M200, M200 A/P
(6150-01-208-9755), (6150-01-308-5672)
ELECTRICALFEEDERSYSTEM ,
MI00, MI00 A/P
(6150-01-208-9754), (6150-01-308-5671)
ELECTRICALDISTRIBUTIONSYSTEM
M40, M40 A/P
(6150-01-208-9753), (6150-01-307-9446)
ELECTRICALDISTRIBUTIONSYSTEM
M60, M60 A/P
(6150-01-208-9752), (6150-01-307-9445)
ELECTRICALUTILITYASSEMBLY
M46
(6150-01-208-9751)

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NO. 2

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Operator's, Unit, and Direct Support
Maintenance Manual
for

DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (DISE) AND POWER DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (PDISE) CONSISTING OF ELECTRICAL FEEDER SYSTEM M200, M200 A/P (6150-01-208-9755), (6150-01-308-5672) ELECTRICAL FEEDER SYSTEM M100, M100A/P (6150-01-208-9754), (6150-01-308-5671) ELECTRICAL DISTRIBUTION SYSTEM M40, M40 A/P (6150-01-208-9753), (6150-01-307-9446) ELECTRICAL DISTRIBUTION SYSTEM M60, M60 A/P (6150-01-208-9752), (6150-01-307-9445) ELECTRICAL UTILITY ASSEMBLY M46 (6150-01-208-9751)

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Operator, Unit, and Direct Support
Maintenance Manual
for
DISTRIBUTION ILLUMINATION SYSTEMS,
ELECTRICAL (DISE) AND
POWER DISTRIBUTION ILLUMINATION SYSTEMS,
ELECTRICAL (PDISE)
CONSISTING OF
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M200, M200 A/P
(6150–01–208–9755), (6150–01–308–5672)
ELECTRICAL FEEDER SYSTEM
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ELECTRICAL DISTRIBUTION SYSTEM
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ELECTRICAL UTILITY ASSEMBLY
M46
(6150–01–208–9751)

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2–1 and 2–2	2–1 and 2–2
2–5 and 2–6	2–5 and 2–6
2–11 and 2–12	2–11 and 2–12
2–19 and 2–20	2–19 and 2–20
2–23 and 2–24	2–23 and 2–24
2–39 and 2–40	2–39 and 2–40
4–29 through 4–32	4–29 through 4–32
4–43 through 4–52	4–43 through 4–52
B–5 and B–6	B–5 and B–6
B–9 and B–10	B–9 and B–10
C–5 and C–6	C–5 and C–6

TM 9–6150–226–13
C 1

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F–1 and F–2	F–1 and F–2
F–17 and F–18	F–17 and F–18
F–29 through F–36	F–29 through F–36
F–71 through F–80	F–71 through F–80
F–83 through F–92	F–83 through F–92

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TECHNICAL MANUAL

N0. 9-6150-226-13

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DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 May 1991

Operator, Unit and Direct Support Maintenance Manual for DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (DISE) and POWER DISTRIBUTION ILLUMINATION SYSTEMS, ELECTRICAL (PDISE)

CONSISTING OF
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(6150-01-208-9752), (6150-01-307-9445)

ELECTRICAL UTILITY ASSEMBLY M46
(6160-01-206-9751)

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 your letter or 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, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. You may also submit your recommended changes by E-mail directly to <mpm%avma28@st-louis-emh7.army.mil>. A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

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*** This manual together with TM 9-6150-226-23P supersedes TM 5-6150-226-13&P, dated 25 July 1988.**

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LIST OF ILLUSTRATIONS (Continued)

LIST OF TABLES

HOW TO USE THIS MANUAL

This manual is designed to help you install, operate, and maintain the electrical distribution and illumination systems (Distribution Illumination Systems, Electrical-DISE) and (Power Distribution Illumination Systems, Electrical-PDISE). Listed below are some of the special features of this manual which will help you locate and use the information you need.

A front cover index gives you a quick reference to chapters and sections that you will be using often.

The appendixes are located at the end of the manual. They contain a reference guide to other manuals, a maintenance allocation chart, a list of components of end items and basic issue items, a list of additional authorized items, a list of expendable supplies and materials, a manufactured items list, and torque values.

Each new maintenance task begins on a new page. Often a complete task is described on only two pages.

The maintenance tasks tell you what has to be done to the system before you start the task, and what you must do to return the system to operating condition after the task is finished.

The manual is divided into chapters containing operator, unit, and direct support maintenance procedures. These procedures tell you a number of things such as:

What you will need to do the job.
If you will need any assistance.
Safety precautions you should be aware of.

In addition to the text, you will have illustrations to aid in connecting, operating, and maintaining DISE and PDISE equipment. The illustrations are keyed to the text and show you how to remove the part, repair the part, and install the part. Cleaning and inspection procedures are also included when required.

Become familiar with the entire maintenance procedure before beginning a maintenance task.

Read warnings and cautions before performing any procedures.

CHAPTER 1

INTRODUCTION

Chapter Index

Section I. GENERAL INFORMATION

Section Index

Section Index (Cont.)

1-1. SCOPE.

a. Type of Manual. Operator, Unit, and Direct Support Maintenance Manual.

b. Model Number and Equipment Name. The electrical distribution and illumination systems (Distribution Illumination Systems, Electrical-DISE) and (Power Distribution Illumination Systems, Electrical-PDISE) are composed of the following models:

DISE	PDISE
(1) M200 Electrical Feeder System;	M200 A/P Electrical Feeder System
(2) M1OO Electrical Feeder System;	M1OO A/P Electrical Feeder System
(3) M40 Electrical Distribution System;	M40 A/P Electrical Distribution System
(4) M60 Electrical distribution System;	M60 A/P Electrical Distribution System
(5) M46 Electrical Utility Assembly;	M46 Electrical Utility Assembly
(6) All Auxiliary Equipment, page 2-44	

c. Purpose of Equipment. To distribute electrical power from the power source (supplied separately) to user equipment during field conditions and to provide illumination for field shelters.

1-2. MAINTENANCE FORMS AND RECORDS.

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

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

For general destruction procedures for this equipment, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command).

1-4. LIST OF ABBREVIATIONS.

Abbreviations used in this manual are listed in the glossary at the end of this manual. Explanations of terms used in this manual are induded in the glossary.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATION (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 an SF 368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Aviation and Troop Command, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798, ATTN: AMSAT-I-MDO. We will send you a reply.

1-6. WARRANTY INFORMATION.

Warranty procedures for DISE/PDISE components are listed in TB 9-6150-226-23. DISE and PDISE is warranted by UNICOR, Federal Prison Industries for 24 months from date of delivery on DA Form 2410.

1-7. CALIBRATION.

DISE/PDISE equipment does not require calibration.

1-8. NOMENCLATURE CROSS – REFERENCE LIST.

There is no nomenclature used in this manual which deviates from official nomenclature. List of unusual terms used are located in the Glossary.

1-9. QUALITY ASSURANCE/QUALITY CONTROL.

The following manuals are required for quality assurance/quality control of DISE and PDISE equipment: TM 9-237; TM 38-230-1 ; TM 38-230-2, TM 43-0139; and FM 10-16.

Section II. EQUIPMENT DESCRIPTION

Section Index

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

a. DISE/PDISE is a family of power distribution and illumination equipment which transmits electrical power between power generation and power using equipment. DISE/PDISE supplements current unit illumination and adds distribution capabilities.

b. DISE/PDISE consists of items illustrated and listed in paragraph 1-11. It is used to form a consolidated power network by adding components to meet specific organizational missions and requirements.

c. DISE/PDISE permits using units more flexibility by consolidating power sources.

d. DISE/PDISE provides flexibility to unit operations and can be quickly assembled/disassembled for rapid relocation.

e. DISE/PDISE equipment is designed for basic climatic (120 to -25° F [49 to -32° C]) and field conditions.

f. DISE/PDISE equipment is designed to be used with generator sets (120/208 V ac, 50/60 Hz, 5 to 200 kW).

g. DISE/PDISE system and user's electrical equipment are protected by circuit breakers within the DISE/PDISE equipment.

h. DISE/PDISE equipment uses military standard connectors.

i. DISE/PDISE equipment is compatible with International Standardization Organization (IS0) containers and Tent Extendable, Modular, Personnel (TEMPER).

j. Line distance from generator to load is limited to a total of 300 feet (91.4m) at maximum load, because line distance greater than 300 feet (91.4m) would cause an unacceptable voltage loss. See Table 1-3 to determine voltage loss at rated current.

k. The M46 electrical utility assembly can be used to illuminate field shelters. The M46 is not intended to replace existing lighting sets, but is intended to augment and expand current capabilities.

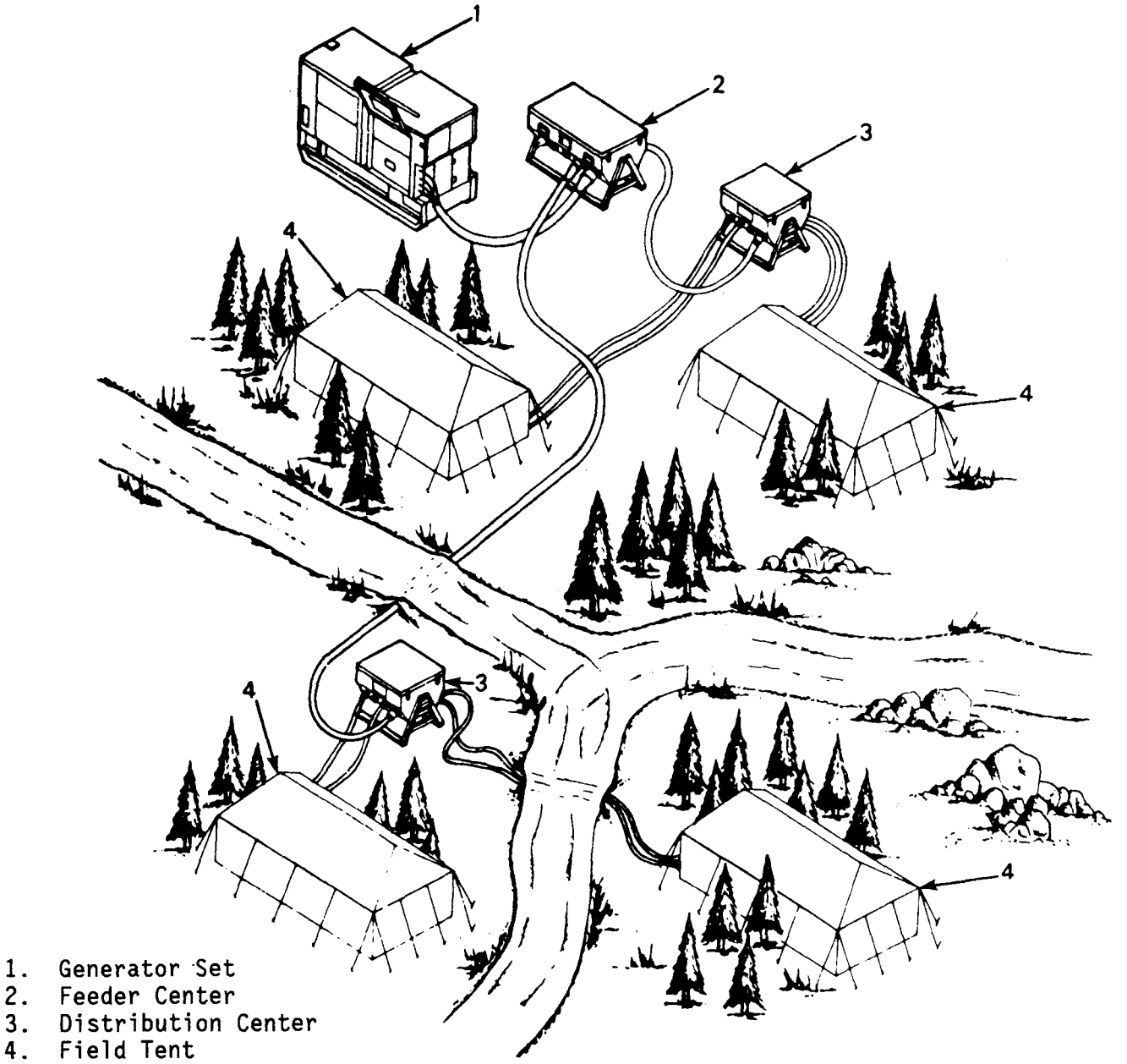
1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

a. Typical System Placement. The quantity, location, and placement of DISE and PDISE equipment is dependent upon field conditions and user needs. Figure 1-1 is a typical field placement of a 3-phase power distribution system. Figure 1-2 shows details of DISE and PDISE equipment inside the user's tent.

b. System Components. The components of the five basic systems for DISE and PDISE are illustrated in Figures 1-3 thru 1-7.

NOTE:

EQUIPMENT ENLARGED TO SHOW DETAIL.



1. Generator Set
2. Feeder Center
3. Distribution Center
4. Field Tent

FIGURE 1-1. Typical Field Placement

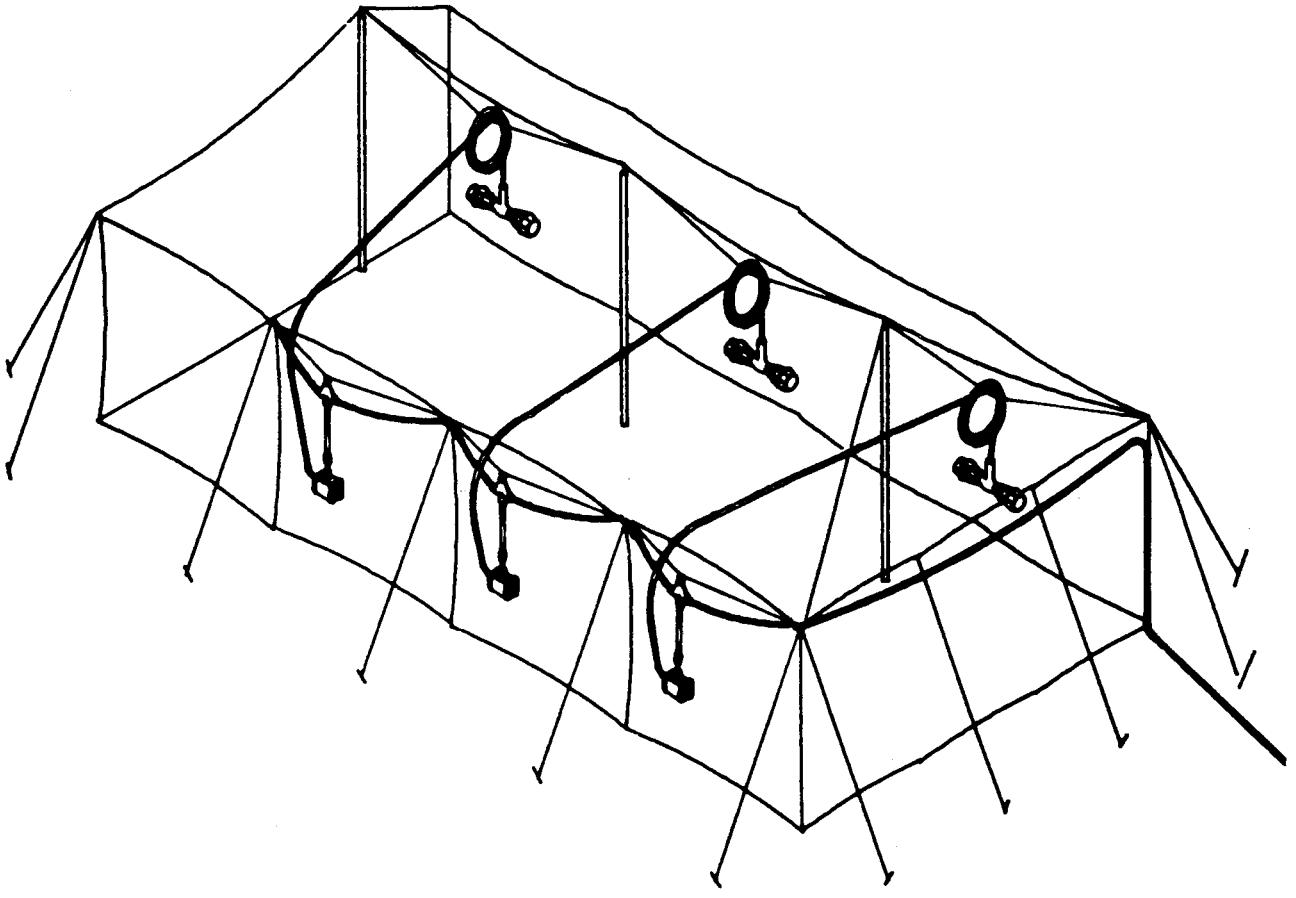
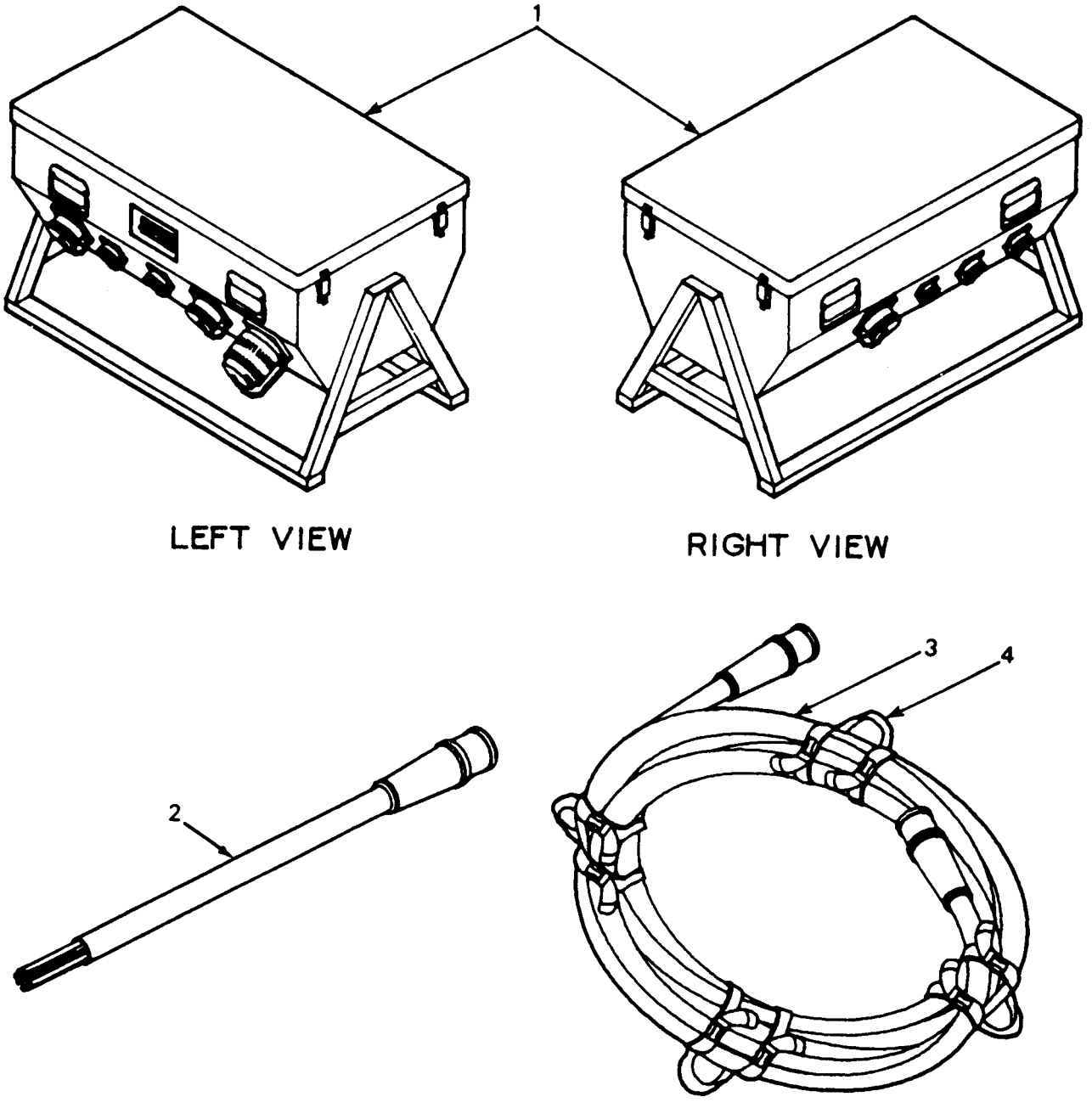


FIGURE 1-2. DISE and PDISE Branch Cable and Light Assemblies.

NOTE :

COMPONENTS ARE
NOT DRAWN TO SCALE.

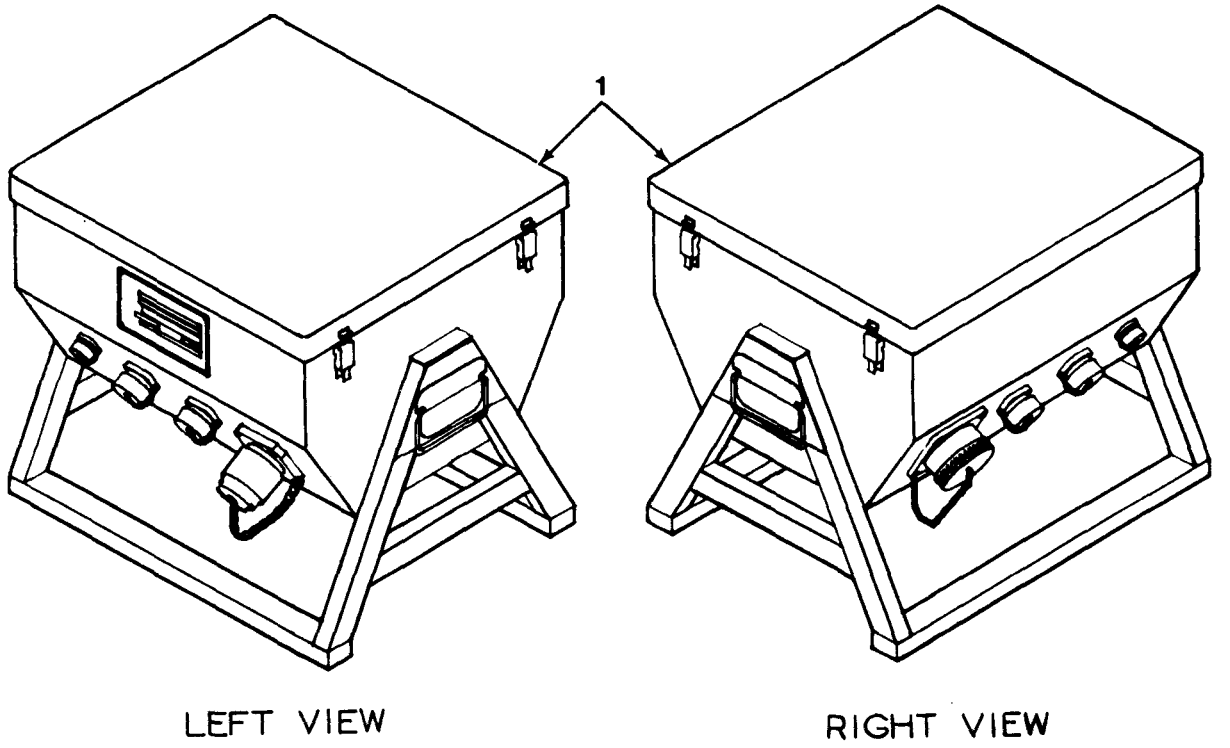


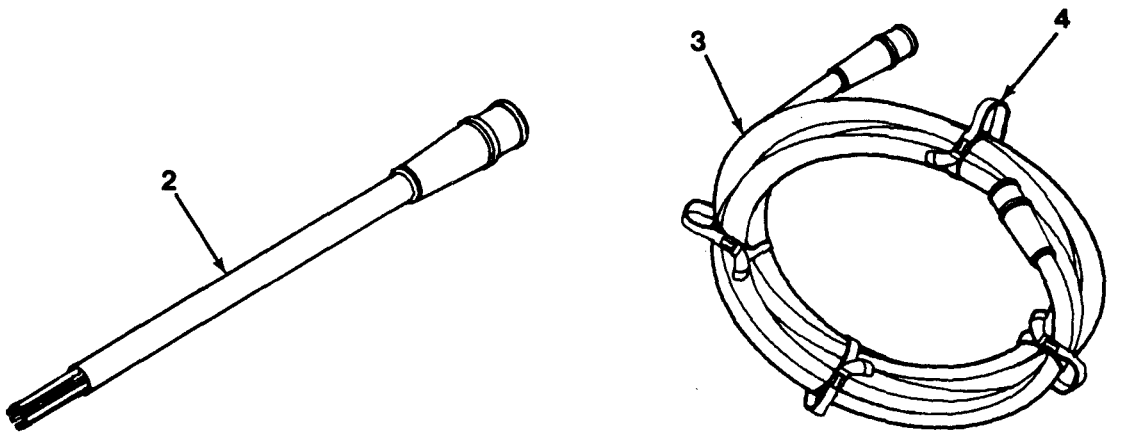
1. Electrical feeder center, 3-ph, 120/208 V, 200 amp/ph
2. Pigtail cable assy, 4 ft (1.2 m), 200-amp, 8-pin
3. Service/feeder cable assy, 25 ft (7.6m), 200-amp, 8-pin (4)
4. Cable carrying strap (16)

FIGURE 1-3. Electrical Feeder System, M200 and M200 A/P, 3-Phase.

NOTE :

COMPONENTS ARE
NOT DRAWN TO SCALE.





1. Electrical feeder center, 3-ph, 120/208 V, 100 amp/ph
2. Pigtail cable assy, 4 ft (1.2 m), 100-amp, 8-pin
3. Service/feeder cable assy, 50 ft (15.2 m), 100-amp, 8-pin (2)
4. Cable carrying strap (8)

FIGURE 1-4. Electrical Feeder System, M100 and M100 A/P, 3-Phase.

NOTE :

COMPONENTS ARE NOT DRAWN TO SCALE .

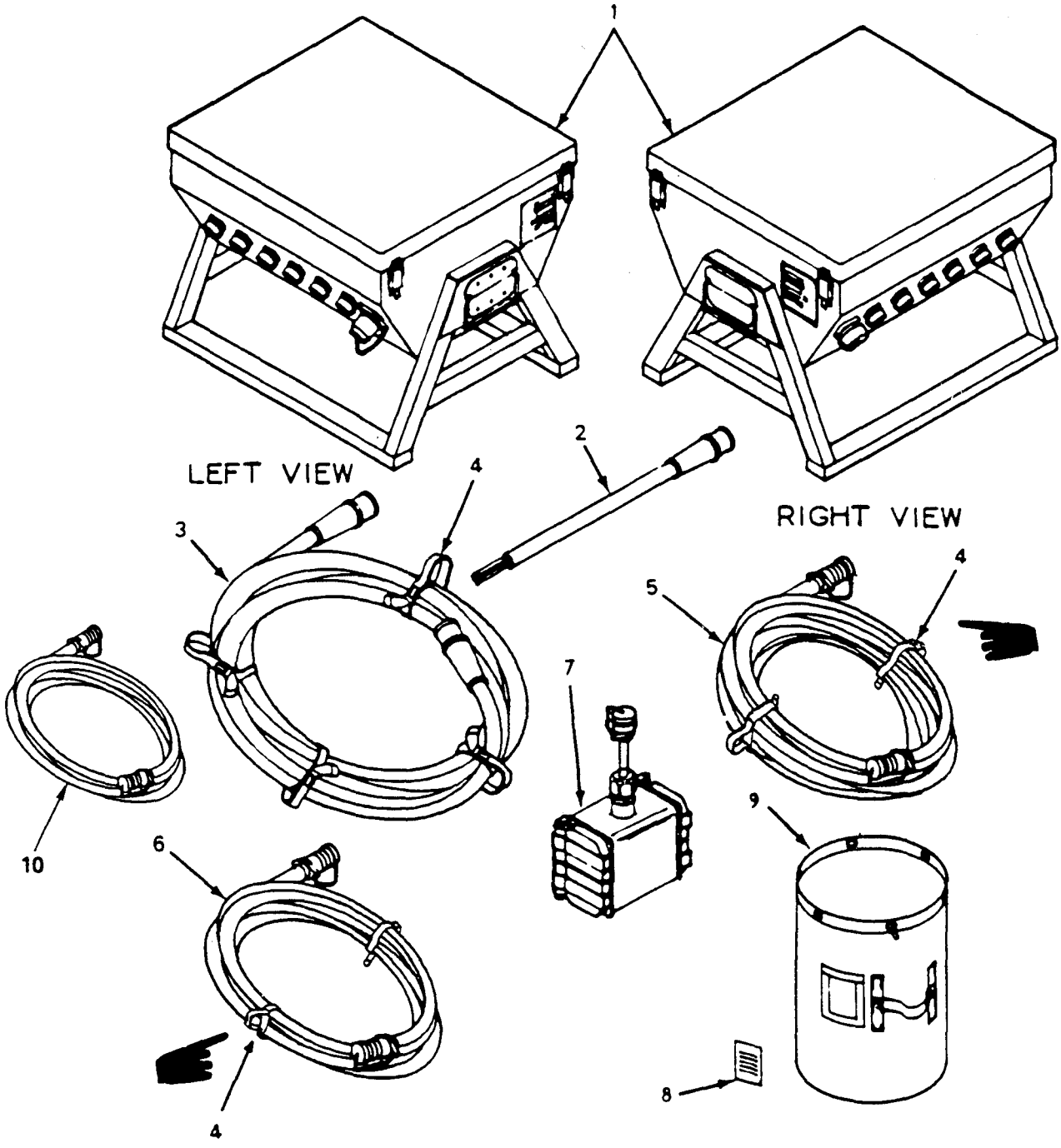


FIGURE 1-5. Electrical Distribution System, M40 and M40 A/P, 3-Phase. (sheet 1 of 2)

LEGEND:

1. Distribution center, 3-ph, 120/208 V, 40 amp/ph
2. Pigtail cable, 4 ft (1.2 m), 40 amps, 5-pin
3. Service/feeder cable assy, 50 ft (15.2 m), 40/60-amp, 5-pin (2)
4. Cable carrying strap (8)
5. Extension cable assy, 50 ft (15.2 m), 20-amp, 3-pin (3)
6. Extension cable assy, 25 ft (7.6 m), 20-amp, 3-pin (3)
7. Receptacle group 2-duplex box enclosure, 120 V, 20 amp
8. Packing List
9. Transit and storage container
10. Interface cable

FIGURE 1-5. Electrical Distribution System, M40 and M40 A/P, 3-Phase (sheet 2 of 2)

NOTE:

COMPONENTS ARE NOT DRAWN TO SCALE.

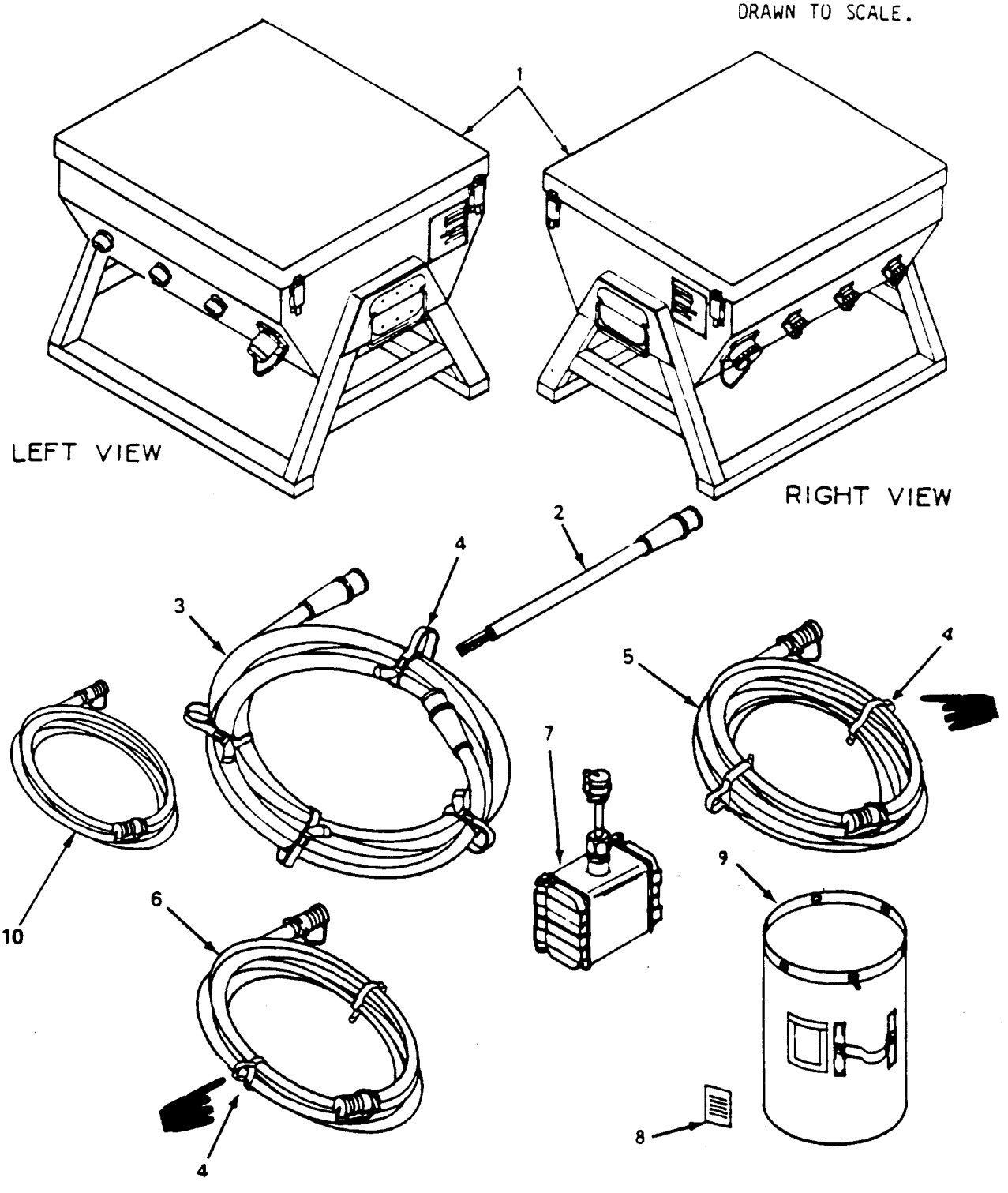


FIGURE 1-6. Electrical Distribution System, M60 and M60 A/P Single-Phase. (sheet 1 of 2)

LEGEND:

1. Distribution center, single-phase, 120 V, 60 amp
2. Pigtail cable assy, 4 fit (1.2 m), 60-amp, 4-pin
3. Service/feeder cable assy, 100 ft (30.5 m), 60-amp, 4-pin
4. Cable carrying strap (4)
5. Extension cable assy, 50 ft (15.2 m), 20-amp, 3-pin (3)
6. Extension cable assy, 25 ft (7.6 m), 20-amp, 3-pin (3)
7. Receptacle group 2-duplex box enclosure, 120 V, 20 amp
8. Packing List
9. Transit and storage-container
10. Interface cable

FIGURE 1-6. Electrical Distribution System, M60 and M60 A/P Single-Phase. (sheet 2 of 2)

NOTE :

COMPONENTS ARE
NOT DRAWN TO SCALE.

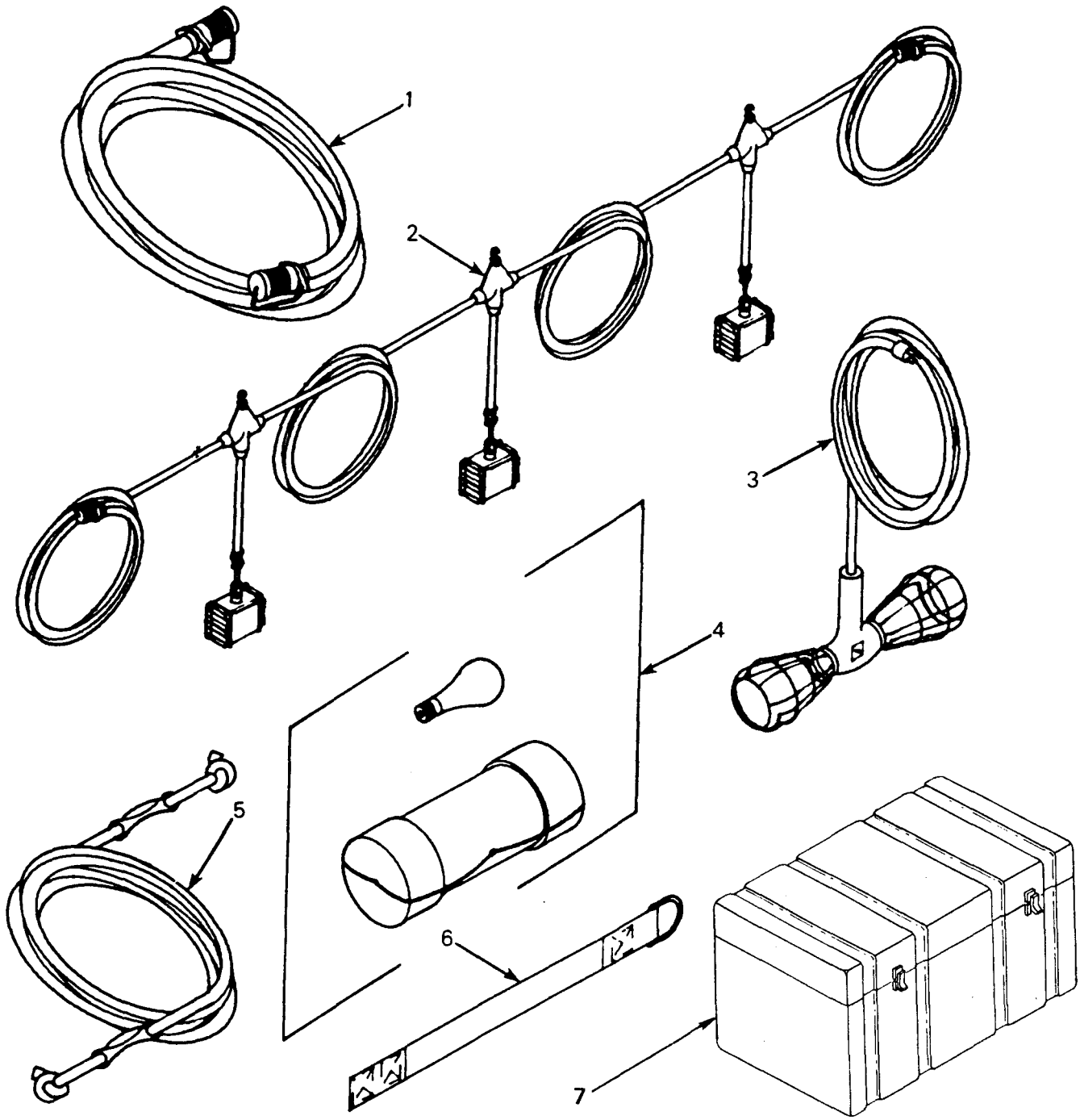


FIGURE 1-7. Electrical Utility Kit, M46. (sheet 1 of 2)

LEGEND:

1. Extension cable assy, 15 ft (4.6m), 20-amp, 3-pin (6)
2. Branch circuit cable assy, 12-outlet, 24 ft (7.3 m), 20-amp, 3-pin, 3-drop (2)
3. Utility light, 120 V, dual socket, incandescent (2)
4. Light bulbs kit: blue 40 W (2), white 75 W (2)
5. Rope support assy, 53 ft (16.2 m) (2)
6. Cable securing strap (6)
7. Transit storage container

FIGURE 1-7. Electrical Utility Kit, M46. (sheet 2 of 2)

1-12. DIFFERENCE BETWEEN MODELS.

a. The major difference between the DISE and PDISE systems are:

(1) The DISE models (M40, M60, M1OO and M200) use thermal-magnetic circuit breakers while the PDISE models (M40 A/P, M60 A/P, M1OO A/P and M200 A/P) use hydraulic-magnetic circuit breakers. (2) The DISE models use one length of wire for each model inside the enclosure assembly while the PDISE models use different lengths of wire due to bus bar location and type of circuit breaker. (3) The DISE models have ground fault circuit interruption while the PDISE models do not use the ground fault circuit interruption circuit breaker. (4) The inside covers for DISE models are designed differently from PDISE models due to size of circuit breakers.

b. Three-Phase DISE and PDISE Equipment. The M40, M40A/P, M1OO, M1OOA/P, M200, and M200 A/P systems require a 3-phase electrical power source rated at 208V ac, 50/60 Hz for input power. These systems will provide 3-phase (208 V ac, 50/60 Hz) or single-phase (120 V ac, 50/60 Hz) electrical power, depending on which output receptacles are used. These three systems will interconnect to provide a 3-phase plus single-phase electrical network of up to 72 kW total capacity.

c. Single-Phase DISE and PDISE Equipment. The M60 and M60 A/P systems requires a single-phase electrical power source rated at 120 V ac, 50/60 Hz, for input power. This system will provide only single-phase (120 V ac, 50/60 Hz) electrical power at the output receptacles.

d. Electrical Utility Assembly. The M46 system connects to the M60 system outputs or to the single-phase outputs of the 3-phase systems (M40, M40 A/P, M1OO, M1OO A/P, M200 and M200 A/P). The M46 system consists of various electrical cables, lights for illumination, and standard household type duplex receptacles for plugging in electrical loads not to exceed the rating of the circuit breaker.

e. Common Features.

(1) DISE and PDISE Feeder/Distribution Centers.

(a) Each center uses a 4-foot (1.2 m) pigtail cable to connect to the generator.

(b) Each center is equipped with a master circuit breaker rated at the maximum permissible load.

(c) Each center is equipped with phase indicator lights which indicate the presence of input power.

(d) Each center is equipped with branch circuits that are individually protected with circuit breakers.

(2) DISE and PDISE Cables.

(a) Cables are equipped with at least one phase wire, one neutral wire, and one ground wire.

(b) Cables are equipped with military standard connectors which mate according to amperage rating. Cables designed for different amperages will not connect.

(c) Cables are equipped with covers to protect the connectors from moisture and dirt.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on supplier. Wires will be color coded to designate the phases. If the wire color coding cannot be determined, notify next higher level of maintenance to perform continuity test. Perform a continuity test to verify correct phase designation in accordance with identified color.

(d) Cable wires are color-coded as follows:

1 Phase A (L1)-Black

2 Phase B (L2)-Red

3 Phase C (L3)-Blue

4 Neutral N (LO)-White

5 Ground G-Green or bare wire

(3) Systems. Systems are designed to provide correct phase, neutral, and ground matching.

1-13. EQUIPMENT DATA.

a. Table 1-1 lists equipment data for each of the DISE and PDISE feeder/distribution centers.

b. Tables 1-2 and 1-3 list equipment data for the DISE and PDISE cables.

There are other auxiliary items that supplement the five DISE and PDISE systems (see para 2-9).

Table 1-1. DISE AND PDISE FEEDER/DISTRIBUTION CENTERS

Item	System Model			
	200-amp Feeder Center	100-amp Feeder Center	40–amp Dist Center	60–amp Dist Center
weight in pounds	130-140	65-77	48-55	4345
(kilograms)	(59.0-63.5)	(29.5-34.9)	(21.8-25.0)	(19.5-20.4)
Length in inches	33.5	24.25	24.25	24.25
(centimeters)	(85.09)	(61 .59)	(61 .59)	(61 .59)
Width in inches	22.97	22.35	21.74	21.74
(centimeters)	(58.34)	(58.03)	(55.20)	(55.20)
Height in inches	20.37	20.37	16.12	15,50
(centimeters)	(51 .74)	(51 .74)	(40.94)	(39.37)
Frequency ratings (Hz)	50/60	50/60	50/60	50/60
Voltage ratings (V)	120/208	120/208	120/208	120
Number of phases	3	3	3	1
Maximum amperage/phase(amp)	200	100	40	60
Maximum output load (kW)	72	36	14.4	7.2
Input Connectors				
200-amp/8-pin/3-ph	1			
100-amp/8-pin/3-ph		1		
40-amp/5-pin/3-h			1	
60-amp/4-pin/1-ph				1
Output connectors				
100-amp/8-pin/3-ph	3	1		
40-amp/5-pin/3-ph		2	1	
60-amp/5-pin/3-ph	4	2		
60-amp/4-pin/1-ph				1
20-amp/3-pin/1-ph	1	2	12	6
Circuit breakers				
200-amp/3-ph	1			
100-amp/3-ph	3	1		
60-amp/3-ph	4	2		
40-amp/3-ph		2	1	
60-amp/1-ph				1
20-amp/1-ph			6	3
20-amp/1-ph/ground fault (M40,M60,M100,M200)	1	2	6	3
20-amp/1-ph (M40A/P ,M200A/P ,M100A/P)	1	2	12	
Phase indicator lights	3	3	3	1

Table 1-2. DISE AND PDISE CABLES

Cable Name	Amp Rating	No. of Pins/ Sockets	No. of Phase Wires	Cable Length ft. (m)	Cable Weight lb. (kg)	Connector Diameter in. (mm)	Cable Diameter in. (mm)
Pigtail	200	8	3	4 (1.2)	28 (12.7)	4.1 (104)	2.4 (61)
Pigtail	100	8	3	4 (1.2)	17 (7.7)	3.7 (94)	1.6 (41)
Pigtail*	60	5	3	4 (1.2)	5 (2.3)	2.7 (69)	1.3 (33)
Pigtail	60	4	1	4 (1.2)	4 (1.8)	2.7 (69)	1.1 (28)
Service/Feeder	200	8	3	25 (7.6)	136 (61.7)	4.1 (104)	2.4 (61)
Service/Feeder	100	8	3	50 (15.2)	100 (45.4)	3.7 (94)	1.6 (41)
Service/Feeder*	60	5	3	25 (7.6)	27 (12.3)	2.7 (69)	1.3 (33)
Service/Feeder*	60	5	3	50 (15.2)	53 (24.1)	2.7 (69)	1.3 (33)
Service/Feeder*	60	5	3	100 (30.5)	105 (47.7)	2.7 (69)	1.3 (33)
Service/Feeder	60	4	1	50 (15.2)	48 (21.8)	2.7 (69)	1.1 (28)
Service/Feeder	60	4	1	100 (30.5)	96 (43.6)	2.7 (69)	1.1 (28)
Extension	20	3	1	3.5 (1.1)	0.7 (0.3)	1.2 (31)	0.4 (10)
Extension	20	3	1	15 (4.6)	3 (1.4)	1.2 (31)	0.4 (10)
Extension	20	3	1	25 (7.6)	5 (2.3)	1.2 (31)	0.4 (10)

Table 1-2. DISE AND PDISE CABLES (Cont.)

Cable Name	Amp Rating	No. of Pins/ Sockets	No. of Phase Hires	Cable Length ft. (m)	Cable Weight lb. (kg)	Connector Diameter in. (mm)	Cable Diameter in. (mm)
Extension	20	3	1	50 (15.2)	10 (4.5)	1.2 (31)	0.4 (lo)
Branch (1-drop)	20	3	1	8 (2.4)	2 (0.9)	1.2 (31)	0.4 (lo)
Branch (2-drop)	20	3	1	16 (4.9)	4 (1.8)	1.2 (31)	0.4 (lo)
Branch (3-drop)	20	3	1	24 (7.3)	6 (2.7)	1.2 (31)	0.4 (lo)

* These cables may be connected to the 40-amp or 60-amp, 5-pin, 3-phase connectors.

Table 1-3. APPROXIMATE* VOLTAGE LOSSES AT RATED CURRENT

Rated Amperage/No. of Pins	Cable Length in Feet (Meters)					
	15 (4.6)	25 (7.6)	50 (15.2)	100 (30.5)	200 (61)	300 (91.4)
200-amp/8-pin cables	1 V	1.6 V	3.2 V	6.4 V	12.8 V	19.2 V
100-amp/8-pin cables	0.4 V	0.7 V	1.4 V	2.8 V	5.6 V	8.4 V
60-amp/5-pin cables	0.5 V	0.9 V	1.6 V	3.5 V	6.4 V	10.5 V
40-amp/5-pin cables	0.3 V	0.6 V	1.1 V	2.3 V	4.4 V	6.9 V
60-amp/4-pin cables	0.5 V	0.9 V	1.7 V	3.4 V	6.8 V	10.2 V
20-amp/3-pin cables	1.1 V	1.8 V	3.6 V	7.2 V	14.4 V	21.6 V

* Actual voltage loss varies with actual current flow and conductor temperature.

1-14. EQUIPMENT CONFIGURATION

a. Single-Phase System. The M60 and M60 A/P 60-amp, single-phase electrical distribution system (Fig. 1-6) can be used as a stand-alone system with the following provisions:

(1) The total load must not exceed 7.2 kW.

(2) The generator selected must be capable of supporting the total load.

(3) Individual branch circuit loads must not exceed 2.4 kW. Three of the six outputs, carrying maximum load, can be used at the same time.

b. Three-Phase Input Systems.

(1) M200 and M200 A/P. The 200-amp, 3-phase electrical feeder system (Fig. 1-3) can be used as a stand-alone system with the following provisions:

(a) The total load must not exceed 72 kW.

(b) The generator selected must be capable of supporting the total load.

(c) Individual branch circuit output loads must not exceed:

1 36 kW for the 100-amp. 3-phase branch circuits. Two of the three outputs, carrying maximum load, can be "used at the same time.

2 21.6 kW for the 60-amp, 3-phase branch circuits. Three of the four outputs, carrying maximum load, can be used at the same time.

3 2.4 kW for the 20-amp, single-phase branch circuit.

(2) M1OO and M1OO A/P. The 100-amp, 3-phase electrical feeder system (Fig. 1-4) can be used as a stand-alone system with the following provisions:

(a) The total load must not exceed 36 kW.

(b) The generator selected must be capable of supporting the total load.

(c) Individual branch circuit output loads must not exceed:

1 36 kW for the 100-amp, 3-phase feed-through circuit. This uses the total system capacity and no other outputs can be used.

2 21.6 kW for the 60-amp, 3-phase branch circuits. Only one of the two outputs, carrying maximum load, can be used at the same time.

3 14.4 kW for the 40-amp, 3-phase branch circuits. Both outputs, carrying maximum load, can be used at the same time.

4 2.4 kW for the 20-amp, single-phase circuits. Both outputs, carrying maximum load, can be used at the same time.

(3) M40 and M40 A/P. The 40-amp, 3-phase electrical distribution system (Fig. 1-5) can be used as a stand-alone system with the following provisions:

(a) The total load must not exceed 14.4 kW.

(b) The generator selected must be capable of supporting the total load.

(c) Individual branch circuit output loads must not exceed:

1 14.4 kW for the 40-amp, 3-phase feed-through circuit. This uses the total system capacity and no other outputs can he used.

2 2.4 kW for the 20-amp, single-phase branch circuits. Six of the 12 outputs, carrying maximum load, can be used at the same time.

c. Electrical Utility Assembly. The M46 (Fig. 1-7) can be used with any DISE/PDISE system to provide the user with lighting and 120 V ac duplex receptacle outlets.

d. Networking. Figure 1-8 is an example of one possible network arrangement. The 3-phase systems are used for networking with the following provisions:

(1) The total load must not exceed the capacity of the largest distribution center connected between the generator and the rest of the network.

(2) The generator selected must be capable of supporting the total load.

(3) Individual branch systems must not exceed the capacity of the branch distribution center.

e. Generator Selection. Table 1-4 is a list of examples for pairing generator sets with equipment. Refer to FM 20-31, Electrical Power Generation in the Field, for generator selection.

Table 1-4. Examples for Pairing Generators with DISE and PDISE

Generator KW	M200/ M200A/P	M100/ M100A/P	M40/ M40A/P	M60/ M60A/P	M46	Phase
5				1	3	1
10				1	3	1
10			1		6	3
15				3	9	1
15			1		6	3
30			2		12	3
30		1	1		6	3
60		2	2		12	3
60	1	2	2		12	3
100		3	6		36	3
100	2	4	8		48	3
200	3	6	12		72	3

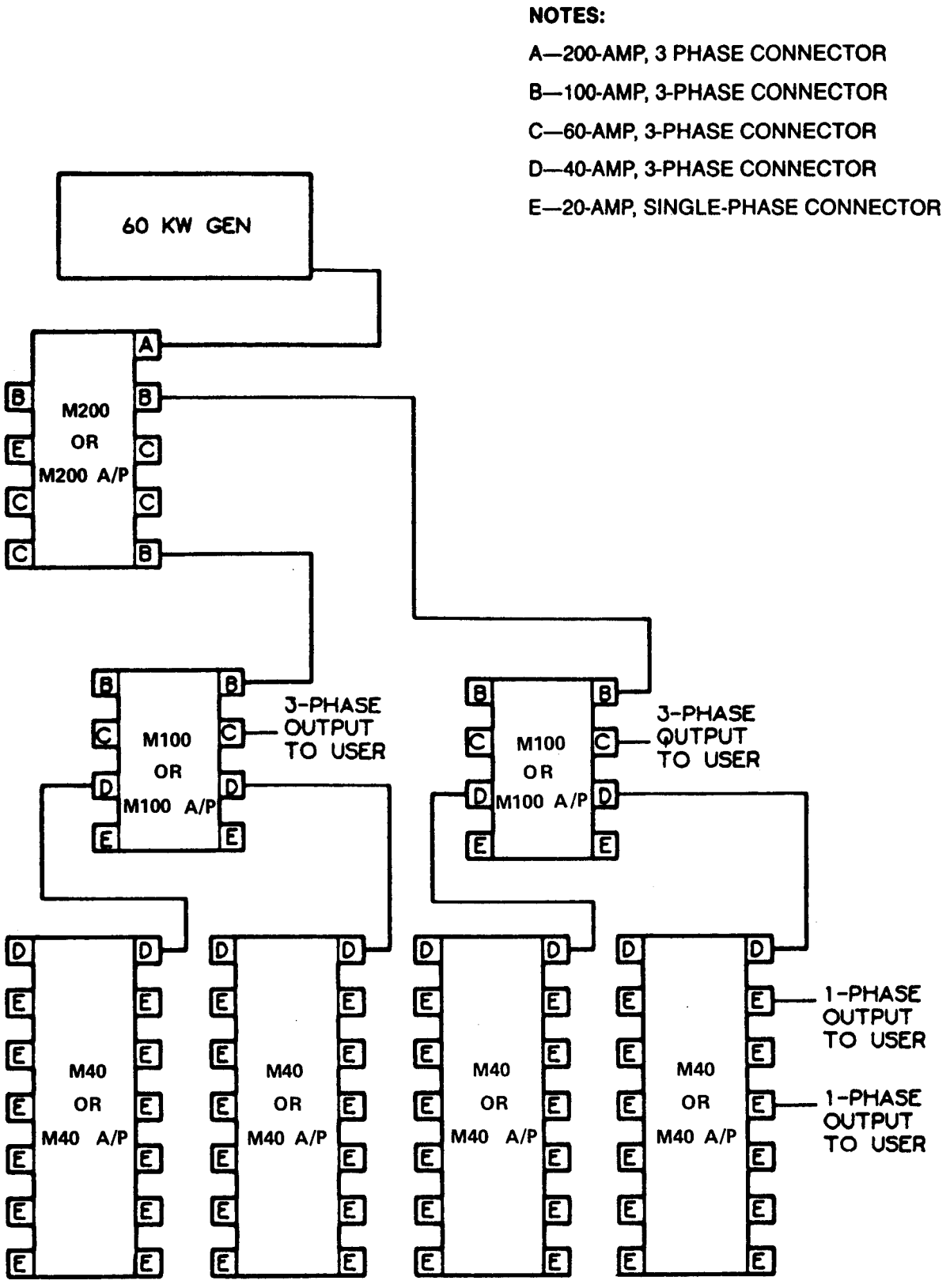


FIGURE 1-8. An Example of One Possible Network Arrangement.

1-15. SAFETY, CARE AND HANDLING.

To prevent personal injuries and equipment damage, strictly observe and comply with all warnings and cautions during operation, maintenance, and movement of the DISE/PDISE equipment.

a. The power supply to the DISE and PDISE equipment must be shut off before beginning work on the equipment due to the high voltage which could result in death.

b. Component of the DISE and PDISE systems are heavy and may be awkward to handle. Use correct lifting procedure or assistance from other personnel to avoid injury. Weights of the components (system model) are listed in table 1-1.

Section III. TECHNICAL PRINCIPLES OF OPERATION

1-16. PRINCIPLES OF OPERATION.

The generator supplies electrical power to the DISE and PDISE systems. The DISE and PDISE systems distribute electrical power through circuit breakers and cables to the user electrical equipment. The circuit breakers mounted in the feeder/distribution center protect system cables from excessive current flow.

CHAPTER 2

OPERATING INSTRUCTIONS

Chapter Index

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

Section Index

2-1. M200 DISE FEEDER CENTER AND M200 A/P PDISE FEEDER CENTER.

a. Main Circuit Breaker (CB1). This 3-Phase circuit breaker (1, Figure 2-1 for M200) and (1, Figure 2-2) for M200 A/P is in series between the 200-amp input connector and the bus bars. This circuit breaker prevents input power to the distribution center from exceeding a total current of 200 amps per phase (72 kW maximum load). This circuit breaker allows the operator to turn off power to all output circuit breakers.

b. CB4. CB5. and CB11 (100-amp, 3-Phase). Each 3-phase circuit breaker (2, Figure 2-1) for M200 and (2, Figure 2-2) for M200 A/P is in series between the bus bars and a 100-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 100 amps per phase (36 kW maximum load). These circuit breakers allow the operator to turn off power to the load circuits.

c. CB7. CB8. CB9. and C10 (60-amp. 3-Phase).Each 3-phase circuit breaker (3, Figure 2-1) for M200 and (3, Figure 2-2) for M200 A/P is in series between the bus bars and a 60-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 60 amps per phase (21.6 kW maximum load). These circuit breakers allow the operator to turn off power to the load circuits.

d. CB6 (20 amps Ground Fault [GF], Single-Phase). This circuit breaker (4, Figure 2-1) for M200 is in series between the bus bars and the 20-amp output connector. This circuit breaker prevents output power to the connector from exceeding a current of 20 amps (2.4 kW maximum load), allows the operator to turn off power to the load, and also interrupts the circuits when a current flow occurs in the ground wire.

e. CB6 (20-amp, Single-Phase). This single-phase circuit breaker (7, Figure 2-2) for M200 A/P is in series between the bus bars and a 20-amp output connector. This circuit breaker prevent output power to the connector from exceeding a current of 20 amps per phase (2.4 kW maximum load). This circuit breaker also allow the operator to turn off to the load circuit.

f. Ground Fault Test Switch. This switch (5, Figure 2-1) for M200 tests the ground fault sensor (trip indication) for the 20A GF circuit breaker. The M200 A/P does not have a ground fault circuit.

g. L1, L2, and L3 Phase Indicator Lights. These lights (6, Figure 2-1) for M2OO and (5. Figure 2-2) for M200 A/P are connected between neutral and each phase. When electrical’power is being supplied to the feeder center, the lights will illuminate.

2-2. M1OO DISE FEEDER CENTER AND M1OO A/P PDISE FEEDER CENTER.

a. Main Circuit Breaker CB1 (100-amp,3-Phase). This 3-phase circuit breaker (1, Figure 2-3) for M1OO and (1, Figure 2-4) for M1OO A/P is in series between the 100-amp input connector and the bus bars. This circuit breaker prevents input power to the distribution center from exceeding a total current of 100 amps per phase (36 kW maximum load). This circuit breaker also allows the operator to turn off power to all output circuit breakers.

b. CB3 and CB6 (60-amp,3-Phase). Each 3-phase circuit breaker (2, Figure 2-3) for M1OO and (2, Figure 2-4) for M1OO A/P is in series between the bus bars and a 60-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 60 amps per phase (21.6 kW maximum load). These circuit breakers also allow the operator to turn off power to the load circuits.

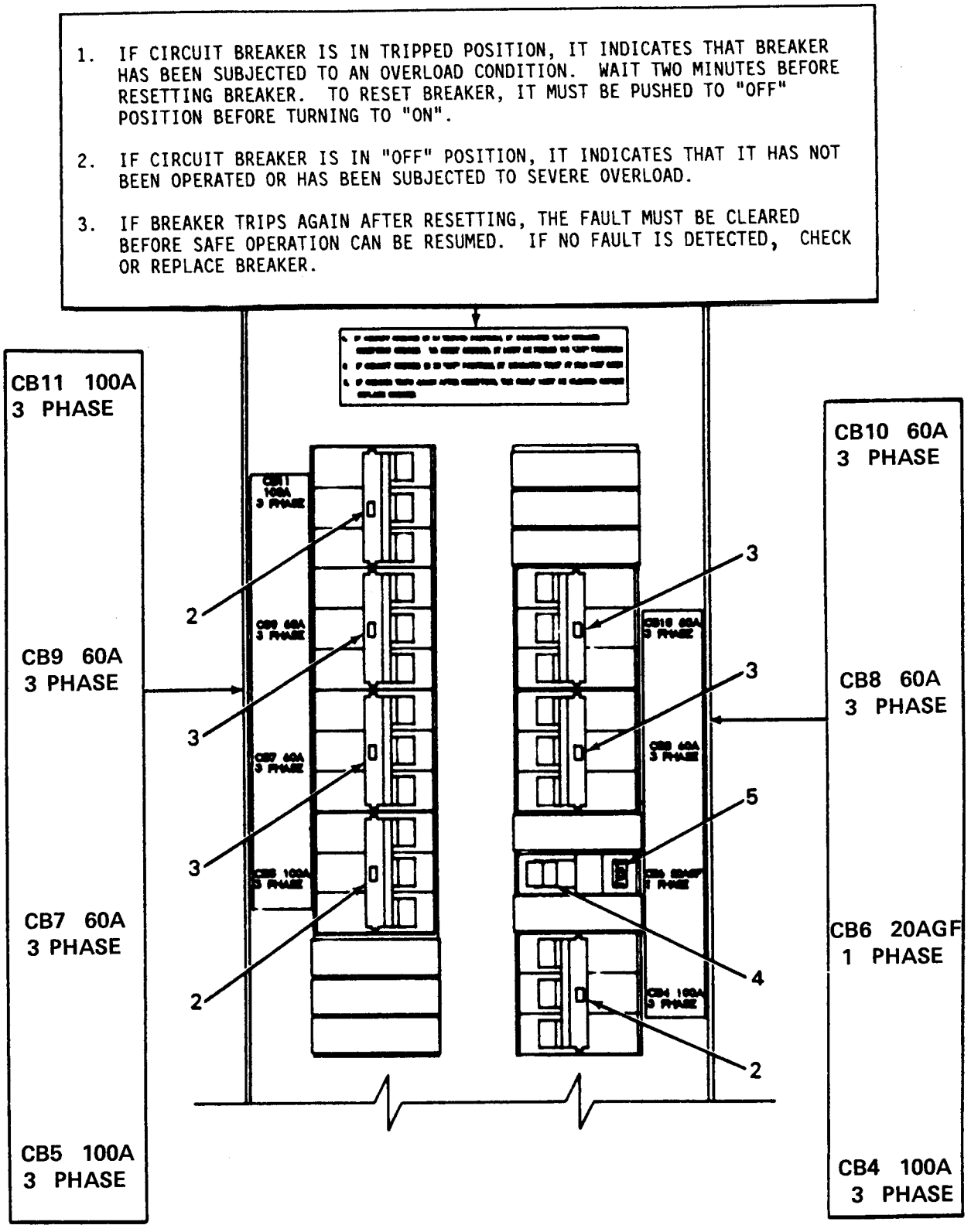


FIGURE 2-1. M200 System Control Panel. (sheet 1 of 3)

1. IF CIRCUIT BREAKER IS IN TRIPPED POSITION, IT INDICATES THAT BREAKER HAS BEEN SUBJECTED TO AN OVERLOAD CONDITION. WAIT TWO MINUTES BEFORE RESETTING BREAKER. TO RESET BREAKER, IT MUST BE PUSHED TO "OFF" POSITION BEFORE TURNING TO "ON".
2. IF CIRCUIT BREAKER IS IN "OFF" POSITION, IT INDICATES THAT IT HAS NOT BEEN OPERATED OR HAS BEEN SUBJECTED TO SEVERE OVERLOAD.
3. IF BREAKER TRIPS AGAIN AFTER RESETTING, THE FAULT MUST BE CLEARED BEFORE SAFE OPERATION CAN BE RESUMED. IF NO FAULT IS DETECTED, CHECK OR REPLACE BREAKER.

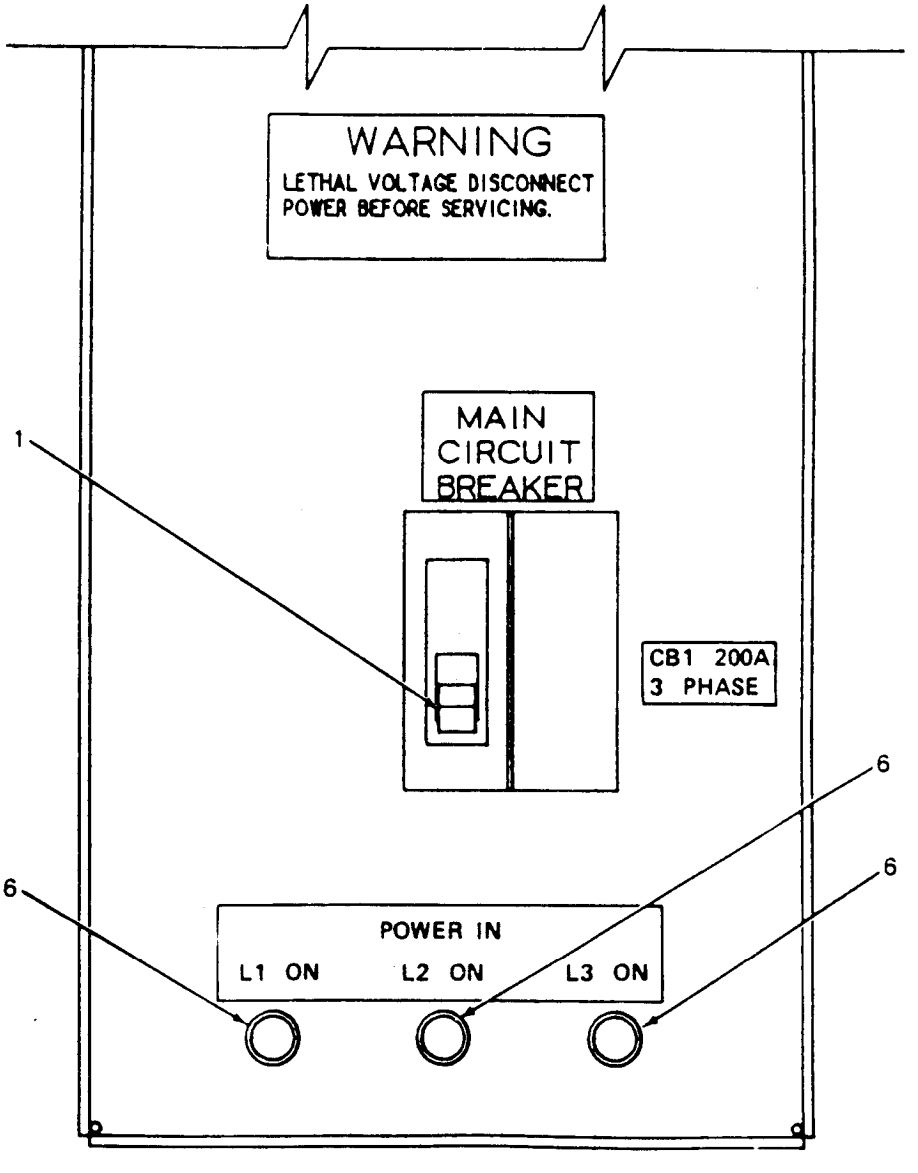


FIGURE 2–1. M200 System Control Panel. (sheet 2 of 3)

NOTE:

OPERATOR SHALL CONTACT NEXT HIGHER LEVEL OF MAINTENANCE TO REPLACE CIRCUIT BREAKERS.

LEGEND:

1. Main circuit breaker
2. 100-amp, 3-phase circuit breaker (3)
3. 60-amp, 3-phase circuit breaker (4)
4. 20 AGF, single-phase circuit breaker
5. Ground fault test switch
6. Phase indicator light (3)
7. 20-Amp, Single-phase circuit breaker (1)

FIGURE 2-1. M200 System Control Panel. (sheet 3 of 3)

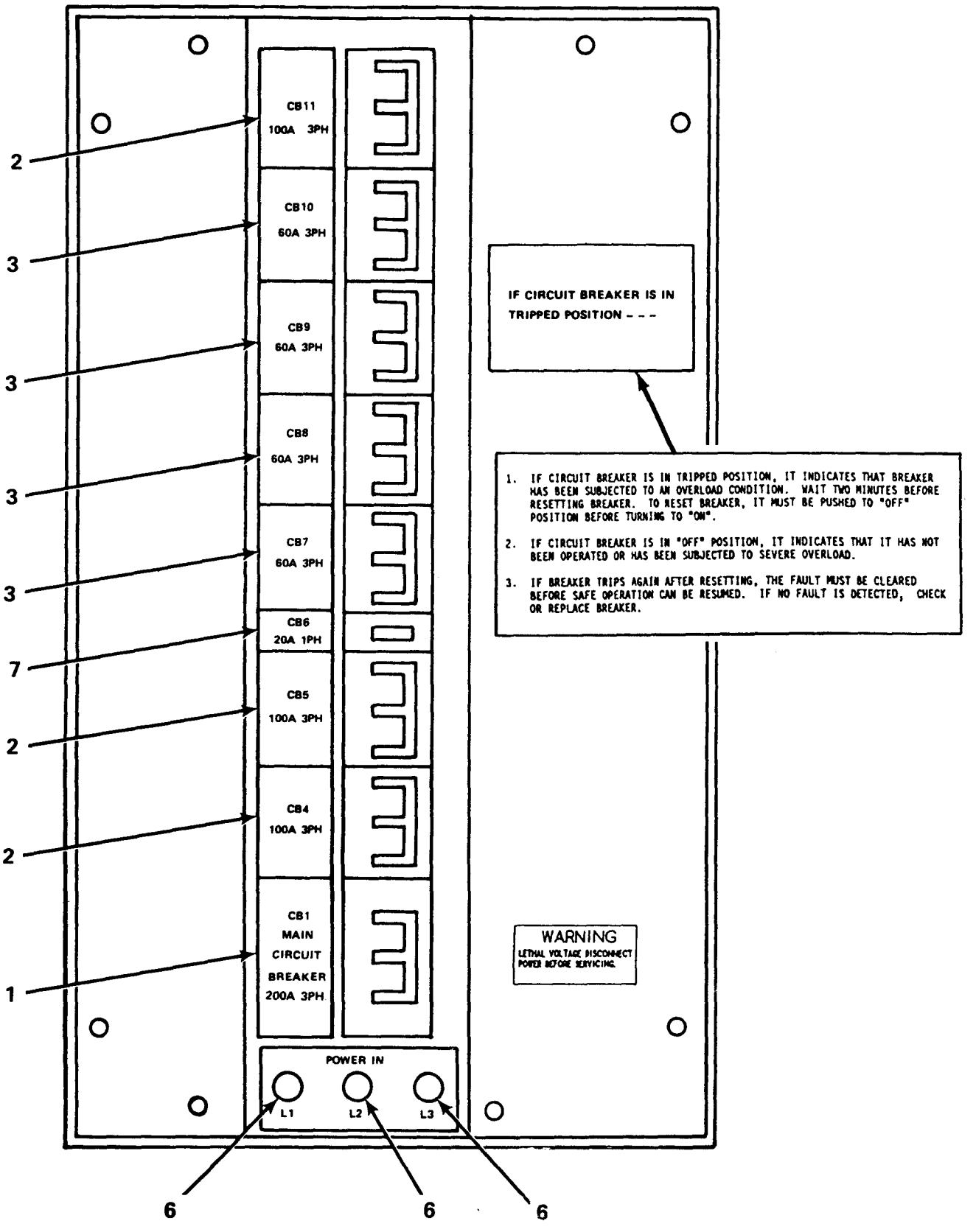


FIGURE 2-2. M200 A/P System Control Panel

1. IF CIRCUIT BREAKER IS IN TRIPPED POSITION, IT INDICATES THAT BREAKER HAS BEEN SUBJECTED TO AN OVERLOAD CONDITION. WAIT TWO MINUTES BEFORE RESETTING BREAKER. TO RESET BREAKER, IT MUST BE PUSHED TO "OFF" POSITION BEFORE TURNING TO "ON".

2. IF CIRCUIT BREAKER IS IN "OFF" POSITION, IT INDICATES THAT IT HAS NOT BEEN OPERATED OR HAS BEEN SUBJECTED TO SEVERE OVERLOAD.

3. IF BREAKER TRIPS AGAIN AFTER RESETTING, THE FAULT MUST BE CLEARED BEFORE SAFE OPERATION CAN BE RESUMED. IF NO FAULT IS DETECTED, CHECK OR REPLACE BREAKER.

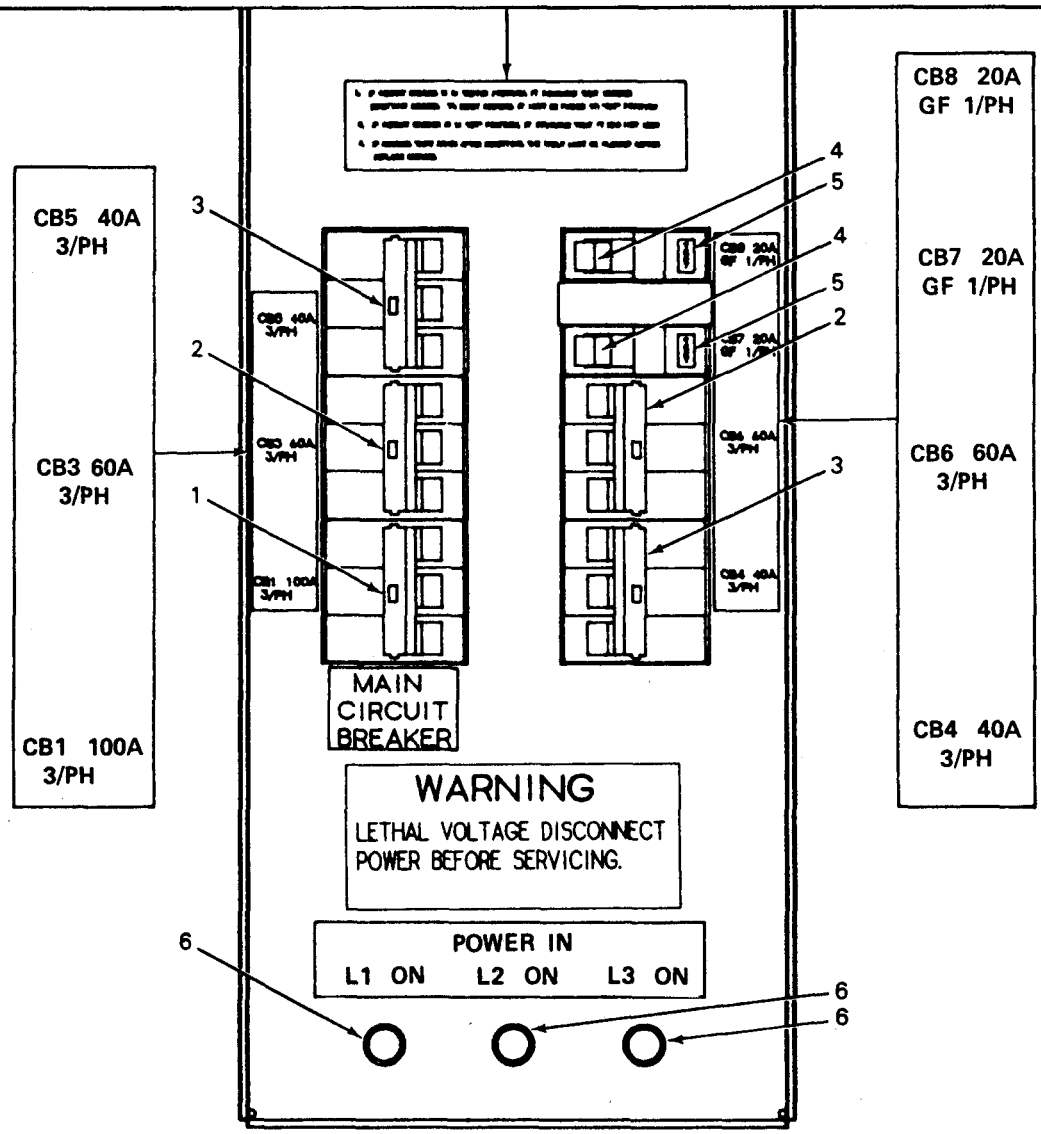


FIGURE 2-3. M100 System Control Panel. (sheet 1 of 2)

NOTE :

OPERATOR SHALL CONTACT NEXT HIGHER LEVEL OF MAINTENANCE TO REPLACE CIRCUIT BREAKERS.

LEGEND:

1. Main circuit breaker
2. 60-amp, 3-phase circuit breaker (2)
3. 40-amp, 3-phase circuit breaker (2)
4. 20 AGF, single-phase circuit breaker (2)
5. Ground fault test switch (2)
6. Phase indicator light (3)
7. 20-amp, single-phase circuit breaker (2)

FIGURE 2-3. M100 System Control Panel. (sheet 2 of 2)

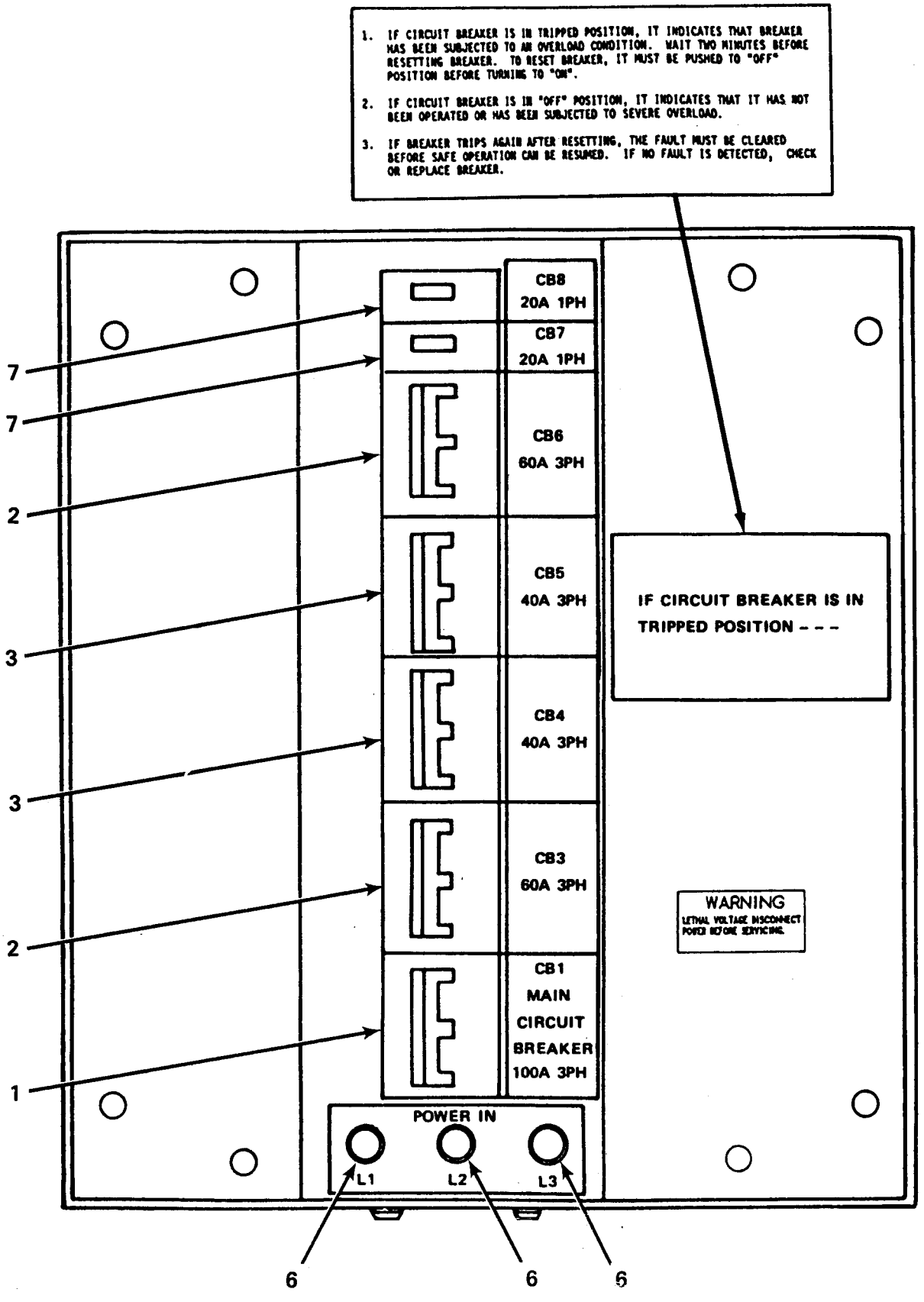


FIGURE 2-4. M100 A/P System Control Panel

c. CB4 and CB5 (40- 3-Phase. Each 3-phase circuit breaker (3, Figure 2-3) for Ml 00 and (3, Figure 2-4) for M100 A/P is in series between the bus bars and a 40-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 40 amps per phase (14.4 kW maximum load). These circuit breakers allow the operator to turn off power to the load circuits.

d. CB7 and CB8 Ground Fault [GF]. Single-Phase). Each single-phase circuit breaker (4, Figure 2-3) for M100 is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps (2.4 kW maximum load), allows the operator to turn power off to the load, and interrupt the circuit when a current flow occurs in the ground wire.

e. CB7 and CB8 (20-amp. Single-Phase). Each single-phase circuit breaker (7, Figure 2-4) for M40 A/P is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps per phase (2.4 kW maximum load). These circuit breakers also allow the operator to turn off to the load circuits.

f. Ground Fault Test Switch. These switches (5, Figure 2-3) for Ml 00 test the ground fault sensor (trip indication) for the 20A GF circuit breakers. The M 100 A/P doesn't have a ground fault circuit.

g. L1, L2, and L3 Phase Indicator Lights. These lights (6, Figure 2-3) for Ml 00 and (5, Figure 2-4) for M100 A/P are connected between neutral and each phase. When electrical power is being supplied to the feeder center, the lights will illuminate.

2-3. M40 DISE DISTRIBUTION CENTER AND M40 A/P PDISE DISTRIBUTION CENTER.

a. Main Circuit Breaker CB1 (40-amp, 3-Phase). This 3-phase circuit breaker (1, Figure 2-5) for M40 and (1, Figure 2-6) for M100 A/P is in series between the 40-amp input connector and the bus bars. This circuit breaker prevents input power to the distribution center from exceeding a total current of 40 amps per phase (14.4 kW maximum load). This circuit breaker allows the operator to turn off power to all output circuit breakers.

b. CB4, CB6, CB10, CB12, CB14 and CB14 (20-amp, Single-Phase). Each single-phase circuit breaker (2, Figure 2-5) for M40 is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps per phase (2.4 kW maximum load). These circuit breakers also allow the operator to turn off power to the load circuits.

c. CB3, CB5, CB7, CB9, CB11, and CB13 (20-amp Ground Fault [GF], Single-Phase). Each single-phase circuit breaker (3, Figure 2-5) for M40 and is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps (2.4 kW maximum load), allows the operator to turn power off to the load, and also interrupt the circuit when a current flow occurs in the ground wire.

d. CB3 through CB14 (20–amp, Single–Phase). Each single–phase circuit breaker (6, Figure 2–6) for M40 A/P is in series between the bus bars and a 20- amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps per phase (2.4 kW maximum load). These circuit breakers also allow the operator to turn off to the load circuits.

e. Ground Fault Test Switch. These switches (4, Figure 2–5) for M40 test the ground fault sensors (trip indication) for the 20 AFG circuit breakers. The M40 A/P does not have a ground fault circuit.

f. L1, L2, and L3 Phase Indicator Lights. These lights (5, Figure 2–5) for M40 and (4, Figure 2–6) for M40 A/P are connected between neutral and each phase. When electrical power is being supplied to the distribution center, the lights will illuminate.

2-4. M60 DISE DISTRIBUTION CENTER AND M60 A/P PDISE DISTRIBUTION CENTER.

a. Main Circuit Breaker CB1 (60–amp, Single–Phase). This single–phase circuit breaker (1, Figure 2–7) for M60 and (1, Figure 2-6) for M60 A/P is in series between the 60-amp input connector and the bus bars. This circuit breaker prevents input power to the distribution center from exceeding a total current of 60 amps (7.2 kW maximum load). This circuit breaker allows the operator to turn off power to all output circuit breakers.

1. IF CIRCUIT BREAKER IS IN TRIPPED POSITION, IT INDICATES THAT BREAKER HAS BEEN SUBJECTED TO AN OVERLOAD CONDITION. WAIT TWO MINUTES BEFORE RESETTING BREAKER. TO RESET BREAKER, IT MUST BE PUSHED TO "OFF" POSITION BEFORE TURNING TO "ON".

2. IF CIRCUIT BREAKER IS IN "OFF" POSITION, IT INDICATES THAT IT HAS NOT BEEN OPERATED OR HAS BEEN SUBJECTED TO SEVERE OVERLOAD.

3. IF BREAKER TRIPS AGAIN AFTER RESETTING, THE FAULT MUST BE CLEARED BEFORE SAFE OPERATION CAN BE RESUMED. IF NO FAULT IS DETECTED, CHECK OR REPLACE BREAKER.

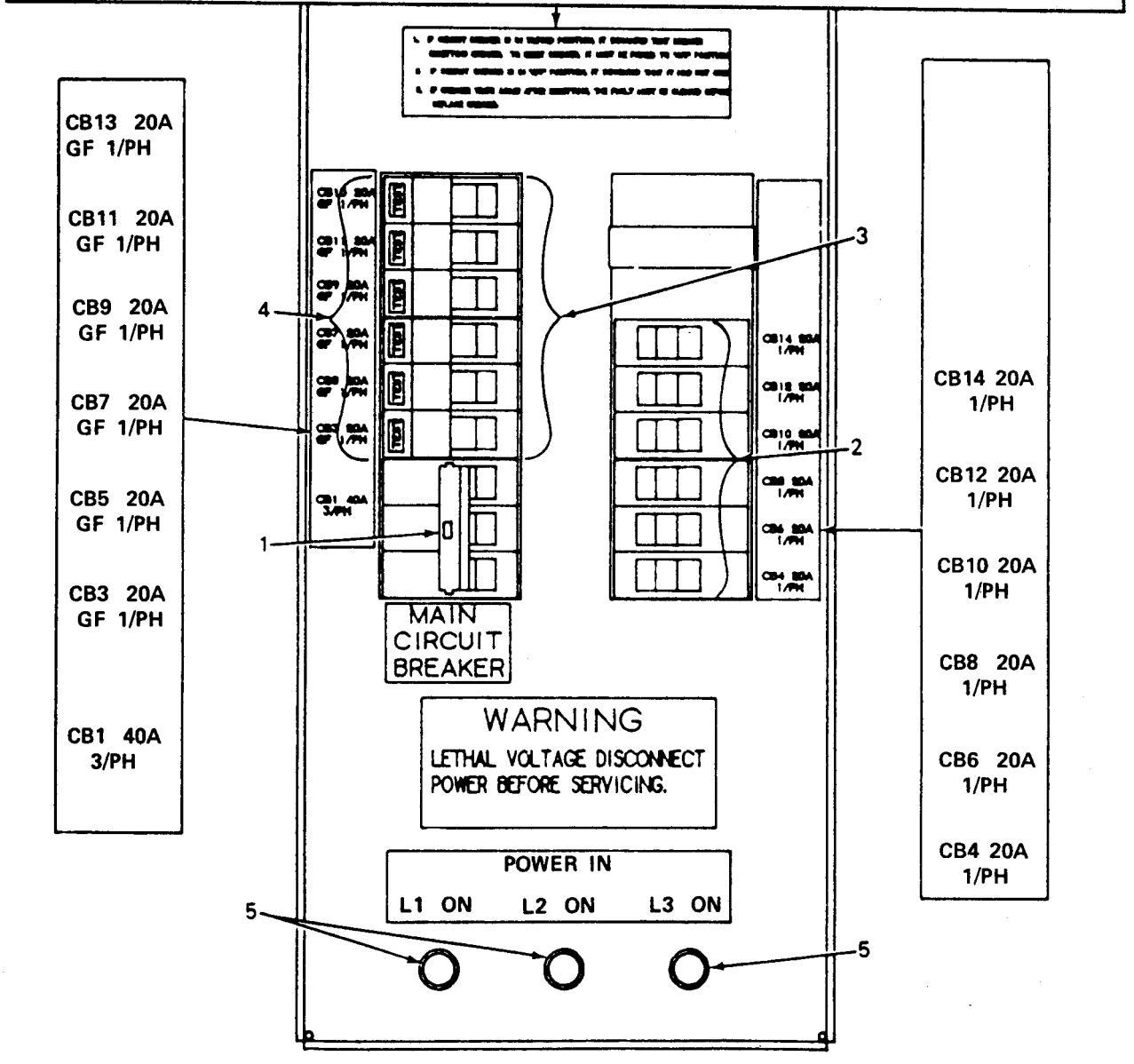


FIGURE 2-5. M40 System Control Panel. (sheet 1 of 2)

NOTE :

OPERATOR SHALL CONTACT NEXT HIGHER LEVEL OF MAINTENANCE TO REPLACE CIRCUIT BREAKERS.

LEGEND:

1. Main circuit breaker
2. 20-amp, single-phase circuit breaker (6)
3. 20 AGF, single-phase circuit breaker (6)
4. Ground fault test switch (6)
5. Phase indicator light (3)
6. 20-amp, single-phase circuit breaker (12)

FIGURE 2-5. M40 System Control Panel. (sheet 2 of 2)

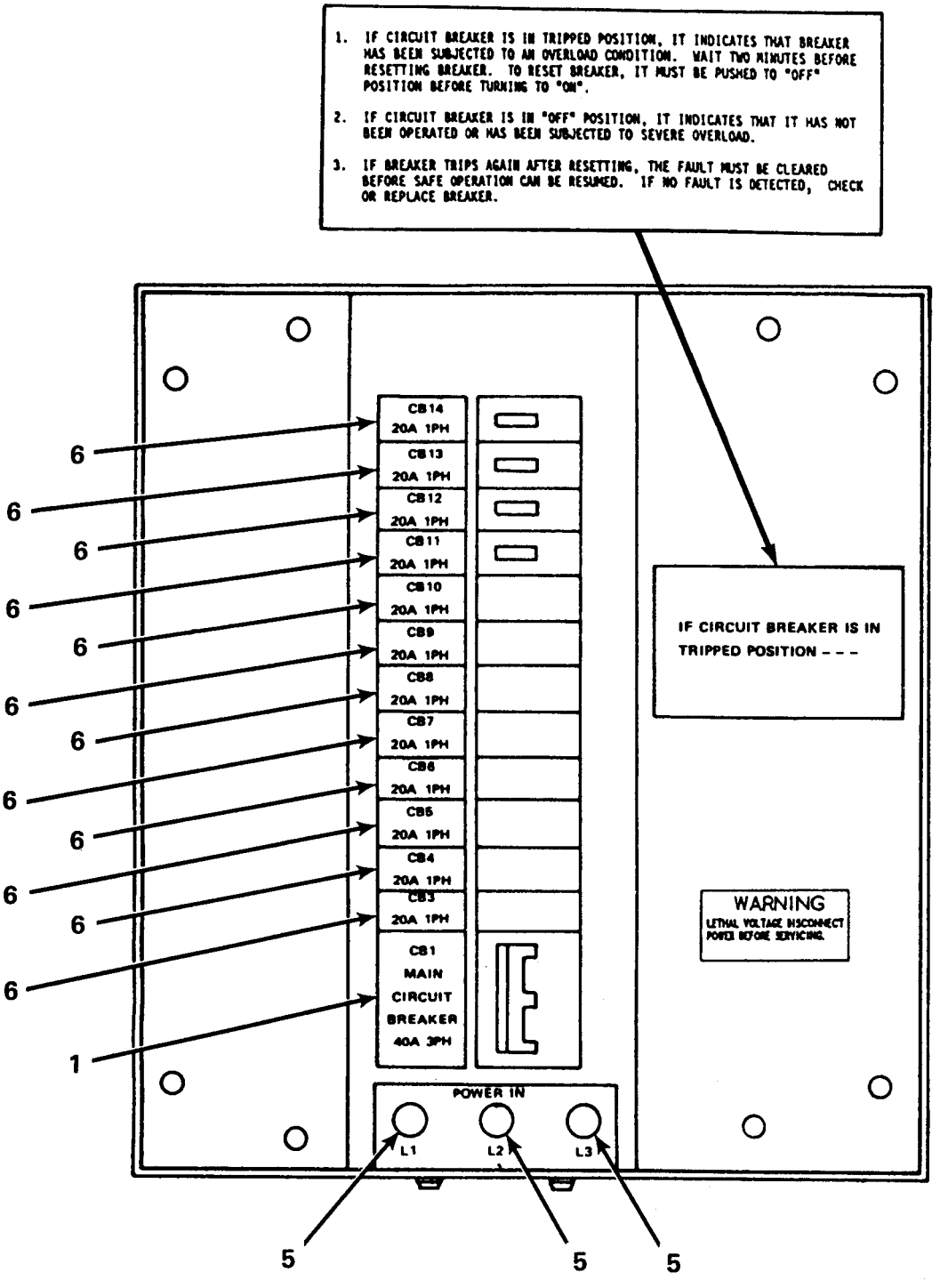


FIGURE 2-6. M40 A/P System Control Panel .

1. IF CIRCUIT BREAKER IS IN TRIPPED POSITION, IT INDICATES THAT BREAKER HAS BEEN SUBJECTED TO AN OVERLOAD CONDITION. WAIT TWO MINUTES BEFORE RESETTING BREAKER. TO RESET BREAKER, IT MUST BE PUSHED TO "OFF" POSITION BEFORE TURNING TO "ON".

2. IF CIRCUIT BREAKER IS IN "OFF" POSITION, IT INDICATES THAT IT HAS NOT BEEN OPERATED OR HAS BEEN SUBJECTED TO SEVERE OVERLOAD.

3. IF BREAKER TRIPS AGAIN AFTER RESETTING, THE FAULT MUST BE CLEARED BEFORE SAFE OPERATION CAN BE RESUMED. IF NO FAULT IS DETECTED, CHECK OR REPLACE BREAKER.

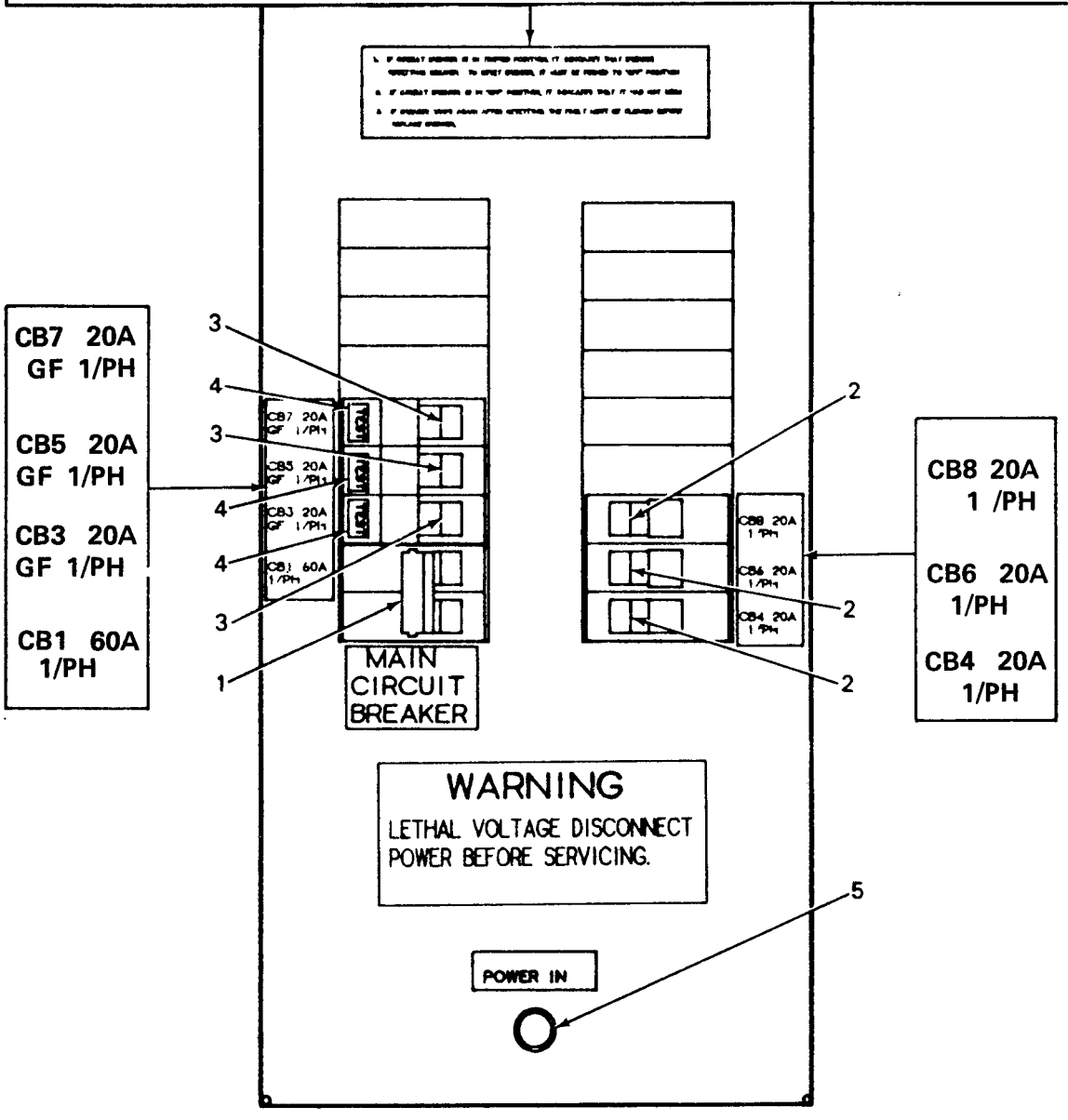


FIGURE 2-7. M60 System Control Panel. (sheet 1 of 2)

NOTE :

OPERATOR SHALL CONTACT NEXT HIGHER LEVEL OF MAINTENANCE TO REPLACE CIRCUIT BREAKERS.

LEGEND:

1. Main circuit breaker
2. 20-amp, single-phase circuit breaker (3)
3. 20 AGF, single-phase circuit breaker (3)
4. Ground fault test switch (3)
5. Phase indicator light

FIGURE 2-7. M60 System Control Panel. (sheet 2 of 2)

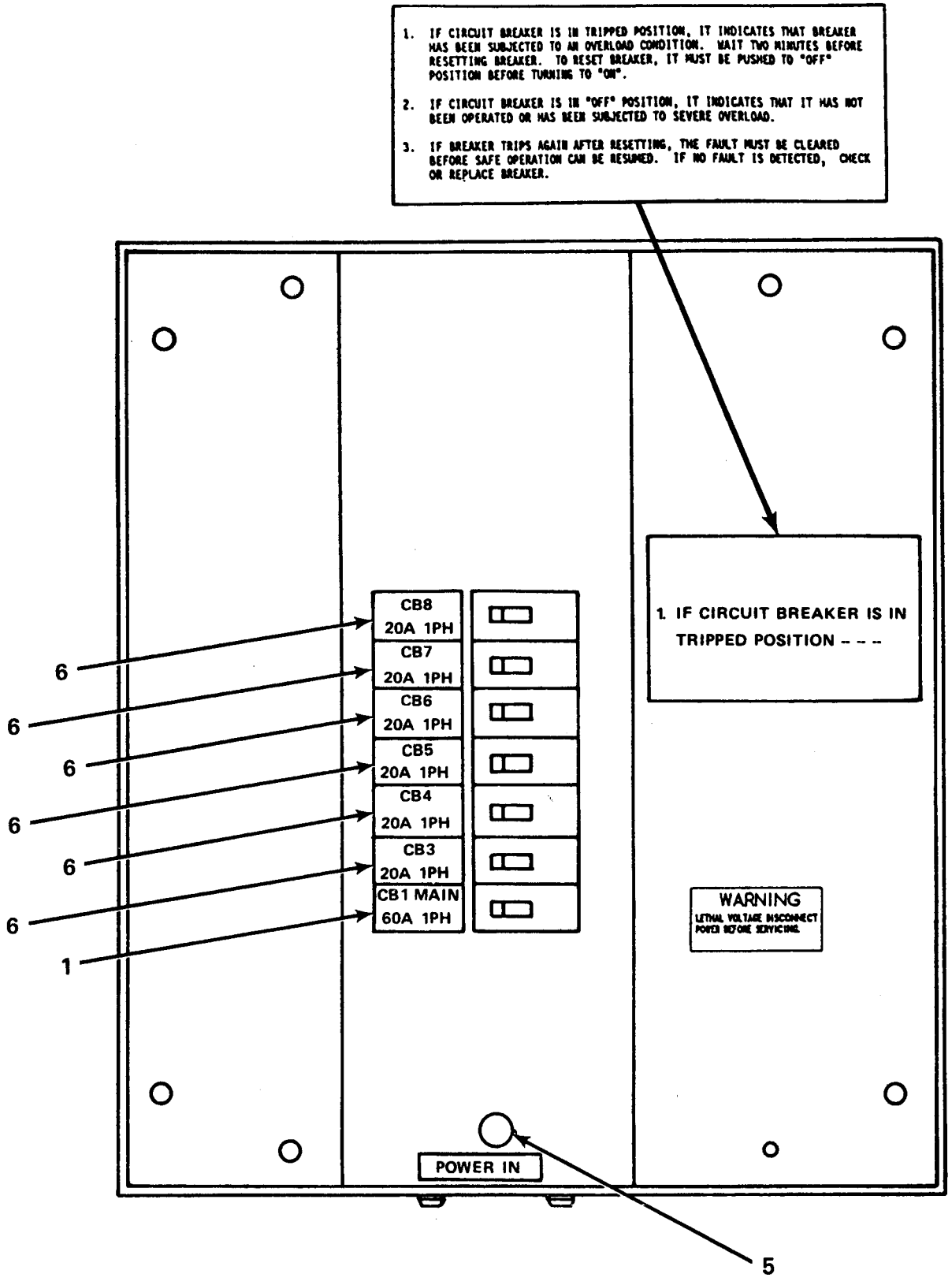


FIGURE 2-8. M60 A/P System Control Panel.

b. CB4, CB6, CB8 (20-amp, Single-Phase). Each single-phase circuit breaker (2, Figure 2-7) for M60 is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connector from exceeding a current of 20 amps (2.4 kW maximum load). These circuit breakers allow the operator to turn off power to the load circuits.

c. CB3, CB5, and CB7(20-amp Ground Fault [GF], Single-Phase). Each single-phase circuit breaker (3, Figure 2-7) for M60 is in series between the bus bars and a 20-amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps per phase (2.4 kW maximum load), allows the operator to turn power off to the load, and interrupts the circuit when a current flow occurs in the ground wire.

d. GB3 through CB8 (20-amp. Single-Phase). Each single-phase circuit breaker (6, Figure 2-8) for M60 A/P is in series between the bus bars and a 20- amp output connector. These circuit breakers prevent output power to the connectors from exceeding a current of 20 amps per phase (2.4 kW maximum load). These circuit breakers also allow the operator to turn power off to the load.

e. Ground Fault Test Switch. These switches (4, Figure 2–7) for M60 test the ground fault sensors (trip indication) for the 20A GF circuit breakers. The M60 A/P does not have a ground fault cicruit.

f. Power Indicator Light. This light (5, Figure 2-7) for M60 and (4, Figure 2-8) for M60 A/P is connected between neutral and the phase line. When electrical power is being supplied to the distribution center, the light will illuminate.

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

Section Index

2-5. INTRODUCTION

a. General. Your PMCS table (Table 2-1) has been provided so you can keep your equipment in good operating condition and ready for its primary mission. The PMCS contains those checks and services authorized to the operator by the maintenance allocation chart (MAC) under “inspection and service” functions.

b. Warnings and Cautions. Always observe the WARNINGS and CAUTIONS appearing in your PMCS table BEFORE, DURING, and AFTER you operate the equipment. The warnings and cautions appear before certain procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or prevent your equipment from being damaged.

c. Explanation of Table Entries.

(1) Item Number 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) Interval Column. This column tells you when you must do the procedure in the 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 or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

(3) Check/Service Column. This column provides the location and the item to be checked or serviced. The item location is underlined and will be exterior or interior to the feeder center and distribution center.

(4) Procedure Column. This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(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 check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or repotting equipment failure."

d. Other Table Entries. Information other than warnings, cautions, and notes appear in the PMCS table. Be sure to observe all special information appearing in your table.

2-6. PMCS PROCEDURES.

Table 2-1, Operator Preventive Maintenance Checks and Services for DISE (M40, M60, M100, M200, M46) and PDISE (M40 A/P, M60 A/P, M100 A/P, M200 A/P)

NOTE

- All DISE and PDISE subsystems are similar and contain similar components. Subsystems are combined in the PMCS chart and component checks for similar items are shown under a single heading.
- If the equipment must be kept in continuous operation, do only the procedures that can be done without disturbing operation. Make complete checks and services when equipment is shut down.

0 If your DISE/PDISE system does not perform as required, refer to Chapter 3 under Troubleshooting for possible problems. Report any malfunctions or failures on the proper DA Form 2404, Equipment Inspection and Maintenance Worksheet or refer to DA PAM 738-750.

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with DISE and PDISE 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 to 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. The form should be submitted to the address specified in DA Pam 738-750. Corrosion can be prevented and controlled by following PMCS procedures and cleaning the equipment after operations.

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
			WARNING High Voltage is present in this equipment. DISE/PDISE supports equipment using 120/208 V ac. Do not perform PMCS with the power on. Death or serious injury may result.	
1	Before	Electrical Feeder System M200, M200 (AP) M100, M100 (AP)	a. Check that unused connectors are capped and center lid is closed.	
2	Before	Circuit breaker	b Check for damaged circuit breakers. Notify unit maintenance.	Circuit breakers are damaged so as to affect the function of safety.
3	Before	Connectors on feeder system	c Check for damaged connectors. Ensure that all pins and connector lugs are serviceable. Notify unit maintenance.	Connectors are damaged, burnt, broken or missing.

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cent)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
			WARNING High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color-coding. The insulation on the wires inside the cable jacket may vary, depending on supplier. Wires will be color coded to designate the phases. If the wire color coding cannot be determined, notify next higher level of maintenance to perform continuity test. Perform a continuity test to verify correct phase designation in accordance with identified color.	
4	Before	Pigtail Cable and end connectors.	d. Check that all ground wires are securely attached to ground terminals. Check connectors, ensure that all pins and connector lugs are serviceable. Notify unit maintenance.	Pigtail cable has exposed wires or frayed/missing ground wires.
5	Before	Service feeder cable assy.	e. Check for exposed wiring. Split, cut or damaged insulation. Notify unit maintenance.	Wiring is exposed, insulation cut, split.
6	Before	Phase indicator light	f. Check for damaged light/ light socket.	
7	Before	Electrical distribution system M40, M40 (AP) M60, M60 (AP)	a. Check that unused connectors are capped and center lid is closed.	

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
8	Before	Connectors Distribution Center	b. Check all connectors for broken pins, damaged lugs and that all cable connectors are securely fastened. Notify unit maintenance.	Connectors are damaged.
9	Before	Circuit breakers	c. Check circuit breakers for damage and proper operation. Notify unit maintenance.	Circuit breakers are damaged so as to affect the function or safety.
10	Before	Phase indicator lights	d. Check for damaged light/ light sockets. **WARNING** High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color-coding. The insulation on the wires inside the cable jacket may vary, depending on supplier. Wires will be color coded to designate the phases. If the wire color coding cannot be determined, notify next higher level of maintenance to perform continuity test. Perform a continuity test to verify correct phase designation in accordance with identified color.	
11	Before	Pigtail cable ground wires	e. Check that all ground wires are securely attached to ground terminals. Notify unit maintenance.	Pigtail cable ground wires are frayed or missing.

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
12	Before	Extension cable assy.	f. Check for damaged cable connectors.	
			g. Check for split, cuts and damaged insulation.	
13	Before	Receptacle groups duplex-boxes	a. Check for damaged receptacle groups and connectors. Any faults found, notify unit maintenance.	
14	Before	Service feeder cable assy.	b. Check for damaged cable connectors and split, cut insulation.	Cable connectors are damaged or bare wires are exposed.
15	Before	Electrical Utility Kit M46		
16	Before	Extension cable assy.	a. Check for damaged cable connectors and split, cut insulation. Notify unit maintenance.	Cable connector are damaged or bare wires are exposed.
		Branch circuit assy.	b. Check for damaged cable connectors and split, cut insulation. Notify unit maintenance.	Cable connector are damaged or bare wires are exposed.
		Utility light assy.	c. Check for damaged cable connectors and split, cut insulation. Notify unit maintenance.	Cable connector are damaged or bare wires are exposed.
17	Before	Universal Adapter M214	a. Check for damaged enclosure assembly.	Enclosure is damaged so that internal wiring is exposed or lid will not close.

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
			NOTE On DISE only. After power hook-up to generator, but before notifying user that system is operational, perform ground fault test.	
18	During	Electrical Feeder System M200, M100	a. Press ground fault test switch and verify that circuit breaker trips. Notify unit maintenance.	Ground fault circuit breaker fails to trip.
19	After	Electrical Feeder System M200, M200 (AP) M100, M100 (AP)	b. Clean face of circuit breaker with a dry rag (item 8, App E). Wipe internal and external surfaces with a damp, clean rag.	
20	After	Cable assemblies	c. Clean face of circuit breaker with a dry rag (item 8, App E). Wipe internal and external surfaces with a damp, clean rag.	
21	After	Electrical Distribution System M40, M40 (AP) M60, M60 (AP)	a. Clean with a rag (item 8, App E) soaked in a mild detergent solution (item 2, App E). Dry surface with a damp, clean rag (item 8 App E).	
22	After	Transit and storage container	b. Check for damaged transit and storage container.	
23	After	Branch circuit assembly	a. Clean with a rag (item 8, App E), soaked in a mild detergent solution (item 2, App E). Dry surface with a damp, clean rag (item 8, App E).	

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
24	After	Universal adapter assembly	b. Wipe internal and external surfaces with a damp clean rag (item 8, App E).	

Section III. OPERATION UNDER USUAL CONDITIONS

Section Index

NOTE

In addition to this section, FM20-31, Electrical Power Generation in the Field, will provide you with useful and detailed information relating to electrical generators used to power your DISE and PDISE systems.

2-7. ASSEMBLY AND PREPARATION FOR USE.

WARNING

Components of this system are heavy and may be awkward to handle. Use correct lifting procedures and/or assistance from personnel to avoid injury.

NOTE

Considerations and calculations for field load equipment may be complicated. The Commander should appoint a qualified soldier to plan the power network. The soldier shall consult and plan the power network with personnel (MOS 52D) familiar with electrical power distribution principles and calculations when available to the unit.

a. Field Considerations. In establishing a consolidated power network using DISE and PDISE, you must start with an analysis of electrical equipment needs in the particular field application. Although your TOE/MTOE will dictate the quantity and size of your generator set(s) and DISE or PDISE equipment, various exercises may allow selection of equipment to support the mission. You should know the terrain to determine special considerations for grounding and routing of cables. You should also know general locations of the power source and the vehicles, tents, communication vans, etc. that are being provided power. You must also be familiar with tactical or other restrictions (if any) on locating the power source(s) relative to tents, shelters, and other power consuming equipment. Prior to actual deployment to the field location,

you should develop a power distribution plan, based on the analysis, that allows for terrain and tactical constraints and provides distributed electrical power from the least number of generators as possible. Begin the analysis at the consuming end of the system and work back to the power source. Analyze each tent, shelter, van, etc. for watts, amps, and type of power needed. If data on the quantity of watts, amps, and type of power needed by consuming equipment is unavailable, best assumptions must be made. Use FM 20-31 as a guide.

b. Determining the User's Needs. In order to select the proper generator and PDISE/DISE equipment for your particular field application you must first consult with each user of electrical equipment and make a careful record of their electrical power requirements. When watts and amps are known on a piece of equipment, record that information as outlined in paragraph 2-7, b(2). When either is unknown [watts(P), volts(E), amps(I)] use Table 2-2 to approximate the unknown.

Table 2-2. RULE OF THUMB FORMULAS

RESISTIVE LOADS (LIGHT OR HEAT)	INDUCTIVE LOADS (MOTORS)
$KW = \frac{QTY \times WATTS}{1000}$	KW = QTY X HP
$I = \frac{QTY \times WATTS}{VOLTS}$	I = QTY X AMPS
NOTE: Use above formulas when watts and volts are given.	NOTE: Use above formulas when horsepower and amps are given.

When volts and amps are known use (volts x amps) to find watts. P = E x I

NOTE
RULE OF THUMB
INDUCTIVE LOADS ONLY

1 HP = 1KW
3/4 HP = .750KW
1/2 HP = .500KW
1/4 HP = .250KW
1/8 HP = .125KW

(1) When using the rule of thumb formulas the following points apply:

(a) Total load (KW) will determine the size of generator set needed.

(b) Total Amps (I) will determine the proper DISE or PDISE feeder and/or distribution systems, the proper output connectors(s), and will be used for correct phase balancing.

(c) Quantity (QTY) is the number of like items.

(d) Voltage (Volts): When the generator output voltage is set at 120/208 volts AC, 120 volts is single-phase (1) and 208 volts is three-phase (3). Single phase requires at least a two wire connection (one hot lead and one neutral lead). Three-phase requires at least a four wire connection (three hot leads and one neutral lead).

NOTE

DISE and PDISE can only be used with generators rated at 120/208 volts AC, all other ratings will require a different type of generator set.

(e) When watts and volts are given on the equipment, resistive types of loads (light or heat) are indicated.

(f) When horsepower and amps are given on the equipment, inductive types of loads (coils or windings) are indicated.

NOTE

Examples of resistive loads are light bulbs, heaters, coffee pots, etc...

Examples of inductive loads are fans, drills, motors, transformers, etc...

(2) Using the above information, perform the following steps:

(a) Draw up a table as illustrated in table 2-3.

(b) Record location and description of all power consuming equipment.

(c) Record the voltage rating (120v single-phase or 208v three-phase) and the number of receptacles (output) needed (Plugs or Mil-Std./ Universal Adapter).

(d) Record al 1 known information (Kilowatts and Amps).

(e) Calculate for all unknown information (Kilowatts and Amps) using the Rule of Thumb Formulas and record them when completed.

(f) When recording amps, place information in the correct column for single-phase amps and three-phase amps.

(g) Add UP the total of all columns (for the example on table 2-3 there are 19 plugs, 1 universal adapter, 9.540KW, 66.95 single-phase amps, and 4.5 three-phase amps).

NOTE

Keep in mind that all power consuming equipment might not be energized at the same time.

c. Generator Selection. Choose the proper power source for your application. Remember that not all power consuming devices will likely be energized at the same time. Therefore; you should determine the maximum power demand (highest total KW load) that will exist during actual operation. Select a generator large enough to support this demand (for the example on Table 2-3 10 KW will be used). If connecting DISE/PDISE equipment to power sources that are paralleled, ensure that connections are made to the switching device between the paralleled generators.

d. DISE and PDISE Selection Considerations. Although both distribution systems (40 amp and 60 amp) provide single-phase output power, they cannot be used in series or be cabled to each other. The 60 amp system is a stand alone

system for use with single-phase input power originating from the single-phase smaller kilowatt rated generator sets, generally a 5KW generator.

(1) You will have to determine the number, type and location of the 40 amp or 60 amp distribution systems needed.

Table 2-3. EXAMPLE OF DETERMINING USER NEEDS

	Required Receptacle		Totals	Total Amps	
	120 V/1-ph	208 V/3-ph	Kilowatts		
Area Item	Plug(s)	MIL STD/Univ. Adapter		1-ph	3-ph
Tent #1					
1.) Electric drill 120 V/800W	1		.800	6.6	
2.) Electric grinder 120 V/7.5 amps	1		.900	7.5	
3.) Sander 120 V/450W	1		.450	3.75	
4.) Radio set 120 V/180W	1		.180	1.5	
5.) Lights 120 V/60W ea	6		.360	3.0	
6.) Welder 208 V/1 1/2HP/4.5 amps		1	1.500		4.5
TOTAL FOR TENT #1	10	1	4.190	22.35	4.5
Tent #2					
1.) Electric heater 120 V/10.8 amps	1		1.300	10.8	
2.) Radio transceiver 120 V/1000W	1		1.000	8.3	
3.) Light set 120 V.60W ea	1		.360	3.0	
TOTAL FOR TENT #2	3		2.660	22.1	
Tent #3					
1.) X-Ray unit 120 V/5 amps	1		.600	5.0	
2.) Film processor 120 V/120W	1		.120	1.0	
3.) Suction unit 120 V/140W	1		.140	1.2	
4.) Prophylaxis unit 120 V/1500W	1		.150	1.3	
5.) Surgery lamp 120 V/10 amps	1		1.200	10.0	
6.) Light set 120 V/60W ea	1 .		.480	4.0	
TOTAL FOR TENT #3	6		2.690	22.5	
TOTAL REQUIREMENTS	19	1	9.540	66.95	4.5

(2) When using the 40-amp distribution system, determine the number and location of 100-amp and/or 200-amp feeder systems, if any. (It is more efficient to locate the power consuming equipment as close to the power source as possible, thereby minimizing the need for feeder systems). Refer to Table 1-4 for pairing of the 40-amp distribution system to the appropriate sized generator.

(3) The 100-amp feeder system can be used with two or more 40-amp distribution systems, and the 200-amp feeder system with two or more 100-amp feeder systems. Refer to Table 1-4 for pairing of the 100-amp and 200-amp feeder systems to the appropriate sized generator and other DISE and PDISE equipment.

(4) The feeder systems can also be used in a stand alone mode to feed power directly to multiple existing pre-wired circuits that required 40-amp or 60-amp three-phase input power, such as large shelters or systems that have the proper military standard connector.

(5) Ensure that the M46 electrical utility assemblies, which provide lighting and 120v AC duplex receptacles, are connected only to DISE or PDISE feeder or distribution systems. The M46 does not have built in fuse or circuit breaker protection.

e. DISE and PDISE Selection. Use the table of information you have developed to help You select a feeder and/or distribution system(s) which will handle the total amperage required for your particular field application. Remember when selecting the DISE or PDISE equipment, you cannot exceed the total amperage rating of the largest DISE or PDISE feeder/distribution center. The following must be determined when selecting DISE and PDISE equipment.

(1) Quantity of M46 Electrical Utility Assemblies needed in each area.

(2) Quantity of three-phase and single-phase output connectors on the DISE or PDISE feeder and/or distribution centers to be used.

(3) Quantity of Universal Adapters needed for equipment that is not compatible with DISE and PDISE, or cannot be modified by adding compatible connectors.

(4) For the example on Table 2-3, one M40 or M40 A/P distribution system was determined to be needed. It is capable of one three-phase and twelve single-phase outputs. Six single-phase output connectors and one three-phase connector on the M40 or M40 A/P will be used to connect all the loads on Table 2-3. One M46 Electrical Utility Assembly was determined to be needed to provide illumination and sufficient receptacles to accommodate all the loads. One Universal Adapter will be needed to accommodate the welder.

NOTE

The M40 and M40 A/P is capable of 40-amps per phase, 40-amps on L1, 40-amps on L2, and 40-amps on L3.

CAUTION

Distribute the single-phase loads so they are balanced within 10 percent of each other. Phase imbalances greater than 10 percent may cause damage to the generator set.

f. Phase balancing. If the DISE or PDISE equipment for your particular field situation uses a three-phase input (M200, 200 A/P, M1OO, M1OO A/P, M40 or M40 A/P system) and single-phase output is required, you will have to allow for phase balancing. Three-phase loads are self-balancing and should be connected first. Using Table 2-4 as a guide, make a similar table for your application. Refer to Table 2-5 to determine which output

connector should connect to which load for each center. Perform the following steps to ensure proper phase balancing:

(1) Connect all 1 three-phase loads first.

(2) Connect the largest single-phase loads.

(3) Connect the next largest single-phase load to the phase with the least amperage.

(4) Continue connecting the single-phase loads, largest to smallest until all loads are connected.

NOTE

The following chart will show the proper connections and correct phase balancing of the M40 or M40 A/P used in the example in Table 2-3 and figure 2-5 and figure 2-6.

Table 2-4. EXAMPLE OF LOAD ASSIGNMENTS FOR THREE/SINGLE-PHASE OUTPUT CONNECTORS OF THE M40 OR M40 A/P

Area	Item #	Phase A L1	Output Connector	Area	Item #	Phase B L2	Output Connector	Area	Item #	Phase C L3	Output Connector
Tent 1 Tent 2	6 2-3	4.5 11.3	J2 J7	Tent 3	5-6	4.5 14.0	J5	Tent 1	1-3	4.5 17.85	J3
Subtotal to determine phase with least amps		15.8		Subtotal to determine phase with least amps		18.5		Subtotal to determine phase with least amps		22.35	
Tent 2	1	10.8	J13	Tent 3	1-4	8.5	J11	Tent 1	4-5	4.5	J9
TOTAL		26.6		TOTAL		27.0		TOTAL		26.85	

NOTE

The power distribution plan is now complete and assembly of the DISE or PDISE network can be performed. Before deployment, test the power distribution plan in garrison.

Table 2-5. CONNECTOR TO PHASE LINKS - DISE AND PDISE

Center/Connector	A L1	B L2	C L3	N
200-amp feeder center				
J-1 200-amp input 3-ph.	x	x	x	x
J-4 100-amp output 3-ph.	x	x	x	x
J-5 100-amp output 3-ph.	x	x	x	x
* J-6 20-amp output GF.		x		x
J-7 60-amp output 3-ph.	x	x	x	x
J-8 60-amp output 3-ph.	x	x	x	x
J-9 60-amp output 3-ph.	x	x	x	x
J-10 60-amp output 3-ph.	x	x	x	x
J-11 100-amp output 3-ph.	x	x	x	x
100-amp feeder center				
J-1 100-amp input.	x	x	x	x
J-2 100-amp output	x	x	x	x
J-3 60-amp output.	x	x	x	x
J-4 40-amp output.	x	x	x	x
J-5 40-amp output.	x	x	x	x
J-6 60-amp output.	x	x	x	x
* J-7 20-amp output GF			x	x
* J-8 20-amp output GF	x			x
40-amp distribution center				
J-1 40-amp input	x	x	x	x
J-2 40-amp output.	x	x	x	x
* J-3 20-amp output GF			x	x
J-4 20-amp output.			x	x
* J-5 20-amp output GF		x		x
J-6 20-amp output.		x		x
* J-7 20-amp output GF	x			x
J-8 20-amp output.	x			x
* J-9 20-amp output GF			x	x
J-10 20-amp output.			x	x
* J-11 20-amp output GF		x		x
J-12 20-amp output.		x		x
* J-13 20-amp output GF	x			x
* J-14 20-amp output GF	x			x
60-amp distribution center				
J-1 60-amp input	x			x
J-2 60-amp output.	x			x
* J-3 20-amp output GF	x			x
J-4 20-amp output.	x			x
* J-5 20-amp output GF	x			x
J-6 20-amp output.	x			x
* J-7 20-amp output GF	x			x
J-8 20-amp output.	x			x

* Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

NOTE

DISE and PDISE cables may be fabricated at direct support level.

g. Cable Selection. Your choice of DISE or PDISE cables should be based on the distances between the locations selected for the generator set, the distribution center, and the tents. Remember, the longer the cable the greater the voltage loss at the user's end. Keep the total cable lengths between the generator set and the user equipment under 300 feet (91.44 m). If the user equipment is sensitive to voltage loss, you may have to use shorter cables. Cables may be fabricated at direct support level of maintenance as shown in Appendix F.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not submerge cable connectors in water. Death or severe injury may result.

CAUTION

Bury cables which cross roadways. DISE and PDISE cables may be damaged by tactical vehicles.

h. Cable Routing. Route the system cables to avoid vehicle roadways and troop walkways. If a cable must cross a roadway, bury the cable (refer to FM 20-31) to protect it from damage. Do not lay cable connectors in depressions where water can collect. See Figure 2-9 for a typical power system layout based on the supposed field situation in Table 2-2.

NOTE

Use lubricant (item 3, App E) to aid in mating DISE and PDISE cables.

Connection of Cables. Work outward from the user's equipment to the feeder/distribution center. For the supposed field situation based on Table 2-3 and Figure 2-9, connect the DISE and PDISE equipment as follows:

(1) Secure sufficient branch circuit cables to #1 tent frame with the securing straps in a manner convenient and safe for the user.

(2) Connect required number of duplex receptacle boxes to the branch circuit cable. Connect an extension cable between the branch circuit cables and the M40 or M40 A/P distribution center 200-amp output connector.

(3) Connect a service/feeder cable of the desired length to the M40 distribution center output connector (J-2). Connect the other end to the welder input provided the welder contains a military standard connector. If

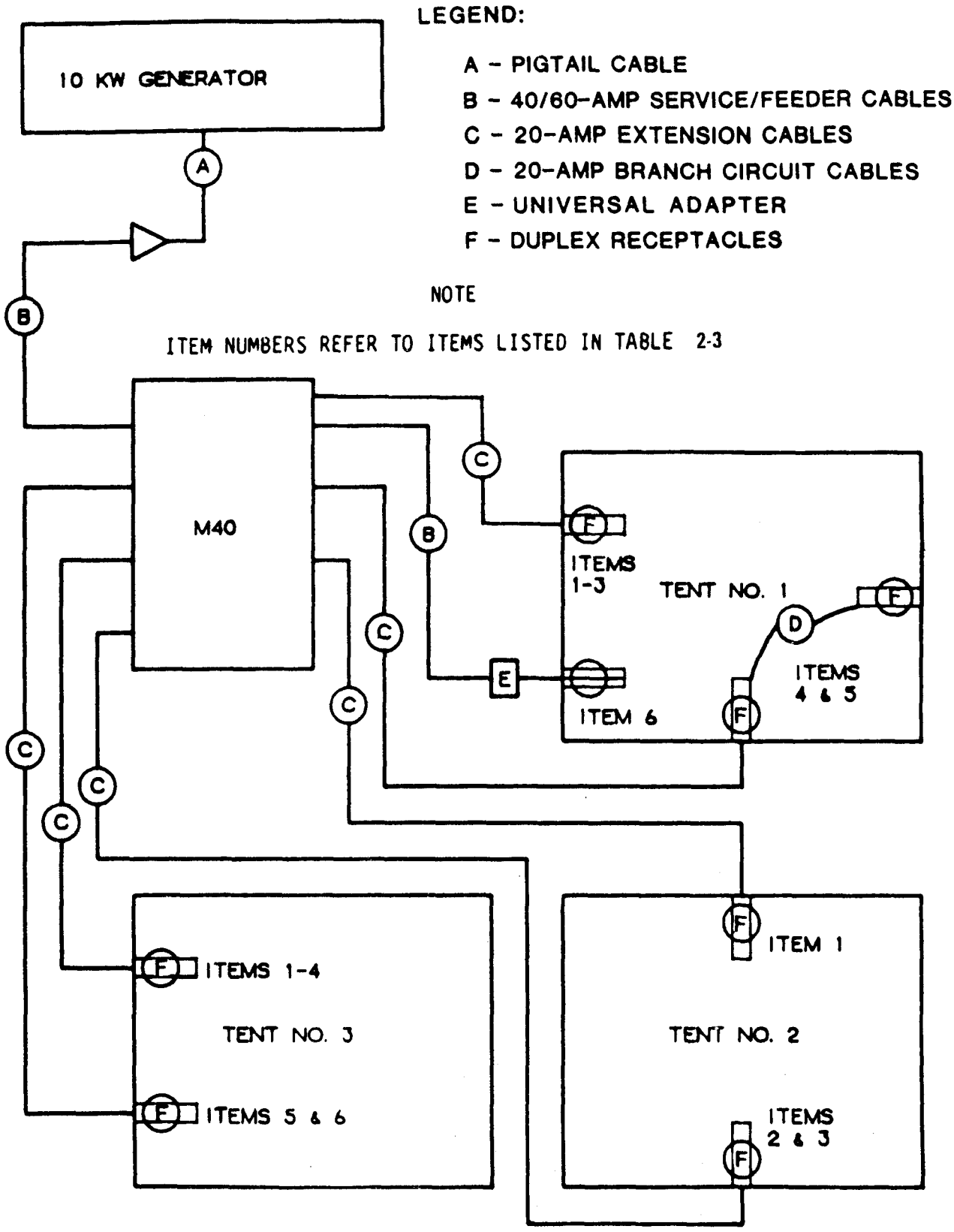


FIGURE 2-9. Typical layout diagram DISE/PDISE.

the welder does not contain a military standard connector, use the universal adapter as described in paragraph 2-7k.

(4) Repeat steps (1) and (2) above for tents #2 and #3.

(5) Connect the pigtail cable to a service/feeder cable of the desired length selected from Table 1-2. Connect the service/feeder cable to the input connector of the M40 or M40 A/P distribution center.

j. Connection to Generator Set.

WARNING

- High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not connect cables to the generator set with the power on. Death or severe injury may result.
- Ground the generator set. Death or severe injury may result if you do not properly ground the generator set.
- Connect the ground leads (green) of the pigtail cable to the ground terminal of the generator set. Death or severe injury may result if you do not properly connect the ground leads to the generator set.
- High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. The DISE feeder/distribution centers use ground fault circuit breakers. The neutral and ground of some generator sets must be electrically connected with 6-gage wire for the ground fault circuit breakers to function properly. Failure to electrically connect the ground and neutral lugs may result in death or severe injury.

(1) Physically check that the generator set is properly grounded. Refer to the proper techncal manuals for grounding procedures.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be color-coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with identified color.

(2) Connect the pigtail cable to the generator set as follows:

(a) Black lead (phase A) to L1

(b) Red lead (phase B) to L2

(c) Blue lead (phase C) to L3

(d) White lead (neutral) to L0

NOTE

For eight-lead cables, twist the four green ground wires together and connect to ground.

(e) Green (or bare) leads to ground

k. Universal Adapter.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not connect equipment with the power on. Death or serious injury may result.

CAUTION

When tightening split lug terminals, use provided insulated wrench to prevent over tightening.

(1) The universal adapter is designed to connect user electrical equipment, without military standard connectors, to the electrical power distribution equipment.

(2) The universal adapter (Fig. 2-10) consists of a box with a 5-pin, 3-phase 40/60 amp input connector and five terminals. The box includes an insulated wrench for tightening/loosening the terminals.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be color-coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with identified color.

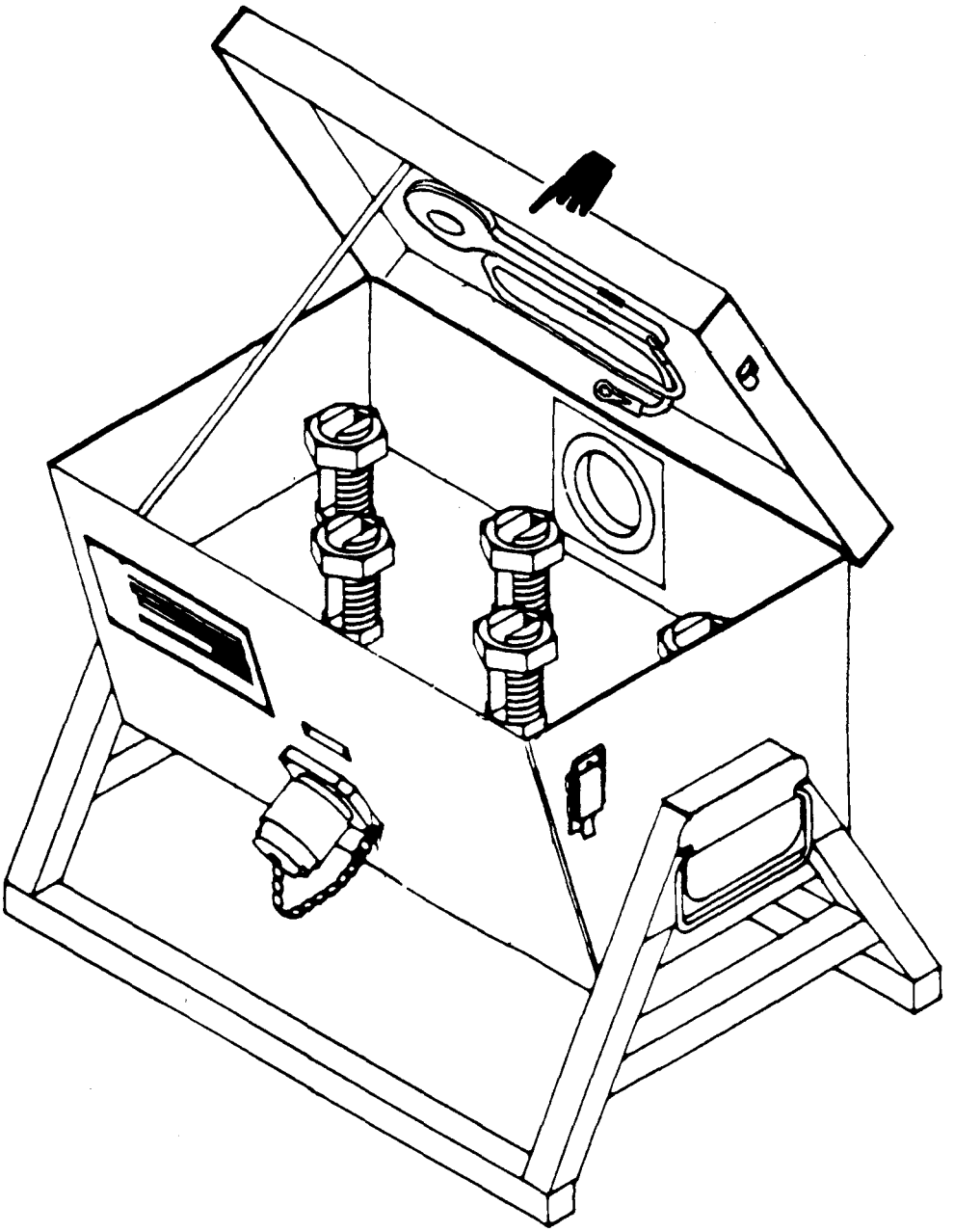


FIGURE 2-10. Universal Adapter

CAUTION

If equipment using 3-phase motors is not properly operating, your equipment is in reverse phase and must be shut down immediately or damage to equipment may occur. To obtain correct phase, change any two of the 3-phase leads.

(3) Connect the user's equipment to the output studs of the universal adapter as follows:

(a) L1 to phase A (black)

(b) L2 to phase B (red)

(c) L3 to phase C (blue)

(d) L0 to neutral (white)

(e) G to ground (green or bare wires)

(4) Connect a 40/60 amp, 5-vvire cable to the input connector of the universal adapter.

(5) Connect the 40/60-amp, 5-wire cable to the proper distribution center output connector.

I. Circuit Cable Loads. Write up and refer to a table of user requirements for your particular field situation. Each branch circuit cable load must not exceed 2.4 kW or 20 amps(120v x 20 amps -2400 watts). Each service/feeder cable load must not exceed the kilowatt rating (or amperage rating) of the circuit breaker supporting that load. Table 2-4 lists the maximum loads for each feeder/distribution center based on output connectors used. Any combination of output connectors can be used as long as the total load does not exceed the capacity of the feeder/distribution center and the load is balanced.

Table 2-6. FEEDER/DISTRIBUTION CENTER OUTPUT CONNECTOR LOADS

NOTE

Evenly distribute load across available connectors being sure total load does not exceed circuit breaker rating.

	Connector Type (Max Connector Load)	Balanced Connector kW Load	No. of Connectors	Total kW Load
a.	M200 and M200 A/P Feeder Centers (72 kW total output capacity)			
	100-amp, 8-pin, 3-phase (36 kW)	24	3	72*
	60-amp, 5-pin, 3-phase (21.6 kW)	18	4	72*
	20-amp, 3-pin single-phase (2.4 kW)	2.4	1	2.4
b.	M100 and M100 A/P Feeder Centers (36 kW total output capacity)			
	100-amp, 8-pin, 3-phase (36 kW)	36	1	36*
	60-amp, 5-pin, e-phase (21.6 kW)	18	2	36*
	40-amp, 5-pin, 3-phase (14.4 kW)	14.4	2	28.8
	20-amp, 3-pin, single-phase (2.4 kW)	2.4	2	4.8
c.	M40 and M40 A/P Distribution Centers (14.4 kW total output capacity)			
	40-amp, 5-pin, 3-phase (14.4 kW)	14.4	1	14.4*
	20-amp, 3-pin, single-phase (2.4 kW)	1.2	12	14.4*
d.	M60 and M60 A/P Distribution Centers (7.2 kW total output capacity)			
	60-amp, 4-pin, single-phase (7.2 kW)	7.2	1	7.2*
	20-amp, 3-pin, single-phase (2.4 kW)	1.2	6	7.2*

*Requires feeder/distribution center's total output capacity.

2-8. OPERATING PROCEDURES.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Secure connector cover on unused feeder/distribution center output connectors to avoid electrical shock.

CAUTION

- Never block circuit breaker switches in the ON position. Excessive current will damage DISE and PDISE equipment.
- Do not block the feeder/distribution center lids in the open position. Rainwater may accumulate inside feeder/distribution center and damage components.

NOTE

Refer to proper technical manuals and FM 20-31 for operating procedures relating to the particular generator set used with your DISE and PDISE systems.

a. Starting Procedures.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Before turning on electrical power, alert all users. Failure to do so may result in death or severe injury.

(1) Set each DISE and PDISE feeder/distribution center main circuit breaker to OFF.

(2) Start the generator set. Refer to TM for proper generator operating procedures.

(3) Starting with the feeder/distribution center electrically closest to the generator. Set the feeder/distribution center main circuit breaker ON.

(4) Set the circuit breaker for the branch circuits being used to ON.

(5) Check the current output at the generator for each phase (3-phase systems only). If the current draw for any one phase is 10 percent

greater than any other, open all DISE or PDISE circuit breakers and shut down the generator set. Reconnect the user's loads to the various branch circuit output connectors until all three phases are evenly balanced.

b. Operation. Advise the users that the system is operational.

c. Testing the Ground Fault Circuit Breakers. At monthly intervals shut down user equipment and test the DISE ground fault circuit breakers. Record the test on the Test Reminder tag (Fig. 2-11). Perform test as follows:

(1) Apply power to center to be tested.

(2) Push the red push-to-test button. The ground fault circuit breaker should trip.

(3) Reset circuit breaker.

(4) Record maintenance actions taken on DA Form 2404 in accordance with DA PAM 738-750.

d. Resetting the Circuit Breakers.

(1) A circuit breaker in the tripped position (midway between On and OFF positions) indicates the circuit breaker has been subjected to an overload condition. Wait 2 minutes before resetting the circuit breaker. To reset the circuit breaker, move the switch to the OFF position and then to the ON position.

(2) If the circuit breaker trips again after resetting, the overload or fault must be cleared before safe operation can be resumed. If no fault or overload condition is detected, troubleshoot the electrical circuit (Table 3-1).

(3) A circuit breaker in the OFF position indicates the circuit breaker has not been operated.

e. Shutdown Procedures.

(1) Turn off the individual branch circuit breakers on the feeder/distribution centers.

(2) Start with the feeder/distribution center electrically closest to the user's equipment and turn off the main circuit breaker of each feeder/distribution center.

(3) Refer to the proper technical manuals and shut down the generator set.

2-9. OPERATION OF AUXILIARY EQUIPMENT.

a. Power Generation Equipment. The power source for your DISE and PDISE equipment consists of standard generator sets used to supply electrical power. Refer to the unit Modified Table of Organization and Equipment (MTOE) for a

listing of these generator sets. Refer to the applicable TM and to FM 20-31 for operating instructions.

b. Auxiliary Equipment. User requirements will periodically vary according to the field situation; extra DISE or PDISE components may be required. This technical manual is the authorization to requisition these items on as required basis. Complete descriptions and NSNS are in TM 9-6150-226-23P. The optional items listed below may be used to tailor the DISE and PDISE systems to your unit's requirements.

(1) Branch circuit cable, 8ft (2.4 m), 20-amp, 3-pin

(2) Branch circuit cable, 16 ft (4.9 m), 20-amp, 3-pin

(3) Branch circuit cable, 24 ft (7.3 m), 20-amp, 3-pin

(4) Cable carrying straps

(5) Cable securing straps

(6) Container, transit and storage

(7) Duplex receptacle, 120 V, 20 amp

(8) Extension cable, 3.5 ft (1.1 m), 20-amp, 3-pin

(9) Extension cable, 15 ft (4.6 m), 20-amp, 3-pin

(10) Extension cable, 25 ft (7.6 m), 20-amp 3-pin

(11) Extension cable, 50 ft (15.2 m), 20-amp, 3-pin

(12) Fluorescent light, 120 V, single tube

(13) Container, light bulb kit, 40 W, 2-bulb

(14) Pigtail cable, 4 ft (1.2 m), 40/60-amp, 5-pin

(15) Pigtail cable, 4 ft (1.2 m), 60-amp, 4-pin

(16) Pigtail cable, 4 ft (1.2 m), 100-amp, 8-pin

(17) Pigtail cable, 4 ft (1.2 m), 200-amp, 8-pin

(18) Rope support assembly, 53 ft (4.6 m)

(19) Service/feeder cable, 25 ft (7.6 m), 40/60-amp, 5-pin

(20) Service/feeder cable, 25 ft (7.6 m), 200-amp, 8-pin

(21) Service/feeder cable, 50 ft (15.2 m), 40/60-amp, 5-pin

(22) Service/feeder cable, 50 ft (15.2 m), 60-amp, 4-pin

(23) Service/feeder cable, 50 ft (15.2 m), 100-amp, 8-pin

(24) Service feeder cable, 100 ft (30.4 m), 40/60-amp, 5-pin

(25) Service/feeder cable, 100 ft (30.4 m), 60-amp, 4-pin

(26) Universal adapter

(27) Utility light, 120 V, dual socket, incandescent

(28) Interface cable, 40/60-amp, 5-ton expando van

(29) Interface cable, 20-amp, general illumination light set

(30) Cable carrying strap (double), 200-amp

2-10. PREPARATION FOR MOVEMENT.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt to disconnect the equipment with the electrical power on. Death or severe injury may result.

CAUTION

Dirt and contamination may plug connector sockets. Secure cap on connectors when disassembling the equipment.

a. Shut down the DISE or PDISE system (para 2-8e).

b. Starting at the user’s end, disconnect the user’s equipment.

c. Disconnect the lights and branch circuit cables.

d. Disconnect the extension cables.

e. Disconnect the service/feeder cables.

f. Disconnect the pigtail cables.

Install the connector caps and perform the “after” preventive maintenance checks and services in table 2-1.

h. Coil the service/feeder cables up and attach cable carrying straps.

i. Store the pigtail, extension, and branch circuit cables along with the lights, plugs, and receptacle boxes in the transit storage containers, 200-amp.

j. Secure the latches on the feeder/distribution center. Install connector caps.

2-11. OPERATING INSTRUCTIONS ON DECALS AND INSTRUCTION PLATES.

a. FIGURE 2-11 shows a ground fault test record which is located on the right side of the control panel on all DISE feeder/distribution centers.

b. FIGURE 2-1 shows the location of data plates on the control panel of the M200 equipment, FIGURE 2-2 shows the location of data plates on the control panel of the M200 A/P equipment, and FIGURE 2-12 shows the location of the cable connection data plates.

c. FIGURE 2-3 shows the location of data plates on the control panel of the M1OO equipment, FIGURE 2-4 shows the location of data plates on the control panel of the M1OO A/P equipment, and FIGURE 2-13 shows the location of the cable connection data plates.

d. FIGURE 2-5 shows the location of data plates on the control panel of the M40 equipment, FIGURE 2-6 shows the location of data plates on the control panel of the 40 A/P equipment, and FIGURE 2-14 shows the location of the cable connection data plates.

e. FIGURE 2-7 shows the location of data plates on the control panel of the M60 equipment, FIGURE 2-8 shows the location of data plates on the control panel of the M60 A/P equipment, and FIGURE 2-15 shows the location of the cable connection data plates.

f. FIGURE 2-16 shows the warning tag of the DISE and POISE cables.

TEST REMINDER

THE CIRCUIT BREAKERS ON THIS PANEL THAT CONTAIN A “PUSH TO TEST” BUTTON ARE OF THE “GROUND FAULT CIRCUIT INTERRUPTER” (GFCI) TYPE. FOR RELIABLE PROTECTION FROM ELECTRICAL SHOCK, EACH GFCI BREAKER SHOULD BE TESTED AT THE BEGINNING OF EACH SETUP AND AT MONTHLY INTERVALS THEREAFTER DURING CONTINUOUS OPERATIONS.

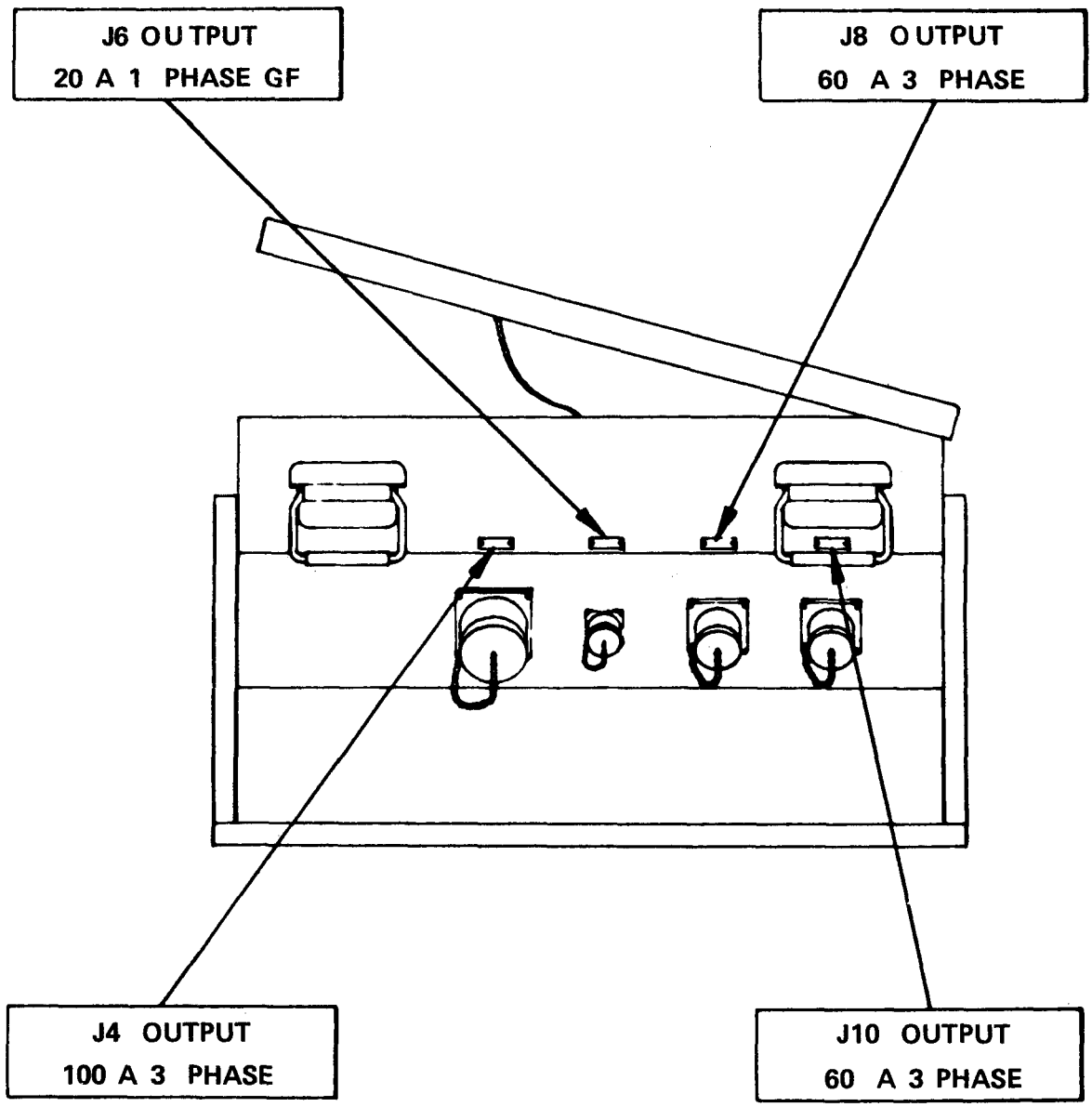
TO TEST THE GFCI BREAKER, PROCEED AS FOLLOWS:

1. CONNECT POWER SOURCE TO THE INPUT CONNECTOR.
2. TURN ON THE MAIN CIRCUIT BREAKER.
3. TURN ON THE GFCI CIRCUIT BREAKER.
4. PUSH THE “PUSH TO TEST BUTTON.”
5. ENTER DATE TEST WAS PERFORMED AND INITIAL.
6. UNDER NOTES-RECORD ANY FAILURE AND ACTION TAKEN.
7. ALL ENTRIES SHOULD BE MADE WITH A MARKER THAT WILL PROVIDE A LEGIBLE RECORD AND THAT IS ERASABLE FOLLOWING THE TERMINATIONS OF AND OR COMPLETED MAINTENANCE ACTIONS.

	YEAR	DATE	INIT	YEAR	DATE	INIT	YEAR	DATE	INIT
JAN									
FEB									
MAR									
APR									
MAY									
JUN									
JUL									
AUG									
SEP									
OCT									
NOV									
DEC									

NOTES :

FIGURE 2-11. Ground fault test record, right side of control panel.



NOTE

Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

FIGURE 2-12. M200 and M200 A/P data right view. (sheet 1 of 2)

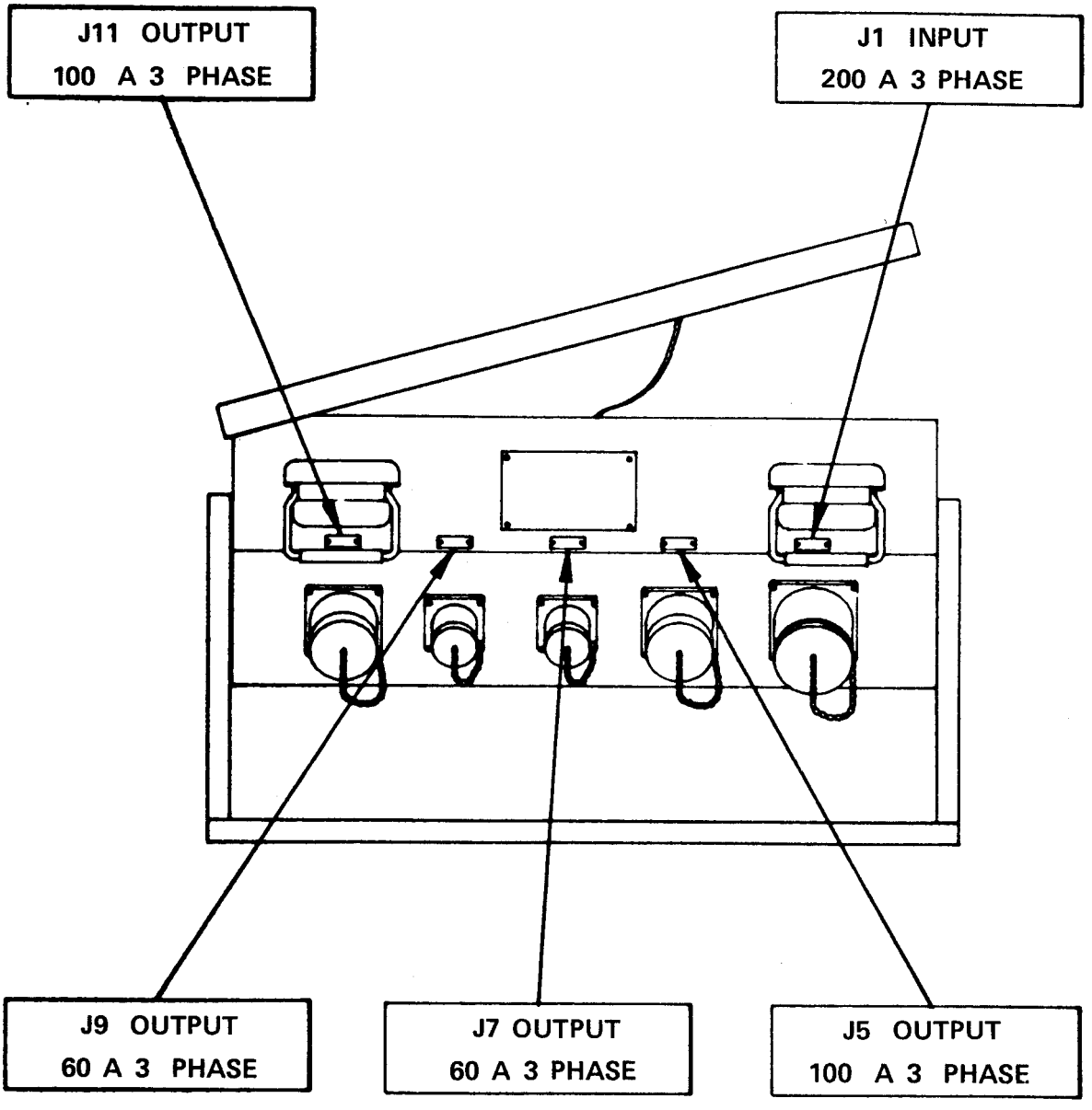
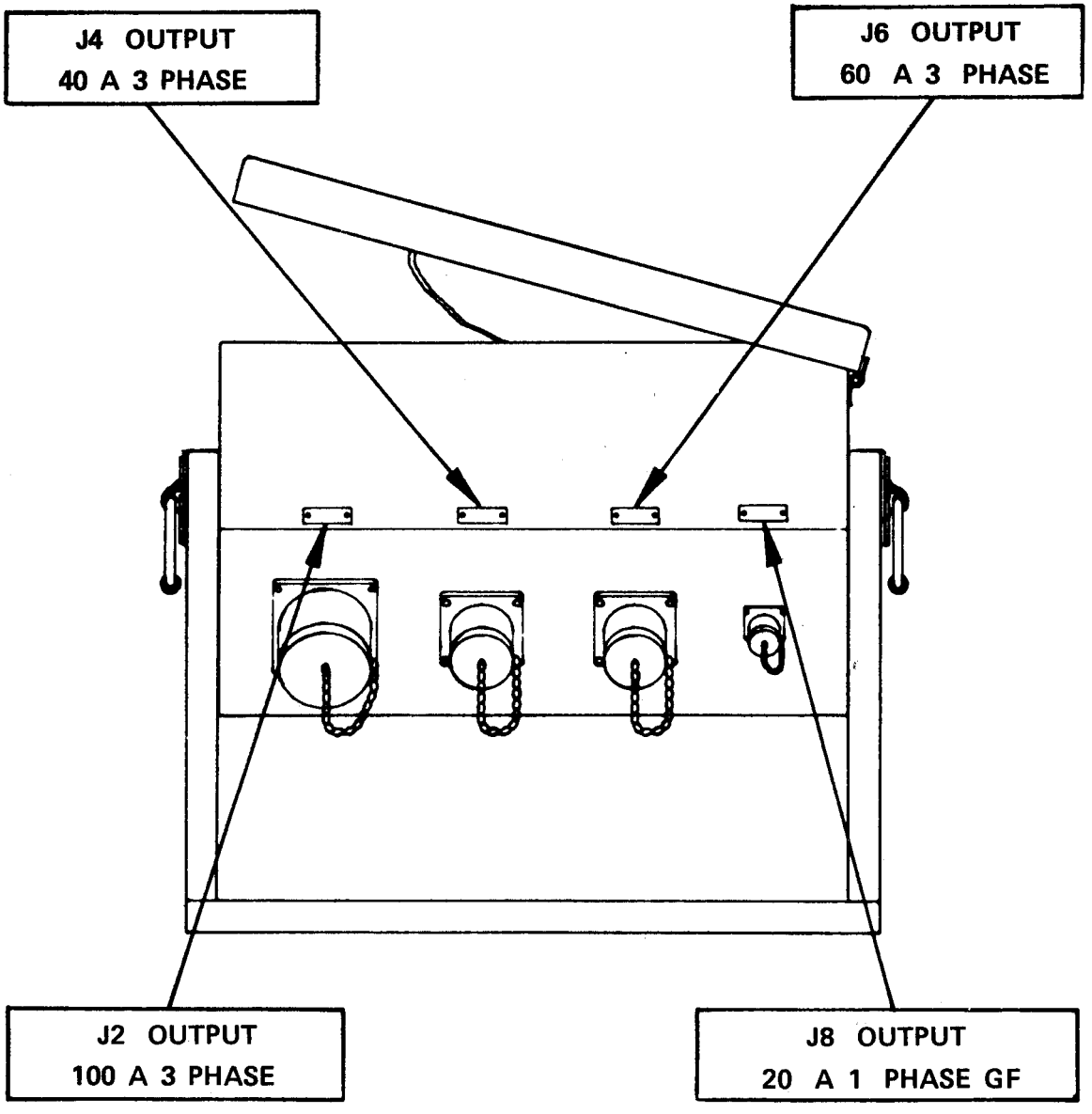


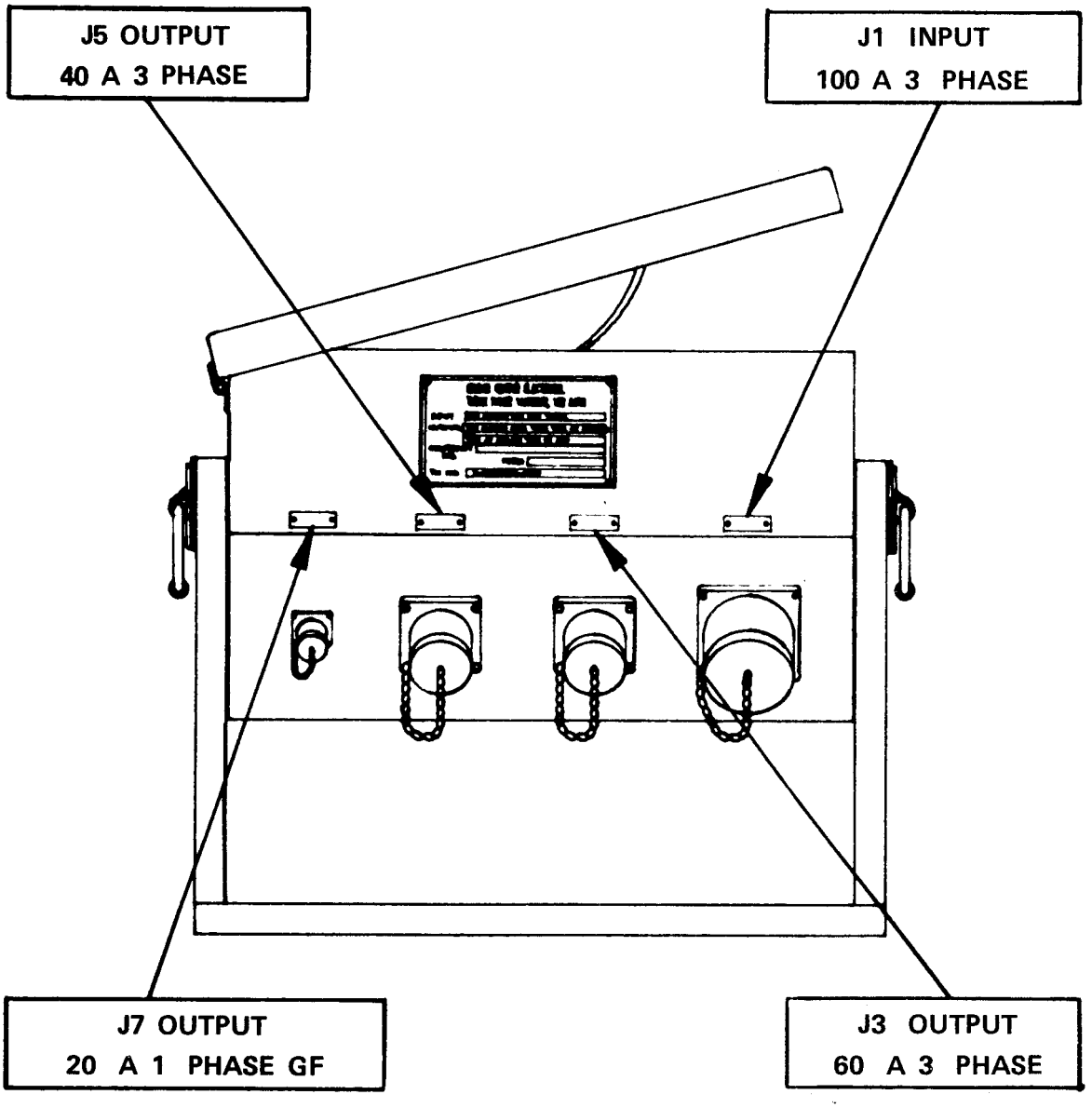
FIGURE 2-12. M200 and M200 A/P data plates, left view. (sheet 2 of 2)



NOTE

Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

FIGURE 2-13. M100 and M100 A/P data plates, right view. (sheet 1 of 2)



NOTE

Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

FIGURE 2-13. M100 and M100 A/P data plates, left view. (sheet 2 of 2)

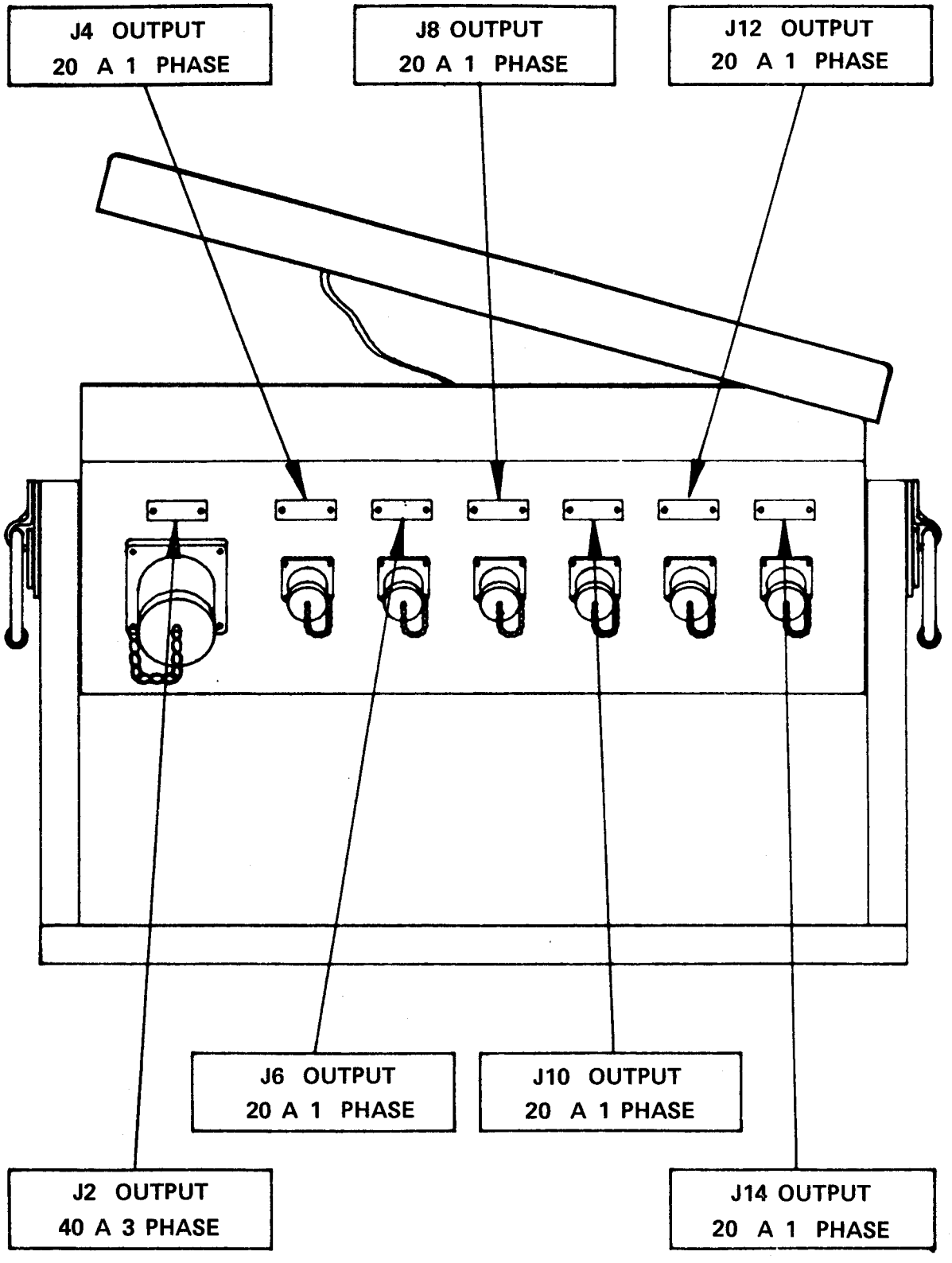
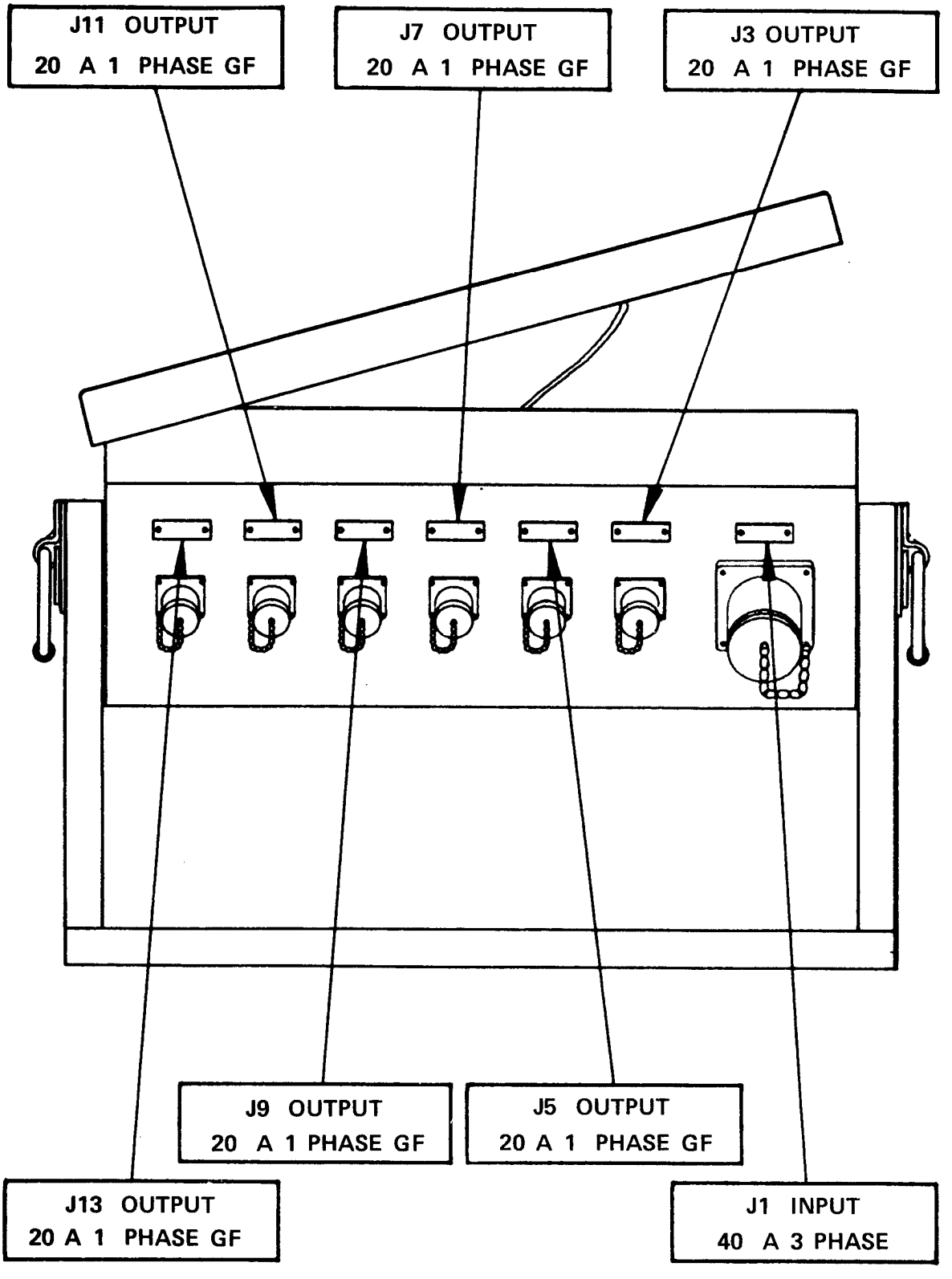


FIGURE 2-14. M40 and M40 A/P data plates, right view. (sheet 1 of 2)



Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

FIGURE 2-14. M40 and M40 A/P data plates, left view. (sheet 2 of 2)

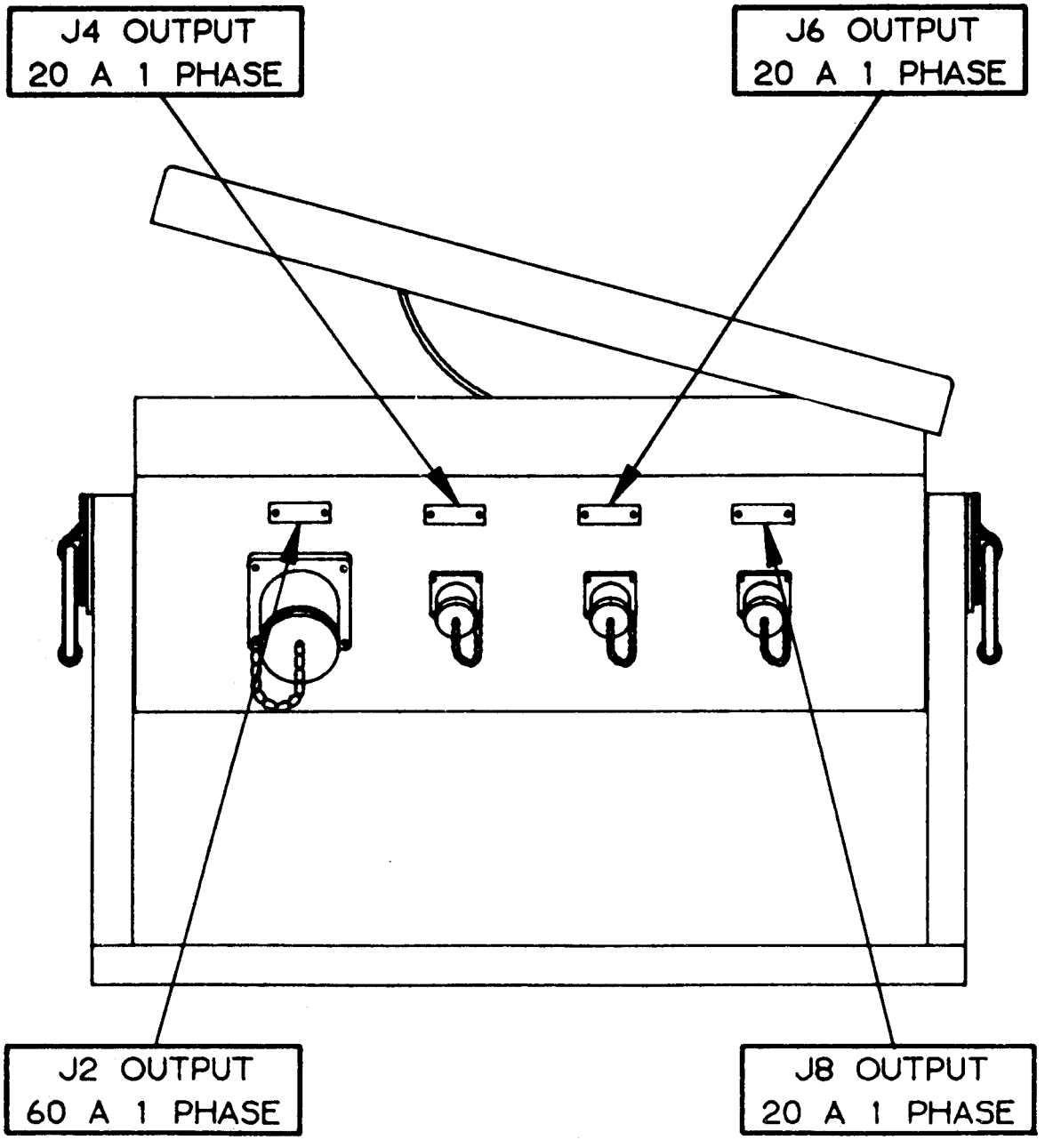
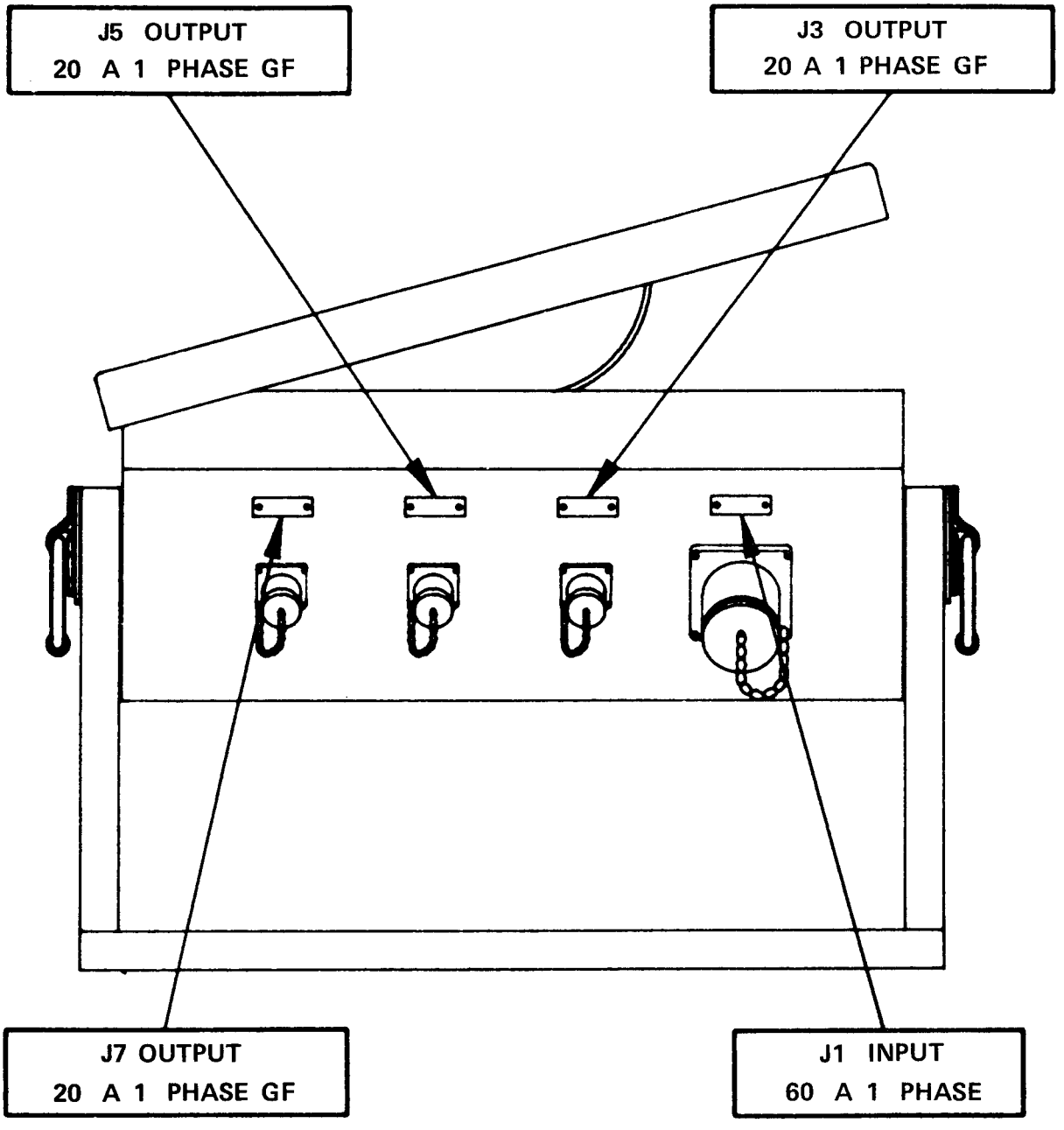


FIGURE 2-15. M60 and M60 A/P data plates, right view. (sheet 1 of 2)



NOTE

Both DISE and PDISE Systems contain 20 amp circuits. Only DISE systems utilize ground fault (GF) breakers.

FIGURE 2-15. M60 and M60 A/P data plates, left view. (sheet 2 of 2)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color coding. The insulation on the wires inside the cable jacket may vary depending on the supplier. Wires will be color coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with identified color.

FIGURE 2-16. Warning tag (located on both ends of DISE and PDISE 3-phase cables).

Section IV. OPERATIONS UNDER UNUSUAL CONDITIONS

Section Index

WARNING

- High Voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Ground the generator set. Death or severe injury may result if you do not properly ground the generator set.
- The DISE feeder/distribution centers use ground fault circuit breakers. The neutral and ground of some generator sets must be electrically connected with 6-gage wire for the ground fault circuit breakers to function properly. Failure to electrically connect the ground and neutral lugs may result in death or severe injury.
- Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be color coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the identified color.
- Connect the pigtail ground leads to the generator set. Death or severe injury may result if you do not properly connect the ground leads of the pigtail cables to the generator set.
- Do not submerge feeder/distribution centers or cable connector in water. Death or severe injury may result.

2-12. OPERATION IN EXTREME COLD (Below O°F [-18°C]).

WARNING

Do not touch cold metal parts with bare hands. Frostbite can cause permanent injury.

a. The DISE and PDISE equipment is designed for operation at -25°F (-32°C).

b. Cap unused connectors to protect against moisture.

c. Close and latch the feeder/distribution center lids to protect against moisture.

d. When coiling cables, form large loops. Cables are difficult to coil in subzero temperatures.

2-13. OPERATION IN DUSTY OR SANDY AREAS.

a. Shield the DISE and PDISE feeder/distribution centers from blowing dust and sand. Take advantage of natural barriers which offer protection from sand and dust.

b. Cap unused connectors to protect against sand and dirt.

c. Close and latch the feeder/distribution center lids to protect against sand and dust.

2-14. OPERATION IN RAINY OR HUMID CONDITIONS.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not allow DISE or PDISE feeder/distribution center or cable connectors to be submerged in water. Death or severe injury may result.

a. Take special precautions to keep DISE and PDISE feeder/distribution centers dry. If possible, provide a shelter for the centers. If a sheltered area is not available, cover the centers with canvas.

b. Do not allow feeder/distribution centers or cable connectors to be submerged in water.

c. Cap unused connectors to protect against moisture.

d. Close and latch the feeder/distribution centers lids to protect against moisture.

e. Check that the generator set is properly grounded and that the pigtail cable ground wires are properly connected to the generator set.

2-15. OPERATION IN SALTWATER AREAS.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not allow DISE or POISE feeder/distribution center or cable connectors to be submerged in water. Death or severe injury may result.

a. Take special precautions to keep DISE and PDISE feeder/distribution centers dry. If possible, provide a shelter for the centers. If a sheltered area is not available, cover the centers with canvas.

b. Do not allow feeder/distribution centers or cable connectors to be submerged in water.

c. Cap unused connectors to protect against moisture.

d. Close and latch the feeder/distribution centers lids to protect against moisture.

e. If DISE or PDISE equipment is operated in a saltwater area for an extended period of time, perform the following at weekly intervals:

(1) Shut down the DISE or PDISE network generator sets.

(2) Disconnect the DISE or PDISE feeder/distribution center from the cables.

(3) Clean the face of the circuit breakers with a dry rag (item 8, App E).

(4) Wipe internal and external surfaces of the feeder/distribution center with a damp, clean rag (item 8, App E).

(5) Allow centers to dry thoroughly.

(6) Reconnect the centers to the network cables.

(7) Refer to paragraph 2-8a and restart the system.

2-16. OPERATION IN EXTREME HEAT (Above 120° F [49° C]).

DISE and PDISE should not be exposed to direct sunlight. DISE and PDISE boxes should be placed in the shade or shade should be created, especially when supplying power to equipment needing uninterrupted power. To reduce the effects of heat absorption, DISE and PDISE should be placed on the shady side of a building or structure, under canvas or camouflage, or in a tent. The DISE and PDISE boxes need to be well ventilated.

2-17. EMERGENCY PROCEDURES.

a. If DISE or PDISE equipment fails, it may be possible to maintain a limited electrical power network with less DISE or PDISE equipment. In this situation, contact organizational maintenance for assistance in developing an alternate plan for power distribution.

b. In case of complete failure, connect the generator sets directly to the user's equipment according to tactical priority of user's equipment.

2-18. NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION PROCEDURES.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt to decontaminate equipment with liquid chemicals while the power is on. Death or severe injury may result.

NOTE

For detailed contamination procedures, refer to FM 3-5, Nuclear, Biological, and Chemical Decontamination, and FM 3-4, Nuclear, Biological, and Chemical Protection.

a. General. The following emergency procedures can be performed until field NBC decontamination facilities are available. The unit commander is responsible for assignment of crew duties and providing assistance to the NBC supporting unit.

b. Emergency Procedures. If NBC attack is known or suspected, mask at once and continue mission. If inside, do not leave shelters. If outside, follow decontamination procedures below to avoid taking contamination into shelters. Do not unmask until told to do so.

(1) Nuclear Decontamination: Brush fallout from skin, clothing, and equipment with available brushes, rags, and tree branches. Wash skin and have radiation check made as soon as tactical situation permits.

(2) Biological Decontamination: Remain masked and continue mission until told to unmask.

c. Chemical Detection and Decontamination.

WARNING

Do not use decontamination spray on personnel. It could cause injury to personnel.

(1) If exposure to liquid agent is known or suspected, use M258A1 kit and clean exposed skin, clothing, and personal gear, in that order. Use the buddy system. Wash exposed skin and thoroughly decontaminate as soon as tactical situation permits.

(2) If the M8 or M9 paper indicates that liquid chemical agent is present on the DISE or PDISE equipment surface, use the ABC-M11 decontamination apparatus for partial decontamination of the equipment. Spray only surface that will be touched.

(3) Decontamination procedures take time. Do as much as you can based on the tactical situation.

CHAPTER 3

OPERATING MAINTENANCE INSTRUCTIONS

Chapter Index

Section I. LUBRICATING INSTRUCTIONS

Section Index

DISE and PDISE equipment does not require lubrication.

Section II. TROUBLESHOOTING PROCEDURES

3-1. INTRODUCTION TROUBLESHOOTING.

This section contains troubleshooting information and tests for the operator to locate and correct malfunctions for DISE/PDISE models. These malfunctions may be observed by the operator during PMCS and during normal operations of the system. The troubleshooting table (Table 3-1) lists malfunctions which are authorized by the MAC followed by a list of probable causes and corrective action.

a. Troubleshooting consists of isolating the system in which the malfunction occurs and locating the defective component, using testing devices and tools identified in the Maintenance Allocation Chart.

b. Any trouble beyond the user shall be referred to unit level maintenance.

3-2. TROUBLESHOOTING.

a. The troubleshooting table lists the common malfunctions which you may find during the operating or maintenance of DISE/PDISE or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

SYMPTOM	INDEX Troubleshooting Procedure Table 3-1, Item
Feeder/Distribution Centers	
User's Equipment Will Not Operate	1
Circuit Breaker Supporting User's Load Repeatedly Trips	2
User's Equipment Operates Erratically or Too Slowly	3

Table 3-1. OPERATOR TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Be careful not to contact high-voltage connections when troubleshooting this equipment. Death or serious injury may result.

1. USER'S EQUIPMENT WILL NOT OPERATE.

Step 1. Check phase indicator light on nearest center supporting user's load.

a. If phase indicator lights are on, go to step 2.

b. If phase indicator lights are off, go to step 3.

Step 2. Check circuit breaker on nearest center supporting user's load for trip indication.

CAUTION

Do not block circuit breakers in ON position. Excessive current will damage DISE and PDISE equipment.

a. If breaker is tripped, reset it.

b. If circuit breaker is not tripped, notify next higher level of maintenance.

Step 3. Check phase indicator lights on other centers (if any) in network.

a. If phase indicator lights on other centers are on, but phase indicator lights on center supporting user's loads are off, notify unit maintenance.

b. If phase indicator lights on all network centers are off, refer to proper TM and check generator for proper output.

c. If (a) or (b) above does not correct problem, notify next higher level of maintenance.

Table 3-1. OPERATOR TROUBLESHOOTING (cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
2. CIRCUIT BREAKER SUPPORTING USER'S LOAD REPEATEDLY TRIPS.
CAUTION Do not block circuit breakers in ON position. Excessive current will damage DISE and PDISE equipment.
Step 1. Recalculate user's load requirements for circuit that is tripping.
a. If user's total load requirements exceed circuit breaker rating, redistribute load by running an additional extension and branch circuit to user's equipment.
b. If user's total load requirements are less than circuit breaker rating and circuit breaker still trips, notify next higher level of maintenance.
3. USER' S EQUIPMENT OPERATES ERRATICALLY OR TOO SLOWLY.
Step 1. Check generator for proper output. Refer to proper TM and adjust generator.
Step 2. Check cables and connectors for proper connections. Properly connect cables and connectors.
Step 3. Calculate voltage loss due to cable length (table 1-3). Use shorter cable as necessary to reduce voltage loss.

Section III. MAINTENANCE PROCEDURES

Section Index

WARNING

High voltage is present in this system. DISE/PDISE supports equipment using 120/208 V ac. Do not clean components with the power on. Death or serious injury may result.

3-3. INTRODUCTION.

DISE/PDISE equipment is designed for high reliability and low maintenance. Operator maintenance is limited to inspection and cleaning of DISE/PDISE equipment as listed under operator PMCS (Table 2-1) and replacement of DISE/PDISE components. Minor defects that do not render the DISE/PDISE equipment inoperative or unsafe are acceptable.

3-4. INSPECTION.

Inspect DISE/PDISE equipment in accordance with Table 2-1.

3-5. REPAIR.

Operator repair is limited to replacement of defective DISE/PDISE components in the MAC.

a. Troubleshooting consists of isolating the system in which the malfunction occurs and locating the defective component, using testing devices and tools identified in the Maintenance Allocation Chart.

b. Any trouble beyond the user shall be referred to unit level maintenance.

CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS

Chapter Index

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

Section Index

4-1. INTRODUCTION.

MOS 52D, power generator equipment repairer, is authorized to perform all unit maintenance on DISE/PDISE equipment.

4-2. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment, refer to Section III of the MAC .

4-3. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

Refer to Appendix B, Maintenance Allocation Chart, and TM 9-6150-226-23P, Repair Parts and Special Tools List for a list of special tools, TMDE, and support equipment.

4-4. REPAIR PARTS.

Repair parts are listed and illustrated in TM 9-6150-226-23P.

Section II. SERVICE UPON RECEIPT

Section Index

4-5. SERVICE UPON RECEIPT OF MATERIEL.

Refer to Table 4-1 and perform the actions listed.

Table 4-1. SERVICE UPON RECEIPT CHECKLIST

Item	Location	Action	Remarks
1.	Feeder/distribution centers	a. Inspect circuit breaker switches for freedom of movement.	
		b. Inspect connectors for missing covers.	
		c. Inspect connector plugs for missing or bent pins.	
		d. Inspect connector receptacles for-distorted or damaged sockets.	
		e. Inspect phase lights for damaged or missing bulbs.	
		f. Inspect for missing or damaged latches.	
2.	Cables	a. Inspect for missing connector covers.	
		b. Inspect for missing or bent connector pins.	
		c. Inspect for distorted or damaged connector sockets.	
		d. Inspect for split, cut, or damaged insulation.	
3.	Utility lights	a. Inspect for broken or damaged sockets.	
		b. Inspect for missing plugs.	
		c. Inspect for inoperable or damaged switches.	

Table 4-1. SERVICE UPON RECEIPT CHECKLIST (cont)

Item	Location	Action	Remarks
		d. Inspect for split, cut, or damaged cable insulation.	
4.	Duplex receptacle	a. Inspect for missing or damaged covers.	
		b. Inspect for distorted or damaged connectors.	

4-6. CHECKING UNPACKED EQUIPMENT.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF Form 364, Report of Discrepancy.

b. Check the equipment against the packing list to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

c. Check current publications to determine if equipment has been modified or is projected to be modified.

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

Section Index

4-7. INTRODUCTION.

General. Your PMCS table (Table 4-2) has been provided so you can keep your equipment in good operating condition and ready for its primary mission. The PMCS contains those checks and services authorized to the unit by the maintenance allocation chart (MAC) under “inspection and service” functions.

b. Warnings and cautions. Always observe the WARNINGS and CAUTIONS appearing in your PMCS table. The warnings and cautions appear before certain procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or prevent your equipment from being damaged.

c. Explanation of table entries.

(1) Item number 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) Interval column. This column tells you when you must do the procedure in the procedure column.

(3) Check/Service column. This column provides the location and the item to be checked or serviced.

(4) Procedure column. This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(5) Not fully mission capable if: column. Information in this column tells you what faults will keep your equipment from beinq capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

d. Other table entries. Information other than warnings, cautions, and notes appear in the PMCS table. Be sure to observe all special information appearing in your table.

4-8. PMCS INSTRUCTIONS.

NOTE

- All DISE and PDISE subsystems are similar and contain similar components. Subsystems are combined in the PMCS chart and component checks for similar items are shown under a single heading.
- If the equipment must be kept in continuous operation, do only the procedures that can be done without disturbing operation. make complete checks and services when equipment is shut down.
- If you discover a maintenance problem while performing PMCS , troubleshoot it with the instructions in Section IV of this chapter. Report any malfunctions or failures on the proper DA Form 2404, Equipment Inspection and Maintenance Work Sheet, or refer to DA Pam 738-750.
- Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is

important that any corrosion problems with DISE and PDISE 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 to 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. The form should be submitted to the address specified in DA Pam 738-750. Corrosion can be prevented and controlled by following PMCS procedures.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

WARNING

High voltage is present in this equipment. DISE/PDISE supports equipment using 120/208 V ac. Do not perform PMCS with the power on. Death or serious injury may result.

Table 4-2. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
	Semi - annually	Feeder/distri-bution centers internal wiring M40,M46,M60, M1OO,M2OO, M40 A/P, M60 A/P M100 A/P and M200 A/P	Check internal wiring for secure connections. Check for burnt insulation and signs of over-heating.	Wires not secured by lugs. Wires burnt.
	Semi - annually	Circuit breakers	Check for secure mounting.	Circuit breaker not secured.
	Semi - annually	Internal Surfaces	Check for corrosion and mildew.	

Table 4-2. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES - (Cont.)

Item No.	Interval	Location Item to Check/ Service	Procedure	Not fully Mission Capable if:
4	Semi - annually	Connectors	Check for missing gasket or hardware and secure mounting in distribution center.	Connectors are damaged or gasket is missing or un-serviceable.
5	Semi - annually	Circuit breaker and bus bar wire lugs	Check torque in accordance with Table G-1.	Circuit breakers not secure to bus bar wire lug or screws loose or missing.
6	Semi - annually	Cable Connectors	Check gland nut behind cable connector to insure nut is tight.	Nuts are loose or missing.
7	Annually	Bus bars	Check for secure mounting and signs of damage.	Screws loose or missing. Bus bar is broken.
8	Annually	Phase indicator lights	Check for secure mounting, missing or broken bulbs, and missing or broken covers.	Mounting not secured. Bulbs are broken or missing.

Section IV. UNIT TROUBLESHOOTING

Section Index

4-9. SCOPE.

a. This section contains troubleshooting information and test for unit maintenance personnel to locate and correct malfunctions for DISE/PDISE models. These malfunctions may be observed by the operator during PMCS and during normal operations of the system, or by the unit during PMCS and maintenance.

The troubleshooting table (Table 4-3) lists malfunctions which are authorized by the Maintenance Allocation Chart (MAC) followed by a list of probable causes and corrective action.

b. Troubleshooting consists of isolating the system in which the malfunction occurs and locating the defective component, using testing devices and tools identified in the Maintenance Allocation Chart.

4-10. TROUBLESHOOTING.

a. The table lists the common malfunctions which you may find during the operation or maintenance of DISE/PDISE or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. The manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify next higher level of maintenance.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not make continuity checks with the power on. Death or serious injury may result.

c. Phase Designation. Electrical phases are designated with one of two designations as follows:

(1) Phase A or L1
(2) Phase B or L2
(3) Phase C or L3
(4) Neutral (N) or LO

d. Wiring Designation. DISE and PDISE feeder/distribution center wires are designated with 6- to 10-character codes in accordance with the following examples:

(1) Example 1-J2A4L1.
  (a) J2A-wire originates from connector J2, pin A.
  (b) 4-wire is #4 gage.
  (c) L1-wire connects to phase bus L1 (phase A).

(2) Example 2-J8B12NEUT.
  (a) J8B - wire originates from connector J8, pin B.
  (b) 12-wire is #12 gage.
  (c) NEUT wire connects to neutral phase bus (LO).

(3) Example 3-J14A12CB14.
  (a) J14A-wire originates from connector J14, pin A.
  (b) 12-wire is #12 gage.
  (c) CB14-wire connects to circuit breaker #14.

e. Electrical Fault Isolation. To isolate a short or open circuit, use a multimeter (item 3, Section III, App B). Refer to the troubleshooting guide (Table 4-3) and the appropriate DISE and PDISE equipment continuity checklist (Tables 4-4 thru 4-8). An "X" in the table indicates there should be continuity between those two respective points. If a measurement of no continuity is obtained, it indicates an open circuit. An "O" in the table indicates there should be no continuity between those two respective points. If a measurement of continuity is obtained, it indicates a short circuit. Figures 4-1 thru 4-4 are wiring diagrams for the DISE equipment. Figures 4-5 thru 4-8 are wiring diagrams for the PDISE equipment. Figures 4-9 thru 4-11 are used with either the DISE or PDISE equipment.

SYMPTOM INDEX

Table 4-3. UNIT TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. USER'S SINGLE-PHASE (120 V) EQUIPMENT WILL NOT OPERATE AND ALL PHASE INDICATOR LIGHTS ARE ON.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Disconnect power before performing continuity checks. Be careful not to contact high-voltage connections when troubleshooting this equipment. Death or serious injury may result.

Step 1. Use a multimeter and check for proper voltage at duplex receptacle supporting user's equipment.

(a) If proper voltage is present, advise user that his equipment is faulty.

(b) If proper voltage is not present, go to step 2.

Step 2. Check output voltage at source supporting user's equipment.

(a) If proper voltage is present, sequentially check for proper output voltage at each cable between last center and user's equipment. Replace cable as necessary.

(b) If proper voltage is not present, go to step 3.

Step 3. Check for proper output voltage at circuit breaker connected to output connector supporting user's load.

(a) If proper voltage is present, replace output connector (refer to para 4-15).

(b) If proper voltage is not present, replace circuit breaker (refer to para 4-14).

2. USER'S SINGLE-PHASE (120 V) EQUIPMENT WILL NOT OPERATE AND PHASE INDICATOR LIGHTS ARE OFF.

Step 1. Use a multimeter and check for proper voltage at output connector of center that is nearest to user's load and has all phase indicator lights on.

Table 4-3. UNIT TROUBLESHOOTING (cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
2. USER'S SINGLE-PHASE (120 V) EQUIPMENT WILL NOT OPERATE AND PHASE INDICATOR LIGHTS ARE OFF. (cont)
(a) If proper voltage is present, replace cable between center with phase indicator lights on and center with phase indicator lights off.
(b) If proper voltage is not present, go to step 2.
Step 2. Check output voltage at circuit breaker connected to output connector supporting user's load.
(a) If proper voltage is present, replace output connector (refer to para 4-15).
(b) If proper voltage is not present, replace circuit breaker (refer to para 4-14).
3. USER'S 3-PHASE (208 V) EQUIPMENT WILL NOT OPERATE AND ALL PHASE INDICATOR LIGHTS ARE ON.
Step 1. Use a multimeter and check for correct output voltage at universal adapter.
(a) If correct voltage is present, advise user that his equipment is faulty.
(b) If correct voltage is not present, go to step 2.
Step 2. Disconnect universal adapter input cable, use a multimeter and check for correct output voltage.
(a) If correct voltage is present, go to step 3.
(b) If correct voltage is not present, go to step 4.
Step 3. Check for continuity between universal adapter terminal lugs and connector pins (see Table 4-7).
If continuity does not exist, repair universal adapter connector (para 4-21).

Table 4-3. UNIT TROUBLESHOOTING (cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
3. USER'S 3-PHASE (208 V) EQUIPMENT WILL NOT OPERATE AND ALL PHASE INDICATOR LIGHTS ARE ON. (cont)
Step 4. Disconnect output cable at nearest center, use multimeter and check for correct output voltage. (a) If correct voltage is present, replace cable. (b) If correct voltage is not present, go to Malfunction 1, step 3, and continue troubleshooting.
4. USER'S 3-PHASE (208 V) EQUIPMENT WILL NOT OPERATE AND PHASE INDICATOR LIGHTS ARE OFF.
Perform troubleshooting steps in malfunction 2.
5. CIRCUIT BREAKER SUPPORTING USER'S LOAD REPEATEDLY TRIPS.
CAUTION Do not block circuit breakers in ON position. Excessive current will damage DISE and PDISE equipment.
Check that user's load requirements do not exceed center connector output rating. (a) If user's load requirements exceed circuit breaker rating, notify operator that load exceeds circuit breaker rating. (b) If the user's total load requirements are less than circuit breaker rating and circuit breaker still trips, replace circuit breaker (refer to para 4-14).

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

0 indicates no continuity.

a. M200 Feeder Center (see Fig. 4-1) and M200 A/P Feeder Center (see Fig. 4-5)

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (L0)	Ground (G1
J1-A	x	0	0	0	0
J1-B	0	x	0	0	0
J1-C	0	0	x	0	0
J1-N	0	0	0	x	0
J1-G1	0	0	0	0	x
J1-G2	0	0	0	0	x
J1-G3	0	0	0	0	x
J1-G4	0	0	0	0	x
J4-A	x	0	0	0	0
J4-B	0	x	0	0	0
J4-C	0	0	x	0	0
J4-N	0	0	0	x	0
J4-G1	0	0	0	0	x
J4-G2	0	0	0	0	x
J4-G3	0	0	0	0	x
J4-G4	0	0	0	0	x
J5-A	x	0	0	0	0
J5-B	0	x	0	0	0
J5-C	0	0	x	0	0
J5-N	0	0	0	x	0
J5-G1	0	0	0	0	x
J5-G2	0	0	0	0	x
J5-G3	0	0	0	0	x
J5-G4	0	0	0	0	x
J6-A	0	x	0	0	0
J6-B	0	0	0	x	0
J6-C	0	0	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragrah 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

a. M200 and M200 A/P Feeder Center. (cont)

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J7-A	x	0	0	0	0
J7-B	0	x	0	0	0
J7-C	0	0	x	0	0
J7-N	0	0	0	x	0
J7-G	0	0	0	0	x
J8-A	x	0	0	0	0
J8-B	0	x	0	0	0
J8-C	0	0	x	0	0
J8-N	0	0	0	x	0
J8-G	0	0	0	0	x
J9-A	x	0	0	0	0
J9-B	0	x	0	0	0
J9-C	0	0	x	0	0
J9-N	0	0	0	x	0
J9-G	0	0	0	o	x
J1O-A	x	O	0	0	0
J1O-B	0	X	0	0	0
J1O-C	0	O	x	0	0
J1O-N	0	O	O	x	0
J1O-G	0	O	0	O	x
J11-A	x	0	0	0	0
J11-B	O	x	0	0	0
J11-C	0	O	x	0	0
J11-N	0	0	O	x	0
J11-G1	0	O	0	O	x
J11-G2	0	0	0	0	x
J11-G3	0	0	0	0	x
J11-G4	0	0	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

b. M100 Feeder Center (see Fig. 4-2) and M1OO A/P Feeder Center (see Fig. 4-6).

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J1-A	x	0	0	0	0
J1-B	0	x	0	0	0
J1-C	0	0	x	0	0
J1-N	0	0	0	x	0
J1-G1	0	0	0	0	x
J1-G2	0	0	0	0	x
J1-G3	0	0	0	0	x
J1-G4	0	0	0	0	x
J2-A	x	0	0	0	0
J2-B	0	x	0	0	0
J2-C	0	0	x	0	0
J2-N	0	0	0	x	0
J2-G1	0	0	0	0	x
J2-G2	0	0	0	0	x
J2-G3	0	0	0	0	x
J2-G4	0	0	0	0	x
J3-A	x	0	0	0	0
J3-B	0	x	0	0	0
J3-C	0	0	x	0	0
J3-N	0	0	0	x	0
J3-G	0	0	0	0	x
J4-A	x	0	0	0	0
J4-B	0	x	0	0	0
J4-C	0	0	x	0	0
J4-N	0	0	0	x	0
J4-G	0	0	0	0	x
J5-A	x	0	0	0	0
J5-B	0	x	0	0	0
J5-C	0	0	x	0	0
J5-N	0	0	0	x	0
J5-G	0	0	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

b. M100 and M100 A/P Feeder Center. (cont)

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J6-A	X	0	0	0	O
J6-B	O	x	0	0	O
J6-C	O	0	x	0	O
J6-N	O	0	0	x	O
J6-G	O	0	0	0	X
J7-A	o	0	x	0	0
J7-B	o	0	0	x	0
J7-C	0	0	0	0	x
J8-A	x	0	0	0	0
J8-B	0	0	0	x	0
J8-C	0	0	0	0	x

M40 Distribution Center (see Fig. 4-3) and M40 A/P Distribution Center (see Fig. 4-7).

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J1-A	x	0	0	0	0
J1-B	0	x	0	0	0
J1-C	0	0	x	0	0
J1-N	0	0	0	x	0
J1-G	0	0	0	o	x
J2-A	x	0	0	0	0
J2-8	0	x	0	0	0
J2-C	0	0	x	0	0
J2-N	0	0	0	x	0
J2-G	0	0	0	0	x
J3-A	0	0	x	0	0
J3-B	0	0	0	x	0
J3-C	0	0	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

c. M40 and M40 A/P Distribution Center. (cont)

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J4-A	0	0	x	0	0
J4-B	0	0	0	x	0
J4-C	0	0	0	0	x
J5-A	0	x	0	0	0
J5-B	0	0	0	x	0
J5-C	0	0	0	0	x
J6-A	0	x	0	0	0
J6-B	0	0	0	x	0
J6-C	0	0	0	0	x
J7-A	x	0	0	0	0
J7-B	0	0	0	x	0
J7-C	0	0	0	0	x
J8-A	x	0	0	0	0
J8-B	0	0	0	x	0
J8-C	0	0	0	0	x
J9-A	0	0	x	0	0
J9-B	0	0	0	x	0
J9-C	0	0	0	0	x
J10-A	0	0	x	0	0
J10-B	0	0	0	x	0
J10-C	0	0	0	0	x
J11-A	0	x	0	0	0
J11-B	0	0	0	x	0
J11-C	0	0	0	0	x
J12-A	0	x	0	0	0
J12-B	0	0	0	x	0
J12-C	0	0	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

c. M40 and M40 A/P Distribution Center. (cont)

	Phase A (L1)	Phase B (L2)	Phase C (L3)	Neutral (LO)	Ground (G)
J13-A	x	0	0	0	0
J13-B	0	0	0	x	0
J13-C	0	0	0	0	x
J14-A	x	0	0	0	0
J14-B	0	0	0	x	0
J14-C	0	0	0	0	x

d. M60 Distribution Center (see Fig. 4-4) and M60 A/P Distribution Center (see Fig. 4-8).

	Phase A (L1)	Neutral (L0)	Ground (G)
J1-A	x	0	0
J1-N	0	x	0
J1-G1	0	0	x
J1-G2	0	0	x
J2-A	x	0	0
J2-N	0	x	0
J2-G1	0	0	x
J2-G2	0	0	x
J3-A	x	0	0
J3-B	0	x	0
J3-C	0	0	x
J4-A	x	0	0
J4-B	0	x	0
J4-C	0	0	x
J5-A	x	0	0
J5-B	0	x	0
J5-C	0	0	x

Table 4-4. DISE AND PDISE FEEDER/DISTRIBUTION CENTER CONTINUITY CHECKS (cont)

NOTE

Refer to paragraph 4-14 for DISE and paragraph 4-17 for PDISE and expose phase bus bars as necessary. All checks are made with circuit breakers closed.

X indicates continuity.

O indicates no continuity.

d. M60 and M60 A/P Distribution Center. (cont)

	Phase A (L1)	Neutral (LO)	Ground (G)
J6-A	X	0	0
J6-B	0	X	0
J6-C	0	0	X
J7-A	X	0	0
J7-B	0	X	0
J7-C	0	0	X
J8-A	X	0	0
J8-B	0	X	0
J8-C	0	0	X

Table 4-5. DUPLEX RECEPTACLE CONTINUITY CHECKS

X indicates continuity.

O indicates no continuity.

(See Fig. 4-9.)

Input Connector	Duplex Receptacle Phase Line (Black Wire) (Short Slot)	Neutral Line (White Wire) (Long T-slot)	Ground Line (Green Wire) (Ground Slot)
J1-A	X	0	0
J1-B	0	X	0
J1-C	0	0	X

Table 4-6. INCANDESCENT UTILITY LIGHT

X indicates continuity

O indicates no continuity

(See Fig. 4-10.)

Standard Plug	Bulb Sockets: Center Contact	Sleeve Contact	Ground
Phase Line (Narrow Pin) (Black Wire)	x	0	0
Neutral Line (Wide Pin) (White Wire)	0	x	0
Ground Line (Ground Pin) (Green Wire)	0	0	x

Table 4-7. UNIVERSAL ADAPTER CONTINUITY CHECKS

X indicates continuity

O indicates no continuity

(See Fig. 4-11.)

Input Connector	Output Terminals: L1	L2	L3	LO	G
J1-A	x	0	0	0	0
J1-B	0	x	0	0	0
J1-C	0	0	x	0	0
J1-N	0	0	0	x	0
J1-G	0	0	0	0	x

Table 4-8. DISE AND POISE CABLE CONTINUITY CHECKS

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color coding. The insulation on the wires inside the cable jacket may vary depending on supplier. Wires will be color coded to designate the phases. Perform a continuity test to verify phase designation is in accordance with identified color.

X indicates continuity

O indicates no continuity

a. 200- and 100-Amp, 8 Wire Service/Feeder Cables.

	P1-A	P1-B	P1-C	P1-N	P1-G1	P1-G2	P1-G3	P1-G4
P2-A	x	o	0	0	0	0	0	0
P2-B	o	x	o	0	0	0	0	0
P2-C	o	0	x	o	0	0	0	0
P2-N	o	0	0	x	o	0	0	0
P2-G1	o	0	0	0	x	x	x	x
P2-G2	o	0	0	0	x	x	x	x
P2-G3	o	0	0	0	x	x	x	x
P2-G4	o	0	0	0	x	x	x	x

b. 40/60-Amp, 5-Wire Service/Feeder Cables.

	Pi-A	Pi-B	Pi-C	Pi-N	Pi-G
P2-A	x	0	0	0	0
P2-B	0	x	0	0	0
P2-C	0	0	X	0	0
P2-N	0	0	0	x	0
P2-G	0	0	0	0	x

Table 4-8. DISE AND PDISE CABLE CONTINUITY CHECKS (cont)

X indicates continuity

O indicates no continuity

NOTE

If tags are missing, perform continuity checks and tag wires according to appropriate color code.

c. 200- and 100-Amp, 8-Wire Pigtail Cables.

	P1-A	P1-B	P1-C	P1-N	P1-G1	P1-G2	P1-G3	P1-G4
black		0	0	0	0	0	0	0
red	x	x	0	0	0	0	0	0
blue	0	0	x	0	0	0	0	0
white	0	0	0	X	0	0	0	0
green/bare 1	0	0	0	0	x	x	x	x
green/bare 2	0	0	0	0	x	x	x	x
green/bare 3	0	0	0	0	x	x	x	x
green/bare 4	0	0	0	0	x	x	x	x

NOTE

If tags are missing, perform continuity checks and tag wires according to appropriate color code.

d. 40/60-Amp, 5-Wire Pigtail Cables.

	P1-A	P1-B	P1-C	P1-N	P1-G
black	x	0	0	0	0
red	0	x	0	0	0
blue	0	0	x	0	0
white	0	0	0	x	0
green/bare	0	0	0	0	x

e. 60-amp, 4-Wire Service/Feeder Cables.

	P1-A	P1-N	P1-G1	P1-G2
P2-A	x	0	0	0
P2-N	0	x	0	0
P2-G1	0	0	x	x
P2-G2	0	0	x	x

Table 4-8. DISE AND PDISE CABLE CONTINUITY CHECKS (cont)

X indicates continuity

O indicates no continuity

NOTE

If tags are missing, perform continuity checks and tag wires according to appropriate color code.

f. 60-Amp, 4-Wire Pigtail Cables.

	P1-A	P1-N	P1-G1	P1-G2
blk	X	0	0	0
wht	0	X	0	0
grn/bare 1	0	0	X	X
grn/bare 2	0	0	X	X

g. 20-Amp, 3-Wire Extension Cables.

	P1-A	P1-B	P1-C
P2-A	X	0	0
P2-B	0	X	0
P2-C	0	0	X

h. 20-Amp, 3-Wire Branch Circuit Cables.

	P1-A	P1-B	P1-C
P2-A	X	0	0
P2-B	0	X	0
P2-C	0	0	X
P3-A	X	0	0
P3-B	0	X	0
P3-C	0	0	X
P4-A	X	0	0
P4-B	0	X	0
P4-C	0	0	X
P5-A	X	0	0
P5-B	0	X	0
P5-C	0	0	X

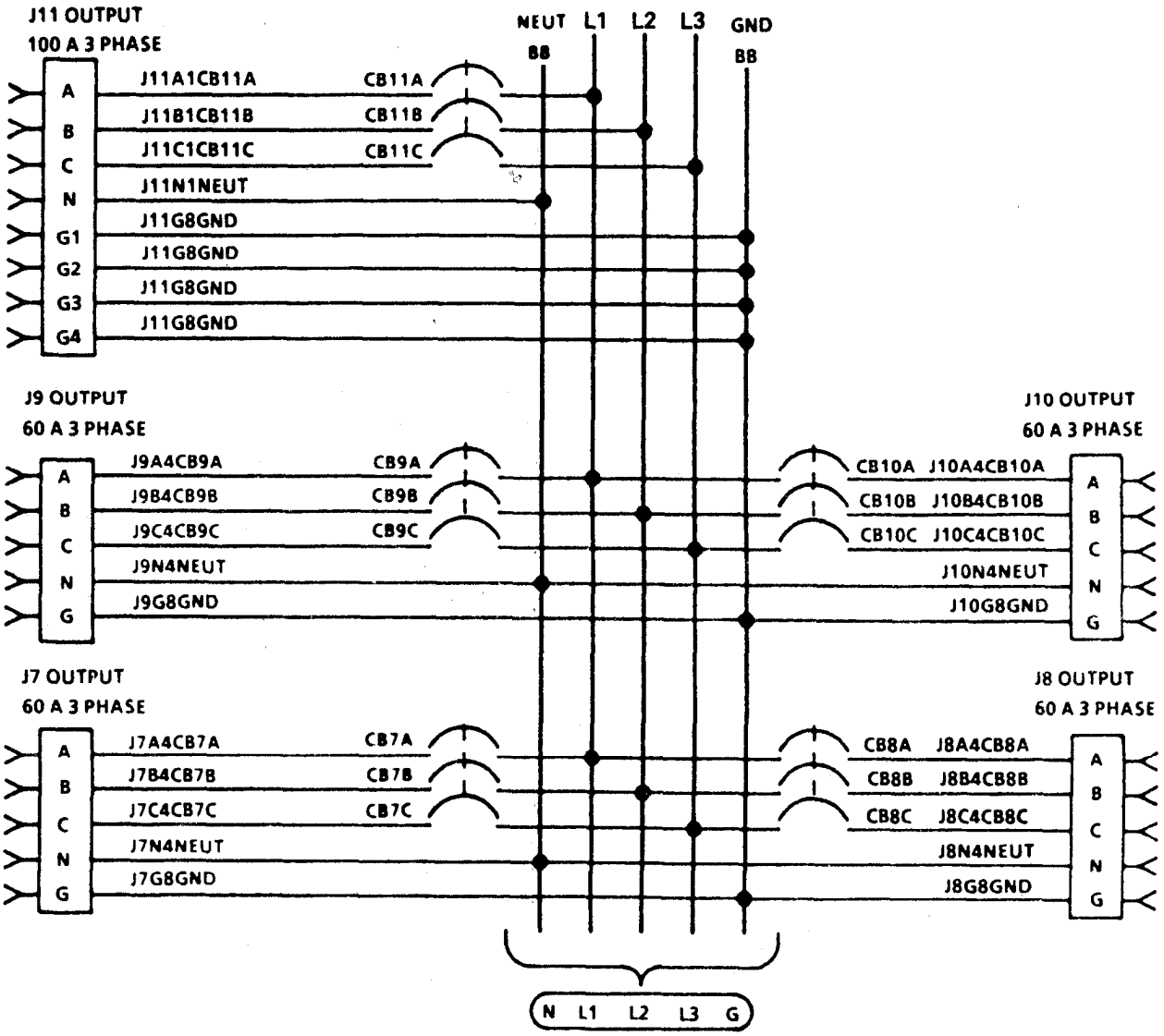


FIGURE 4-1. M200 Feeder Center Wiring Diagram. (Sheet 1 of 2)

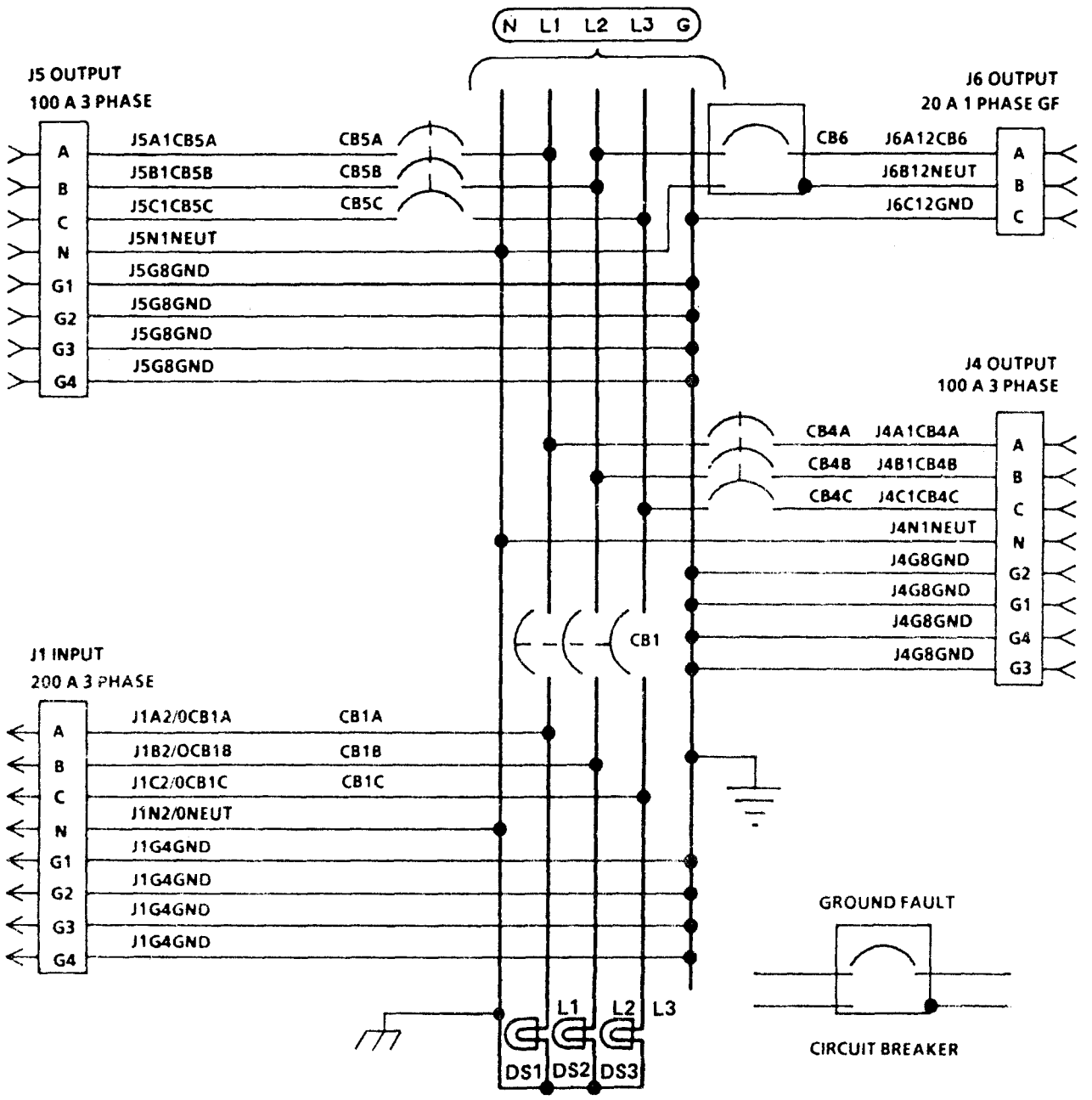


FIGURE 4-1. M200 Feeder Center Wiring Diagram. (Sheet 2 of 2)

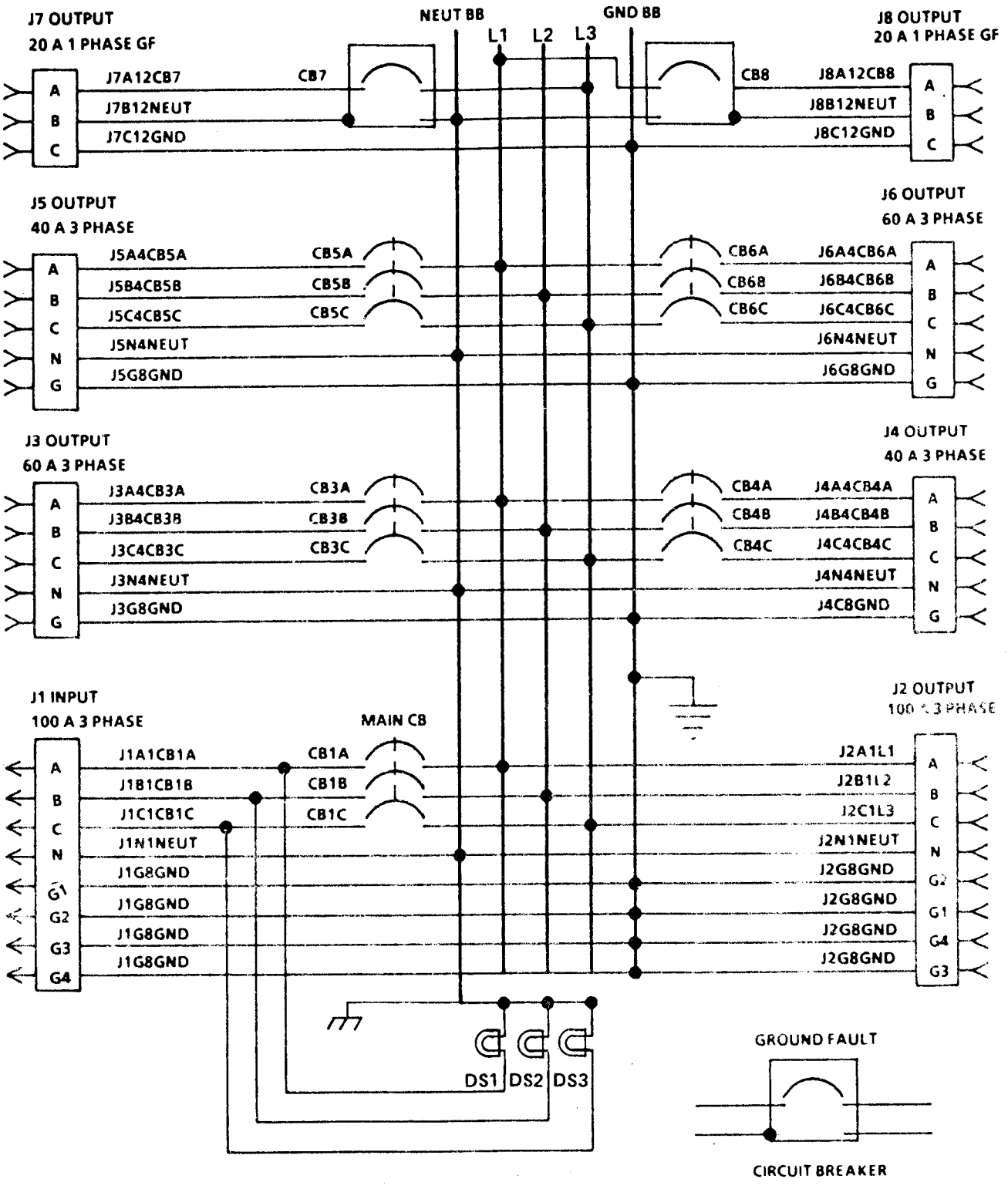


FIGURE 4-2. M100 Feeder Center Wiring Diagram.

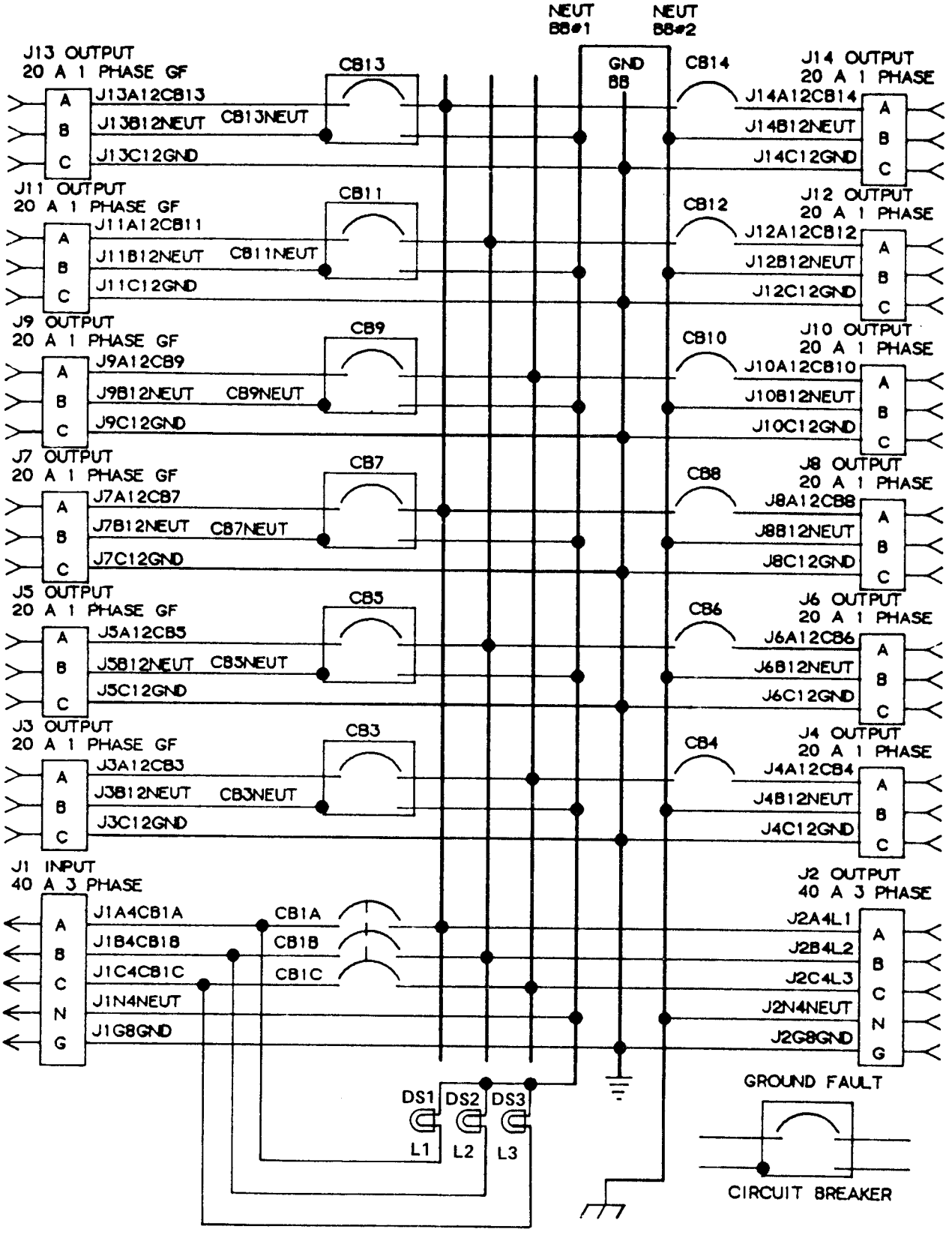


FIGURE 4-3. M40 Distribution Center Wiring Diagram.

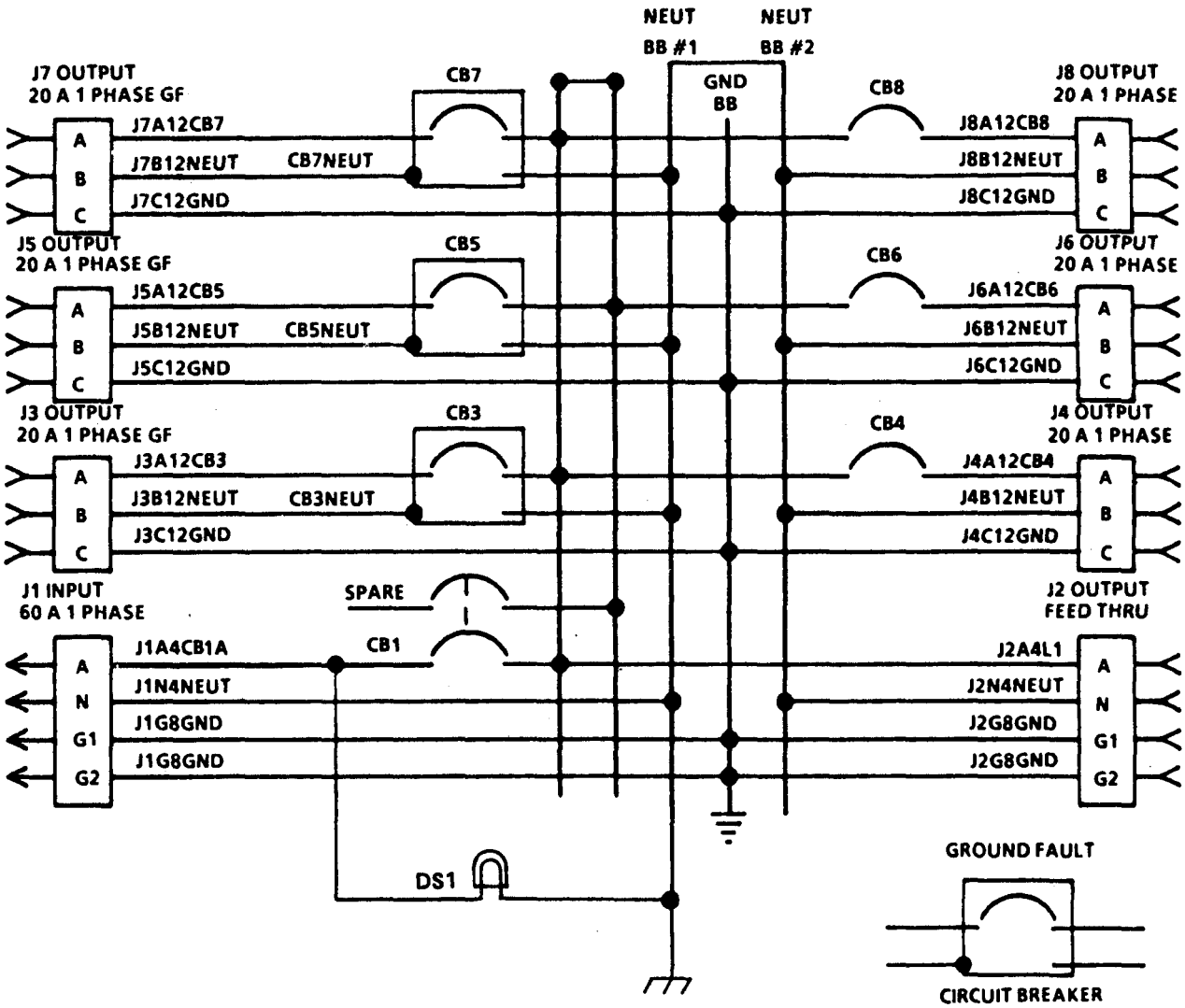


FIGURE 4-4. M60 Distribution Center Wiring Diagram.

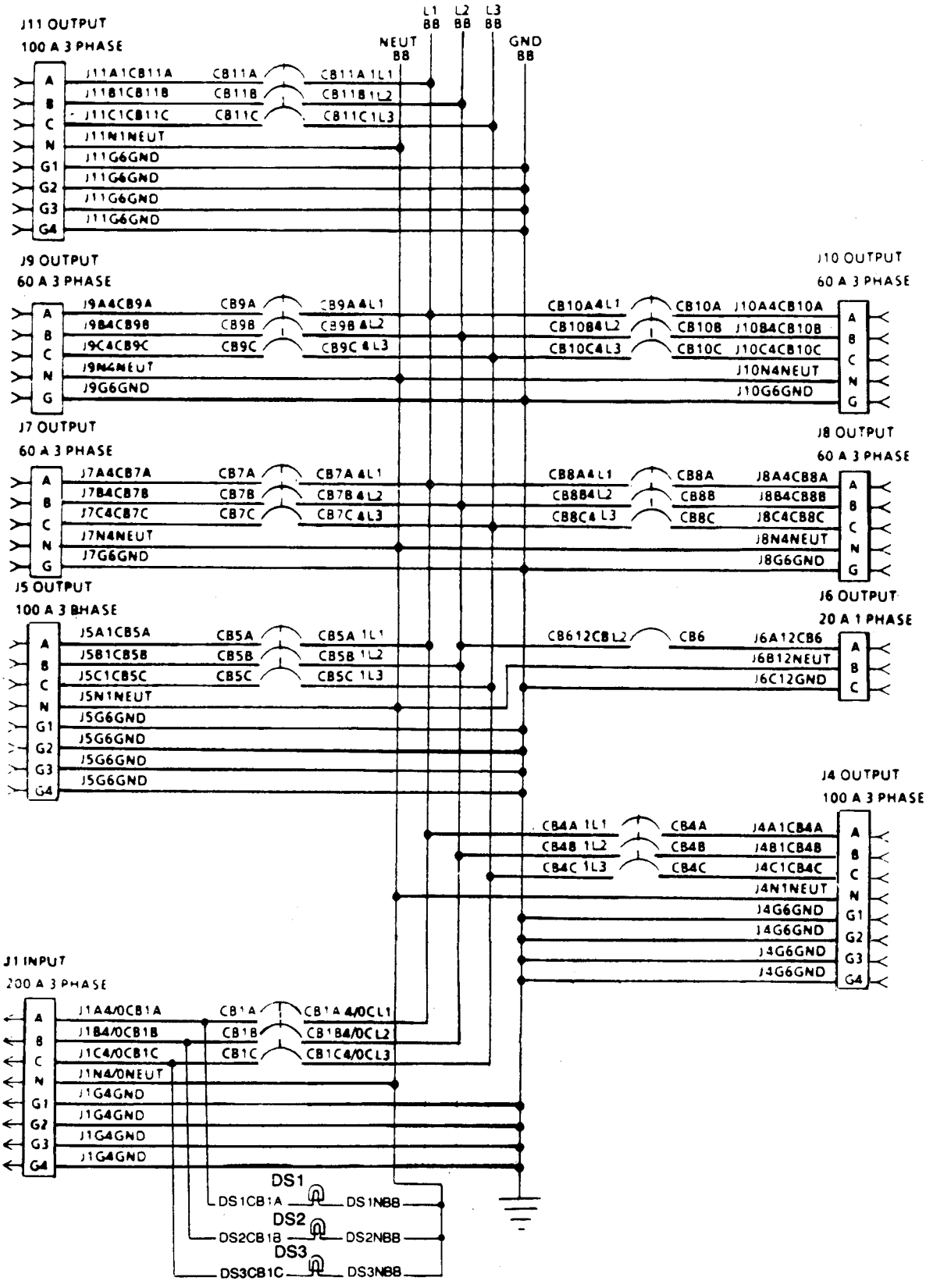


FIGURE 4-5. M200 A/P Feeder Center Wiring Diagram.

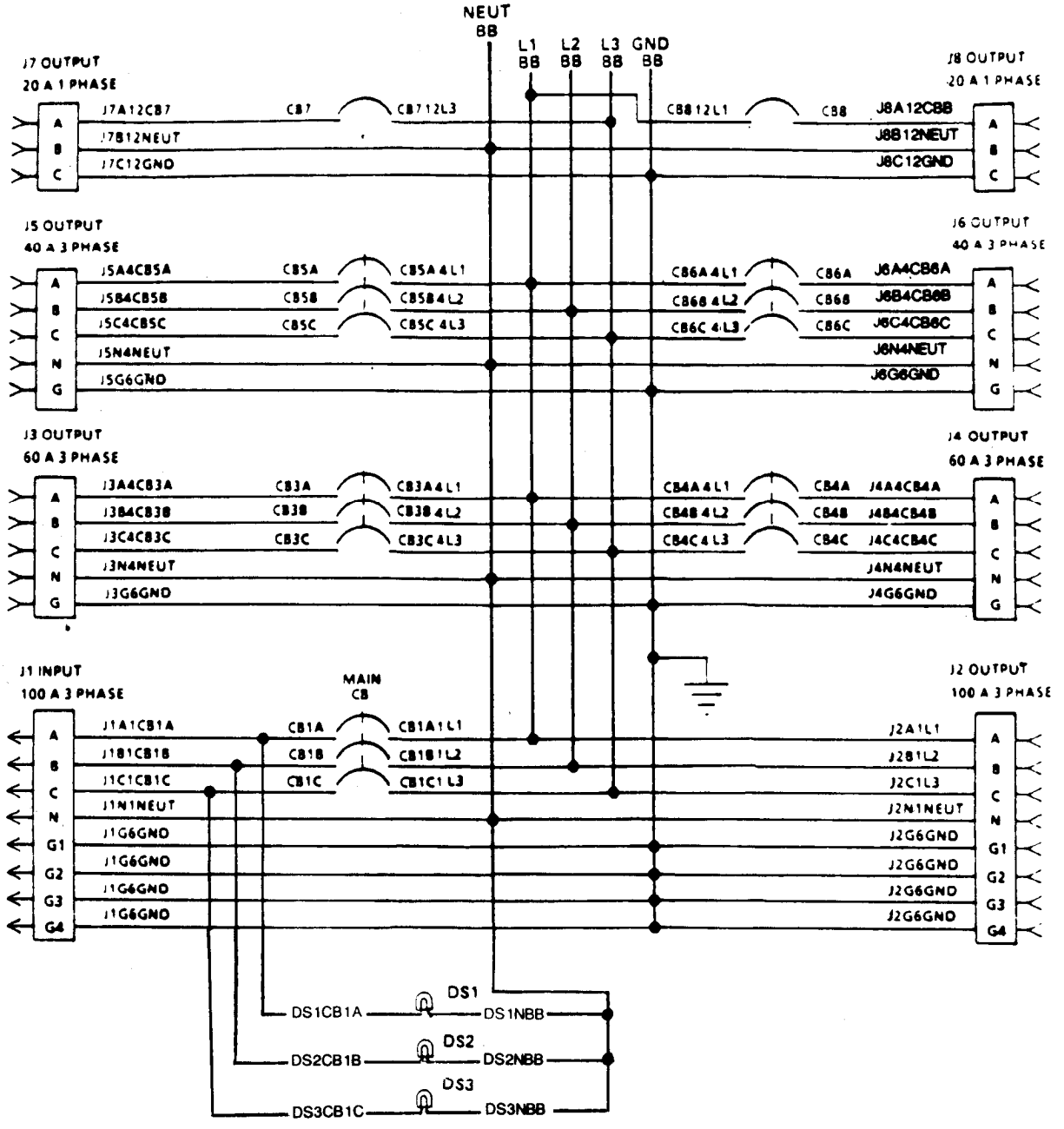


FIGURE 4-6. M100 A/P Feeder Center Wiring Diagram.

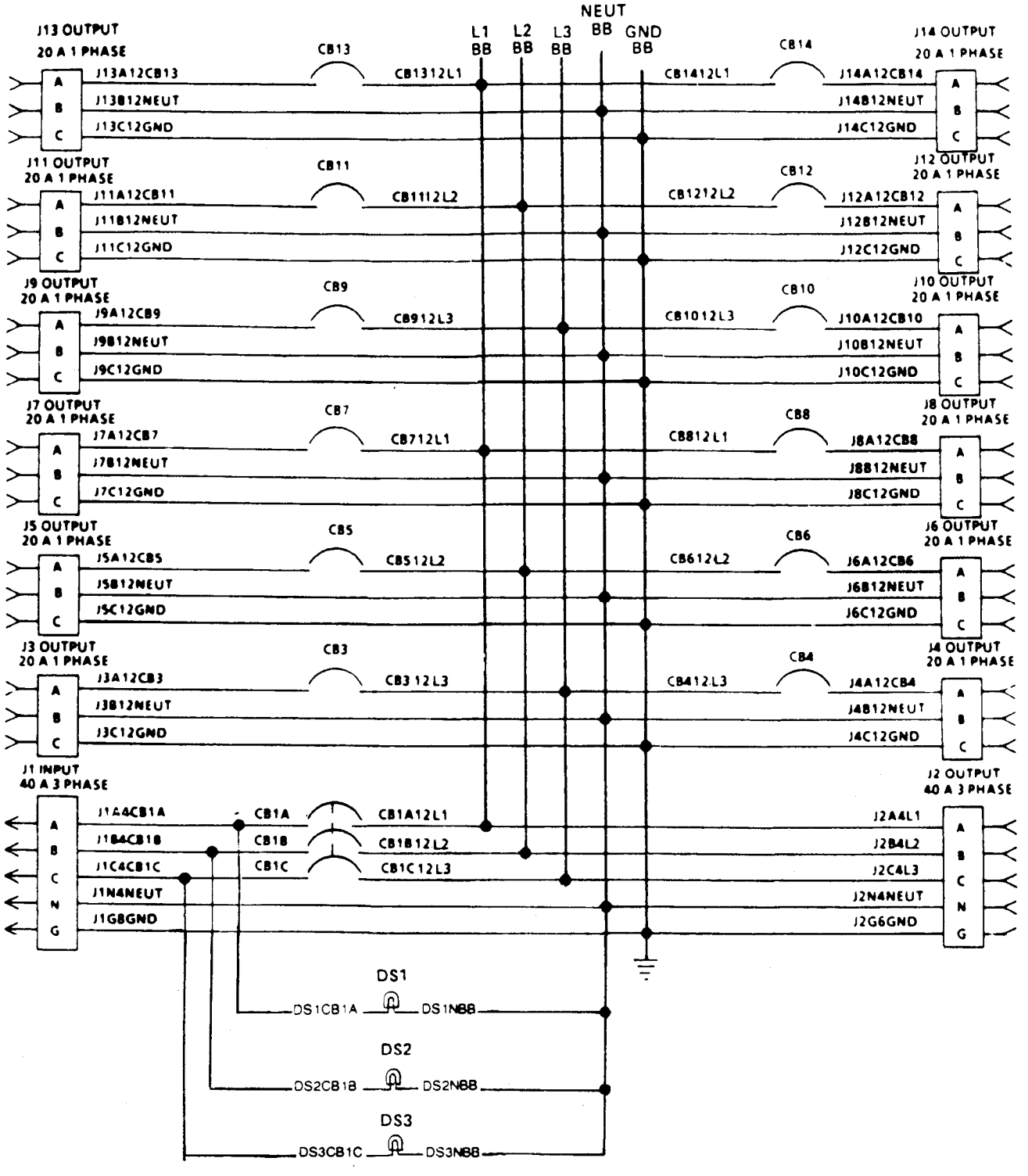


FIGURE 4-7. M40 A/P Distribution Center Wiring Diagram

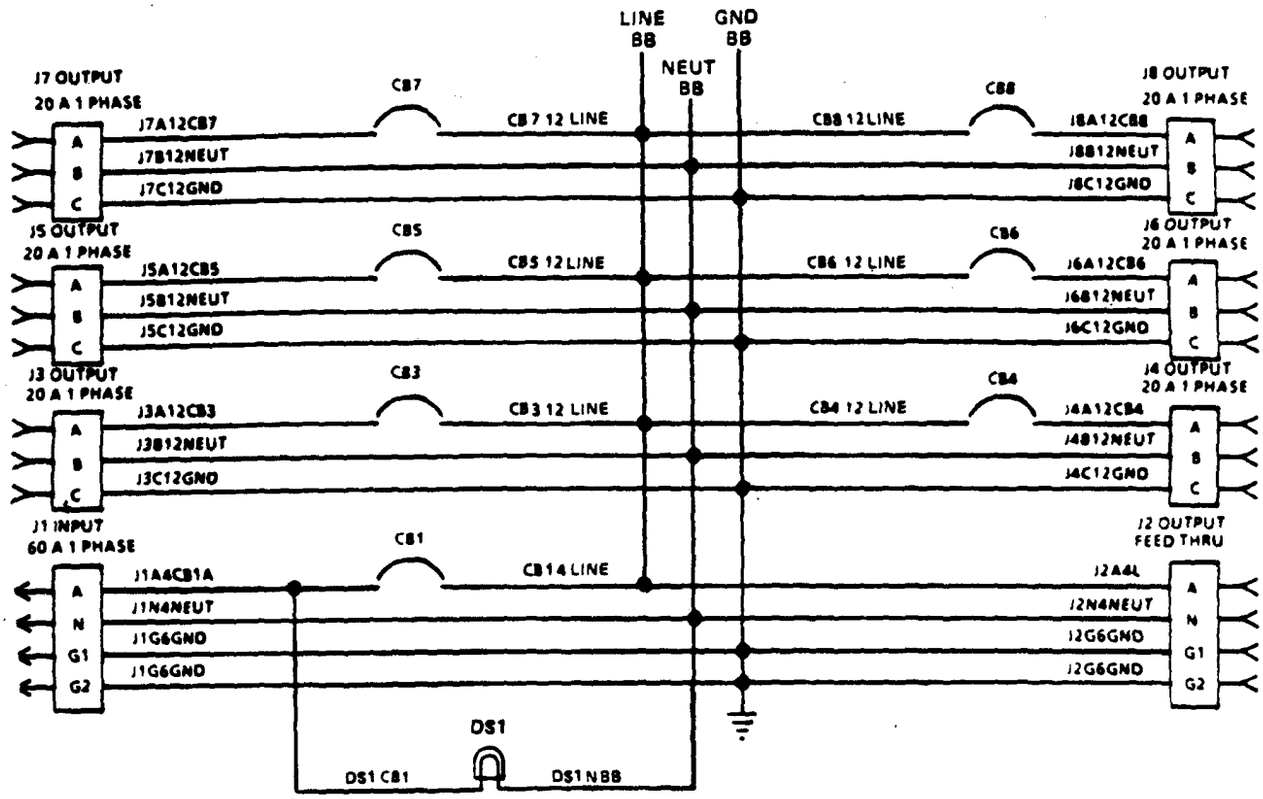


FIGURE 4-8. M60 A/P Distribution Center Wiring Diagram.

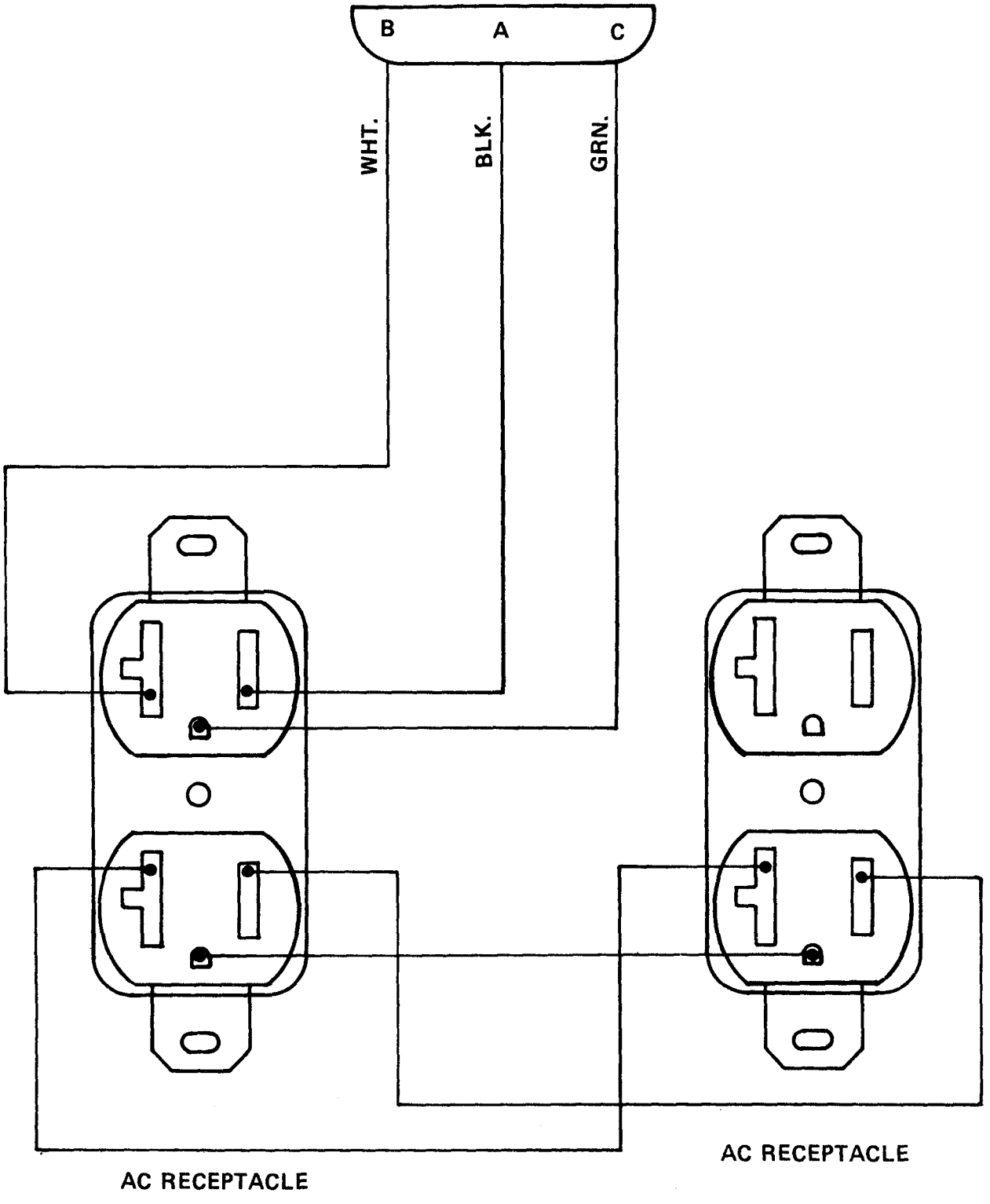


FIGURE 4-9. Duplex Receptacle Wiring Diagram.

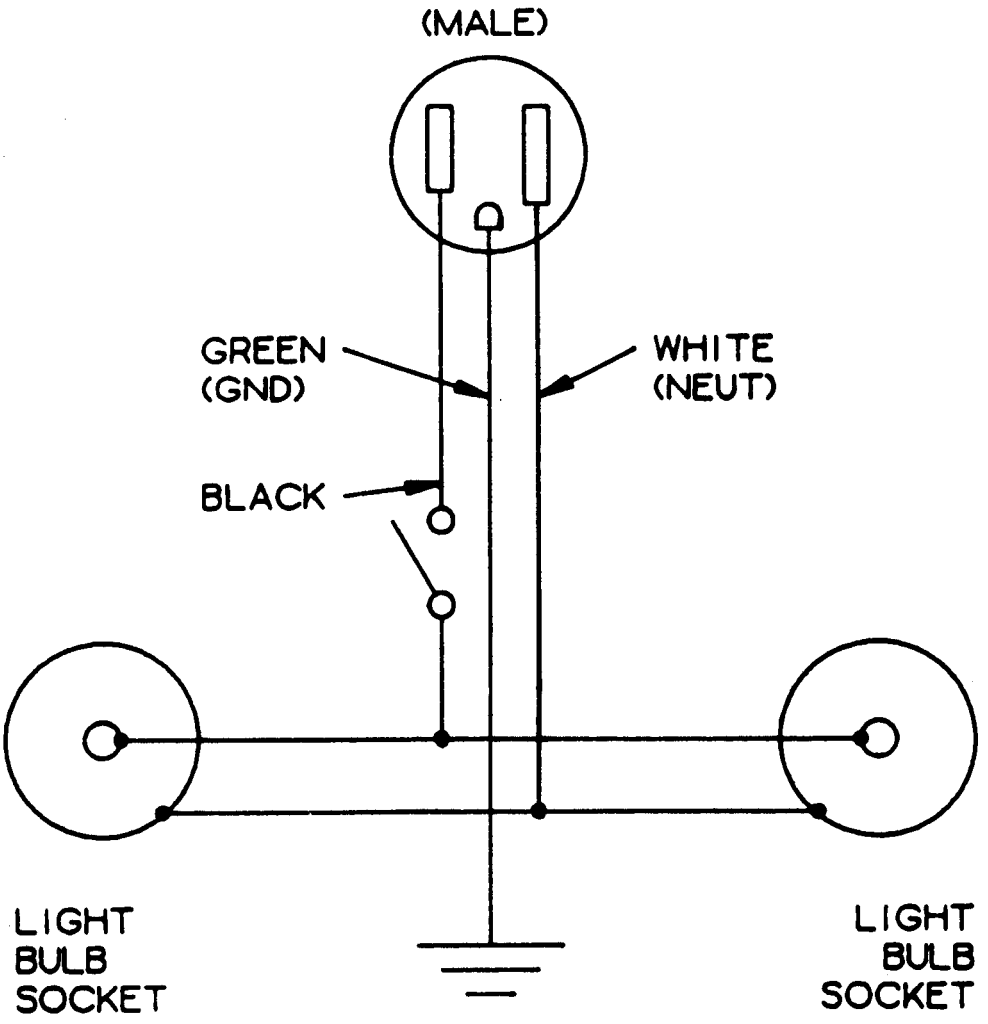


FIGURE 4-10. Incandescent Utility Light Wiring Diagram.

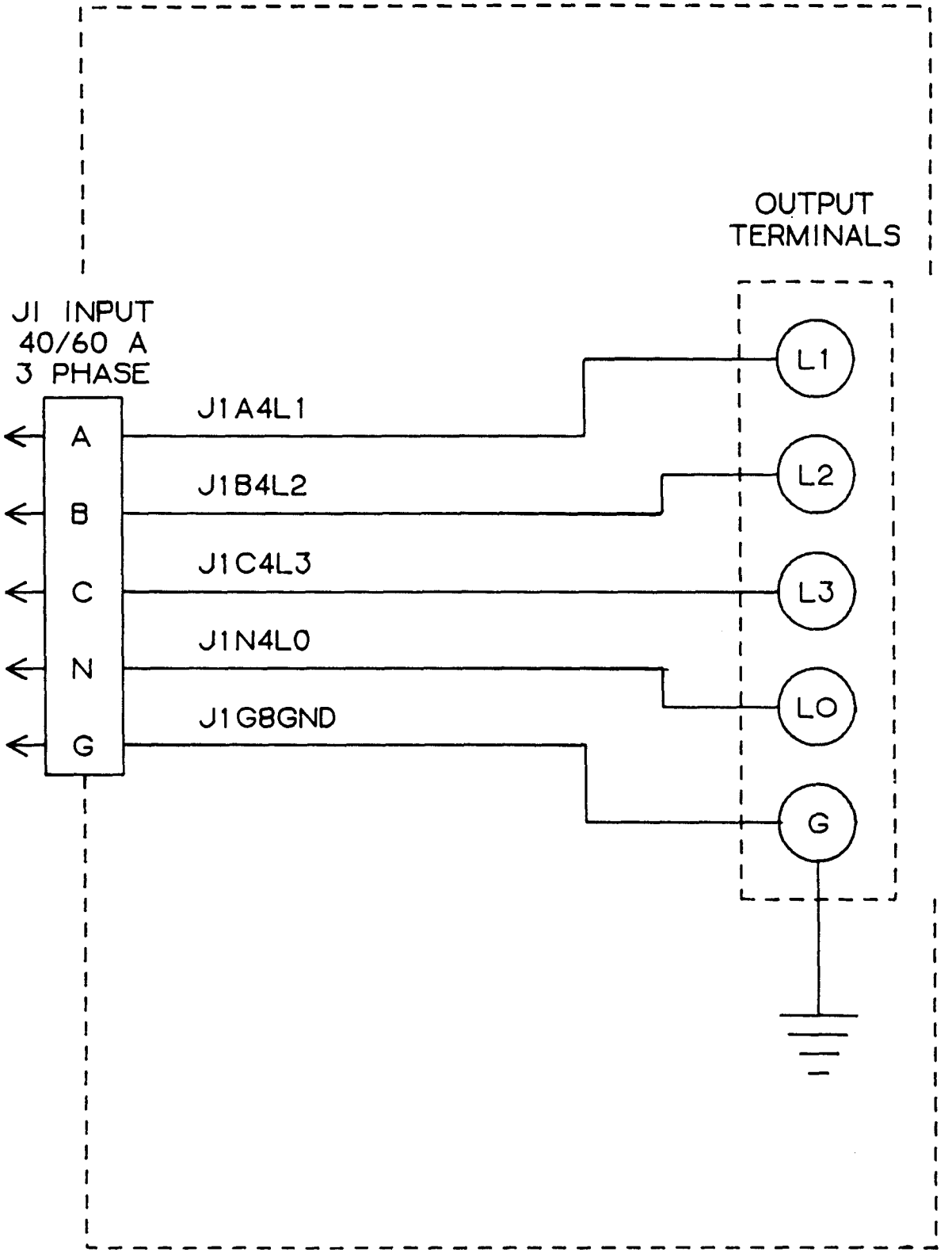


FIGURE 4-11. Universal Adapter Wiring Diagram.

Section V. UNIT MAINTENANCE PROCEDURE

Section Index

4-11. SCOPE MAINTENANCE.

Unit maintenance replaces, repairs, and tests unserviceable components of DISE and PDISE as authorized by the Maintenance Allocation Chart.

4-12. GENERAL.

a. Replace or repair defective components you discover during PMCS.

b. To facilitate assembly and installation, apply identifying tags to mating points of electrical lines when they are disconnected. Figures 4-1 thru 4-11 show complete wiring diagrams for appropriate DISE and PDISE equipment. For example of internal wiring inside the centers, see paragraph 4-10d for identification.

c. Remove only those parts requiring repair or replacement. Tag similar parts to ensure correct assembly. Do not disassemble a component any further than necessary to accomplish needed repairs.

d. Refer to wiring diagrams (Fig. 4-1 thru 4-11) and identifying tags when assembling DISE and PDISE equipment. Wires are marked to aid you in assembly of the feeder/distribution centers.

e. Maintenance procedures are for both the DISE and PDISE equipment. When the procedures for PDISE models (M200 A/P, M1OO A/P, M60 A/P and M40 A/P) are different than DISE models, a note will be listed and PDISE instruction will follow.

4-13. PAINTING.

a. Remove rust, corrosion, and flaked and peeling paint. Ensure surfaces to be painted are dry. Refer to TM 38-230-1, Packaging of Materiel: Preservation.

b. Use masking tape (item 10, App E) and mask connectors and data plates that are not to be painted.

c. Use paint (item 7, App E) and paint surfaces as required to protect against deterioration. Refer to TM 43-0139, Painting Instructions for Army Materiel.

CAUTION

Torquing of all circuit breaker lugs must be performed in accordance with Appendix G, Table G-1.

MAINTENANCE OF FEEDER/DISTRIBUTION CENTER ENCLOSURE ASSEMBLIES

4-14 LANYARD, PANEL BOARD, AND CIRCUIT BREAKERS.

This task covers:

a. Replacement

b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Screwdriver, flat tip, 3/8-inch,
12-inch length

General Safety Instructions

WARNING

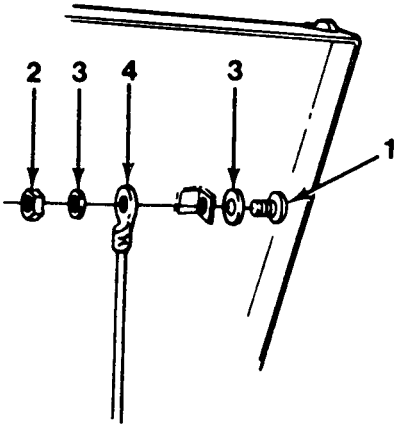
High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a circuit breaker with the power on. Death or serious injury may result.

REPLACEMENT

CAUTION

Failure to support the lid after lanyards are removed may result in damage to the hinges.

1. REMOVE LANYARDS.
Remove screws (1), nuts (2), washers (3), and lanyards (4) from box and lid.



4-14 LANYARD, PANEL BOARD, AND CIRCUIT BREAKERS. (cont)

2. REMOVE COVER PANELS.

NOTE

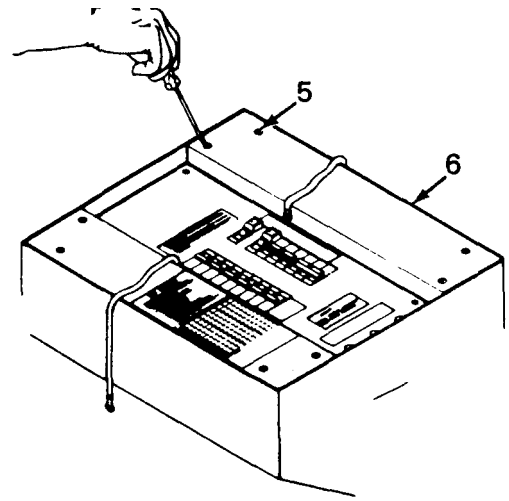
If you have PDISE equipment follow instructions in 2c and d.

a. Remove screws (5) securing inspection cover (6) to distribution center.

b. Remove inspection cover (6).

c. Remove screws (7) securing panel cover (8) to distribution center.

d. Remove panel cover (8).

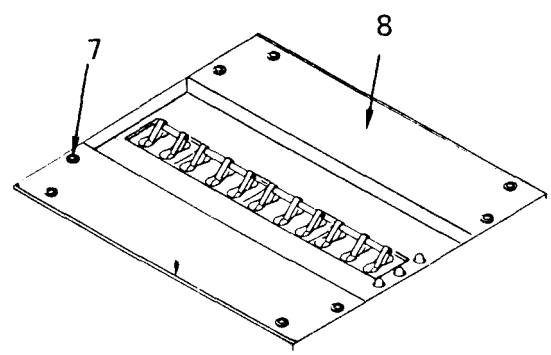


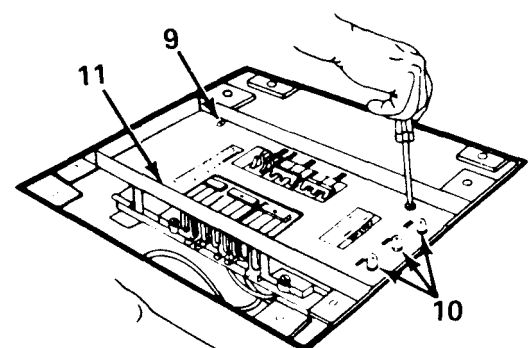
3. REMOVE CIRCUIT BREAKER PANEL.

DISE only

a. Remove screws (9) securing panel to bus bar assembly. Tag and disconnect phase indicator lights (10) from circuit breaker and neutral bus bar.

b. Remove circuit panel (11).





4. REMOVE CIRCUIT BREAKER.

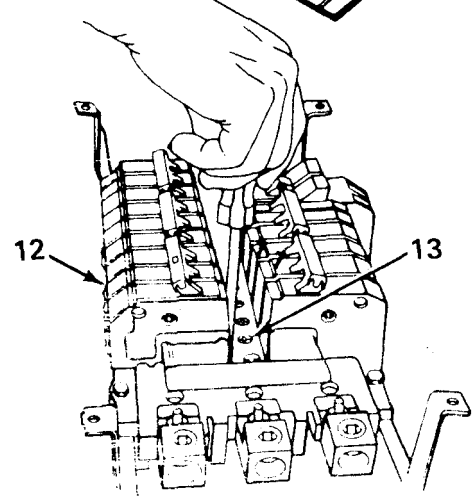
NOTE

If you have PDISE equipment follow instructions in paragraph 4d, e and f.

a. Tag and disconnect internal wiring from circuit breaker (12).

b. Loosen screws (13) securing circuit breaker to bus bar assembly.

c. Tilt circuit breaker (12) away from bus bar assembly and remove circuit breaker.

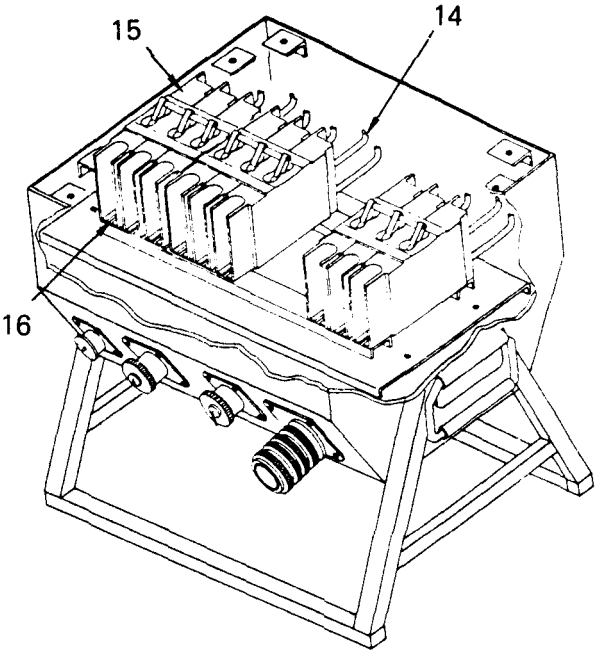


4-14 LANYARD, PANEL BOARD, AND CIRCUIT BREAKERS. (cont)

d. Tag and disconnect the internal wiring (14) from circuit breakers (15).

e. Remove screws (16) securing circuit breakers to support rails.

f. Remove circuit breakers (15) from support rails.



TEST

1. PERFORM CONTINUITY TEST ON CIRCUIT BREAKER.

NOTE

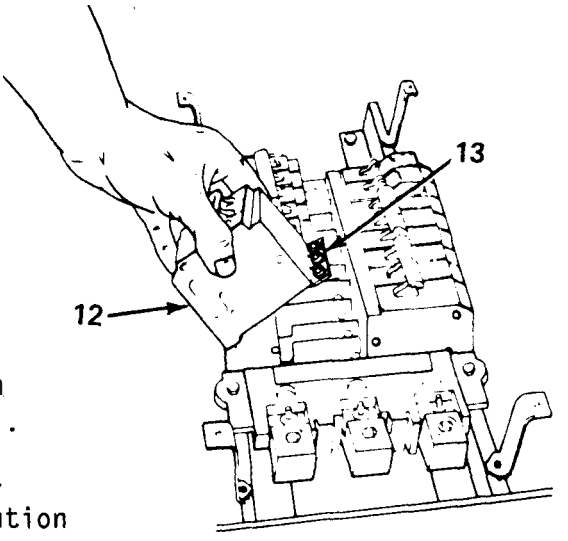
If you have PDISE equipment follow procedures in paragraph 1c and d.

a. Open circuit breaker and check for no continuity.

b. Close circuit breaker and check for continuity.

NOTE

Circuit breaker support rails are marked with phase designations. All circuit breakers must be installed in the correct pole space in order to maintain proper phases.

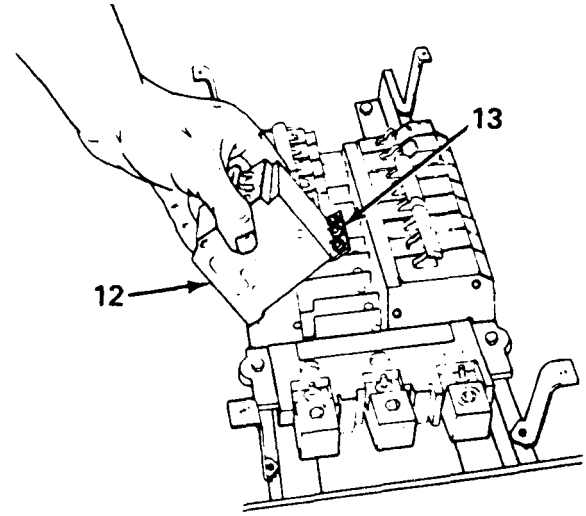


c. Tag and disconnect wiring (14) from right side of circuit breakers (15).

d. Refer to Table 4-4 and perform continuity test on the feeder/distribution center.

4-14 LANYARD, PANEL BOARD, AND CIRCUIT BREAKERS. (cont)

2. INSTALL CIRCUIT BREAKER.



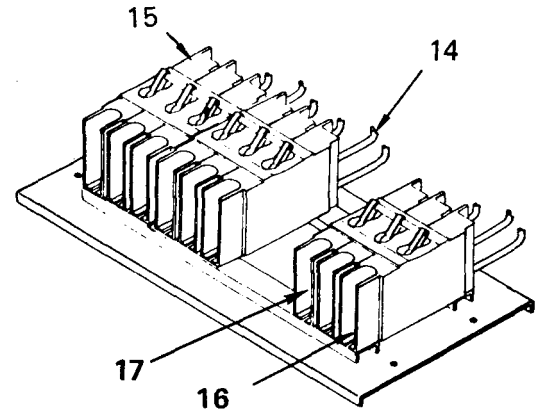
If you have PDISE equipment, follow instructions in paragraph 2c and d.

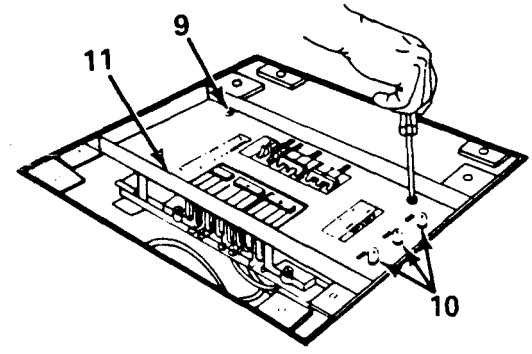
a. Hook circuit breaker (12) on support rail, swing down into place, and secure with screws (13).

b. Connect internal wiring to circuit breaker (12) and remove tags. Torque circuit breaker wire lug in accordance with Table G-1.

c. Place circuit breaker (15) on support rails, and secure with screws (16).

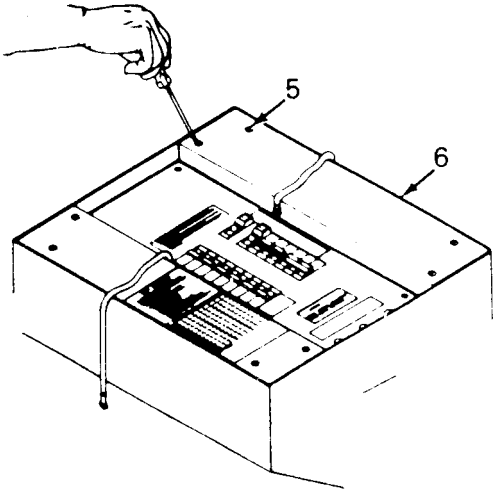
d. Connect internal wires (14) to circuit breaker (15) and remove tags. Torque circuit breaker wire lug (17) in accordance with Table G-1.





4-14 LANYARD, PANEL BOARD, AND CIRCUIT BREAKERS. (cont)

3. PERFORM CONTINUITY TEST.



WARNING

Do not attempt continuity check with the power on. Death or serious injury may result.

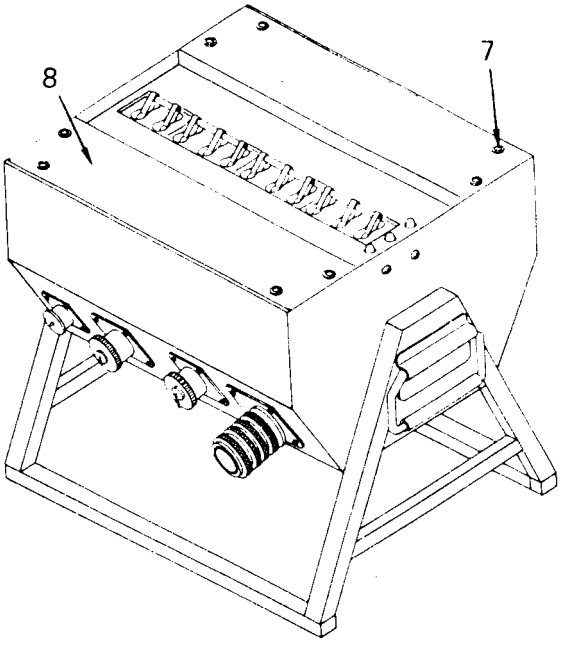
NOTE

If you have PDISE equipment, follow instructions in paragraph 5b and 6.

Refer to Table 4-4 and perform continuity test on the feeder/ distribution center.

4. INSTALL CIRCUIT BREAKER PANEL.

Install circuit breaker panel (11) and secure with screws (9). Connect phase indicator lights (10) and remove tags. Torque bus bar lugs in accordance with Table G-1.



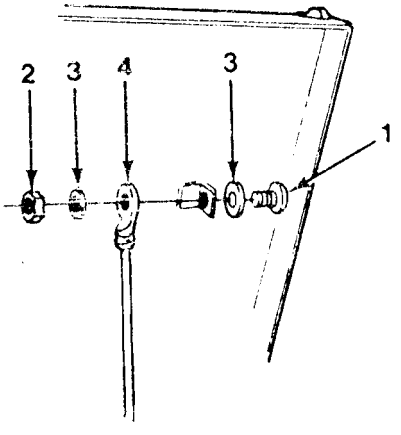
5. INSTALL COVER PANEL.

a. Install inspection cover (6) and secure with screws (5).

b. Install panel cover (8) and secure with screws (7).

6. INSTALL LANYARDS.

Install lanyards (4) on box and lid and secure with washers (3), nuts (2), and screws (1).



4-15 CONNECTOR ASSEMBLY - DISE and PDISE.

This task covers:

a. Replacement b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Equipment Conditions

Reference
Paragraph 4-14, cover and circuit breaker panels removed,

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE CONNECTORS.

NOTE

When disconnecting or connecting wires to bus bar terminal, it is necessary to remove circuit breaker assembly for PDISE. Refer to paragraph 4-17.

4-15 CONNECTOR ASSEMBLY. (cont)

a. Tag and disconnect receptacle/plug wiring from circuit breaker and bus bar terminals

b. Remove screw (1) securing receptacle/plug and gasket (2) and remove connector,

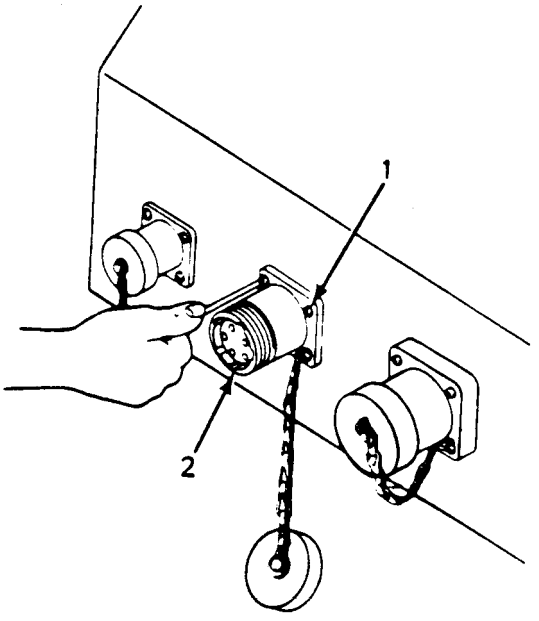
2. INSTALL CONNECTOR.

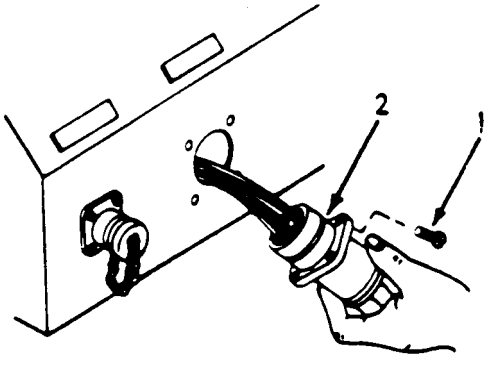
a. Install receptacle/plug and gasket (2) in mounting hole and secure with screw (1).

b. Connect receptacle/plug wiring and remove tags. Remove tags and torque terminal lugs in accordance with Table G-1.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity check with the power on. Death or severe injury may result.





TEST

PERFORM CONTINUITY TEST

Refer to Table 4-4 and perform continuity test on the feeder/distribution center.

FOLLOW-ON MAINTENANCE: Install cover panel, circuit breaker assembly, and lanyards (para 4-14).

4-16 PHASE INDICATOR LIGHT ASSEMBLY AND BULB.

This task covers:

Replacement

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC5180-90-CL-N26

Equipment Conditions

Reference
Paragraph 4-14, cover and circuit breaker panels removed for DISE and DPISE.
Paragraph 4-17 Circuit Breaker Assembly removed for PDISE only.

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

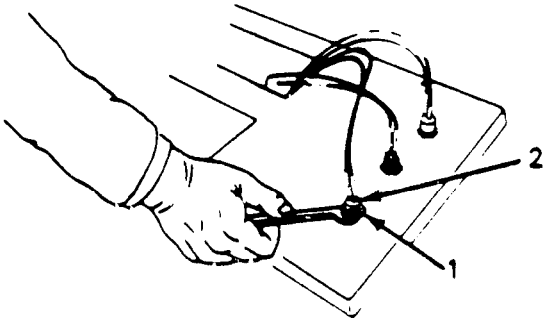
REPLACEMENT

NOTE

If you have PDISE equipment, follow instructions in paragraph 2e, f, g and h.

1. REPLACE PHASE INDICATOR, LIGHT BULB.

Unscrew colored lens and replace bulb.



4-16 PHASE INDICATOR LIGHT ASSEMBLY AND BULB. (cont)

2. REMOVE PHASE INDICATOR LIGHT ASSEMBLY.

a. Disconnect phase light wiring from bus bar.

b. Invert circuit breaker panel.

c. Loosen and remove hardware (1).

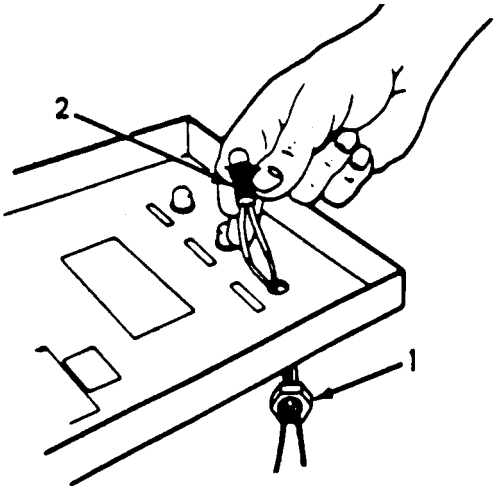
d. Lift out phase indicator light assembly (Z) from front of panel.

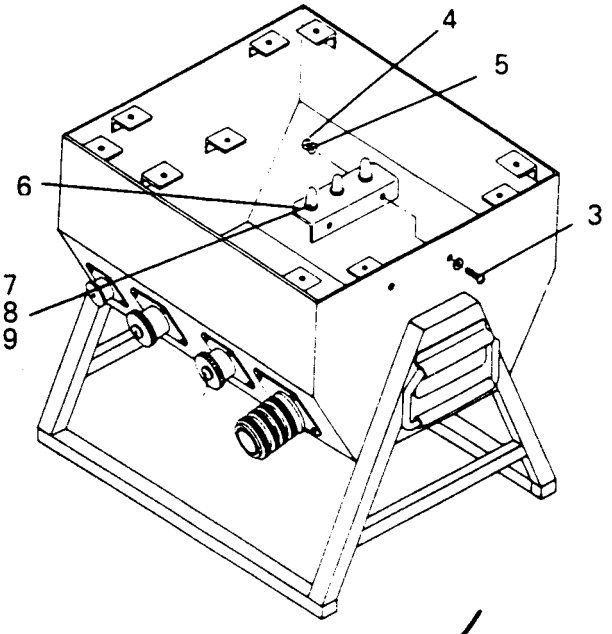
e. Disconnect phase light wiring from bus bars.

f. Remove screws (3), nuts (4) and washers (5) from light bracket mounting (6).

g. Remove nut (7) and washer (8) from phase indicator light (9).

h. Lift out phase indicator light (9) from light bracket mounting (6).





3. INSTALL NEW PHASE INDICATOR LIGHT.

NOTE

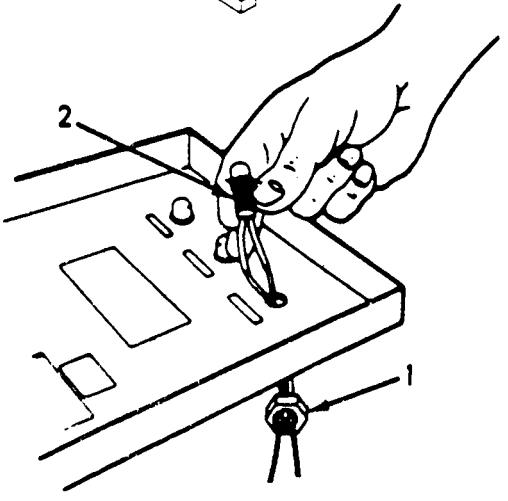
If you have PDISE equipment, follow instructions in paragraph 3d, e, f, g and h.

a. Insert phase indicator light (2) through front of panel.

b. Install and tighten hardware (1) on phase indicator light.

c. Connect phase light wiring to bus bar.

FOLLOW-ON MAINTENANCE:
Install cover panel, circuit breaker panel, and lanyards (para 4-14).



4-16 PHASE INDICATOR LIGHT ASSEMBLY AND BULB. (cont)

d. Insert phase indicator light (9) through top of light bracket mounting (6).

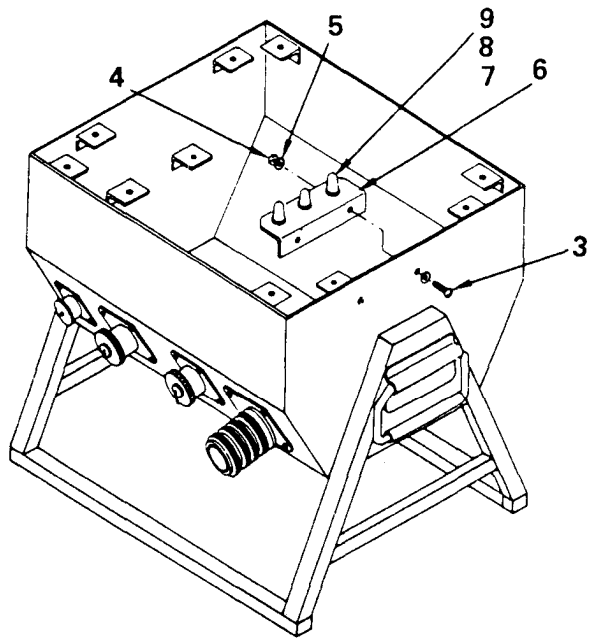
e. Install washer (8) and tighten nut (7).

f. Install washers (5) and tighten nuts (4).

g. Install screws (3) in light bracket mounting (6) and tighten.

h. Connect phase light wire to bus bar.

FOLLOW-ON MAINTENANCE: Install cover panel and lanyard (para. 4-14).



4-17 CIRCUIT BREAKER ASSEMBLY AND BUS BAR.

This task covers:

a. Replacement b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Equipment Conditions

Reference
Paragraph 4-14, cover and circuit breaker panels removed. PDISE equipment paragraph 4-16, Phase Indicator light removed.

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE CIRCUIT BREAKER ASSEMBLY.

CAUTION

Ground fault circuit breaker have the panel neutral wire permanently attached inside the circuit breaker. Disconnect this wire at the bus bar.

4-17 CIRCUIT BREAKER ASSEMBLY AND BUS BAR. (cont)

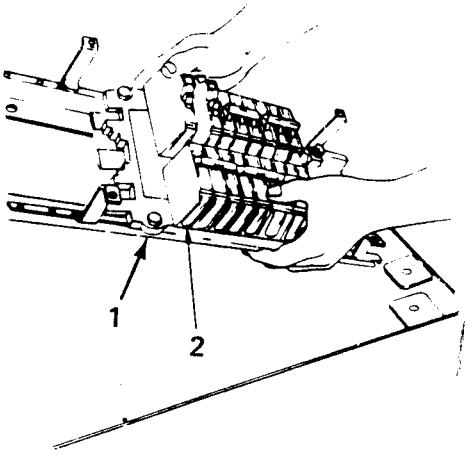
NOTE

If you have PDISE equipment, follow instructions in paragraph 1d, e, f and g.

a. Tag and disconnect wiring from circuit breakers and bus bars.

b. Remove screw (1) securing circuit breaker assembly.

c. Remove circuit breaker assembly (2) from feeder/ distribution center.



NOTE

M60 A/P has only Phase A.

d. Tag and disconnect wiring J1, A, B and C (3) from circuit breaker 1 (4).

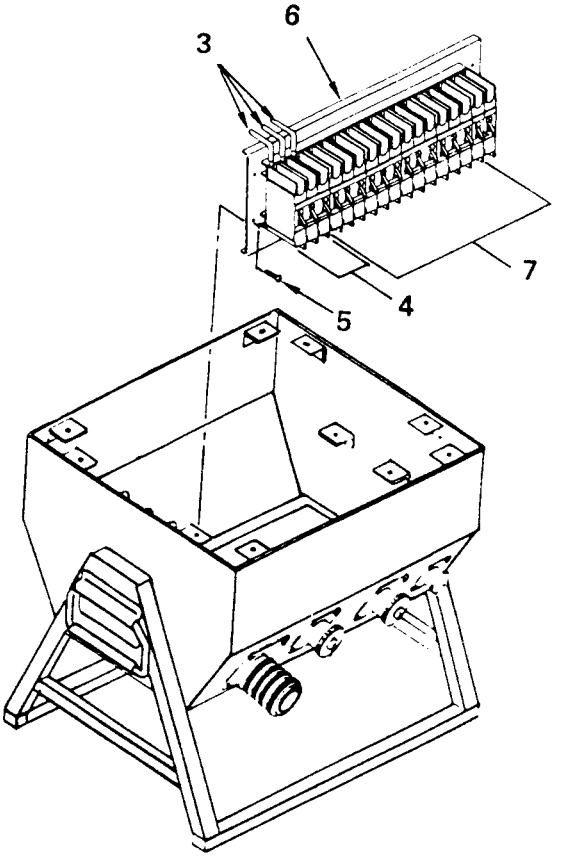
e. Remove screws (5) securing circuit breaker assembly (6).

NOTE

On model M100 A/P remove circuit breaker 8 for access to mounting screw.

f. Tag and disconnect wiring from circuit breakers 3,4, 5,6,7,8 (7) and J2, A, B and C from bus bars L1, L2 and L3.

g. Tilt circuit breaker assembly (6) clockwise for exposure.



2. REMOVE BUS BAR.

NOTE

If you have PDISE equip ment, follow instructions in paragraph 2c, d, e, f and g.

4-17 CIRCUIT BREAKER ASSEMBLY AND BUS BAR. (cont)

NOTE

When removing ground bus bar, disconnect and remove ground strap connecting bus bar to enclosure.

a. Tag and disconnect wiring (8) from bus bar terminals (9).

b. Remove nut (10) securing bus bar (9) to feeder/distribution center. Remove bus bar.

c. Tag and disconnect wiring (11) from three phase bus bars (12).

d. Remove screws (13) securing bus bars. Remove bus bars.

e. Tag and disconnect wiring (14) from ground (15) and neutral (16) bus bars.

f. Remove screws (17), nuts (18) and washers (19) securing bus bars. Remove bus bars.

g. Remove screw (20), nut (18), and washer (19) securing ground strap.

3. INSTALL BUS BAR.

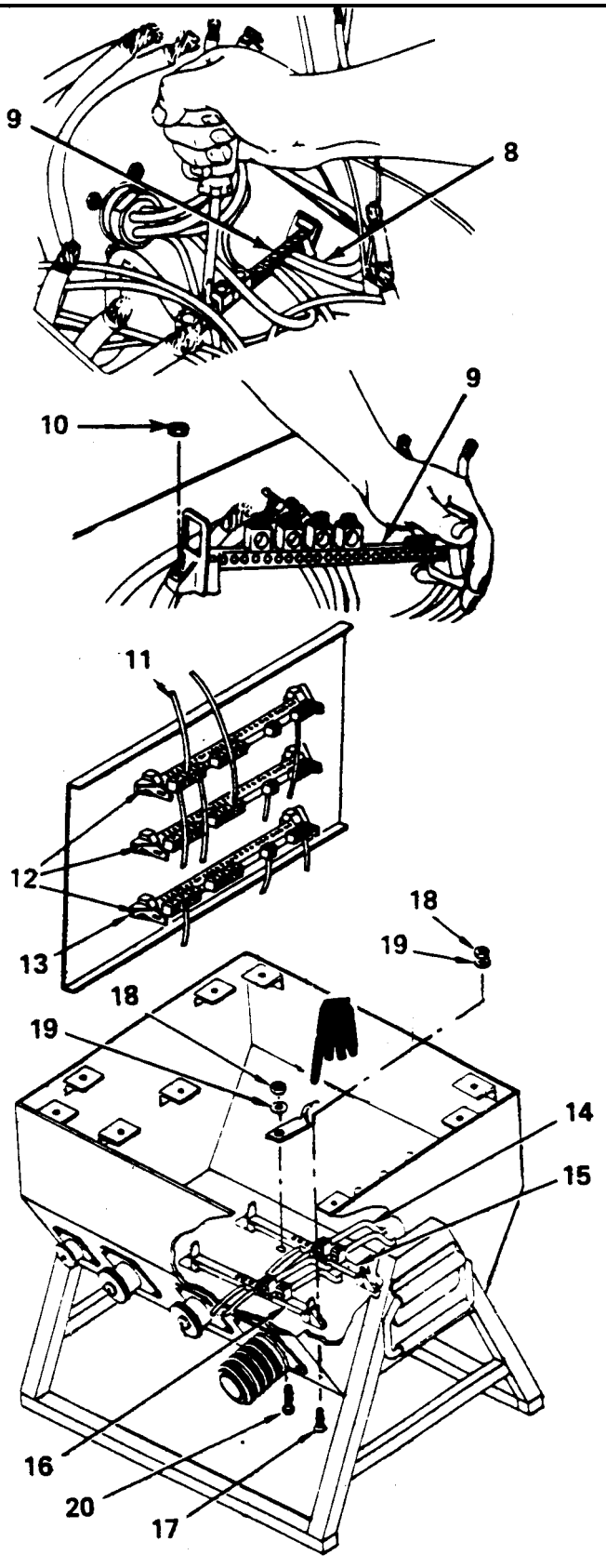
NOTE

If you have PDISE equipment, follow instructions in paragraph 3c, d, e and f.

a. Install bus bar (9) and secure with nut (10).

b. Solder dip or solder gun wire ends, not to exceed .025 inches, using Kester Solder MIL Spec No. QQ-S-571 (Sn 60 Pb 40).

c. Refer to tags and connect wiring (8) to bus bar terminals (9). Remove tags and torque terminals in accordance with table G-1.



4-17 CIRCUIT BREAKER ASSEMBLY AND BUS BAR. (cont)

d. Install neutral (16), and ground (12) bus bars and secure with screws (17), washers (19) nuts (18).

e. Install screw (20), washer (19), and nut (18) securing ground strap.

f. Refer to tags and connect wiring (14) to bus bars.

g. Secure phase bus bars (12) with screws (13).

h. Refer to tags and connect wiring (11) to bus bars (12). Remove tags and torque terminal lugs in accordance with Table G-1.

4. INSTALL CIRCUIT BREAKER ASSEMBLY.

NOTE

If you have PDISE equipment, follow instructions in paragraph 4c, d and e.

a. Install circuit breaker assembly (2) and secure with screw (1).

b. Solder dip or solder gun wire ends, not to exceed .025 inches, using Kester Solder MIL Spec No. QQ-S-571 (Sn 60 Pb 40)

c. Refer to tags and connect receptacle/plug wiring to circuit breakers. Remove tags and torque in accordance with Table G-1.

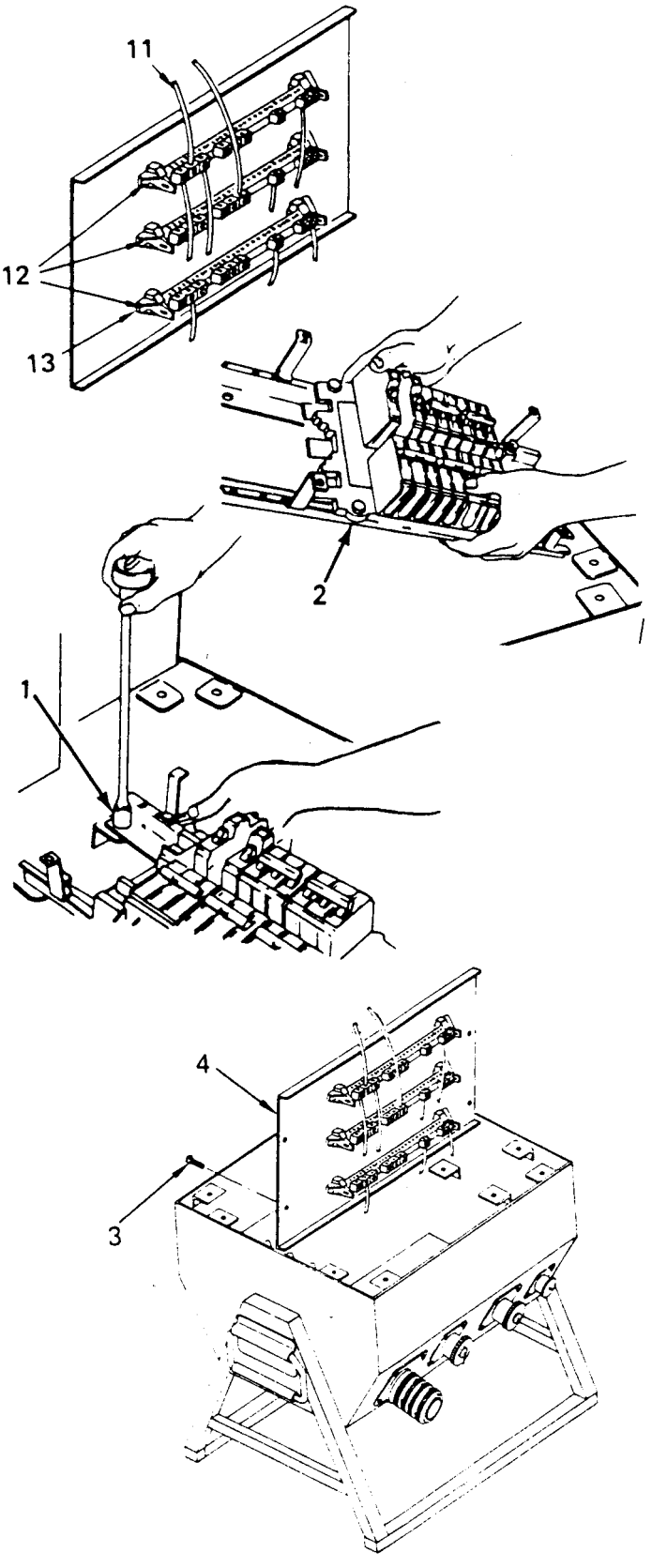
NOTE

Don't secure circuit breaker assembly when performing continuity test.

d. Connect wiring J2, A, B and C to bus bars.

e. Install circuit breaker assembly (4) and secure with screws (3).

f. Refer to tags and connect wiring to circuit breakers.



4-17 CIRCUIT BREAKER ASSEMBLY AND BUS BAR. (cont)

f. Refer to tags and connect wiring to circuit breakers. Remove tags and torque in accordance with Table G-1.

TEST

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity check with the power on. Death or serious injury may result.

PERFORM CONTINUITY TEST.

Refer to Table 4-4 and perform continuity test on the feeder/ distribution center.

FOLLOW-ON MAINTENANCE: Install cover panel, circuit breaker panel, and lanyards (para 4-14).

If you have PDISE equipment. Follow-On Maintenance: Install bracket mounting lights (para. 4-16). Install cover panel, circuit breaker panel and lanyards (para 4-14).

4-18 GASKET.

This task covers:

Replacement

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Equipment Conditions

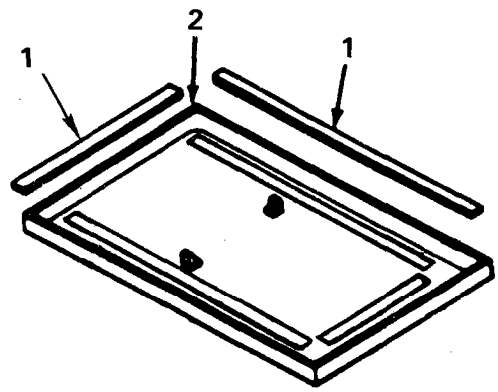
Reference
Paragraph 4-14, lanyards removed.

Materials/Parts

Gasket Cement (item 1, App E)

REPLACEMENT

1. REMOVE GASKET.
   a. Scrape off old gasket (1).
   b. Clean surface of lid with solvent and rag
2. INSTALL GASKET.
   a. Coat surface of gasket (1) with adhesive (Item 1, App E).
   b. On hinged end of lid, place gasket (1) on inside of lip (2).
   c. Place gasket (1) on bottom of lid for other three sides.



FOLLOW ON MAINTENANCE:
Install lanyards (paragraph 4-14).

MAINTENANCE OF RECEPTACLE GROUP

4-19 DUPLEX RECEPTACLE AND CABLE.

This task covers:

a. Replacement

b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Multimeter AN/PSM-45

Materials/Parts

Replacement Parts

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE DOOR ASSEMBLY.

   Remove screws (1) and remove door assembly (2).

2. REMOVE DUPLEX RECEPTACLE.

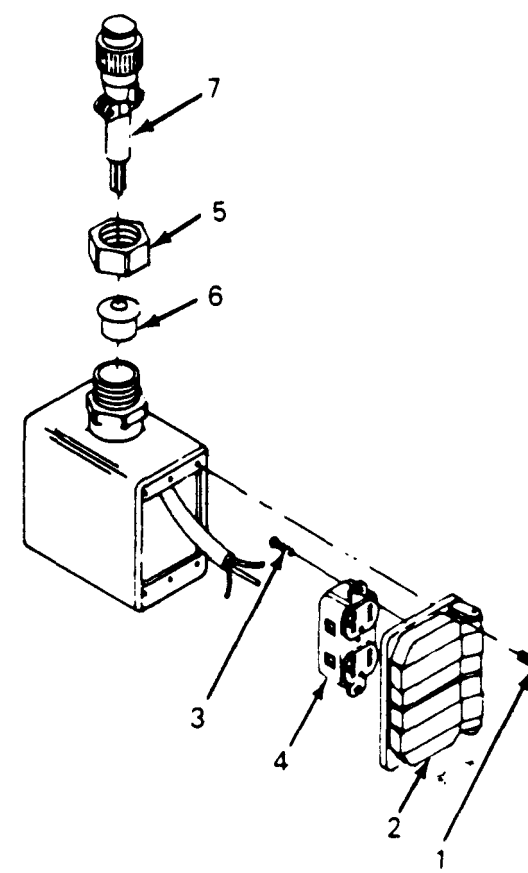
   a. Remove screws (3) and remove duplex receptacle (4) from door assembly (2).

   b. Tag and disconnect wires.

3. REMOVE CABLE ASSEMBLY.

   a. Loosen gland nut (5) and remove gland (6).

   b. Remove cable assembly (7) from receptacle box.



4-19 DUPLEX RECEPTACLE AND CABLE. (cont)

4. REPLACE DEFECTIVE PARTS.

5. INSTALL CABLE ASSEMBLY.

   a. Install cable assembly (7) in receptacle box.

   b. Install gland (6) in place and secure with gland nut (5).

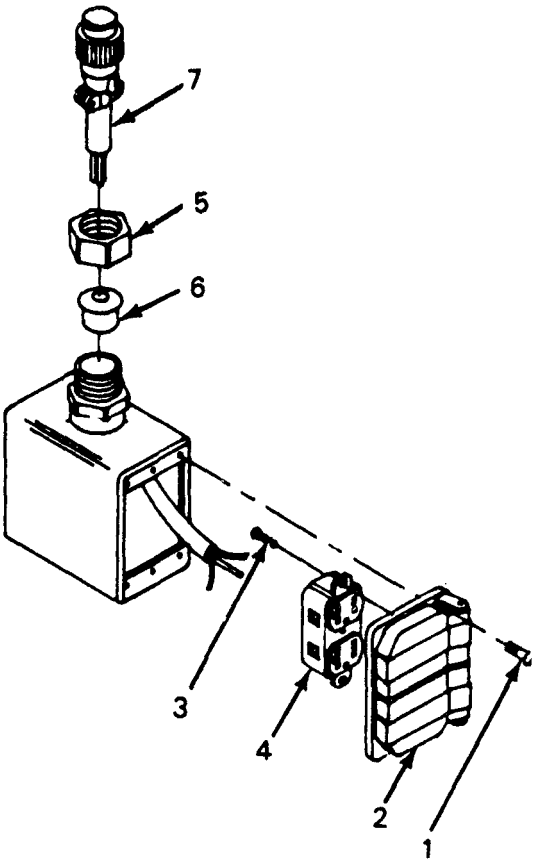
6. INSTALL DUPLEX RECEPTACLE.

   a. Remove tags and connect wires.

   b. Install duplex receptacle (4) on door assembly (2) and secure with screws (3).

7. INSTALL DOOR ASSEMBLY.

   Place door assembly (2) on box and secure with screws (1)



TEST

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity checks with the power on. Death or serious injury may result.

PERFORM CONTINUITY TEST.

Refer to Table 4-5 and perform continuity test on the duplex receptacle.

MAINTENANCE OF DUAL BULB INCANDESCENT UTILITY LIGHT

4-20 PLUG, SWITCH SOCKETS, AND REFLECTOR GUARDS.

This task covers:

a. Repair

b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Multimeter AN/PSM-45

Materials/Parts

Replacement Parts

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPAIR

1. REMOVE PLUGS.

   a. Remove screws (1) securing cable grip (2) and remove cable grip halves.

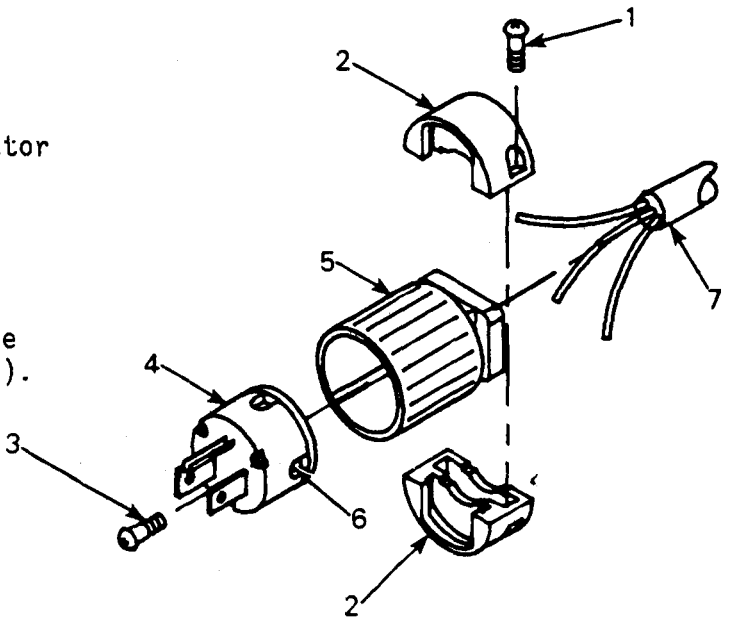
   b. Remove screws (3) securing pin group (4) inside connector body (5).

   c. Remove pin group (4) from connector body (5).

   d. Loosen screws (6) and remove pin group (4) from cable (7).

2. REMOVE METAL GUARDS.

   Loosen screws (8) securing guard (9) and remove guard.



4-20 PLUG, SWITCH SOCKETS, AND REFLECTOR GUARDS. (cont)

3. REMOVE HOOK ASSEMBLY.

   Remove plug (10) and hook assembly (11), if present.

4. REMOVE BULB SOCKETS.

   CAUTION
   Do not distort bulb socket.

   Carefully remove bulb sockets (12) from rubber handle (13).

5. REMOVE SWITCH.

   Remove knurled nut (14) and switch (15).

6. REPLACE DEFECTIVE PARTS.

   Tag wires and replace defective parts as necessary.

7. INSTALL SWITCH.

   Position switch (15) inside rubber handle (13) and secure with knurled nut (14).

8. INSTALL BULB SOCKETS.

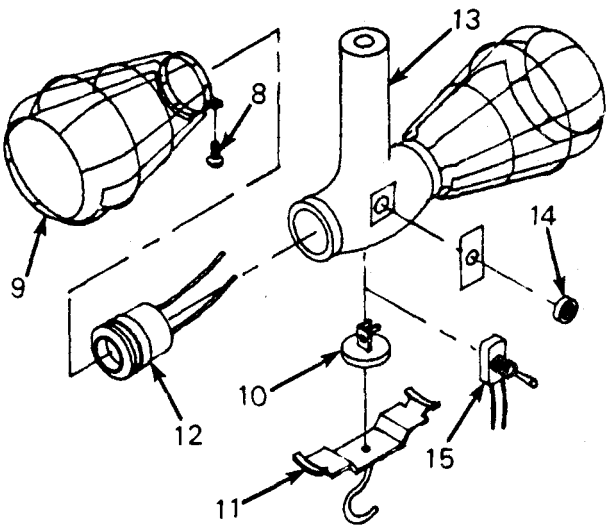
   Press bulb sockets (12) into rubber handle (13).

9. INSTALL HOOK ASSEMBLY.

   Press plug (10) and hook assembly (11), if present, into rubber stock.

10. INSTALL METAL GUARDS.

    Install guard (9) and secure with secure with screws (8).



4-20 PLUG, SWITCH SOCKETS, AND REFLECTOR GUARDS. (cont)

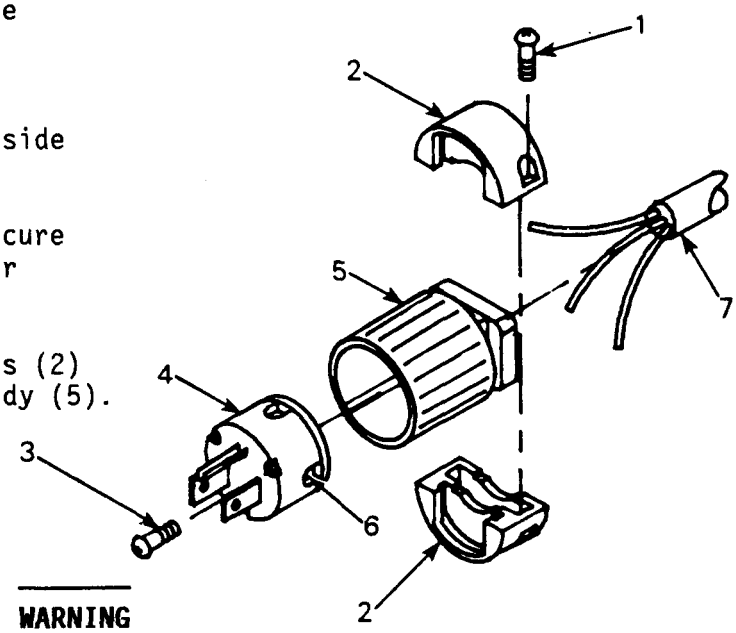
11. INSTALL PLUG.

a. Install connector body (5) and pin group (4) on cable wires (7) and secure with screws (6).

b. Position pin group (4) inside connector body (5).

c. Install screws (3) and secure pin group (4) to connector body (5).

d. Position cable grip halves (2) on cable and connector body (5). Secure with screws (1).



TEST

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity check with the power on. Death or serious injury may result.

PERFORM CONTINUITY TEST.

Refer to Table 4-6 and perform a continuity test on the incandescent utility light.

MAINTENANCE OF UNIVERSAL ADAPTER

4-21 MOUNTING BOARD AND INPUT CONNECTOR.

This task covers:

a. Repair

b. Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Multimeter AN/PSM-45

Materials/Parts

Replacement Connector

Equipment Conditions

Reference
Paragraph 4-14, lanyards removed

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE CONNECTOR.

CAUTION

Failure to support the universal adapter lid may result in damage to the hinges.

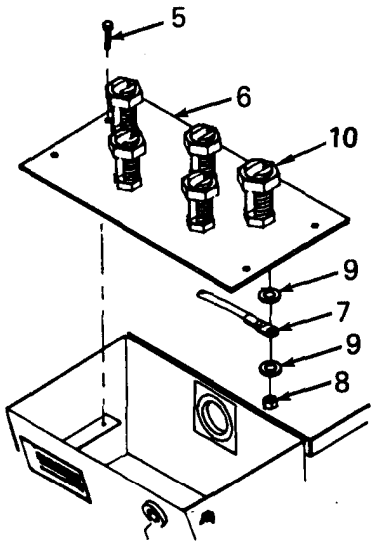
a. Remove bolts (5) securing terminal board (6).

b. Remove terminal board (6) from universal adapter box.

4-21 MOUNTING BOARD AND INPUT CONNECTOR. (cont)

c. Tag wires (7) according to the load terminal connection. Remove nuts (8) and washers (9) and disconnect wires from bottom of load terminals (10).

d. Remove nuts (11), washers (12), and screws (13) securing input connector (14) to box and remove connector.



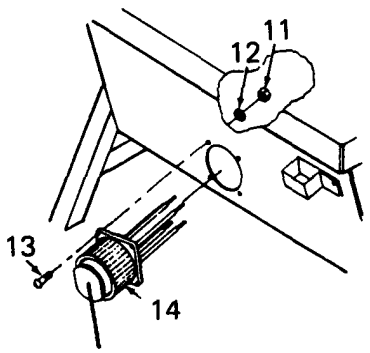
2. INSTALL CONNECTOR.

a. Insert input connector (14) through front of box and secure with nuts (11), washers (12), and screws (13).

b. Connect wires (7) to bottom of load terminals (10). Secure with nuts (8) and washers (9) and remove tags.

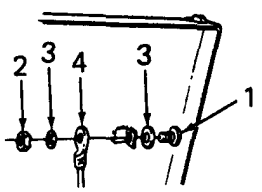
c. Position terminal board (6) inside universal adapter box.

d. Secure terminal board (6) with bolts (5).



FOLLOW-ON MAINTENANCE:
Connect lanyards (para. 4-14).

TEST



WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity check with the power on. Death or serious injury may result.

TEST CONNECTOR.

Perform a continuity test in accordance with Table 4-7.

4-22 DUST AND MOISTURE SLEEVE.

This task covers:

Replacement

INITIAL SETUP

Tool S

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Materials/Parts

Replacement Dust and Moisture Sleeve

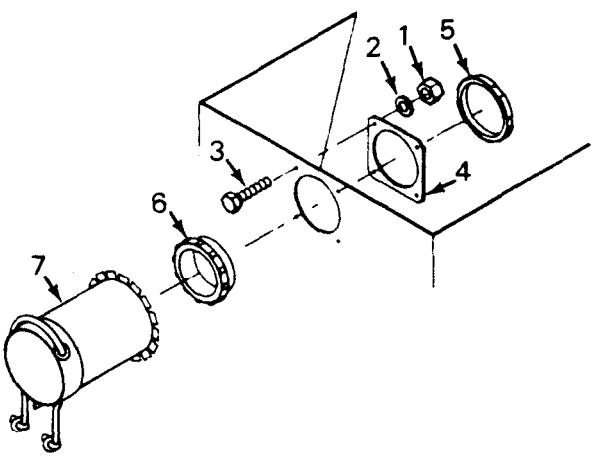
General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE DUST AND MOISTURE SLEEVE.
   a. Remove nuts (1), flat washers (2), and screws (3) securing sleeve plate (4) to enclosure.
   b. Remove locknut (5) and bushing (6).
   c. Remove sleeve plate (4).
   d. Remove dust and moisture sleeve (7).
   e. Replace defective parts.
2. INSTALL DUST AND MOISTURE SLEEVE.
   a. Install dust and moisture sleeve (7) and secure with sleeve plate (4), locknut (5), and bushing (6).



4-22 DUST AND MOISTURE SLEEVE. (cont)

b. Secure sleeve plate (4) with nuts (1), flat washers (2), and screws (3).

4-23 LOAD TERMINAL.

This task covers:

Replacement

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Materials/Parts

Replacement Parts

Equipment Conditions

Reference
Paragraph 4-21, lanyards and terminal mounting board removed.

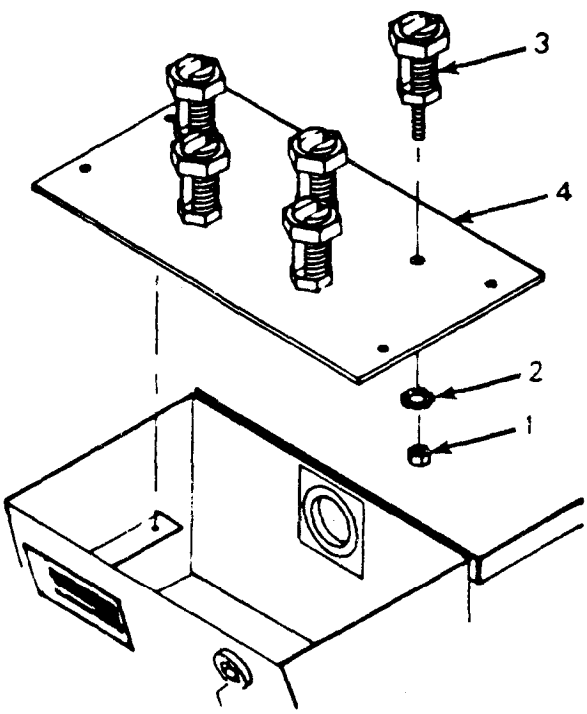
General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE LOAD TERMINAL.
   a. Remove nuts (1) and washers (2) securing load terminal (3) to terminal board (4).
   b. Remove load terminal (3).
2. INSTALL LOAD TERMINAL.
   a. Insert load terminal (3) through terminal board (4).
   b. Secure load terminal (3) to terminal board (4) with nuts (1) and washers (2).



4-23 LOAD TERMINAL. (cont)

NOTE

FOLLOW-ON MAINTENANCE:
Install terminal board lanyards to lid (paragraph 4-21).

MAINTENANCE OF CABLE ASSEMBLIES

4-24 CABLE ASSEMBLY.

This task covers:

Test

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Multimeter AN/PSM-45

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

TEST

PERFORM CONTINUITY TEST.

a. Disconnect both ends of cable from the DISE or PDISE equipment.

b. Refer to paragraph 4-10e and Table 4-8 and perform a continuity test on the cable.

c. If cable is defective, send to next higher level of maintenance.

MAINTENANCE OF ROPE ASSEMBLIES

4-25 ROPE ASSEMBLY.

This task covers:

Replacement

INITIAL SETUP

Tools

None

Materials/Parts

Replacement Slide and Rope

REPLACEMENT

REPLACE **ROPE ASSEMBLY**

MAINTENANCE OF FLUORESCENT LIGHT

4-26 PLUG, SWITCH, SOCKETS, AND LENS.

This task covers:

a. Test

b. Repair

INITIAL SETUP

Tools

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26

Materials/Parts

Replacement Parts

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

Information will be provided when it is available.

Section VI. Preparation for Storage or Shipment

Section Index

4-27. SCOPE.

a. Instructions in this section apply to the DISE and PDISE equipment to prepare it for storage or shipment.

b. Instructions pertaining to administrative storage are covered in SB 740-99-9, storage serviceability standard for TROSCOM material.

c. Placement of equipment in administrative storage should be for short periods of time when a shortage of maintenance effort exists. Items should be in mission readiness within 24 hours or within the item factors as developed by the directing authority. During the storage period appropriate maintenance records will be kept.

d. Before placing equipment in administrative storage, current maintenance services and Equipment Serviceable Criteria (ESC) evaluations should be completed. Shortcomings and deficiencies should be corrected, and all Modification Work Orders (MWOs) should be applied.

e. Storage site selection. Inside is preferred for items selected for administrative storage. If inside storage is not available, trucks, vans, conex containers and other containers may be used.

4-28. PREPARATION FOR STORAGE OR SHIPMENT.

a. Inspection. Perform preventive maintenance checks and services Iisted in Table 4-2.

b. Repair Correct deficiencies noted during the inspection. Refer repairs beyond the scope of unit maintenance to Direct Support Maintenance personnel.

c. Cleaning. Refer to operator PMCS (Table 2-1) for cleaning instructions.

d. Painting.

(1) Remove rust, corrosion, and flaked and peeling paint. Ensure surfaces to be painted are dry. Refer to TM 38-230-1, Packaging of Materiel: Preservation.

(2) Mask connectors and data plates, that are not to be painted, with masking tape (item 10, App E).

(3) Paint surface (item 7, App E), as required, to protect against deterioration. Refer to TM 43-0139, Painting Instructions for Army Materiel.

e. Packaging. Refer to TM 38-230-2, Packing.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Chapter Index

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

Section Index

5-1. INTRODUCTION.

MOS 52D, Power Generator equipment repairer, is authorized to perform all direct support maintenance on DISE/PDISE equipment.

5-2. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-3. SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT.

Refer to Appendix B, Maintenance Allocation Chart (MAC); TM 9-6150-226-23P, Repair Parts and Special Tools List; and paragraph 5-9c for a list of special tools, TMDE, and support equipment for direct support maintenance.

5-4. REPAIR PARTS.

Repair Parts are listed and illustrated in TM 9-6150-226-23P for DISE and PDISE equipment.

Section II. DIRECT SUPPORT TROUBLESHOOTING

Section Index

5-5. SCOPE TROUBLESHOOTING.

This section contains troubleshooting information and tests for locating and correcting malfunctions in the DISE/PDISE equipment. Fault isolation is limited to those components authorized for repair or replacement at the direct support or lower maintenance levels in accordance with the MAC, and will refer the maintenance technician to the technical manual for generator set faults.

5-6. TROUBLESHOOTING.

The troubleshooting table lists the common malfunctions which you may find during the operation or maintenance of DISE/PDISE or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. The manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed actions, notify your supervisor.

c. Troubleshooting Instructions. Direct support troubleshooting lists the common malfunctions which can occur during the operation of the DISE and PDISE equipment. Each malfunction is followed by a list of tests or inspections which will help to determine corrective actions to take.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not attempt continuity checks with the power on. Death or serious injury may result.

d. Electrical Fault Isolation. To isolate a short or open circuit, use a multimeter (item 3, App B). Refer to Table 5-1 and the appropriate DISE or PDISE cable continuity checklist in Table 4-8 and measure continuity. A measurement of continuity between two points listed in the tables as having no continuity indicates a short circuit. A measurement of no continuity between two points listed in the tables as having continuity indicates an open circuit.

NOTE

Before using Table 5-1, be sure all applicable operator and organizational checks have been performed.

Table 5-1. DIRECT SUPPORT TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
SYSTEM CABLE WILL NOT CARRY CURRENT OR TRIPS CIRCUIT BREAKER.
Step 1. Check continuity between corresponding letters of pins and sockets of male and female connectors (see Table 4-8). No continuity indicates an open wire. Repair/replace defective cable.
Step 2. Check continuity between different letters of pins and sockets of male and female connectors (see Table 4-8). Continuity indicates a short between wires. Repair/replace shorted cable.

Section III. DIRECT SUPPORT MAINTENANCE PROCEDURES

Section Index

5-7. SCOPE MAINTENANCE.

Direct support maintenance replaces and repairs unserviceable components of DISE and PDISE as authorized by the Maintenance Allocation Chart (MAC).

5-8. GENERAL.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not perform maintenance procedures with cables connected to power. Death or serious injury may result.

a. This section provides the procedures to be followed in the testing, repair, and fabrication of DISE and PDISE cable assemblies to the extent authorized at the direct support maintenance level by the Maintenance Allocation Chart (MAC).

b. DISE and PDISE cables are designed for use in moist climatic conditions; cable splices are unauthorized. Cable assembly repair is limited to shortening the cable by cutting off the damaged portion and reattaching the connector.

c. Determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

5-9. MAINTENANCE PROCEDURES.

a. Wire Color Codes.

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be color coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with identified color.

CAUTION

When installing both a male and a female connector on a length of bulk cable, the connectors must be installed on particular cable ends so that the wire colors match the connector pin/socket positions as indicated in step (1) below.

(1) DISE and PDISE service/feeder and pigtail cable wires are tagged with color-coded tape and pin matched (Fig. 5-1 thru 5-3) as follows:

(a) Phase line A (L1) - black wire connects to pin/socket marked A.

(b) Phase line B (L2) - red wire connects to pin/socket marked B.

(c) Phase line C (L3) - blue wire connects to pin/socket marked C.

(d) Neutral line (LO) - white wire connects to pin/socket marked N.

NOTE

If there are one or more ground wires, connect to pins marked G1, G2, G3, or G4 as applicable.

(e) Ground lines - green (or bare) wires connect to pins/sockets marked G.

(2) DISE and PDISE extension and branch cable wires are color coded and pin matched (Fig. 5-4) as follows:

(a) Phase line - black wire connects to pin/socket marked A.

(b) Neutral line - white wire connects to pin/socket marked B.

(c) Ground line - green wire connects to pin/socket marked C.

b. Keyway and Pin Positions. The key and pins of the plug connectors (male) and the keyways and sockets of the receptacle connectors (female) must be properly positioned to ensure a correct phase match. Refer to the following to determine the proper position when you assemble a connector.

(1) For 100- and 200-amp, 8-wire connectors, see Figure 5-1.

(2) For 40/60-amp, 5-wire connectors, see Figure 5-2.

(3) For 60-amp, 4-wire connectors, see Figure 5-3.

(4) For 20-amp, 3-wire connectors, see Figure 5-4.

c. Connector Crimping Tools. The cable and wall mount connectors have pins (male) or sockets (female) that attach to the wires with a four-indent crimp. Table 5-2 identifies which tools to use to crimp each type and size of connector. Table 5-3 lists the various insert, removal, locator, and crimp tools you need (also refer to TM 9-6150-226-23P).

d. Removal of Cable Insulation. When installing electrical connectors to cable ends, cut and remove cable jacket and insulation as follows:

NOTE

The following cut of the outer cable jacket must be made so that each of the eight conductors extends 4 ± 1/16 inches (102 ± 1.6 mm) from the jacket cut. If a conductor is out of tolerance, the 200-amp connector cannot be assembled.

(1) 200-Amp, 8-Wire, Cables.

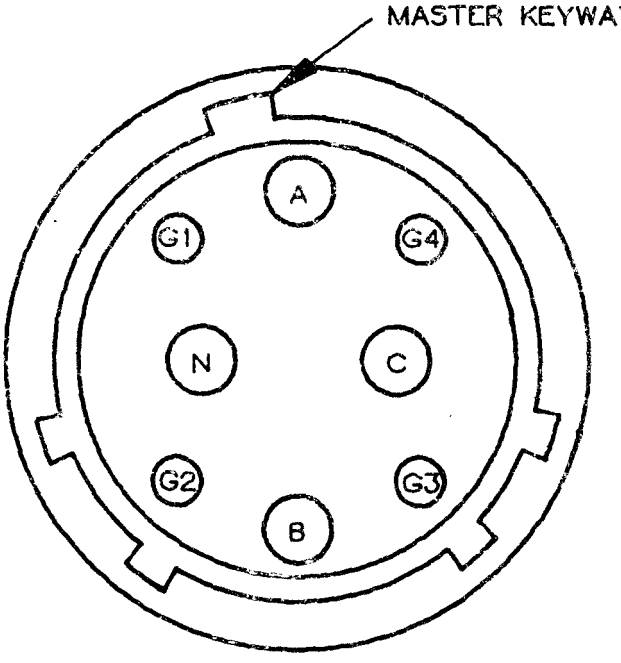
(a) Carefully cut and remove 4 inches (102 mm) of outer cable jacket from end of cable.

(b) Carefully cut and remove 7/8 inch (22 mm) of conductor insulation from end of each conductor.

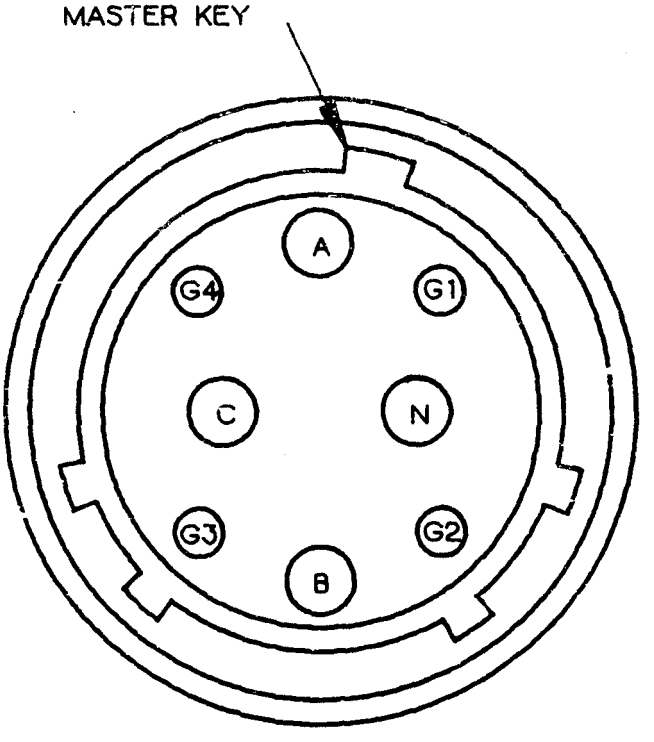
(c) Attach electrical connector to cable end.

NOTE:

FIGURE SHOWS VIEW FROM END OF CONNECTORS.



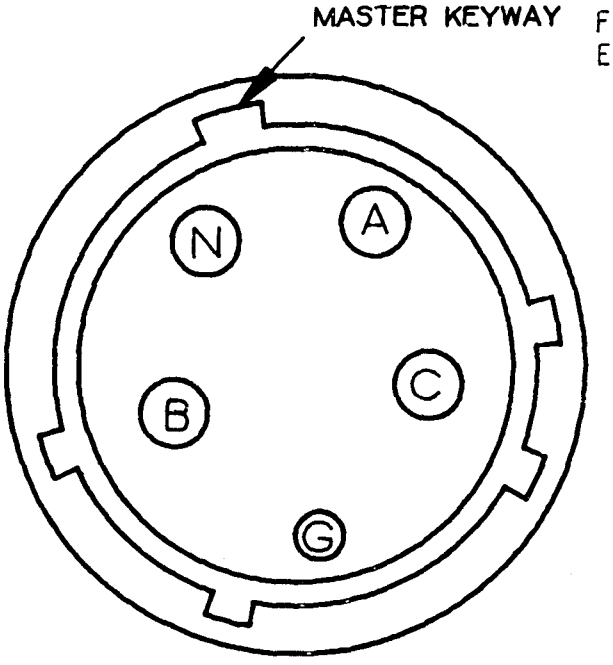
RECEPTACLE CONNECTOR (FEMALE)



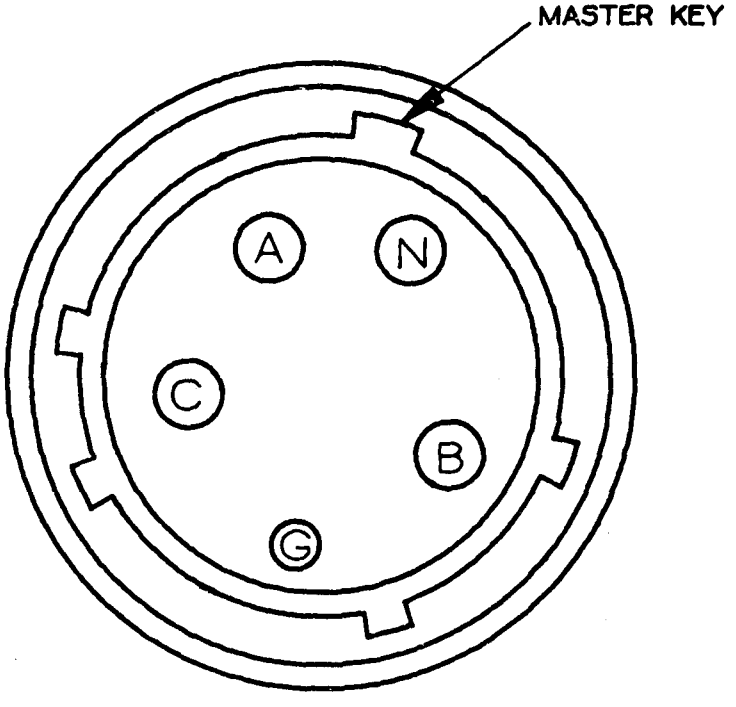
PLUG CONNECTOR (MALE)

FIGURE 5-1. 100- and 200-amp, 8-wire connector faces.

NOTE:
FIGURE SHOWS VIEW FROM END OF CONNECTORS.



P2 CONNECTOR (FEMALE)

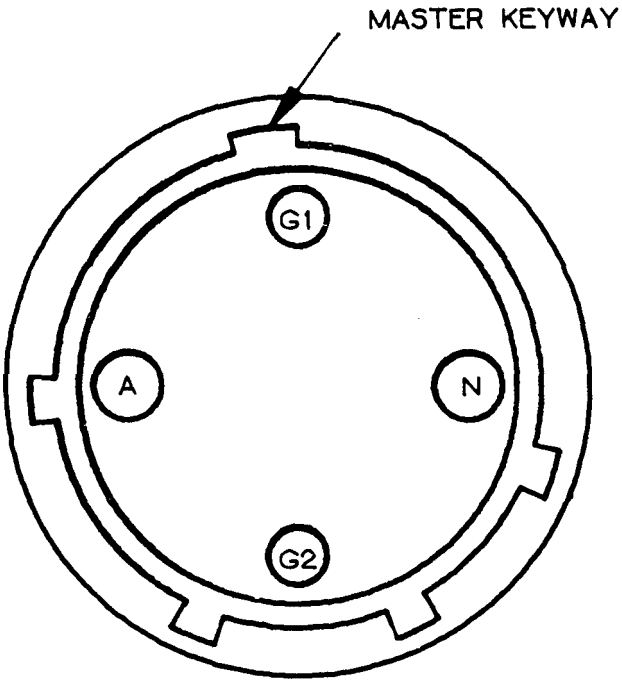


P1 CONNECTOR (MALE)

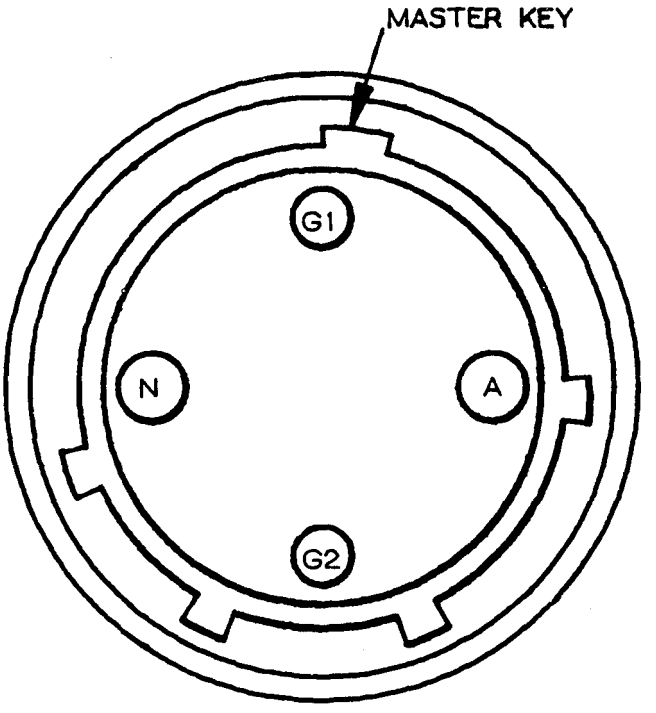
FIGURE 5-2. 40/60-amp, 5-wire connector faces.

NOTE:

FIGURE SHOWS VIEW FROM END OF CONNECTORS.



RECEPTACLE CONNECTOR (FEMALE)



PLUG CONNECTOR (MALE)

FIGURE 5-3. 60-amp, 4-wire connector faces.

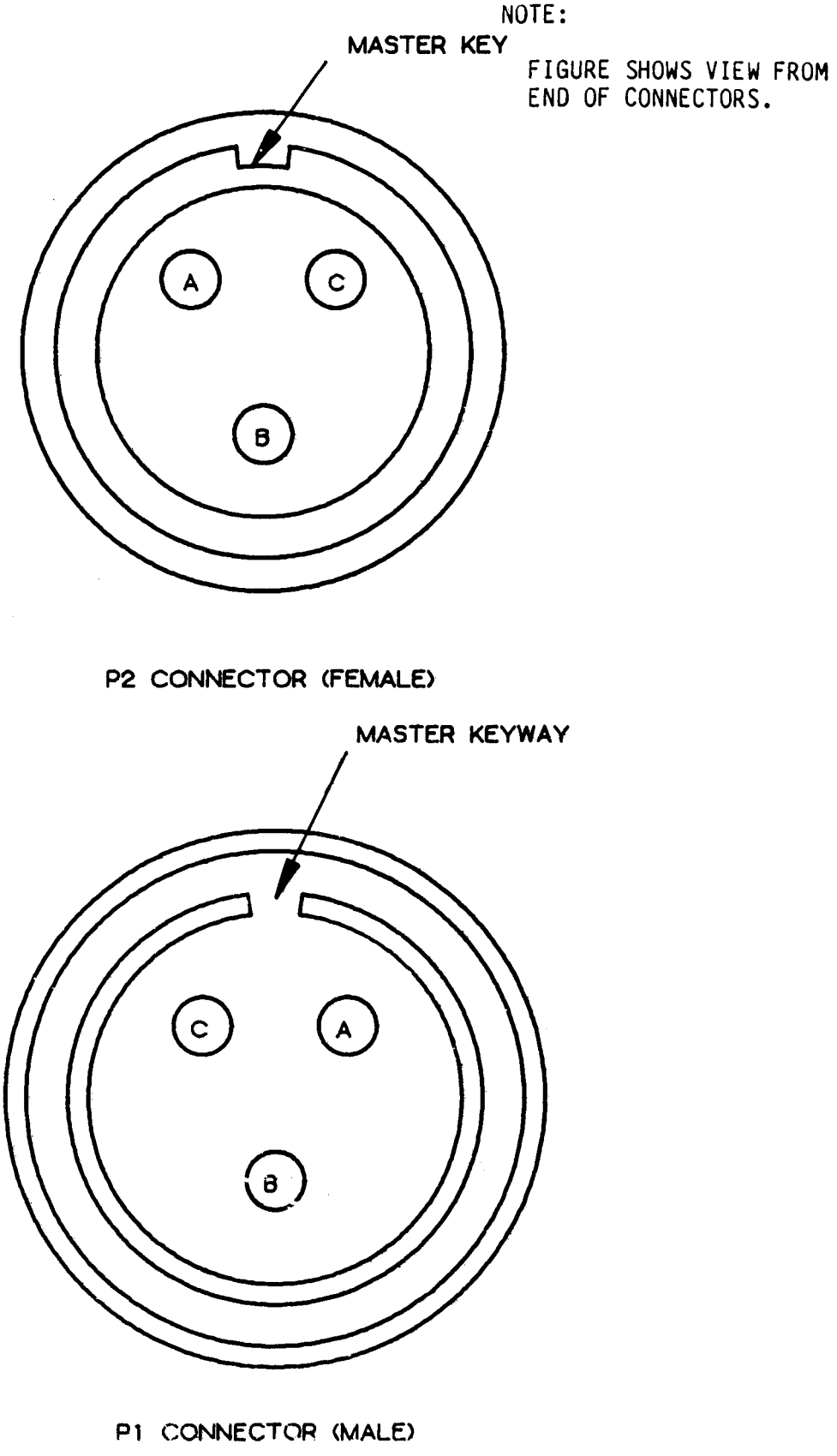


FIGURE 5-4. 20-amp, 3-wire connector faces.

Table 5-2. CRIMP TOOL SELECTION CHART (REFER TO PARA 5-9C)

NOTE

Cable-type connectors mount on cable ends. Wall-type connectors mount on the feeder/distribution centers. Use needle-nose pliers to install pins or sockets which do not have a special installation tool listed.

Connector group/type	Pin/Socket Size	Table 5-3 Item No.			
		Removal Tool	Install Tool	Locate Tool	Crimp Tool
200-A, 8-wire connectors					
Cable-type, large pin/socket	4/0	1	-	11a	11b
Cable-type, small pin/socket	4	3	5	11c	11d
Wall-type, large pin/socket	4/0	1	-	11a	11b
Wall-type, small pin/socket	4	3	5	11c	11d
1OO-A, 8-wire connectors					
Cable-type, large pin/socket	0	2	-	11e	11f
Cable-type, small pin/socket	6	4	-	11g	11h
Wall-type, large pin/socket	0	2	-	11e	11f
Wall-type, small pin/socket	6	4	-	11g	11h
40/60-A, 5-wire connectors					
Cable-type, large pin/socket	4	3	5	11c	11d
Cable-type, small pin/socket	6	4	-	11g	11h
Wall-type, large pin/socket	4	3	5	11c	11d
Wall-type, small pin/socket	6	4	-	11g	11h
60-A, 4-wire connectors					
Cable-type, large pin/socket	4	3	5	11c	11d
Cable-type, small pin/socket	6	4	-	11g	11h
Wall-type, large pin/socket	4	3	5	11c	11d
Wall-type, small pin/socket	6	4	-	11g	11h
20-A, 3-wire connectors					
All types	12	6,9, 10	7	-	8

Table 5-3. CRIMP TOOLS (REFER TO PARA 5-9C)

Item No.	Nomenclature	Size	Part Numbers
1	Removal tool, pin/socket	4/0	M81969/27-01
2	Removal tool, pin/socket	1/0	M81926/27-03
3	Removal tool, pin/socket	4	M81926/27-05
4	Removal tool, pin/socket	6	M81969/27-06
5	Installer tool, pin/socket	4	M81969/17-07
6	Removal tool, pin/socket	12	M81969/8-10
7	Installer tool, pin/socket	12	M81969/8-09
8	Crimp tool, pin/socket	12	WT111M
9	Tool stripper cable		45-156
10	Tool stripper wire	12	WT2000
10A	Tool stripper cable		45-157
11	Crimp tool system, pneumatic	-	400-1-200-5KL
11a	Locator, pin/ socket	4/0	4297-1 M22520/23-16
11b	Crimping die, pin/socket	4/0	414DA-40N-1 M22520/23-07
11c	Locator, pin/ socket	4	4297-5 M22520/23-12
11d	Crimping die, pin/socket	4	414DA-4N M22520/23-04
11e	Locator, pin/ socket	1/0	4297-3 M22520/23-13
11f	Crimping die, pin/socket	1/0	414DA-ON M22520/23-05

Table 5-3. CRIMP TOOLS (REFER TO PARA 5-9C) (cont)

Item No.	Nomenclature	Size	Part Numbers
11g	Locator, pin/ socket	6	4297-6 M22520/23-10
11h	Crimping die, pin/socket	6	414DA-6N M22520/23-03

(2) 100-Amp, 8-Wire Cables.

(a) Carefully cut and remove 3-1/2 inches (89 mm) of outer cable jacket from end of cable.

(b) Carefully cut and remove 7/8 inch (22 mm) of conductor insulation from end of each conductor.

(c) Attach electrical connector to cable end.

(3) 40/60-Amp, 5-Wire Cables.

(a) Carefully cut and remove 3-1/2 inches (89 mm) of outer cable jacket from end of cable.

(b) Cut off 1/2 inch (13 mm) from phases A, B, C, and neutral conductor (the four large conductors).

(c) Carefully cut and remove 7/8 inch (22 mm) of conductor insulation from end of each conductor.

(d) Attach electrical connector to cable end.

(4) 60-Amp, 4-Wire Cables.

(a) Carefully cut and remove 3 inches (76 mm) of outer cable jacket from end of cable.

(b) Carefully cut and remove 7/8 inch (22 mm) of conductor insulation from end of each conductor.

(c) Attach electrical connector to cable end.

(5) 20-Amp, 3-Wire Cables.

(a) Carefully cut and remove 1/2 inch (13 mm) of outer cable jacket from end of cable.

(b) Carefully cut and remove 3/8 inch (10 mm) of conductor insulation from end of each conductor.

(c) Attach electrical connector to cable end.

Feeder/Distribution Center Connectors (Wall-Mount Type). To determine the correct wire length, correct stripping of wire, and correct selection of pins/sockets, refer to Table 5-4. This table lists the connector by type of center and connector position on the center. The table then directs you to the appropriate figure in Appendix F. These figures list the necessary information to repair or fabricate the connector.

Table 5-4. FEEDER/DISTRIBUTION CENTER CONNECTOR REPAIR/FABRICATION REFERENCE

a. M200 Feeder Center Connectors

Connector No.	Rating	See App F Figure
J1	200 amp Input Connector	F-5
J4	100 amp Output Connector	F-7
J5	100 amp Output Connector	F-7
J6	20 amp Output Connector	F-13
J7	60 amp Output Connector	F-9
J8	60 amp Output Connector	F-9
J9	60 amp Output Connector	F-9
J10	60 amp Output Connector	F-9
J11	100 amp Output Connector	F-7

b. M100 Feeder Center Connectors

Connector No.	Rating	See App F Figure
J1	100 amp Output Connector	F-6
J2	100 amp Output Connector	F-7
J3	60 amp Output Connector	F-9
J4	40 amp Output Connector	F-9
J5	40 amp Output Connector	F-9
J6	60 amp Output Connector	F-9
J7	20 amp Output Connector	F-14
J8	20 amp Output Connector	F-13

c. M40 Distribution Center Connectors.

Connector No.	Rating	See App F Figure
J1	40 amp Input Connector	F-8
J2	40 amp Output Connector	F-9
J3	20 amp Output Connector	F-12
J4	20 amp Output Connector	F-12
J5	20 amp Output Connector	F-12
J6	20 amp Output Connector	F-12
J7	20 amp Output Connector	F-12
J8	20 amp Output Connector	F-12
J9	20 amp Output Connector	F-12
J10	20 amp Output Connector	F-12
J11	20 amp Output Connector	F-12
J12	20 amp Output Connector	F-12
J13	20 amp Output Connector	F-12
J14	20 amp Output Connector	F-12

Table 5-4. FEEDER/DISTRIBUTION CENTER CONNECTOR REPAIR/FABRICATION REFERENCE (cont)

d. M60 Distribution Center Connectors

Connector No.	Rating	See App F Figure
J1	60 amp Input Connector	F-10
J2	60 amp Output Connector	F-11
J3	20 amp Output Connector	F-12
J4	20 amp Output Connector	F-12
J5	20 amp Output Connector	F-12
J6	20 amp Output Connector	F-12
J7	20 amp Output Connector	F-12
J8	20 amp Output Connector	F-12

NOTE

If you have PDISE equipment, follow instructions in paragraph e thru h.

e. M200 A/P Feeder Center Connectors

Connector No.	Rating	See App F Figure
J1	200 amp Input Connector	F-26
J4	100 amp Output Connector	F-28
J5	100 amp Output Connector	F-28
J6	20 amp Output Connector	F-34
J7	60 amp Output Connector	F-30
J8	60 amp Output Connector	F-30
J9	60 amp Output Connector	F-30
J10	60 amp Output Connector	F-30
J11	100 amp Output Connector	F-28

f. M1OO A/P Feeder Center Connectors

Connector No.	Rating	See App F Figure
J1	100 amp Input Connector	F-27
J2	100 amp Output Connector	F-28
J3	60 amp Output Connector	F-30
J4	40 amp Output Connector	F-30
J5	40 amp Output Connector	F-30
J6	60 amp Output Connector	F-30
J7	20 amp Output Connector	F-35
J8	20 amp Output Connector	F-34

Table 5-4. FEEDER/DISTRIBUTION CENTER CONNECTOR REPAIR/FABRICATION REFERENCE (cont)

g. M40 A/P Distribution Center Connectors.

Connector No.	Rating	See App F Figure
J1	40 amp Input Connector	F-29
J2	40 amp Output Connector	F-30
J3	20 amp Output Connector	F-33
J4	20 amp Output Connector	F-33
J5	20 amp Output Connector	F-33
J6	20 amp Output Connector	F-33
J7	20 amp Output Connector	F-33
J8	20 amp Output Connector	F-33
J9	20 amp Output Connector	F-33
J10	20 amp Output Connector	F-33
J11	20 amp Output Connector	F-33
J12	20 amp Output Connector	F-33
J13	20 amp Output Connector	F-33
J14	20 amp Output Connector	F-33

h. M60 A/P Distribution Center Connectors

Connector No.	Rating	See App F Figure
J1	60 amp Input Connector	F-31
J2	60 amp Output Connector	F-32
J3	20 amp Output Connector	F-33
J4	20 amp Output Connector	F-33
J5	20 amp Output Connector	F-33
J6	20 amp Output Connector	F-33
J7	20 amp Output Connector	F-33
J8	20 amp Output Connector	F-33

MAINTENANCE OF CABLES

5-10 CABLE CONNECTOR.

This task covers:

Repair

INITIAL SETUP

Tool S

General Mechanic's Automotive Tool Kit
SC 5180-90-CL-N26
Crimping Tools (see Table 5-2)
Cable Stripper (Appendix B, Section III, Item 20)

Materials/Parts

Lubricant (item 3, App E)
Tape (items 10 thru 15 App E.)

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPAIR

NOTE

Female connectors use sockets; male connectors use pins. The procedures refer to pins only, but apply to both types of connectors.

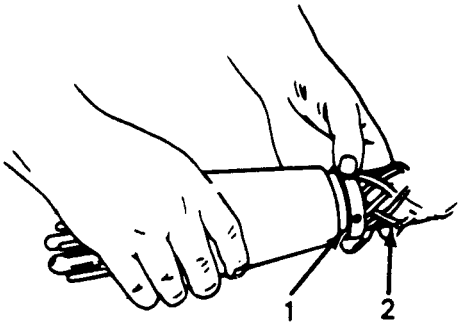
5-10 CABLE CONNECTOR. (cont)

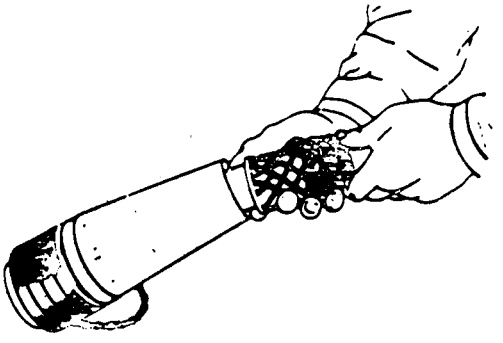
1. DISASSEMBLE CONNECTOR.

NOTE

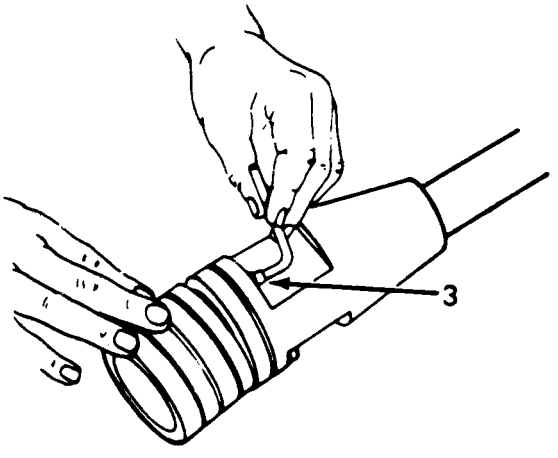
Cable gland nut (1) has left-hand threads.

a. With 10-inch slip joint pliers loosen cable gland nut (1). Use both hands to compress wire mesh (2), and slide cable gland nut and wire mesh 12 inches (30 cm) up the cable.



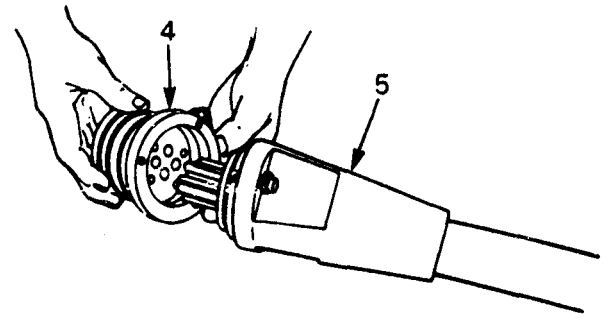


b. Loosen three hex-socket screws (3).

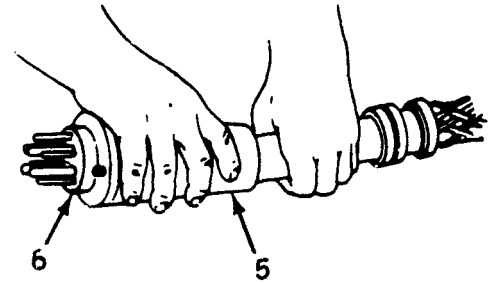


5-10 CABLE CONNECTOR. (cont)

c. Remove connector head (4) from connector body (5).

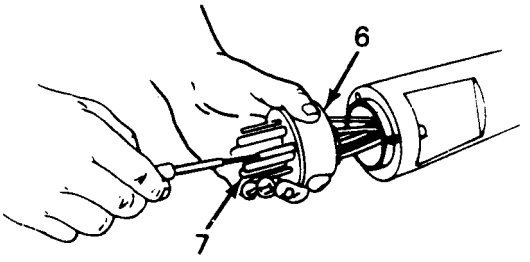


d. Apply lubricant (item 3, App E) on cable directly behind connector. Push cable forward into connector body (5) and force support group (6) out.



5-10 CABLE CONNECTOR. (cont)

2. REMOVE CONNECTOR PARTS.

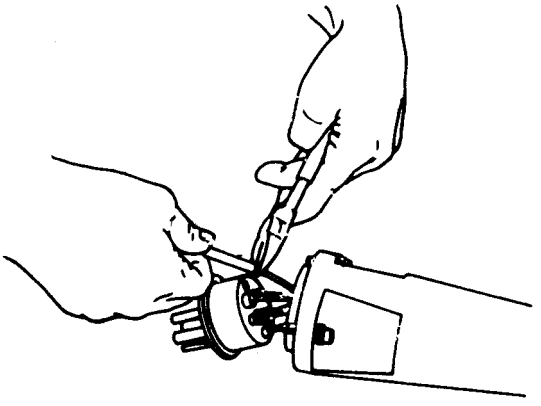


a. Use the proper pin extractor tool (Tables 5-2 and 5-3) and remove pins (7) from support group (6).

b. Cut cable wires as close to pins as possible.

NOTE

Record the order and direction of connector parts as they are removed.



c. Remove connector body (5), glands (8) and (9), and wire mesh (2) from cable.

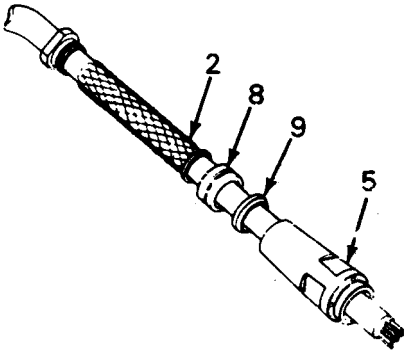
d. Replace defective parts.

CAUTION

When installing both a male and a female connector on a length of bulk cable, the connectors must be installed on particular cable ends so that the wire colors match the connector pin/socket positions as indicated in paragraph 5-9a.

NOTE

Refer to TM 9-6150-226-23P for a list of parts.

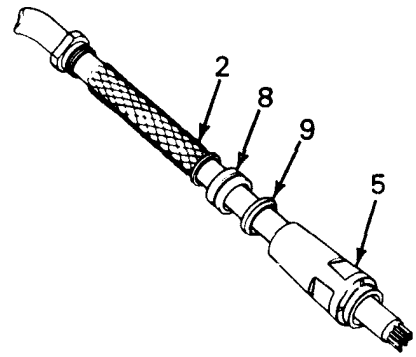


5-10 CABLE CONNECTOR. (cont)

3. INSTALL CONNECTOR PARTS.

a. Install wire mesh (2), glands (9) and (8), and connector body (5).

b. Cut and remove proper length of insulation from outer cable jacket and wires (refer to para 5-9d).

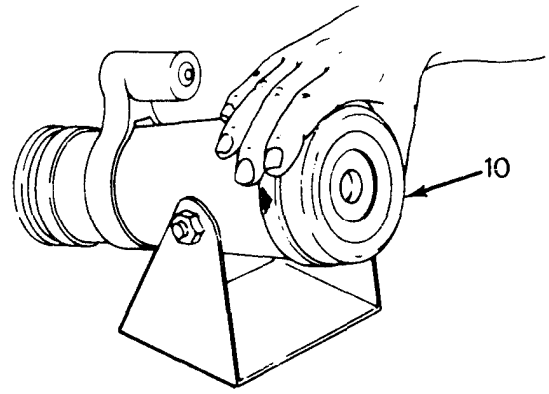


c. Use a multimeter (item 3, App B) and perform a continuity test (Table 4-8) to determine correct pin-to-wire installation.

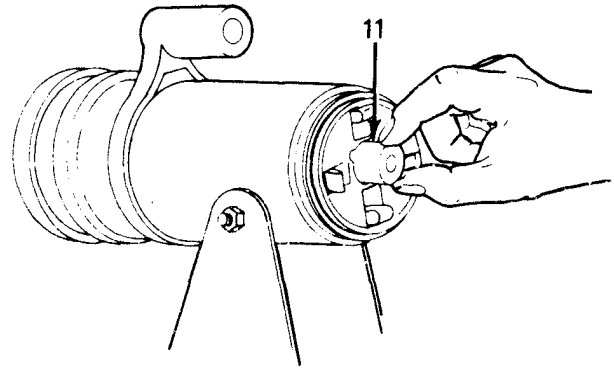
d. Tag wires with colored tape (items 10 thru 15, App E) in accordance with paragraph 5-9a.

NOTE

The long pin attaches to the neutral wire of the male connector.



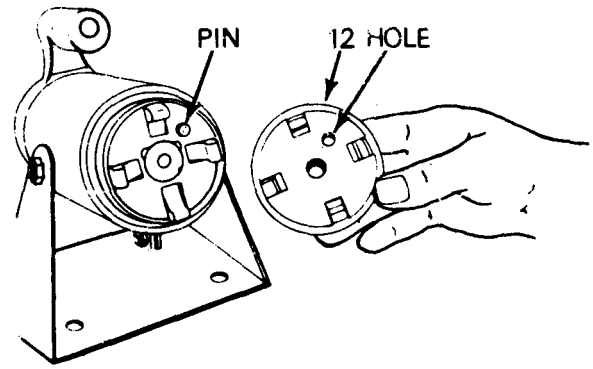
e. Remove pneumatic crimper die retaining ring (10) and crimper die.



f. Refer to Tables 5-2 and 5-3 and select the proper pin/socket locator. Place locator (11) into crimper so notches in crimper and locator aline.

5-10 CABLE CONNECTOR. (cont)

g. Refer to Tables 5-2 and 5-3 and select proper crimping die (12) and install onto crimper so pin and hole aline. Install retaining ring.

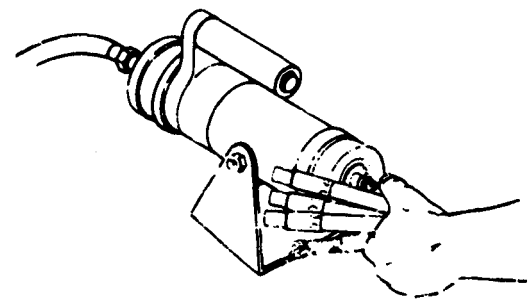


h. Slide pins onto cable wire and crimp in place.

4. ASSEMBLE CONNECTOR.

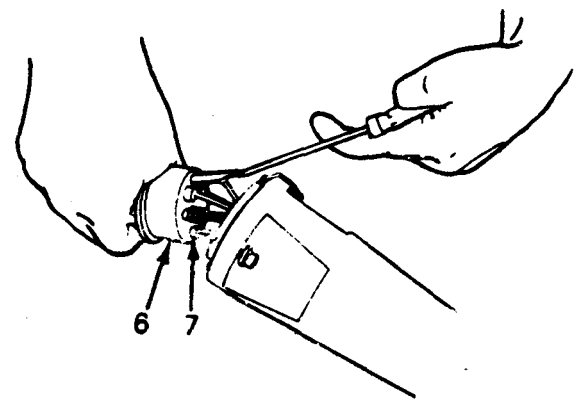
WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be color coded to designate the phases. Perform a continuity test to verify correct phase designation in accordance with identified color.



- Refer to paragraph 5-9a to determine correct pin letter and wire color code.
- Use lubricant (item 3, App E) to aid installation of pins (7) into support group (6).

a. Use proper insert tools (Tables 5-2 and 5-3) and insert pins (7) into support group (6).



5-10 CABLE CONNECTOR. (cont)

NOTE

- Refer to paragraph 5-9b to determine correct pin-to-key position connector.
- The following is an alternate procedure for the 100-amp, 8-pin; 40/60-amp, 5-pin; and 60-amp, 4-pin cable connectors. This procedure is a method for inserting the pins collectively into the support group.

(1) Start the A-pin into support group (6).

(2) Start the N-pin into support group (6).

(3) Slide support group (6) halfway over the A- and N-pins.

(4) Start the B-pin into support group (6).

(5) Start the C-pin into support group (6).

(6) Slide support group (6) as far as possible over all the pins.

(7) Rock support group (6) toward the A-pin until it locks into position.

(8) Rock support group (6) toward the N-pin until it locks into position.

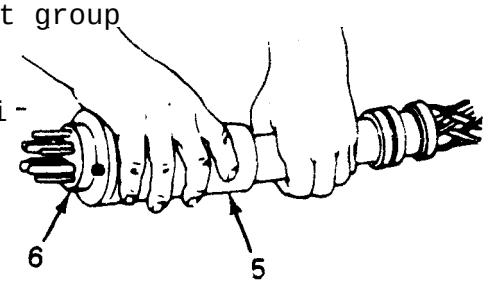
(9) Grasp the C-pin wire and push the wire toward support group (6) while rocking the support group toward the C-pin until it locks into position.

(10) Grasp the B-pin wire and push the wire toward support group (6) while rocking the support group toward the B-pin until it locks into position.

(11) Select a G-pin wire nearest to its support group (6) hole. Use long-nosed pliers to grasp the pin and insert the pin into its hole and lock in position.

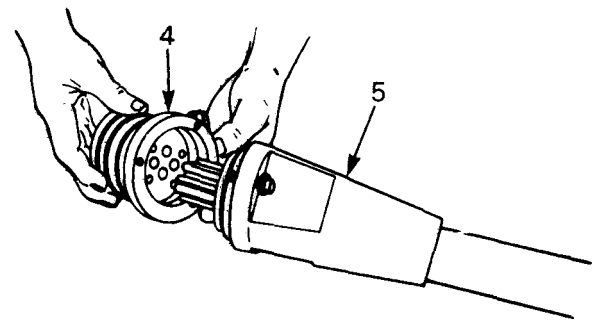
(12) Insert remaining G-pins into support group (6) as described above.

b. Slide connector body (5) down cable and position support group (6) and connector body together.

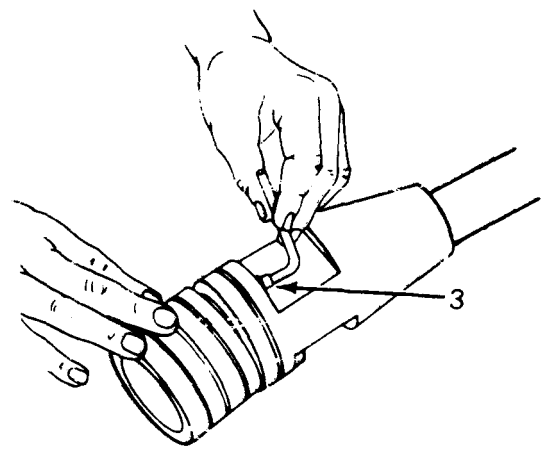


5-10 CABLE CONNECTOR. (cont)

c. Install connector head (4) on connector body (5).



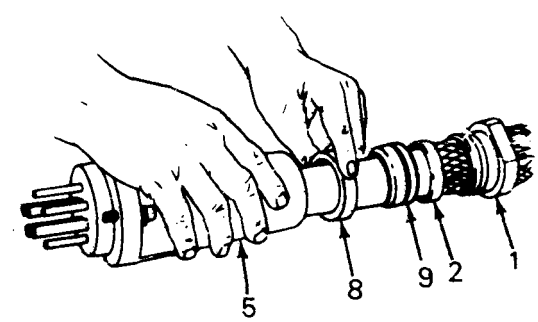
d. Install hex-socket screws (3).



NOTE

Cable gland nut (1) has left-hand threads.

e. Slide glands (8) and (9), wire mesh (2), and cable gland nut (1) into connector body (5) and tighten nut.



f. Use a multimeter (item3, App B) and perform continuity test (Table 4-8) and verify correct assembly.

MAINTENANCE OF CENTER CONNECTORS

5-11 FEEDER/DISTRIBUTION CENTER CONNECTORS.

This task covers:

Repair

INITIAL SETUP

Tools

General Mechanic's Tool Kit
SC 5180-90-CL-N26
Crimping Tools (see Table 5-2)

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPAIR

NOTE

- Female connectors use sockets; male connectors use pins. The procedures refer to pins only, but apply to both types of connectors.
- The following procedures are for a typical connector. Appearance of actual parts may vary from these illustrations.

5-11 FEEDER/DISTRIBUTION CENTER CONNECTORS. (cont)

1. DISASSEMBLE THE CONNECTOR.

NOTE

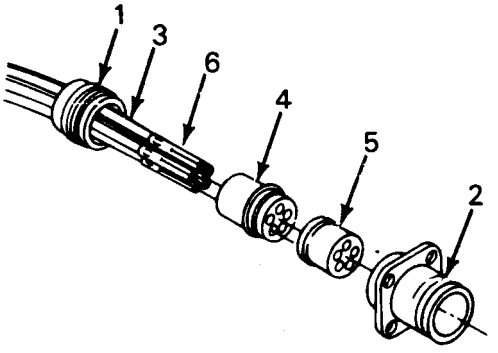
Nut (1) has left-hand threads.

a. Remove nut (1) from connector (2).

b. Remove wires (3), rear support group (4), and forward support group (5).

c. Remove forward support group (5) from pins (6).

d. Use removal tool (Tables 5-3 and 5-4) and remove pins (6) from rear support group (4).



2. REPLACE DEFECTIVE PARTS.

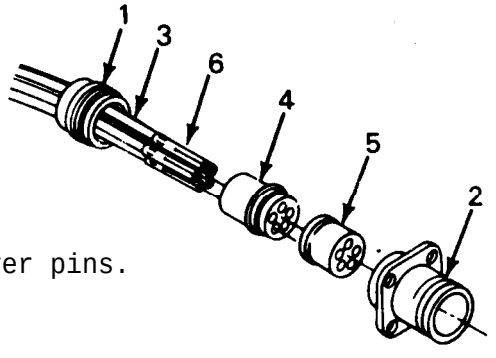
Refer to TM 9-6150-226-23P, Appendixes F for a list of parts.

3. ASSEMBLE CONNECTOR.

a. Install wires and pins (6) into rear support group (4).

NOTE

Pins lock in place.



b. Position forward support group (5) over pins.

NOTE

- Ensure position markings on rear and forward support groups match.
- Forward support group (5) and connector are keyed to fit together.

c. Refer to Figures 5-1 thru 5-4, and install rear support group (4) and forward support group (5) into connector (2).

5-11 FEEDER/DISTRIBUTION CENTER CONNECTORS. (cont)

NOTE

Nut (1) has left-hand threads.

d. Install nut (1) on connector (2).

MAINTENANCE OF FEEDER/DISTRIBUTION CENTERS AND UNIVERSAL ADAPTER

5-12 LATCH.

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Tools

General Mechanic's Tool Kit
SC 5180-90-CL-N26
Hand Riveter Kit G-749
(Appendix B, Section III, item 6)

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE LATCH ASSEMBLY.

   a. Drill off rivet head (1).

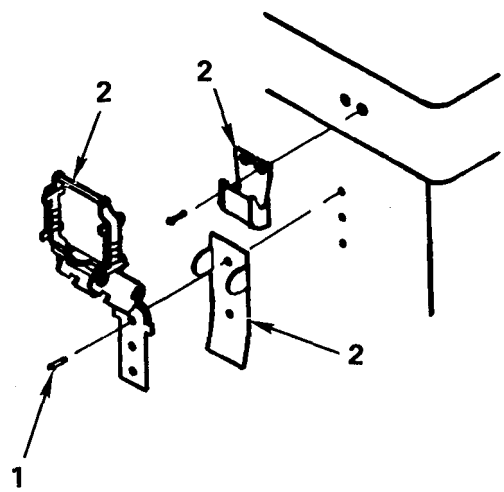
   b. Use a punch and drive out the rest of the rivet.

   c. Remove latch assembly (2).

2. INSTALL LATCH ASSEMBLY.

   a. Position latch over holes in center.

   b. Install rivets (1) into holes and fasten with hand riveter.



5-13 ENCLOSURE ASSEMBLY.

This task covers:

Replacement

INITIAL SETUP

Tools

General Mechanic's Tool Kit
SC 5180-90-CL-N26

General Safety Instructions

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not replace a connector assembly with the power on. Death or serious injury may result.

REPLACEMENT

1. REMOVE INTERNAL COMPONENTS.

   a. Refer to paragraph 4-17 (para 4-23 for universal adapter) and remove bus bars and circuit breaker assembly (mounting board and load terminal).

   b. Refer to paragraph 4-15 (para 4-21 for universal adapter) and remove all connectors.

   c. Replace enclosure assembly.

2. INSTALL INTERNAL COMPONENTS.

NOTE

Refer to Figures 4-1 thru 4-11 (Fig. 4-7 for universal adapter) and paragraph 4-10d when connecting internal wiring.

   a. Refer to paragraph 4-15 (para 4-21 for universal adapter) and install all connectors.

   b. Refer to paragraph 4-17 (para 4-23 for universal adapter) and install bus bars and circuit breaker assembly.

APPENDIX A

REFERENCES

A-1. SCOPE.

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

A-2. FORMS .

Equipment Inspection and Maintenance Worksheet . . . . DA Form 2404
Maintenance Request . . . . . DA Form 2407
Component Removal and Repair/Overhaul Record . . . . . DA Form 2410
Product Quality Deficiency Report . . . . . SF Form 368
Recommended Changes to Equipment Technical Publications . . . . . DA Form 2028-2
Report of Discrepancy . . . . . SF Form 364

A-3. FIELD MANUALS.

Camouflage. . . . . FM 5-20
Electrical Power Generation in the Field . . . . . FM 20-31
First Aid for Soldiers. . . . . FM 21-11
Nuclear, Biological, and Chemical Decontamination . . . FM 3-5
Nuclear, Biological, and Chemical Protection Operations. . . . . FM 3-4
General Fabric Repair . . . . . FM 10-16

A-4. TECHNICAL MANUALS.

Operator’s Manual for Welding Theory and Application . . TM 9-237
Packaging of Materiel: Preservation (VOL 1) . . . . . TM 38-230-1
Packaging of Materiel: Preservation (VOL 2) . . . . . TM 38-230-2
Painting Instructions for Army Materiel . . . . . TM 43-0139
Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command) . . . . . TM 750-244-3
Unit and Direct Support Maintenance Repair Parts and Special Tools List for Distribution Illumination System, Electrical (DISE) . . . . . TM 9-6150-226-23P

A-5. MISCELLANEOUS PUBLICATIONS.

Consolidated Index of Army Publications and Blank Forms . . . . . DA Pam25-30
Equipment Improvement Report and Maintenance Digest . . TB 43-0001-39
Storage Serviceability Standard for TROSCOM Materiel . . SB 740-97-3900-1
The Army Maintenance Management System (TAMMS) . . . . . DA Pam 738-750

A-6. MILITARY SPECIFICATIONS

None

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

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

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

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

d. Section IV contains supplemental instructions or 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 (e.g., by sight, sound, or feel).

b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

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

f. Calibrate. To determine and cause corrections or adjustments 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, seating, 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. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3rd position code of the SMR code.

i. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and 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 (services/actions) prescribed to restor an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

B-3 . EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

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

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

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, refer to paragraph B-2.)

d. Column 4, Maintenance Level. Column 4 specifies, by the listings of a work time figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform the maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures will be shown for each level. The 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 (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

Code	Explanation
C	Operator or Crew
O	Organizational (Unit) Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

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 alphabetical order which shall be keyed to the remarks contained in Section IV.

B-4. COLUMN ENTRIES USED IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. Column 1, Tool or Test Equipment Reference Code. The tool and test equipment reference code correlates with a code used in MAC, Section II, Column 5.

b. Column 2, Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

c. Column 3, Nomenclature. Name or identification of the tools or test equipment.

d. Column 4, National/NATO Stock Number. The National or NATO stock number of the tool or test equipment.

e. Column 5, Tool Number. The manufacturer’s part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. Column 1, Reference Code. The code recorded in column 6, Section III.

b. Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART FOR DISE/PDISE EQUIPMENT

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DIR. SUPT	GEN. SUPT	DEPOT		
			C	O	F	H	D		
00	DISTRIBUTION ILLUMINATION SYSTEM, ELECTRIC AND POWER DISTRIBUTION ILLUMINATION SYSTEM, ELECTRIC								
01	FEEDER SYSTEM								
	FEEDER CENTER	INSPECT REPAIR	0.1		 2.0			 2	
	GASKET	INSPECT REPLACE	0.1	 0.5					
	ENCLOSURE ASSY	REPLACE REPAIR			2.0 1.0			2	A
	LATCH	REPLACE			0.5			2,21 thru 23	
	PANEL BOARD	INSPECT REPLACE		0.2 1.0				 1	
	CIRCUIT BREAKER	INSPECT TEST REPLACE	0.1 0.1	 0.1 0.2				 3 1,24,25	
	CONNECTOR ASSY	INSPECT TEST REPLACE REPAIR	0.1	 0.1 0.5	 2.0			 3 1 2,7 thru 19	
	PHASE INDICATOR LIGHT ASSY	INSPECT REPLACE	0.1	 0.2				 1	
	PHASE INDICATOR LIGHT BULB	REPLACE		0.1					
	CIRCUIT BREAKER ASSY	REPLACE		0.5				1,24 thru 27	

Section II. MAINTENANCE ALLOCATION CHART FOR DISE/PDISE EQUIPMENT

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
	BUS BAR	REPLACE		0.5				1, 24 thru 27	
	CABLE ASSY	INSPECT	0.1						
		TEST			0.2			3	
		REPLACE	0.1						
		REPAIR			2.0			2, 3 thru 20	B
	LANYARD ASSY	INSPECT	0.1						
		REPLACE		0.5					
02	DISTRIBUTION SYSTEM								
	DISTRIBUTION CENTER	INSPECT	0.1						
		REPAIR			2.0			2	
	ENCLOSURE ASSY ASSY	REPLACE			2.0			2	
		REPAIR			1.0				
	LATCH	REPLACE			0.5			2, 21 thru 23	
	PANEL BOARD	INSPECT		0.2					
		REPLACE		1.0				1	
	CIRCUIT BREAKER	INSPECT	0.1						
		TEST	0.1	0.1				3	
		REPLACE		0.3				1,24,25	
	TINNING	REPAIR			0.1				C
	CONNECTOR ASSY ASSY	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE		0.5				1	
		REPAIR			2.0			2, 7 thru 19	
	PHASE INDICA- TOR LIGHT ASSY INDICATOR LIGHT ASSY	INSPECT	0.1						
		REPLACE		0.2				1	
	PHASE INDICATOR LIGHT BULB	REPLACE		0.1					

Section II. MAINTENANCE ALLOCATION CHART FOR DISE/PDISE EQUIPMENT

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
	CIRCUIT BREAKER ASSY	REPLACE		0.5				1,24 thru 27	
	BUS BAR	REPLACE		0.5				1,24 thru 27	
	CABLE ASSY	INSPECT	0.1						
		TEST			0.2			3	
		REPLACE	0.1						
		REPAIR			2.0			2,3 thru 20	B
	RECEPTACLE GROUP GROUP	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE	0.1						
		REPAIR		0.5	1.0			1,2,12	
	CONTAINER, TRANSIT TRANSIT AND STORAGE STORAGE	INSPECT	0.1						
		REPLACE	0.1						
		REPAIR			2.0				
	CONNECTOR ASSY ASSY	REPLACE			1.0				
		REPAIR			1.0			1,12	
03	UTILITY ASSEMBLY, ASSEMBLY, ELECTRICAL								
	CABLE ASSY ASSY	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE	0.1						
		REPAIR			1.0			2,12	B
	BRANCH CIRCUIT ASSY	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE	0.1						
		REPAIR		0.2				2,12	
	BRANCH CIRCUIT TRUNK ASSY ASSY	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE	0.1						
		REPAIR			2.0			2,12	

Section II. MAINTENANCE ALLOCATION CHART FOR DISE/PDISE EQUIPMENT

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DIR. SUPT	GEN. SUPT	DEPOT		
			C	O	F	H	D		
	RECEPTACLE GROUP	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE	0.1						
		REPAIR		0.5	1.0			1,2,12	
	ROPE ASSY	INSPECT	0.1						
		REPLACE		0.1					
	LIGHT, INCANDESCENT, DUAL BULB	INSPECT	0.1						
		TEST		0.2				3	
		REPLACE	0.1						
		REPAIR		1.0				1	
	CONTAINER, TRANSIT AND STORAGE	INSPECT	0.1						
		REPLACE	0.1						
		REPAIR			2.0				
04	AUXILLARY EQUIPMENT								
	LIGHT, FLUORESCENT	INSPECT	0.1						
		TEST		0.2				3	
		REPLACE	0.1						
		REPAIR		0.5	1.0			1,2,12	
	CABLE ASSY'S	INSPECT	0.1						
		TEST			0.2			3	
		REPLACE	0.1						
		REPAIR			2.0			2,4 thru 15	B
	UNIVERSAL ADAPTOR	INSPECT	0.1						
		TEST		0.2				3	
		REPLACE	0.1						
		REPAIR		1.0				1	
	ENCLOSURE	REPLACE			2.0			2	
		REPAIR			1.0				
	CONNECTOR ASSY	INSPECT	0.1						
		TEST		0.1				3	
		REPLACE		0.5				1	
		REPAIR			2.0			2,7 thru 19	

Section II. MAINTENANCE ALLOCATION CHART FOR DISE/PDISE EQUIPMENT

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DIR. SUPT	GEN. SUPT	DEPOT		
			C	O	F	H	D		
	LATCH	REPLACE			0.5			2,21 thru 23	
	SLEEVE, DUST AND MOISTURE	REPLACE		0.5				1	
	BOARD, MOUNTING	REPLACE		0.5				1	
	TERMINAL, LOAD	INSPECT	0.1						
		REPLACE		0.5				1	

Section III. TOOL AND TEST EQUiPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBERS
1	O	TOOL KIT, GENERAL MECHANICS AUTOMOTIVE	5180–00–177–7033	SC5180–90–CL–N26
2	O	SHOP EQUIP., AUTO, ORG #2 COMMON	4910–00–754–0050	SC4910–95–CL–A72
3	O	SHOP EQUIP., AUTO, ORG #1 COMMON	4910–00–754–0654	SC4910–95–CL–A74
4	F	SHOP EQUIPMENT AUTOMOTIVE MAINTENANCE	4910–00–754–0705	SC4910–95–CL–A31
5	F	SHOP EQUIPMENT, MECH. MAINTENANCE SHELTER	4940–00–209–6227	SC4910–95–CL–A52
6	F	TOOL KIT, RIVETOR	5120–00–017–2849	J–T49CMR
7	F	TOOL REMOVAL SIZE 4/0	81349	M81969/27–01
8	F	TOOL REMOVAL SIZE 2/0	81349	M81969/27–02
9	F	TOOL REMOVAL SIZE 1/0	81349	M81926/27–03
10	F	TOOL REMOVAL SIZE #4	81349	M81926/27–05
11	F	TOOL REMOVAL SIZE #6	81349	M81926/27–06
12	F	TOOL INSTALLER SIZE #12	81349	M81969/8–09
13	F	TOOL REMOVAL SIZE #12	81349	M81969/8–10
14	F	TOOL KIT CRIMPING	81349	M83507/11–1
15	F	TOOL, CRIMPING	59703	WT111M
16	F	TOOL STRIPPER CABLE	30119	45–156
17	F	TOOL STRIPPER WIRE	59730	WT2000
18	F	TOOL STRIPPER CABLE	30119	45–127
19	F	TOOL REMOVAL SIZE #2	81349	M81969/27–04
20	F	STRIPPER, CABLE, HAND ADJUSTABLE		45–156

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBERS
21	F	DRILL, ELECT, PORTABLE 8845 OR EQUIVALENT	5130–00–226–5586	8845
22	F	DRILL, BIT, NO. 13	5133–01–046–2902	
23	F	RIVETER, BLIND HEAD G749 OR EQUIVALENT	5120–00–148–5847	G749
24	O	WRENCH, TORQUE 6063 OR EQUIVALENT	5120–00–177–7328	6063
25	O	SCREWDRIVER 3/8 x 12 FLAT	5120–00–287–2503	
26	O	ATTACHMENT, SOCKET HEAD WRENCH 3/8 DRIVE x 5/16	5120–01–016–8713	
27	O	ATTACHMENT, SCREWDRIVER TIP 3/8 DRIVE	5120–00–243–7337	

Section IV. REMARKS

CODE	REMARKS
A	Repair of enclosure consists of welding and straightening.
B	Fabrication of DISE/PDISE cable assemblies is authorized at the direct support maintenance level.
C	Solder dip or solder gun wire ends not to exceed 0.025 inch using Kester Solder MIL Spec No. QQ-S-571 (Sn 60 Pb 40).

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. SCOPE.

This appendix lists components of end item and basic issue items for the DISE and PDISE equipment to help you inventory items required for safe and efficient operation.

C-2. GENERAL.

The components of End Items and Basic Issue Items (BII) lists are divided into the following sections:

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

b. Section III, Basic Issue Items. These are the minimum essential items required to place the DISE and PDISE equipment in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the DISE and PDISE equipment during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

C-3. EXPLANATION OF COLUMNS.

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

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

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

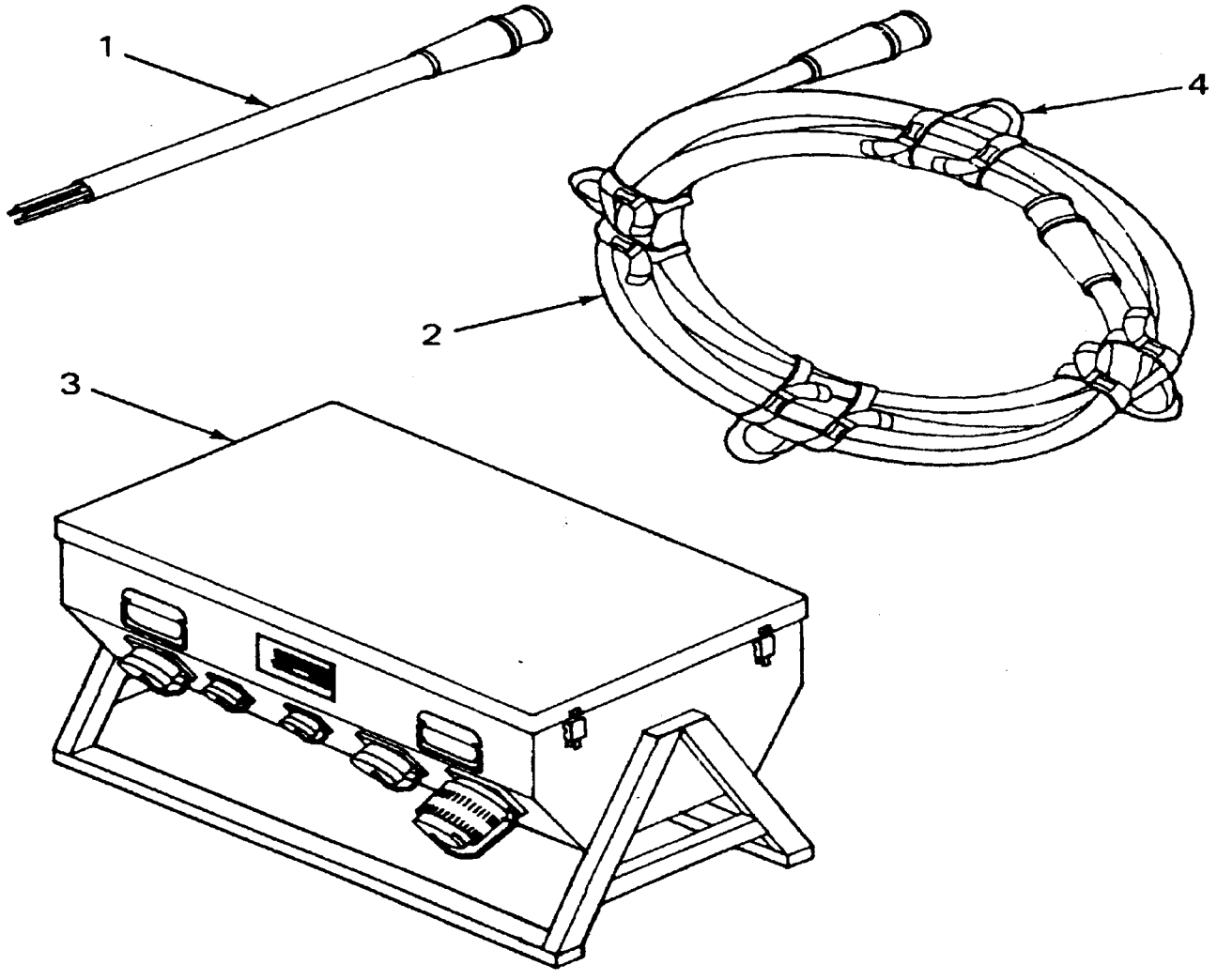
c. Column (3), Description. Indicates the Federal item name and, if required. a minimum description to identify and locate the item. The last line for each-item indicates the Commercial and Government Entity Code (CAGEC) (in parentheses) followed by the part number. If item needed differs for different models of this equipment, the model is shown under the Usable On Code heading in this column. These codes are identified as:

Code	Used On
DZC	Model M200
DZB	Model M100
DYZ	Model M40
DZA	Model M60
DZD	Model M46
ENK	Model M200 A/P
ENL	Model M100 A/P
ENM	Model M40 A/P
ENN	

d. Column (4), Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).

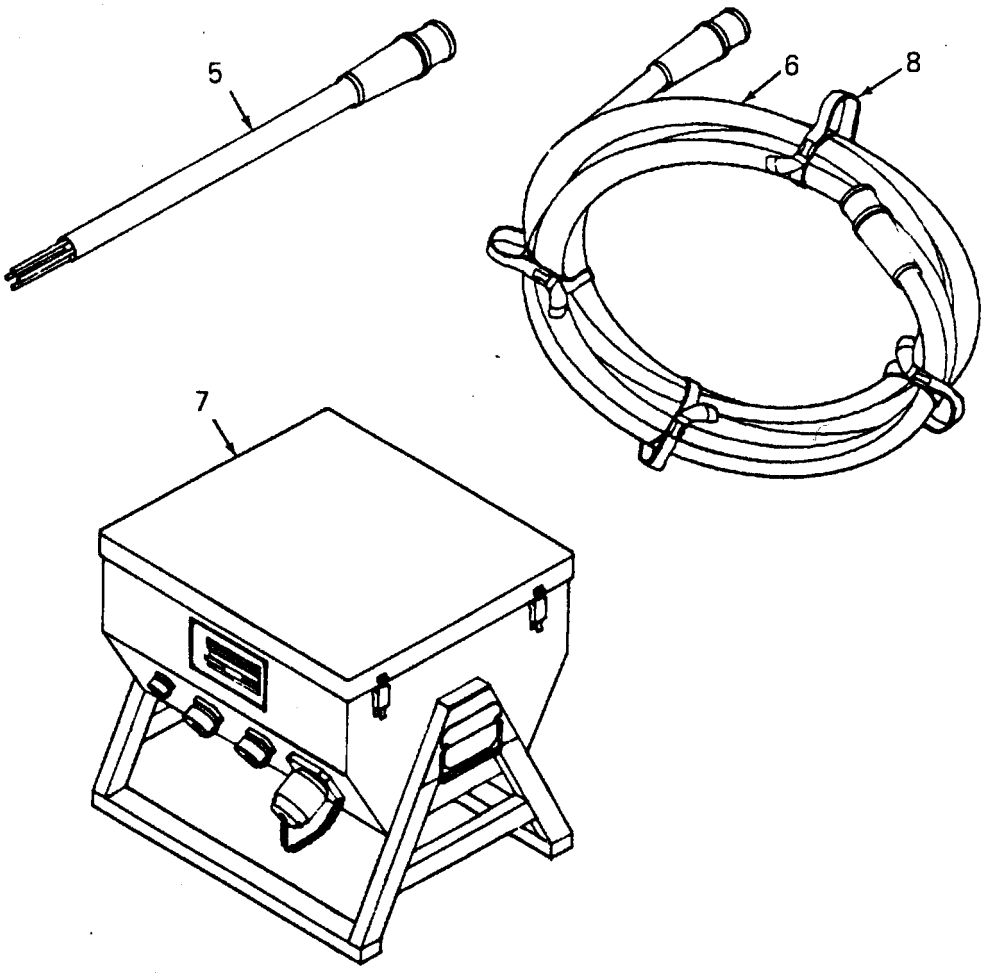
e. Column (5), Quantity Required (Qty Rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM



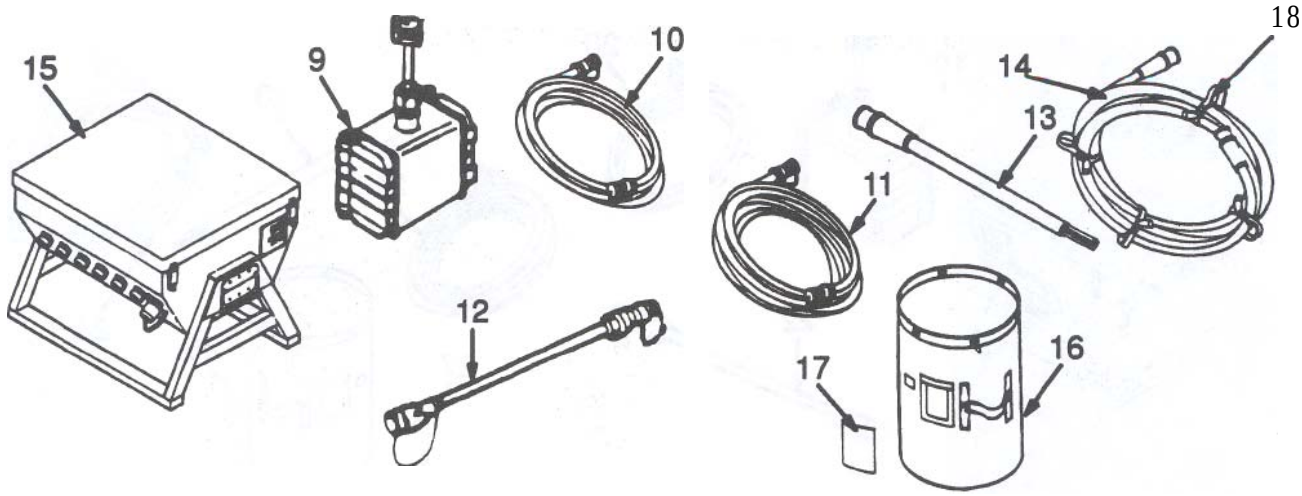
(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
1	6150-01-247-4768	CABLE, PIGTAIL: 4-ft (1.2 m), 100-amp, 8-pin 8-pin (97403) 13226E7021	DZC,ENK	EA	1
2	6150-01-247-4782	CABLE, SERVICE/FEEDER: 25-ft (7.6 m), 200-amp, 8-pin (97403) 13226E7025	DZC,ENK	EA	4
3		CENTER, ELECTRICAL FEEDER: 3-phase 120/208 V, 200-amp/ph (97403) 13226E7030	DZC,ENK	EA	1
4		STRAP, CABLE CARRYING (97403) 13227E5821	DZC,ENK	EA	16

Section II. COMPONENTS OF END ITEM (CONT)



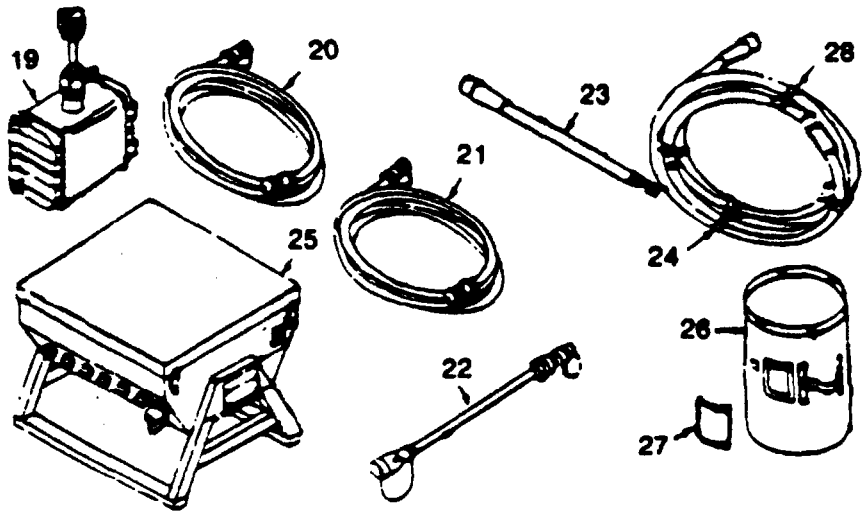
(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
5	6150-01-256-6300	CABLE, PIGTAIL: 4-ft (1.2 m), 200-amp, 8-pin (97403) 13226E7020	DZB,ENL	EA	1
6	6150-01-256-6304	CABLE, SERVICE/FEEDER: 50-ft (15.2 m), 100-amp, 8-pin (97403) 13226E7024	DZB,ENL	EA	2
7		CENTER, ELECTRICAL FEEDER: 3-phase 120/208 U, 100-amp/ph (97403) 13226E7029	DZB,ENL	EA	1
8	6150-01-256-6299	STRAP, CABLE CARRYING (97403) 13226E5825	DZB,ENL	EA	8

Section II. COMPONENTS OF END ITEM (CONT)



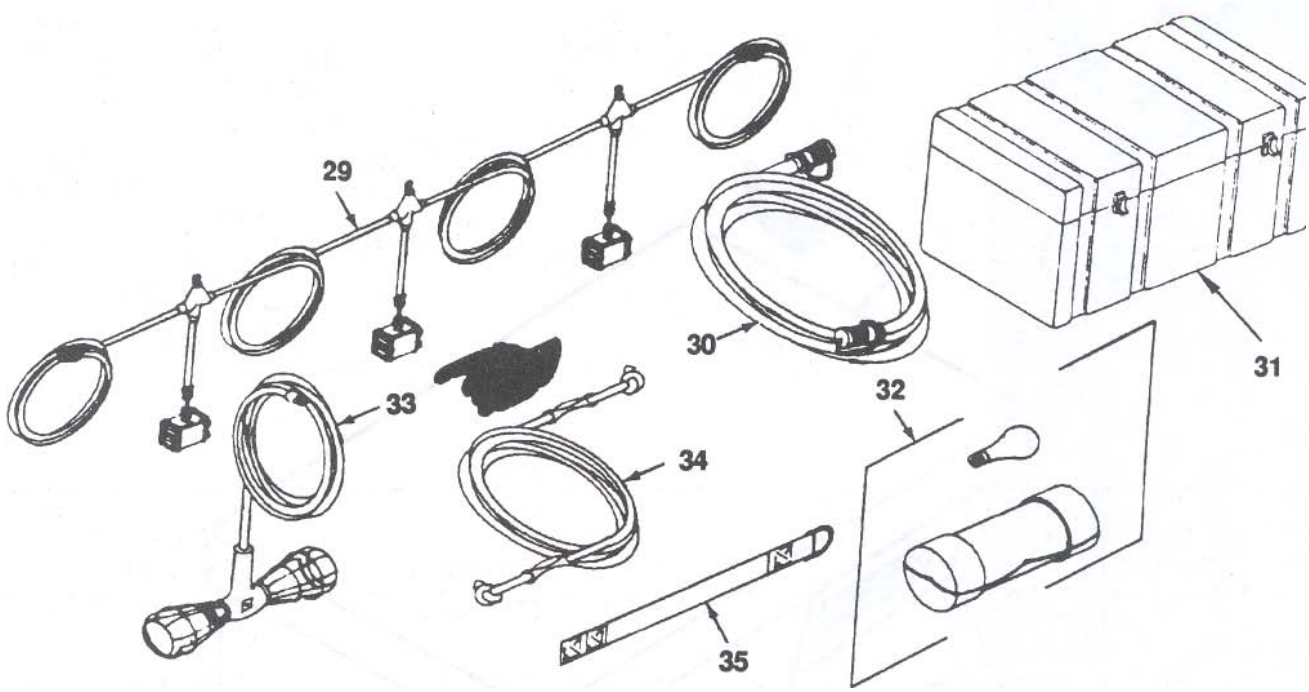
(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
9	6150-01-251-9125	BOX, RECEPTACLE: 120 V, 20-amp (97403) 13226E7040	DYZ,ENM	EA	1
10	6150-01-250-0044	CABLE, EXTENSION: 25-ft (7.6 m), 20-amp, 3-pin (97403) 13226E7032-2	DYX,ENM	EA	3
11	6150-01-250-3643	CABLE, EXTENSION: 50-ft (15.2 m), 20-amp, 3-pin (97403) 13226E7032-1	DYZ,ENM	EA	3
12	6150-01-253-4290	CABLE, LIGHT SET, 25 OUTLET	DYZ,ENM	EA	2
13	6150-01-256-6301	CABLE, PIGTAIL: 4-ft (1.2 m), 40/60-amp, 3-pin (97403) 13226E7019	DYZ,ENM	EA	1
14	6150-01-247-4761	CABLE, SERVICE/FEEDER: 100-ft (30.48m), 40/60-amp, 3-pin (97403) 13226E7023-2	DYZ,ENM	EA	1
15		CENTER, DISTRIBUTION: 3-phase120/208 V, 40-amp/ph (97403) 13226E7028 (97403) 13229E6345	DYZ,ENM	EA	1
16	6150-01-256-6298	CONTAINER, TRANSIT AND STORAGE (97403) 13227E5830	DYZ,ENM	EA	1
17		LIST, PACKING (97403) 13227E5826	DYZ,ENM	EA	1
16	6150-01-256-6299	STRAP, CABLE CARRYING (97403) 13227E5825	DYZ,ENM	EA	16

Section II. COMPONENTS OF END ITEM (CONT)



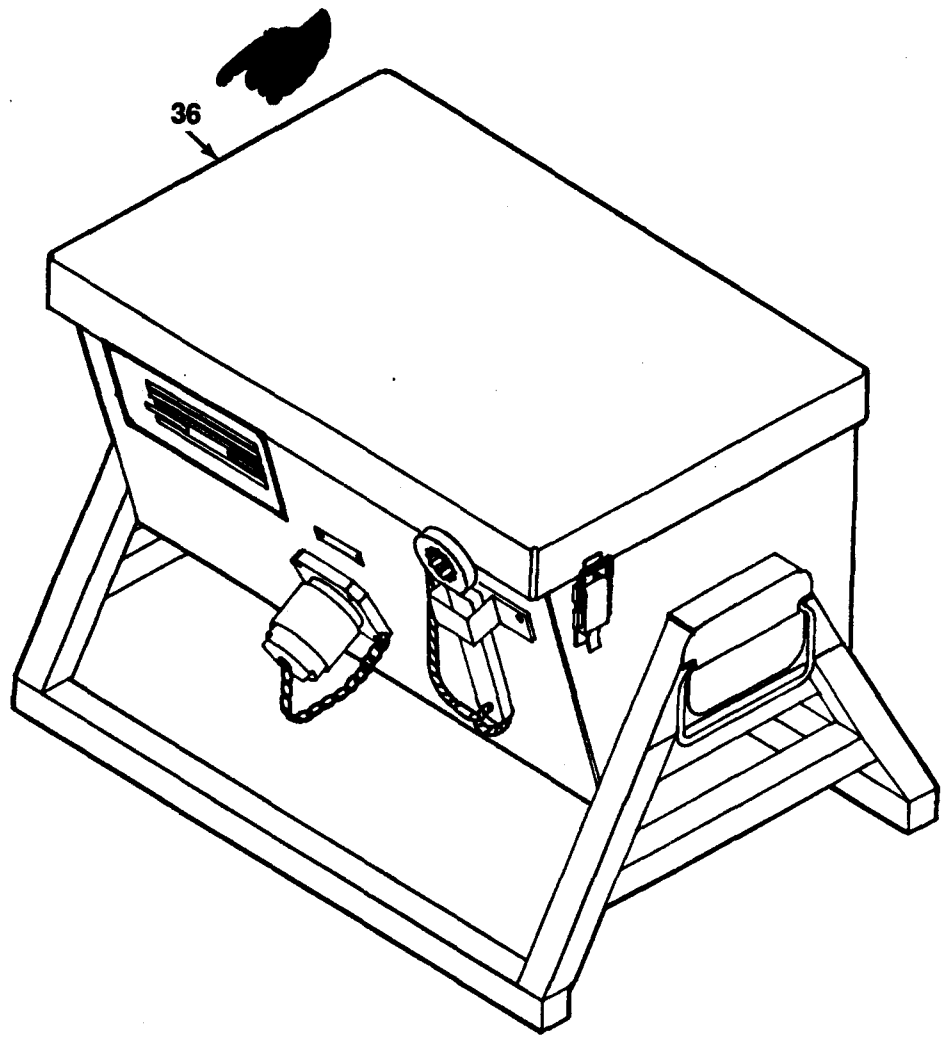
(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
19	6150-01-251-9125	BOX, RECEPTACLE: 120 V, 20-amp 97403) 13226E7040	DZA,ENN	EA	1
20	6150-01-250-0044	CABLE, EXTENSION: 25-ft (7.6 m), 20-amp, 3-pin 97403) 13226E7032-2	DZA,ENN	EA	3
21	6150-01-250-3643	CABLE, EXTENSION: 50-ft (15.2 m), 20-amp, 3-pin 97403) 13226E7032-1	DZA,ENN	EA	3
22	6150-01-253-4290	CABLE, LIGHT SET, 25 OUTLET	DZA, ENN	EA	2
23	6150-01-247-4778	CABLE, PIGTAIL: 4-ft (1.2 m), 60-amp, 4-pin (97403) 13226E7018	DZA,ENN	EA	1
24	6150-01-247-4793	CABLE, SERVICE/FEEDER: 100-ft (30.5 m), 60-amp, 4-pin (97403) 13226E7022-1	DZA,ENN	EA	1
25		CENTER, DISTRIBUTION: Single-phase 120 V, 60-amp (97403) 13226E7027	DZA,ENN	EA	1
26	6150-01-256-6298	CONTAINER, TRANSIT AND STORAGE (97403) 13227E5830	DZA,ENN	EA	2
27		LIST, PACKING (97403) 13227E5826	DZA,ENN	EA	1
28	6150-01-256-6299	STRAP, CABLE CARRYING (97403) 13227E5825	DZA,ENN	EA	16

Section II. COMPONENTS OF END ITEM (CONT)



(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qv Rqr
29	6150-01-251-9124	CABLE ASSEMBLY, BRANCH CIRCUIT: 24-h (7.3 m), 20-amp, 3-pin, (97403) 13226E7034	DZD	EA	2
30	6150-01-247-4766	CABLE, EXTENSION: 15-h (4.6 m), 20-amp, 3-pin (97403) 13226E7032-3	DZD	EA	6
31		CONTAINER, TRANSIT AND STORAGE (97403) 13229E6362	DZD	EA	1
32	6150-01-264-2068	KIT, LiGHT BULB (97403) 13227E5829	DZD	EA	3
	6240-00-617-I 744	40 W, Blue (81348) W-L-I 01/68	DZD	EA	3
	6240-00-689-8504	75 W, White (06172) 4OA/B-120V	DZD	EA	3
33	6230-01-247-4784	LIGHT, UTILITY: 120 V, dual socket, incandescent (97403) 13226E7043	DZD	EA	2
34	6150-01-256-6302	ROPE ASSEMBLY, SUPPORT 53-h (I .2 m) (97403) 13226E7041	DZD	EA	2
35	6150-01-250-0045	STRAP, CABLE SECURING (97403) 13226E7044	DZD	EA	6

Section II. COMPONENTS OF END ITEM (CONT)



(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
36	5975-01-247-4791	ADAPTER, UNIVERSAL (97403) 13227E6201	DZC, ENK DZB, ENL DYZ, ENM	EA	1

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Section III. BASIC ISSUE ITEMS

(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On code	(4) U/M	(5) Qty Rqr
		TM 9-6150-226-13	DZC DZB DYZ DZA DZD ENK ENL ENM ENN	EA	1

APPENDIX D
ADDITIONAL AUTHORIZATION LIST (AAL) ITEMS

NOT APPLICABLE

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE.

This appendix lists expendable supplies and materials you will need to operate and maintain the DISE and PDISE systems. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/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.

a. Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., Use drycleaning solvent, item 1, app E).

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

O - Organizational (Unit) Maintenance

F - Direct Support Maintenance

H - General Support Maintenance

c. Column (3)-National Stock Number. This is the national stock number assigned to the item; use it to request or requisition the item.

d. Column (4) - Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC) in parentheses, followed by the part number.

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

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National stock number	(4) Description	(5) U/M
1	O	8040–01–038–5043	Cement, gasket, 8 oz (237 cc) can	oz
2	O	7930–00–249–8036	Detergent, general–purpose 5 lb (2.3 kg)	lb
3	O	6850–00–057–9360	Compound, cleaning and lubricating, electrical contact, 6–oz (177 cc) can	oz
4	O	6240–00–152–2987	Lamp, fluorescent, 120 V, 40 W	ea
5	O	6240–00–689–8504	Lamp, Incandescent, blue 120 V, 40 W	ea
6	O	6240–00–824–4675	Lamp, Incandescent, white 120 V, 75 W	ea
7	O	8010–01–229–7546	Paint, CARC forest green, type II 1–quart (0.94 liter) kit	qt
8	O	7920–00–205–1711	Rag, wiping	ea
9	F	5970–00–944–1450	Sleeving, insulation, heat shrinkable blue 1 in. diameter	v
10	O	7510–00–266–6711	Tape, masking, 3/4 in. (19.1 mm)	ea
11	F	5970–00–689–3444	Tape, wire marker, black 1/2 X 1296 in. (12.7 mm X 6 m)	ro
12	F	5970–01–017–7388	Tape, wire marker, blue 1/2 X 240 in. (12.7 mm X 6 m)	ro
13	F	5970–01–013–9366	Tape, wire marker, green 1/2 X 240 in. (12.7 mm X 6 m)	ro
14	F	5970–00–834–2569	Tape, wire marker, red 1/2 X 240 in. (12. mm X 6 m)	ro
15	F	5970–00–832–4299	Tape, wire marker, white 1/2 X 648 in. (12.7 mm X 16 m)	ro
16	O	8040–01–038–5643	Adhesive	oz
17	F		Solder, Kester MIL Spec QQ–S–571 (Sn 60 Pb 40)	lb

APPENDIX F

ILLUSTRATED LIST OF MANUFACTURED ITEMS

Section I. INTRODUCTION

This appendix includes complete instructions for making items authorized to be manufactured or fabricated at direct support maintenance. A part number index in alphanumeric order is provided for cross–referencing the part number of the item to be manufactured to the figure which covers fabrication criteria. All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustrations.

Section II. MANUFACTURED ITEMS PART NUMBER INDEX

PART NO.	NSN	DESCRIPTION	FIG. NO.
C0–02HDF (2/4–2/8R) 1290		Cable, Electrical	F–3, F–18, G–22
C0–03MGF (3/12) 0385		Cable, Electrical	F–4, F–23 thru F–25
C0–04HDE (4/0000–4/4R) 2380		Cable, Electrical	F–15, F–19
C0–04HDF (4/1–4/8R) 1620	6145–01–199–1418	Cable, Electrical	F–16, G–20
C0–04HDF (4/4–4/1A)		Cable, Electrical	F–17
C0–04HDF (4/4–4/12R) 1290		Cable, Electrical	F–1, F–2, F–21
M23053/5–109–4	5970–00–057–3545	Sleeving, insulation, heat shrink	F–4, F–23 thru F–25
M23053/5–112–4	5970–00–810–6118	Sleeving, insulation, heat shrink	F–1 thru F–3 F–17, F–18, F–21, F–22
M23053/5–113–4	5970–00–810–6013	Sleeving, insulation, heat shrink	F–16, F–20
M23053/5–114–4	5970–00–810–6132	Sleeving, insulation, heat shrink	F–15, F–19
M39029/30–219	5999–00–190–1887	Socket, electrical connector	F–4, F–12 thru F–14, F–23 thru F–25, F–33 thru F–35

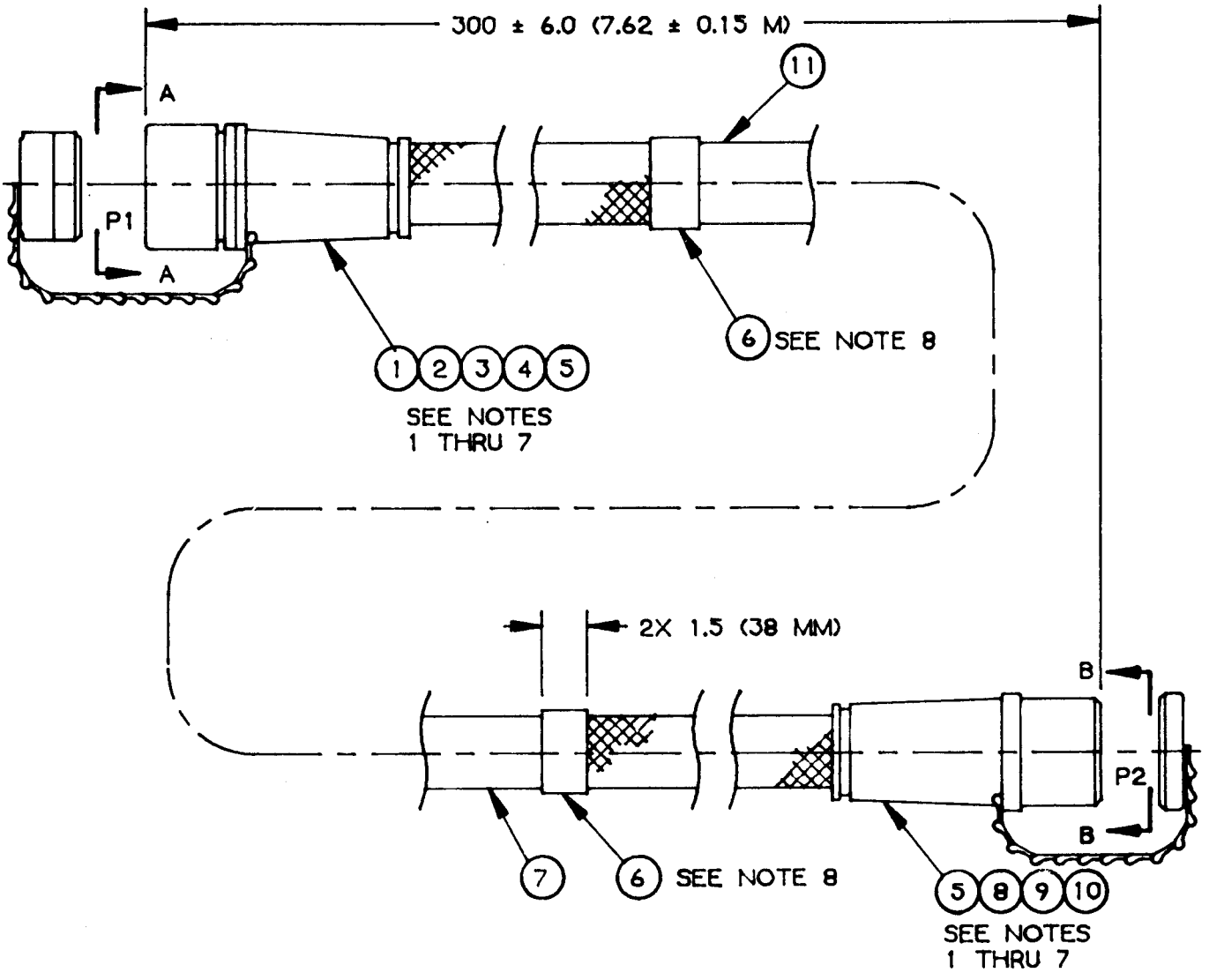
PART NO.	NSN	DESCRIPTION	FIG. NO.
M39029/44–290	5999–01–044–9729	Contact, Electrical pin	F–4, F–23 thru F–25
M39029/48–318	5999–00–014–0939	Contact, electrical pin	F–1 thru F–3, F–8, F–10, F–21, F–22, F–29, F–31
M39029/48–319	5999–01–108–8602	Contact, electrical pin	F–6, F–20, F–27
M39029/48–320	5999–01–014–0941	Contact, electrical pin	F–1 thru F–3, F–8, F–10, F–21, F–22, F–29, F–31
M39029/48–321	5999–01–014–0943	Contact, electrical pin	F–1 thru F–3, F–8, F–10, F–21, F–22, F–29, F–31
M39029/48–322	5999–00–344–1907	Contact, electrical pin	F–5, F–19, F–26
M39029/48–323	5999–01–130–1899	Contact, electrical pin	F–6, F–27
M39029/48–324	5999–01–113–4552	Contact, electrical pin	F–6, F–27
M39029/48–327	5999–00–344–1904	Contact, electrical pin	F–5, F–19, F–26
M39029/48–328	5999–00–344–1906	Contact, electrical pin	F–5, F–19, F–26
M39029/49–329	5999–00–014–0952	Contact, electrical socket	F–3, F–9, F–11, F–17, F–18, F–21, F–22, F–30, F–32
M39029/49–330	5999–01–131–5588	Contact, electrical socket	F–7, F–16, F–20, F–28
M39029/49–331	5999–01–091–3187	Contact, electrical socket	F–1 thru F–3, F–9, F–11, F–18, F–21, F–22, F–30, F–32
M39029/49–332	5999–00–346–8787	Contact, electrical socket	F–15, F–19
M39029/49–333	5999–01–130–1897	Contact, electrical socket	F–7, F–16, F–20, F–28

PART NO	NSN	DESCRIPTION	FIG. NO.
M39029/49-335	5999-00-344-1909	Contact, electrical socket	F-15, F-19
M5086/2-1-9	6145-01-197-3918	Wire, electrical	F-6, F-7, F-27, F-28
M5086/2-12-9	6145-00-578-7514	Wire, electrical	F-12 thru F-14, F-33 thru F-35
M5086/2-2/0-9	6145-00-578-6600	Wire, electrical	F-5
M5086/2-4/0-9		Wire, electrical	F-26
M5086/2-4-9	6145-00-578-6595	Wire, electrical	F-8 thru F-11, F-29 thru F-32
M5086/2-6-9	6145-00-578-6594	Wire, electrical	F-29 thru F-32
M5086/2-8-9	6145-00-284-0657	Wire, electrical	F-8 thru F-11
M39029/49-331	5999-01-091-3187	Contact, electrical socket	F-18
MS25042-16D	5935-01-189-3220	Cover, electrical connector, straight plug	F-4, F-23 thru F-25
MS25043-16D	5935-01-184-7188	Cover, electrical, connector	F-4, F-12 thru F-14, F-23 thru F-25, F-33 thru F-35
MS3102R16-10S	5935-01-160-1788	Connector, electrical receptacle	F-18
MS3348-6-8L	5999-01-167-0838	Reducer, connector pin	F-1 thru F-3, F-7 thru F-11, F-16, F-18, F-20 thru F-25, F-28 thru F-32
MS3349-410-210	5990-01-217-4773	Reducer, contact electrical	F-5, F-26
MS3451W16-10S	5935-01-260-9595	Connector, electrical receptacle	F-4, F-23 thru F-25
MS3452W16-10S	5935-01-160-1788	Connector, electrical receptacle	F-12 thru F-14 F-33 thru F-35

PART NO.	NSN	DESCRIPTION	FIG. NO.
MS3456W16-10P	5935-01-026-221	Connector, Electrical, straight plug	F-4, F-23 thru F-25
MS90555C32405S		Connector, electrical receptacle	F-11, F-32
MS90555C32413S	5935-01-087-020	Connector, electrical receptacle	F-9, F-30
MS90555C44413S	5935-01-092-345	Connector, electrical receptacle	F-7, F-28
MS90556C32405P		Connector, electrical, straight plug	F-3, F-22
MS90556C32413P	5935-01-086-642	Connector, electrical, straight plug	F-1, F-2, F-21
MS90556C52413P	5935-01-106-451	Connector, electrical straight plug	F-19
MS90557C32405S	5935-01-257-402	Connector, electrical receptacle	F-3, F-22
MS90557C32413S	5935-01-087-018	Connector, electrical receptacle	F-1, F-2, F-17, F-21
MS90557C44413S	5935-01-091-916	Connector, electrical receptacle	F-16, F-20
MS90557C52413S	5935-01-106-451	Connector, electrical socket	F-15, F-19
MS9055844413P	5935-01-092-426	Connector, electrical receptacle	F-6, F-27
MS90558C32405P	5935-01-257-403	Connector, electrical receptacle	F-10, F-31
MS90558C32413P	5935-01-076-573	Connector, electrical receptacle	F-8, F-29
MS90558C52413P	5935-01-087-078	Connector, electrical receptacle	F-5, F-26
MS90563-3C	5935-00-114-8061	Cover, electrical connector	F-9, F-11, F-30, F-32
MS90563-7C		Cover, electrical connector	F-7, F-28

PART NO.	NSN	DESCRIPTION	FIG. NO.
MS90564-11C		Cover, electrical connector	F-5, F-26
MS90564-3C		Cover, electrical connector	F-8, F-10, F-29, F-31
MS90564-7C		Cover, electrical connector	F-6, F-27

Section III. MANUFACTURED ITEMS ILLUSTRATION



1. MS90556C32413P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-320 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. M39029/48-321 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-318 CONTACT, ELECTRICAL PIN (P1-G)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1-G, P2-G)
6. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-04HDF (4/4-4/12R) 1290 CABLE
8. MS90557C32413S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-331 CONTACT, ELECTRICAL SOCKET (P2-A, B, C, N)
10. M39029/49-329 CONTACT, ELECTRICAL SOCKET (P2-G)
11. TAG, WARNING

FIGURE F-1. 40/60-amp, 25-ft (7.6m) service/feeder cable. (sheet 1 of 3)

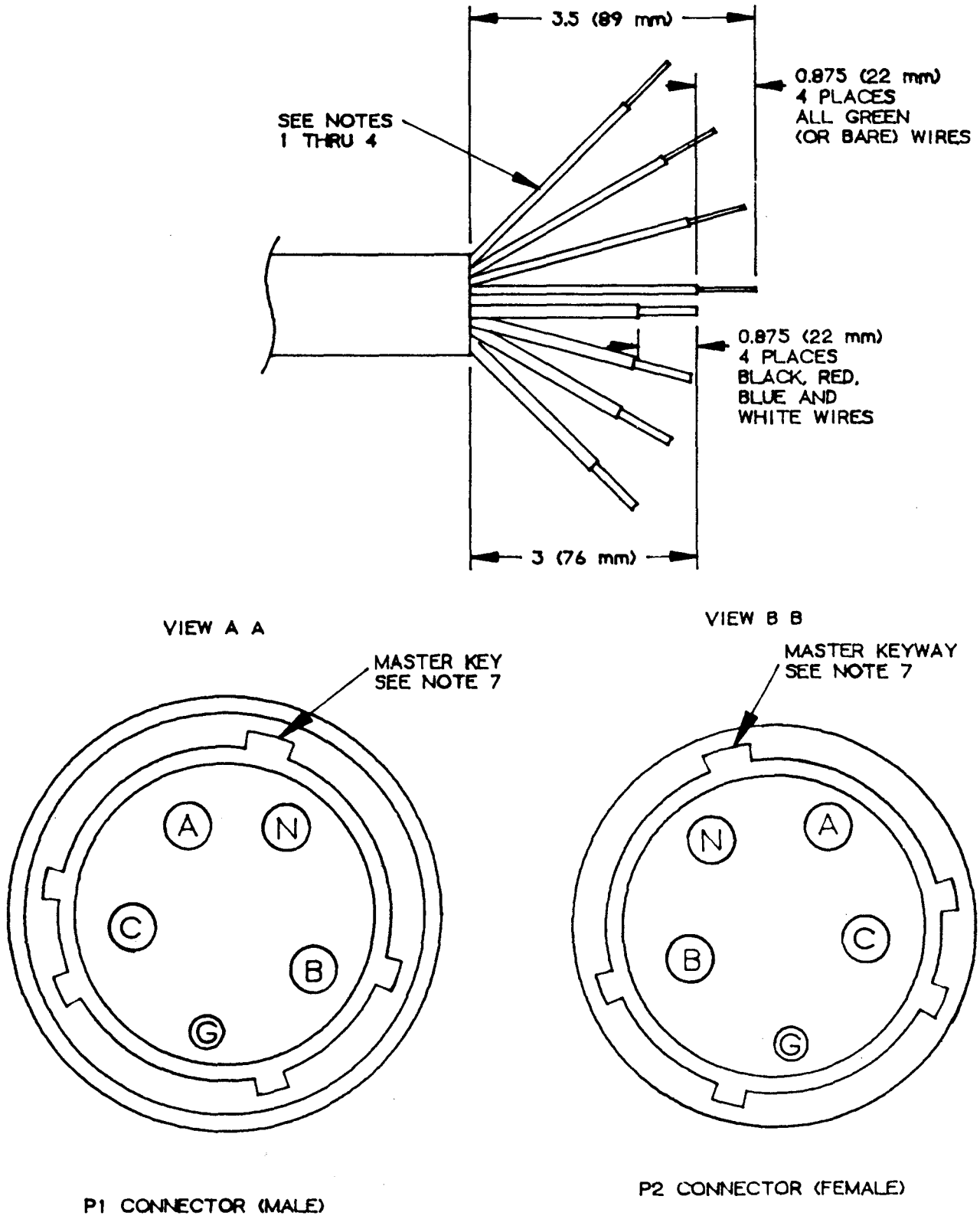


FIGURE F-1. 40/60-amp, 25-ft (7.6m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test. to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. TWIST FOUR GROUND WIRES TOGETHER.

4. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
RED	P1-B	P2-B
BLUE	P1-C	P2-C
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G	P2-G
GREEN (OR BARE)		
GREEN (OR BARE)		
GREEN (OR BARE)		

5. VERIFY ELECTRICAL CONTINUITY FOR EACH “FROM-TO” PATH WITH AN OHMMETER.

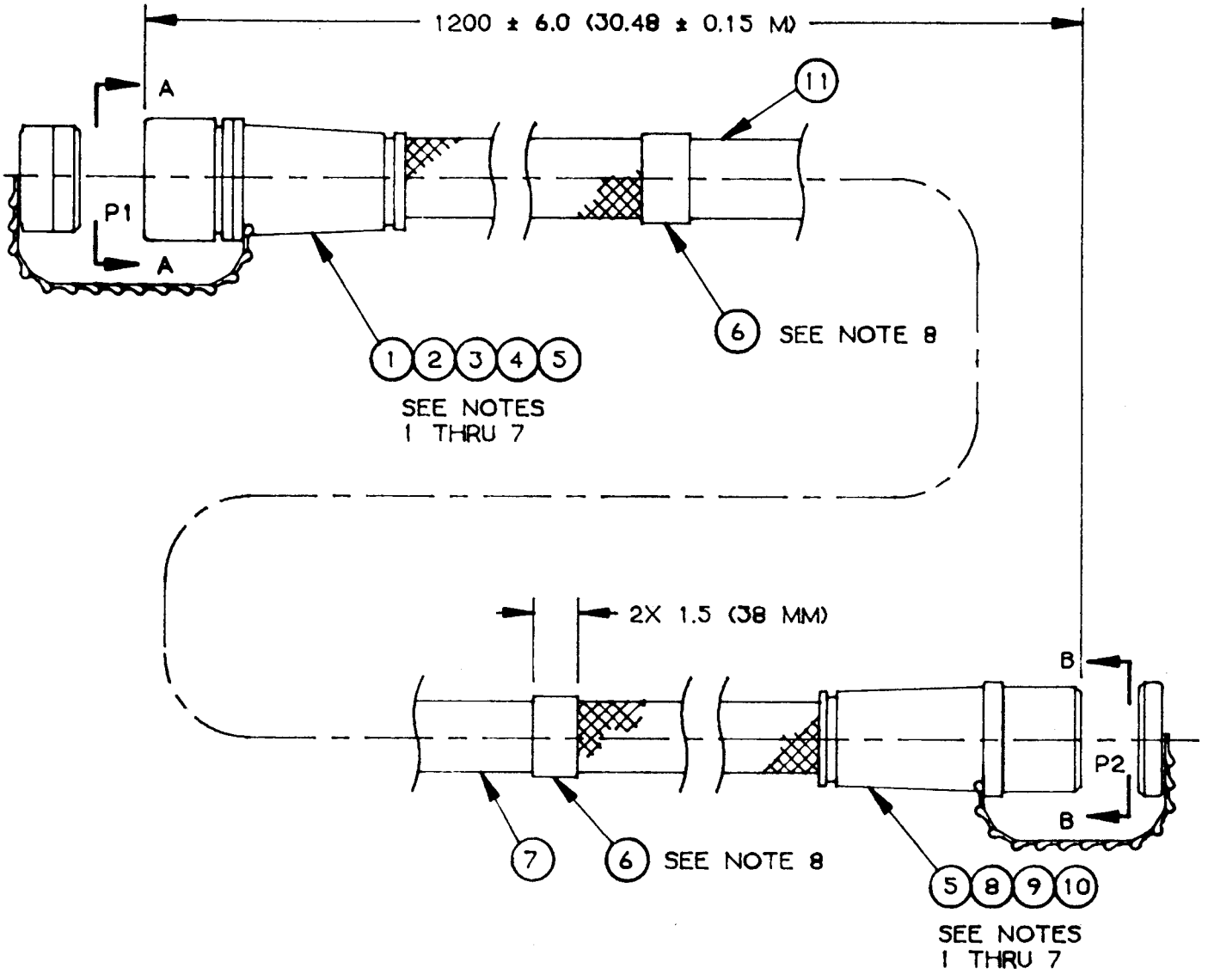
6. CRIMP PINS/SOCKETS TO CABLE WIRES.

7. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PINS/SOCKETS ALINE AS INDICATED.

8. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7023-3
120/208 VAC
3 PHASE
60 AMP

FIGURE F-1. 40/60-amp, 25-ft (7.6m) service/feeder cable. (sheet 3 of 3)



1. MS90556C32413P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-320 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. M39029/48-321 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-318 CONTACT, ELECTRICAL PIN (P1-G)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1-G, P2-G)
6. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-04HDF (4/4-4/12R) 1290 CABLE
8. MS90557C32413S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-331 CONTACT, ELECTRICAL SOCKET (P2-A, B, C, N)
10. M39029/49-329 CONTACT, ELECTRICAL SOCKET (P2-G)
11. TAG, WARNING

FIGURE F-2. 40/60-amp, 100-ft (30.5m) service/feeder cable. (sheet 1 of 3)

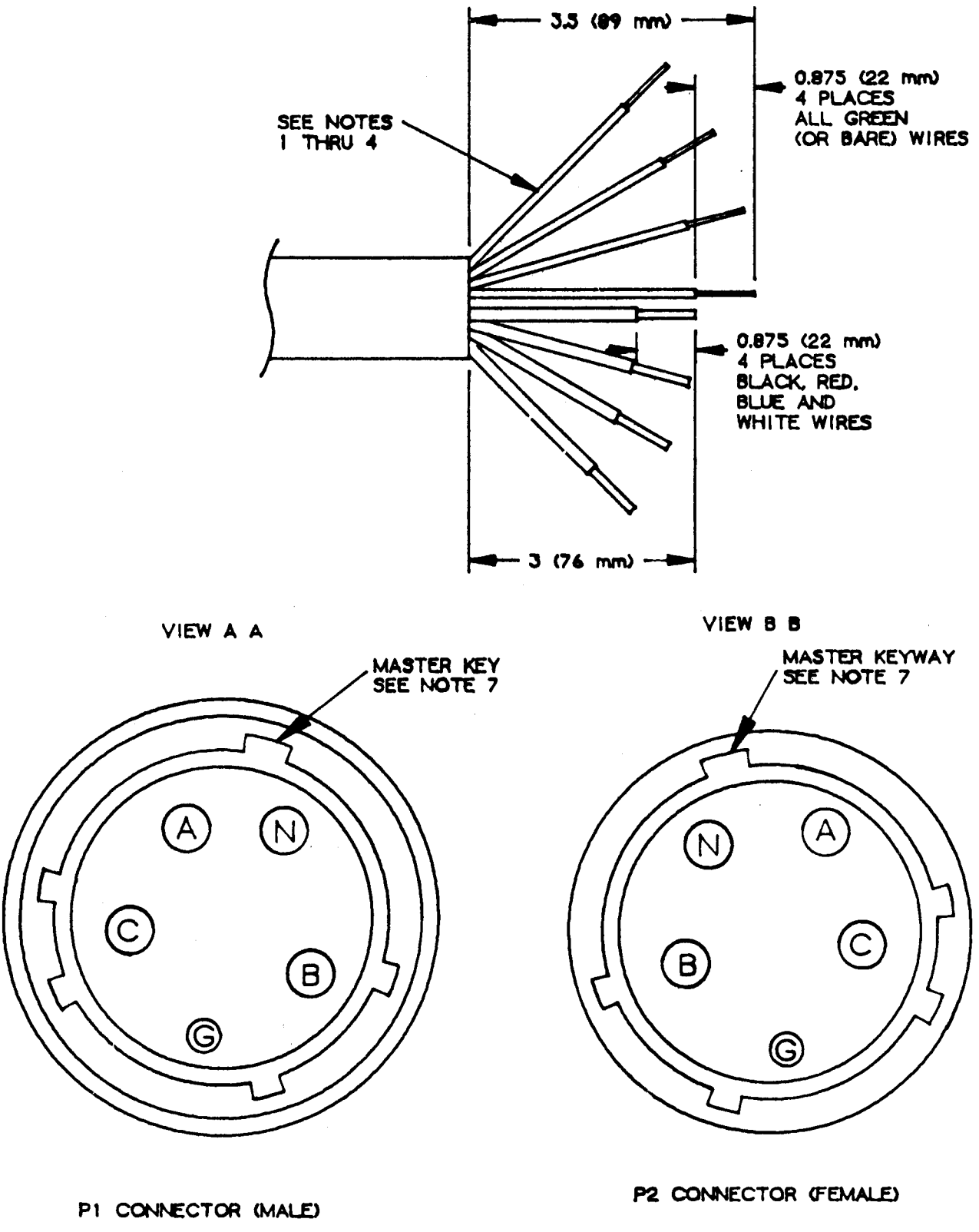


FIGURE F-2. 40/60-amp, 100-ft (30.5m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

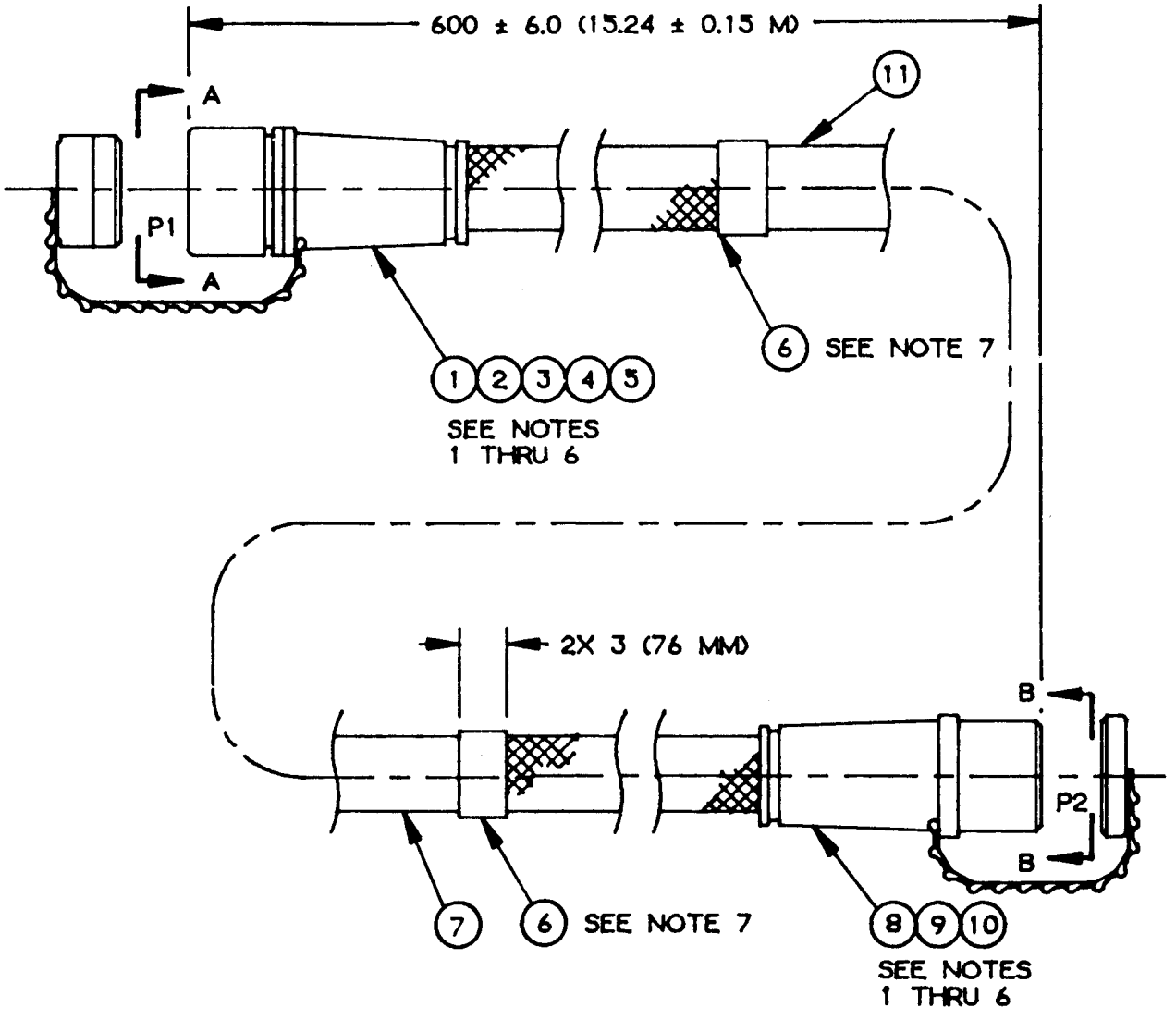
1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.
2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.
3. TWIST FOUR GROUND WIRES TOGETHER.
4. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
RED	P1-B	P2-B
BLUE	P1-C	P2-C
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G	P2-G
GREEN (OR BARE)		
GREEN (OR BARE)		
GREEN (OR BARE)		

5. VERIFY ELECTRICAL CONTINUITY FOR EACH “FROM-TO” PATH WITH AN OHMMETER.
6. CRIMP PINS/SOCKETS TO CABLE WIRES.
7. ASSEMBLE P1 AND P2 CONNECTORS SO -KEYS/KEYWAYS AND PINS/SOCKETS ALINE AS INDICATED.
8. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7023-1
120/208 VAC
3 PHASE
60 AMP

FIGURE F-2. 40/60-amp, 100-ft (30.5m) service/feeder cable. (sheet 3 of 3)



1. MS90556C32405P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-320 CONTACT, ELECTRICAL PIN (P1-A)
3. M39029/48-321 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-318 CONTACT, ELECTRICAL PIN (P1-G, G2)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1-G1, G)
6. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-02HDF (2/4-2/8R) 1290 CABLE
8. MS90557C32405S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-331 CONTACT, ELECTRICAL SOCKET (P2-A, N)
10. M39029/49-329 CONTACT, ELECTRICAL SOCKET (P2-G1,G-2)
11. TAG, WARNING

FIGURE F-3. 60-amp, 50-ft (15.2m) service/feeder cable. (sheet 1 of 3)

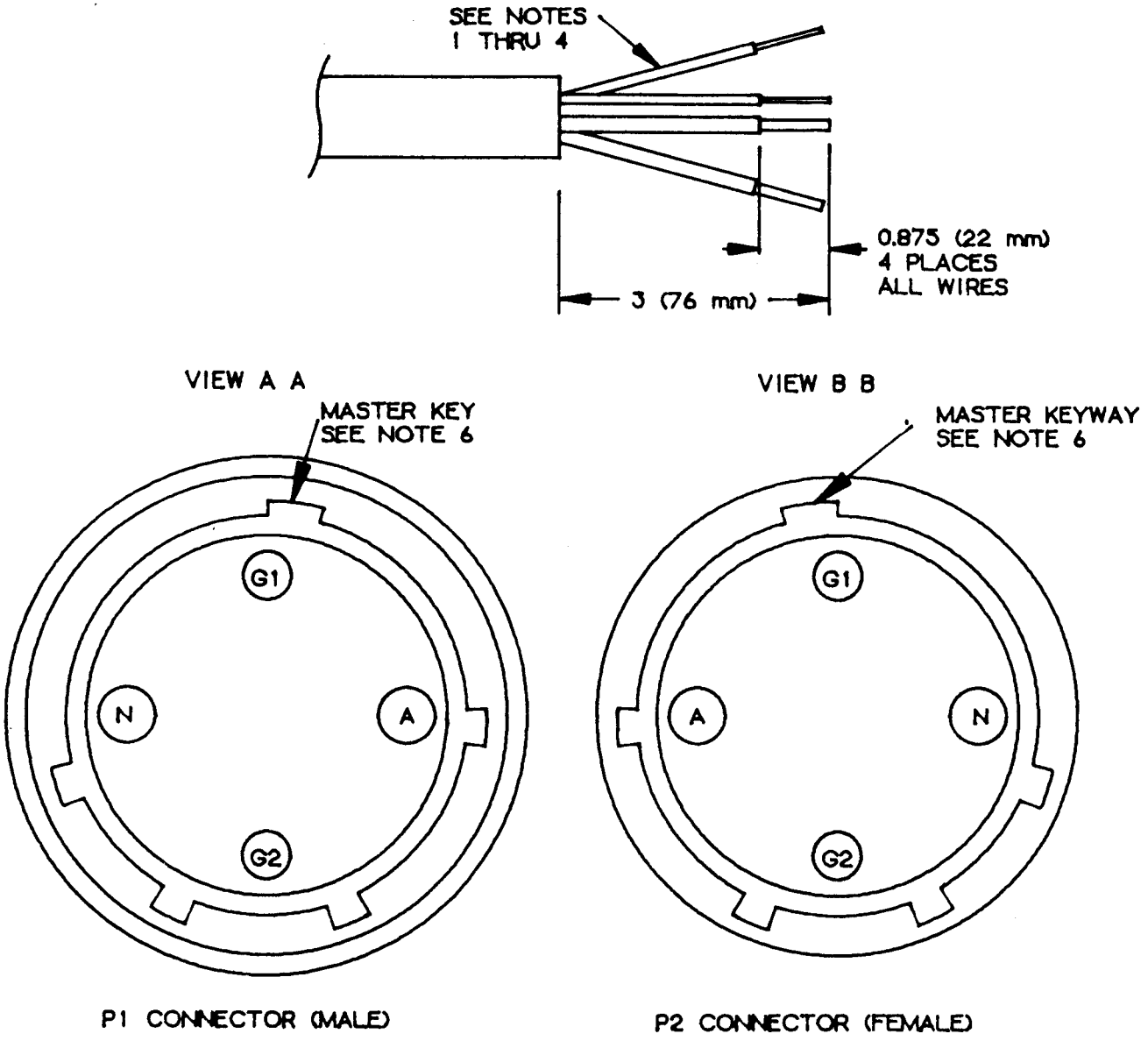


FIGURE F-3. 60-amp, 50-ft (15.2m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G	P2-G1
GREEN (OR BARE)	P1-G2	P2-G2

4. VERIFY ELECTRICAL CONTINUITY FOR EACH “FROM-TO” PATH WITH AN OHMMETER.

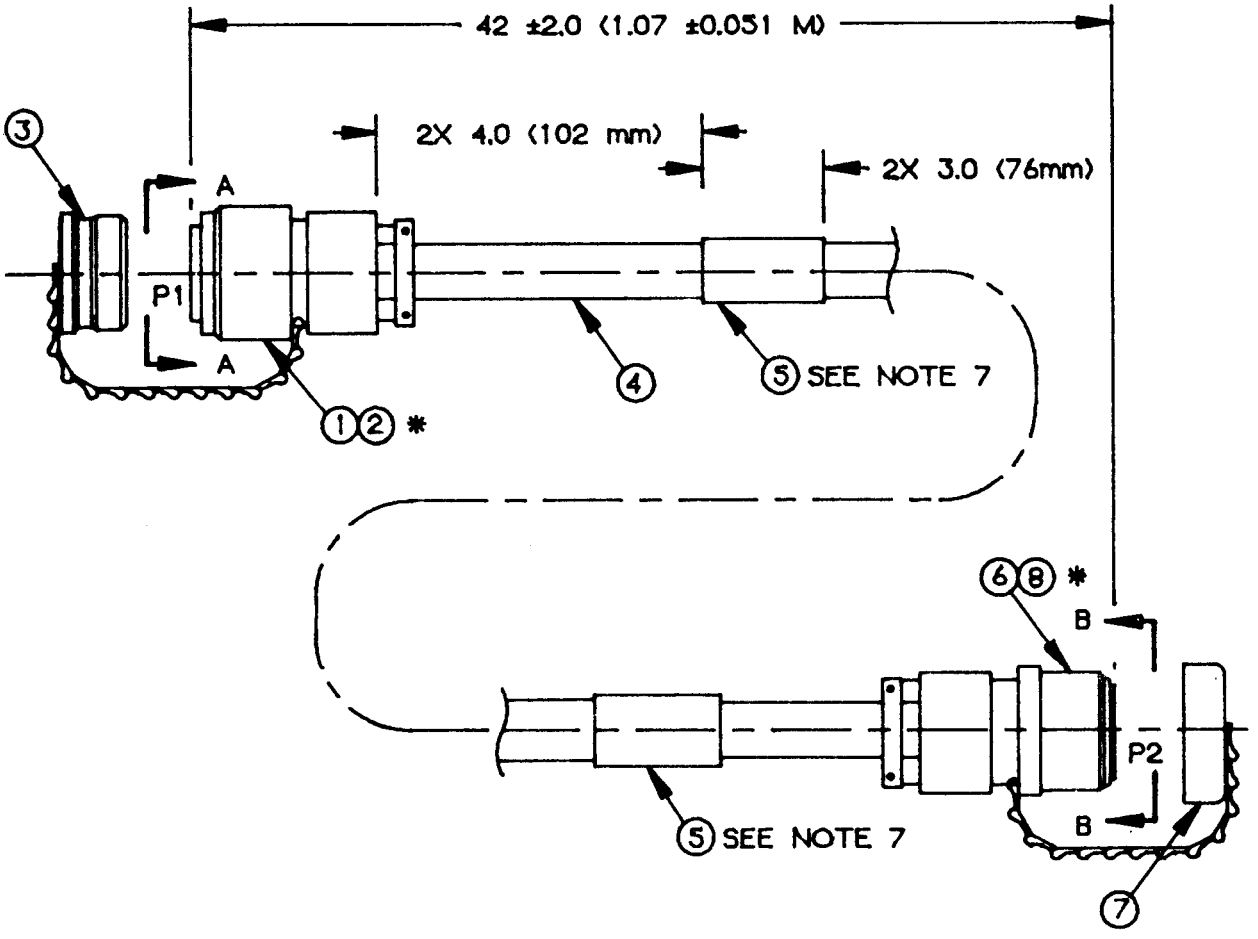
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PINS/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7022-2
120/208 VAC
3 PHASE
60 AMP

FIGURE F-3. 60-amp, 50-ft (15.2m) service/feeder cable. (sheet 3 of 3)



*SEE NOTES 1 THRU 6.

1. MS3456W16-10P CONNECTOR, ELECTRICAL STRAIGHT PLUG (Pi)
2. M39029/44-290 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. MS25042-16D COVER, ELECTRICAL CONNECTOR, STRAIGHT PLUG
4. CO-03MGF (3/12) 0385 CABLE, BLACK
5. M23053/5-109-4 SLEEVING, INSULATION, HEAT SHRINK
6. MS3451W16-10S CONNECTOR, ELECTRICAL, RECEPTACLE (P2)
7. MS25043-16D COVER, ELECTRICAL, CONNECTOR, ELECTRICAL RECEPTACLE
8. M39029/30-219 CONTACT, ELECTRICAL SOCKET (P2-A, B, C)

FIGURE F-4. 20-amp, 3.5-ft (1.07m) extension cable. (sheet 1 of 3)

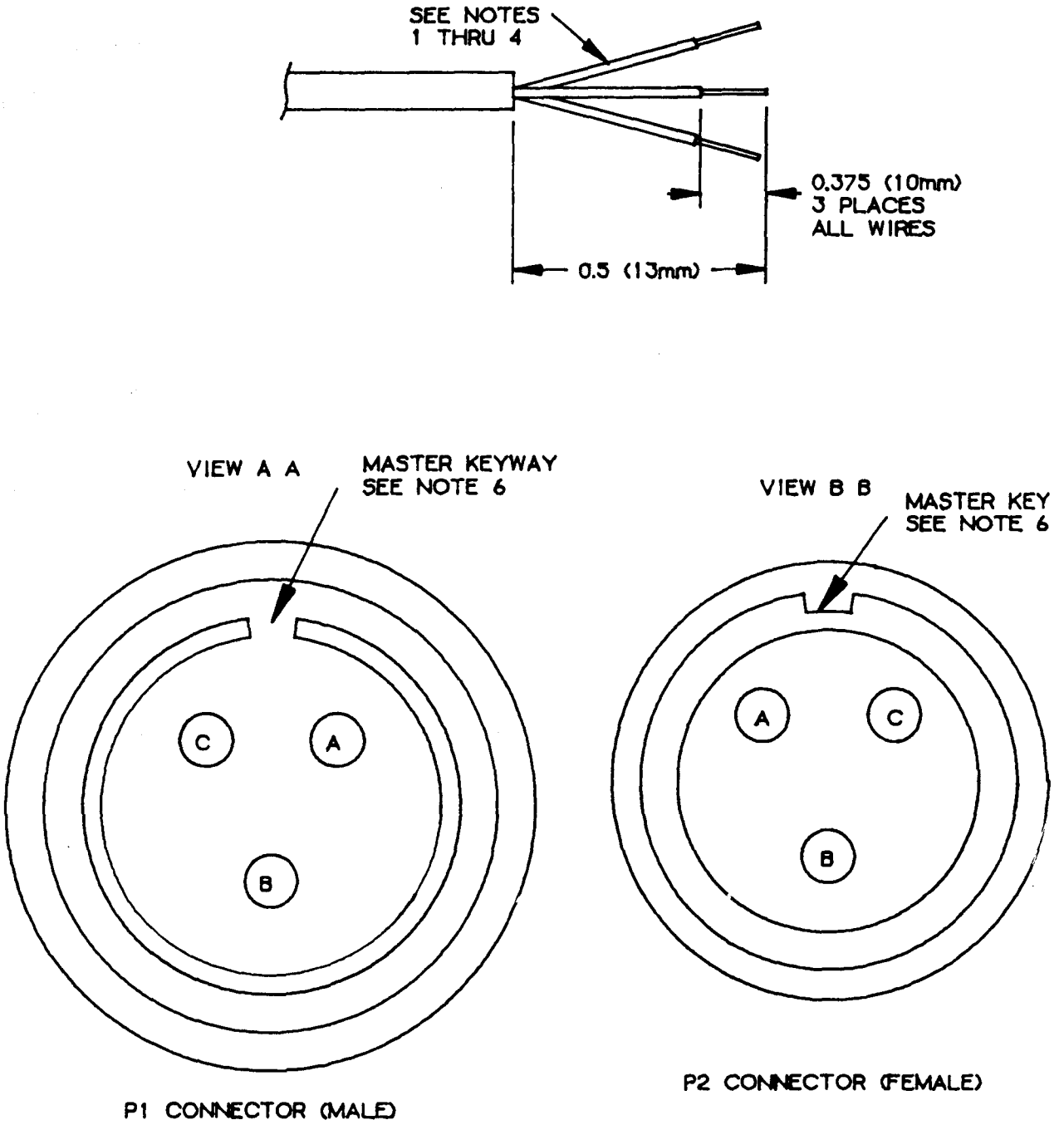


FIGURE F-4. 20-amp, 3.5-ft (1.07m) extension cable. (sheet 2 of 3)

NOTES:

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1–A	P2-A
WHITE	P1-B	P2-B
GREEN	P1–C	P2-C

4. VERIFY ELECTRICAL CONTINUITY FOR EACH “FROM-TO PATH WITH AN OHMMETER.

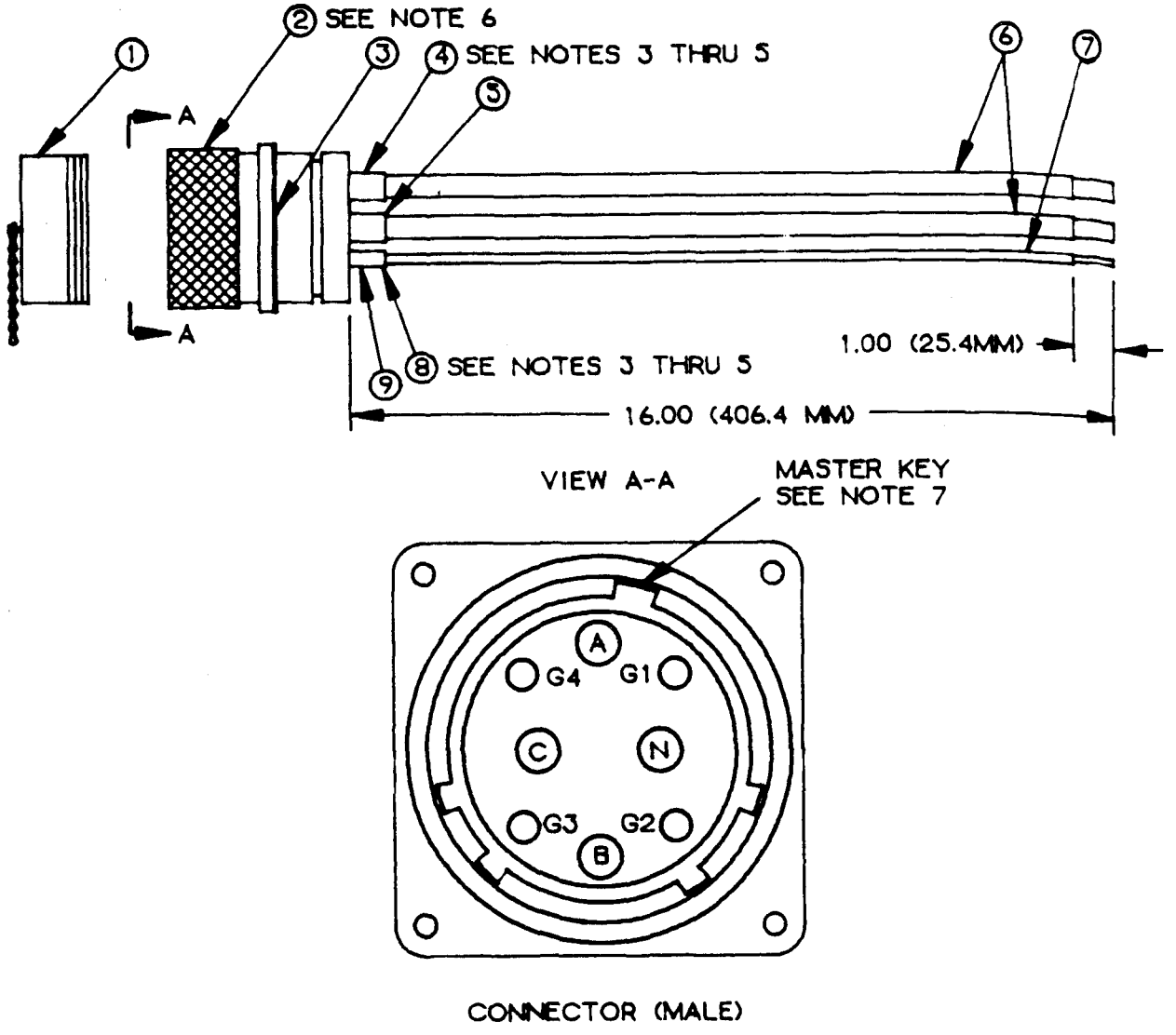
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PINS/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7032–4
120 VAC
20 AMP

FIGURE F-4. 20-amp, 3.5-ft (1.07m) extension cable. (sheet 3 of 3)



1. MS90564-11C COVER, ELECTRICAL CONNECTOR
2. MS90558C52413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-327 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-328 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-02-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-4-9 WIRE, ELECTRICAL (G1, G2, G3, G4)
8. M39029/48-322 CONTACT, ELECTRICAL PIN (G1, G2, G3, G4)
9. MS3349 REDUCER, CONTACT ELECTRICAL (G1, G2, G3, G4)

FIGURE F-5. 200-amp input connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M200 FEEDER CENTER, CONNECTOR J1.

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

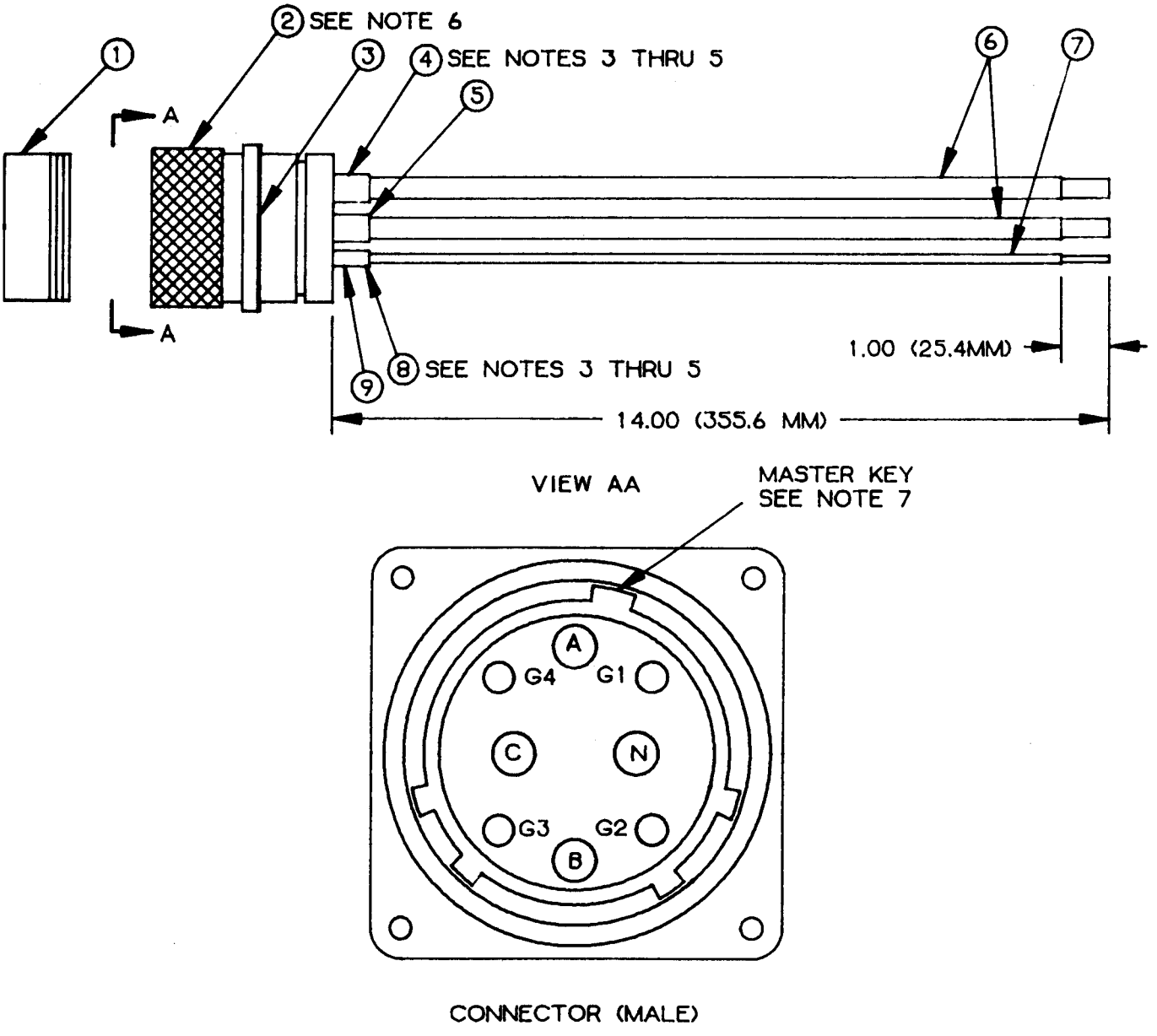
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 6	2/0	16 (406.4 MM)
B	4 and 6	2/0	16 (406.4 MM)
C	4 and 6	2/0	16 (406.4 MM)
N	5 and 6	2/0	16 (406.4 MM)
G1	7, 8, and 9	4	16 (406.4 MM)
G2	7, 8, and 9	4	16 (406.4 MM)
G3	7, 8, and 9	4	16 (406.4 MM)
G4	7, 8, and 9	4	16 (406.4 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEMS 4, 5, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-5. 200-amp input connector assembly. (sheet 2 of 2)



1. MS90564-7C COVER, ELECTRICAL CONNECTOR
2. MS9055844413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-323 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-324 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-l-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-8-9 WIRE, ELECTRICAL (G1, G2, G3, G4)
8. M39029/48-319 CONTACT, ELECTRICAL PIN (G1, G2, G3, G4)
9. MS3348-6-8L REDUCER, CONTACT PIN (G1, G2, G3, G4)

FIGURE F-6. 100-amp input connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M1OO FEEDER CENTER, CONNECTOR J1.

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

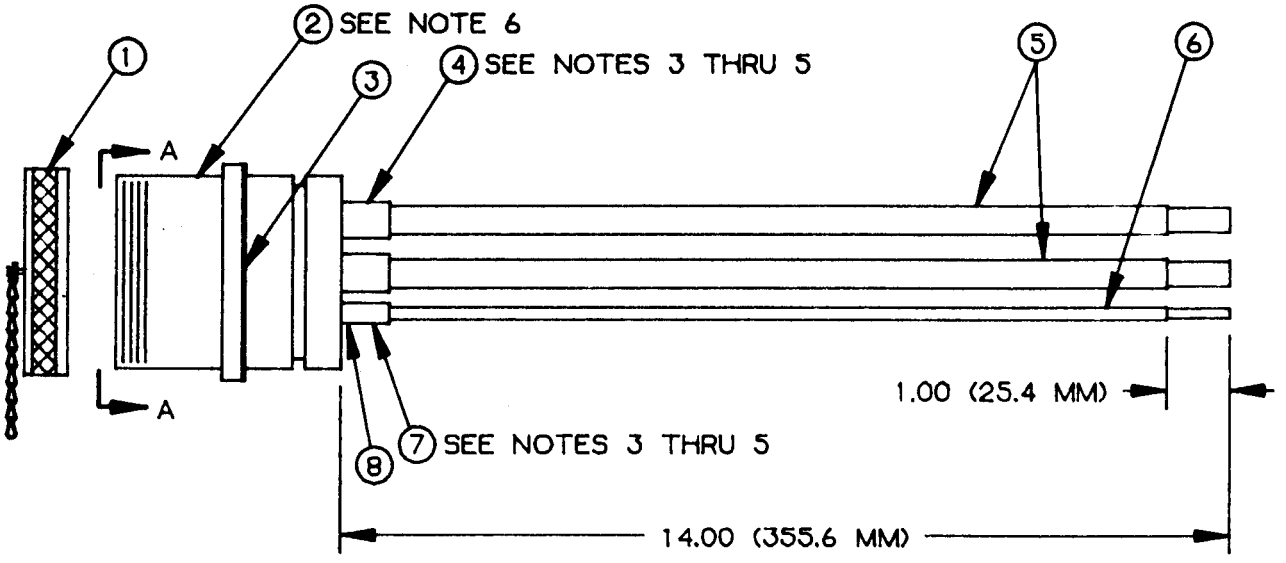
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 6	1	14 (355.6 MM)
B	4 and 6	1	14 (355.6 MM)
C	4 and 6	1	14 (355.6 MM)
N	5 and 6	1	14 (355.6 MM)
G1	7, 8, and 9	8	14 (355.6 MM)
G2	7, 8, and 9	8	14 (355.6 MM)
G3	7, 8, and 9	8	14 (355.6 MM)
G4	7, 8, and 9	8	14 (355.6 MM)

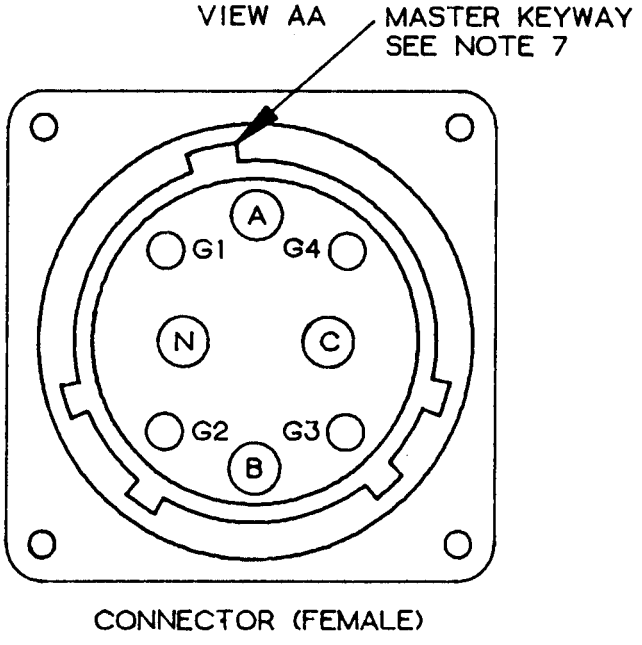
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT PINS (ITEMS 4, 5, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-6. 100-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (FEMALE)

1. MS90563-7C COVER, ELECTRICAL CONNECTOR
2. MS9055C44413S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/49-333 CONTACT, ELECTRICAL SOCKET (A, B, C, N)
5. M5086/2-1-9 WIRE, ELECTRICAL (A, B, C, N)
6. M5086/2-8-9 WIRE, ELECTRICAL (G1, G2, G3, G4)
7. M39029/49-330 CONTACT, ELECTRICAL SOCKET (G1, G2, G3, G4)
8. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (G1, G2, G3, G4)

FIGURE F-7. 100-amp output connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 FEEDER CENTER, CONNECTORS J4, J5, AND J11
   M1OO FEEDER CENTER, CONNECTOR J2

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

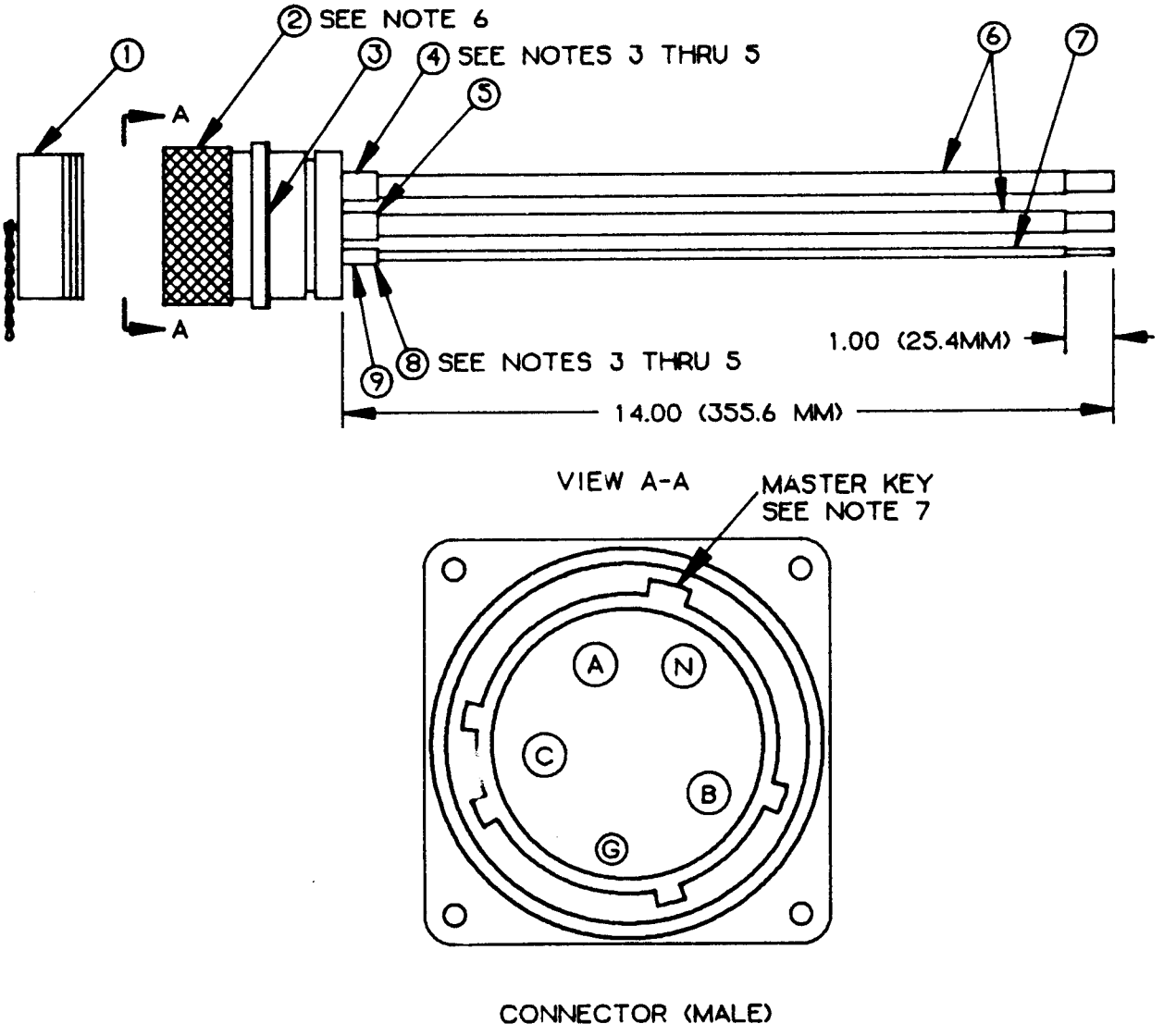
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 6	1	14 (355.6 MM)
B	4 and 6	1	14 (355.6 MM)
C	4 and 6	1	14 (355.6 MM)
N	5 and 6	1	14 (355.6 MM)
G1	7, 8, and 9	8	14 (355.6 MM)
G2	7, 8, and 9	8	14 (355.6 MM)
G3	7, 8, and 9	8	14 (355.6 MM)
G4	7, 8, and 9	8	14 (355.6 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEMS 4, AND 7)

7. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-7. 100-amp output connector assembly. (sheet 2 of 2)



1. MS90564-3C COVER, ELECTRICAL CONNECTOR
2. MS90558C32413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-320 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-321 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-4-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-8-9 WIRE, ELECTRICAL (G)
8. M39029/48-318 CONTACT, ELECTRICAL PIN (G)
9. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (G)

FIGURE F-8. 40-amp input connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M40 DISTRIBUTION CENTER, CONNECTOR J1.

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

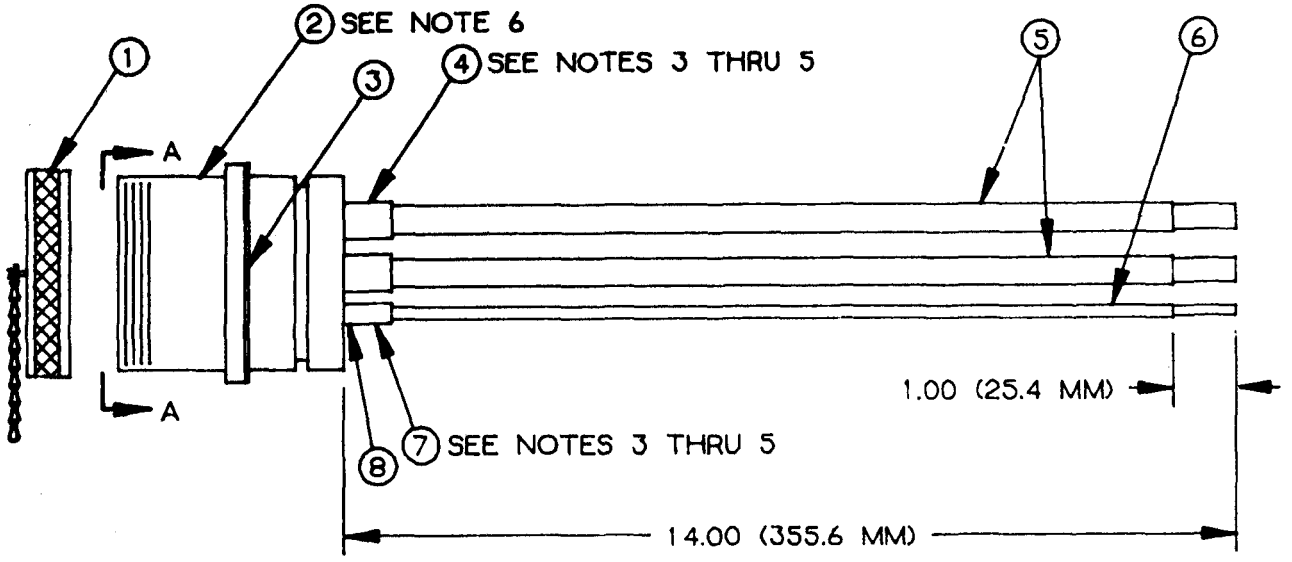
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	3	14 (355.6 MM)
B	4 and 5	3	14 (355.6 MM)
C	4 and 5	3	14 (355.6 MM)
N	5 and 8	3	14 (355.6 MM)
G	6, 7, and 9	4	14 (355.6 MM)

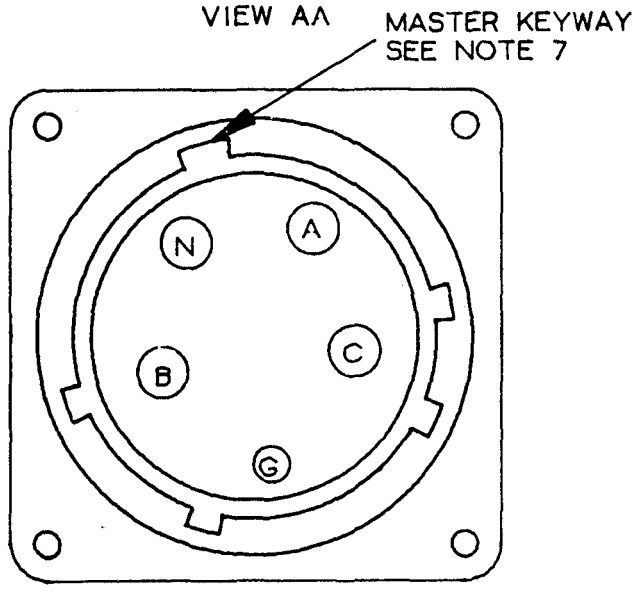
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEMS 4, 7, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-8. 40-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (FEMALE)

1. MS90563-3C COVER, ELECTRICAL CONNECTOR
2. MS90555C32413S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/49-331 CONTACT, ELECTRICAL SOCKET (A, B, C, N)
5. M5086/2-4-9 WIRE, ELECTRICAL (A, B, C, N)
6. M5086/2-8-9 WIRE, ELECTRICAL (G)
7. M39029/49-329 CONTACT, ELECTRICAL SOCKET (G)
8. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (G)

FIGURE F-9. 40/60-amp output connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 FEEDER CENTER, CONNECTORS J7 THRU J1O
   M1OO FEEDER CENTER, CONNECTOR J3 THRU J6
   M40 DISTRIBUTION CENTER, CONNECTOR J2

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

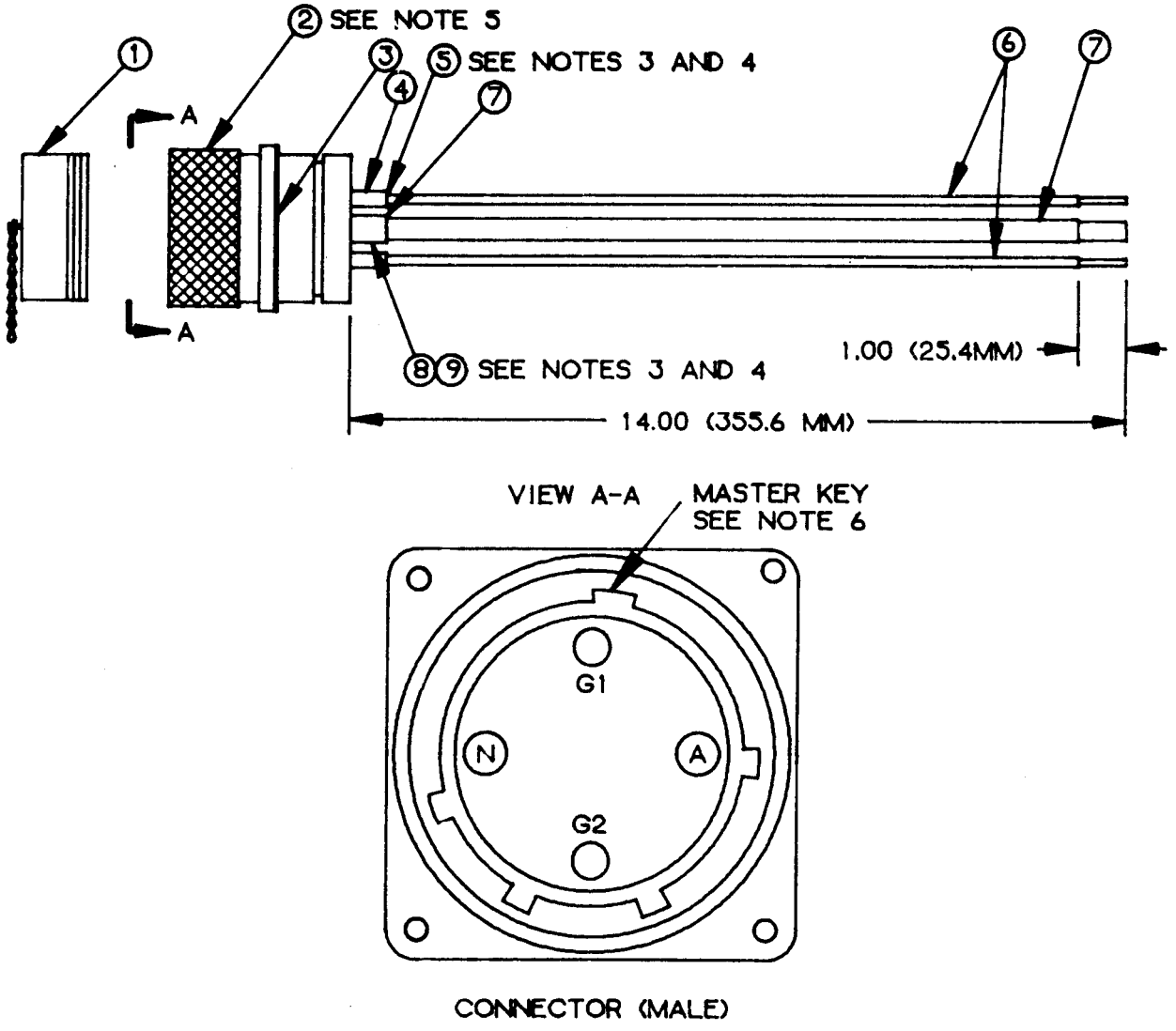
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	14 (355.6 MM)
B	4 and 5	4	14 (355.6 MM)
C	4 and 5	4	14 (355.6 MM)
N	4 and 5	4	14 (355.6 MM)
G	6, 7, and 8	8	14 (355.6 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEMS 4 AND 7)

7. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-9. 40/60-amp connector assembly. (sheet 2 of 2)



1. MS90564-3C COVER, ELECTRICAL CONNECTOR
2. MS90558C32405P CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/48-318 CONTACT, ELECTRICAL PIN (G1, G2)
5. MS3348-6-8L REDUCER, CONTACT PIN (G1, G2)
6. M5086/2-8-9 WIRE, ELECTRICAL (G1, G2)
7. M5086/2-4-9 WIRE, ELECTRICAL (A, N)
8. M39029/48-320 CONTACT, ELECTRICAL PIN (A)
9. M39029/48-321 CONTACT, ELECTRICAL PIN (N)

FIGURE F-10. 60-amp input connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M60 DISTRIBUTION CENTER, CONNECTOR J1 .
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. REMAINING WIRES ARE REMOVED FOR CLARITY.
4. CUT AND REMOVE WIRE INSULATION AS INDICATED.
5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

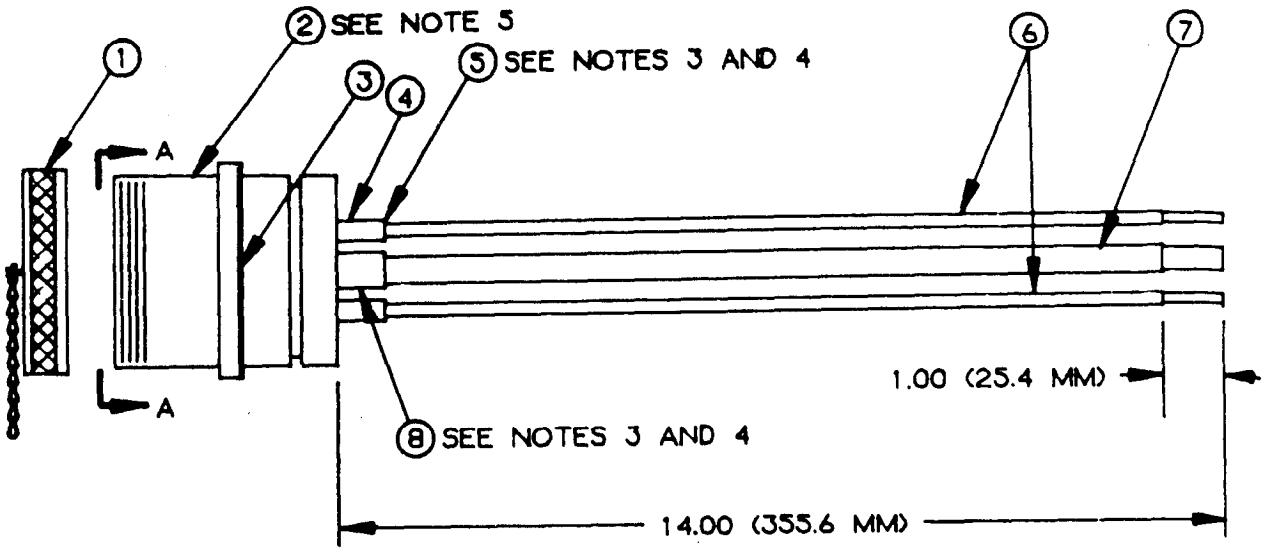
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	6 and 7	4	14 (355.6 MM)
N	6 and 8	4	14 (355.6 MM)
G1	4, 5, 1 and 9	8	14 (355.6 MM)
G2	4, 5, and 9	8	14 (355.6 MM)

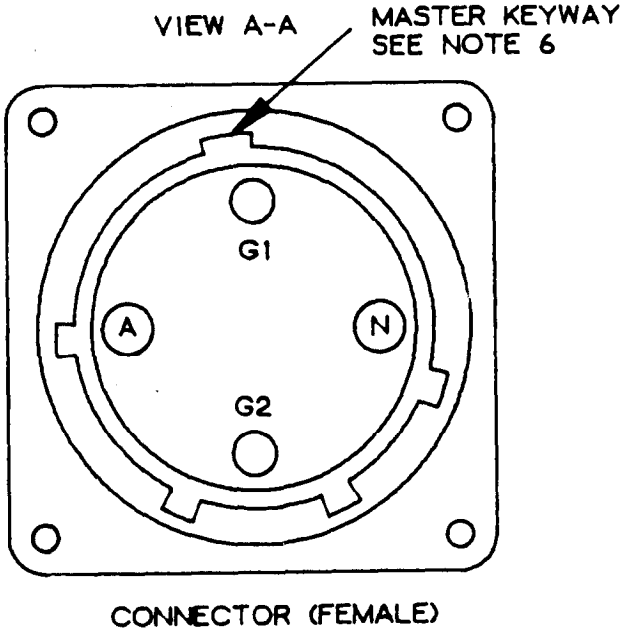
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEMS 4,7 AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-10. 60-amp input connector assembly. (sheet 2 of 2)





1. MS90563-3C COVER, ELECTRICAL CONNECTOR
2. MS90555C32405S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. MS3348-6-8L REDUCER, ELECTRICAL SOCKET (G1, G2)
5. M39029/49-329 CONTACT, ELECTRICAL SOCKET (G1, G2)
6. M5086/2-4-9 WIRE, ELECTRICAL (G1, G2)
7. M5086/2-8-9 WIRE, ELECTRICAL (A, N)
8. M39029/49-331 CONTACT, ELECTRICAL SOCKET (A,N)

FIGURE F-11. 60-amp output connector assembly, (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M60 DISTRIBUTION CENTERS, CONNECTOR J2.
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. CUT AND REMOVE WIRE INSULATION AS INDICATED.
4. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

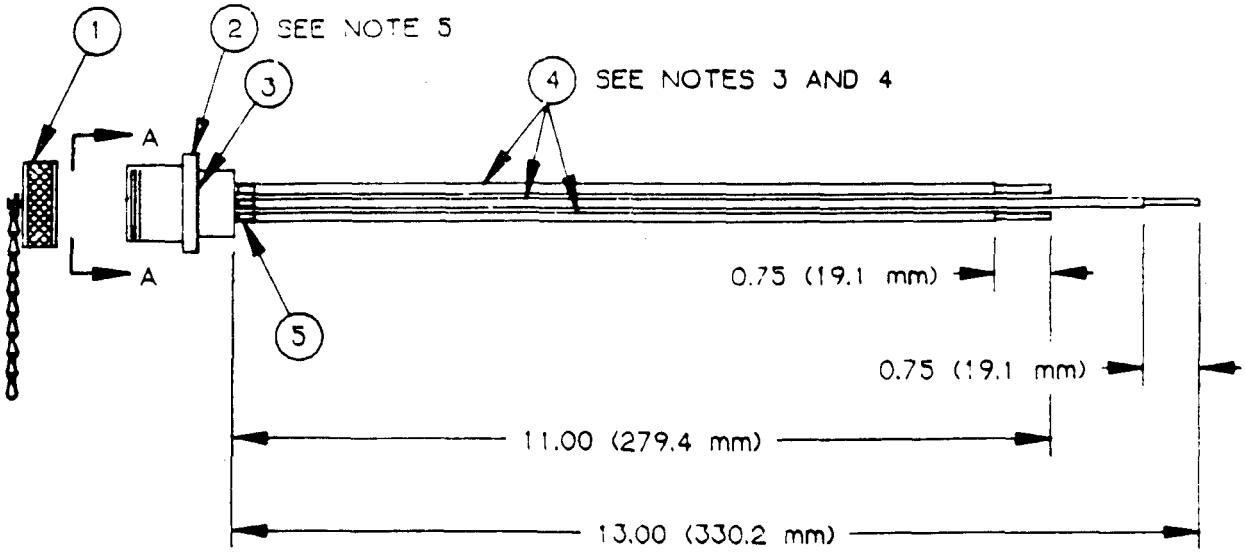
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	7 and 8	4	14 (355.6 MM)
N	7 and 8	4	14 (355.6 MM)
G1	4, 5, and 6	8	14 (355.6 MM)
G2	4, 5, and 6	8	14 (355.6 MM)

5. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

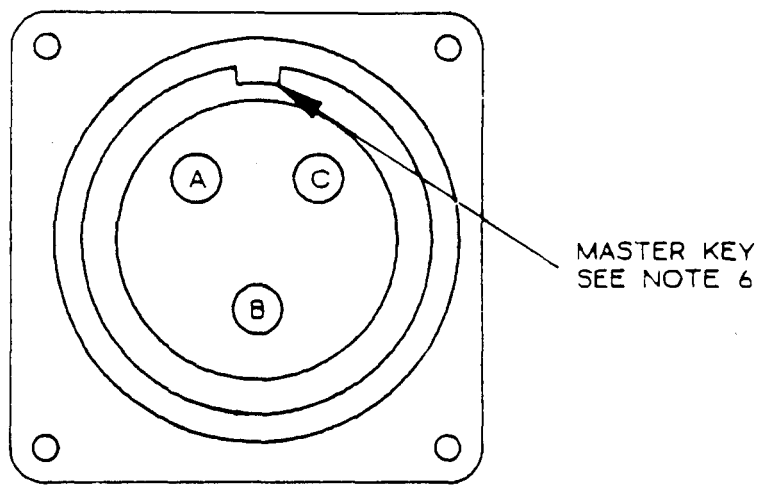
   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEMS 5, AND 8)

6. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-11. 60-amp output connector assembly. (sheet 2 of 2)



VIEW AA



CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-10S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE, ELECTRICAL (A, B, C)
5. M39029/30-219 SOCKET, ELECTRICAL CONTACT (A, B, C)

FIGURE F-12. 20–amp output connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M40 DISTRIBUTION CENTER, CONNECTORS J3 THRU J14
   M60 DISTRIBUTION CENTER, CONNECTOR J3 THRU J8

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. CUT AND REMOVE WIRE INSULATION AS INDICATED.

4. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

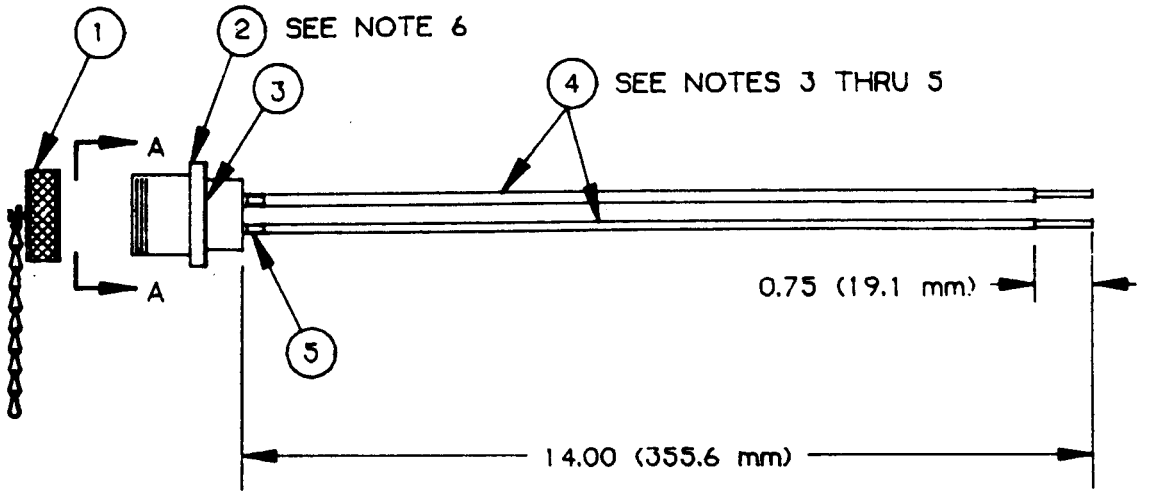
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	11 (279.4 MM)
B	4 and 5	12	13 (330.2 MM)
C	4 and 5	12	11 (279.4 MM)

5. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

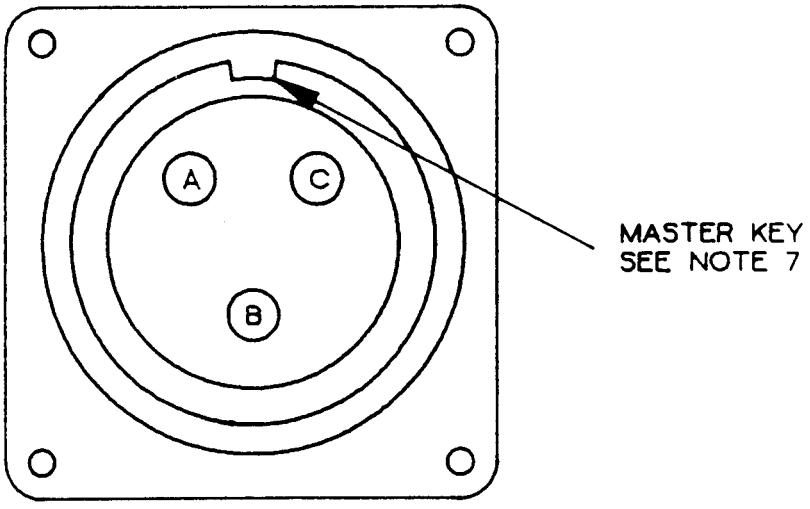
   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEM 5)

6. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-12. 20-amp output connector assembly. (sheet 2 of 2)



VIEW AA



CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-10S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE, ELECTRICAL(A, B, C)
5. M39029/30-219 SOCKET, ELECTRICAL CONTACT (A, B, C)

FIGURE F-13. 20-amp output connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 FEEDER CENTER, CONNECTOR J6
   M100 FEEDER CENTER, CONNECTOR J8

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

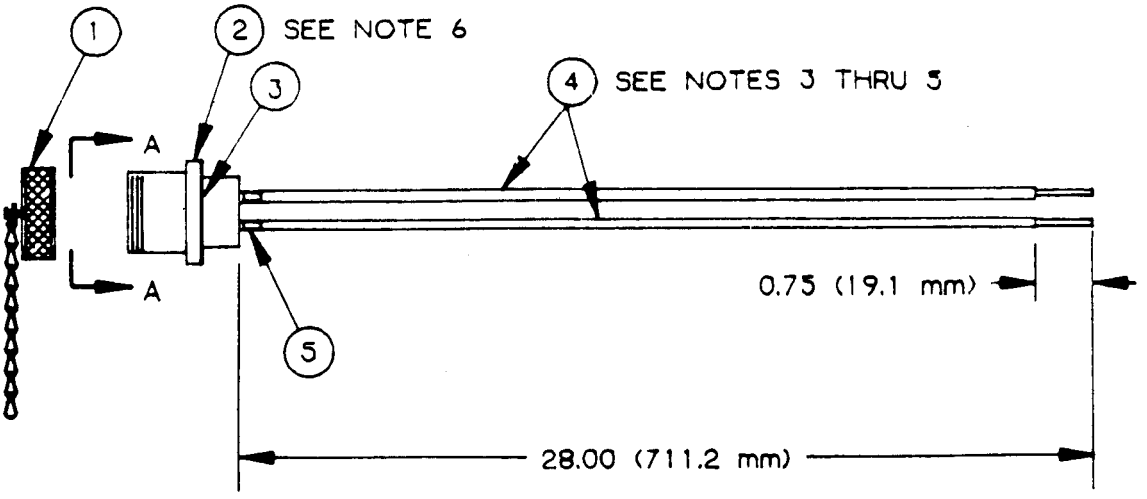
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	14 (355.6 MM)
B	4 and 5	12	14 (355.6 MM)
C	4 and 5	12	14 (355.6 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

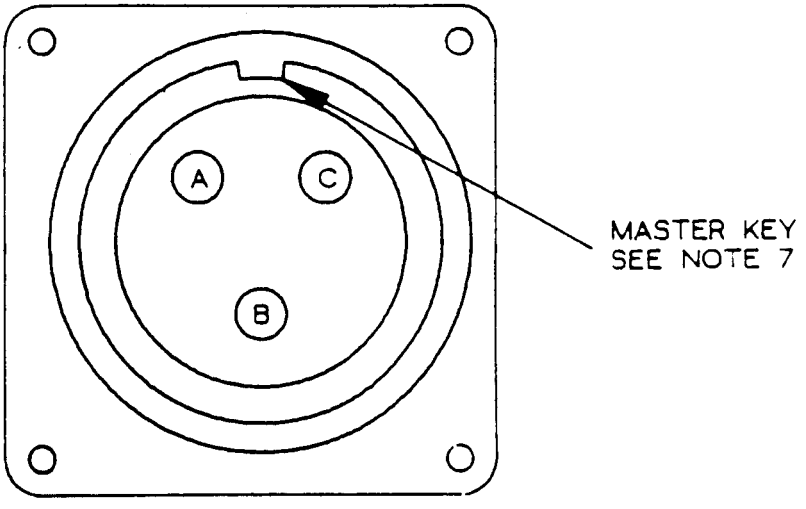
   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEM 5)

6. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED,

FIGURE F-13. 60-amp output connector assembly. (sheet 2 of 2)



VIEW AA



CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-10S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE, ELECTRICAL (A, B, C)
5. M39029/30-219 SOCKET, Electrical CONTACT (A, B, C)

FIGURE F-14. 20-amp output connector assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M1OO FEEDER CENTER, CONNECTORS J7.

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

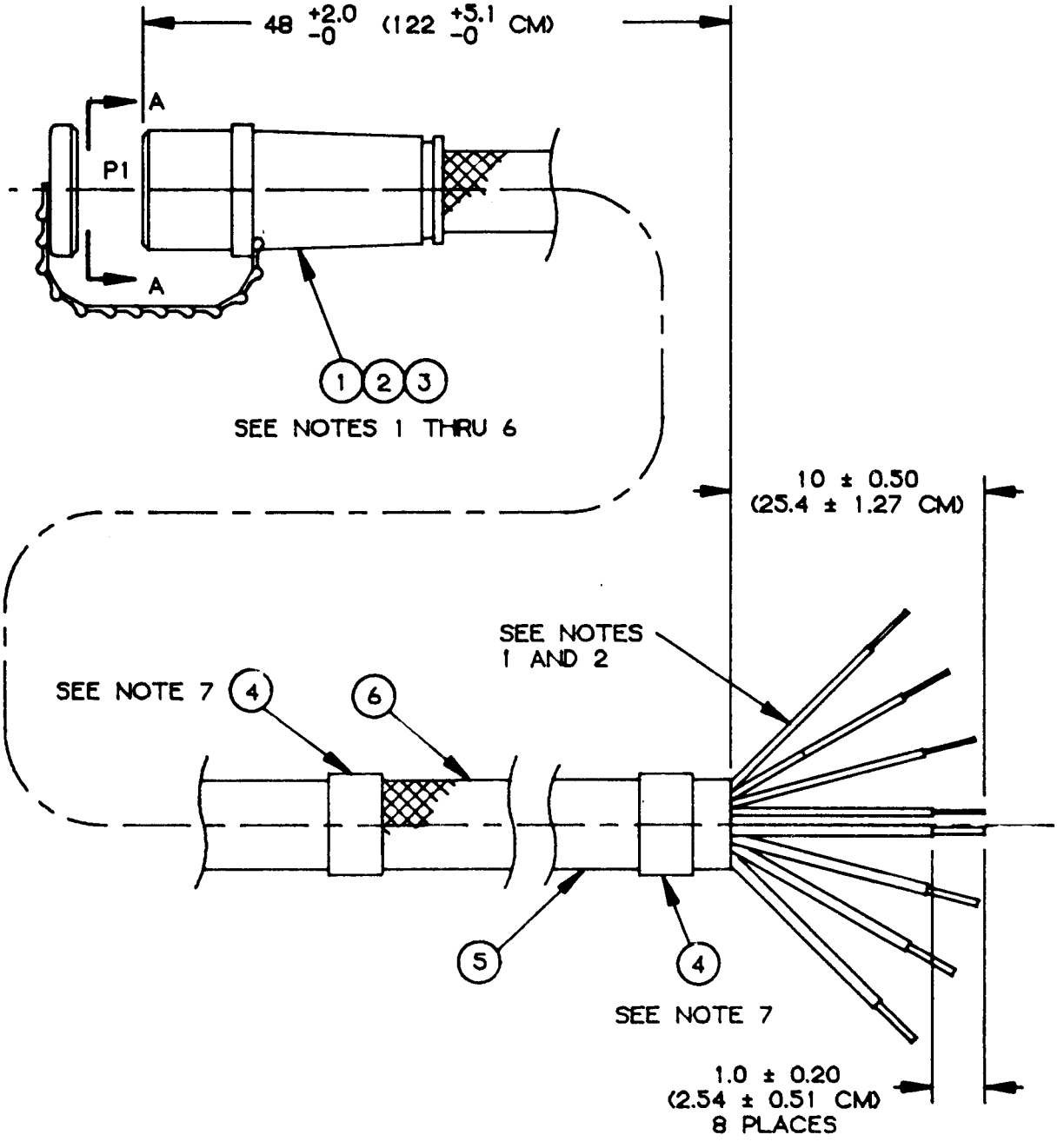
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	28 (711.2 MM)
B	4 and 5	12	28 (711.2 MM)
C	4 and 5	12	28 (711.2 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT PINS (ITEM 5)

6. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-14. 20-amp output connector assembly. (sheet 2 of 2)



1. MS90557C54213S CONNECTOR, ELECTRICAL SOCKET (P1)
2. M39029/49-335 CONTACT, ELECTRICAL SOCKET (P1-A, B, C, N)
3. M39029/49-332 CONTACT, ELECTRICAL SOCKET (P1-G1, G2, G3, G4)
4. M23053/5-114-4 SLEEVING, INSULATION, HEAT SHRINK
5. CO-04HDE (4/0000-4/4R) 2380 CABLE
6. TAG, WARNING

FIGURE F-15. 200-amp, 4-ft (1.2m) pigtail cable. (sheet 1 of 3)

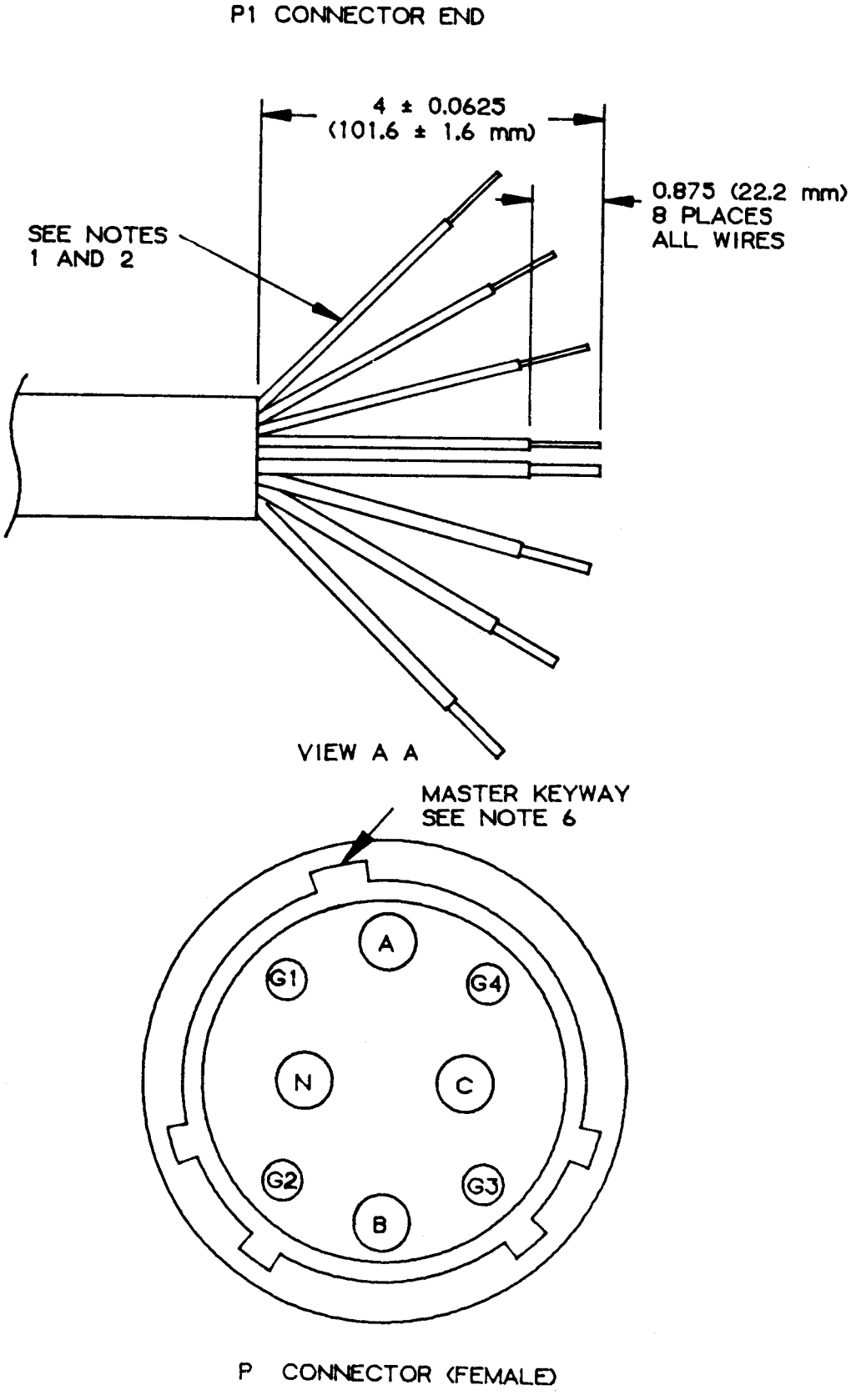


FIGURE F-15. 200-amp, 4-ft (1.2m) pigtail cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 CONNECTOR ON PROPER CABLE ENDS SO COLORS AND SOCKETS MATCH AS FOLLOWS:

COLOR	FROM
BLACK	P1-A
RED	P1-B
BLUE	P1-C
WHITE	P1-N
GREEN (OR BARE)	P1-G1
GREEN (OR BARE)	P1-G2
GREEN (OR BARE)	P1-G3
GREEN (OR BARE)	P1-G4

4. VERIFY ELECTRICAL CONTINUITY FOR EACH PATH WITH AN OHMMETER.

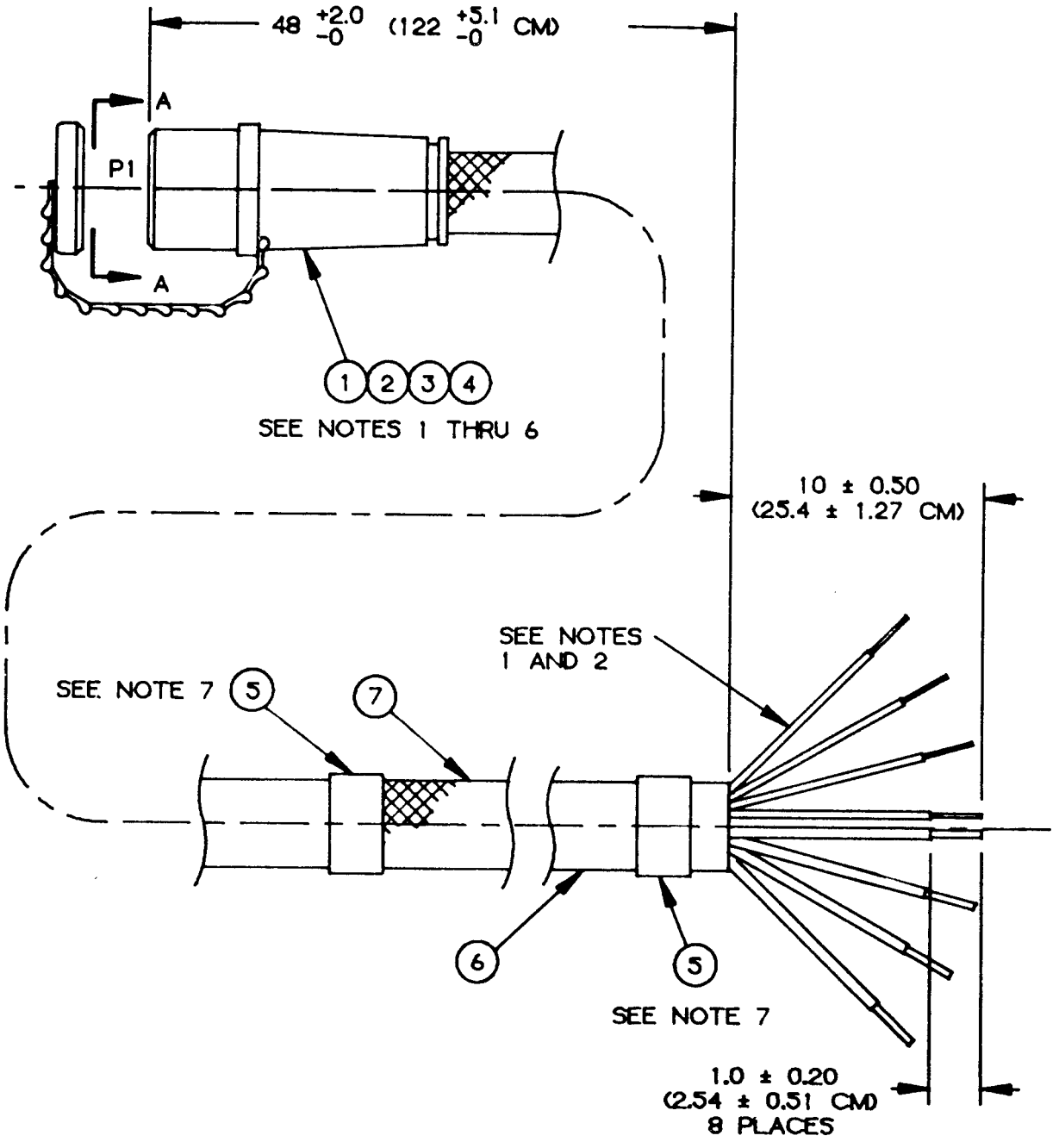
5. CRIMP SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7021
120/208 VAC
3 PHASE
200 AMP

FIGURE F-15. 200-amp, 4-ft (1.2m) pigtail cable. (sheet 3 of 3)



1. MS90557C44413S CONNECTOR, ELECTRICAL RECEPTACLE (P1)
2. MS3348-6-8L BUSHING, REDUCING (P1-G1, G2, G3, G4)
3. M39029/49-330 CONTACT, ELECTRICAL SOCKET (P1-G1, G2, G3, G4)
4. M39029/49-333 CONTACT, ELECTRICAL SOCKET (P1-A, B, C, N)
5. M23053/5-113-4 SLEEVING, INSULATION, HEAT SHRINK
6. CO-04HDF (4/1-4/8R) 1620 CABLE
7. TAG, WARNING

FIGURE F-16. 100-amp, 4-ft (1.2m) pigtail cable. (sheet 1 of 3)

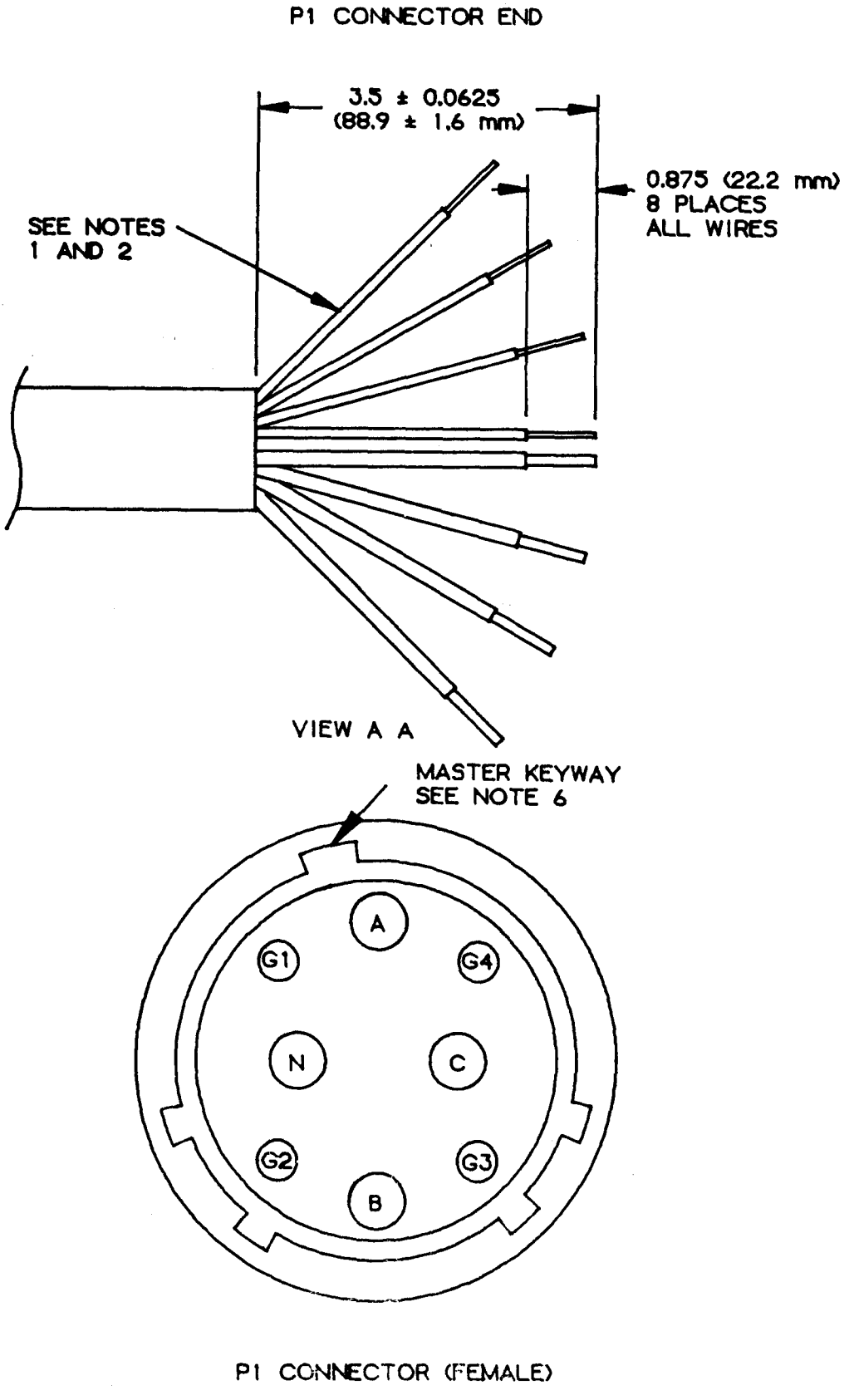


FIGURE F-16. 100-amp, 4-ft (1.2m) pigtail cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 CONNECTOR ON PROPER CABLE ENDS SO WIRE COLORS AND SOCKETS MATCH AS FOLLOWS:

COLOR	FROM
BLACK	P1-A
RED	P1-B
BLUE	P1-C
WHITE	P1-N
GREEN (OR BARE)	P1-G1
GREEN (OR BARE)	P1-G2
GREEN (OR BARE)	P1-G3
GREEN (OR BARE)	P1-G4

4. VERIFY ELECTRICAL CONTINUITY FOR EACH PATH WITH AN OHMMETER.

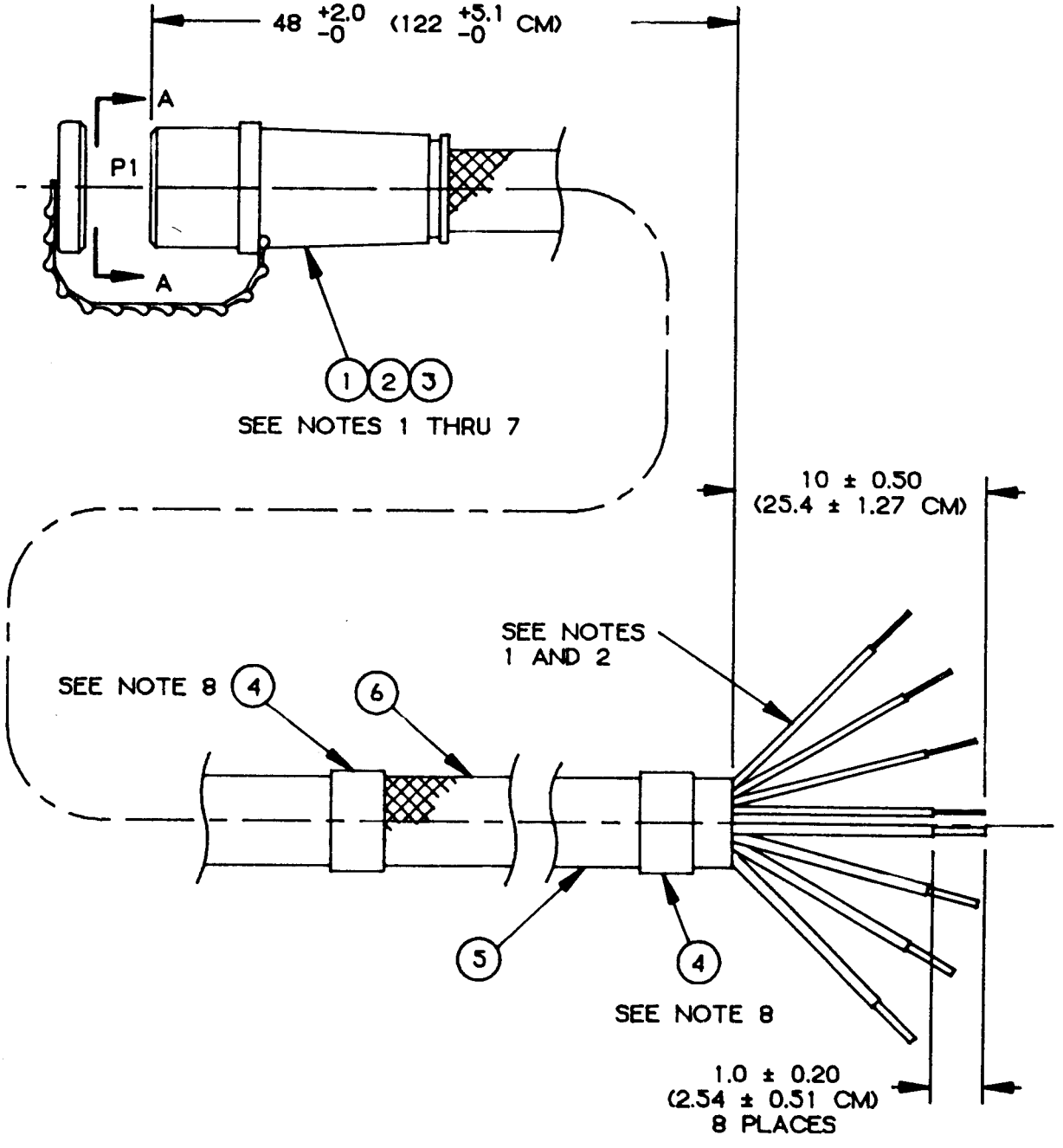
5. CRIMP SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7020
120/208 VAC
3 PHASE
100 AMP

FIGURE F-16. 100-amp, 4-ft (1.2m) pigtail cable. (sheet 3 of 3)



1. MS90557C32413S CONNECTOR, E1 ELECTRICAL RECEPTACLE (P1)
2. M39029/39-331 CONTACT, ELECTRICAL SOCKET (P1-A, B, C, N)
3. M39029/39-329 CONTACT, ELECTRICAL SOCKET (P1-G)
4. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
5. CO-04HDF (4/4-4/1A) CABLE
6. TAG, WARNING

FIGURE F-17. 40/60-amp, 4-ft (1.2m) pigtail cable. (sheet 1 of 3)

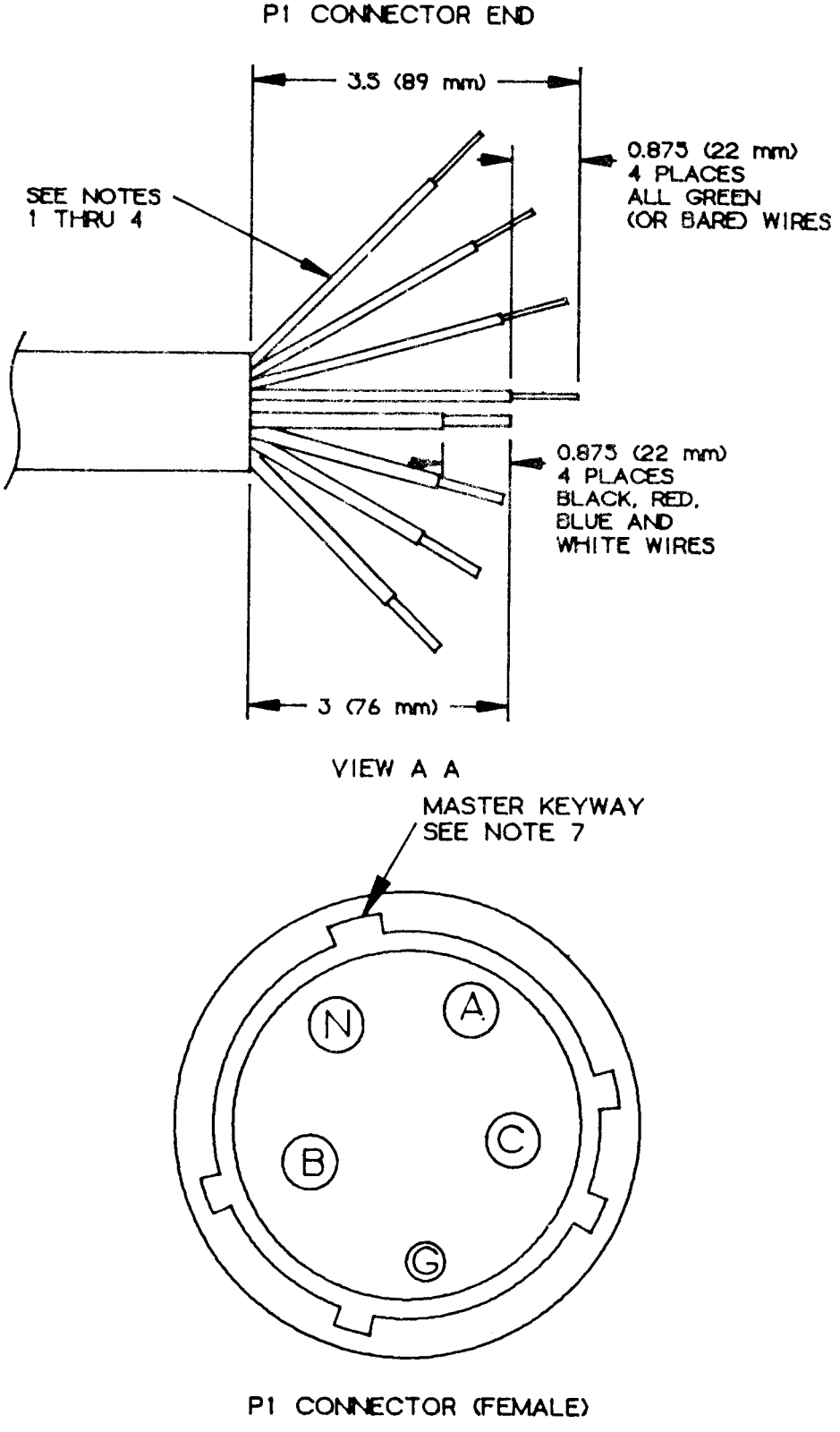


FIGURE F-17. 40/60-amp, 4-ft (1.2m) pigtail cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 CONNECTOR ON PROPER CABLE ENDS SO WIRE COLORS AND SOCKETS MATCH AS FOLLOWS:

COLOR	FROM
BLACK	P1-A
RED	P1-B
BLUE	P1-C
WHITE	P1-N
GREEN (OR BARE)	P1-G
GREEN (OR BARE)	
GREEN (OR BARE)	
GREEN (OR BARE)	

4. VERIFY ELECTRICAL CONTINUITY FOR EACH PATH WITH AN OHMMETER.

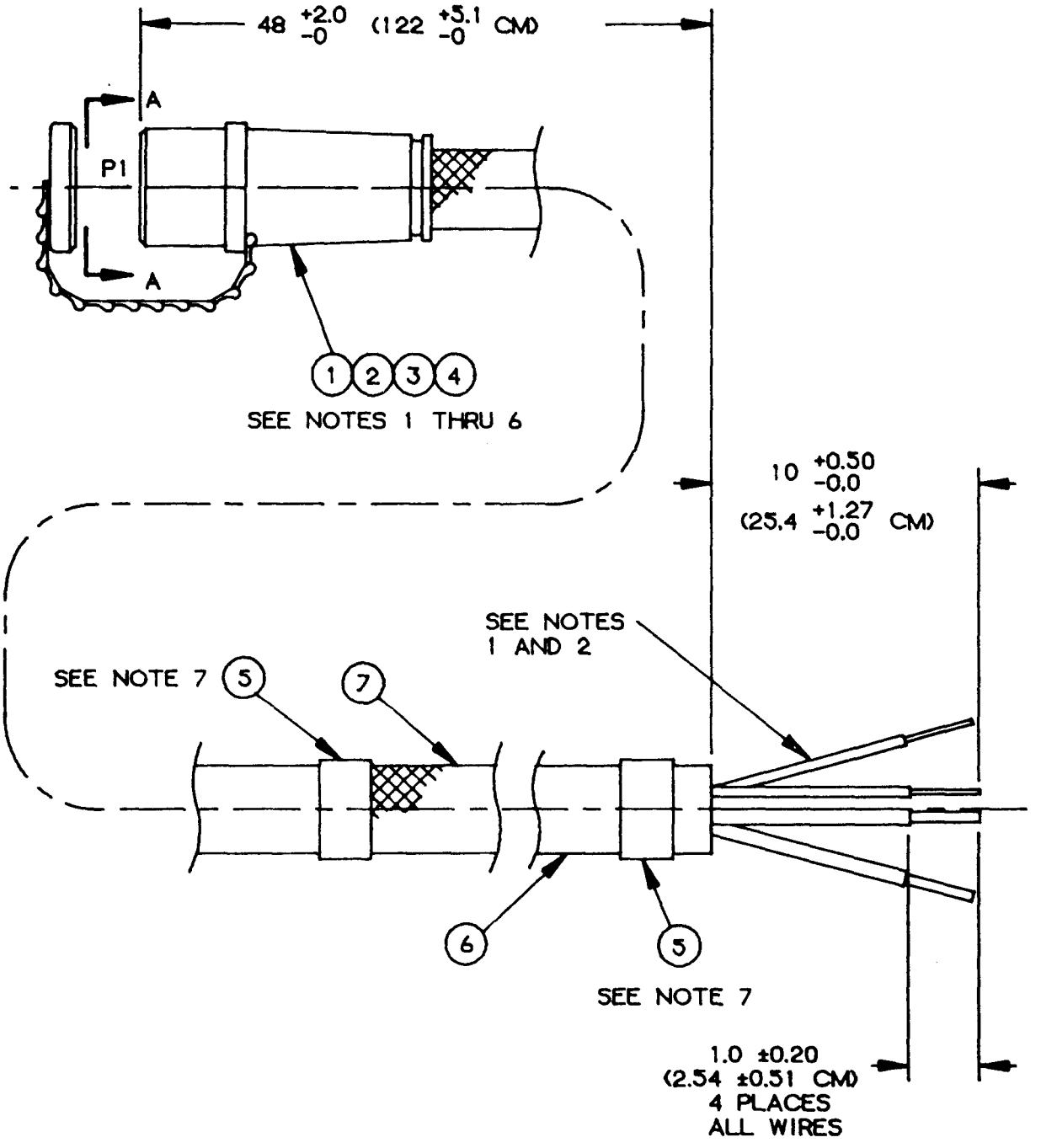
5. CRIMP SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7019
120/208 VAC
3 PHASE
40/60 AMP

FIGURE F-17. 40/60-amp, 4-ft (1.2m) pigtail cable. (sheet 3 of 3)



1. MS3102R16-10S CONNECTOR, ELECTRICAL RECEPTACLE (P1)
2. M90929/49-331 CONTACT, ELECTRICAL SOCKET (P1-A, N)
3. MS3348-6-8L BUSHING REDUCING # 6 AWG (P1-G)
4. M39029/38-329 CONTACT, ELECTRICAL SOCKET (P1-G)
5. M2305315-112-4 SLEEVING, INSULATION, HEAT SHRINK
6. C0-02HDF (2/4-2/8R) 1290 CABLE
7. TAG, WARNING

FIGURE F-18. 60-amp, 4-ft (1.2m) pigtail cable. (sheet 1 of 3)

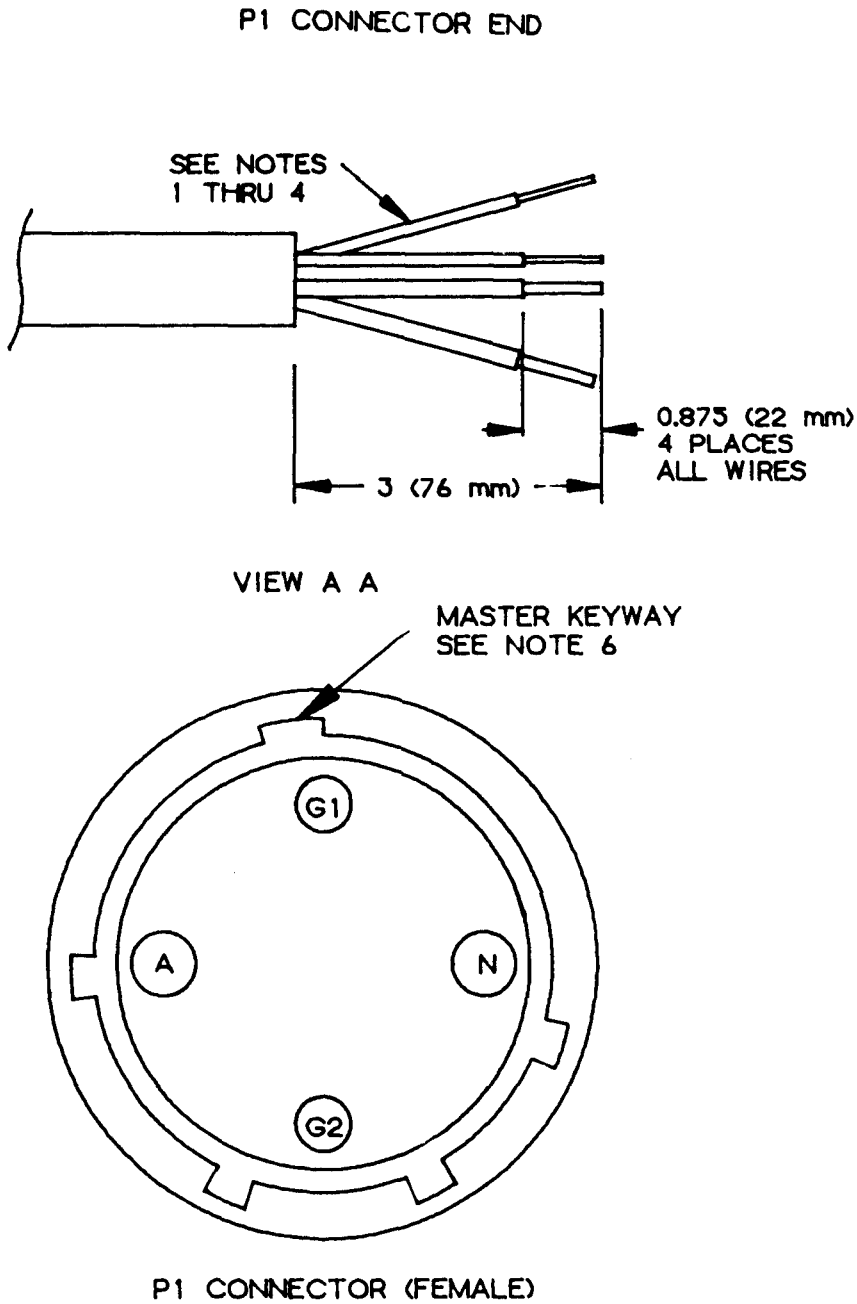


FIGURE F-18. 60-amp, 4-ft (1.2m) pigtail cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 CONNECTOR ON PROPER CABLE ENDS SO WIRE COLORS AND SOCKETS MATCH AS FOLLOWS:

COLOR	FROM
BLACK	P1-A
WHITE	P1-N
GREEN (OR BARE)	P1-G1
GREEN (OR BARE)	P1-G2

4. VERIFY ELECTRICAL CONTINUITY FOR EACH PATH WITH AN OHMMETER.

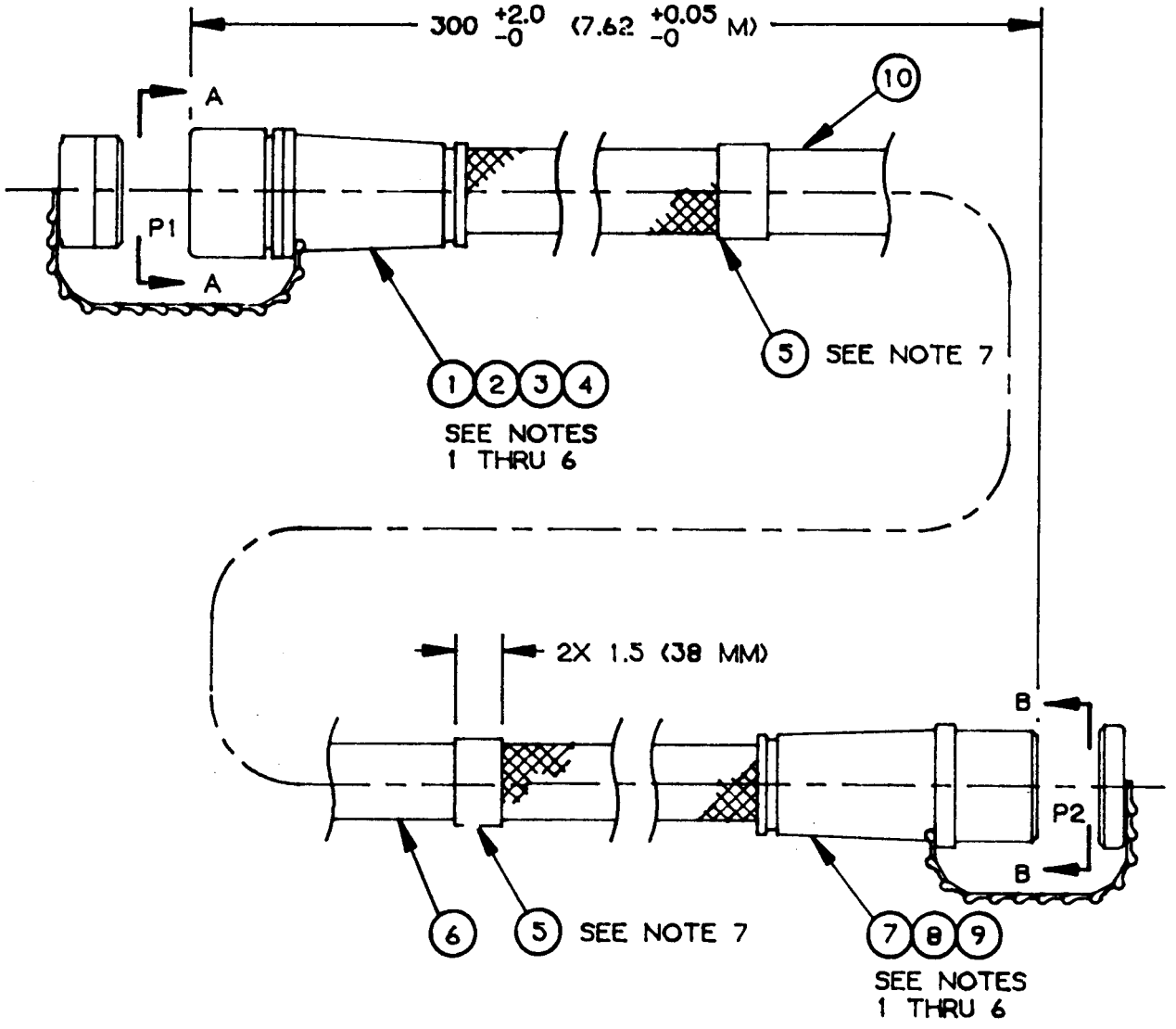
5. CRIMP SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

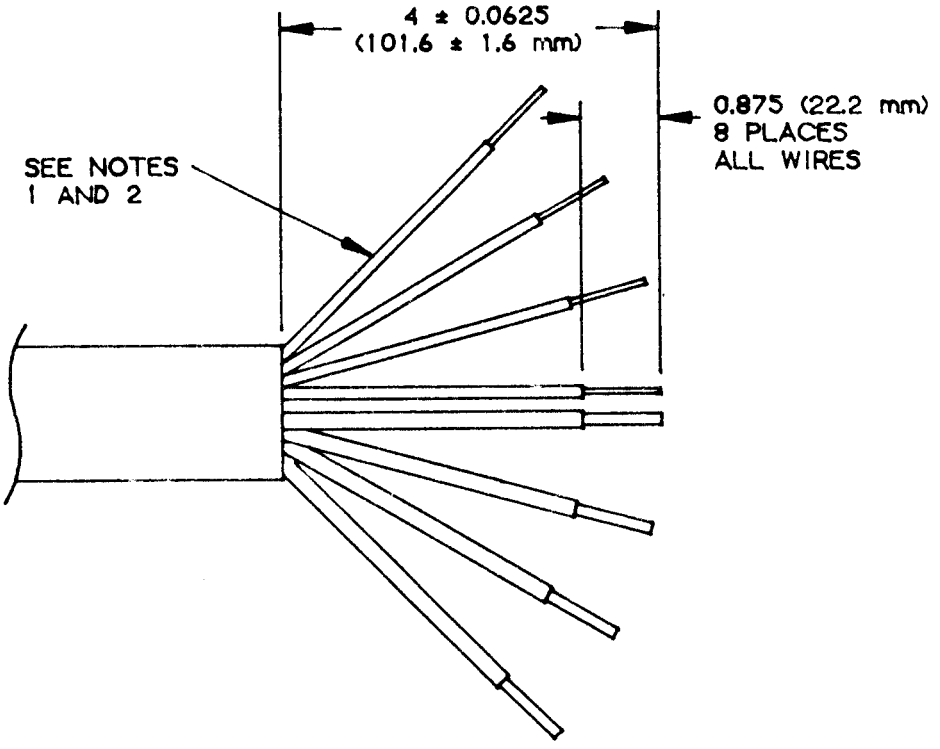
97403-13226E7018
120/208 VAC
1 PHASE
60 AMP

FIGURE F-18. 60-amp, 4-ft (1.2m) pigtail cable. (sheet 3 of 3)



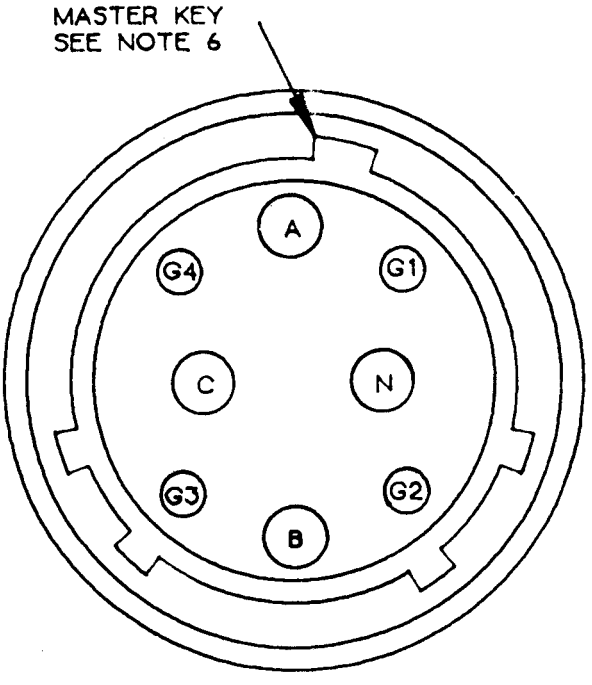
1. MS90556C52413P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-327 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. M39029/48-328 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-322 CONTACT, ELECTRICAL PIN (P1-G1, G2, G3, G4)
5. M23053/5-114-4 SLEEVING, INSULATION, HEAT SHRINK
6. CO-04HDF (4/0000-4/4R) 2380 CABLE
7. MS90557C52405S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
8. M39029/49-335 CONTACT, ELECTRICAL SOCKET (P2-A, B, C, N)
9. M39029/49-332 CONTACT, ELECTRICAL SOCKET (P2-G1, G2, G3, G4)
10. TAG, WARNING

FIGURE F-19. 200-amp, 25-ft (7.6m) service/feeder cable. (sheet 1 of 3)

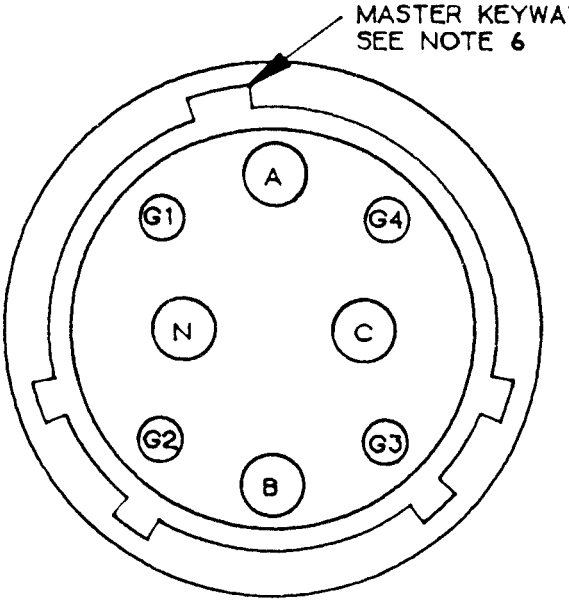


VIEW A A

VIEW B B



P1 CONNECTOR (MALE)



P2 CONNECTOR (FEMALE)

FIGURE F-19. 200-amp, 25-ft (7.6m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 CONNECTOR ON PROPER CABLE ENDS SO WIRE COLORS AND SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
RED	P1-B	P2-B
BLUE	P1-C	P2-C
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G1	P2-G1
GREEN (OR BARE)	P1-G2	P2-G2
GREEN (OR BARE)	P1-G3	P2-G3
GREEN (OR BARE)	P1-G4	P2-G4

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

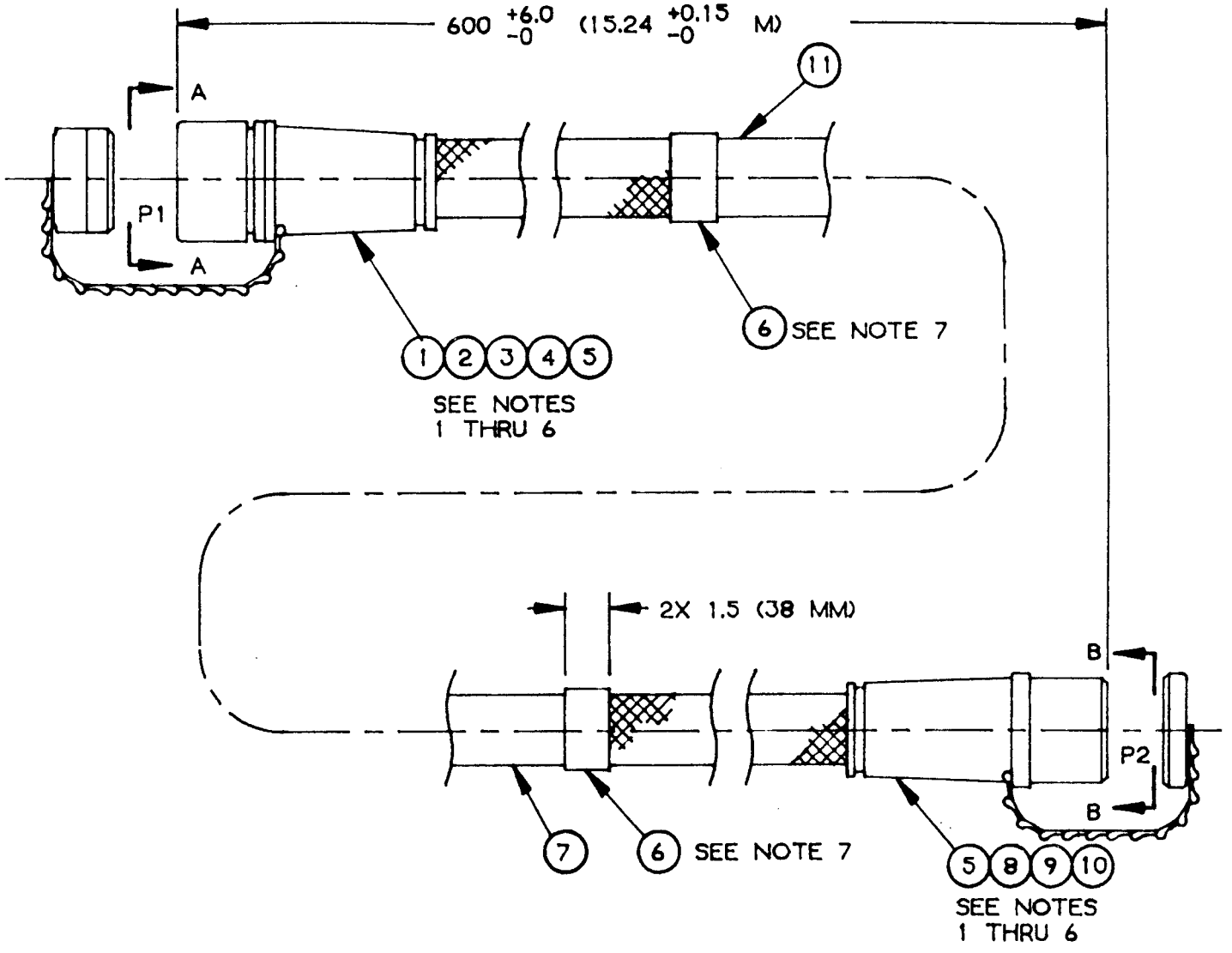
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTOR SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7025
120/208 VAC
3 PHASE
200 AMP

FIGURE F-19. 200-amp, 25-ft (7.6m) service/feeder. (sheet 3 of 3)



1. MS90556C44413P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-323 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. M39029/48-324 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-319 CONTACT, ELECTRICAL PIN (P1-G1, G2, G3, G4)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1 AND P2-G1, G2, G3, G4)
6. M23054/5-113-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-04HDF (4/1-4/8R) 1620 CABLE
8. MS90557C44413S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-333 CONTACT, ELECTRICAL SOCKET (P2-A, B, C, M)
10. M39029/49-330 CONTACT; ELECTRICAL SOCKET (P2-G1, G2, G3, G4)
11. TAG, WARNING

FIGURE F-20. 100-amp, 50-ft (15.2m) service/feeder cable. (sheet 1 of 3)

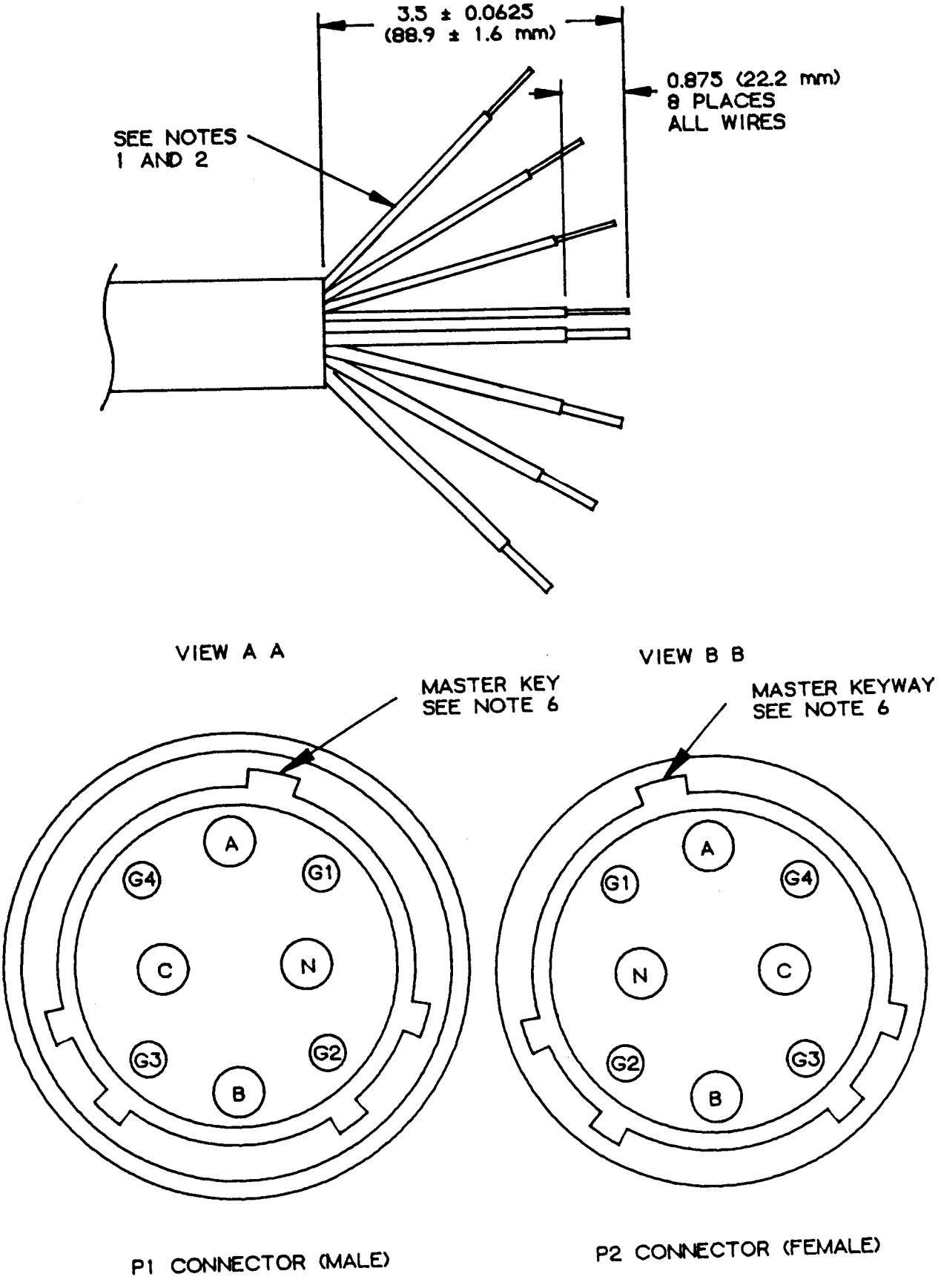


FIGURE F-20. 100-amp, 50-ft (15.2m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO WIRE COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
RED	P1-B	P2-B
BLUE	P1-C	P2-C
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G1	P2-G1
GREEN (OR BARE)	P1-G2	P2-G2
GREEN (OR BARE)	P1-G3	P2-G3
GREEN (OR BARE)	P1-G4	P2-G4

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

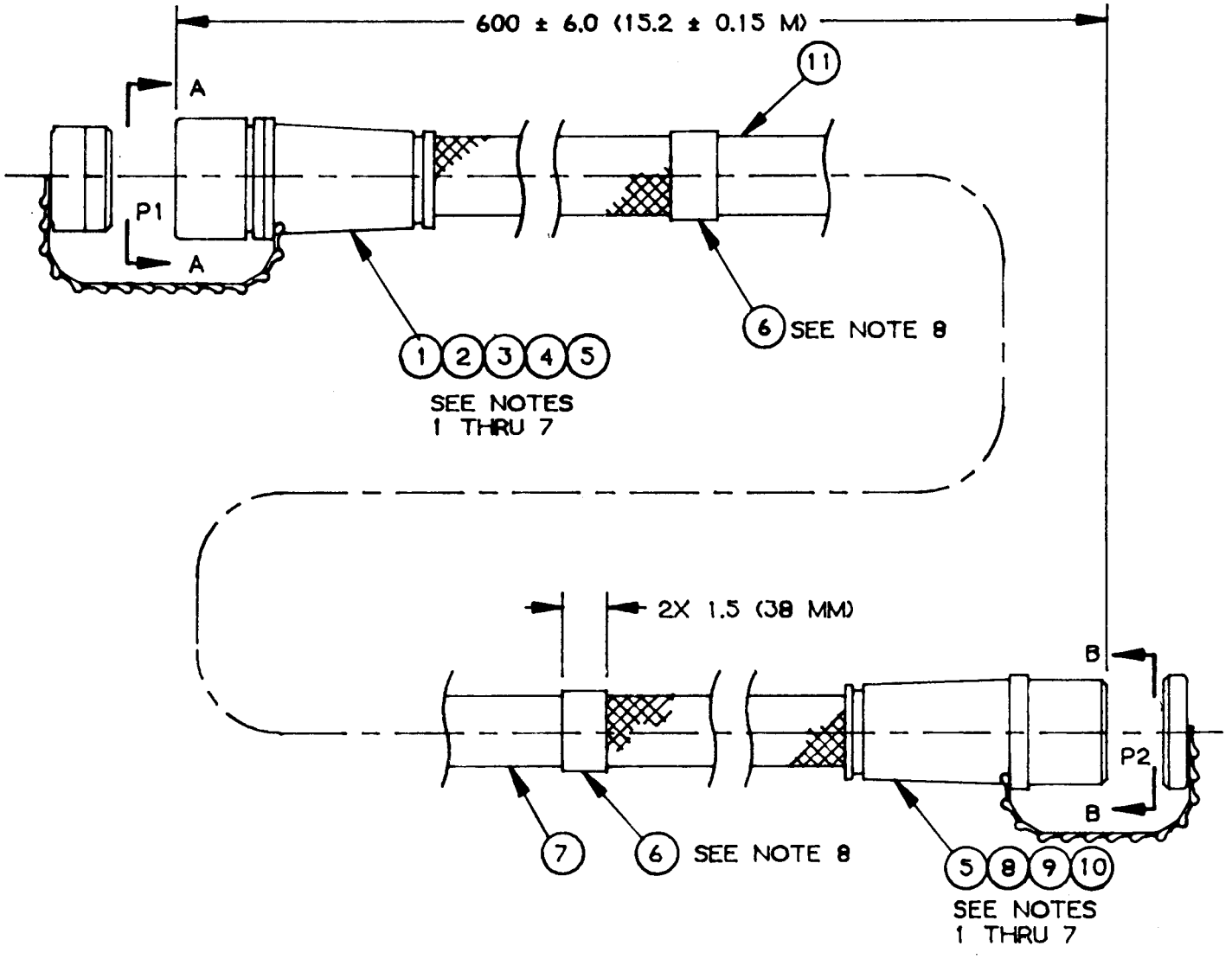
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7024
120/208 VAC
3 PHASE
100 AMP

FIGURE F-20. 100-amp, 50-ft (15.2m) service/feeder. (sheet 3 of 3)



1. MS90556C32413P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-320 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. M39029/48-321 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-318 CONTACT, ELECTRICAL PIN (P1-G1)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1-G, P2-G)
6. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-04HDF (4/4-4/12R) 1290 CABLE
8. MS90557C32413S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-331 CONTACT, ELECTRICAL SOCKET (P2-A, B, C, N)
10. M39029/49-329 CONTACT, ELECTRICAL SOCKET (P2-G)
11. TAG, WARNING

FIGURE F-21. 40/60-amp, 50-ft (15.2m) service/feeder cable. (sheet 1 of 3)

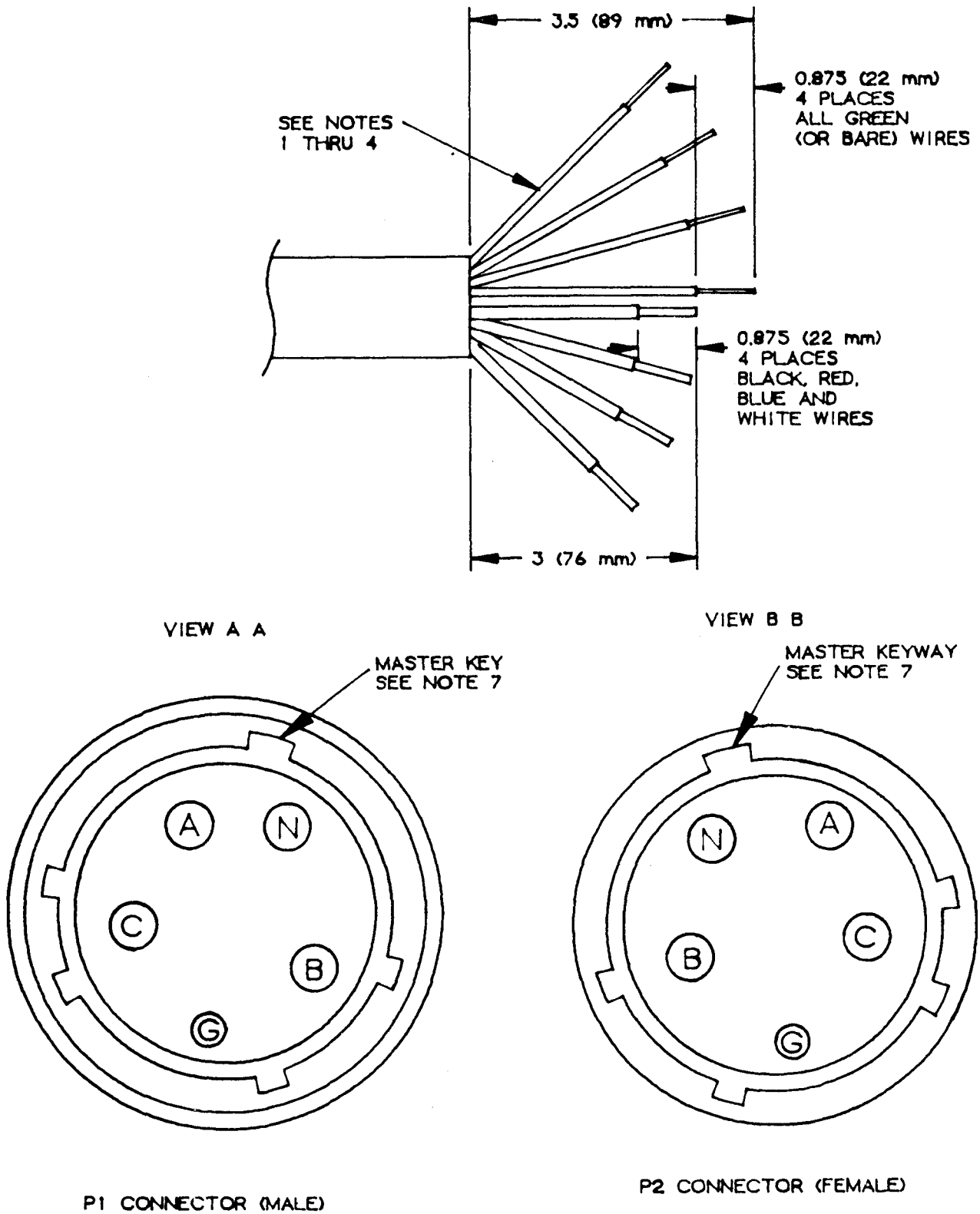


FIGURE F-21. 40/60-amp, 50-ft (15.2m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the, wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	PI-A	P2-A
RED	Pi-B	P2-B
BLUE	Pi-C	P2-C
WHITE	Pi-N	P2-N
GREEN (OR BARE)		
GREEN (OR BARE)	Pi-G	P2-G
GREEN (OR BARE)		
GREEN (OR BARE)		

4. VERIFY ELECTRICAL CONTINUITY FOR EACH PATH WITH AN OHMMETER.

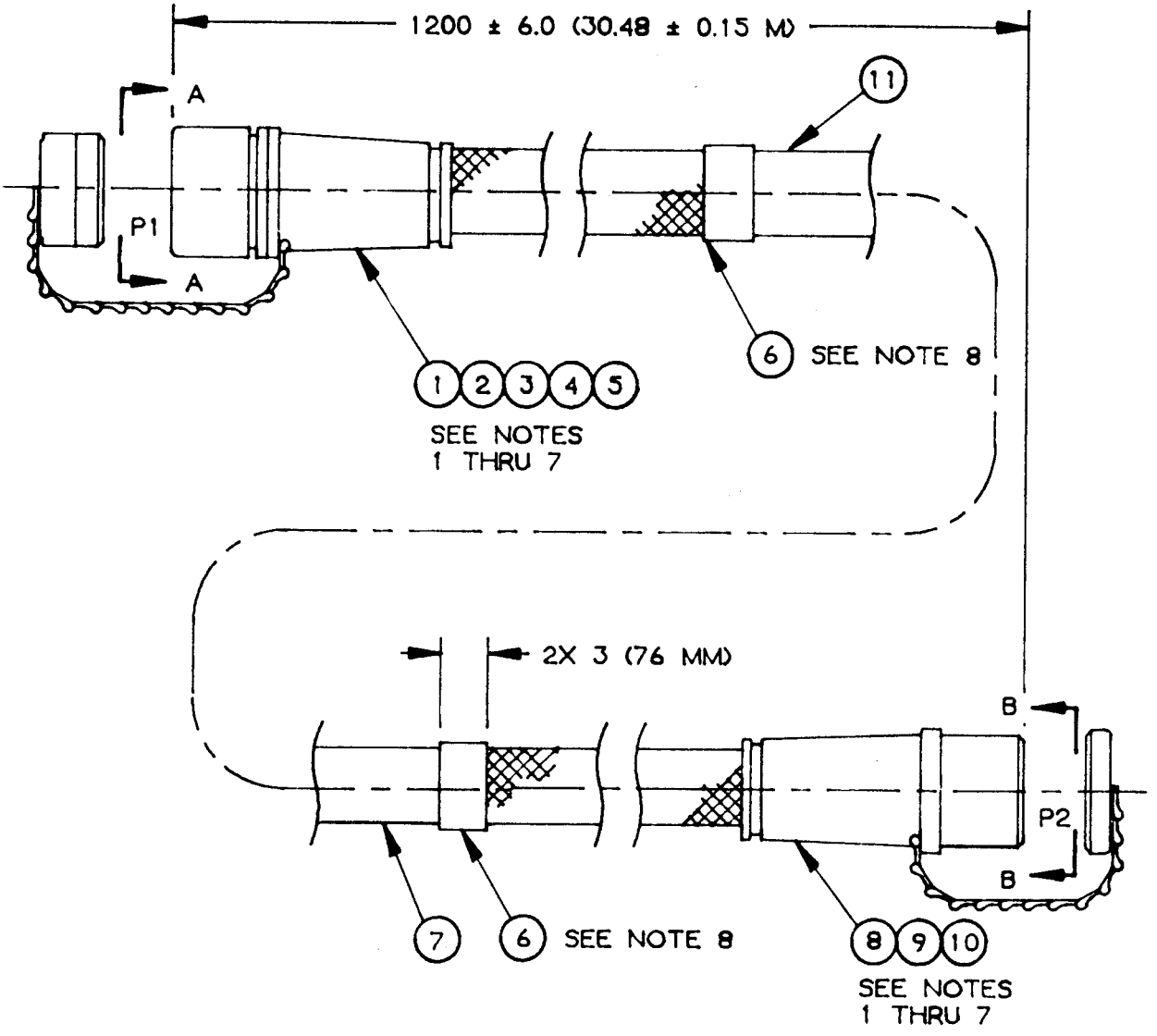
5. CRIMP SOCKETS TO CABLE WIRES.

6. ASSEMBLE PI CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7023-2
120/208 VAC
3 PHASE
60 AMP

FIGURE F-21. 40/60-amp, 50-ft (15.2m) service/feeder. (sheet 3 of 3)



1. MS90556C32405P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-320 CONTACT, ELECTRICAL PIN (P1-A)
3. M39029/48-321 CONTACT, ELECTRICAL PIN (P1-N)
4. M39029/48-318 CONTACT, ELECTRICAL PIN (P1-G1, G2)
5. MS3348-6-8L REDUCER, ELECTRICAL CONTACT (P1-G, G2)
6. M23053/5-112-4 SLEEVING, INSULATION, HEAT SHRINK
7. CO-02HDF (2/4-2/8R) 1290 CABLE
8. MS90557C32405S CONNECTOR, ELECTRICAL RECEPTACLE (P2)
9. M39029/49-331 CONTACT, ELECTRICAL SOCKET (P2-A, N)
10. M39029/49-329 CONTACT, ELECTRICAL SOCKET (P2-G1, G2)
11. TAG, WARNING

FIGURE F-22. 60-amp, 100-ft (30.5m) service/feeder cable. (sheet 1 of 3)

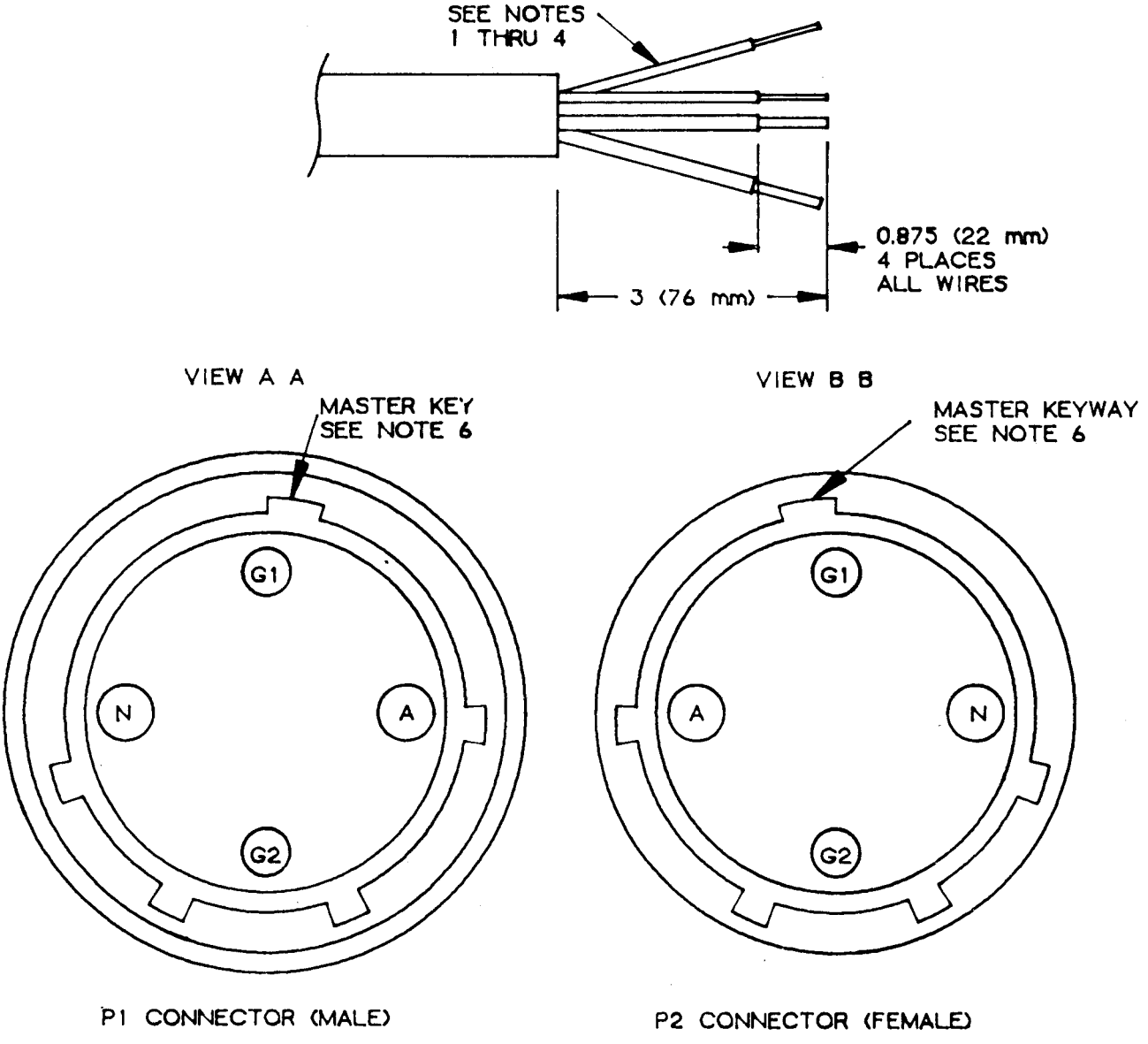


FIGURE F-22. 60-amp, 100-ft (30.5m) service/feeder cable. (sheet 2 of 3)

WARNING

High voltage is present in this system. DISE and PDISE supports equipment using 120/208 V ac. Do not rely on the color of the wire insulation for phase color-coding. The insulation on the wires inside the cable jacket may vary, depending on the supplier. Wires will be marked with colored tape to designate the phases. Perform a continuity test to verify correct phase designation in accordance with the colored tape.

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
WHITE	P1-N	P2-N
GREEN (OR BARE)	P1-G1	P2-G1
GREEN (OR BARE)	P1-G2	P2-G2

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

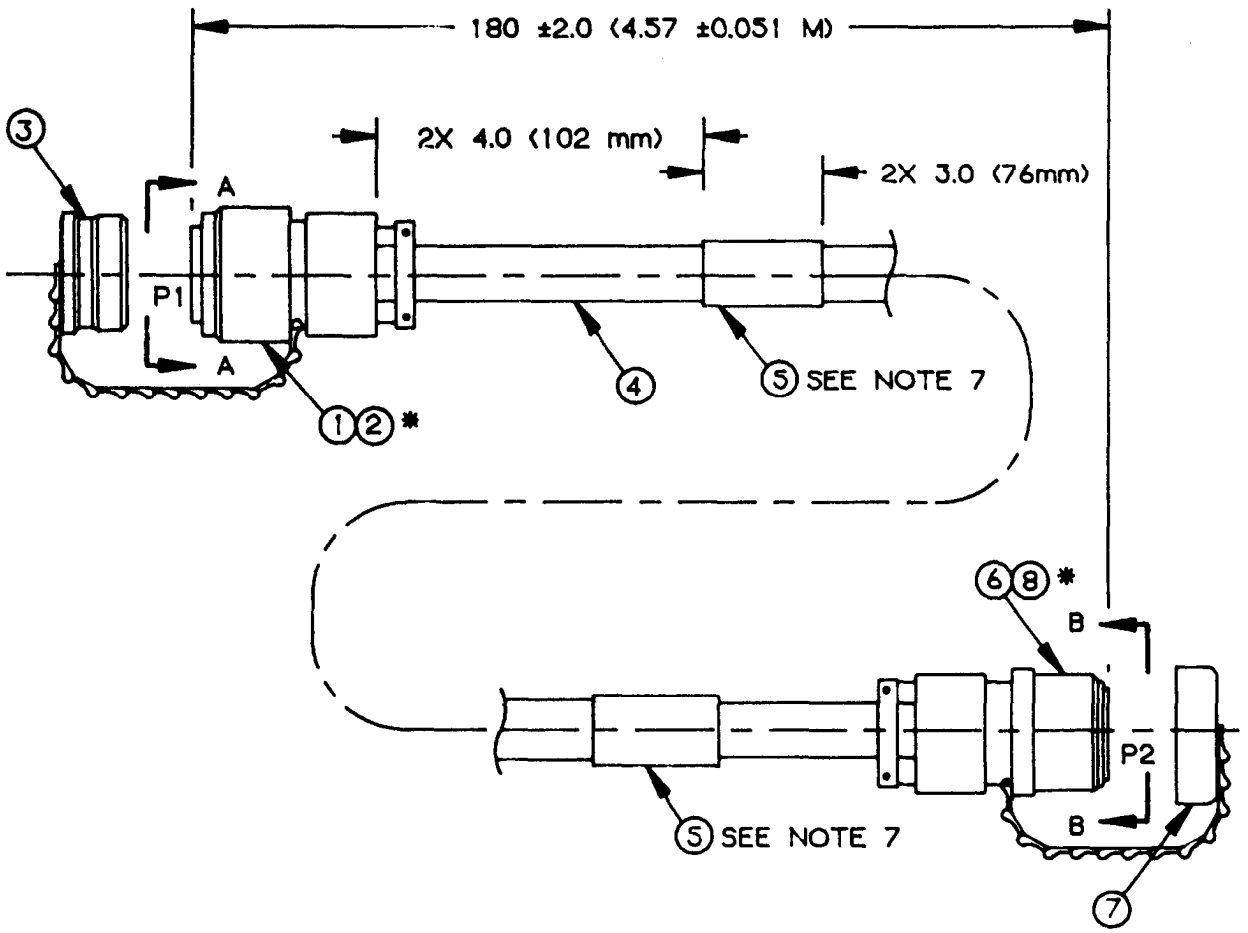
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7022-1
120/208 VAC
3 PHASE
60 AMP

FIGURE F-22. 60-amp, 100-ft (30.5m) service/feeder. (sheet 3 of 3)



* SEE NOTES 1 THRU 6.

1. MS3456W16-10P CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/48-290 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. MS25042-16D COVER, ELECTRICAL CONNECTOR, STRAIGHT PLUG
4. CO-03MGF (3/12) 0385 CABLE BLACK
5. M23053/5-109-4 SLEEVING, INSULATION, HEAT SHRINK
6. MS3451W16-10S CONNECTOR, ELECTRICAL, RECEPTACLE (P2)
7. MS25043-16D COVER, ELECTRICAL, CONNECTOR, ELECTRICAL RECEPTACLE
8. M39020/30-219 CONTACT, ELECTRICAL SOCKET (P2-A, B, C)

FIGURE F-23. 20-amp, 15-ft (4.57m) extension cable. (sheet 1 of 3)

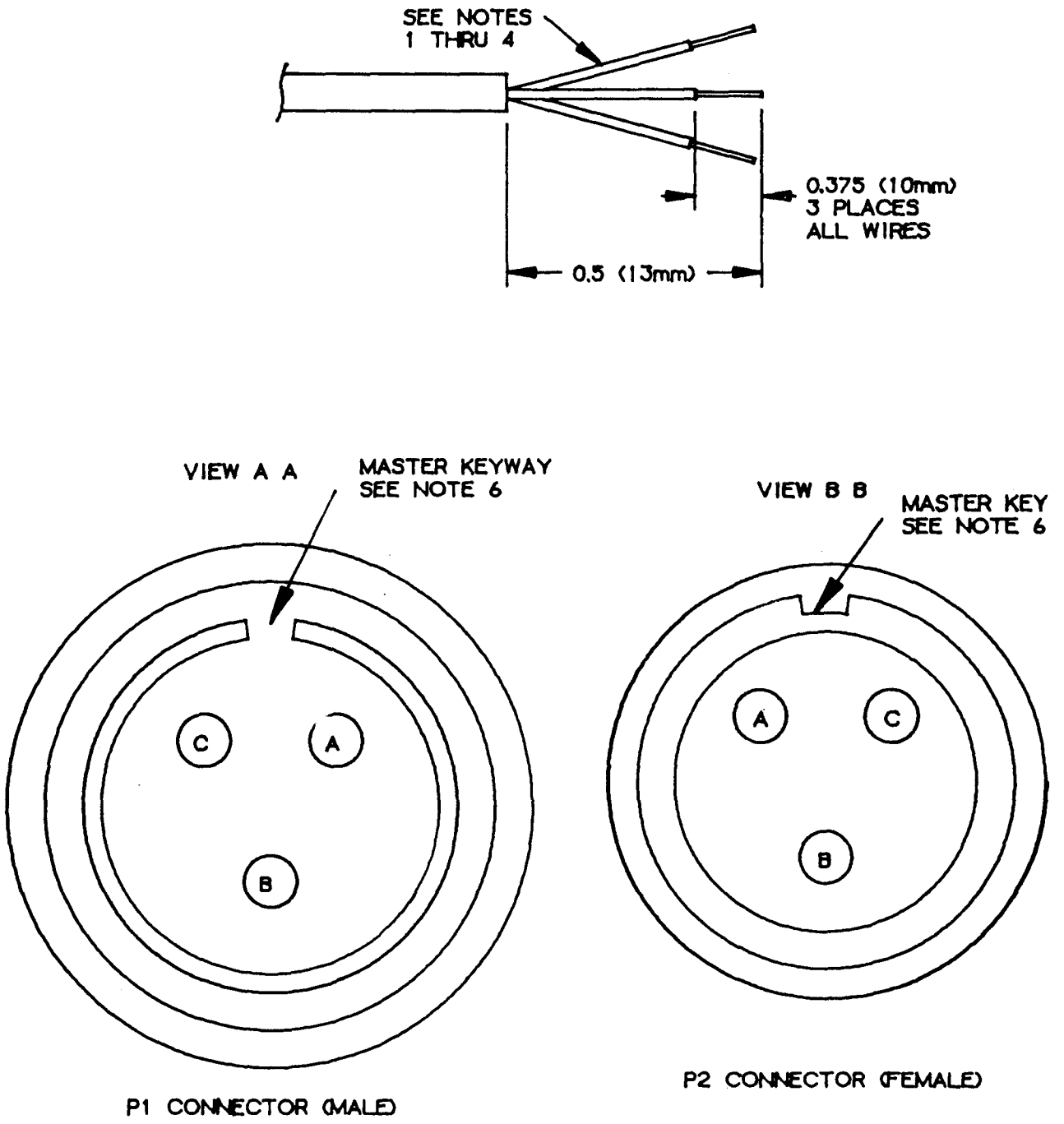


FIGURE F-23. 20-amp, 15-ft (4.57m) extension cable. (sheet 2 of 3)

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO WIRE COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
WHITE	P1-B	P2-B
GREEN	P1-C	P2-C

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

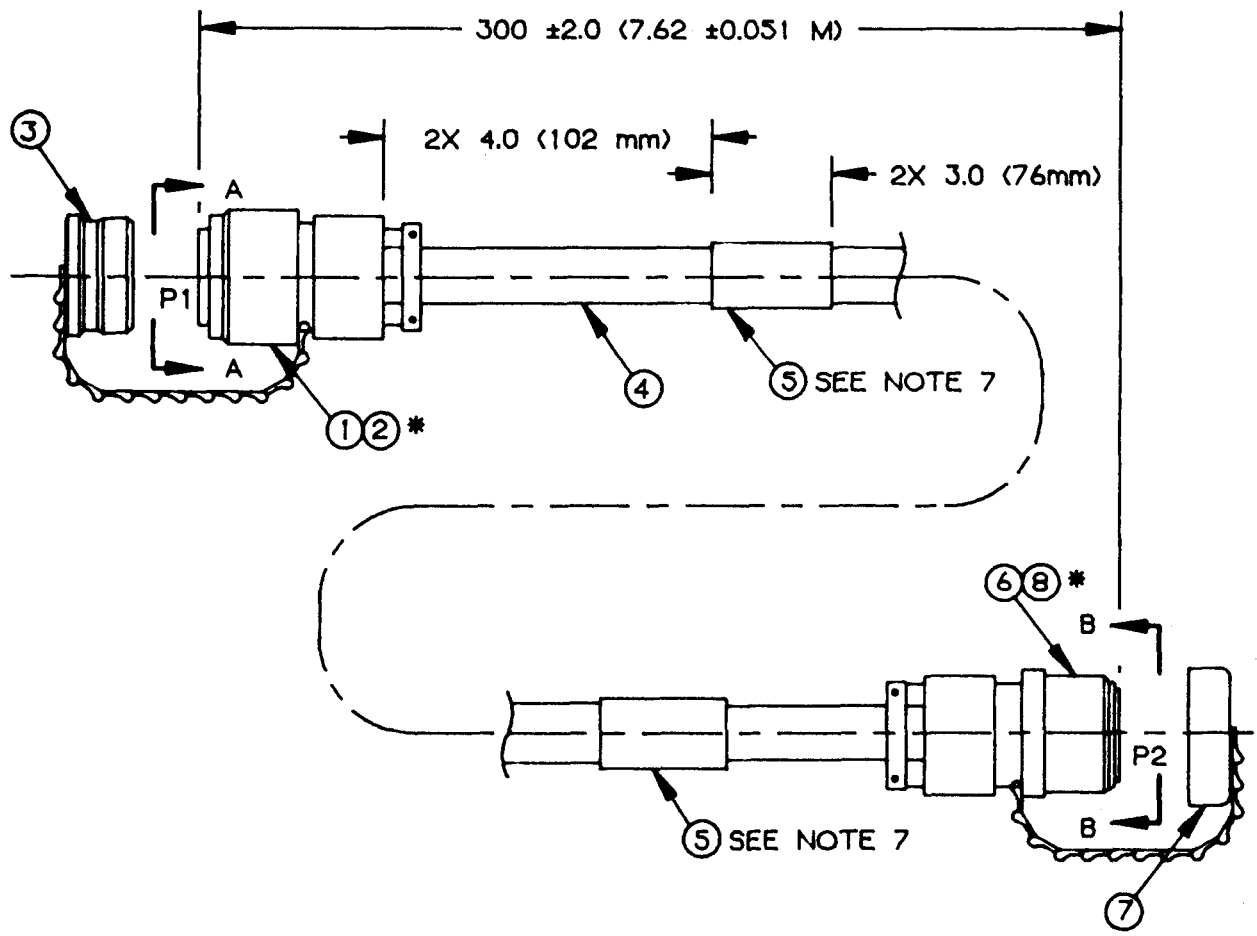
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7032-3
120/208 VAC
3 PHASE
20 AMP

FIGURE F-23. 20-amp, 15-ft (4.57m) extension cable. (sheet 3 of 3)



* SEE NOTES 1 THRU 6.

1. MS3456W16-1OP CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/44-290 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. MS25042-16D COVER, ELECTRICAL CONNECTOR, STRAIGHT PLUG
4. CO-03MGF (3/12) 0385 CABLE BLACK
5. M23053/5-109-4 SLEEVING, INSULATION, HEAT SHRINK
6. MS3451W16-1OS CONNECTOR, ELECTRICAL, RECEPTACLE (P2)
7. MS25043-16D COVER, ELECTRICAL, CONNECTOR, ELECTRICAL RECEPTACLE
8. M39029/30-219 CONTACT, ELECTRICAL SOCKET (P2-A, B, C)

FIGURE F-24. 20-amp, 25-ft (7.62m) extension cable. (sheet 1 of 3)

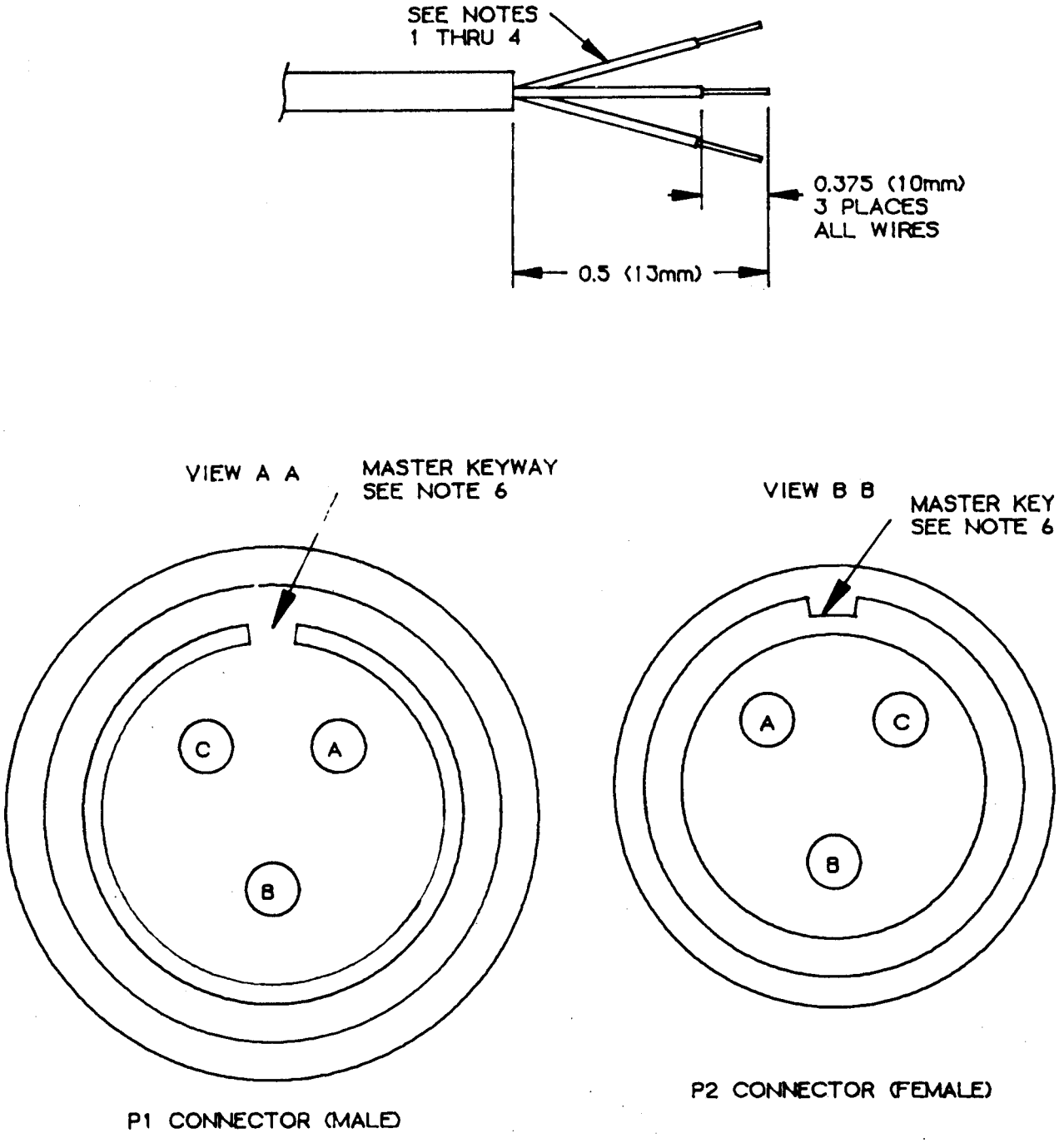


FIGURE F-24. 20-amp, 25-ft (7.62m) extension cable. (sheet 2 of 3)

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO WIRE COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
WHITE	P1-B	P2-B
GREEN	P1-C	P2-C

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

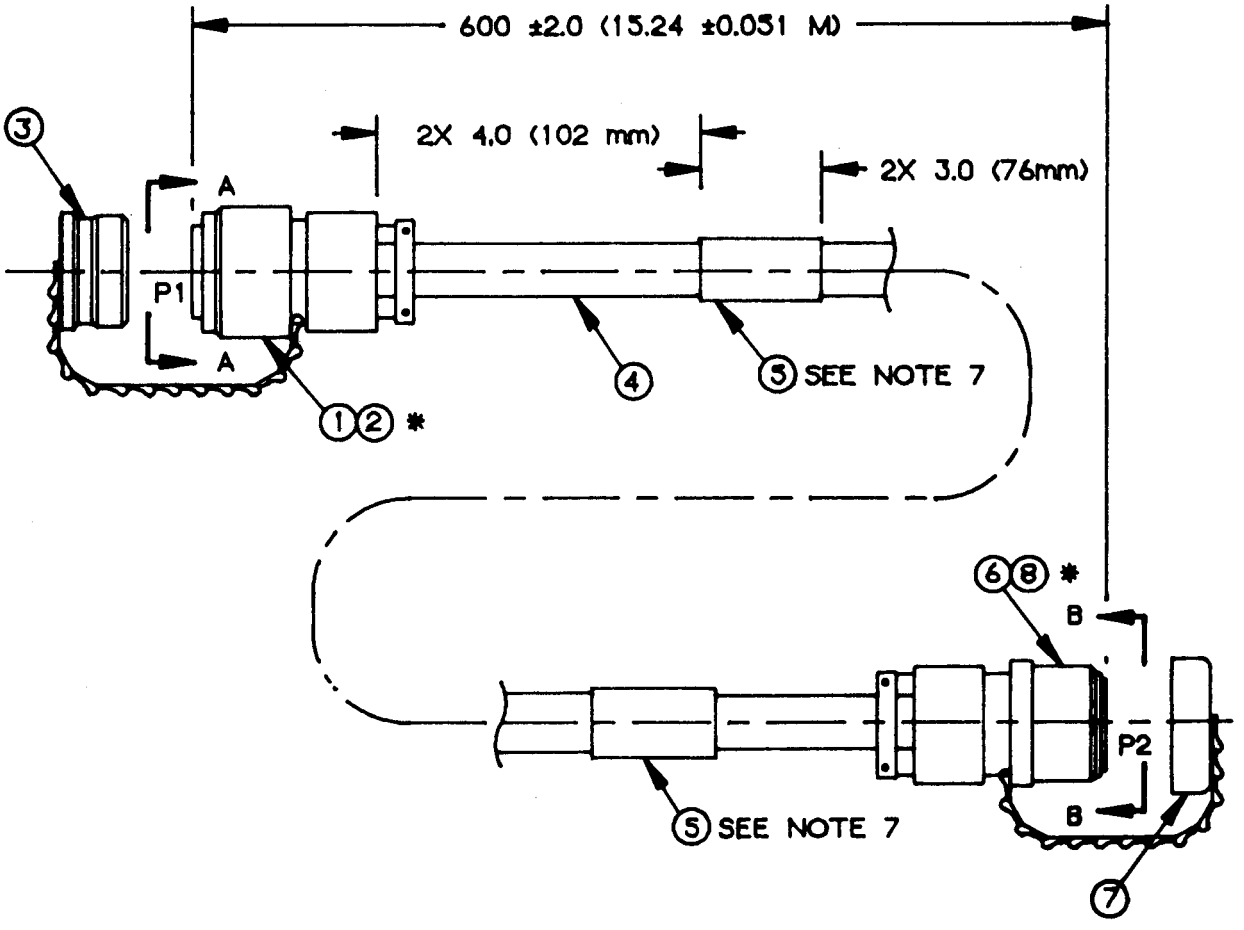
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7032-2
120 VAC
20 AMP

FIGURE F-24. 20-amp, 25-ft (7.62m) extension cable. (sheet 3 of 3)



1. MS3456W16-1OP CONNECTOR, ELECTRICAL STRAIGHT PLUG (P1)
2. M39029/44-290 CONTACT, ELECTRICAL PIN (P1-A, B, C)
3. MS25042-16D COVER, ELECTRICAL CONNECTOR, STRAIGHT PLUG
4. C0-03MGF (3/12) 0385 CABLE BLACK
5. M23053/5-109-4 SLEEVING, INSULATION, HEAT SHRINK
6. MS3451W16-1OS CONNECTOR, ELECTRICAL, RECEPTACLE (P2)
7. MS25043-16D COVER, ELECTRICAL CONNECTOR, ELECTRICAL RECEPTACLE
8. M39029/30-219 CONTACT, ELECTRICAL SOCKET (P2-A, B, C)

FIGURE F-25. 20-amp, 50-ft (15.24m) extension cable. (sheet 1 of 3)

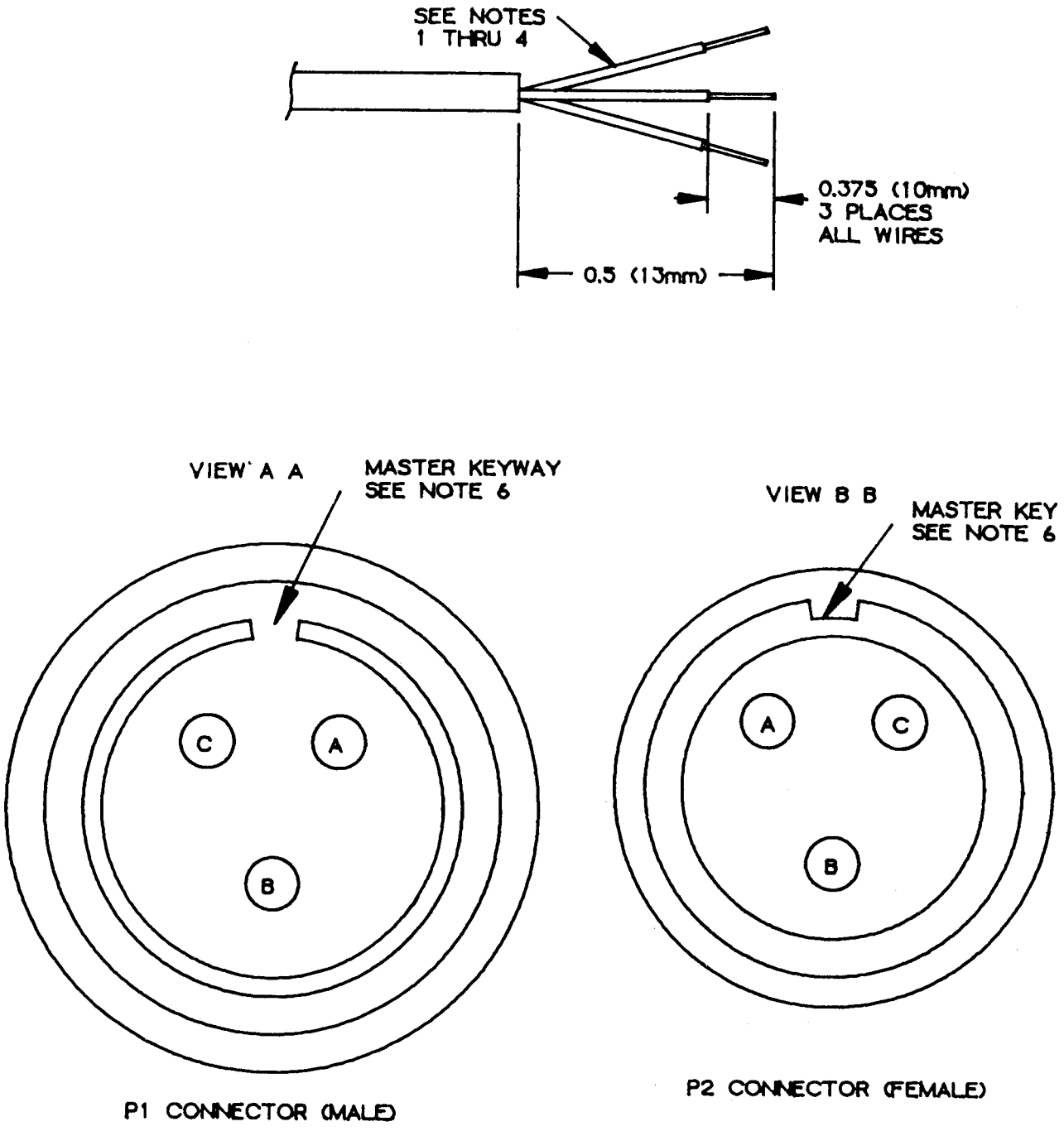


FIGURE F-25. 20-amp, 50-ft (15.24m) extension cable. (sheet 2 of 3)

NOTES :

1. ALL DIMENSIONS ARE IN INCHES, WITH THE METRIC EQUIVALENT IN PARENTHESES.

2. CUT AND REMOVE CABLE AND WIRE INSULATION FROM CABLE ENDS AS INDICATED.

3. INSTALL P1 AND P2 CONNECTORS ON PROPER CABLE ENDS SO WIRE COLORS AND PINS/SOCKETS MATCH AS FOLLOWS:

COLOR	FROM	TO
BLACK	P1-A	P2-A
WHITE	P1-B	P2-B
GREEN	P1-C	P2-C

4. VERIFY ELECTRICAL CONTINUITY FOR “FROM - TO” PATH WITH AN OHMMETER.

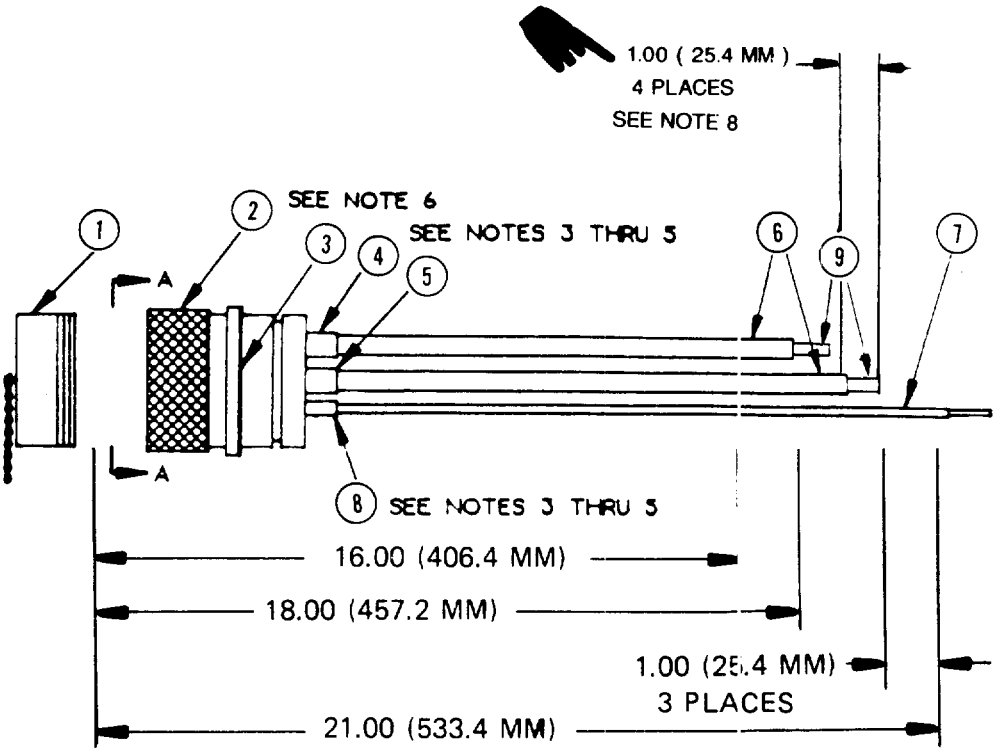
5. CRIMP PINS/SOCKETS TO CABLE WIRES.

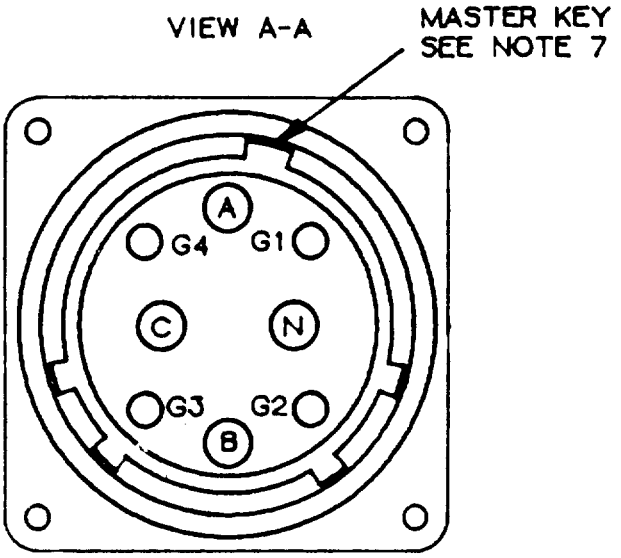
6. ASSEMBLE P1 AND P2 CONNECTORS SO KEYS/KEYWAYS AND PIN/SOCKETS ALINE AS INDICATED.

7. MARK SLEEVES IN ACCORDANCE WITH MIL-M-60903 AS FOLLOWS:

97403-13226E7032-4
120 VAC
3 PHASE
20 AMP

FIGURE F-25. 20-amp, 50-ft (15.24m) extension cable. (sheet 3 of 3)





CONNECTOR (MALE)

1. MS90564-11C COVER, ELECTRICAL CONNECTOR
2. MS90558C52413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-327 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-328 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-04-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-4-9 WIRE, ELECTRICAL (G1, G2, G3, G4)
8. M39029/48-322 CONTACT, ELECTRICAL PIN (G1 , G2, G3, G4)
9. MS3349 REDUCER, CONTACT ELECTRICAL WIRE, NICKEL (G1, G2, G3, G4)

FIGURE F-26. PDISE 200-amp, input connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M200 A/P FEEDER CENTER, CONNECTOR J1.
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. REMAINING WIRES ARE REMOVED FOR CLARITY.
4. CUT AND REMOVE WIRE INSULATION AS INDICATED.
5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

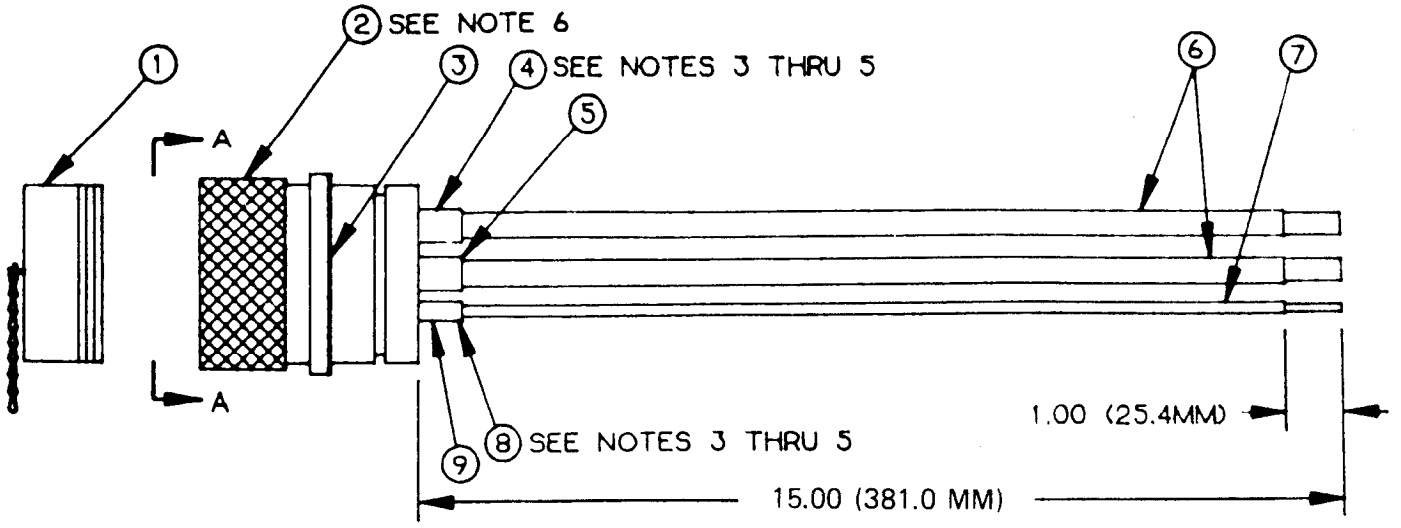
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 6	4/0	19.75 (501.7 MM)
B	4 and 6	4/0	21.00 (533.4 MM)
C	4 and 6	4/0	21.00 (533.4 MM)
N	5 and 6	4/0	11.75 (298.5 MM)
G1	7,8, and 9	4	17.75 (450.9 MM)
G2	7,8, and 9	4	17.75 (450.9 MM)
G3	7,8, and 9	4	18.25 (463.6 MM)
G4	7,8, and 9	4	18.00 (457.2 MM)

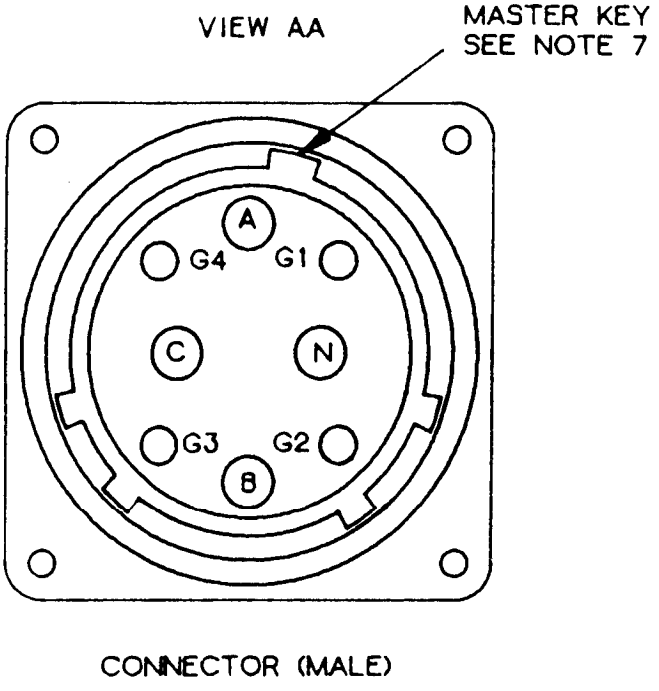
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT PINS (ITEMS 4,5, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-26. PDISE 200-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (MALE)

1. MS90564-7C COVER, ELECTRICAL CONNECTOR
2. MS9055844413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-323 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-324 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-1-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-6-9 WIRE, ELECTRICAL (G1, G2, G3, G4)
8. M39029/48-319 CONTACT, ELECTRICAL PIN (G1, G2, G3, G4)

FIGURE F-27. PDISE 100-amp, input connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M200 A/P FEEDER CENTER, CONNECTOR J1 .
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. REMAINING WIRES ARE REMOVED FOR CLARITY.
4. CUT AND REMOVE WIRE INSULATION AS INDICATED.
5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

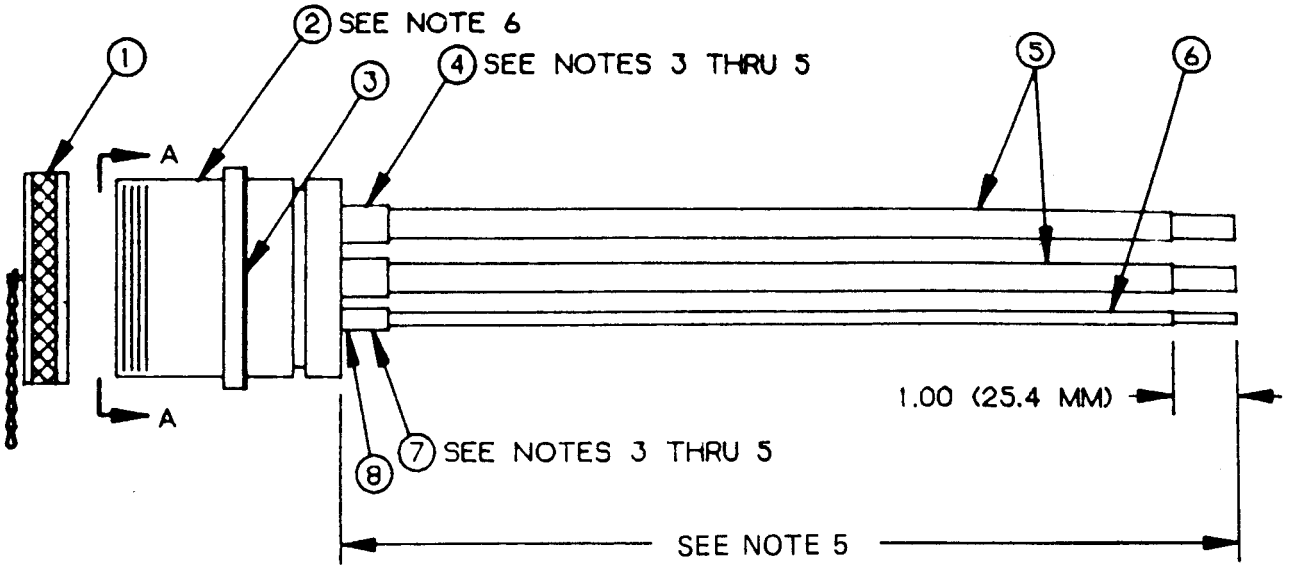
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 6	1	24.50 (622.3 MM)
B	4 and 6	1	25.00 (635.0 MM)
C	4 and 6	1	24.75 (628.7 MM)
N	5 and 6	1	7.50 (190.5 MM)
G1	7, 8, and 9	6	11.50 (292.1 MM)
G2	7, 8, and 9	6	11.62 (295.1 MM)
G3	7, 8, and 9	6	10.00 (254.0 MM)
G4	7, 8, and 9	6	10.75 (273.1 MM)

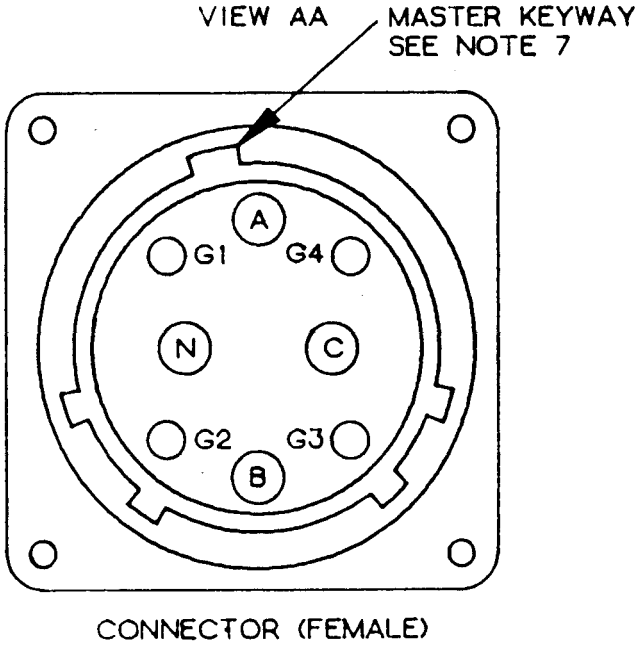
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEMS 4, 5, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-27. PDISE 100-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (FEMALE)

1. MS90563-7C COVER, ELECTRICAL CONNECTOR
2. MS90555C444135 CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/49-333 CONTACT, ELECTRICAL SOCKET (A, B, C, N)
5. M5086/2-1-9 WIRE, ELECTRICAL (A, B, C, N)
6. M5086/2-6-9 WIRE, ELECTRiCAL (G1, G2, G3, G4)
7. M39029/49-330 CONTACT, ELECTRICAL PIN (G1, G2, G3, G4)

FIGURE F-28. PDISE 100-amp, output connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 A/P FEEDER CENTER, CONNECTORS J4,J5,ANDJ11
   M100 A/P FEEDER CENTER, CONNECTOR J2

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. REMAINING WIRES ARE REMOVED FOR CLARITY.
4. CUT AND REMOVE WIRE INSULATION AS INDICATED.
5. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

M200A/P ,CONNECTOR J4

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	1	21.50 (546.1 MM)
B	4 and 5	1	21.00 (533.4 MM)
C	4 and 5	1	21.00 (533.4 MM)
N	5 and 5	1	8.50 (215.9 MM)
G1	7, 8, and 9	6	8.25 (209.6 MM)
G2	7, 8, and 9	6	8.00 (203.2 MM)
G3	7, 8, and 9	6	5.75 (146.1 MM)
G4	7, 8, and 9	6	7.00 (1 77.8 MM)

M200 A/P, CONNECTOR J5

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	1	9.62 (244.3 MM)
B	4 and 5	1	11.25 (285.8 MM)
C	4 and 5	1	10.00 (254.0 MM)
N	5 and 5	1	6.50 (165.1 MM)
G1	7,8, and 9	6	11.50 (292.1 MM)
G2	7,8, and 9	6	12.00 (304.8 MM)
G3	7,8, and 9	6	10.75 (273.1 MM)
G4	7,8, and 9	6	12.00 (304.8 MM)

M200 A/P, CONNECTOR J11

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	1	9.50 (241 .3 MM)
B	4 and 5	1	10.88 (276.4 MM)
C	4 and 5	1	10.00 (254.0 MM)
N	5 and 5	1	5.62 (142.7 MM)
G1	7, 8, and 9	6	11.62 (295.1 MM)
G2	7, 8, and 9	6	11.00 (279.4 MM)
G3	7, 8, and 9	6	10.50 (266.7 MM)
G4	7, 8, and 9	6	11.62 (295.1 MM)

M10 A/P, CONNECTOR J2

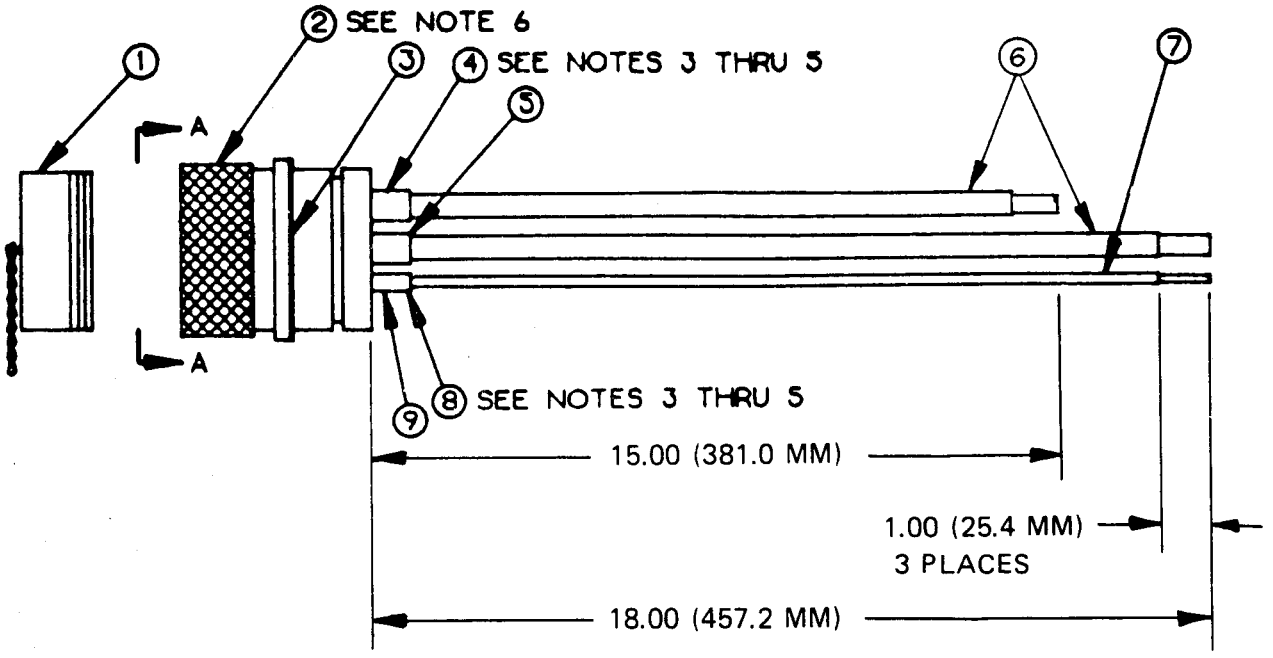
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	1	14.62 (371 .3 MM)
B	4 and 5	1	19.00 (482.6 MM)
C	4 and 5	1	22.00 (558.8 MM)
N	5 and 5	1	11.00 (279.4 MM)
G1	7,8, and 9	6	10.00 (254.0 MM)
G2	7,8, and 9	6	10.00 (254.0 MM)
G3	7,8, and 9	6	8.50 (215.9 MM)
G4	7,8, and 9	6	8.75 (222.3 MM)

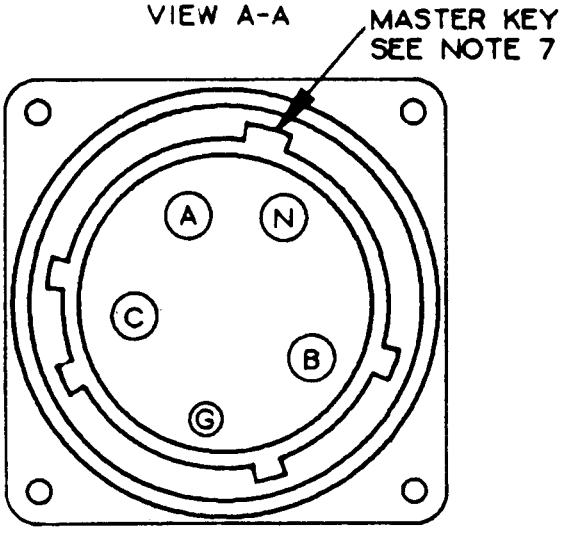
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT SOCKETS (ITEMS 4 AND 7)

7. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-28. PDISE 100-amp output connector assembly. (sheet 2 of 2)





CONNECTOR (MALE)

1. M590564-3C COVER, ELECTRICAL CONNECTOR
2. MS90558C32413P CONNECTOR, ELECTRICAL
3. GASKET
4. M39029/48-320 CONTACT, ELECTRICAL PIN (A, B, C)
5. M39029/48-321 CONTACT, ELECTRICAL PIN (N)
6. M5086/2-4-9 WIRE, ELECTRICAL (A, B, C, N)
7. M5086/2-6-9 WIRE, ELECTRICAL (G)
8. M39029/48-318 CONTACT, ELECTRICAL PIN (G)

FIGURE F-29. PDISE 40-amp, input connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M40 A/P DISTRIBUTION CENTER, CONNECTOR J1 .
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. REMAINING WIRES ARE REMOVED FOR CLARITY.
4. CUT AND REMOVE WIRE INSULATION AS INDICATED.
5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

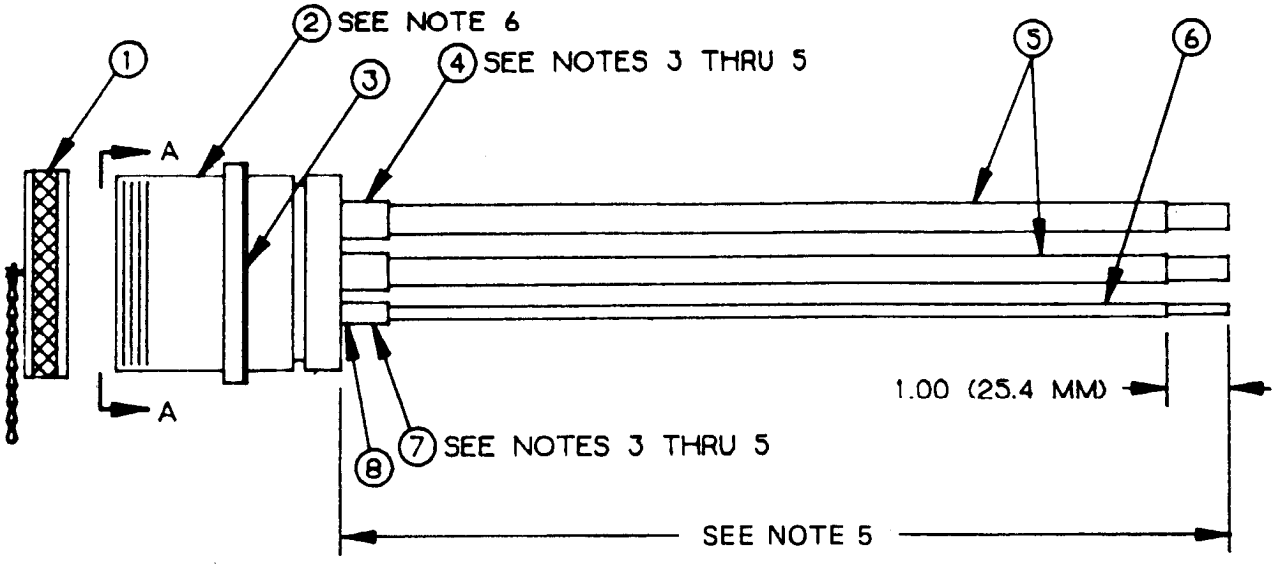
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	28.50 (723.9 MM)
B	4 and 5	4	29.00 (736.6 MM)
c	4 and 5	4	29.50 (749.3 MM)
N	5 and 8	4	16.00 (406.4 MM)
G	6, 7, and 9	6	16.00 (406.4 MM)

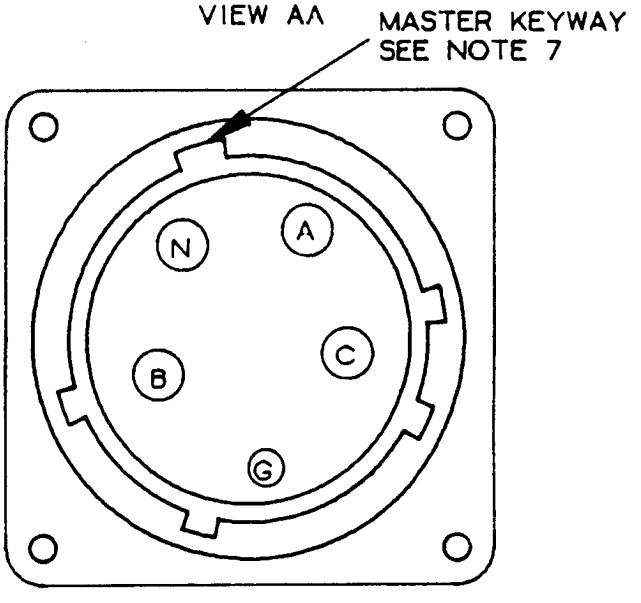
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEMS 4,7, AND 8)

7. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-29. PDISE 40-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (FEMALE)

1. MS90563-3C COVER, ELECTRICAL CONNECT OR
2. MS90555C32413S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/49-331 CONTACT, ELECTRICAL SOCKET (A, B, C, N)
5. M5086/2-4-9 WIRE, ELECTRICAL (A, B, C, N)
6. M5086/2-6-9 WIRE, ELECTRICAL(G)
7. M39029/49-329 CONTACT, ELECTRICAL SOCKET (G)

FIGURE F-30. PDISE 40/60-amp, output connect or assembly. (sheet 1 of 2)

NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 A/P FEEDER CENTER, CONNECTORS J7 THRU J1O
   M1OO A/P FEEDER CENTER, CONNECTORS J3 THRU J6
   M40 A/P DISTRIBUTION CENTER, CONNECTOR J2

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

M200 A/P, CONNECTOR J7 AND J9

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	23 (584.2 MM)
B	4 and 5	4	23 (584.2 MM)
c	4 and 5	4	23 (584.2 MM)
N	4 and 5	4	12 (304.8 MM)
G	6, 7, and 8	6	18 (457.2 MM)

M200 A/P, CONNECTOR J8 AND J1O

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	15 (381.0 MM)
B	4 and 5	4	15 (381.0 MM)
C	4 and 5	4	15 (381.0 MM)
N	5 and 8	4	12 (304.8 MM)
G	6, 7, and 9	6	15 (381.0 MM)

M1OO A/P, CONNECTOR J3 AND J5

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	25 (635.0 MM)
B	4 and 5	4	25 (635.0 MM)
C	4 and 5	4	25 (635.0 MM)
N	5 and 8	4	12 (304.8 MM)
G	6, 7, and 9	6	15 (381.0 MM)

M1OO A/P, CONNECTOR J4 AND J6

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	14 (355.6 MM)
B	4 and 5	4	14 (355.6 MM)
C	4 and 5	4	14 (355.6 MM)
N	5 and 8	4	14 (355.6 MM)
G	6, 7, and 9	6	15 (381.O MM)

M40 A/P, CONNECTOR J2

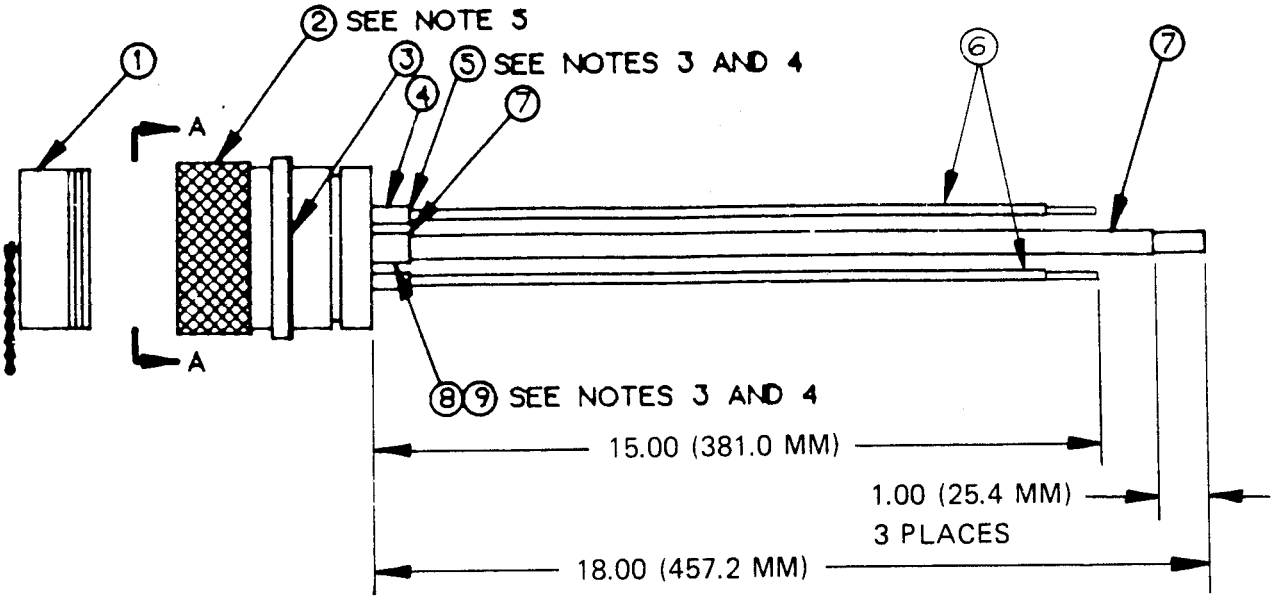
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	4	18 (457.2 MM)
B	4 and 5	4	18 (457.2 MM)
C	4 and 5	4	18 (457.2 MM)
N	5 and 8	4	18 (457.2 MM)
G	6, 7, and 9	6	18 (457.2 MM)

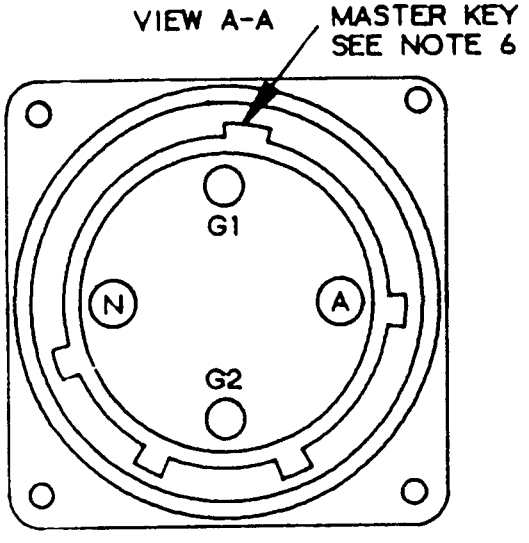
6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT SOCKETS (ITEMS 4 AND 7)

7. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-30. PDISE 40/60-amp output connector assembly. (sheet 2 of 2)





CONNECTOR (MALE)

1. MS90564-3C COVER, ELECTRICAL CONNECTOR
2. MS90558C32405P CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/48-318 CONTACT, ELECTRICAL PIN (G1, G2)
5. M5086/2-6-9 WIRE, ELECTRICAL (G1, G2)
6. M5086/2-4-9 WIRE, ELECTRICAL (A, N)
7. M39029/48-320 CONTACT, ELECTRICAL PIN (A)
8. M39029/48-321 CONTACT, ELECTRICAL PIN (N)

FIGURE F-31. PDISE 60-amp, input connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M60 A/P DISTRIBUTION CENTER, CONNECTOR J1 .
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. CUT AND REMOVE WIRE INSULATION AS INDICATED.
4. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

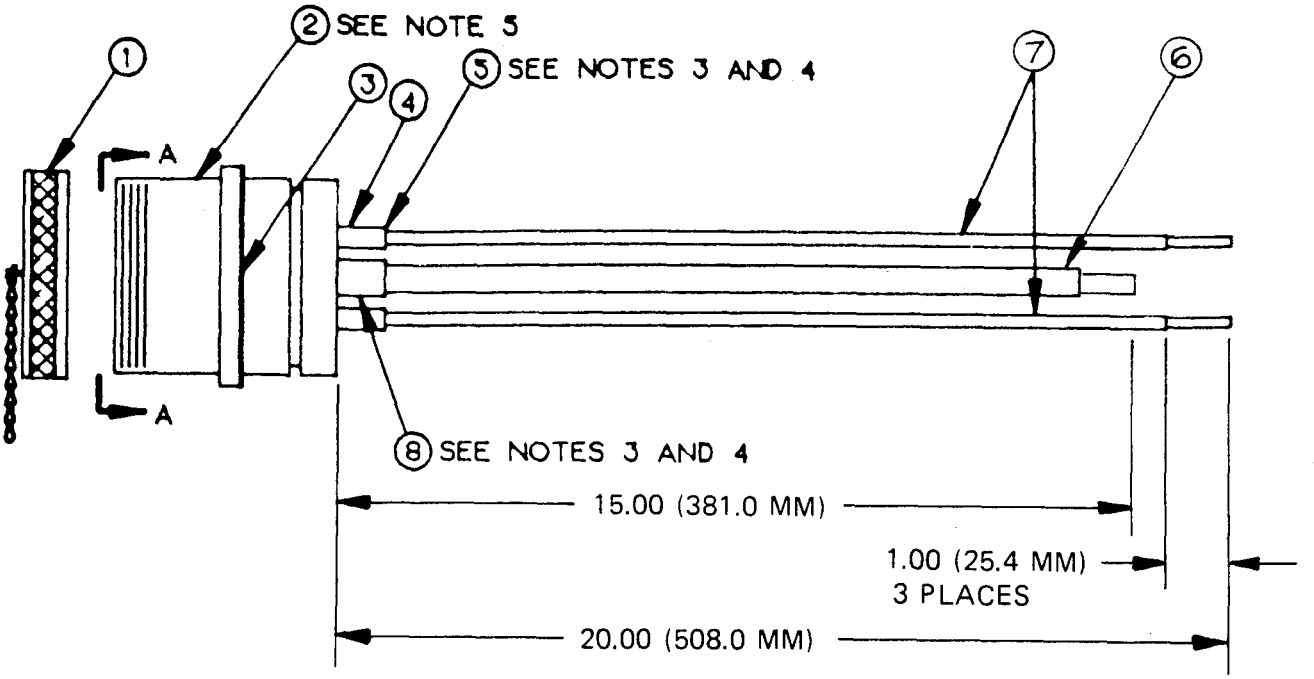
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	6 and 7	4	21.00 (533.4 MM)
N	6 and 8	4	6.00 (152.4 MM)
G1	4,5, and 9	6	18.00 (457.2 MM)
G2	4,5, and 9	6	18.00 (457.2 MM)

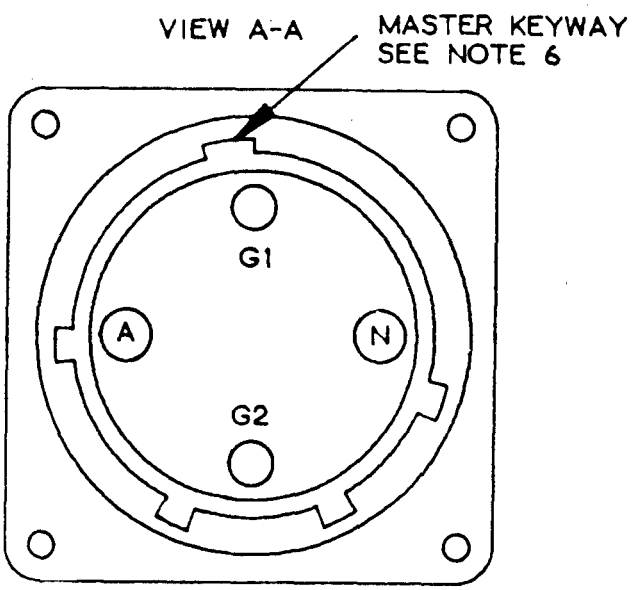
5. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEMS 4, 7, AND 8)

6. ASSEMBLE CONNECTOR SO KEYS AND PINS ALINE AS INDICATED.

FIGURE F-31. PDISE 60-amp input connector assembly. (sheet 2 of 2)





CONNECTOR (FEMALE)

1. MS90563-3C COVER, ELECTRICAL CONNECTOR
2. MS90555C32405S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M39029/49-329 CONTACT, ELECTRICAL SOCKET (G1, G2)
5. M5086/2-6-9 WIRE, ELECTRICAL (G1, G2)
6. M5086/2-4-9 WIRE, ELECTRICAL (A, N)
7. M39029/49-331 CONTACT, ELECTRICAL SOCKET (A, N)

FIGURE F-32. PDISE 60-amp, output connector assembly. (sheet 1 of 2)

4. MS3348-6-8L REDUCER, ELECTRICAL SOCKET (G1, G2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M60 A/P DISTRIBUTION CENTER, CONNECTOR J2.
2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.
3. CUT AND REMOVE WIRE INSULATION AS INDICATED.
4. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

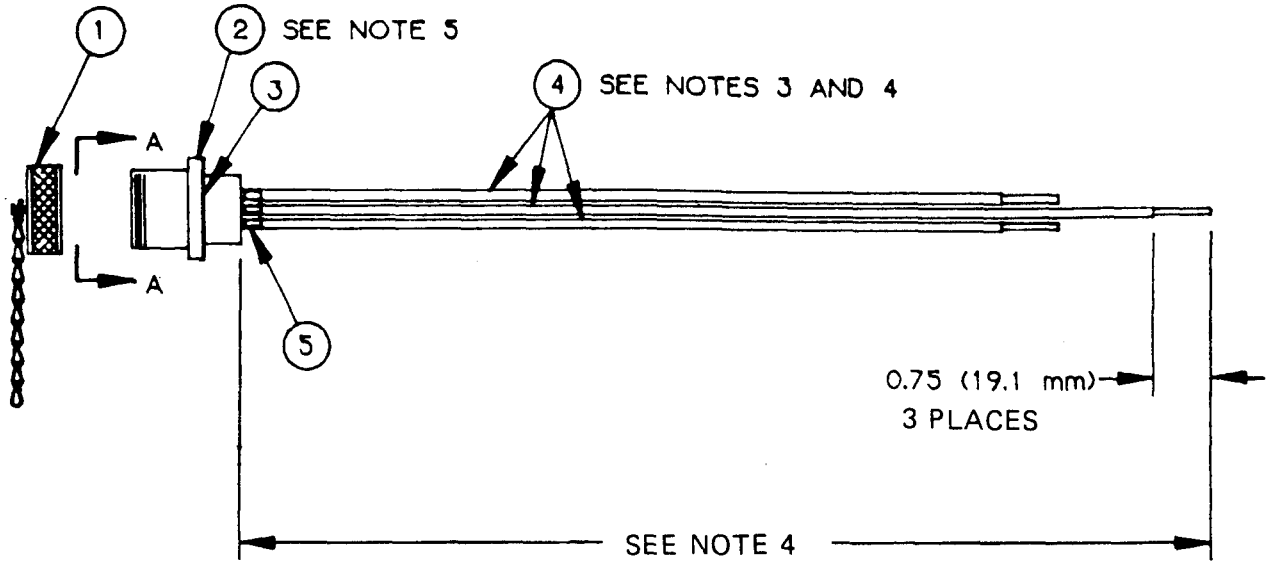
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	7 and 8	4	14.50 (368.3 MM)
N	7 and 8	4	14.00 (355.6 MM)
G1	4, 5, and 6	6	6.00 (152.4 MM)
G2	4, 5, and 6	6	6.00 (152.4 MM)

5. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT SOCKETS (ITEMS 5 AND 8)

6. ASSEMBLE CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-32. PDISE 60-amp output connector assembly. (sheet 2 of 2)



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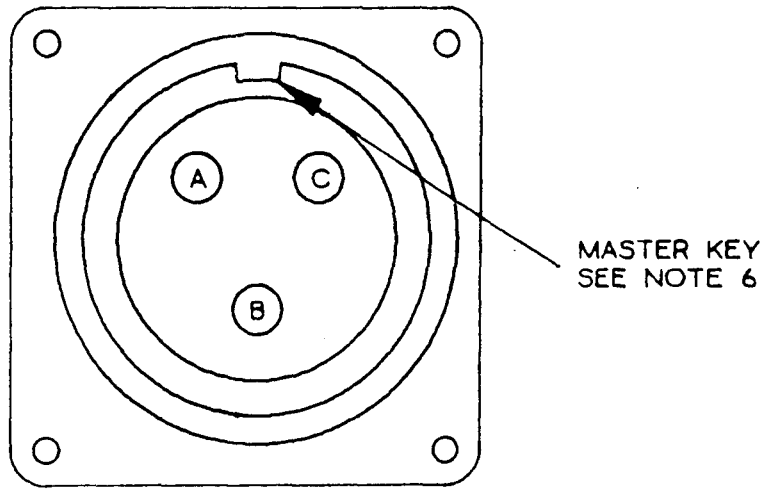


CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-1 OS CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE, ELECTRICAL (A, B, C)
5. M39029/30-219 SOCKET, ELECTRICAL CONTACT (A, B, C)

FIGURE F-33. PDISE 20-amp, output connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M40 A/P DISTRIBUTION CENTER, CONNECTORS J3 THRU J14
   M60 A/P DISTRIBUTION CENTER, CONNECTORS J3 THRU J8

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. CUT AND REMOVE WIRE INSULATION AS INDICATED.

4. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

M40 A/P, CONNECTORS J3, J5, J7, J9, J11 AND J13

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	20 (508.0 MM)
B	4 and 5	12	12 (304.8 MM)
C	4 and 5	12	15 (381.0 MM)

M40 A/P, CONNECTORS J4, J6, J8,J10,J12 AND J14

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	10 (254.0 MM)
B	4 and 5	12	15 (381.0 MM)
c	4 and 5	12	12 (304.8 MM)

M60 A/P, CONNECTORS J3, J5 AND J7

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	18 (457.2 MM)
B	4 and 5	12	9 (228.6 MM)
c	4 and 5	12	14 (355.6 MM)

M60 A/P, CONNECTORS J4, J6 AND J8

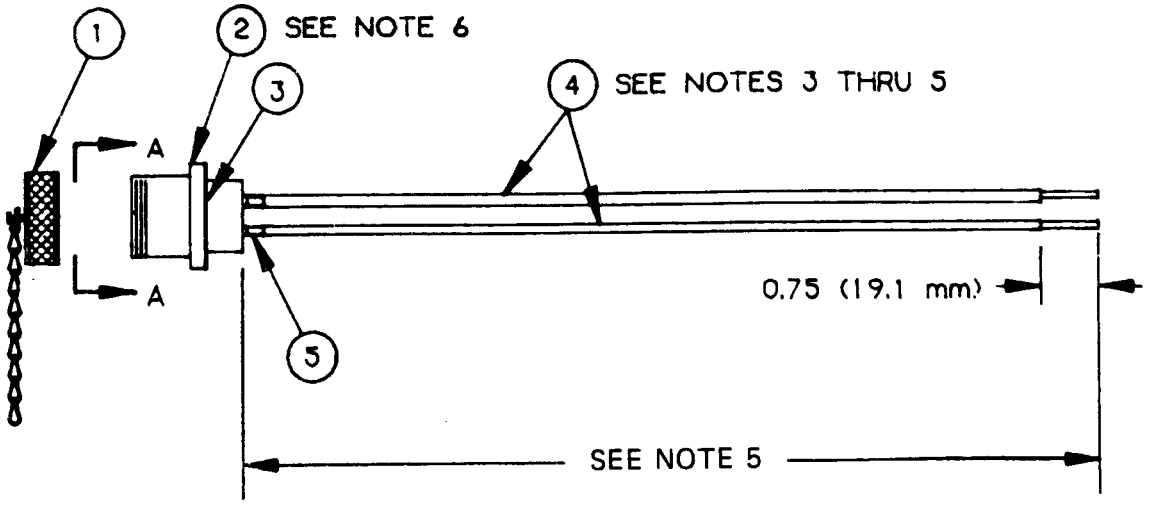
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	9 (228.6 MM)
B	4 and 5	12	14 (355.6 MM)
C	4 and 5	12	8 (203.2 MM)

5. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

COVER (ITEM 1)
GASKET (ITEM 3)
ELECTRICAL CONTACT SOCKETS (ITEM 5)

6. ASSEMBLE CONNECTOR SO KEYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-33. PDISE 20-amp output connector assembly. (sheet 2 of 2)



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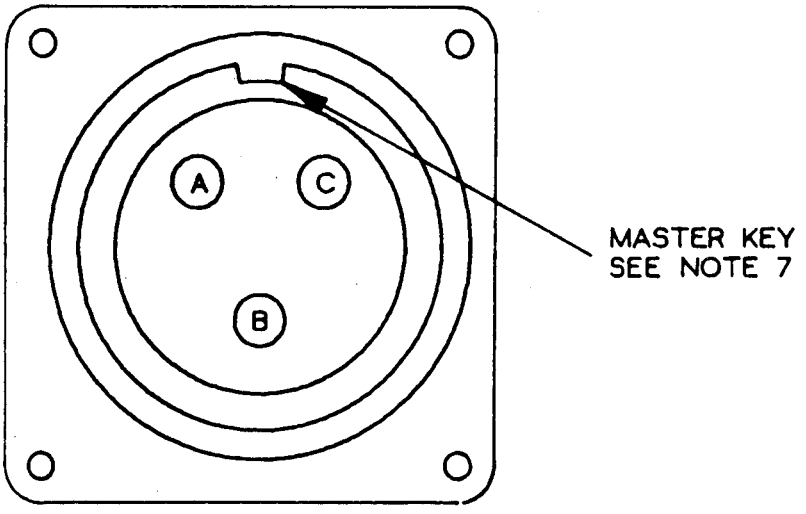


CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-10S CONNECTOR, ELECTRICAL RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE,ELECTRICAL(A ,B ,C)
5. M39029/30-219 SOCKET, ELECTRICAL CONTACT (A, B, C)

FIGURE F-34. PDISE 20-amp, output connector assembly. (sheet 1 of 2)

NOTES:

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE FOLLOWING:

   M200 A/P FEEDER CENTER, CONNECTOR J6
   M100 A/P FEEDER CENTER, CONNECTOR J8

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT SOCKETS TO WIRES FOR POSITIONS AS FOLLOWS:

M200 A/P, CONNECTOR J6

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	12 (304.8 MM)
B	4 and 5	12	12 (304.8 MM)
c	4 and 5	12	10 (254.0 MM)

M100 A/P, CONNECTOR J8

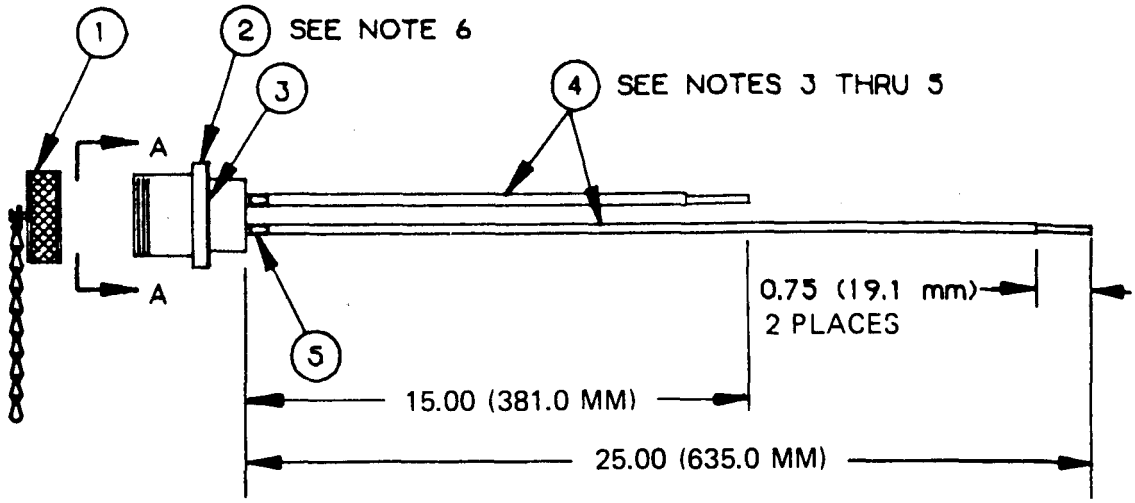
POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	14 (355.6 MM)
B	4 and 5	12	14 (355.6 MM)
C	4 and 5	12	14 (355.6 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT PINS (ITEM 5)

7. ASSEMBLE CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-34. PDISE 20-amp output connector assembly. (sheet 2 of 2)



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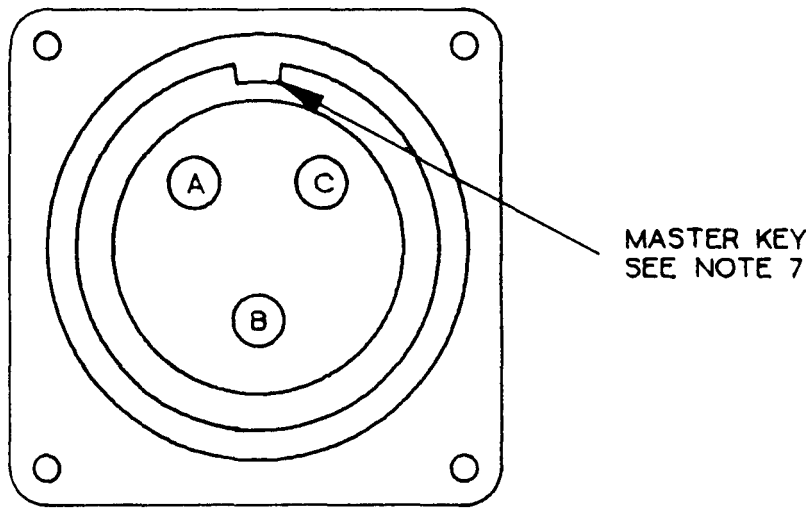

CONNECTOR (FEMALE)

1. MS25043-16D COVER, ELECTRICAL CONNECTOR
2. MS3402D16-10S CONNECTOR, Electrical RECEPTACLE
3. GASKET
4. M5086/2-12-9 WIRE, ELECTRICAL(A,B ,C)
5. M39029/30-219 SOCKET, ELECTRICAL CONTACT (A, B, C)

FIGURE F-35. PDISE 20-amp, output connector assembly. (sheet 1 of 2)

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NOTES :

1. THIS FIGURE ILLUSTRATES ASSEMBLY OF THE M1OO A/P FEEDER CENTER, CONNECTORS

2. ALL DIMENSIONS ARE IN INCHES, WITH METRIC EQUIVALENTS IN PARENTHESES.

3. REMAINING WIRES ARE REMOVED FOR CLARITY.

4. CUT AND REMOVE WIRE INSULATION AS INDICATED.

5. CRIMP ELECTRICAL CONTACT PINS TO WIRES FOR POSITIONS AS FOLLOWS:

POSITION	ITEM NO.	WIRE SIZE	WIRE LENGTH
A	4 and 5	12	25 (635.0 MM)
B	4 and 5	12	15 (381.0 MM)
C	4 and 5	12	15 (381.0 MM)

6. ELECTRICAL CONNECTOR (ITEM 2) IS FURNISHED WITH THE FOLLOWING:

   COVER (ITEM 1)
   GASKET (ITEM 3)
   ELECTRICAL CONTACT SOCKETS (ITEM 5)

7. ASSEMBLE CONNECTOR SO KEYWAYS AND SOCKETS ALINE AS INDICATED.

FIGURE F-35. PDISE 20-amp output connector assembly. (sheet 2 of 2)

APPENDIX G

TORQUE LIMITS

G-1. GENERAL.

This section provides general torque limits for screws used on the DISE and PDISE systems. Special torque limits are indicated in the maintenance procedures for applicable components. The general torque limits given in this appendix shall be used when specific torque limits are not indicated in the maintenance procedure. These general torque limits cannot be applied to screws that retain rubber components. The rubber components will be damaged before the correct torque limit is reached. If a special torque limit is not given in the maintenance instructions, tighten the screw or nut until it touches the metal bracket; then tighten it one more turn.

G-2. TORQUE LIMITS.

Table G-1 lists torque limits for circuit breaker lugs. Table G-2 lists dry torque limits. Dry torque limits are used on screws that do not have lubricants applied to the threads.

Table G-1. TORQUE LIMITS FOR CIRCUIT BREAKER LUGS

NOTE

On the M200 feeder center only, torque the main circuit breaker (200 amp) input lugs to 180 lb-in (20.3 N.m). Torque all other circuit breaker lugs according to wire size connected as follows:

Wire Size AWG	Torque in.-lb +5 in.-lb	N.m ±0.6 N.m
18-20	25	2.8
10-14	30	3.4
8	30	3.4
6	35	4
4	35	4
3	35	4
2	40	4.5
1	45	5.1
1/0	50	5.7
2/0	50	5.7
4/0	50	5.7

NOTE

If you have PDISE equipment, torque all circuit breaker lugs according to wire size as follows:

Wire Size AWG	Torque in.-lb	N.m.
18	20-23	2.3-2.6
14-10	33-35	3.7-4
8	38-40	4.3-4.5
6-4	42-45	4.7-5
3-1/0	45-50	5-5.7
4/0	275	31

Table G-2. SELF-LOCKING NUT BREAKAWAY TORQUE VALUES

Thread Size	Minimum Breakaway Torque in.-lb (N.m)	Thread Size	Minimum Breakaway Torque in.-lb (N.m)
10-32	2.0 (0.23)	5/8-18	32.0 (3.62)
1/4-28	3.5 (0.40)	3/4-16	50.0 (5.65)
5/16-24	6.5 (0.73)	7/8-14	70.0 (7.91)
3/8-24	9.5 (1.07)	1-12	90.0 (10.17)
7/16-20	14.0 (1.58)	1-1/8-12	117.0 (13.22)
1/2-20	18.0 (2.03)	1-1/4-12	143.0 (16.16)
9/16-18	24.0 (2.71)		

NOTE

To determine breakaway torque, thread nut onto screw or bolt until at least two threads stick out. Nut shall not make contact with a mating part. Stop the nut. Torque necessary to begin turning nut again is the breakaway torque. Do not reuse self-locking nuts that do not meet minimum breakaway torque.

GLOSSARY

Section I. ABBREVIATIONS

ac	Alternating current
amp	Amperage
amp/ph	Amperage per phase
app	Appendix
cm	Centimeter(s)
CTA	Common table of allowances
EIR	Equipment improvement report
Hz	Hertz
1S0	International standardization organization
kg	Kilogram(s)
kW	Kilowatt(s)
lb	Pound(s)
m	Meter(s)
Max	Maximum
mm	Millimeter(s)
MTOE	Modification table of organization and equipment
N.m	Newton-meter(s)
No	Number
NSN	National Stock Number
pf	Power factor
ph	Phase
PMCS	Preventive maintenance checks and services
pneu	Pneumatic
sys	System
TMDE	Test, measurement, and diagnostic equipment
V	Volts
V ac	Volts alternating current
W	Watts

Section II. DEFINITION OF UNUSUAL TERMS

Branch circuit:	The portion of an electrical circuit that extends beyond the final current protection device (circuit breaker).
Continuity:	A continuous path for the flow of current in an electrical circuit.
Distribution system:	Electrical cables and controls between the feeder system and the user’s equipment.
Drop:	The terminating line of a T-connection on a branch circuit cable.

Section II. DEFINITION OF UNUSUAL TERMS (continued)

Feeder system:	Electrical cables and controls between the generator set and the point of distribution.
Ground fault:	An undesirable condition of current flow in the ground line of an electrical circuit.
Networking:	The interconnecting of two or more power distribution systems.
Neutral:	The electrical conductor of a 3-phase system with a potential such that the potential difference between the neutral and each phase is equal.
Phases:	The separate voltage waves in an alternating current supply.
Power factor:	The ratio of actual power to apparent power in an alternating current supply.
Single-phase system:	An alternating-current circuit with one hot line and one neutral line.
Three-phase system:	An alternating-current with three hot lines and one neutral line.
Voltage loss:	The voltage drop across the electrical conductor.

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V

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PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO
6	2-1a		
B1		4-3	
125	line 20		

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 Cylenders. The engine on my set only has 4 Cylenders. Change the manual to show 4 Cylenders.

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

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

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The Metric System and Equivalents

Linear Measure

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

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .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. hectorneter (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

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

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	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