TECHNICAL MANUAL

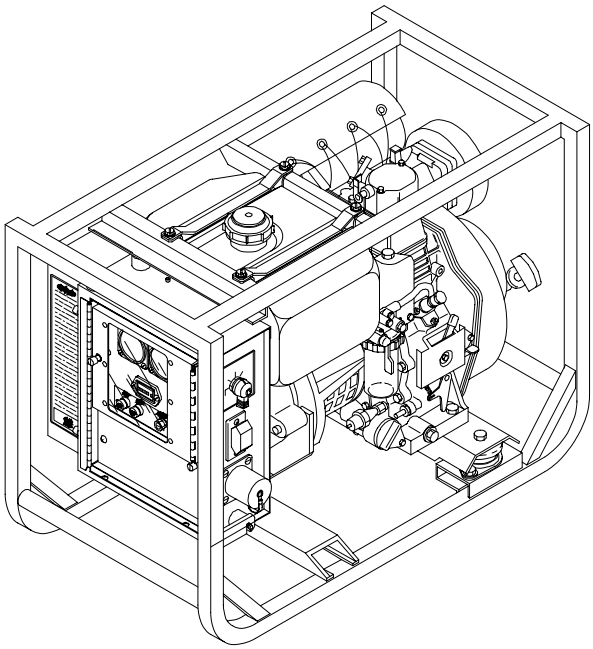
OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL

INCLUDING

REPAIR PARTS AND SPECIAL TOOLS LIST

2 KW MILITARY TACTICAL GENERATOR SETS

120 VAC, 60 Hz:
MEP-531A (DEWEY)
(NSN 6115-01-435-1565) (EIC: LKA)
MECHRON
(NSN 6115-21-912-0393) (EIC: N/A)
28 VDC:
MEP-501A (DEWEY)
(NSN 6115-01-435-1567) (EIC: LKD)
MECHRON
(NSN 6115-21-912-0392) (EIC: N/A)



*This manual supersedes TM 9-6115-673-13&P, dated 1 November 1999

HEADQUARTERS, DEPARTMENTS OF THE ARMY AND THE AIR FORCE

15 SEPTEMBER 2002

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known in the State of California to cause cancer, birth defects, and other reproductive harm.

WARNING SUMMARY

WARNING

High Voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

WARNING

Never attempt to start the generator set if it is not properly grounded. Failure to observe this warning could result in serious injury or death by electrocution.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

WARNING

If 24 VDC battery source is connected to the NATO slave receptacle, DC voltages are present at generator set electrical components even with generator set shutdown. Avoid grounding self when touching any electrical components. Failure to observe this warning can result in personal injury.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

WARNING

Hot fueling of generator sets while they are operating presents a safety hazard and should not be attempted. Hot engine surfaces and sparks produced from the engine and generator circuitry are possible sources of ignition. Failure to observe this warning could result in severe personal injury or death.

WARNING

Exhaust discharge contains deadly gases. Do not operate generator set in enclosed area unless exhaust discharge is properly vented outside. Position as far away from personnel, shelters, and occupied vehicles as possible. Failure to observe this warning could result in severe personal injury or death due to carbon monoxide poisoning.

WARNING

High fuel pressure is generated as a result of operation of the generator set. High-pressure leaks could cause severe personal injury or death.

WARNING

Avoid contacting metal items with bare skin in extreme cold weather. Failure to observe this warning can result in personal injury.

WARNING

Remove metal jewelry when working on electrical system/components. Failure to observe this warning could cause severe personnel injury from electric shock.

WARNING

The noise level of this generator set when operating could cause hearing damage. Hearing protective devices must be worn when operating or working within 13 feet of the generator set when it is running. Failure to observe this warning can result in personal injury.

WARNING

Cleaning solvents are flammable and toxic to eyes, skin, and respiratory tract. Skin/eye protection required. Avoid repeated/prolonged contact. Good general ventilation is normally adequate.

WARNING

When using compressed air, wear protective glasses and use clean, low pressure air, 30 psi (206.8 kPa) maximum. Failure to follow these instructions could result in eye injury.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

WARNING

Adhesive (Item 1, Appendix E) is flammable and toxic. Vapors may ignite explosively. Avoid breathing in vapors. Provide adequate ventilation to prevent vapor concentrations in excess of permissible exposure levels. Keep away from heat, sparks, and open flame. Do not smoke. Extinguish all flames and turn off non-explosion-proof electrical equipment during use until vapors are dissipated. Close container tightly after use. Contains Methylethketone. Avoid swallowing.

WARNING

Be sure the load terminal retaining clip is closed to prevent contact with the lug cover as electrical shock could occur.

WARNING

Note the orientation of the load terminals before removing them. They must be installed in exactly the same way to preclude the possibility of accidental contact with the lug cover and the potential for electrical shock resulting from this contact.

WARNING

MEP-531A engine/alternator assembly weighs 100 lbs (45.4 kg). MEP-501A engine/alternator assembly weighs 80 lbs (36.2 kg). Use caution when removing assembly to prevent personal injury.

FOR FIRST AID REFER TO FM 21-11.

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LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES, DESTROY SUPERSEDED PAGES

Note: This manual supersedes TM 9-6115-673-13&P dated 1 November 1999.

Note: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to diagrams are indicated by shaded areas.

Dates of issue for Revision and changed pages are: 1 September 2002

Original 0 ..... 15 September 2002

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 616, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	0	F-1 – F-11	0	I-1	0
		F-12 Blank	0	I-2 Blank	0
Title Blank	0	F-13 - F16	0	J-1 – J-10	0
Warnings		F-17 Blank	0	K-1 – K-4	0
a-c	0	F-18 - F-25	0	L-1 – L-15	0
d Blank	0	F- 26 Blank	0	L-16 Blank	0
A	0	F-27- F-55	0	M-1 – M-4	0
B Blank	0	F-56	0	Index-1 – Index-8	0
i-xiii	0	F-57 – F-60	0	FO-1/(FO-2 Blank)	0
xiv Blank	0	F-61 Blank	0	FO-3/(FO-4 Blank)	0
1-1 – 1-26	0	F-62 – F-72	0	FO-5/(FO-6 Blank)	0
2-1 – 2-34	0	F-73 Blank	0	FO-7/(FO-8 Blank)	0
3-1 – 3-15	0	F-74 – F-117	0	FO-9/(FO-10 Blank)	0
3-16 Blank	0	F-118 Blank	0	FO-11/(FO-12 Blank)	0
4-1 – 4-140	0	F-119- F121	0	Metric Conversions	0
5-1 – 5-93	0	F-122 Blank	0		
5-94 Blank	0	F-123 – F-168	0		
A-1 – A-2	0	G-1 – G-6	0		
B-1 – B-12	0	G-7 Blank	0		
C-1 – C-3	0	G-8 – G20	0		
C-4 Blank	0	G-21	0		
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E-1 – E-2	0	H-1 – H-2	0		

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TECHNICAL MANUAL

No. 9-6115-673-13&P

HEADQUARTERS,
DEPARTMENTS OF THE ARMY AND THE AIR FORCE
Washington, DC 15 September 2002

OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR 2 KW MILITARY TACTICAL GENERATOR SETS

120 VAC, 60 Hz:

MEP-531A (DEWEY) (NSN 6115-01-435-1565) (EIC: LKA)
MECHRON (NSN 6115-21-912-0393) (EIC: N/A)

28 VDC:

MEP-501A (DEWEY) (NSN 6115-01-435-1567) (EIC: LKD)
MECHRON (NSN 6115-21-912-0392) (EIC: N/A)

REPORTING OF ERRORS

You can improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Communications and Electronics Command, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5006. You may also submit your recommended changes by e-mail directly to AMSEL-LC-LEO-PUBS-CHG@mail1.monmouth.army.mil
For Air Force, mail AFTO Form 22 directly to Commander, Sacramento Air Logistics Center, ATTN: TILBA, McClellan AFB, CA 95652-5990 (AFMC).

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Figure **Page**

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HOW TO USE THIS MANUAL

This manual contains operation and maintenance instructions for the 2 kW Military Tactical Generator Sets. The manual contains operator instructions, operator troubleshooting, and operator maintenance. It also contains unit and direct support troubleshooting and maintenance instructions.

Special features include an integral Repair Parts and Special Tools List (RPSTL) in Appendix F, an Illustrated List of Manufactured Items in Appendix G, and an auxiliary fuel system in Appendix L. The RPSTL is a multi-service illustrated parts breakdown, which lists the Source, Maintenance, and Recoverability (SMR) codes for each of the service branches. Appendix G contains specific instructions for fabricating wiring harnesses and other components of the generator set. Appendix L contains fabrication, pre-assembly, assembly, and disassembly instructions to provide an auxiliary fuel supply for the generator set. This system can be used on both MEP-531A/501A and Mechron sets.

The manual also contains a wiring cross-reference index in Appendix J. The index lists each wire number in the Dewey generator sets with its corresponding wire number in the Mechron generator sets. This cross-reference will be useful when performing testing and troubleshooting to determine which Mechron wire numbers are equivalent to the Dewey wire numbers described in the tables and text of this manual.

This manual is designed to help you operate and maintain the equipment. All task descriptions will take you step-by-step through the procedure. Don't take shortcuts. Before you begin any task, you should read through the complete procedure, make sure you know what needs to be done, then go back and follow the steps as written.

Pay particular attention to **WARNINGS, CAUTIONS**, and **NOTES.** This will prevent injury to personnel, damage to equipment, and provide clear instructions.

Use the alphabetical index at the back of the manual to find a topic not listed in the table of contents.

The definitions **of WARNING, CAUTION**, and **NOTE** as used in this manual apply as follows:

WARNING

A warning is used to emphasize that if an operation, procedure, or practice is not followed exactly, death or injury to personnel may result.

CAUTION

A caution is used to emphasize that if an operation, procedure, or practice is not followed exactly, equipment damage may result.

NOTE

A note is used to emphasize an important procedure or condition.

The following paragraphs describe the technical content of each chapter in the manual.

Chapter 1 contains general information about the manual and the generator sets. Included are physical and functional descriptions of the generator set systems and components.

Chapter 2 is for the operator. It contains an illustration of the control panel with a description for each control and indicator. It also describes operator preoperational checks, operation under normal conditions, and operation under unusual or emergency conditions

Chapter 3 contains the maintenance procedures authorized at the operator level. Included are troubleshooting procedures useful in recognizing generator set malfunctions, tests and inspections, and guidance on performing corrective actions.

Chapter 4 provides unit level maintenance instructions which include servicing the generator set, scheduled maintenance, troubleshooting, and unit level corrective maintenance.

Chapter 5 covers direct support maintenance instructions, which include troubleshooting, and direct support corrective maintenance procedures.

Appendix A identifies the forms and publications that are referenced in this manual. Included are other manuals which should be used with this manual.

Appendix B contains the Maintenance Allocation Chart (MAC). The MAC identifies the maintenance functions authorized for the generator set. The MAC also lists the tools and test equipment required for each function.

Appendix C lists the components of the end item and the basic issue items for the generator set. These items must accompany the generator set and be turned in with the set.

Appendix D identifies additional items authorized for support of the generator set but which do not have to accompany or be turned in with the set.

Appendix E lists the expendable supplies and materials needed to operate and maintain the generator set.

Appendix F is the Repair Parts and Special Tools List (RPSTL) for the generator set.

Appendix G contains illustrations and instructions for manufacturing specific components of the generator set.

Appendix H provides general guidance for applying torque to generator set fasteners and hardware.

Appendix I lists those parts that are automatically replaced when removed while performing maintenance.

Appendix J contains a cross-reference index of Dewey and Mechron wire numbers.

Appendix K contains packaging instructions for the generator set.

Appendix L contains instructions for the auxiliary fuel system.

Appendix M contains the deprocessing checklist.

Alphabetical Index lists each key technical manual topic covered in the manual in alphabetical sequence with its page number. If you require information on a specific topic, but are not sure where to look, use the index to locate the specific page.

Foldouts include electrical schematics and wiring diagrams for the MEP-501A and MEP-531A generator sets and the Mechron 120 VAC and 28 VDC generator sets.

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CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION

1.1. SCOPE.

1.1.1. Type of Manual. This manual contains operator procedures, unit, direct and general support maintenance instructions for the Military Tactical Generator (MTG) Sets 2 kW 120 VAC 60 Hz and 28 VDC, and the Mechron 120 VAC and 28 VDC sets (Figure 1-1), herein referred to as generator set. Also included are descriptions of major components and their functions in relation to other components.

1.1.2. Model Numbers and Equipment Names.

Model Number	Equipment Name
MEP-531A	Generator Set, Military Tactical, Diesel Powered, 2 kW 120 VAC
--------	Mechron Set, 120 VAC
MEP-501A	Generator Set, Military Tactical, Diesel Powered, 2 kW 28 VDC
--------	Mechron Set, 28 VDC

1.1.3. Purpose of Equipment. The generator set provides either 120 VAC, 60 Hertz or 28 VDC power. The generator set is easily transported, operated and maintained.

1.2. MAINTENANCE FORMS AND RECORDS.

1.2.1. 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).

1.2.2. (F) Maintenance Forms and Records maintained by the Air Force are prescribed in AFI 21-101, AFI 37-160, and the applicable TO 00-20 Series Technical Orders.

1.2.3. (N) Navy users should refer to their service peculiar directives to determine the applicable maintenance forms and records to be used.

1.2.4. (MC) Maintenance Forms and Records used by the Marine Corps personnel are prescribed by current edition of TM 4700-15/1.

1.3. CORROSION PREVENTION AND CONTROL.

Specific corrosion prone areas of the generator set shall be inspected on a periodic basis in accordance with the Operator Level Preventive Maintenance Checks and Services (PMCS), Table 2-2 and the Unit Level Preventive Maintenance Checks and Services (PMCS), Table 4-1. Other corrosion control procedures are contained in MIL-HDBK-729.

1.4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Destruction of the generator set to prevent enemy use shall be in accordance with TM 750-244-3.

1.5. PREPARATION FOR STORAGE OR SHIPMENT.

Refer to TB 740-97-2/TO 35-1-4 for procedures to place the generator set into storage. Refer to ASTM D 3951-98 for procedures on preparing the generator set for shipment.

1.6. QUALITY ASSURANCE (QA).

Where applicable, Quality Assurance (QA) requirements have been incorporated into the technical manual. When required, each procedure, paragraph or step in this manual requiring quality assurance is preceded and highlighted by the designation "(QA)".

1.7. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your generator set 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 (Product Quality Deficiency Report). EIRs should be mailed directly to:

Commander
U.S. Army Communications and Electronics Command
ATTN: AMSEL-LC-LEO-D-CS-CFO
Fort Monmouth, New Jersey 07703-5000

A reply will be furnished to you.

1.7.1. (N) Put it on an applicable Navy form and mail it directly to:

Naval Construction Battalion Center
ATTN: CODE 157 Civil Engineer
Support Office (CESO)
Port Hueneme, CA 93043-5000

A reply will be furnished to you.

1.7.2. (F) USAF Deficiency Reporting and Investigating System, TO 00-35D-54, Appendix A procedures will be used for electronic submission. Submit mailed forms to:

SMALC/LIIAD
5029 Dudley Boulevard
McClellan AFB, CA 95652-1095

A reply will be furnished to you.

1.7.3 (MC) Quality Deficiency Report (QDR) shall be submitted on SF 368 in accordance with MCO 4855.10. Submit directly to:

Commander
Marine Corps Logistics Bases
(CODE 856)
Albany, GA. 31704-5000

A reply will be furnished to you.

1.8. WARRANTY INFORMATION.

The generator set is warranted by Dewey Electronics Corporation for a period of 12 months or 1200 operating hours, whichever occurs first. The warranty starts on the date found in block 23, DA Form 2408-9, in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your Unit Maintenance Shop.

NOTE

This warranty does not apply to sets built by Mechron.

1.9. SAFETY, CARE, AND HANDLING.

Refer to the Warning Summary for a list of general safety precautions to be followed when operating and when performing maintenance on the generator set.

1.10. CRITICAL SAFETY ITEMS LIST.

The following is a list of critical safety items for operating and maintaining the generator sets.

a. Ensure that the generator set is properly grounded. Refer to paragraph 2.7.a.

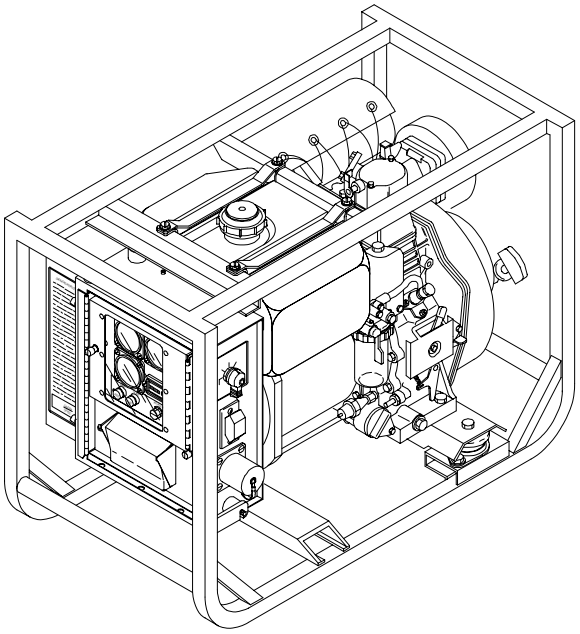
b. Ensure that the load cables are properly installed. Refer to paragraph 2.7.b.

c. Diesel engine exhaust and some of its constituents are known in the State of California to cause cancer, birth defects, and other reproductive harm.

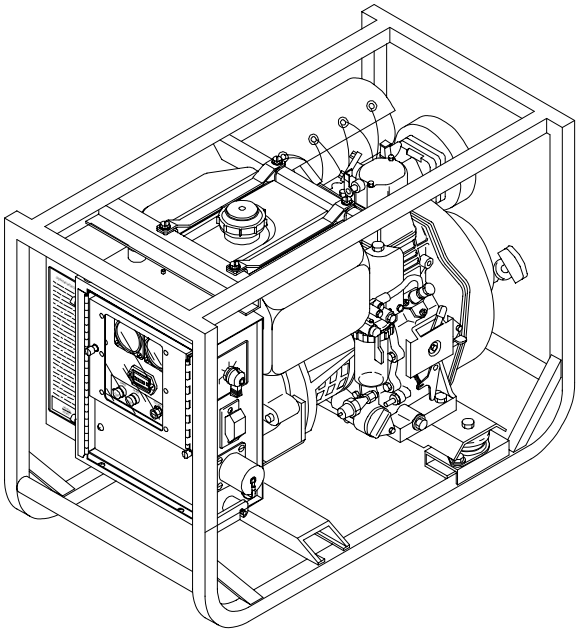
1.11. LIST OF ABBREVIATIONS.

The following list of abbreviations consists of those special or unique abbreviations that are not contained in ASME-Y14.38M and do not conflict with those in ASME-Y14.38M.

Abbreviation	Description
KPA	Kilopascal
KVA	Kilovolt-ampere
kW	Kilowatt
CTA	Common Table of Allowance
MTOE	Modified Table of Organization and Equipment
NATO	North Atlantic Treaty Organization
TDA	Table of Distribution and Allowance
JTA	Joint Table of Allowances
GFCI	Ground Fault Circuit Interrupter



MEP-531A



MEP-501A

Figure 1-1. Military Tactical Generator (MTG) Set - 2 kW

SECTION II. EQUIPMENT DESCRIPTION

1.12. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

1.12.1. General. The 2 kW generator sets, models MEP-501A and MEP-531A, (Figure 1-1) are self-contained, skid-mounted, portable units. They are equipped with controls, instruments and accessories necessary for operation as single units. The generator sets consist of a diesel engine, direct drive AC alternator, speed governing system, fuel system, 24 VDC auxiliary cold weather starting system, and generator control system. The generator sets are portable and require a four-person lift. The generator sets can also be stacked three high while in storage.

NOTE

For all locations referenced in procedures in this technical manual face the control panel at the rear of the generator set.

1.13. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

1.13.1. Diesel Engine. The generator set is powered by a one cylinder, four cycle, fuel injected, naturally-aspirated, air-cooled diesel engine which occupies the front half of the generator set. The engine is also equipped with a fuel filter, lubricating oil strainer, and a foam covered, dry-paper air filter. A safety device automatically stops the diesel engine during conditions of low engine oil pressure.

1.13.2. Alternator. The AC alternator is a single-bearing, drip-proof, synchronous, single phase, air-cooled generator. The DC alternator is a two-pole, revolving field-type AC alternator rectified to DC. Each alternator/generator is coupled directly to the diesel engine crankshaft.

1.13.3. Control Panel Assembly. The generator set control panel assembly is located at the rear of the generator set and contains controls and instruments for operating the engine and the alternator.

1.13.4. Fuel Tank. The 1.6 gallon (6.1 liters) fuel tank is located on top of the generator set just behind the diesel engine. The tank includes a removable strainer element designed to prevent large contaminants from entering the tank through the fill opening. The fuel tank has sufficient capacity to enable the generator set to operate for at least 4.8 hours without refueling while operating at 100% load.

1.13.5. Skid Base. The skid base supports the generator set.

1.13.6. Safety Devices.

a. The generator set features a Low Oil Pressure (LOP) shutoff switch and solenoid which are designed to shut down the generator set if the diesel engine loses oil pressure. The LOP switch is located in the engine block (right-rear corner). The solenoid is located in the main control panel.

b. The convenience receptacle on the MEP-531A features a Ground Fault Circuit Interrupter (GFCI) which protects the generator set components from inductive current in the ground circuit originating from the load connected to the convenience receptacle. The convenience receptacle is located on the main control panel.

c. The ON-OFF load circuit breaker is designed to take the generator set off line in an overload condition. The circuit breaker is located on the right side of the main control panel. A circuit interrupter, internal to the circuit breaker, is connected between the alternator output and the generator set output terminals to disconnect the generator output from the load and also to protect the generator from a short circuit. The circuit interrupter is operated from a current sensor internal to the circuit breaker.

d. Transient suppressors (MEP-501A) protect the load circuit from potential damage caused by cross-connecting the + and - output terminals of the alternator. The transient suppressors are located in the main control panel.

1.14. DIFFERENCES BETWEEN MODELS.

1.14.1 The differences between models of the generator sets covered in this manual are as follows. Refer to Table 1-1, Leading Particulars.

a. Model MEP-531A is equipped with a 120 VAC, 60 Hz alternator.

b. Model MEP-501A is equipped with a 28 VAC alternator rectified for DC output.

1.14.2 This manual is written primarily for the Dewey configuration of generator sets. The differences between (MEP-531A and MEP-501A) models of generator sets and those built by Mechron are as follows:

a. Fuel Tank.

Mechron sets do not include a fuel drain cock.

b. Fuel Filter Assembly.

Air Force Mechron sets have a different fuel filter head with shutoff valve and bleed screws facing the engine. Army Mechron sets were issued a replacement which matches the Dewey configuration.

c. Low Oil Pressure Switch.

Air Force Mechron 28 VDC sets do not include a coupler on this switch. Army Mechron 120 VAC sets have a new standard-to-metric coupler.

d. Convenience Receptacle.

Mechron 120 VAC sets were issued without a Ground Fault Circuit Interrupter feature on the receptacle. This receptacle should be discarded and replaced.

e. Component and Wire Labeling.

Labeling differences do exist. Cross-reference tables for components and wiring identifiers are provided in Appendix J for the Mechron sets. Schematic and wiring diagrams are provided for both MEP-531A/501A and Mechron sets in Figures FO-1 through FO-6.

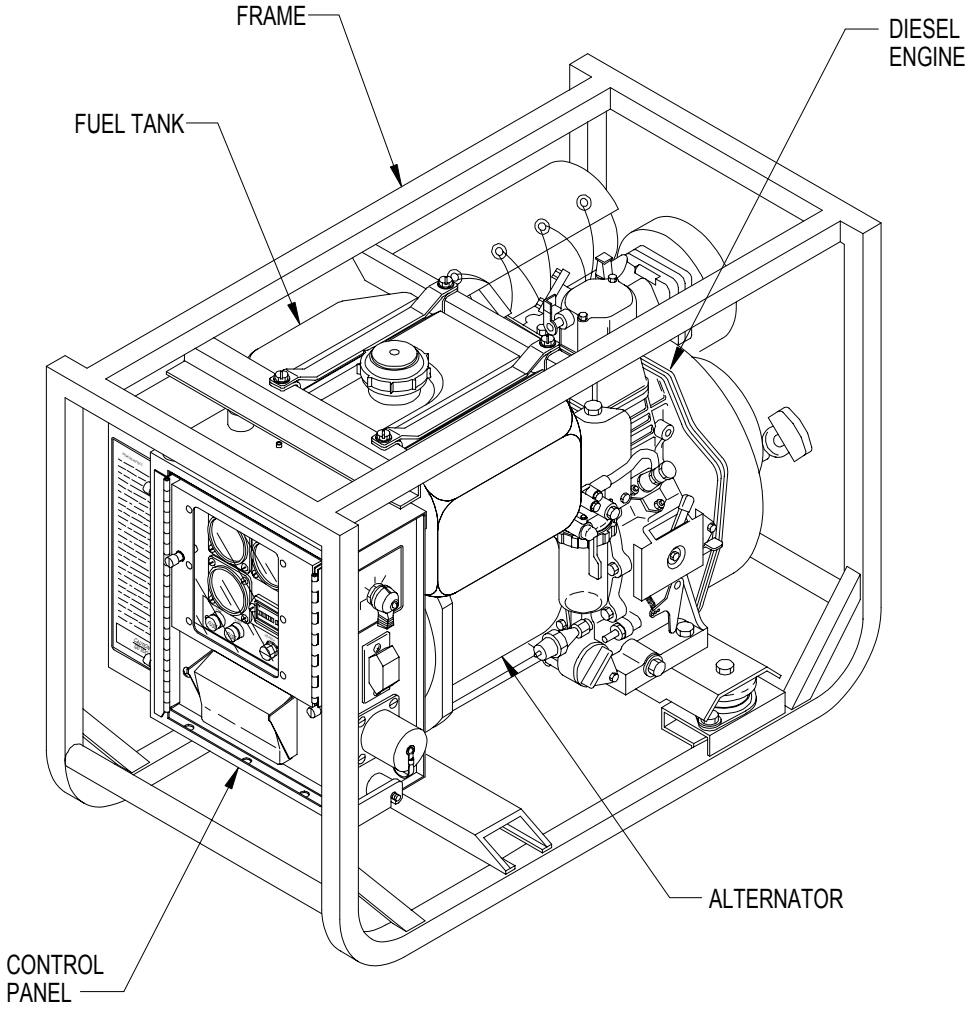


Figure 1-2. Location of Major Generator Set Components

f. Part Numbers.

The RPSTL, Appendix F, should be used for ordering replacement parts for both configurations, Dewey and Mechron.

g. Electromagnetic Interference (EMI) Filter.

The MEP-531A generator set features an EMI filter with integral load terminals in place of the load terminal boards found on the MEP-501A and Mechron sets.

1.15. EQUIPMENT DATA.

1.15.1. Leading Particulars. For a list of Leading Particulars, refer to Table 1-1.

Table 1-1. Leading Particulars

a. Generator Set.

Model Numbers:
2 kW 120 VAC Military Tactical Generator Set MEP-531A
2 kW 28 VDC Military Tactical Generator Set MEP-501A

National Stock Numbers:
MEP-531A ..... NSN 6115-01-435-1565
MEP-501A ..... NSN 6115-01-435-1567

Overall Length
MEP-531A ..... 29.5 in. (750 mm)
MEP 501A ..... 29.5 in. (750 mm)

Overall Width
MEP-531A ..... 16 in. (406 mm)
MEP-501A ..... 16 in. (406 mm)

Overall Height
MEP-531A ..... 21.7 in. (550 mm)
MEP-501A ..... 21.7 in. (550 mm)

Dry Weights
MEP-531A ..... 143.1 lb (64.9 kg)
MEP-501A ..... 123.5 lb (56.0 kg)

Table 1-1. Leading Particulars – Continued

b. Operating Environment.

Temperature Range	-51 to 122° F (-46 to +50° C)
Incline Angle	15° max.

c. Diesel Engine.

Manufacturer	Yanmar
Model	L48AE-DEG
Type	Single cylinder, four cycle, naturally-aspirated diesel
Stroke	2.2 in. (55 mm)
Displacement	12.88 cu in. (0.211 l)
Compression Ratio	19.9:1
Rating	4.2 HP @ 3600 RPM
Engine Operating Speed	
No Load	3750 RPM
Full Load (± 30 RPM)	3600 RPM
Altitude Degradation, 4000 to 8000 ft	1.3% per 328 feet (100 m)
Cold Weather Starting System Use	When temperature is 23°F (-5°C) or below

d. Diesel Engine Cooling System.

Type	Air cooled by fan integral with flywheel

e. Diesel Engine Lubricating System.

Type	Full flow, circulating pressure
Capacity	0.85 qt (0.80 l)
Oil Pump Type	gerotor
Normal Operating Pressure	25-60 psi
Filter Type	reusable strainer
Pressure Indicating System	None

f. Fuel System.

Type of Fuel	DL-1, DL-2, or JP8
Fuel Tank Capacity	1.6 gal. (6.1 l)
Fuel Consumption Rate	0.333 gal./hr (1.26 l/hr) @ 100% load
Full Tank Consumption	4.8 Hours @ 100% load

g. Diesel Engine Starting System.

Manual	Recoil mechanism
Electric (Power supplied via NATO slave receptacle)	Starting motor
Manufacturer	Yanmar
Model	S114-414A
Rating	24 VDC

Table 1-1. Leading Particulars – Continued

h. Alternator.

MEP-531A:

Manufacturer ..... Dewey Electronics Corporation
Type ..... Rotating field synchronous
Load Capacity ..... 2 kW
Voltage Output ..... 120 VAC single phase 2 wire and ground (bonded to frame)
Power Factor 1.0
Load Recovery Time (Voltage):
  NL to FL ..... 3.0 seconds
  FL to NL ..... 3.0 seconds
Load Recovery Time (Frequency):
  NL to FL ..... 4.0 seconds
  FL to NL ..... 5.0 seconds
Cooling ..... forced air
Lubrication Requirements ..... none
Drive Type ..... direct coupling
Duty Classification ..... continuous

MEP-501A:

Manufacturer ..... Balmar Products Inc.
Type ..... Brush AC rectified to DC
Load Capacity ..... 2 kW
Voltage Output ..... 28 VDC
Load Recovery Time (Voltage):
  NL to FL ..... 1.0 seconds
  FL to NL ..... 0.5 seconds
Cooling ..... forced air
Lubrication Requirements ..... none
Drive Type ..... direct coupling
Duty Classification ..... continuous

i. Safety Devices.

Low Engine Oil Pressure:

Trip Pressure (Range) ..... 12-18 psi
Voltage Rating ..... 24 VDC
Current Rating ..... 5 amps
Method ..... Electrically-operated solenoid with mechanical link to fuel governor

SECTION III. TECHNICAL PRINCIPLES OF OPERATION

1.16. INTRODUCTION.

1.16.1. This section contains functional descriptions of the generator set and explains how the controls and indicators interact with the system.

1.17. FUEL SYSTEM.

1.17.1. The Generator Set Fuel System (Figure 1-3) provides filtered and pressurized diesel fuel to the diesel engine. It consists of a fuel tank with removable fuel fill strainer, fuel lines, fuel filter, fuel injection pump, and a fuel injector.

1.17.2. The diesel fuel is stored in a fuel tank. The tank features a plastic mesh strainer in the fill neck opening and a fuel tank drain valve. The fuel tank supplies fuel via a flexible tube to the fuel filter. The fuel filter removes impurities and water from the diesel fuel before it reaches the diesel engine. The fuel filter is made up of a clear bowl and filter head with a throw-away paper filter. The fuel filter also includes a fuel shutoff valve and two bleed screws for removing air trapped in the fuel system. Another flexible tube connects the fuel filter and the fuel injection pump (part of the diesel engine).

1.17.3. With the engine cranking or running, the fuel flow is controlled by a mechanical governor (part of the diesel engine) and the fuel injection pump. The fuel injection pump pressurizes the fuel and transfers it to the fuel injector (part of the diesel engine). Fuel is sprayed by the injector into the engine combustion chamber where it is mixed with air and ignited. The fuel that is not burned by the engine is returned to the generator set fuel tank via an excess fuel return line.

1.17.4. The diesel engine is shutdown by depressing the engine STOP lever which places the fuel injection pump control rack in the no fuel position.

1.18. ENGINE AIR INTAKE AND EXHAUST SYSTEM.

1.18.1. The Engine Air Intake and Exhaust System (Figure 1-4) provides filtered air to the diesel engine and an outlet for exhaust gas produced by air/diesel fuel combustion. The system consists of an air intake filter, air intake manifold, exhaust manifold, and muffler with spark arrester.

1.18.2 The air intake cleaner features a foam pre-filter and a disposable paper filter element. Air is drawn through the pre-filter and the filter element. Airborne dirt is trapped in the pre-filter and air intake filter element. Filtered air passes through the filter, air intake manifold, and open intake valve into the engine combustion chamber where it mixes with pressurized diesel fuel and is combusted.

1.18.3. Immediately following combustion, hot gases are forced out of the combustion chamber (through the open exhaust valve), and into the exhaust manifold. The exhaust manifold passes the gases into the muffler which deadens the sound created by the combustion process. The gases then pass through the muffler and out of the spark arrestor which diffuses the gas. A muffler shroud and blanket (wrapped around the muffler), offer some protection to personnel who may inadvertently touch the muffler while the diesel engine is running.

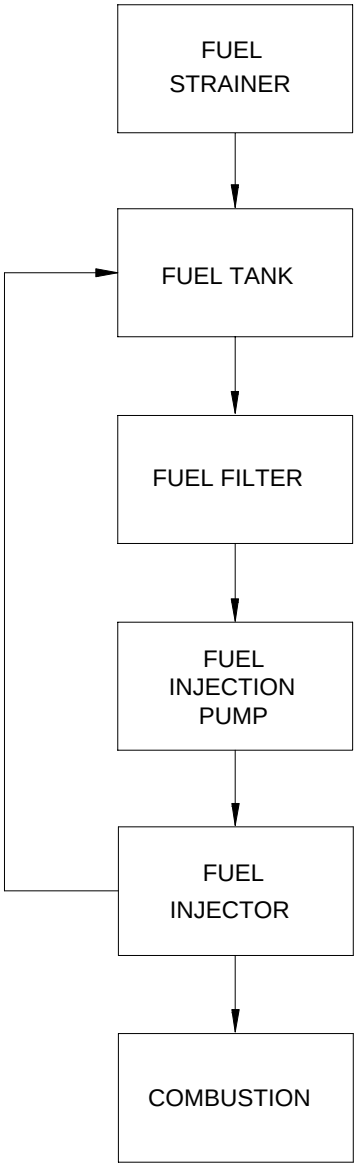


Figure 1-3. Generator Set Fuel System

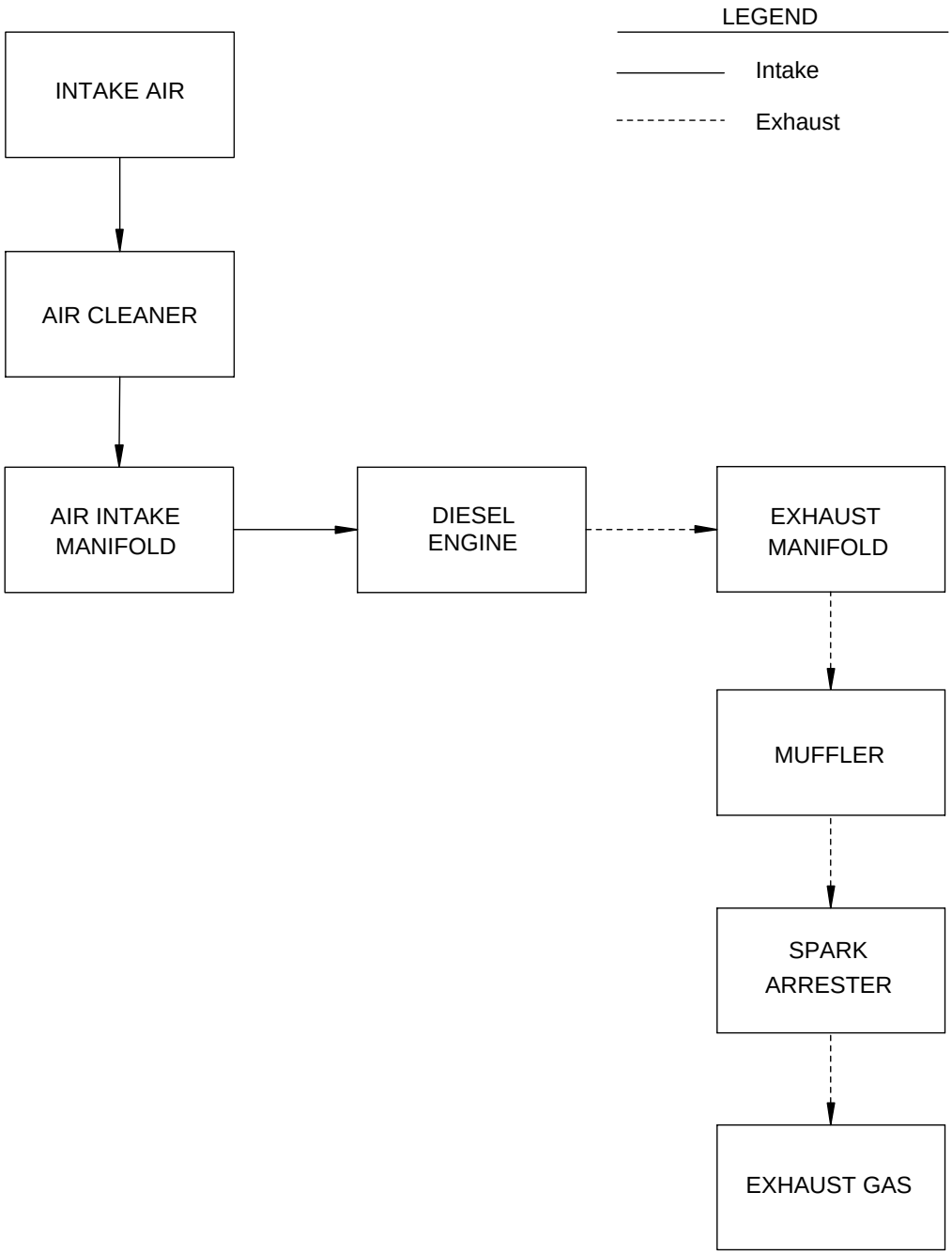


Figure 1-4. Engine Air Intake and Exhaust System

1.19. SPEED CONTROL SYSTEM.

1.19.1. Diesel engine speed is maintained by the speed control system (Figure 1-5) which includes the mechanical governor, governor lever, RUN lever, and STOP lever. The system is designed to maintain engine speed under load at a constant rate of between 3570 and 3630 rpm (no load speed of 3750 rpm).

1.19.2. The governor is the flyweight-type, with the weights mounted on a gear driven by the engine camshaft gear. The force of the flyweights is transferred through a thrust sleeve and collar to the governor lever which is balanced against the tension of the governor spring. The spring is stretched between the governor lever and the engine RUN lever. When the engine speed drops below the governed speed, the resulting decrease in governor flyweight/camshaft rotation places tension on the governor spring. The tension repositions the fuel injection pump rack and increases the stroke of the plunger in the fuel injection pump allowing more fuel to flow to the pump delivery valve. The increase in fuel flow causes the diesel engine to speed up. As the diesel engine recovers to the governed speed, the governor flyweight/camshaft rotation stabilizes and the tension on the governor spring relaxes. This changes the position of the fuel injection pump rack and shortens the stroke of the plunger allowing less fuel to flow to the fuel injectors maintaining the engine speed at 3600.

1.19.3. The governor control mechanism features two operator controlled levers. The black diesel engine RUN lever places tension on a spring attached to the governor lever. The tension places the governor lever in a position to allow fuel flow to the fuel injector for diesel engine start up and to allow the diesel engine to continue running after startup. The red diesel engine shutdown or STOP lever is operated by either depressing the red STOP lever or by the low oil pressure shutdown system. When depressed, the lever trips the RUN lever releasing the tension on the governor spring which places the governor lever in a no fuel or stop position. This action shuts off fuel flow to the fuel injector stopping the combustion process and shutting down the diesel engine.

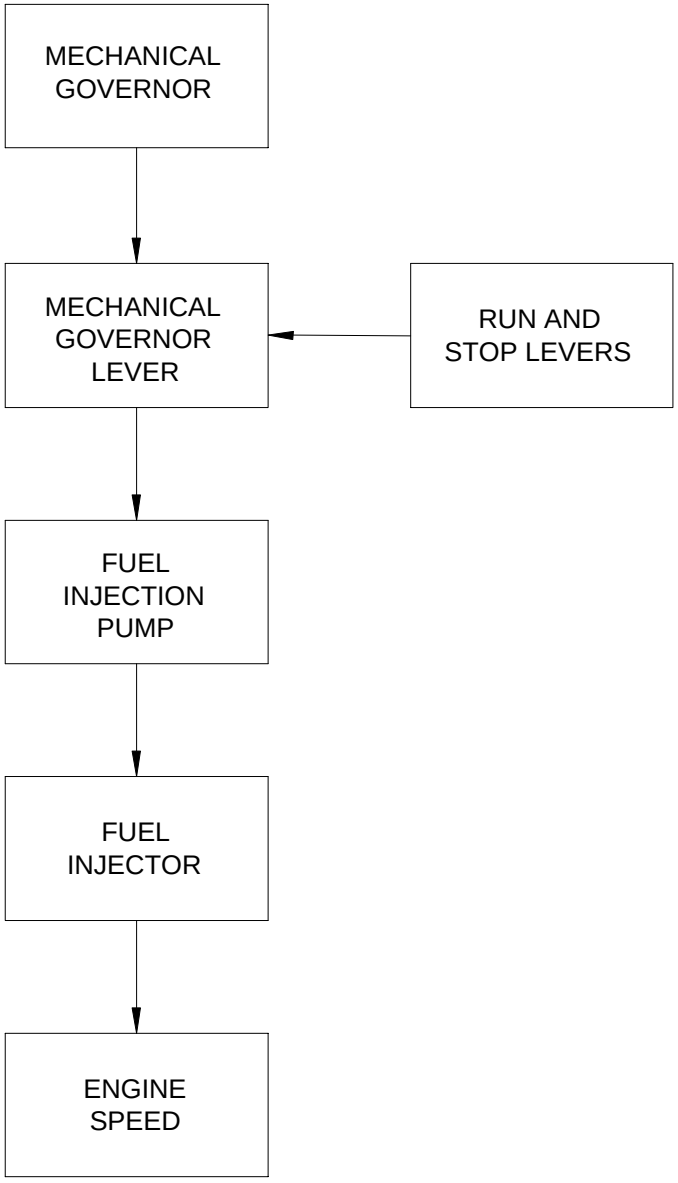


Figure 1-5. Diesel Engine Governor

1.20. DIESEL ENGINE ELECTRICAL STARTING SYSTEM.

1.20.1 Electrical Starting. The diesel engine electrical starting system (Figure 1-6) can be used to start the diesel engine whenever there is an external 24 VDC power source connected to the NATO slave receptacle. The electrical starting system will be required when starting the diesel engine in extremely cold weather or as a backup to the manual starting system (recoil mechanism failure). The electrical system also provides a means for warming diesel engine intake air which also helps to start the engine in cold weather. The system consists of a NATO slave receptacle (SR1), START-PREHEAT/PREHEAT/OFF/START switch (S2), diode (CR1), an engine-mounted starter motor (B1) with solenoid (L5), and two resistance heater elements (HTR1 and HTR2).

1.20.2 When connected to a 24 VDC power source via a power cable, the NATO slave receptacle (SR1) provides power to the START-PREHEAT/PREHEAT/OFF/START switch (S2) at pin B and to the starter solenoid (L5) at pin S. When the operator places switch (S2) in the START position, power is applied through the switch at pin S to the starter solenoid (L5) pin C. This energizes the coil in solenoid (L5) which pulls in the solenoid's plunger and pushes the starter drive pinion attached to the plunger toward the engine flywheel. This movement engages the starter pinion drive with the ring gear teeth on the diesel engine flywheel. As the solenoid plunger pulls in, the power available at solenoid pin S is applied via a jumper to the starter motor (B1) which rotates the starter pinion drive (part of the starter motor) and turns over the flywheel engaged with the pinion drive to start the diesel engine. Immediately after the diesel engine starts, the generator set operator releases the START-PREHEAT/PREHEAT/OFF/START switch (S2). This opens the solenoid-starter circuit causing the solenoid plunger to release the starter pinion drive disengaging it from the engine flywheel ring gear. At the same time, the starter motor (B1) is de-energized. The starter pinion will return to its normal position as the starter motor (B1) slows to a stop.

Diode (CR1) protects the diesel engine electrical starting circuit. It prevents any inductive surges in the grounded side of the circuit from damaging the contacts of START-PREHEAT/PREHEAT/OFF/ START switch (S2) and the starter solenoid (L5).

1.20.3 Preheat Circuit. The diesel engine features two 12-VDC resistance-type heaters (HTR1 and HTR2) wired in series and located in the engine air intake piping between the intake manifold and the air cleaner. The heaters warm the air intake piping and manifold in order to warm up the intake air during attempted cold weather starts.

1.20.4 With an external power cable connected to the NATO slave receptacle and the START-PREHEAT/PREHEAT/OFF/START switch (S2) in the PREHEAT position, power exiting switch S2 at pin H energizes the two resistance-type heaters (HTR1 and HTR2). Normally, the heaters are allowed to remain energized for several minutes to warm up the air intake piping and manifold in preparation for starting the engine. The heaters are then de-energized just prior to the engine startup sequence. However, during periods of extreme cold, it may be necessary to leave heaters HTR1 and HTR2 on during the start sequence. This is accomplished by placing switch S2 in the PREHEAT-START position so that heaters HTR1 and HTR2 remain energized during the engine startup sequence.

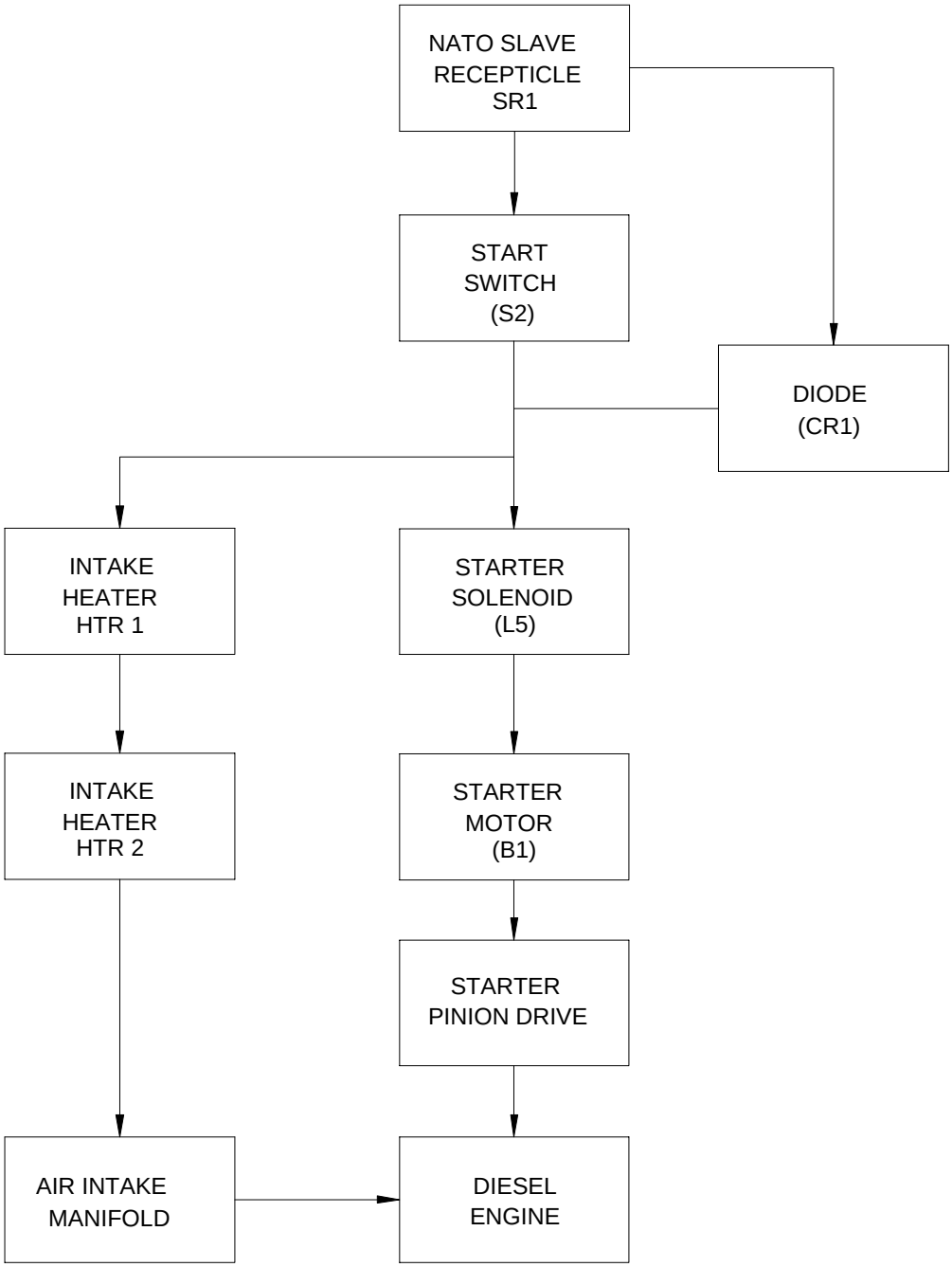


Figure 1-6. Diesel Engine Electrical Starting System

1.21. GENERATOR VOLTAGE REGULATION AND OUTPUT SUPPLY (MEP-531A).

1.21.1. The generator voltage regulation and output supply system (Figures 1-7 and 1-8) senses the load being drawn at the load terminals and adjusts the alternator output accordingly. The system also monitors and adjusts generator set performance and provides power to a GFCI convenience receptacle.

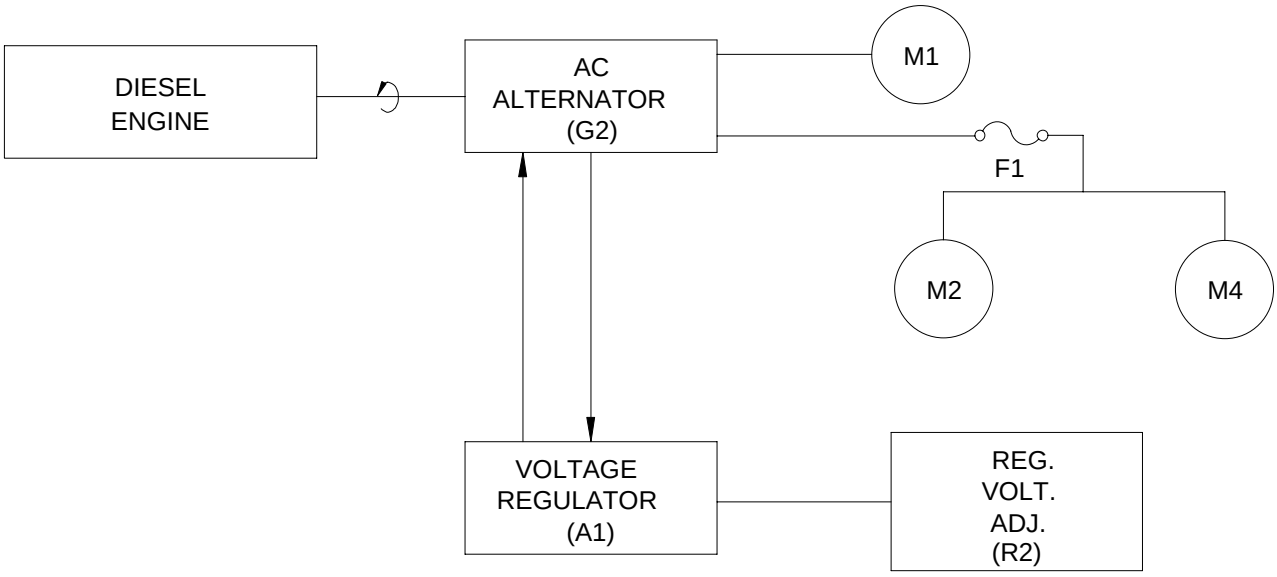
1.21.2 The system consists of the AC alternator (G2), voltage regulator (A1), ON-OFF load circuit breaker (CB1), output load terminals (L and N), GFCI convenience receptacle (J3), AC VOLTS meter (M2), % LOAD meter (M1), HERTZ frequency meter (M4), VOLTAGE ADJ. potentiometer (R2), and fuse (F1). Power produced by the AC alternator is supplied to load terminals on the load terminal board and the GFCI convenience receptacle.

1.21.3. Voltage Regulation. (Figure 1-7)

1.21.3.1 The generator set output voltage is controlled by the voltage regulator (A1). The voltage regulator continuously senses the alternator (G2) output voltage. The voltage regulator (A1) reacts to voltage variations by manipulating the alternator field current to maintain the output voltage. The field current controlled by the voltage regulator is supplied by the alternator excitation windings. The voltage regulator (A1) performs this function using three interactive sub circuits: power input, load sensing, and DC output. The power input circuit draws current from the AC generator (G2) exciter windings through the positive (+) field brushes at A1 pin 3. The load sensing circuit monitors the current being drawn by the load at A1 pin E1. As demand increases, the DC output circuit draws current from the power input circuit, rectifies it to direct current, and reapplies it to the AC alternator (G2) field via A1 pins F+ and F-.

1.21.3.2. Starting the diesel engine automatically field flashes the AC alternator (G2) with residual magnetism stored in the rotor. The residual magnetism induces voltage in the power excitation windings at AC alternator (G2) pins + and 2. As the diesel engine speed begins to increase toward its governed no load speed of 3750 rpm, the induced voltage in the power excitation windings increases. The voltage regulator (A1) power input circuit receives current from the power excitation windings via the positive (+) field brushes at A1 pin 3. Whenever the voltage in the load sensing circuit matches the set point, the current entering the voltage regulator (A1) at pin 3 is allowed to pass through the power input circuit. Whenever the voltage entering the sensing circuit is lower than the set point (indicating a load increase) the DC output circuit reacts by drawing current from the power input circuit. This current is rectified to DC and reapplied via A1 pins F+ and F- to the AC alternator rotor brushes at G2 pins + and -. The application of direct current to the rotor increases the field magnetism between the AC alternator stator and rotor which in turn, increases the current measured across the alternator power windings. The current measured at both the excitation and power windings will increase until the voltage entering the voltage regulator (A1) load sensing circuit matches the set point at which point, the alternator output stabilizes and the A1 DC output circuit stops drawing current from the power input circuit.

1.21.3.3. The voltage regulator (A1) set point can be changed by adjusting the VOLTAGE ADJ. potentiometer (R1). The set point can be changed from 114 to 126 VAC by loosening the locknut and turning the adjustment screw counterclockwise to lower the set point or clockwise to increase the set point. The set point adjustment can be checked with the diesel engine running by observing the needle on VOLTS AC meter (M2).



VOLTAGE REGULATION

M1 - % LOAD
M2 - VOLTS METER
M4 - HERTZ METER

Figure 1-7. Generator Voltage Regulation System (MEP-531A)

1.21.3.4. The generator set performance can be monitored by observing the %LOAD meter (M1), VOLTS AC meter (M2), and HERTZ frequency meter (M4). The %LOAD meter (M1) measures the current being drawn by the load at the load terminals (L and N) and displays the value as a percent (0 to 125) of generator set capacity. The VOLTS AC meter (M2) measures the voltage across the power windings of the AC alternator (G2) and displays the value in VAC from 0 to 150. The HERTZ frequency meter (M4) measures frequency across the power windings in Hz from 55 to 65. Line fuse (F1) protects the VOLTS AC and HERTZ frequency meters from a potential over current condition.

1.21.4. Output Supply. (Figure 1-8)

1.21.4.1. The generator set is brought on line by placing the ON-OFF load circuit breaker (CB1) in the ON position. The circuit breaker is a single pole, shunt trip switch with momentary contacts that return it to the neutral, or center position when the toggle switch is released. An EMI filter (MEP-531A) or load terminals L and N (Mechron 120 VAC set) are energized by this momentary contact to bring the generator set on line. The GFCI convenience receptacle (J3) is also energized by ON-OFF load circuit breaker (CB1). The GFCI convenience receptacle (J3) features a ground fault interrupter which protects the generator set components from inductive current in the ground circuit originating from the load connected to the GFCI receptacle (J3).

1.21.4.2. Placing the ON-OFF load circuit breaker (CB1) momentarily in the OFF position opens the line to the load terminals and takes the generator set off line. The ON-OFF load circuit breaker features a diode (CR2) which protects the generator set components by allowing current to flow in only one direction.

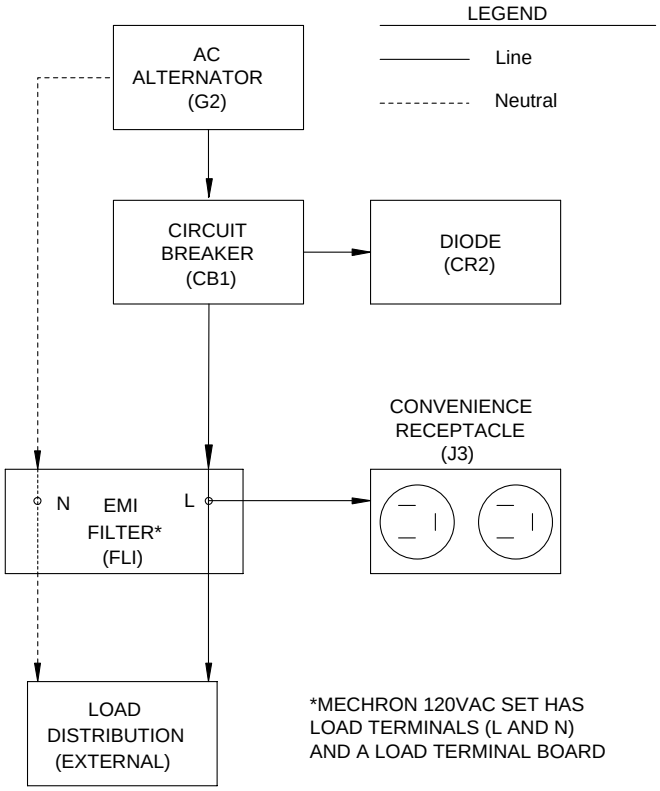


Figure 1-8. Generator Output Supply System (MEP-531A)

1.22. GENERATOR VOLTAGE REGULATION AND OUTPUT SUPPLY (MEP-501A).

1.22.1. The generator voltage regulation and output supply system (Figures 1-9 and 1-10) senses the load being drawn at the load terminals and adjusts the alternator output accordingly. The system also monitors and adjusts generator set performance.

1.22.2 The system consists of the alternator (G2), voltage regulator (A1), ON-OFF load circuit breaker (CB1), output load terminals (+ and -), DC VOLTS meter (M2), % LOAD meter (M1), and VOLTAGE ADJ. potentiometer (R2). Power produced by the alternator supplies load terminals on the load terminal board.

1.22.3. Voltage Regulation. (Figure 1-9)

1.22.3.1 The generator set output voltage is controlled by the voltage regulator (A1). The voltage regulator continuously senses the alternator (G2) output voltage. The voltage regulator (A1) reacts to voltage variations by manipulating the alternator field current to maintain the output voltage. The field current controlled by the voltage regulator is supplied by the alternator excitation windings. The voltage regulator (A1) performs this function using three interactive sub circuits: power input, load sensing, and DC output. The power input circuit draws current from the generator (G2) exciter windings through the positive (+) field brushes at A1 pin F. The load sensing circuit monitors the current being drawn by the load across A1 pins S and A. As demand increases, the DC output circuit draws current from the power input circuit, rectifies it to direct current, and reapplies it to the AC alternator (G2) field via A1 pins F and L.

1.22.3.2. Starting the diesel engine provides the current necessary to field flash the alternator (G2). This current is supplied from the dynamo (G1) to the generator control unit (A2) where it is rectified to direct current. The direct current exits A2 at pin F and is applied to the alternator (G2) field windings. As soon as the generator control unit (A2) detects current at pin VINDC, it disables the flow of current exiting A2 at pin F.

1.22.3.3. The initial field flash current induces voltage in the power excitation windings at alternator (G2). As the diesel engine speed begins to increase toward its governed no load speed of 3750 rpm, the induced voltage in the power excitation windings increases. The voltage regulator (A1) power input circuit receives current from the power excitation windings via the positive (+) field brushes at A1 pin F. When the voltage in the load sensing matches the set point, the current entering the voltage regulator (A1) at pin F is allowed to pass through the power input circuit. When the voltage entering the sensing circuit is lower than the set point (indicating a load increase) the DC output circuit reacts by drawing current from the power input circuit. This current is rectified to DC and reapplied via A1 pins F and L to the alternator rotor brushes. The application of direct current to the rotor increases the field magnetism between the alternator stator and rotor which in turn, increases the current measured across the alternator power windings. The current measured at both the excitation and power windings will increase until the voltage entering the voltage regulator (A1) load sensing circuit at A1 pins S and A match the set point at which point, the alternator output stabilizes and the A1 DC output circuit stops drawing current from the alternator excitation windings.

1.22.3.4. The voltage regulator (A1) set point can be changed by adjusting the VOLTAGE ADJ. potentiometer (R1). The set point can be changed from 26.6 to 32.2 VDC by loosening the locknut and turning the adjustment screw counterclockwise to lower the set point or clockwise to increase the set point. The set point adjustment can be checked with the diesel engine running by observing the needle on VOLTS DC meter (M2).

1.22.3.5. The generator set performance can be monitored by observing the %LOAD meter (M1) and the VOLTS DC meter (M2). The %LOAD meter (M1) measures the current being drawn by the load at the load terminals (+ and -) and displays the value as a percent (0 to 125) of generator set capacity. The %LOAD meter (M1) operates on current provided by shunt resister (R3). The VOLTS DC meter (M2) measures the voltage across the power windings of the alternator (G2) and displays the value in VDC from 0 to 40. Line fuse (F1) protects the VOLTS DC meter from a possible over current condition.

1.22.4. Output Supply. (Figure 1-10)

1.22.4.1. The generator set is brought on line by placing the ON-OFF load circuit breaker (CB1) in the ON position. The circuit breaker is a single pole, shunt trip switch with momentary contacts that return it to the neutral, or center position when the toggle switch is released. Load terminals L and N are energized by this momentary contact to bring the generator set on line.

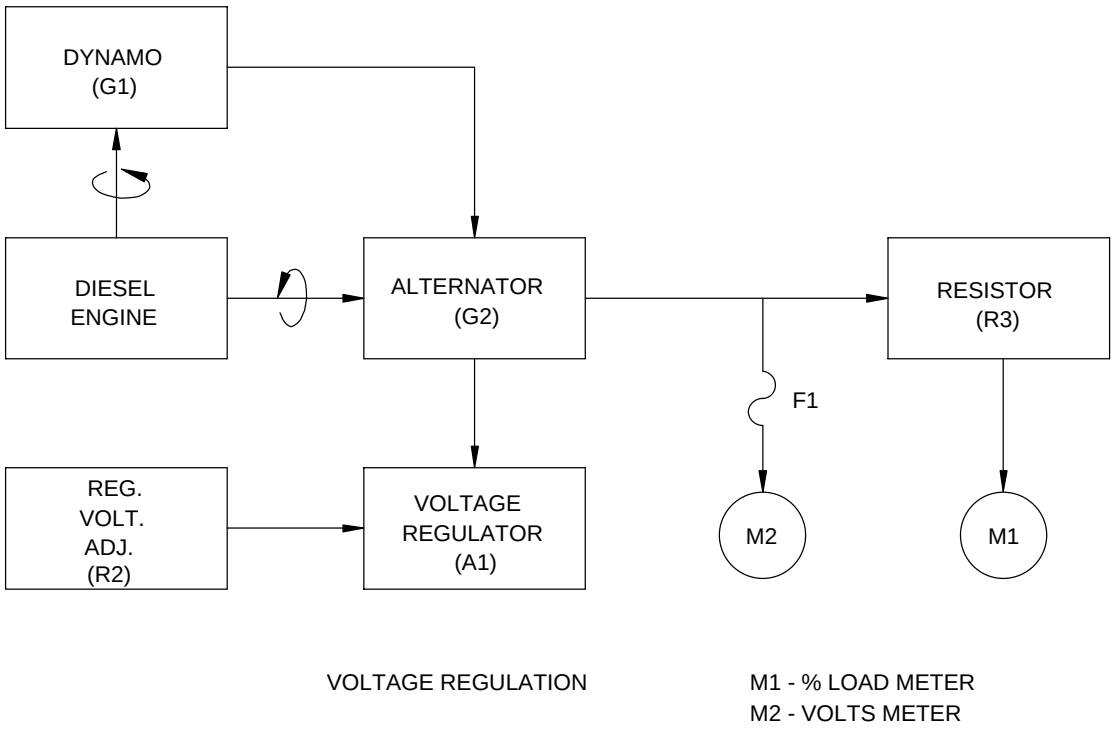


Figure 1-9. Generator Voltage Regulation System (MEP-501A)

1.22.4.2. Placing the ON-OFF load circuit breaker (CB1) momentarily in the OFF position opens the line to the load terminals and takes the generator set off line.

1.22.4.3. There is a transient suppression diode assembly consisting of two diodes (CR2 and CR3) at the load terminals (+ and -) on MEP-501A. These diodes protect the load circuit from potential damage resulting from cross connecting the + and - output terminals on the alternator (G2). The diodes prevent damage by only allowing the current to flow in the generator circuit in one direction.

1.23. GENERATOR CONTROL CIRCUIT.

1.23.1. The generator control circuit (Figure 1-11) consists of a dynamo (G1), the generator control unit (A2), discharge varistor (V1), HOURS meter (M3), and diode (CR2).

1.23.2. The dynamo (G1) generates power for the generator control circuit. The dynamo consists of a stator mounted to the diesel engine block and a dynamo wheel mounted to the engine flywheel. While the diesel engine is running, magnets mounted on the inside surface of the dynamo wheel provide the field magnetism necessary to generate current flow in the stator. The dynamo (G1) generates AC current which is connected via the engine wiring harness to the generator control unit (A2) at A2 pins VMAG1 and VMAG2.

1.23.3. The generator control unit (A2) rectifies the dynamo alternating current to direct current which exits at A2 pin VMAG+. This direct current is used to power the HOURS meter (M3), which maintains the cumulative time for generator set operation (e.g., the total time that the diesel engine dynamo generates power). The current is also used to energize the low oil pressure solenoid (L4) at L4 pin Y.

1.23.4. The generator control unit (A2) also detects a short circuit fault condition and trips the load circuit breaker (CB1). Under normal operating conditions, rectified DC current exits A2 at pin VMAG+ and provides current to the load circuit breaker (CB1) trip coil via an auxiliary shunt (part of CB1). Whenever CB1 is closed (connecting the generator set with the load), the auxiliary shunt closes enabling current to flow to the trip coil. The trip coil will not energize however since the circuit terminates at the generator control unit (A2) pin STC which is not grounded. While the generator set is operating, generator control unit (A2) continually monitors the current flow at A2 pin VINAC (or VINDC for MEP-501A). When a short circuit occurs (or when the generator set is shutdown), the input at VINAC (or VINDC) drops or goes low. The generator control unit (A2) reacts by grounding the CB1 trip coil circuit at A2 pin STC. When the coil is energized, it opens the load circuit breaker (CB1) to isolate the generator set from the load.

1.23.5. Discharge varistor (V1) is connected across the dynamo wires leading to generator control unit (A2) pins VMAG1 and VMAG2. It protects the generator control unit (A2) from inductive voltage surges generated by the dynamo. It accomplishes this by limiting the peak discharge voltage to a safe value.

1.23.6 Diode (CR2), in MEP-531A, protects generator control unit (A2) by suppressing any spikes generated by the trip coil in circuit breaker (CB1).

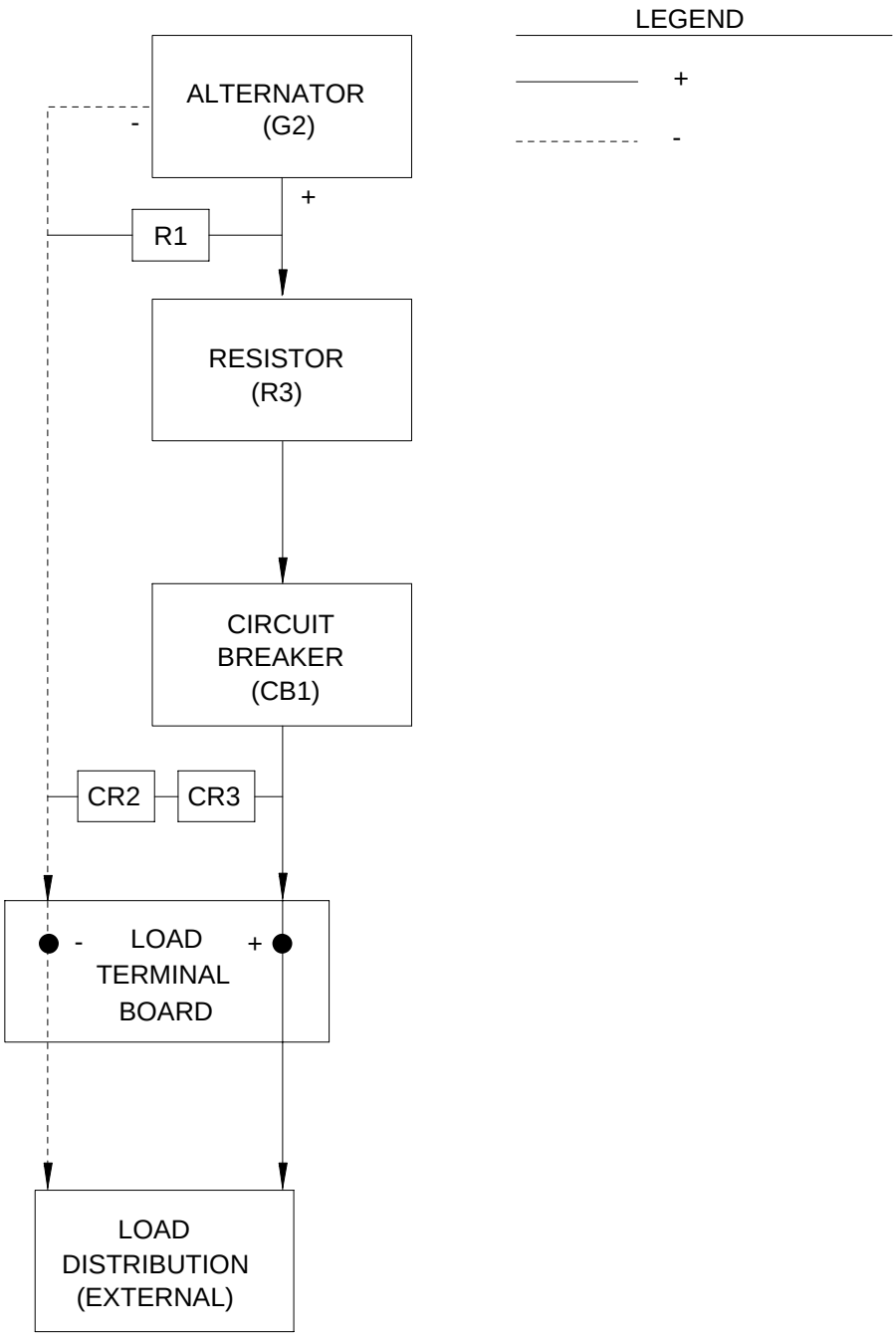


Figure 1-10. Generator Output Supply System (MEP-501A)

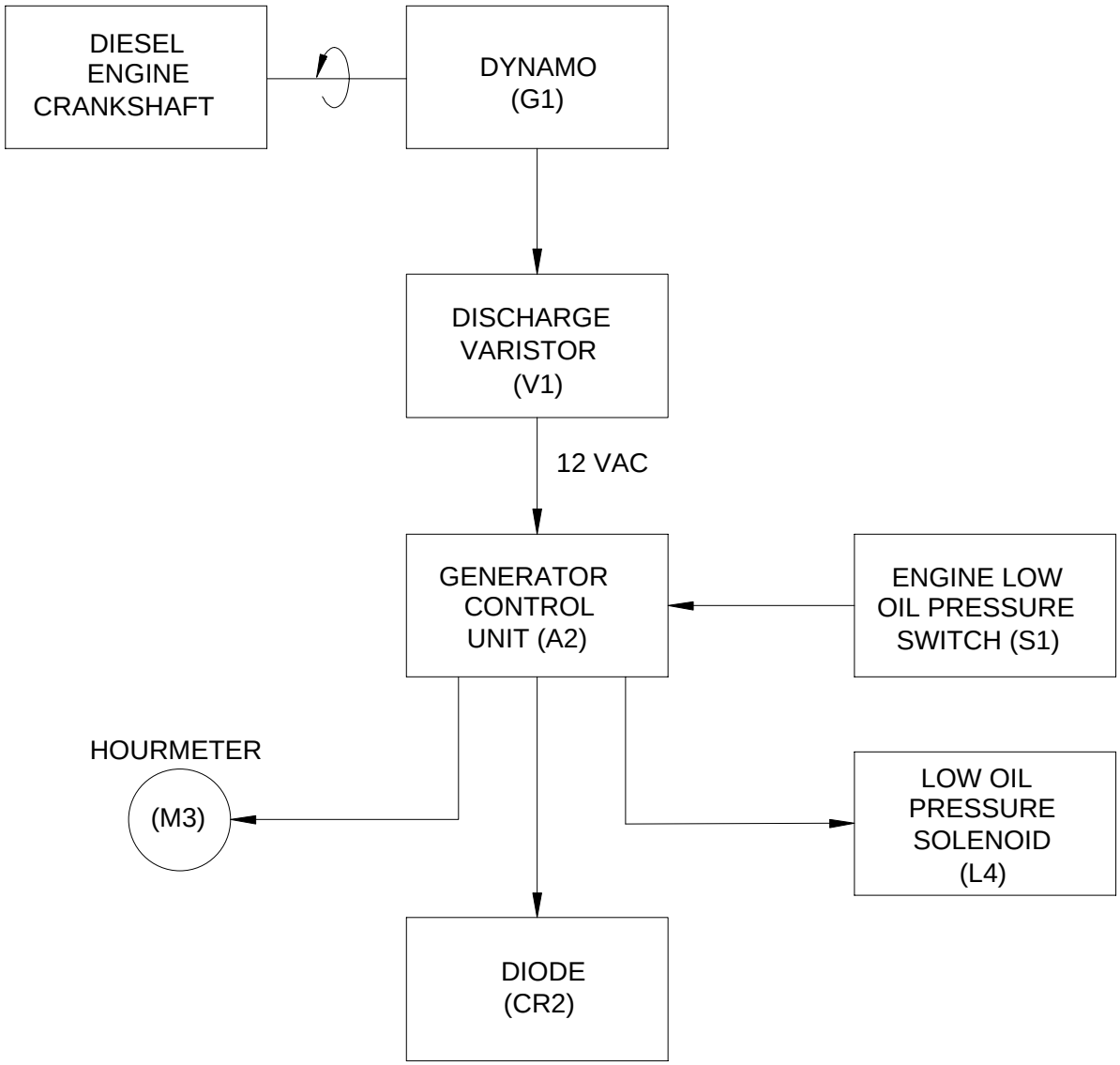


Figure 1-11. Generator Control Circuit

1.24. LOW OIL PRESSURE PROTECTION.

1.24.1. The low oil pressure protection system (Figure 1-12) shuts down the diesel engine in the event of low oil pressure in order to protect the engine from further damage. The system consists of a low oil pressure switch (S1) located in the engine block above the oil strainer, a low oil pressure solenoid (L4) mounted in the control panel, and a cable connecting the low oil pressure solenoid to the diesel engine STOP lever.

1.24.2 The generator control unit (A2) rectifies the alternating current supplied by the dynamo (G1) and provides direct current via A2 pin VMAG+ to the low oil pressure solenoid (L4) at pin Y. The circuit is completed at A2 pin LOP SOL which, after a short time delay, is allowed to pass through and exit A2 at pin LOP SW.

1.24.3. Under normal startup conditions, the low oil pressure switch (S1) opens at 12 to 18 psi (82.7 to 124.1 kPa) and stays open as long as the engine oil pressure stays above 15 psi (103.4 kPa). If a malfunction occurs in the lubrication system causing the oil pressure to drop below the low oil pressure set point, the low oil pressure switch (S1) closes. The low oil pressure solenoid (L4) circuit terminating at A2 pin LOP SW becomes grounded when S1 closes. This energizes the low oil pressure solenoid (L4) coil which momentarily pulls-in the solenoid's plunger. The plunger is connected by a push-pull cable to the engine STOP lever. The cable trips the engine STOP lever placing the governor control lever and the fuel injection pump rack in the "no fuel" position to cut off fuel to the diesel engine to shut down the generator set.

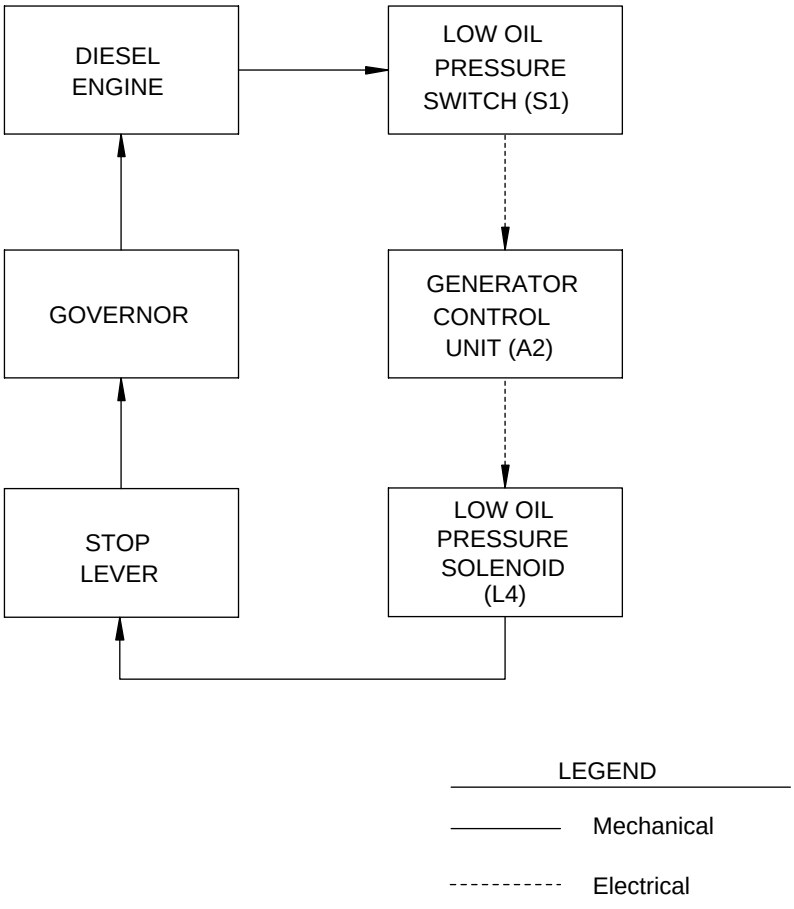


Figure 1-12. Low Engine Oil Pressure Protection System

CHAPTER 2

OPERATING INSTRUCTIONS

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

2.1. SCOPE.

This section describes operator controls and indicators for the generator set.

2.2. CONTROLS AND INDICATORS.

The operator controls and indicators are identified in Figure 2-1 and Table 2-1.

Table 2-1. Operator Controls and Indicators

Key	Control or Indicator	Function
1	Recoil Starter	When pulled, turns-over engine flywheel/crankshaft to start diesel engine.
2	Air Intake Cover	Directs airflow into the engine air intake system. In cold weather, the cover is positioned to allow air which has been warmed by the hot muffler to flow into diesel engine air intake system. Normally, the cover is positioned to allow ambient air to flow into the diesel engine.
3	Decompression Lever "A"	When depressed, releases compression in the diesel engine combustion chamber to allow for manually pull starting the engine. Lever automatically returns to its up ("off") position when recoil starter is pulled.
4	RUN Lever (Black)	Pushed - Enables fuel flow to diesel engine fuel injection pump for starting and running generator set.

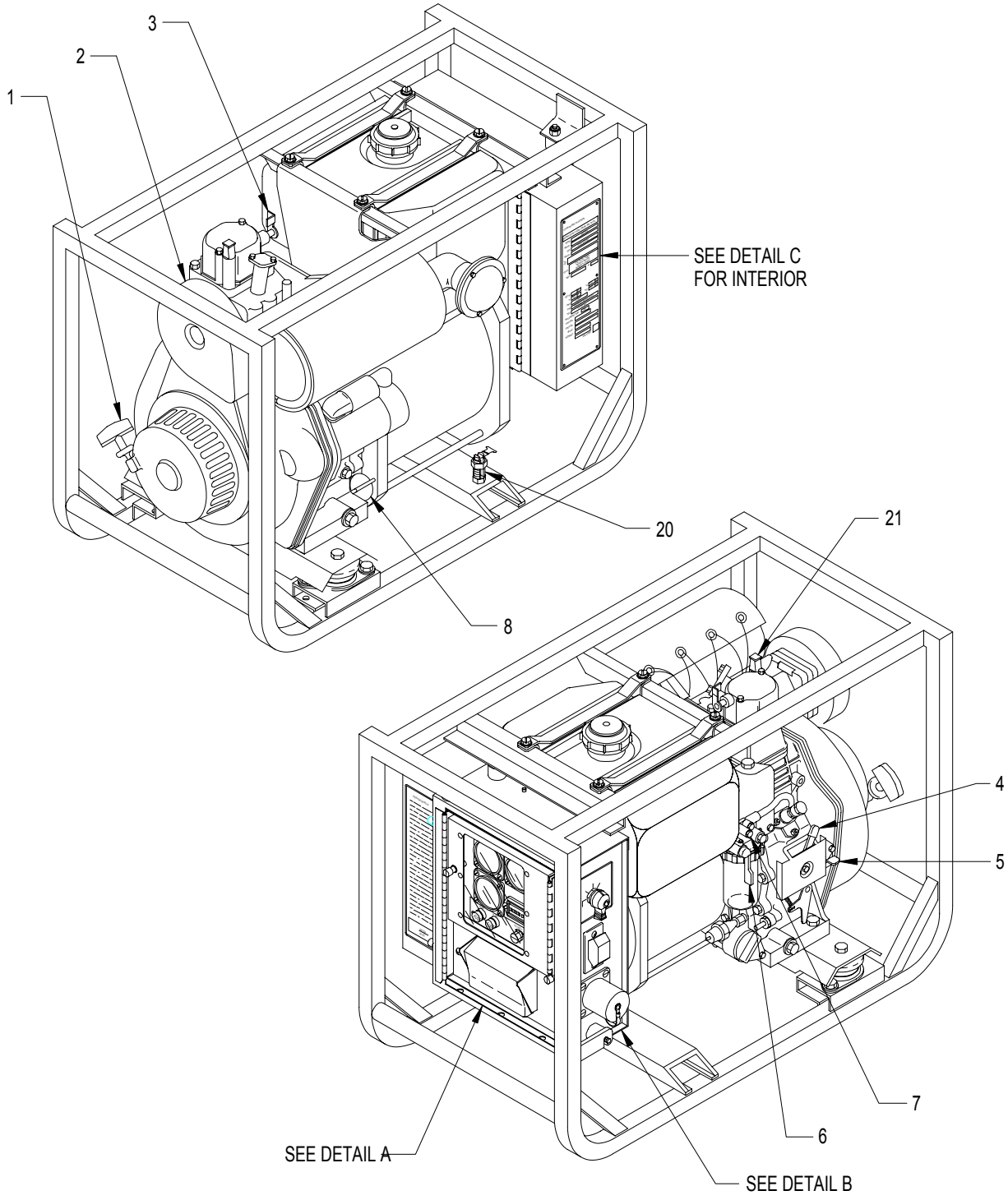
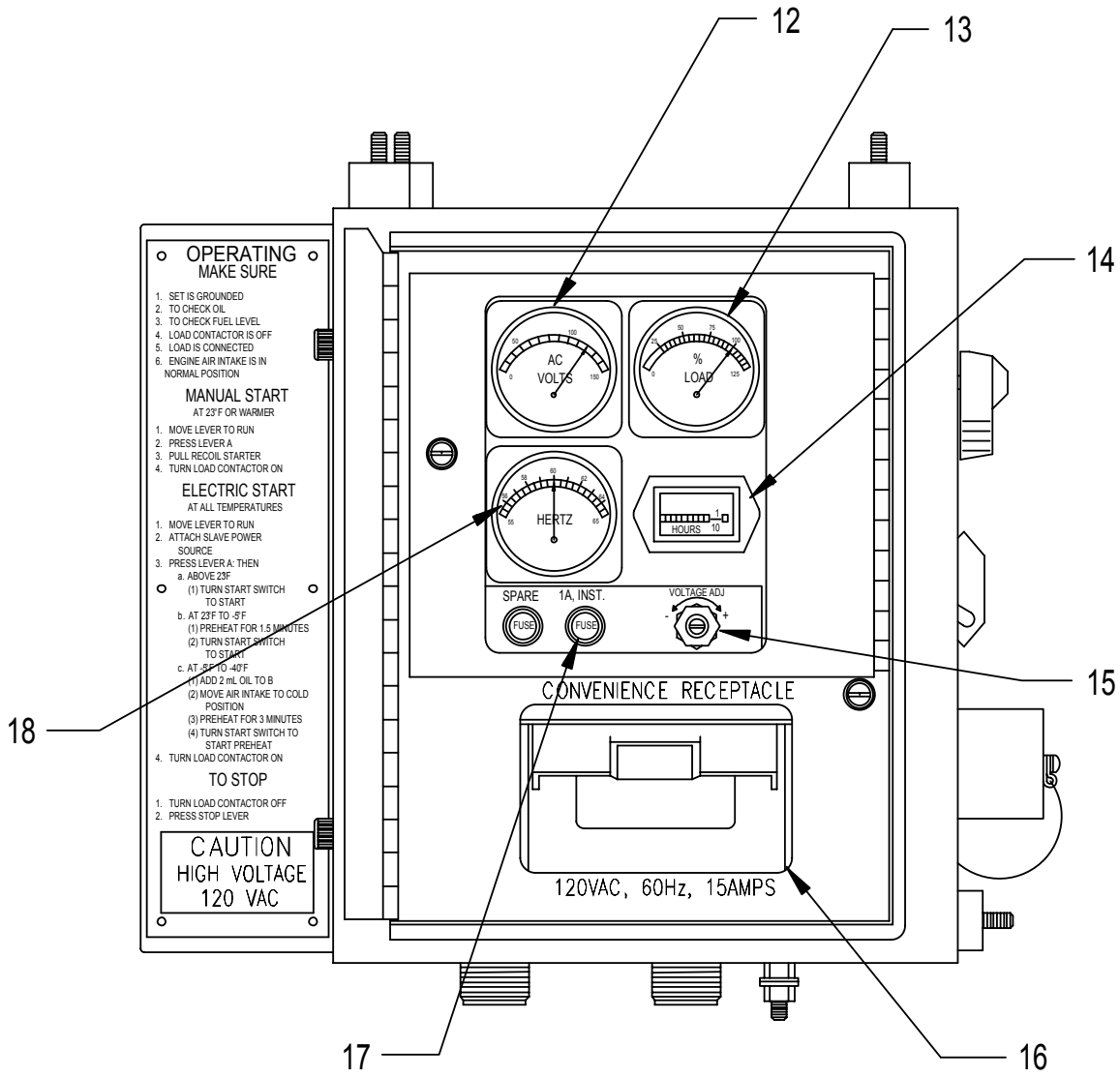
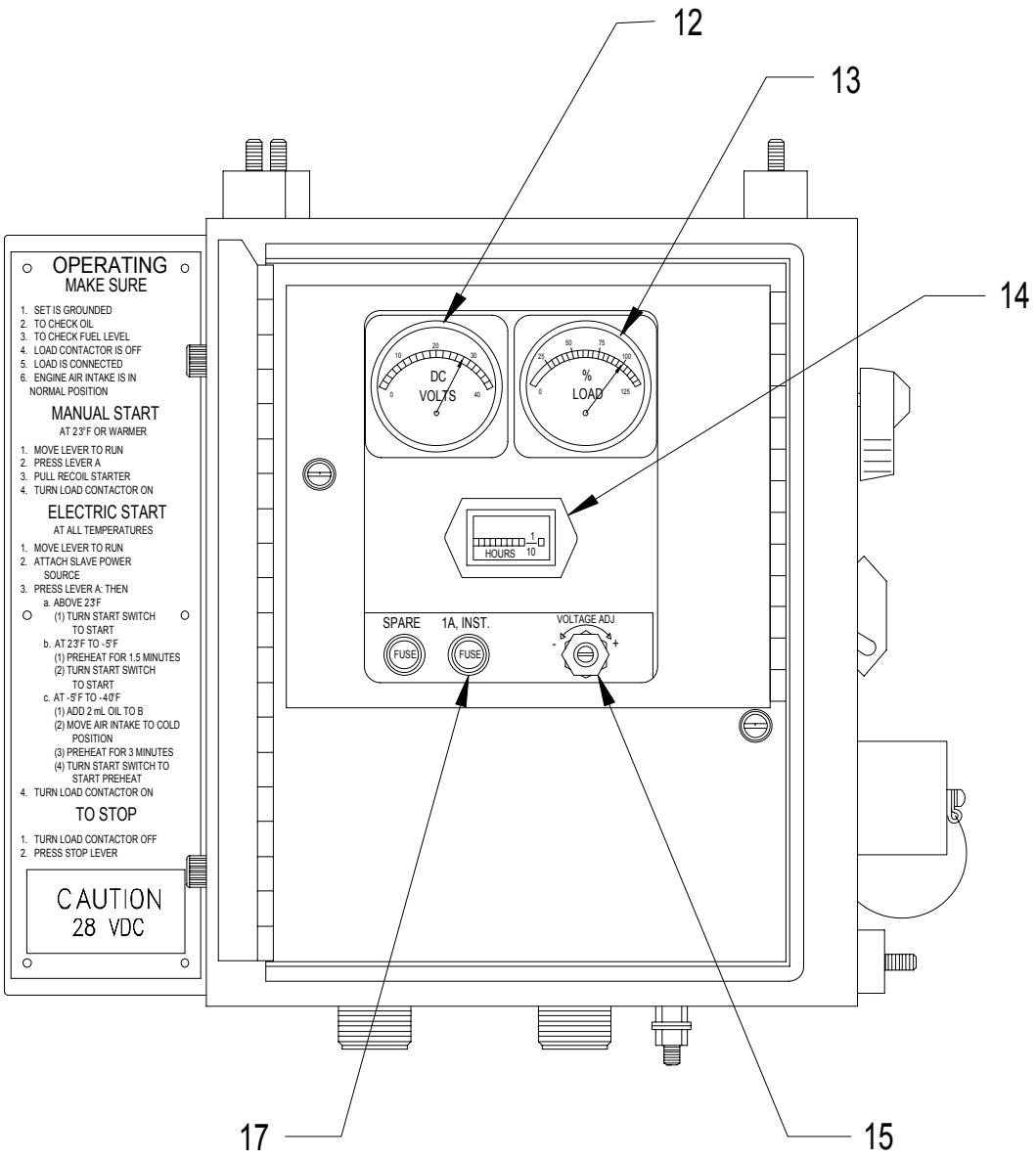


Figure 2-1. Operator's Controls and Indicators (Sheet 1 of 4)



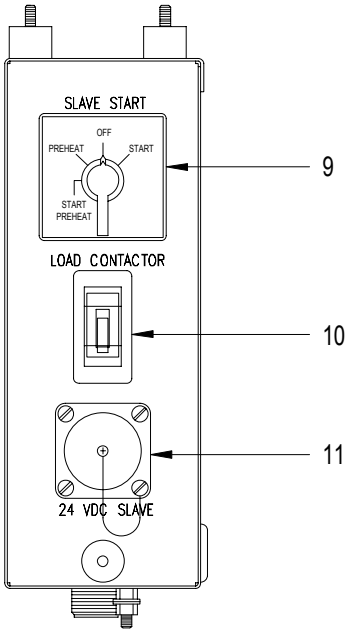
DETAIL A
MEP-531A

Figure 2-1. Operator's Controls and Indicators (Sheet 2 of 4)

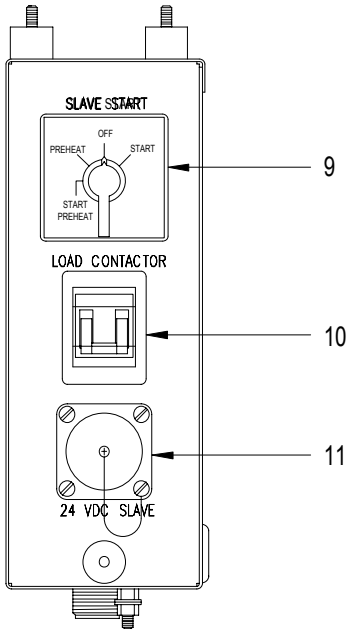


DETAIL A
MEP-501A

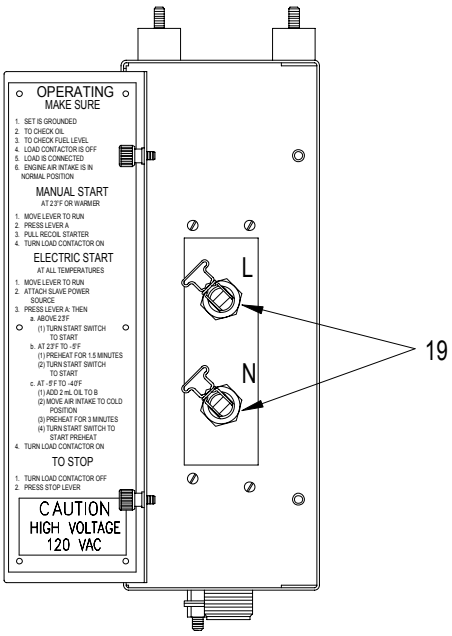
Figure 2-1. Operator's Controls and Indicators (Sheet 3 of 4)



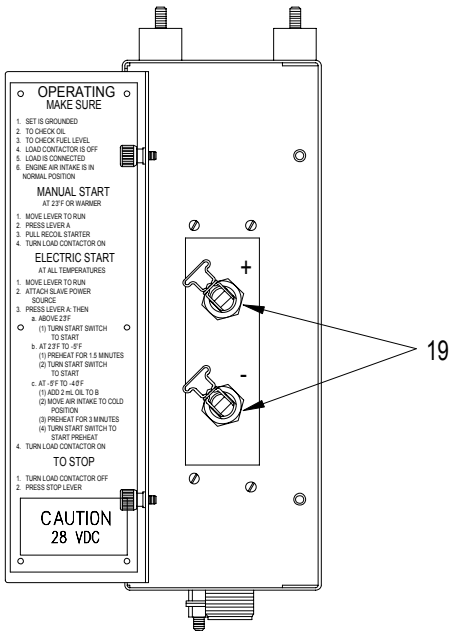
DETAIL B
MEP-531A



DETAIL B
MEP-501A



DETAIL C
MEP-531A



DETAIL C
MEP-501A

Figure 2-1. Operator's Controls and Indicators (Sheet 4 of 4)

Table 2-1. Operator Controls and Indicators – Continued

Key	Control or Indicator	Function
5	STOP Lever (Red)	Depressed - Disables fuel flow to diesel engine fuel injection pump to stop engine.
6	Fuel Shutoff Valve	↓O (Open) - Allows fuel to flow from fuel filter to diesel engine fuel injection pump. ↑C (Closed) - Shuts off fuel flow from fuel filter to fuel injection pump.
7	Fuel Filter Bleed Screws (2 ea)	Bleed air from the generator set fuel system.
8	Oil Fill Cap/Dipstick	Check and add lubrication oil to diesel engine (one on each side of engine).
9	START-PREHEAT/ PREHEAT/OFF/ START Rotary Switch	START-PREHEAT - Selected and held, energizes 24-VDC starting circuit and air intake heaters when 24 VDC power is connected to NATO slave receptacle. When released, spring loaded switch returns to OFF position. PREHEAT - Selected and held, energizes air intake heaters mounted between air cleaner and diesel engine air intake manifold when 24 VDC power is connected to NATO slave receptacle. When released, spring-loaded switch returns to OFF position. OFF - Disables diesel engine 24 VDC starting circuit. START - Selected and held, energizes 24 VDC diesel engine starting circuit when 24 VDC power is connected to NATO slave receptacle. When released, spring-loaded switch returns to OFF position.
10	ON-OFF Load Circuit Breaker	ON - Closes AC circuit to supply power to load terminals. OFF - Opens AC circuit to shut off power to load terminals.
11	NATO Slave Receptacle	Supplies power to diesel engine start and air intake heater circuits when connected to external 24 VDC power source via a NATO power cable.
12	VOLTS Meter (AC MEP-531A) (DC MEP-501A)	Indicates output voltage of generator set. Normal reading for MEP-531A is 120 VAC and for MEP-501A is 28 VDC.
13	%LOAD Meter	Indicates generator set load current as a percent of its rated current. Normal reading is dependent on load demand from 0 to 125 percent.
14	HOURS Meter	Indicates total diesel engine operating hours.
15	VOLTAGE ADJ. Potentiometer	Adjusts generator set voltage from 114 V to 126 VAC (MEP-531A) or from 26.6 to 32.2 VDC (MEP-501A).

Table 2-1. Operator Controls and Indicators – Continued

Key	Control or Indicator	Function
16	GFCI Receptacle (MEP-531A only)	Provides 15 Amp, 120 VAC power. Receptacle features a Ground Fault Circuit Interrupter (GFCI), which protects the generator set from power surges originating from powered equipment and two grounded convenience receptacles. PRESS TO TEST pushbutton tests the GFCI feature of the receptacle. PRESS TO RESET pushbutton resets the GFCI breaker.
17	INST. Fuse	Protects the voltmeter (VOLTS) and frequency (HERTZ) meter during an over current condition. A spare fuse is contained in a fuse holder to left of primary fuse.
18	HERTZ Frequency Meter (MEP-531A only)	Indicates generator set output frequency. This meter may also be used to determine the engine rpm by multiplying the reading by 60 (e.g. 60 Hertz x 60 = 3600 rpm). Normal reading is 60 Hz.
19	EMI Filter (MEP-531A) Load Terminals (MEP-501A and Mechron Sets)	Provide connection point for load cables. Load terminals "L" and "N" (MEP-531A) and "+" and "-" (MEP-501A) are split lug connectors for ease in connecting load cables.
20	Ground Stud	Provides location for grounding generator set to suitable ground.
21	Rubber Plug	Cold Weather Start, Engine Preservation

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2.3. GENERAL.

Preventive Maintenance Checks and Services (PMCS) are those scheduled procedures that are essential to the efficient operation of the equipment. PMCS prevent possible damage that might occur through neglect or failure to observe warning symptoms on time. Ensure all noted discrepancies are corrected.

WARNING

Remove metal jewelry when working on electrical system/components. Failure to observe this warning could cause severe personal injury from electric shock.

2.4. OPERATOR PMCS.

Table 2-2 lists all scheduled maintenance tasks required for the generator set components and accessories. The columns of Table 2-2 are described below.

a. Column (1) - Item Number (Item No.).

This column contains a number for each procedure to be performed. When reporting malfunctions or failures on DA Form 2404, [Equipment Inspection and Maintenance Worksheet, (or DA Form 5988E) enter this number in the "TM Item No." column (refer to DA PAM 738-750)].

b. Column (2) - Interval (Interval B, D, A).

These columns tell when to perform a procedure. A dot in a column tells which procedures apply. Some procedures will have more than one dot.

c. Column (3) - Item To Be Inspected.

This column has the name of the item to be inspected.

d. Column (4) - Procedure.

This column tells how to do the required checks and services. Carefully perform these instructions in the order listed.

e. Column (5) - Equipment Is Not Ready/Available If.

This column states conditions that will cause the equipment not to be ready for operation.

2.5. PREVENTIVE MAINTENANCE PROCEDURES.

NOTE

Within designated intervals, these checks are to be performed in the order listed. If the generator set must be kept in continuous operation, check and service only those items that can be accessed without interrupting operations. Complete checks and services when the generator set is shut down.

a. Before You Operate.

Perform before (B) PMCS in Table 2-2. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

b. While You Operate.

Perform during (D) PMCS in Table 2-2. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

c. After You Operate.

Perform after (A) PMCS in Table 2-2. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

d. Order.

Always do preventive maintenance in the same order.

e. Reporting and Correcting Deficiencies.

If your generator set does not perform as required, refer to troubleshooting for possible problem. Any malfunctions, failures, or discrepancies shall be recorded on DA Form 2404 or DA Form 5988E and reported to higher-level maintenance, refer to DA PAM 738-750.

f. Special Instructions.

The following guidelines have been provided to help you in classifying leaks observed while performing PMCS.

Class I. Seepage of fluid as indicated by wetness or discoloration not great enough to form drops.

Class II. Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked.

Class III. Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

CAUTION

Equipment operation is allowable with minor leakages (Class I or II). Of course, consider the fluid capacity of the item/system being necked/inspected. When in doubt, notify maintenance.

While operating with Class I or Class II leaks, continue to check fluid levels as required in your PMCS. All leaks should be reported to maintenance.

Table 2-2. Operator Preventive Maintenance Checks and Services

NOTE

Within designated intervals, these checks are to be performed in the order listed.

B-Before operation D-During operation A-After operation

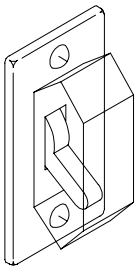
(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
				GENERATOR SET		
(1)	•			Control Panel	Check ON-OFF load circuit breaker for damage. 	ON-OFF load circuit breaker damaged.
	•		•	Instrument Panel	Check window protecting instrument panel for damage.	
	•		•		Check all indicators and controls for damage and missing parts.	Indicators or controls damaged or missing.
		•			Check all indicators for proper operation.	VOLTS Meter or HERTZ frequency meter (MEP-531A) inoperative.
(2)	•		•	Identification and Instruction Plates	Check all identification and instruction plates for damage, security, and legibility. Refer to Figure 2-9.	Safety or operation instruction decal missing or illegible.

Table 2-2. Operator Preventive Maintenance Checks and Services (Continued)

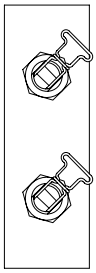
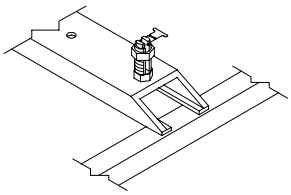
(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(3)	•			Load Terminals	Inspect load terminals for damage and security. 	Load terminals damaged or loose. Retaining clips missing or damaged.
(4)	•	•		Ground terminal stud	Inspect ground terminal stud for damage. Ensure generator set is properly grounded. 	Generator set ground terminal stud is damaged or generator set not properly grounded. Retaining clip missing or damaged.

Table 2-2. Operator Preventive Maintenance Checks and Services (Continued)

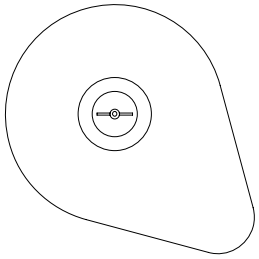
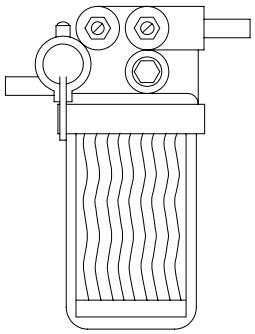
(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(5)	•			Air Intake Cover Wing Nut	Check air intake cover wing nut for security. Tighten if necessary. 	Air intake cover cannot be secured.
(6)	•		•	Filter Assembly, Fuel	Inspect fuel filter assembly for damage and security. Check fuel filter bowl for water or other contaminants. 	Fuel bowl contains water or contaminants.

Table 2-2. Operator Preventive Maintenance Checks and Services (Continued)

(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(7)	•	•	•	Fuel System	Inspect fuel system for loose or missing fuel line clamps, damaged fuel lines, and leaking/damaged fuel tank. Check for evidence of fuels leaks.	Any fuel leaks, or damaged, loose, or missing parts.
	•	•	•		Check fuel level and if necessary, service fuel tank to red line on fuel strainer. Ensure fuel tank fill neck strainer is not clogged or damaged. The following fuels may be used between –51 and 122°F (-46 and 50°C): (a) DL-1 (A-A-52557) [-26° to 0°F (-32 to -18°C)] (b) DL-2 (A-A-52557) [0° to 122°F (-18 to 50°C)] (c) JP-8 (MIL-DTL-83133) [-26°F to -51°F (-32°C to -46°C)]	

Table 2-2. Operator Preventive Maintenance Checks and Services (Continued)

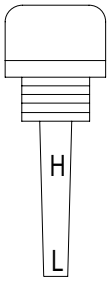
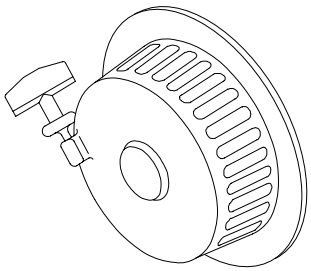
(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
				DIESEL ENGINE		
(8)	•		•	Crankcase Oil	Ensure generator set is level and check diesel engine lubricating oil level using oil fill cap/dipstick (do not screw in oil fill cap/dipstick when checking oil level). Refer to Figure 2-1, item 8 for the locations of oil fill cap/dipstick. Add oil if required for the following operating environments: MIL-PRF-46167, 0W30 [-40° to 0°F (-40° to -18°C)] MIL-PRF-2104, 15W30 [0° to 120°F (-18° to 49°C)] 	
	•	•	•		Inspect the diesel engine and surrounding area for oil leaks.	Class III oil leaks.

Table 2-2. Operator Preventive Maintenance Checks and Services (Continued)

(1) Item No.	(2) Interval B	D	A	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(9)	•	•	•	Cylinder head cooling fins and recoil starter cover	Inspect cooling fins and air intake slots in recoil starter cover for damage and debris restricting air flow over and through cooling fins. Remove debris. Check recoil starter assembly for damage and operation. 	Any damaged, loose, or missing parts.
(10)	•			Spark Arrestor	Check daily for carbon buildup.	Spark arrestor is blocked or buildup is present.

Section III. OPERATION UNDER USUAL CONDITIONS

2.6. GENERAL.

This section provides information and guidance for generator set operation under normal conditions, refer to FM 20-31.

2.7. ASSEMBLY AND PREPARATION FOR USE.

a. Installation of Ground Rods.

WARNING

Never attempt to start the generator set if it is not properly grounded. Failure to observe this warning could result in serious injury or death by electrocution.

(1) Insert ground cable (6 AWG min.) through slot on frame mounted terminal stud GND. Hold terminal body hex with one wrench and tighten terminal nut on terminal stud.

(2) Drive an eight-foot (or longer) ground rod into ground until clamp on top of ground rod is just above surface.

(3) Insert ground cable through ground rod clamp and tighten clamp screw.

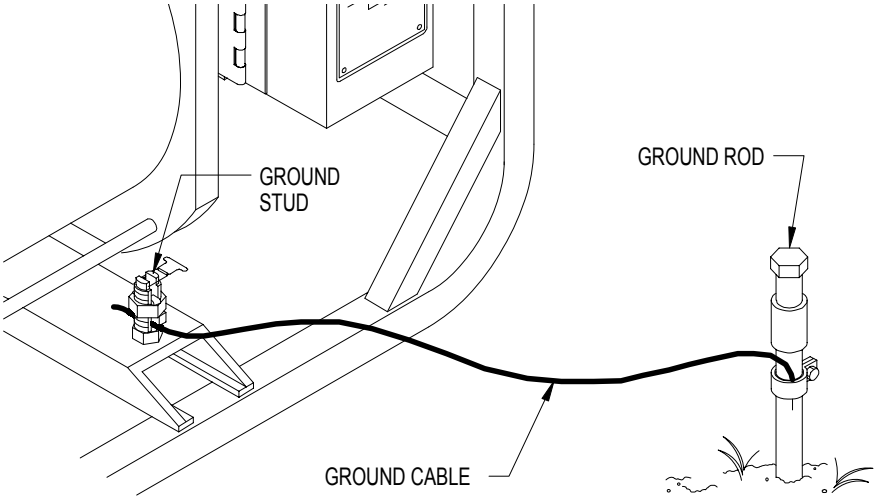


Figure 2-2. Grounding Connections (Typical Installation)

b. Installation of Load Cables.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

(1) If operating, shut down generator set and open load terminal board cover.

(2) Using suitable wrenches, hold terminal body hex with one wrench and loosen terminal nuts (Figure 2-3) on terminals "L" and "N" (MEP-531A) or "+" and "-" (MEP-501A).

(3) Insert ends of load cables through load cable exit. Then insert ends of cables into slots of load terminal studs.

(4) Hold terminal body hex with one wrench and tighten load terminal nuts and lock retaining clips. Then close and secure load terminal board cover.

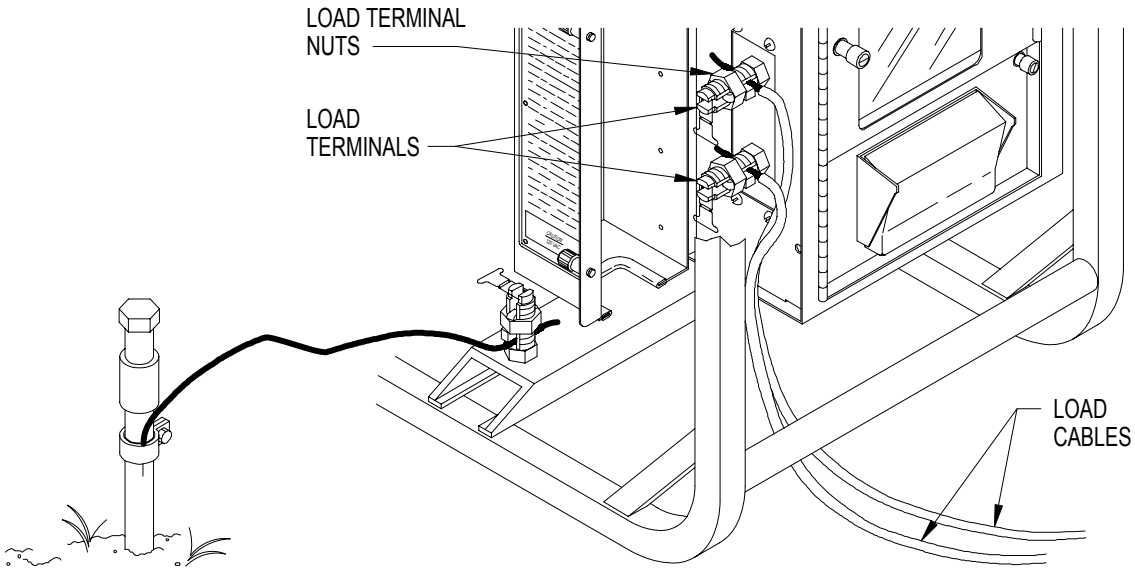


Figure 2-3. Installation of Load Cables

c. Priming and Bleeding the Fuel System.

Under normal conditions, the fuel system does not require priming. Certain conditions may allow air into the fuel system, for example, running out of fuel. Once this occurs, the air must be bled before the engine will start or run smoothly. Using Figure 2-4, proceed as follows:

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

WARNING

Hot fueling of generator sets while they are operating presents a safety hazard and should not be attempted. Hot engine surfaces and sparks produced from the engine and generator circuitry are possible sources of ignition. Failure to observe this warning could result in severe personal injury or death.

(1) Check that fuel tank has fuel and that fuel shutoff valve (Figure 2-4) located on the filter is positioned to ↓O (open).

(2) Open two bleed screws (Figure 2-4) at top of filter in the order listed below.

(a) Open left bleed screw to bleed air from tank-to-filter fuel line.

(b) Open right bleed screw to bleed air from filter to pump fuel line. It may be necessary to squeeze line by hand to force air out of bleed screw.

(3) When fuel flows freely and evenly out of bleed screws (without air bubbles), tighten both bleed screws.

(4) Loosen output fuel line fitting at fuel injection pump, place engine RUN lever to RUN position, depress and hold decompression lever, and pull recoil starter rope until fuel flows from around fuel line fitting (without air bubbles). Tighten output fuel line.

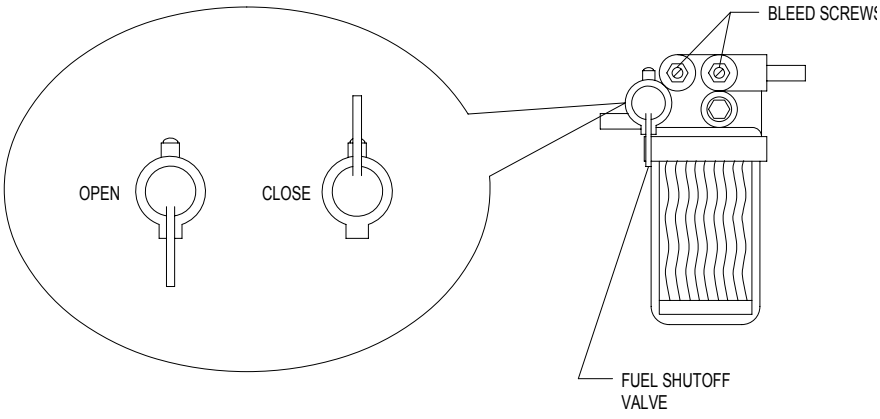


Figure 2-4. Fuel Filter Bleed Screws

2.8. INITIAL ADJUSTMENTS AND CHECKS.

The diesel engine must be broken-in, avoiding heavy loads (no greater than 75%), for a period of at least twenty (20) hours to ensure proper operation of the generator set. After the initial break-in period, intake and exhaust valve clearances must be checked and adjusted, the head nuts torque must be checked, and engine lubricating oil changed. Contact unit maintenance.

2.9. OPERATING PROCEDURES.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

WARNING

Exhaust discharge contains deadly gases. Do not operate generator set in enclosed area unless exhaust discharge is properly vented outside. Position as far away from personnel, shelters, and occupied vehicles as possible. Failure to observe this warning could result in severe personal injury or death due to carbon monoxide poisoning.

WARNING

The noise level of this generator set when operating could cause hearing damage. Hearing protective devices must be worn when operating or working within 13 feet of the generator set when it is running. Failure to observe this warning can result in personal injury.

WARNING

Hot fueling of generator sets while they are operating presents a safety hazard and should not be attempted. Hot engine surfaces and sparks produced from the engine and generator circuitry are possible sources of ignition. Failure to observe this warning could result in severe personal injury or death.

WARNING

High fuel pressure is generated as a result of operation of the generator set. High-pressure leaks could cause severe personal injury or death.

CAUTION

If the diesel engine starts racing (overspeeding) at startup or during operation, there is a governor control malfunction. Depress the engine STOP lever immediately to avoid possible damage to the diesel engine caused by excessive overspeeding.

CAUTION

Check stenciled or painted markings on air intake cover to ensure it is in the proper position. Normal position of cover allows ambient temperature air to flow into the diesel engine. Failure to place air intake cover in normal position, except in temperatures below -5°F, may cause engine oil breakdown, engine overheating, or catastrophic engine failure.

NOTE

Under normal operating conditions, generator set will vibrate and "walk" on hard surfaces. Block generator set appropriately.

a. Manual Starting [23°F (-5°C) to 122°F (50°C)].

WARNING

Never attempt to start the generator set if it is not properly grounded. Failure to observe this warning could result in serious injury or death by electrocution.

(1) Ground generator set, refer to paragraph 2.7.a.

(2) Switch ON-OFF load circuit breaker (10, Figure 2-1) to OFF.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

(3) Connect load cables to load terminals, refer to paragraph 2.7.b.

(4) Perform all B (Before) PMCS procedures, refer to Table 2-2.

(5) Check that air intake cover (2) is in NORMAL operating (summer) position as indicated on top of filter cover (Figure 2-5).

(6) Ensure that fuel shutoff valve (6, Figure 2-1) is in the ↓O (open) position.

(7) Pull recoil starter (1) slowly. Stop when it feels tight.

(8) Depress decompression lever "A" (3).

(9) Move engine RUN lever (4) to RUN position (Figure 2-6).

CAUTION

A condition known as reverse rotation can occur if the recoil starter rope (1, Figure 2-1) is pulled out too slowly. If the engine rotation reverses, you will hear abnormal noises caused by the reverse rotation of the oil pump. DEPRESS THE ENGINE STOP LEVER IMMEDIATELY. Failure to do so will cause the engine bearings to seize due to lack of lubrication.

(10) Take up the slack in recoil starter rope (1) and pull rope quickly and all the way out.

(11) If the engine fails to start, repeat steps 7 thru 10.

(12) If engine still fails to start after two attempts, refer to operator troubleshooting tables in Chapter 3.

(13) Check all gauges for proper indications as follows, refer to Figure 2-1:

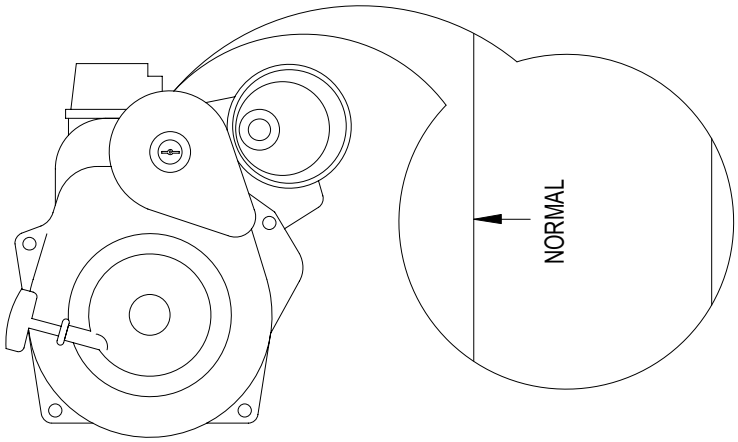


Figure 2-5. Air Intake Cover, Normal Operation

NOTE

If any gauge indicates an improper value, refer to the operator troubleshooting tables in Chapter 3.

(a) VOLTS AC meter (12) for 120 VAC (MEP-531A) or VOLTS DC meter (12) for 28 VDC (MEP-501A).

(b) HERTZ frequency meter (18) for 60-63 Hz (MEP-531A).

(c) %LOAD meter (13) under no load condition should read 0 (%). The reading will vary as the demand changes (from 0 to 125 %).

NOTE

Under normal conditions, allow the diesel engine to warm-up for five minutes before applying a load. If necessary, the load can be applied immediately.

(14) Switch ON-OFF load circuit breaker (10, Figure 2-1) to ON to apply load.

(15) Perform all D (During) PMCS procedures in accordance with Table 2-2.

b. Electric Starting [23°F (-5°C) to 122°F (50°C)].

(1) Ground generator set, refer to paragraph 2.7.a.

(2) Switch ON-OFF load circuit breaker (10, Figure 2-1) to OFF.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

(3) Connect load cables to load terminals, refer to paragraph 2.7.b.

(4) Perform all B (Before) PMCS procedures, refer to Table 2-2.

(5) Check that air intake cover (2) is in NORMAL operating (summer) position as indicated on top of filter cover (Figure 2-5).

(6) Ensure that fuel shutoff valve (6, Figure 2-1) is in the ↓O (open) position.

(7) Connect 24 VDC battery source to NATO slave receptacle (11).

WARNING

If 24 VDC battery source is connected to the NATO slave receptacle, DC voltages are present at generator set electrical components even with generator set shutdown. Avoid grounding self when touching any electrical components. Failure to observe this warning can result in personal injury.

(8) Move the engine RUN lever (4) to RUN position (Figure 2-6).

CAUTION

Do not crank engine more that 10 seconds without allowing the starter to cool for at least 15 seconds between attempted starts. Over cranking can damage the starter.

(9) Turn START-PREHEAT/PREHEAT/OFF/START switch (9, Figure 2-1) clockwise to START position. Release switch when engine starts.

(10) If diesel engine fails to start, repeat steps 8 and 9.

(11) If engine still fails to start after two attempts, refer to operator troubleshooting tables in Chapter 3.

(12) Disconnect 24 VDC battery source from NATO slave receptacle (11).

(13) Check all gauges for proper indications as follows:

NOTE

If any gauge indicates an improper value, refer to the operator troubleshooting tables in Chapter 3.

(a) VOLTS AC meter (12) for 120 VAC (MEP-531A) or VOLTS DC meter (12) for 28 VDC (MEP-501A).

(b) HERTZ frequency meter (18) for 60-63 Hz (MEP-531A).

(c) %LOAD meter (13) under no load condition should read 0 (%). The reading will vary as the demand changes (from 0 to 125 %).

NOTE

Under normal conditions, allow the diesel engine to warm-up for five minutes before applying a load. If necessary, the load can be applied immediately.

(14) Switch ON-OFF load circuit breaker (10, Figure 2-1) to ON to apply load.

(15) Perform all D (During) PMCS procedures in accordance with Table 2-2.

c. Electric Starting [Between 23°F (-5°C) to -5°F (-21°C)].

(1) Ground generator set, refer to paragraph 2.7.a.

(2) Switch ON-OFF load circuit breaker (10, Figure 2-1) to OFF.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

(3) Connect load cables, refer to paragraph 2.7.b.

(4) Perform all PMCS (Before) procedures, refer to Table 2-2.

(5) Ensure that fuel shutoff valve (6) is in the ↓O (open) position.

(6) Connect 24 VDC battery source to NATO slave receptacle (11).

WARNING

If 24 VDC battery source is connected to the NATO slave receptacle, DC voltages are present at generator set electrical components even with generator set shutdown. Avoid grounding self when touching any electrical components. Failure to observe this warning can result in personal injury.

(7) Move engine RUN lever (4) to RUN position (Figure 2-6).

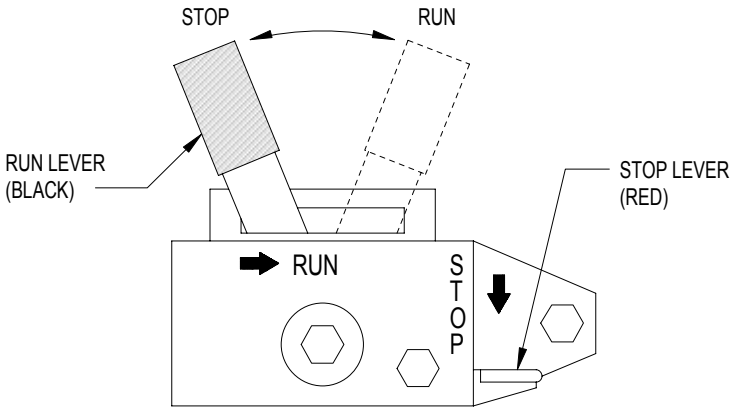


Figure 2-6. Engine RUN and STOP Controls

(8) Turn START-PREHEAT/PREHEAT/OFF/START switch (9, Figure 2-1) counterclockwise to PREHEAT position for 1-1/2 minutes.

CAUTION

Do not crank engine more that 10 seconds without allowing the starter to cool for at least 15 seconds between attempted starts. Over cranking can damage the starter.

(9) Turn START-PREHEAT/PREHEAT/OFF/START switch (9) clockwise to START position. Release switch when engine starts.

(10) If diesel engine fails to start, repeat steps 8 and 9.

(11) If engine still fails to start after two attempts, refer to operator troubleshooting tables in Chapter 3.

(12) Disconnect 24 VDC battery source from NATO slave receptacle (11).

(13) Check all gauges for proper indications as follows:

NOTE

If any gauge indicates an improper value, refer to the operator troubleshooting tables in Chapter 3.

(a) VOLTS AC meter (12) for 120 VAC (MEP-531A) or VOLTS DC meter (12) for 28 VDC (MEP-501A).

(b) HERTZ frequency meter (18) for 60-63 Hz (MEP-531A).

(c) %LOAD meter (13) under no load condition should read 0 (%). The reading will vary as the demand changes (from 0 to 125 %).

NOTE

Under normal conditions, allow the diesel engine to warm-up for five minutes before applying a load. If necessary, the load can be applied immediately.

(14) Switch ON-OFF load circuit breaker (10) to ON to apply load.

(15) Perform all (D) During PMCS procedures in accordance with Table 2-2.

d. Electric Starting [Between -5°F (-21°C) to -25°F (-32°C)].

(1) Ground generator set, refer to paragraph 2.7.a.

(2) Switch ON-OFF load circuit breaker (10, Figure 2-1) to OFF.

WARNING

Never attempt to connect or disconnect load cables while the generator set is running. Failure to observe this warning could result in severe personal injury or death by electrocution.

(3) Connect load cables, refer to paragraph 2.7.b.

(4) Perform all B (Before) PMCS procedures, refer to Table 2-2.

(5) Ensure that fuel shutoff valve (6) is in the ↓O (open) position.

(6) Connect 24 VDC battery source to NATO slave receptacle (11).

WARNING

If 24 VDC battery source is connected to the NATO Slave receptacle, DC voltages are present at generator set electrical components even with generator set shutdown. Avoid grounding self when touching any electrical components. Failure to observe this warning can result in personal injury.

(7) Move the engine RUN lever (4) to the RUN position (Figure 2-6).

(8) Turn air intake cover (2, Figure 2-1) to COLD position, refer to Figure 2-7.

(9) Turn START-PREHEAT/PREHEAT/OFF/START switch (9, Figure 2-1) counterclockwise to PREHEAT position for 3 minutes.

CAUTION

Be sure to install the rubber plug (Figure 2-8) in the cylinder head cover opening after adding oil. Leaving the hole unplugged can lead to premature diesel engine failure as water, dirt, and debris entering the hole can damage internal parts. Do not add more than the specified amount of engine oil through the cylinder head cover.

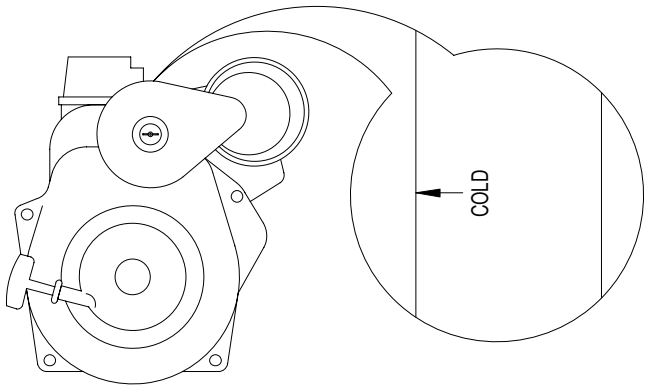


Figure 2-7. Air Intake Cover, Cold Operation

(10) Remove rubber plug "B" (Figure 2-8) in cylinder head cover and add 2 ml (¼ to ½ teaspoon) of clean engine oil, MIL-PRF-2104, 15W40. Install rubber plug.

CAUTION

Do not crank engine more that 10 seconds without allowing the starter to cool for at least 15 seconds between attempted starts. Over cranking can damage the starter.

(11) Turn START-PREHEAT/PREHEAT/OFF/START switch (9, Figure 2-1) counterclockwise to START-PREHEAT position. Release switch when engine starts.

(12) If diesel engine fails to start, repeat steps 9 and 11.

(13) If engine still fails to start after two attempts, refer to operator troubleshooting table in Chapter 3.

(14) Disconnect 24 VDC battery source from NATO slave receptacle (11).

(15) Check all gauges for proper indications as follows:

NOTE

If any gauge indicates an improper value, refer to the operator troubleshooting tables in Chapter 3.

(a) VOLTS AC meter (12) for 120 VAC (MEP-531A) or VOLTS DC meter (12) for 28 VDC MEP-501A).

(b) HERTZ frequency meter (18) for 60-63 Hz (MEP-531A).

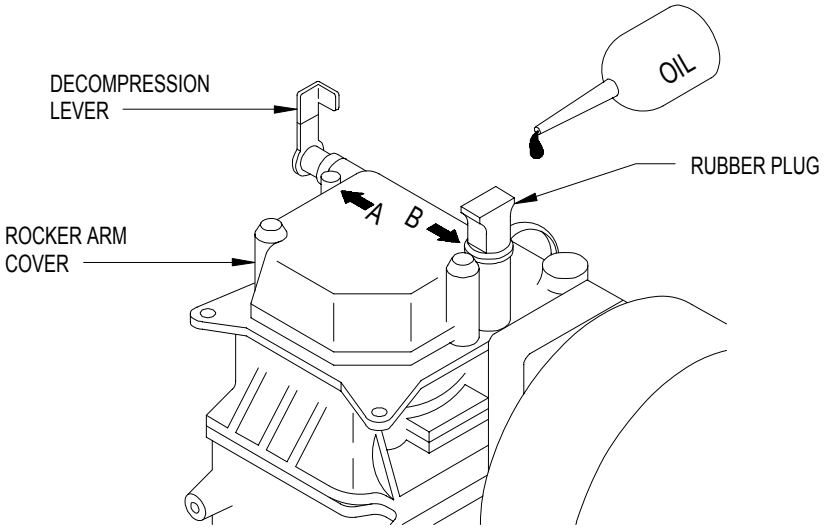


Figure 2-8. Adding Oil – Cylinder Head Cover Opening

(c) % LOAD meter (13) under no load condition should read 0 (%). The reading will vary as the demand changes (from 0 to 125%).

NOTE

Under normal conditions, allow the diesel engine to warm-up for five minutes before applying a load. If necessary, the load can be applied immediately.

(16) Switch ON-OFF load circuit breaker (10) to ON to apply load.

(17) Perform all D (During) PMCS procedures in accordance with Table 2-2.

e. Stopping Procedure.

(1) Switch ON-OFF load circuit breaker (10, Figure 2-1) to OFF position and allow engine to run approximately 3 minutes with no load.

(2) Press engine STOP lever (5).

(3) Perform all A (After) PMCS procedures in accordance with Table 2-2.

2.10. IDENTIFICATION AND INSTRUCTION PLATES.

There are identification and instruction plates on the generator set. Figure 2-9 shows the location and contents of each plate on the generator set.

2.11. PREPARATION FOR MOVEMENT.

(1) Shut down generator set. Refer to paragraph 2.9.e.

(2) Disconnect load cables (Figure 2-3).

(3) Disconnect ground cable (Figure 2-2) and remove ground rods.

(4) Secure all generator set access doors and panels.

(5) For initial set up after movement, refer to paragraph 2.7 for assembly and preparation for use.

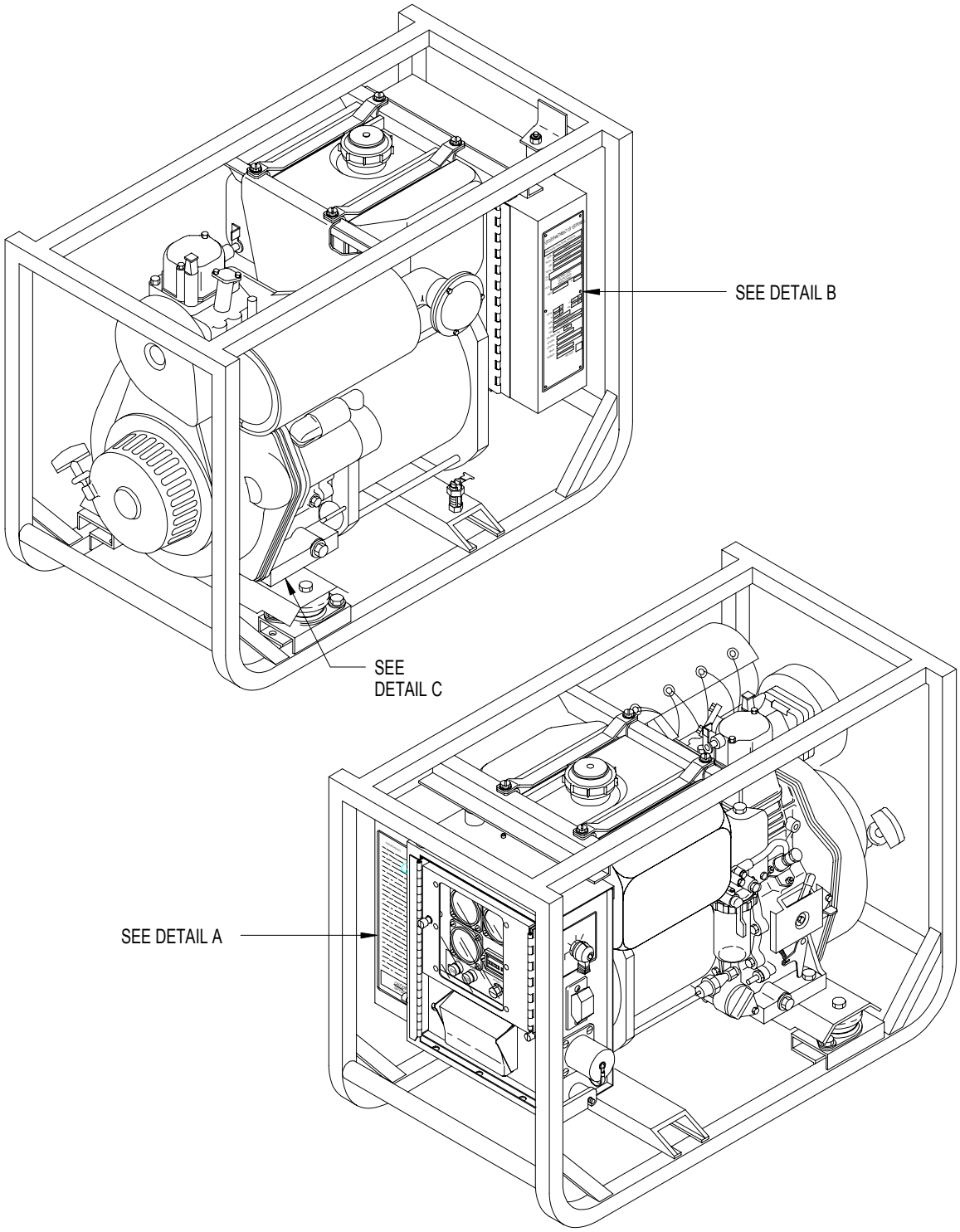
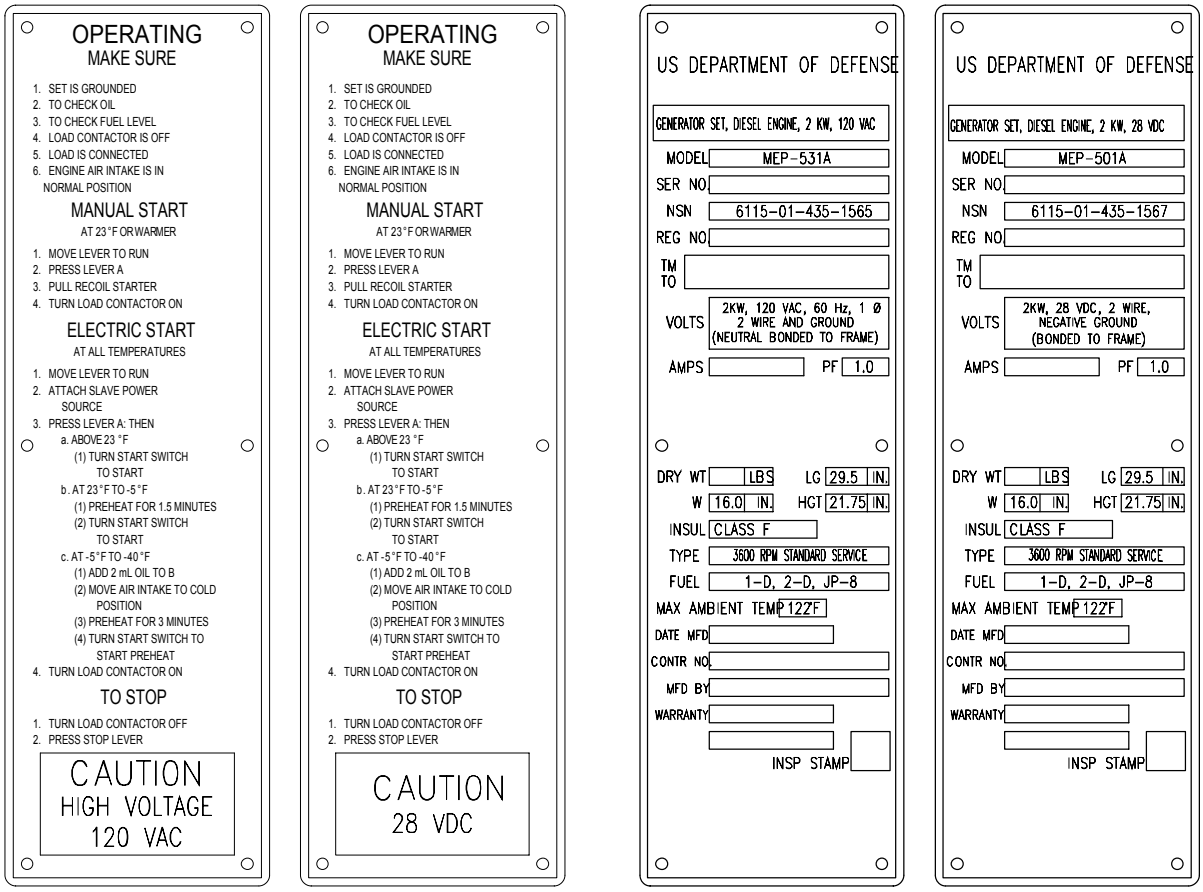
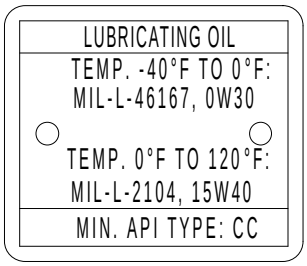


Figure 2-9. Identification and Instruction Plates (Sheet 1 of 2)



MEP-531A MEP-501A MEP-531A MEP-501A

DETAIL A DETAIL B



DETAIL C

Figure 2-9. Identification and Instruction Plates (Sheet 2 of 2)

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2.12 EXTREME ENVIRONMENTAL CONDITIONS.

a. Operation in Extreme Cold [23°F (-5°C) to -51°F (-46°C)].

The generator is designed for use in ambient temperatures as low as -51°F (-46°C). To ensure satisfactory operation, the following steps should be taken.

(1) When possible, provide shelter from winds, freezing rain, and drifting snow. Position generator set behind a wind barrier.

(2) When operated in an enclosed area, be sure that proper provisions are made for removal of exhaust gases.

CAUTION

Be careful not to scrape, scratch, gouge, or in any way damage the generator set. Avoid moving wiring as much as possible.

(3) Remove accumulated snow or ice, if possible, by moving the generator set to a heated enclosure and allow the accumulation to melt after first wiping or brushing away loose deposits. When a heated enclosure is not available, remove snow or ice by wiping, brushing, or carefully picking the deposits away.

(4) For extreme cold weather conditions, MIL-PRF-46167, OW30 oil is recommended.

WARNING

Avoid contacting metal items with bare skin in extreme cold weather. Failure to observe this warning can result in personal injury.

(5) Keep fuel tank at least 3/4 full during cold weather operations.

b. Operation in Extreme Heat [Above 120°F (49°C)].

(1) When operating in extremely hot temperatures, attempt to place the generator set in a shaded area.

(2) Provide as much ventilation as possible.

(3) Keep all engine air passages and end cover openings clean and free of obstructions.

(4) Make sure that air intake cover (2, Figure 2-1) is turned so that ambient air is directed to air intake, see Figure 2-5.

(5) Do not completely fill fuel tank. Leave one inch for fuel expansion.

(6) Use MIL-PRF-2104 GR OE/HDO-30 (Item 14, Appendix E) lubricating oil in diesel engine crankcase.

c. Operation in Dusty or Sandy Areas.

(1) Shield generator set from dust and sand.

(2) Clean dust and dirt from the generator set as required. Do not allow dust to accumulate around generator set.

(3) Inspect and clean secondary (outer) air intake filter.

(4) Keep generator air inlet and outlet slots clean.

(5) Carefully remove dust and sand from control panel.

(6) Keep area around fuel tank clean and free from dust and sand.

d. Operation in Rainy or Humid Conditions.

(1) When not in use, cover generator set with canvas or other waterproof material. Remove cover during dry periods to allow unit to dry out.

(2) Keep fuel tank full to prevent condensation.

e. Operation in Salt Water Areas.

CAUTION

Salt water is harmful to paint and is particularly corrosive when allowed to remain in contact with exposed metal surfaces.

(1) Cover generator set with canvas or other material when it is not in use.

(2) Wipe generator set down frequently with fresh water and allow it to dry thoroughly.

f. Operation at High Altitudes.

NOTE

The generator set is designed to produce 2kW continuous at elevations up to 4,000 ft (1,219 m) above sea level, 95°F (35°C) ambient and 30 to 70% relative humidity without special service or adjustment.

g. Derating Generator Set Output for High Altitudes and Temperatures.

(1) To run the set at a higher altitude, derate output 1.3% for every 328 ft (100 m) above 4000 ft (1,219m). (Refer to Table 2-3.)

(2) Provide adequate ventilation, as the engine is more likely to overheat at high altitudes.

(3) When operating in high temperatures, derate 3% for every 50°F (10°C) above 95°F (35°C). (Refer to Table 2-3.)

Table 2-3. Altitude and Temperature Derating Calculation

Altitude Deration = [Altitude - 4,000 ft (1,219 m)] / 328 ft (100 m) X (0.013) X (2,000 W)
Temperature Deration = [Temperature - 95°F (35°C)] / 50°F (10°C) X (0.03) X (2,000 W)
Total Deration = 2,000 W - Altitude Deration - Temperature Deration

2.13. NUCLEAR, BIOLOGICAL, AND CHEMICAL DECONTAMINATION PROCEDURES.

a. The generator set is capable of being operated by personnel wearing nuclear, biological, or chemical (NBC) protective clothing without special tools or support equipment. Refer to FM 3-5, NBC Decontamination for information on decontamination procedures. Specific procedures for the generator set are the following.

b. Control panel indicators sealing gaskets, control panel door gaskets, access door gaskets, rubber tubing, coverings for electrical conduits, and retaining cord for slave receptacle cover will absorb and retain chemical agents. Replacement of these items is the recommended method of decontamination.

c. Lubricants and fuel may be present on the external surfaces of the generator set or components due to leaks or normal operation. These fluids will absorb NBC agents. The preferred method of decontamination is removal of these fluids using conventional decontamination methods in accordance with FM 3-5.

d. Continued decontamination of external generator set surfaces with super tropical bleach (STB) and decontaminating solution number 2 (DS2) will degrade clear plastic indicator coverings to a point where reading indicators will become impossible. This problem will become more evident for soldiers wearing protective masks. The use of STB and DS2 decontaminants in these areas should be minimized. Indicators should be decontaminated with warm, soapy water.

e. External surfaces of the control panel assembly that are marked with painted or stamped lettering will not withstand repeated decontamination with STB or DS2 without degradation of this lettering. The recommended method of decontamination for these areas is warm, soapy water.

f. Areas that will entrap contaminants, making efficient decontamination extremely difficult, include the following: space behind knobs and switches on the control panel, exposed heads of screws, areas adjacent to and behind exposed wiring conduits, hinged areas of access doors, spaces behind externally mounted equipment data plates, retaining cords for external receptacle covers, areas behind GFCI receptacle cover, access panel locking mechanisms, fuel cap, load output terminal board access door, NATO slave receptacle, frequency adjustment controls, areas around tie-down/lifting points, crevices around access doors, and external screens covering ventilation areas. Replacement of these items, if available, is the preferred method of decontamination. Conventional decontamination methods should be used on these areas, while stressing the importance of thoroughness and the probability of some degree of continuing contact and vapor hazard.

g. The use of overhead shelters or chemical protective covers is recommended as an additional means of protection against contamination in accordance with FM 3-5. If using covers, care should be taken to provide adequate space for airflow and exhaust.

h. For additional NBC information, refer to FM 3-3 and 3-4.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3.1. LUBRICATION INSTRUCTIONS.

Lubrication not required by the operator.

Section II. TROUBLESHOOTING

3.2. OPERATOR TROUBLESHOOTING PROCEDURES.

3.2.1. Purpose of Logic Tree Table.

Troubleshooting Tables 3-1 through 3-11 list common malfunctions that you may find with your equipment. Perform the tests, inspections, and corrective actions in the order they appear in the table. The troubleshooting tables cannot list all the malfunctions that may occur, all the tests and inspections needed to find the fault, or all the corrective actions needed to correct the fault. If the equipment malfunction is not listed or actions listed do not correct the fault, notify your supervisor.

NOTE

Before you use these procedures, be sure that all operator PMCS procedures have been performed, refer to Chapter 2.

3.2.2. Symptom Index.

Table 3-1. Diesel Engine Will Not Start (Manual Starting) Troubleshooting

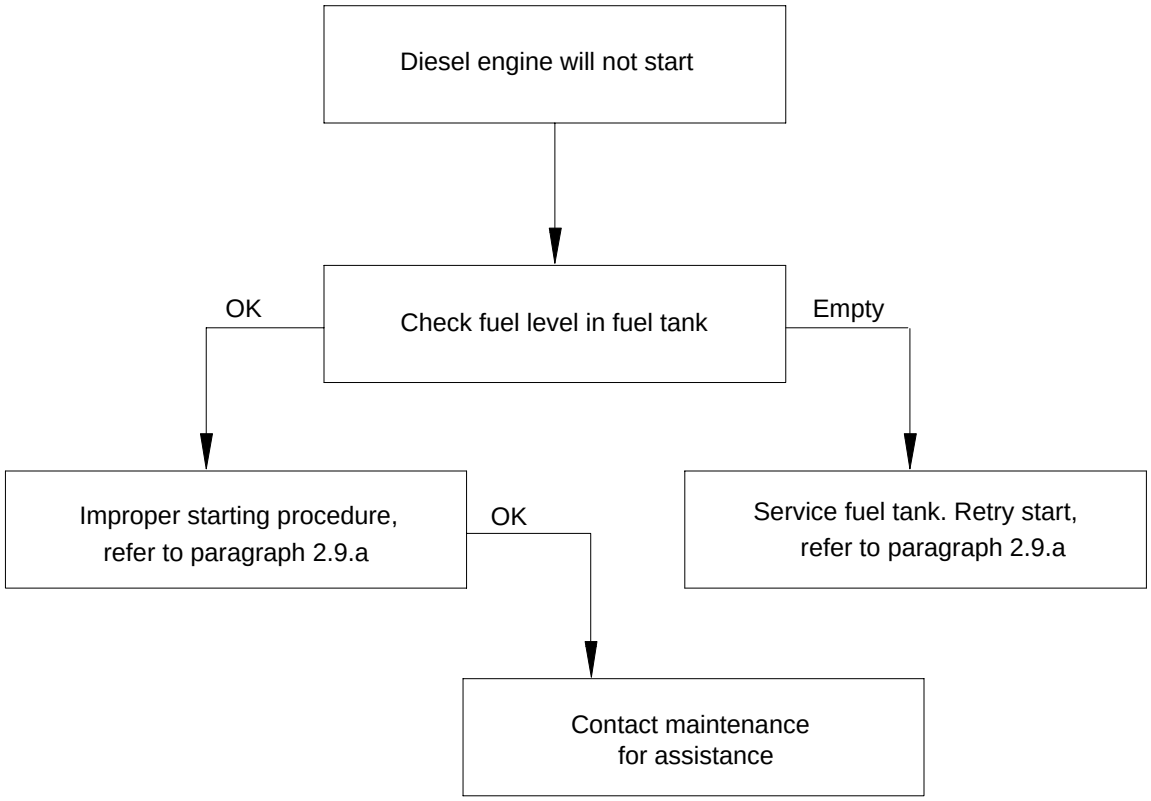


Table 3-2. Diesel Engine Will Not Start (Electric Starting) Troubleshooting

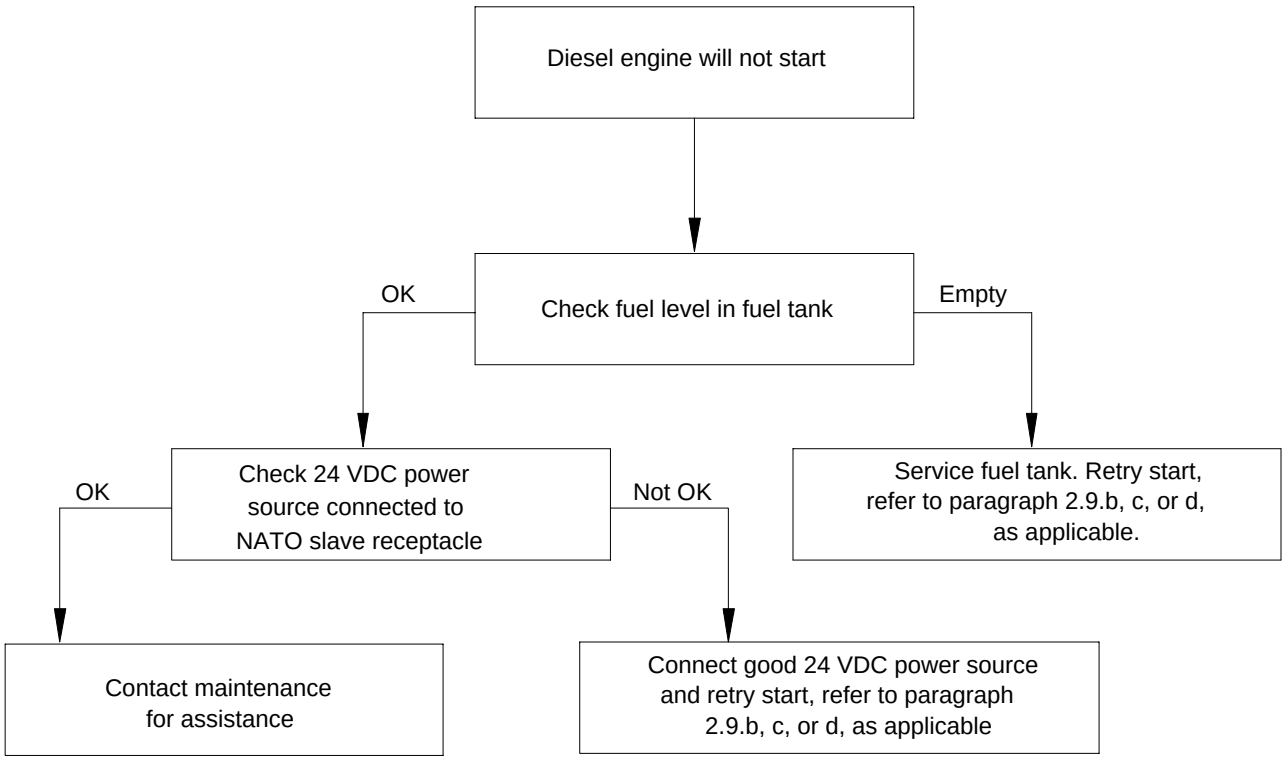


Table 3-3. Diesel Engine Runs Rough Troubleshooting

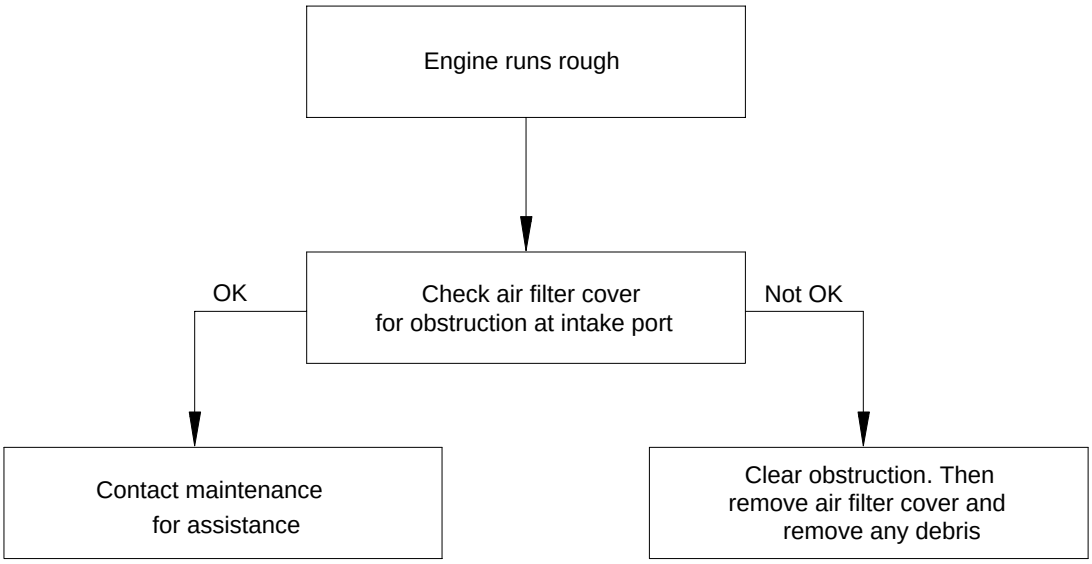


Table 3-4. Voltage Output Drops Troubleshooting

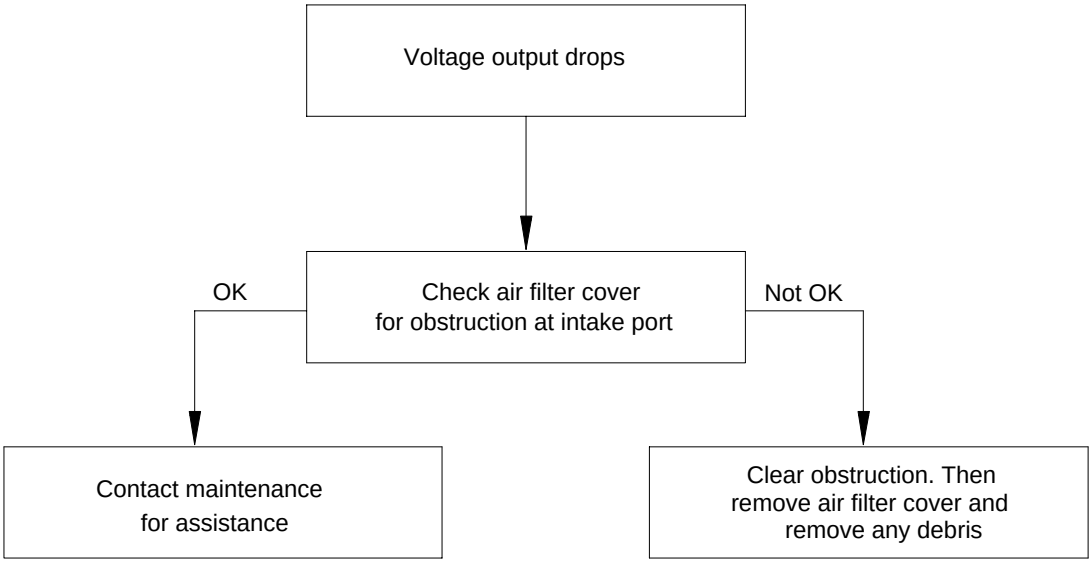


Table 3-5. Generator Set Vibrating/Bouncing Excessively Troubleshooting

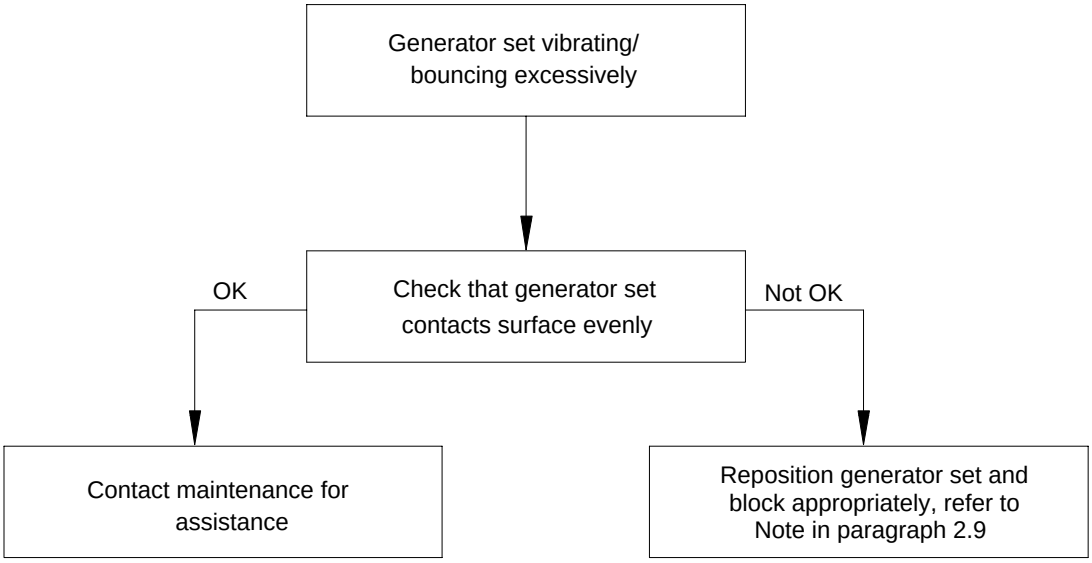


Table 3-6. No Voltage Indication on VOLTS Meter (M2) Troubleshooting

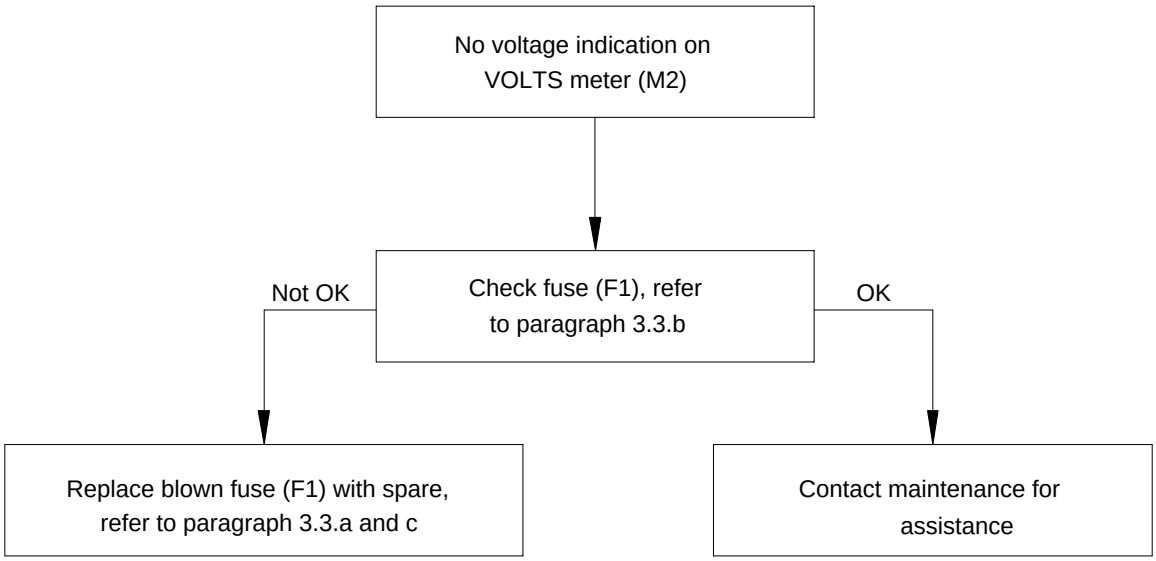


Table 3-7. Voltage Indication on VOLTS Meter (M2) is High, Low, or Fluctuating Troubleshooting

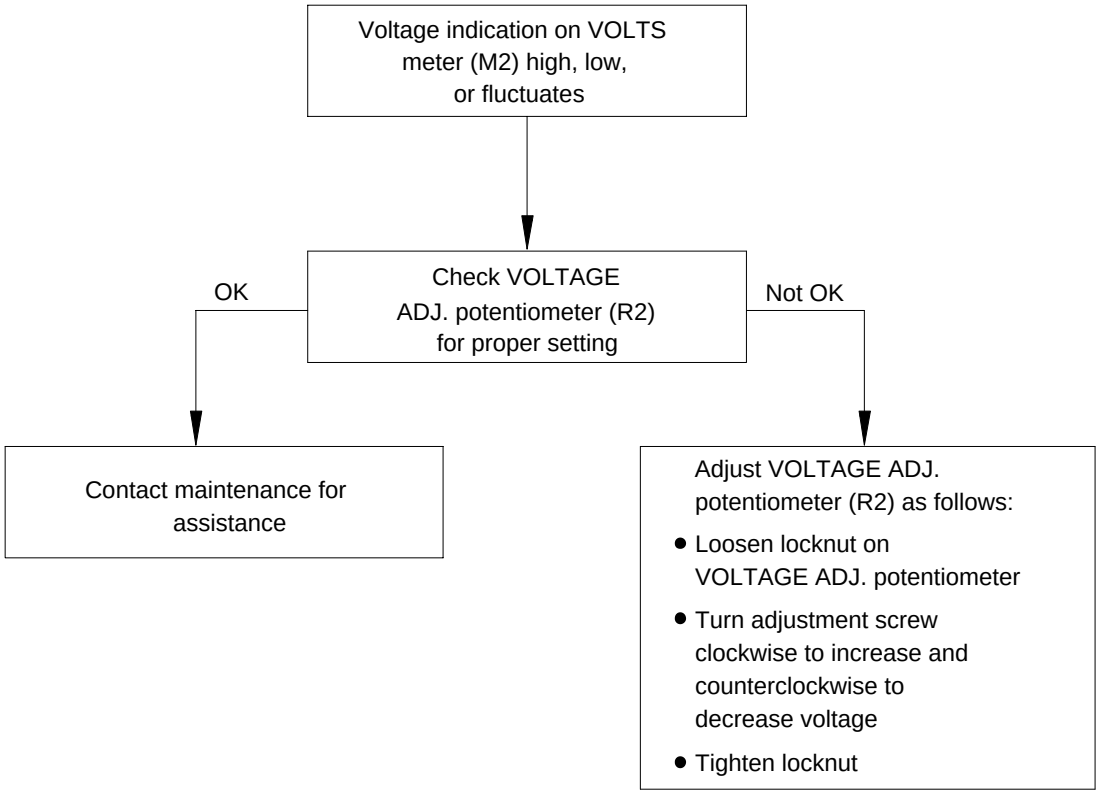


Table 3-8. No Indication on %LOAD Meter (M1) With Load Applied Troubleshooting

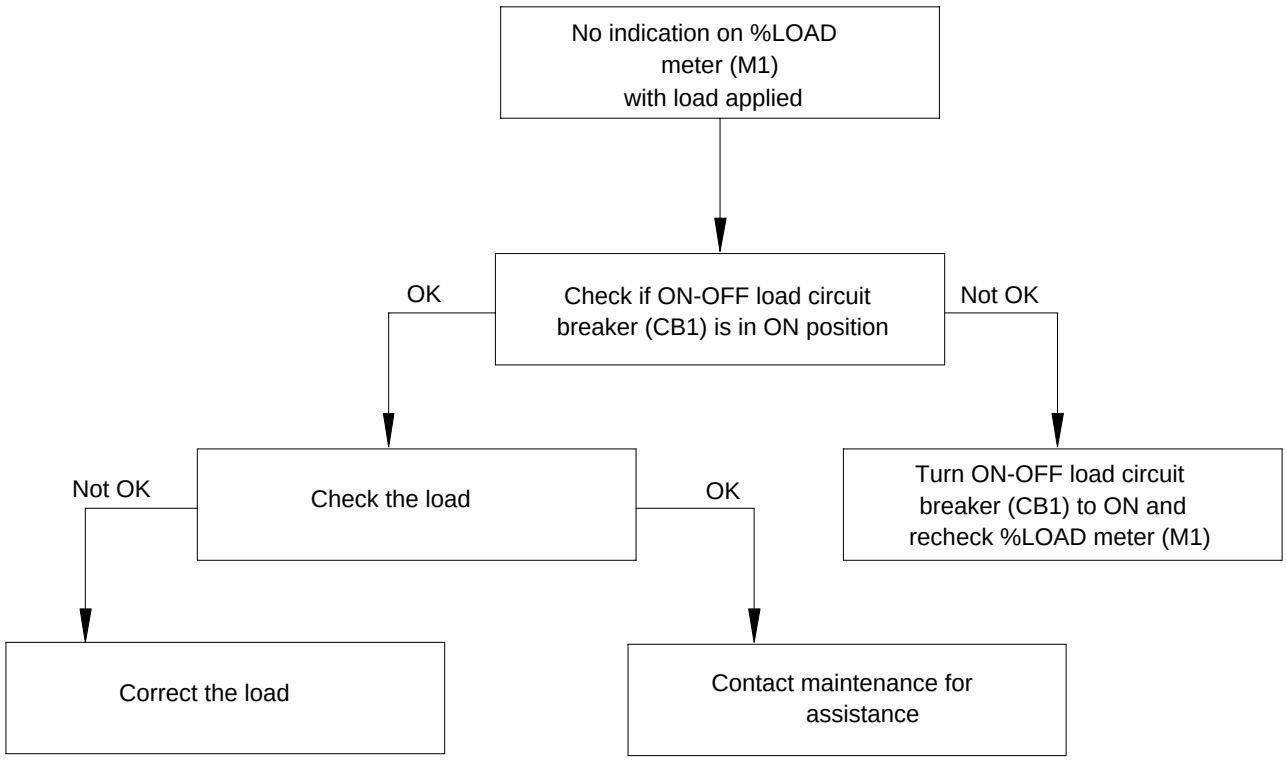


Table 3-9. No Indication on HERTZ Frequency Meter (M4) (MEP-531A) Troubleshooting

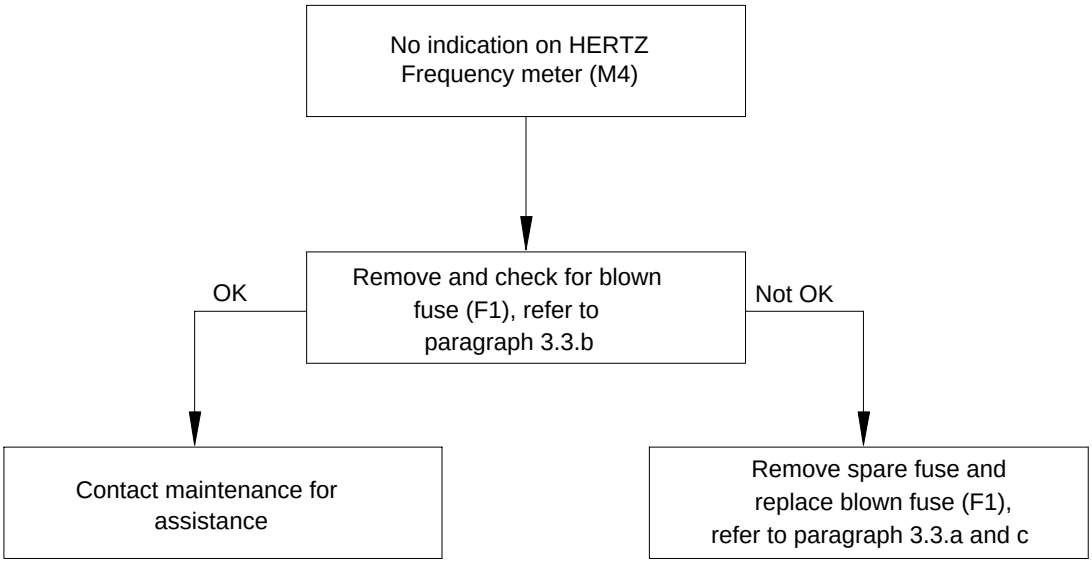


Table 3-10. HOURS Meter (M3) Not Operating Troubleshooting

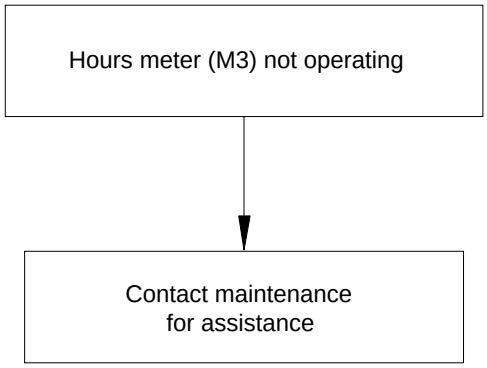
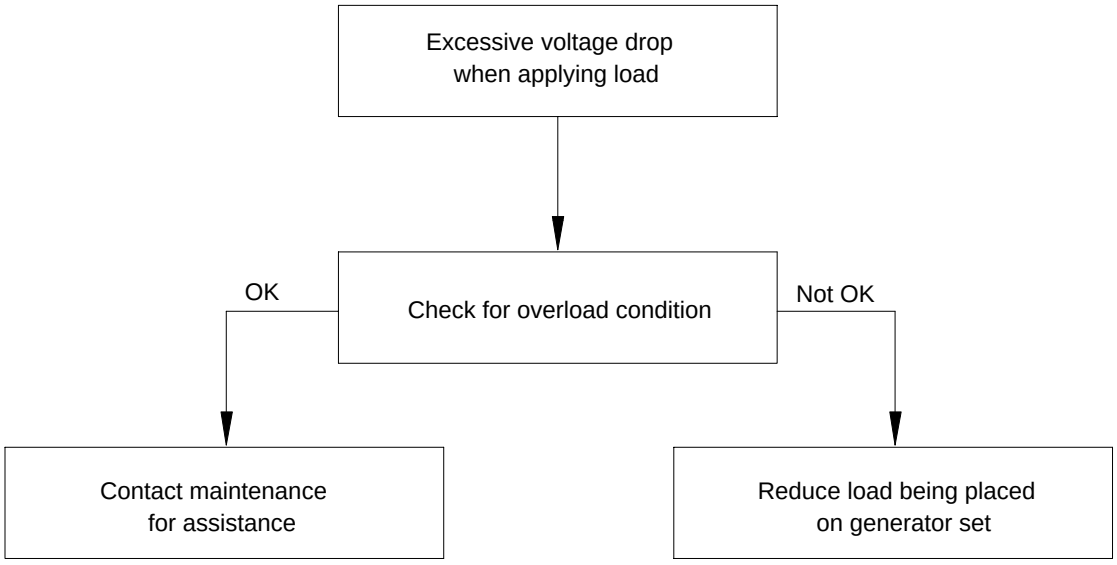


Table 3-11. Excessive Voltage Drop When Applying Load Troubleshooting



Section III. OPERATOR MAINTENANCE PROCEDURES

3.3. INSTRUMENT FUSE (F1).

a. Removal.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Remove cap and fuse (Figure 3-1).

b. Inspection.

(1) Inspect fuse (Figure 3-1) for cracks and burned out element. Discard fuse if defective. If necessary, remove spare fuse from spare fuse holder.

NOTE

If there is no fuse in the spare fuse holder, contact maintenance for the proper replacement.

(2) Inspect contacts in cap and fuse holder for evidence of corrosion and damage. If corroded or damaged, contact Unit maintenance for repair.

c. Installation.

(1) Insert fuse into fuse holder and install cap (Figure 3-1).

(2) Close and secure instrument cover.

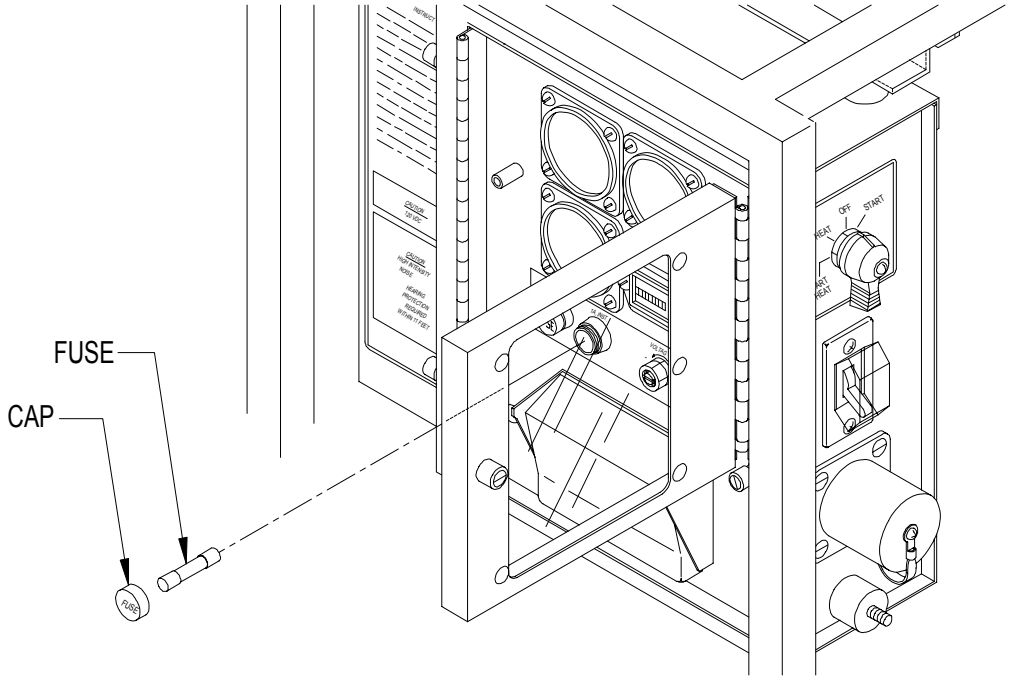


Figure 3-1. Fuse (F1) Replacement

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CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

4.1. LUBRICATION INSTRUCTIONS.

No lubrication requirements for unit maintenance.

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

4.2. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, or CTA 8-100, as applicable to your unit.

4.3. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

There are no special tools or equipment required to perform unit level maintenance on the generator set.

4.4. REPAIR PARTS.

Repair parts and equipment are listed and illustrated in the repair parts and special tools list (Appendix F) covering unit maintenance for this equipment.

Section III. SERVICE UPON RECEIPT

4.5. INSPECTING THE EQUIPMENT.

The following should be performed on the generator set prior to use.

a. Remove all packaging material.

b. Inspect identification plate for positive identification of generator set.

c. Make a thorough inspection of generator set for any damage that may have occurred during shipment.

d. Inspect entire generator set carefully for loose and/or missing hardware.

4.6. SITE SELECTION.

a. Place the generator set on a level site if possible. Provide enough clearance around the generator set to allow for normal operation and maintenance functions.

WARNING

Exhaust discharge contains deadly gases. Do not operate generator set in enclosed area unless exhaust discharge is properly vented outside. Position as far away from personnel, shelters, and occupied vehicles as possible. Failure to observe this warning could result in severe personal injury or death due to carbon monoxide poisoning.

b. In a bivouac location, take measures to minimize noise and exhaust impacts on personnel. Place generator sets as far as possible from personnel areas.

4.7. SERVICING THE EQUIPMENT.

Perform the Preventive Maintenance Checks and Services; see Table 4-1 and Appendix M for deprocessing instructions.

4.8. INSTALLATION.

NOTE

The diesel engine must be broken-in, avoiding heavy loads (no greater than 75%), for a period of twenty (20) hours to ensure proper operation of the generator set. After the initial break-in period, engine-lubricating oil must be changed, cylinder head nuts torque must be checked, and intake and exhaust valve clearances must be checked and adjusted. Refer to paragraph 4.12.10.

a. The generator set is normally received either from the manufacturer or long term storage with the fuel system drained, however, the crankcase will be filled with oil.

b. In order to put the generator set into service, perform the following procedure:

CAUTION

When checking the diesel engine lube oil level, the generator set must be level. If it is tilted, an incorrect oil level may be indicated. Insert dipstick into the oil pan. Do not screw in the dipstick. Overfilling can cause overheating, increased oil pressure, and severe damage.

(1) Check oil level indicated on dipstick, see Figure 4-1. The proper viscosity of oil should be used for the following conditions: (Refer to Items 13 and 14, Appendix E.)

-40° to 0°F	MIL-PRF-46167
(-40° to -18°C)	OW30
0° to 120°F	MIL-PRF-2104
(-18° to 49°C)	15W40

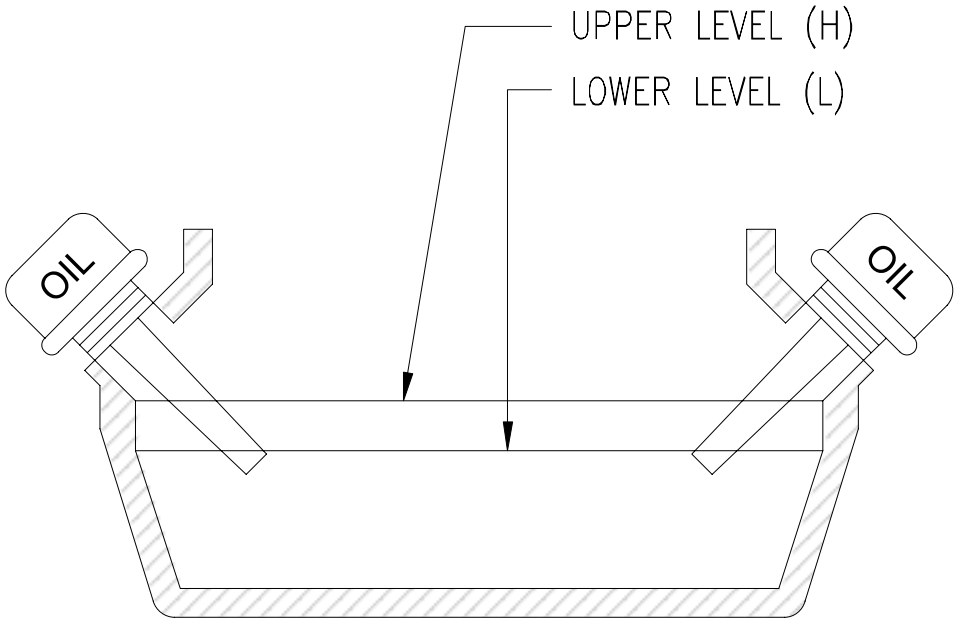


Figure 4-1. Oil Level

CAUTION

Use of fuel other than that for which the fuel injection timing is set, can damage the engine.

(2) Before starting engine, position fuel filter shutoff valve located on fuel filter to ↓O (open), and fill tank with appropriate diesel fuel. Ensure that fuel used is the grade of diesel fuel appropriate for the current fuel injection timing. If necessary, contact next higher level of maintenance to adjust fuel injection timing.

(3) Use of non-recommended fuel may cause clogging in fuel oil filter, fuel injection pump, or fuel injection nozzle. This clogging often causes sudden engine stops after starting. Diesel fuel oil substitutes are not recommended; they may be harmful to the fuel system components.

(4) Prime and bleed fuel system, refer to paragraph 2.7.c.

(5) Start engine, refer to paragraph 2.9.a. If engine will not start, refer to Section V, Troubleshooting.

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4.9. GENERAL.

Preventive Maintenance Checks and Services (PMCS) are those scheduled procedures, which are essential to the efficient operation of the equipment. PMCS prevent possible damage that might occur through neglect or failure to observe warning symptoms on time. Ensure all noted discrepancies are corrected.

4.10. UNIT PMCS TABLE.

Table 4-1 lists all scheduled maintenance tasks required for the generator set components and accessories. The columns of Table 4-1 are described below.

a. Column (1) - Item Number (Item No.).

This column contains a number for each procedure to be performed. When reporting malfunctions or failures on DA Form 2404, [Equipment Inspection and Maintenance Worksheet, or DA Form 5988E enter this number in the "TM Item No." column (refer to DA PAM 738-750)].

b. Column (2) - Interval (Intervals M, Q, S, A, B, H).

These columns tell when to perform a procedure. A dot in a column tells which procedures apply. Some procedures will have more than one dot.

c. Column (3) - Item To Be Inspected.

This column has the name of the item to be inspected.

d. Column (4) - Procedure.

This column tells how to do the required checks and services. Carefully perform these instructions in the order listed.

e. Column (5) - Equipment Is Not Ready/Available If.

This column states conditions that will cause the equipment not to be ready for operation.

4.11. PREVENTIVE MAINTENANCE PROCEDURES.

NOTE

Within designated intervals, these checks are to be performed in the order listed. If the generator set must be kept in continuous operation, check and service only those items that can be accessed without taking the generator set off line. Perform all checks and services when the generator set can be shut down.

a. Monthly.

Perform monthly (M) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

b. Quarterly.

Perform quarterly (Q) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

c. Semi-annually.

Perform semi-annual (S) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

d. Annually.

Perform annual (A) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

e. Bi-annually.

Perform bi-annual (B) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

f. Hourly.

Perform hourly (H) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

g. Order.

Always perform preventive maintenance in the same order.

h. Reporting and Correcting Deficiencies.

If your generator set does not perform as required, refer to troubleshooting for possible problem. Any malfunctions, failures, or discrepancies shall be recorded on DA Form 2404 or DA Form 5988E and reported to higher-level maintenance, refer to DA PAM 738-750.

Table 4-1. Unit Preventive Maintenance Checks and Services

NOTE
Within designated intervals, these checks are to be performed in the order listed.

M-Monthly Q-Quarterly S-Semi-annually A-Annually B-Bi-annually H-Hourly

(1) Item No.	(2) Interval						(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
	M	Q	S	A	B	H			
(1)	•						Diesel Engine	Check for loose, damaged, or missing parts. Tighten loose parts. Repair or replace damaged or missing parts. Inspect decompression lever "A" for debris. Clean if needed.	Engine parts are loose, damaged, or missing.
(2)						50	Primary and Pre-filter Air Filter Elements	Inspect for clogged primary (paper) air filter element. Clean every 50 hours or as required, or replace element if damaged. Replace pre-filter (foam) element. Refer to paragraph 4.12.2.	Air cleaner element is clogged or damaged.
(3)	•						Ground Terminal Lug	Check for damage or corrosion.	
(4)	•						Control Panel	Check for damaged/missing edge protector on load terminal board cover. NOTE There is no edge protector on side with latching screws.	

Table 4-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly Q-Quarterly S-Semi-annually A-Annually B-Bi-annually H-Hourly

(1) Item No.	(2) Interval M	Q	S	A	B	H	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(5)						20 (1st time) 100	Engine Lube System	Change diesel engine oil after the first 20 hours of operation and then after every 100 hours. (1) Remove diesel engine oil drain plug and collect oil in an appropriate chemical-resistant container for disposition/disposal through the local servicing Defense Revitalization and Marketing Office. (2) Remove, clean, and install oil strainer, refer to paragraph 4.55. (3) Add proper lube oil for the following operating environments: -40° to 0°F MIL-PRF-46167 (-40° to -18°C) OW30 0° to 120°F MIL-PRF-2104 (-18° to 49°C) 15W40	
(6)						100	Fuel Filter Element	Replace fuel filter element. Inspect gaskets for damage. Refer to paragraph 4.12.1.	
(7)						50	Spark Arrestor	Check for damaged, missing or corroded spark arrestor. Clean spark arrestor, refer to paragraph 4.19. Check per (F) TO 38-1-23.	
(8)						1000	AC Alternator Brushes, Caps, Wires, and Holders (MEP-531A)	Check for worn alternator brushes. Length must be a minimum of 0.5 in. (1.3 cm). Check for damaged or missing brush caps, wires, and holders. Refer to paragraph 4.12.4.	Alternator brushes worn. Damaged or missing brush caps, wires, and holders.
(9)						20 (1st time) 500	Intake and Exhaust Valves	Adjust valve head clearance after the first 20 hours of operation and then every 500 hours. Refer to paragraph 4.12.10.	
(10)						500	Primary and Pre-filter Air Filter Elements	Replace air filter elements. Refer to paragraph 4.12.2.	

Table 4-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly Q-Quarterly S-Semi-annually A-Annually B-Bi-annually H-Hourly

(1) Item No.	(2) Interval						(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
	M	Q	S	A	B	H			
(11)						20 (1st time) 500	Cylinder Head Nuts	Check after first 20 hours of operation and then every 500 hours. Check for loose head nuts. Torque cylinder head nuts. Refer to paragraph 4.12.9.	Head nuts are loose.
(12)						1000	Fuel Injector	Replace every 1,000 hours. Refer to paragraph 4.12.3.	
(13)						1500	DC Alternator Brush Holder	Contact next higher level of maintenance to replace brush holder assembly.	
(14)						2000	Fuel Injection Pump	Contact next higher level of maintenance to replace fuel injection pump.	
(15)			•				Generator Set, Engine/Alternator, and Control Panel	Check for damage, corrosion, missing, or loose attaching hardware.	Damaged, corroded, missing, or loose hardware.
(16)			•				Fuel Lines	Inspect for breaks and/or damage. Replace damaged fuel lines.	Fuel lines leak or show signs of wear or damage.
(17)			•				Fuel Tank	Check for damaged, corroded, or missing fuel fill strainer, tank cap lug, and retaining rope.	Damaged, corroded, or missing components.
(18)			•				Alternator (MEP-501A)	Check for damaged flexible sleeve coupling and flexible flange couplings. Refer to paragraph 4.12.5.	Damaged alternator coupling components.
(19)			•				Control Panel (External)	Check for damaged, corroded, or missing convenience receptacle and cover (MEP-531A); LOP engine shutdown cable grommet and cable guide; and slave receptacle.	Damaged, corroded, or missing control panel components.
(20)			•				Control Panel (Internal)	Check for damaged terminal board jumper (MEP-531A) and ground straps, and damaged or burned wires and insulation on all electrical leads and harnesses. Ensure that protective cover on rear of instrument panel is secure.	Damaged control panel components.

Table 4-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly Q-Quarterly S-Semi-annually A-Annually B-Bi-annually H-Hourly

(1) Item No.	(2) Interval						(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
	M	Q	S	A	B	H			
(21)			•				Load Terminal Board (MEP-501A and Mechron Sets) EMI Filter (MEP-531A)	Check for damaged or corroded load terminals, load terminal board, and EMI filter load terminals. Check for damaged or missing retaining clips.	Damaged or corroded load terminals, terminal board, or EMI filter load terminals. Damaged or missing retaining clips.
(22)			•				Generator Set	Check ground strap for damage.	Damaged ground strap.
(23)			•				Low Oil Pressure (LOP) Engine Shutdown Cable	Check for damaged push-pull cable and tube. Check cable adjustment. Refer to paragraph 4.50.	Damaged or misadjusted LOP engine shutdown cable.
(24)			•				Air Preheater Lead	Check for damaged or missing tubing and protective boot; damaged or burned wires and insulation.	Damaged air preheater lead.
(25)			•				Engine Wiring Harness	Check for damaged, missing, corroded clamps; damaged or missing tubing and protective boot; and burned insulation.	Damaged, missing, or corroded engine wiring harness components.
(26)			•				Alternator Wiring Harnesses	Check for damaged, missing, corroded clamps; damaged or missing tubing and protective boot; and burned insulation.	Damaged, missing, or corroded generator wiring harness components.
(27)						2000	Resilient Mounts	Replace resilient mounts after 2000 hours. Refer to paragraph 4.12.6.	
(28)				•			Frame	Check for damage and corrosion.	Damaged or corroded frame.
(29)				•			Fuel System	Check for damaged or corroded fuel tank brackets and guard.	Damaged or corroded components.
(30)				•			Engine/Alternator	Check for damaged, corroded alternator guard, brackets, engine mounting bracket, and fuel filter stiffener.	Damaged or corroded components.
(31)				•			Air Intake System	Check for damaged or corroded air filter plate and air filter cover.	Damaged or corroded air intake components.

Table 4-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly Q-Quarterly S-Semi-annually A-Annually B-Bi-annually H-Hourly

(1) Item No.	(2) Interval M	Q	S	A	B	H	(3) Item To Be Inspected	(4) Procedure	(5) Equipment Is Not Ready/Available If:
(32)				•			Exhaust System	Check for damaged or corroded muffler and shroud; damaged or missing grommet; damaged muffler blanket; damaged, missing, or corroded retaining wire.	Damaged or corroded exhaust system components.
(33)				•			Alternator (MEP-531A and Mechron Sets)	Check for damaged engine adapter and damaged or corroded support bracket.	Damaged or corroded alternator components.
(34)				•			Control Panel	Check for damaged or missing panel mounts; panel housing; covers and hinges.	Damaged or missing control panel components.

4.12. DETAILED PREVENTIVE MAINTENANCE PROCEDURES.

4.12.1. Fuel Filter Element Replacement.

NOTE

For generator sets with the original Mechron configuration fuel filter assembly, use the replacement element, bowl, and o-ring listed in this manual.

a. Removal.

(1) Shut down generator set.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

(2) Close fuel shutoff valve.

(3) Unscrew retaining ring (Figure 4-2) and separate bowl and head using care not to spill diesel fuel trapped in bowl. Then pour diesel fuel into suitable container.

(4) Remove and discard fuel filter element and gasket.

b. Installation.

(1) Clean bowl with clean cloth (Item 4, Appendix E).

(2) Install new fuel filter element in bowl.

(3) Lubricate new gasket with clean diesel fuel and seat in land of bowl.

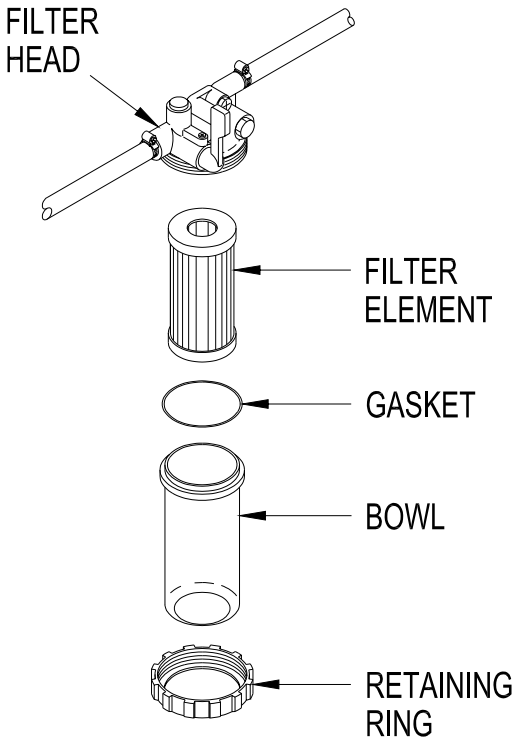


Figure 4-2. Fuel Filter Element Replacement

(4) Assemble bowl to head and hand-tighten retaining ring.

(5) Prime and bleed the fuel system. Refer to paragraph 2.7.c, steps 1 thru 3 only.

4.12.2. Air Filter Element Replacement.

a. Removal.

(1) Shut down generator set.

(2) Remove wing nut (Figure 4-3), cover, and filter element with pre-filter.

(3) Remove pre-filter from filter element.

(4) If necessary, remove gaskets from mounting plate and cover. Clean adhesive residue from surfaces.

b. Inspection/Cleaning.

(1) Inspect cover for cleanliness, cracks and other damage. Clean cover with mild soap and water.

(2) Inspect filter element for cleanliness, dents, and crushed corrugations.

(3) Replace damaged parts.

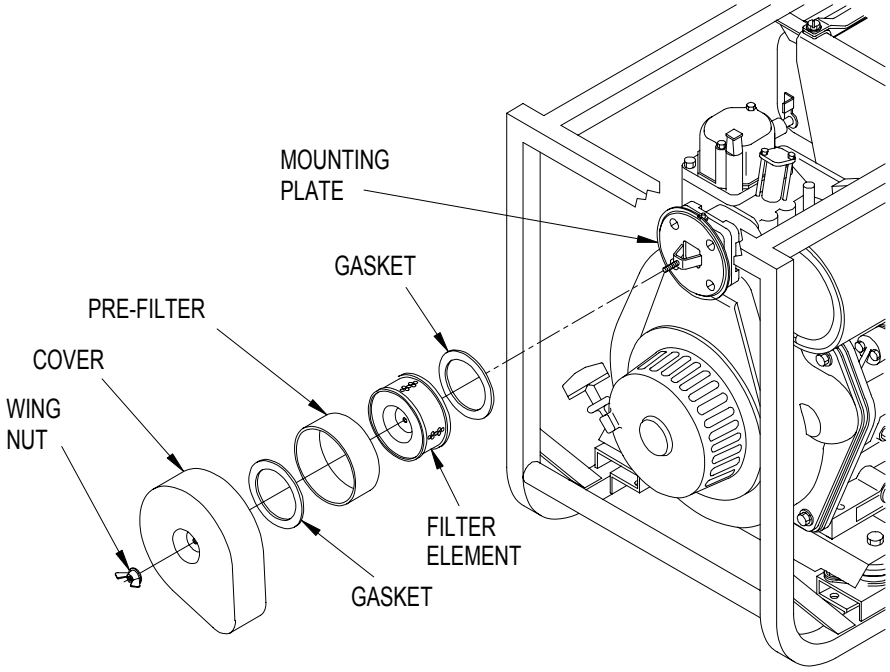


Figure 4-3. Air Filter Elements

(4) Replace filter element if dirty.

(5) Replace pre-filter.

c. Installation.

(1) If removed, install new gaskets (Figure 4-3) on mounting plate and cover.

(2) Soak new pre-filter in clean engine oil (Item 14, Appendix E) and squeeze out ALL excess oil.

(3) Install pre-filter over filter element. Pre-filter should fit snugly over filter element.

(4) Position filter element with pre-filter and cover on mounting plate.

(5) Install wing nut.

4.12.3 Fuel Injector Replacement.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

a. Removal.

(1) Shut down generator set.

(2) Disconnect pressure and return fuel lines from fuel injector (Figure 4-4).

(3) Remove nuts and retainer from cylinder head.

CAUTION

To prevent damage to nozzle tip, wrap fuel injector in a clean cloth after removal. Do not place unprotected nozzle tip directly on dirty surface.

(4) Pull fuel injector straight out of cylinder head, wrap in clean cloth, and remove spacer and gasket. If gasket (black plastic) remains in cylinder head, use a bolt (5/16 in. diameter) that will thread into gasket to remove.

b. Inspection.

(1) Inspect injector for nicks, cracks, scoring, corrosion, and other damage.

(2) Inspect nozzle tip for carbon deposits. Carefully clean deposits from nozzle body and clean nozzle injection ports with 0.019 in. diameter wire (Item 21, Appendix E).

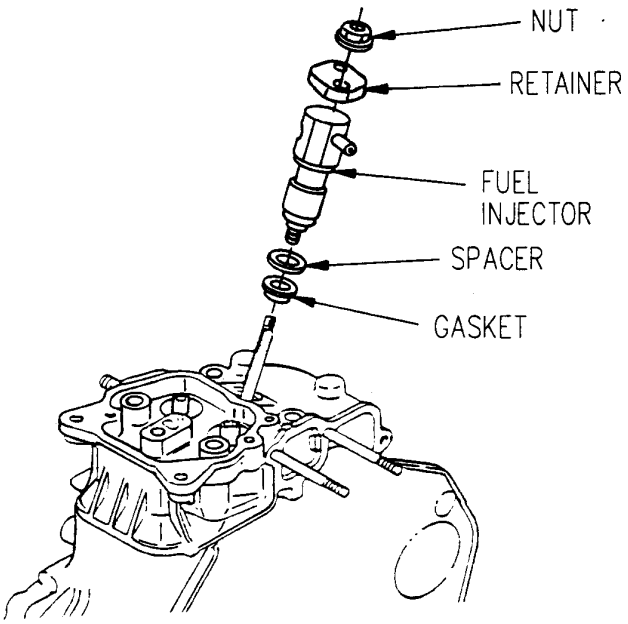


Figure 4-4. Fuel Injector Replacement

c. Installation.

(1) Clean fuel injector sleeve surface in cylinder head.

(2) Install new gasket (Figure 4-4), spacer, and fuel injector in cylinder head.

NOTE

Ensure fuel injector is positioned to connect pressure fuel line prior to securing in cylinder head.

(3) Secure fuel injector in cylinder head with retainer and nuts. Torque nuts evenly to 7-9 lbs-ft (9-12 Nm).

(4) Connect pressure and return fuel lines. Bleed fuel system if necessary, refer to paragraph 2.7.c.

4.12.4. Alternator Brushes Inspection. (MEP-531A)

a. Removal.

(1) Shut down generator set.

(2) Remove control panel assembly, refer to paragraph 4.20.b.

(3) Remove capscrews (Figure 4-5), lockwashers, and guard from alternator.

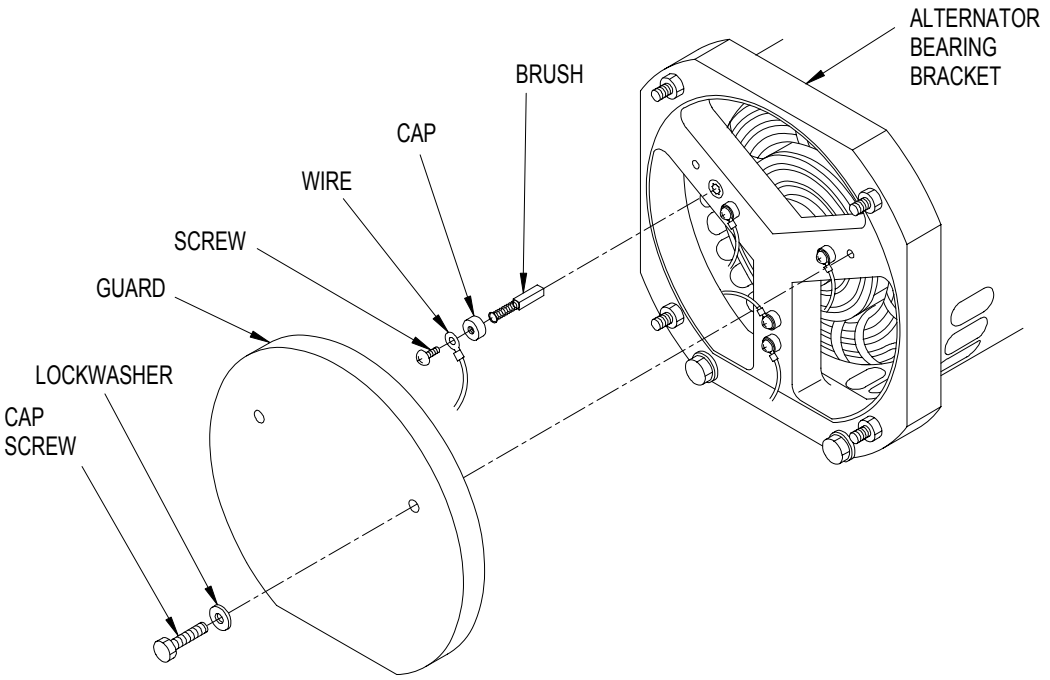


Figure 4-5. AC Alternator Brushes

(4) Tag stator wires and brush wires connected by screws.

(5) Remove screws and brush wires, and disconnect stator wires from bearing bracket.

(6) Unscrew brush caps and lift brushes out gently.

b. Inspection.

(1) Inspect brush wires for security of terminals, cracked insulation, and other damage.

(2) Inspect brush caps for cracks and stripped threads.

(3) Measure brush length [0.875-0.50 in. (2.2-1.3 cm)].

(4) Replace damaged or worn parts.

c. Installation.

NOTE

Always replace brushes in sets.

(1) Insert brushes in bearing bracket and secure with brush caps.

(2) Connect stator wires and brush wires with screws. Remove tags.

(3) Install guard on alternator with lockwashers and capscrews. Cross tighten capscrews to 6 lbs-ft (8.2 Nm).

(4) Install control panel assembly, refer to paragraph 4.20.d.

4.12.5. Alternator Flexible Coupling Inspection. (MEP-501A)

a. Removal.

(1) Shut down generator set.

(2) Remove control panel assembly, refer to paragraph 4.20.b.

(3) Remove capscrews (Figure 4-6), lockwashers, washers, and guard from engine adapter.

(4) Support rear of alternator. Then remove self-locking nuts, washers, capscrews, and ground strap, securing alternator to engine adapter. Carefully remove alternator and sleeve coupling.

b. Inspection.

(1) Inspect sleeve coupling for damage and wear. Replace sleeve coupling if damaged or worn.

(2) Inspect flexible flange couplings on alternator and engine crankshaft for damage and wear. If damaged or worn, refer to next higher level of maintenance.

c. Installation.

(1) Position and support alternator (Figure 4-6) with sleeve coupling to engine adapter. Ensure that external teeth on sleeve coupling engage the internal teeth of alternator and engine crankshaft flexible flange couplings.

(2) Secure alternator to engine adapter with capscrews, washers, and new self-locking nuts ensuring that ground strap is secured under capscrew head on right side. Torque self-locking nuts to 18 lbs-ft (24.4 Nm).

(3) Install guard with capscrews, lockwashers, and washers.

(4) Install control panel assembly, refer to paragraph 4.20.d.

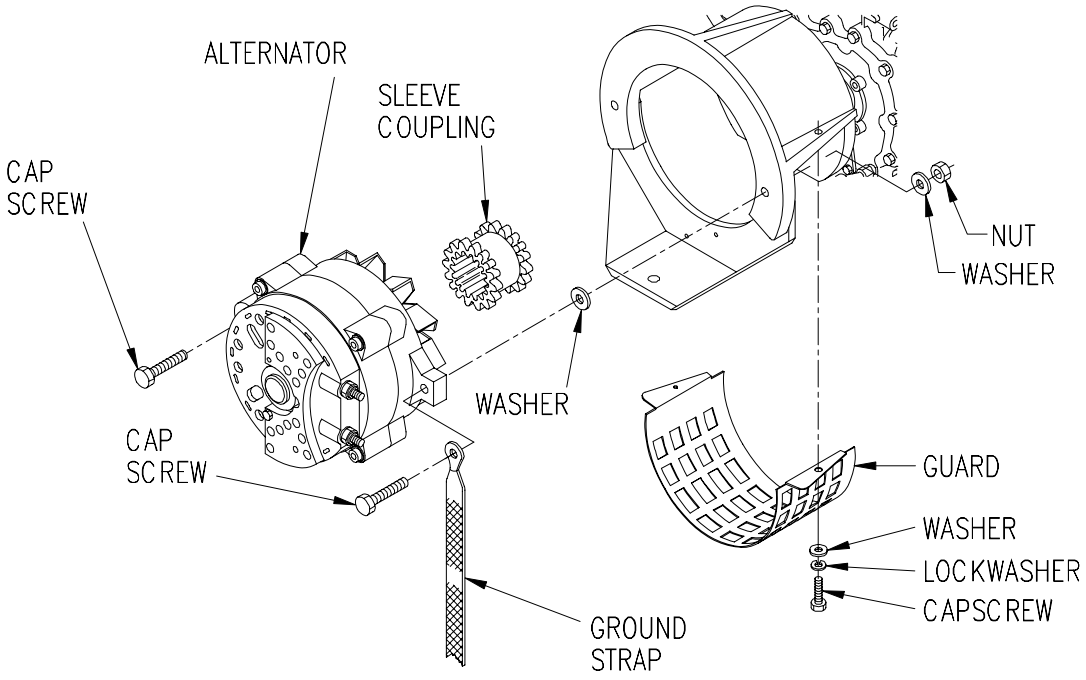


Figure 4-6. Alternator Flexible Coupling (MEP-501A)

4.12.6. Engine Resilient Mounts Replacement.

a. Removal.

(1) Shut down generator set.

(2) Remove capscrews (Figure 4-7), lockwashers, and washers securing resilient mounts to engine support bracket.

(3) Remove capscrew, lockwasher, and washer securing ground strap to side of engine crankcase.

CAUTION

Use caution not to lift engine so high that fuel line from fuel tank to fuel filter stretches and breaks.

(4) Lift engine, with support bracket, approximately 1-1½ inches and insert block under engine to hold in position.

(5) Remove nuts, lockwashers, washers, ground strap, and capscrews with washers securing resilient mounts to generator set frame. Then remove and discard resilient mounts.

b. Installation.

(1) Position new resilient mounts on generator set frame and secure with capscrews, washers, lockwashers, and nuts ensuring engine ground strap is installed under left rear nut and washers. Torque nuts to 17 lbs-ft (23 Nm).

(2) Remove block and lower engine while aligning holes in engine support bracket with resilient mounts.

(3) Secure engine support bracket to resilient mounts with capscrews, washers, and lockwashers. Torque capscrews to 17 lbs-ft (23 Nm).

(4) Secure ground strap on side of engine crankcase with capscrew, lockwasher, and washer.

4.12.7. Alternator Resilient Mount Replacement. (MEP-531A)

a. Removal.

(1) Shut down generator set.

(2) Remove nuts (Figure 4-7), lockwashers, capscrews with washers, and ground strap securing alternator-to-alternator bracket.

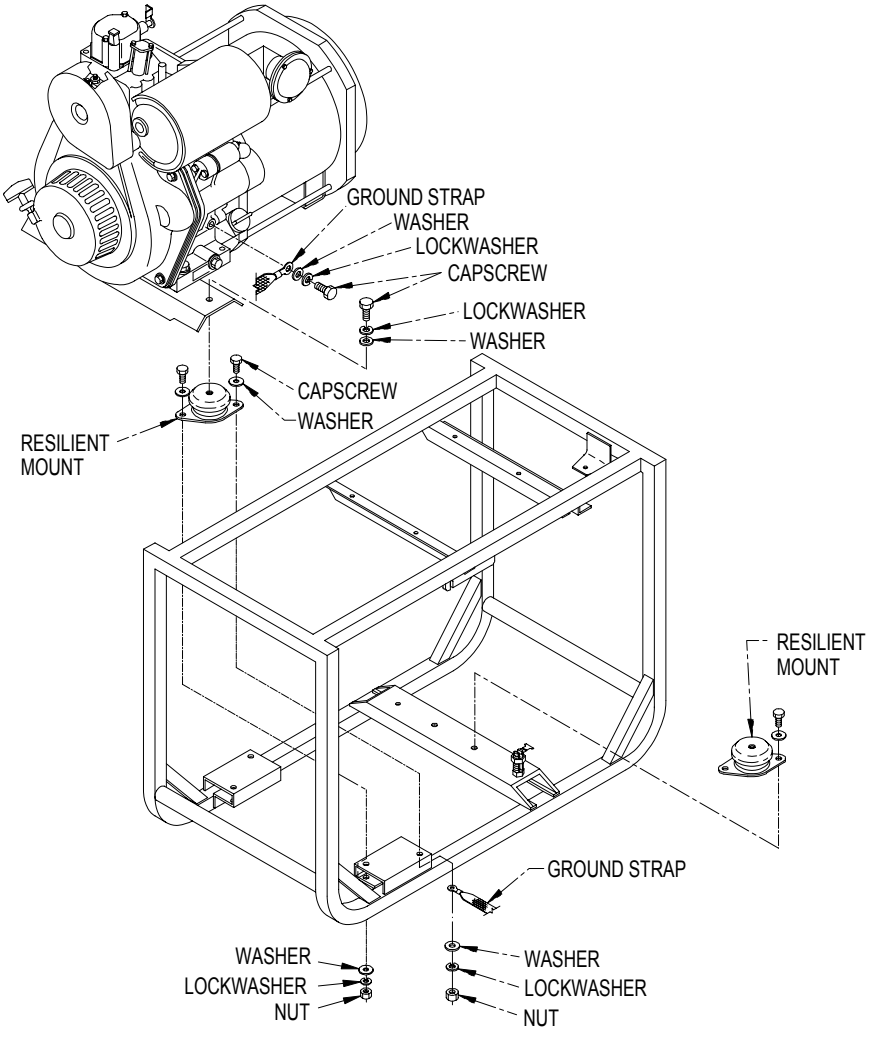


Figure 4-7. Resilient Mounts

CAUTION

Use caution not to lift alternator so high that fuel line from fuel tank to fuel filter stretches and breaks, or alternator wiring harness is damaged.

(3) Lift alternator approximately 1-1½ inches and insert block under alternator to hold in position.

(4) Remove nuts, lockwashers, washers and capscrews securing diesel engine resilient mount and ground strap to generator set frame. Then, remove and discard resilient mount.

(5) Remove capscrew, washer, and lockwasher securing resilient mount to alternator bracket. Then remove and discard resilient mount.

b. Installation.

(1) Install new resilient mount on alternator bracket with capscrew, washer, and lockwasher. Torque capscrew to 17 lbs-ft (23 Nm).

(2) Install new resilient mount and ground strap with alternator bracket on generator set frame with capscrews, washers, lockwashers, and nuts. Torque nuts to 17 lbs-ft (23 Nm).

(3) Remove block and lower alternator onto alternator bracket. Secure alternator to alternator bracket with capscrews, washers, lockwashers, and nuts ensuring alternator ground strap is installed under head of right capscrew and washers.

4.12.8. Alternator Resilient Mount Replacement. (MEP-501A)

a. Removal.

(1) Shut down generator set.

(2) Remove capscrew (Figure 4-8), washer, and lockwasher securing alternator support bracket to resilient mount.

CAUTION

Use caution not to lift alternator so high that fuel line from fuel tank to fuel filter stretches and breaks, or alternator wiring harness is damaged.

(3) Lift alternator approximately 1-1½ inches and insert block under alternator to hold in position.

(4) Remove nuts, lockwashers, washers and capscrews securing diesel engine resilient mount to generator set frame. Then remove and discard resilient mount.

b. Installation.

(1) Install new resilient mount on generator set frame with capscrews, washers, lockwashers, and nuts. Torque nuts to 17 lbs-ft (23 Nm).

(2) Remove block and lower alternator while aligning holes in alternator support bracket with resilient mount.

(3) Secure alternator support bracket to resilient mount with capscrew, washer, and lockwasher. Torque capscrew to 17 lbs-ft (23 Nm).

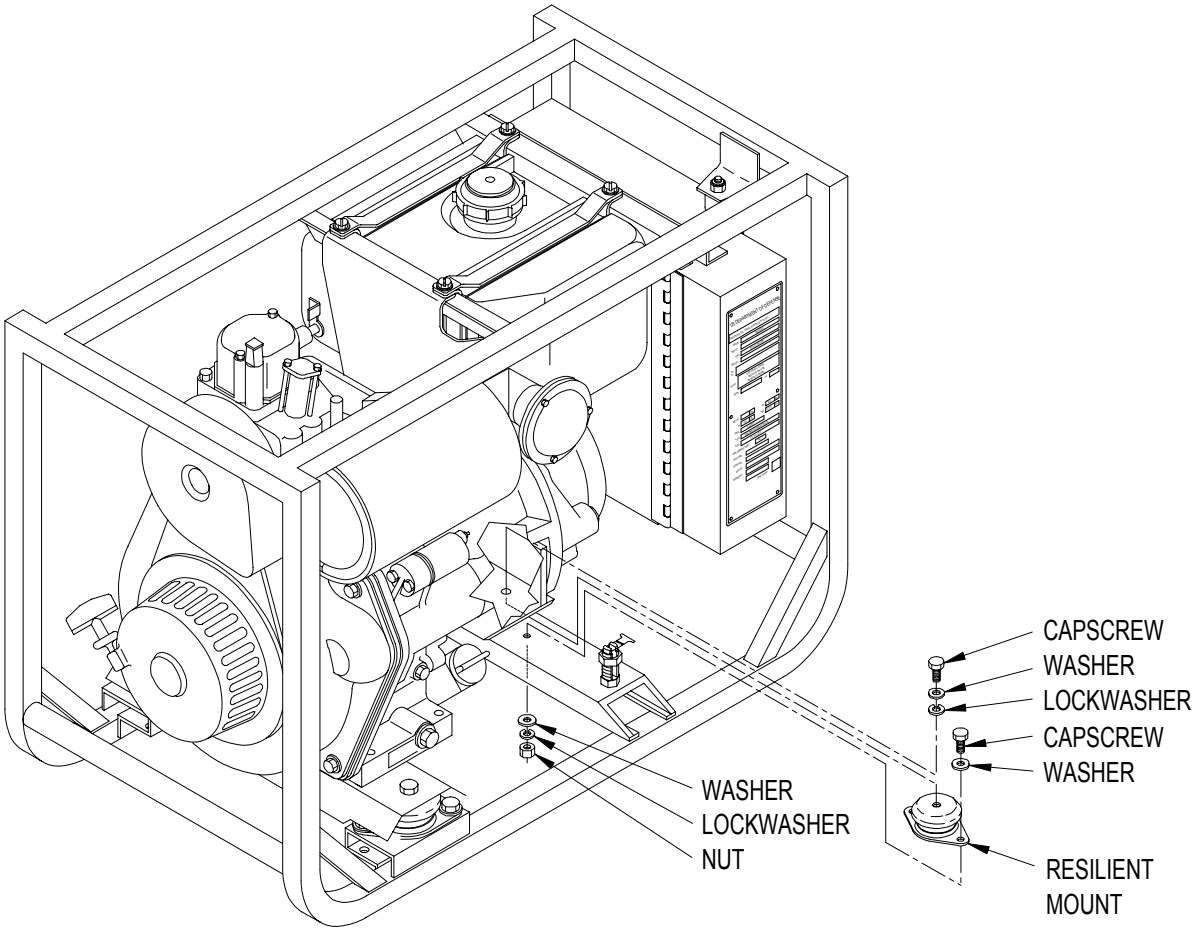


Figure 4-8. Alternator Resilient Mount (MEP-501A)

4.12.9 Cylinder Head Nuts Tightening.

a. Shut down generator set.

b. Remove bolts securing valve cover (Figure 4-9). Then remove valve cover with gasket.

c. Back off fuel line connecting nut from fuel injector. Do not disconnect line.

d. Loosen cylinder head nuts, then cross torque cylinder head nuts to 20-23 lbs-ft (27-31 Nm).

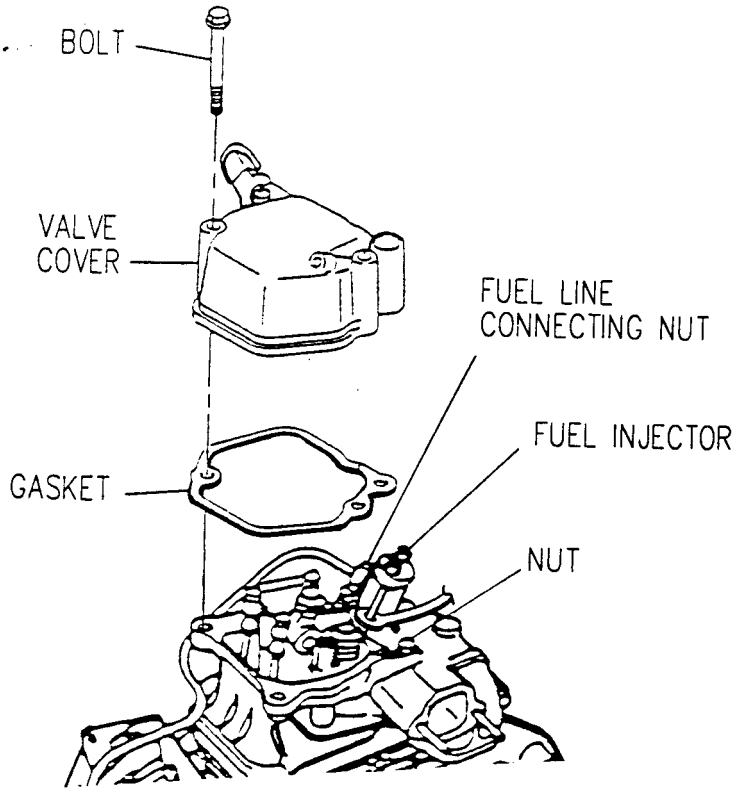


Figure 4-9. Torquing Cylinder Head Nuts

e. Install gasket and valve cover on cylinder head with bolts.

f. Tighten fuel line connecting nut and bleed fuel system if necessary, refer to paragraph 2.7.c.

4.12.10. Intake and Exhaust Valve Adjustment.

NOTES

Perform valve adjustment when engine is cold.
Procedure is the same for intake and exhaust valve.

a. Remove bolts securing valve cover. Then remove valve cover with gasket.

b. Remove cooling fan cover, refer to paragraph 4.53.b.

c. Align T mark on flywheel with V notch on cylinder body fin, refer to Figure 4-10. Ensure both valves are fully closed (both rocker arms have free play).

d. Loosen nut for adjusting screw and adjust screw until correct clearance [0.006 in. (0.15 mm)] is achieved between rocker arm and valve cap, refer to Figure 4-11.

e. Tighten nut and recheck that clearance is correct.

f. Install gasket and valve cover on cylinder head with bolts.

g. Install cooling fan cover, refer to paragraph 4.53.d.

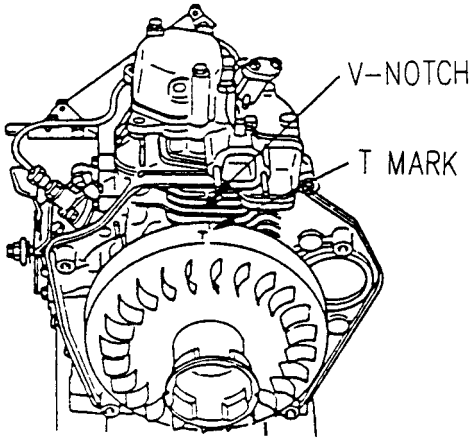


Figure 4-10. T Position Mark

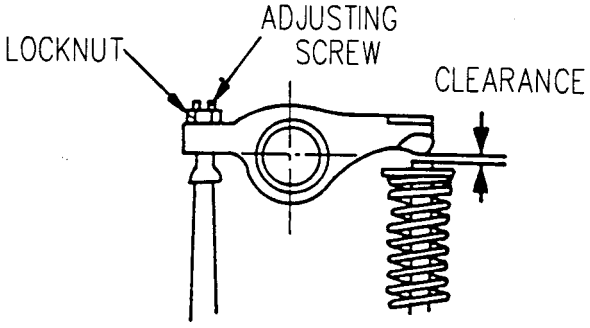


Figure 4-11. Valve Adjustment

Section V. TROUBLESHOOTING

4.13. UNIT TROUBLESHOOTING PROCEDURES.

4.13.1. Purpose of Logic Tree Table.

This section contains troubleshooting information for locating and correcting operating troubles which may develop in the generator set. Each malfunction listed for an individual component, unit, or system is followed by a go-no-go troubleshooting procedure that may help you determine what caused the trouble. Corrective action is provided to help you remedy the problem. If a malfunction is not listed or cannot be corrected by listed corrective actions, notify your supervisor.

NOTE

Before you use these procedures, be sure that all operator and Unit level PMCS procedures have been performed.

NOTE

Ensure operator level troubleshooting has been performed prior to performing unit level troubleshooting.

NOTE

Refer to the Electrical Schematic Figure FO-1 (MEP-531A), Figure FO-2 (MEP-501A), Figure FO-5 (Mechron 120 VAC), or Figure FO-6 (Mechron 28 VDC) and Wiring Diagram Figure FO-3 (MEP-531A) or Figure FO-4 (MEP-501A) as troubleshooting aids.

4.13.2. Symptom Index.

Table 4-2. Diesel Engine Will Not Start (Manual Starting) Troubleshooting

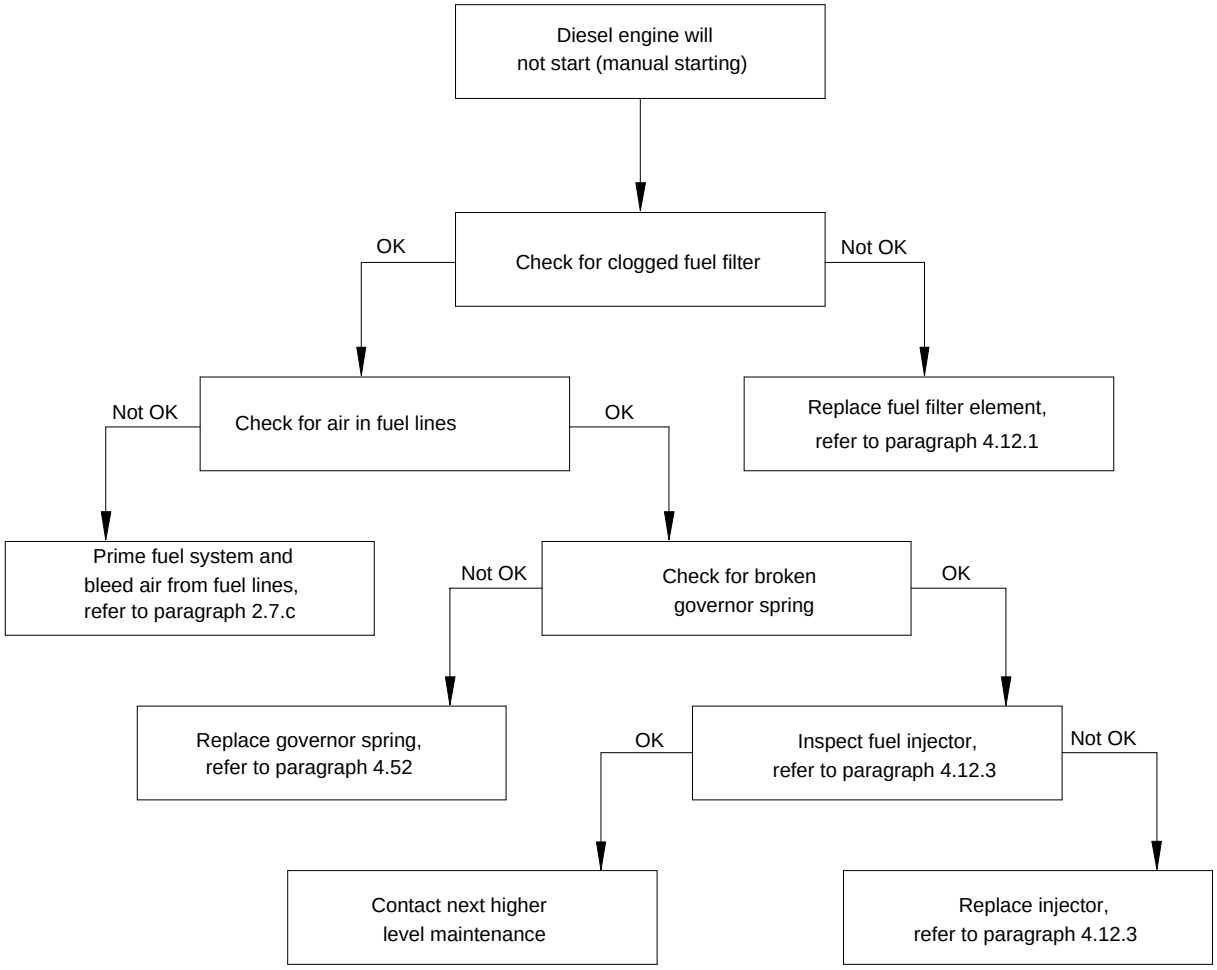


Table 4-3. Diesel Engine Will Not Start (Electric Starting) Troubleshooting (Sheet 1 of 2)

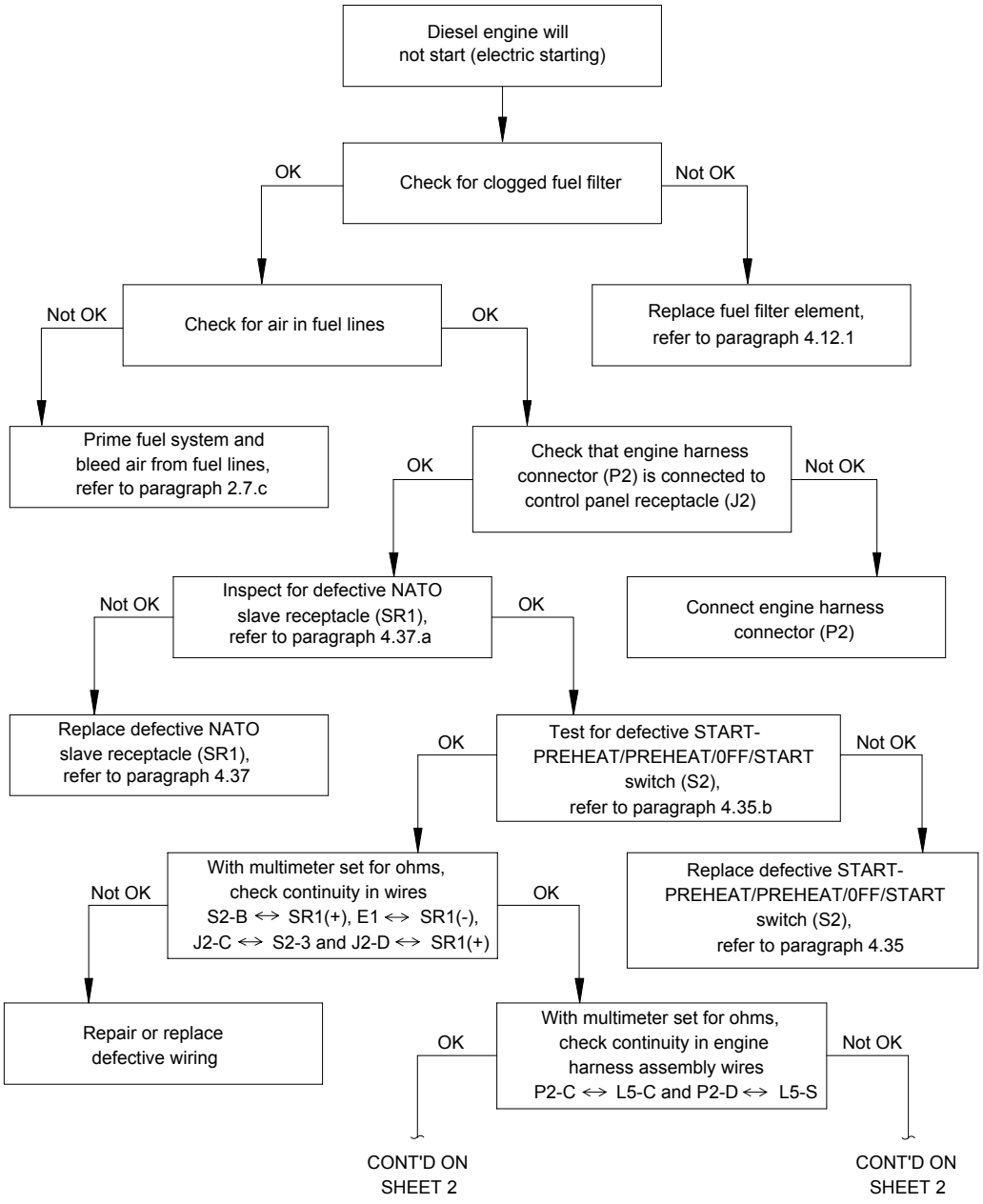


Table 4-3. Diesel Engine Will Not Start (Electric Starting) Troubleshooting (Sheet 2 of 2)

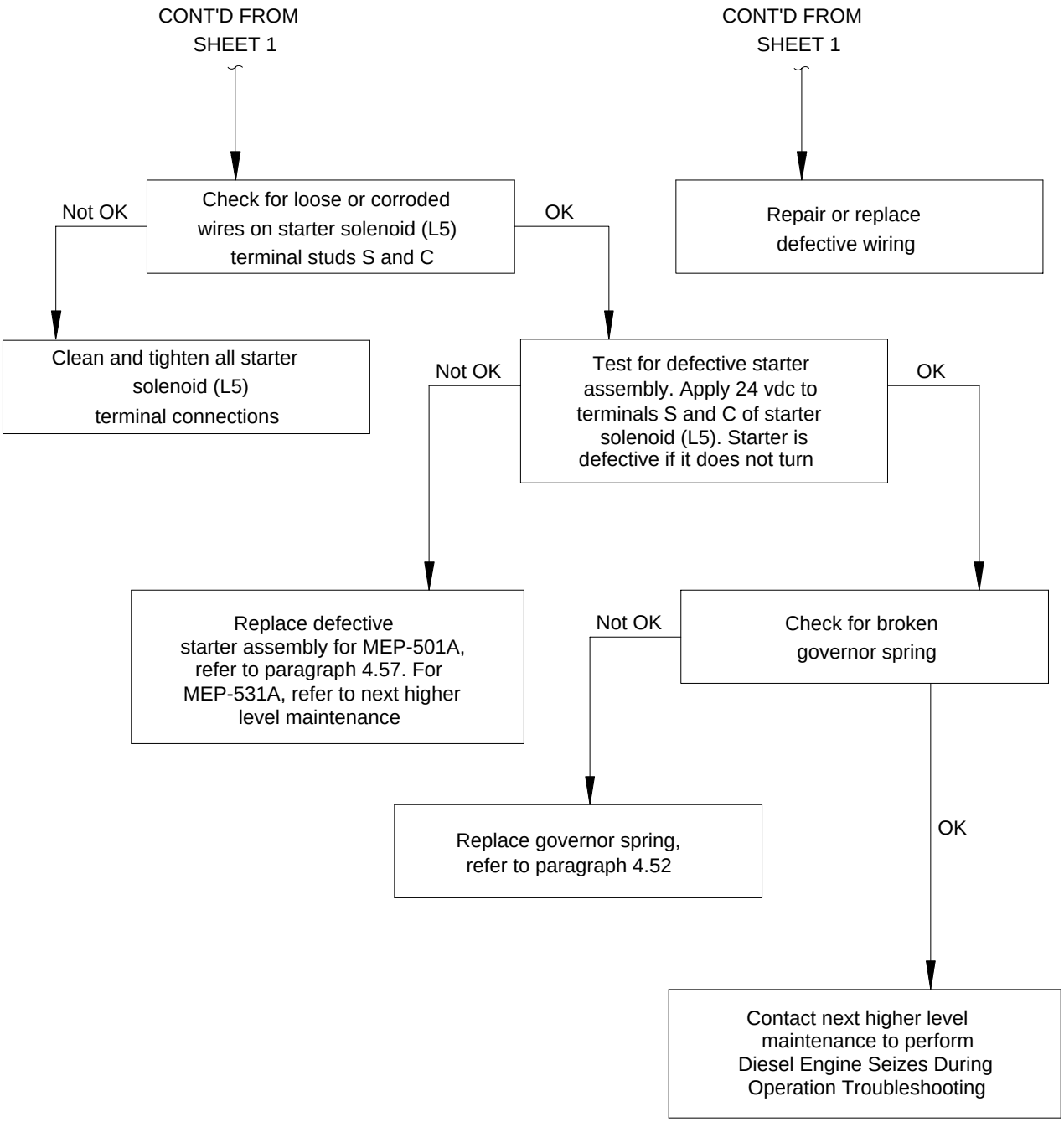


Table 4-4. Diesel Engine Hard To Start Troubleshooting

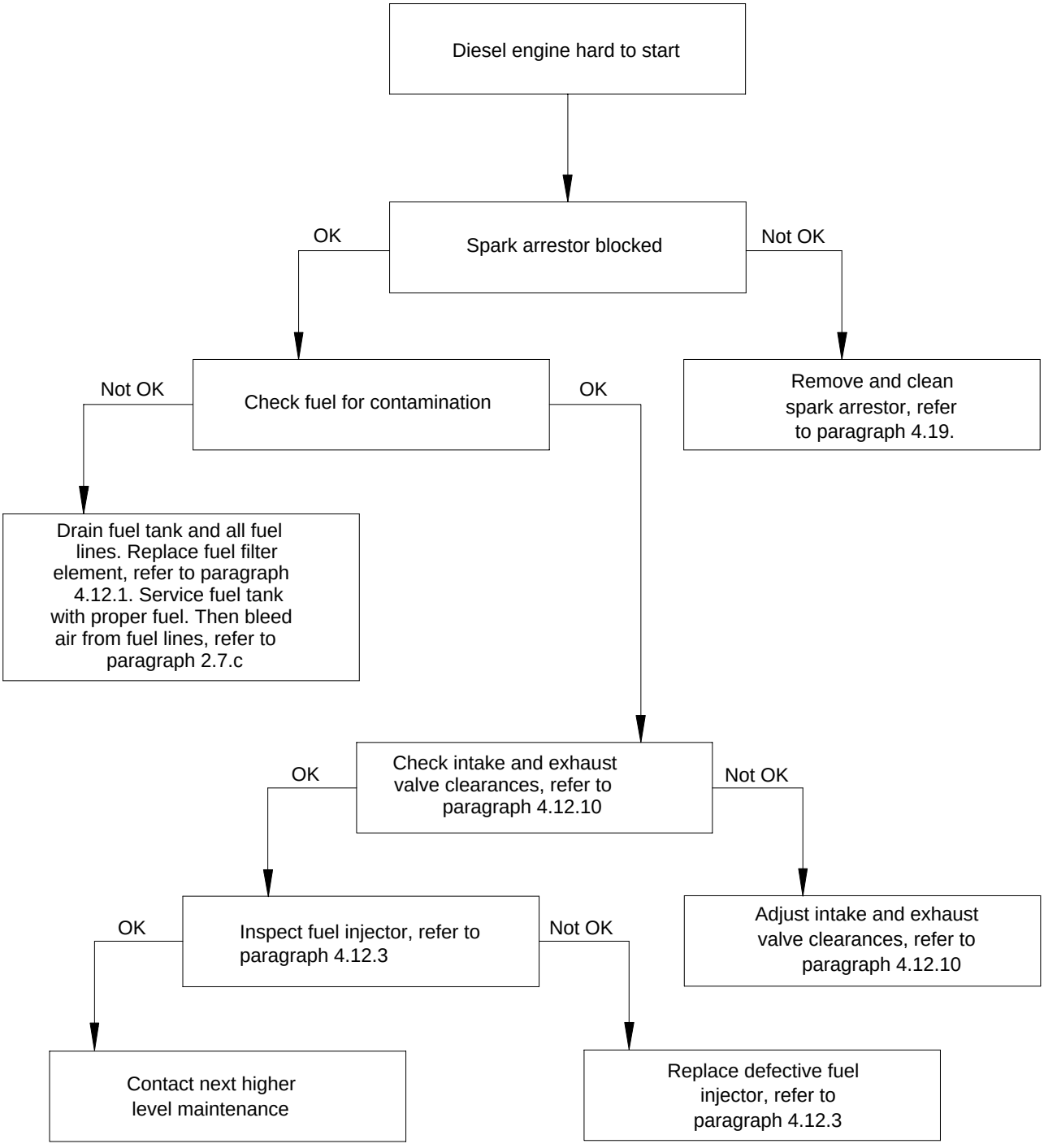


Table 4-5. Diesel Engine Starts But Fails to Keep Running Troubleshooting

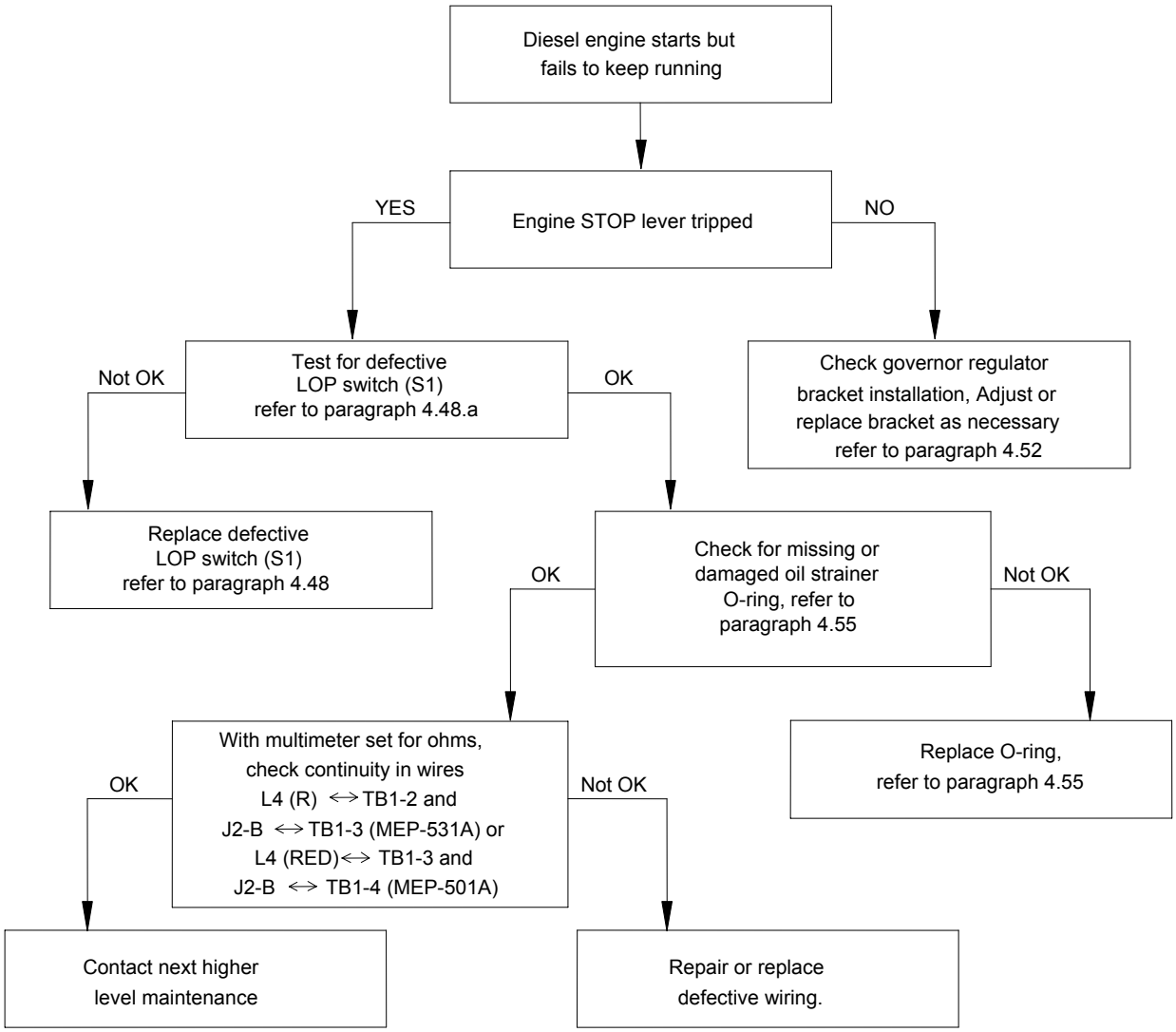


Table 4-6. Diesel Engine Runs Erratic Troubleshooting (Sheet 1 of 2)

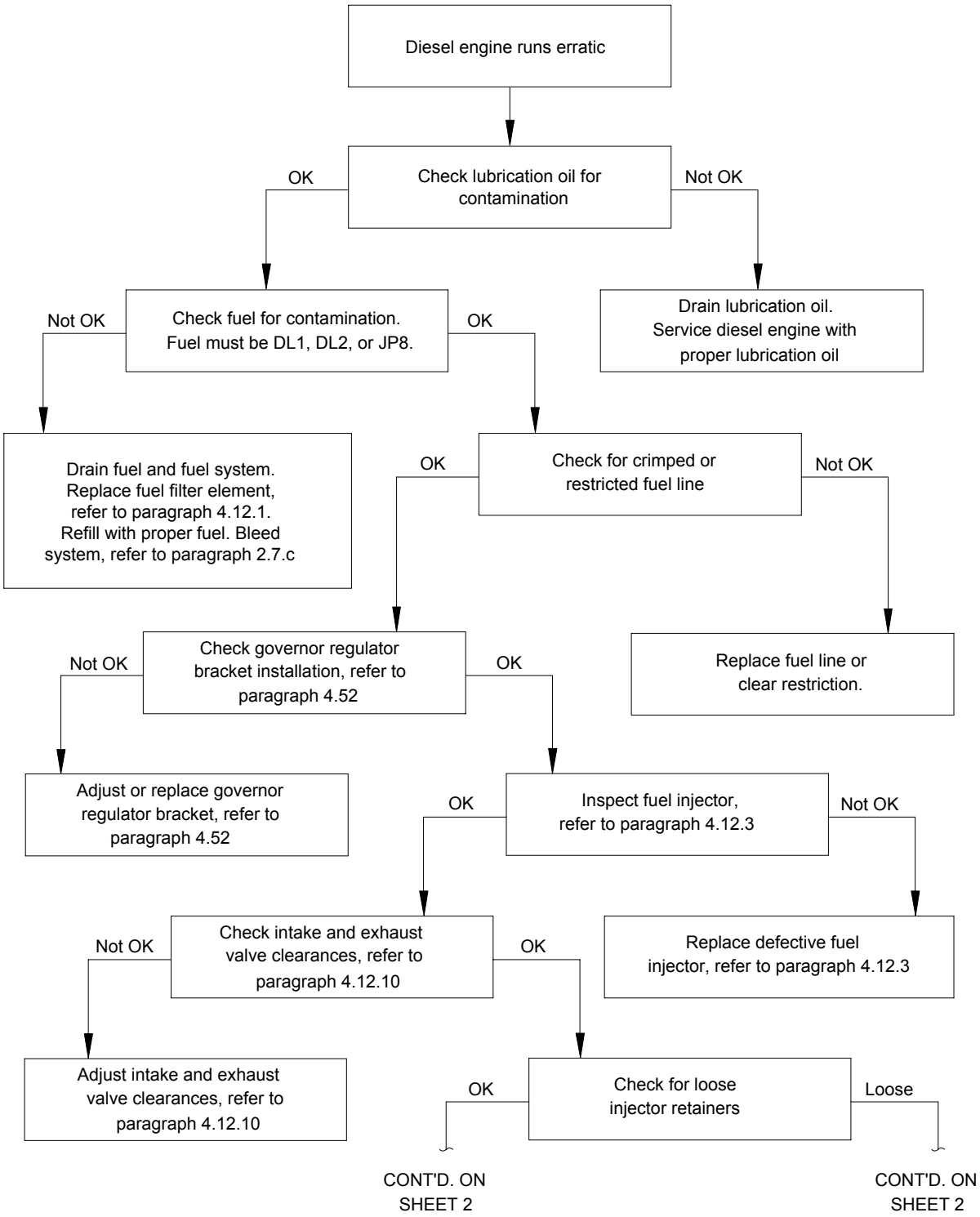


Table 4-6. Diesel Engine Runs Erratic Troubleshooting (Sheet 2 of 2)

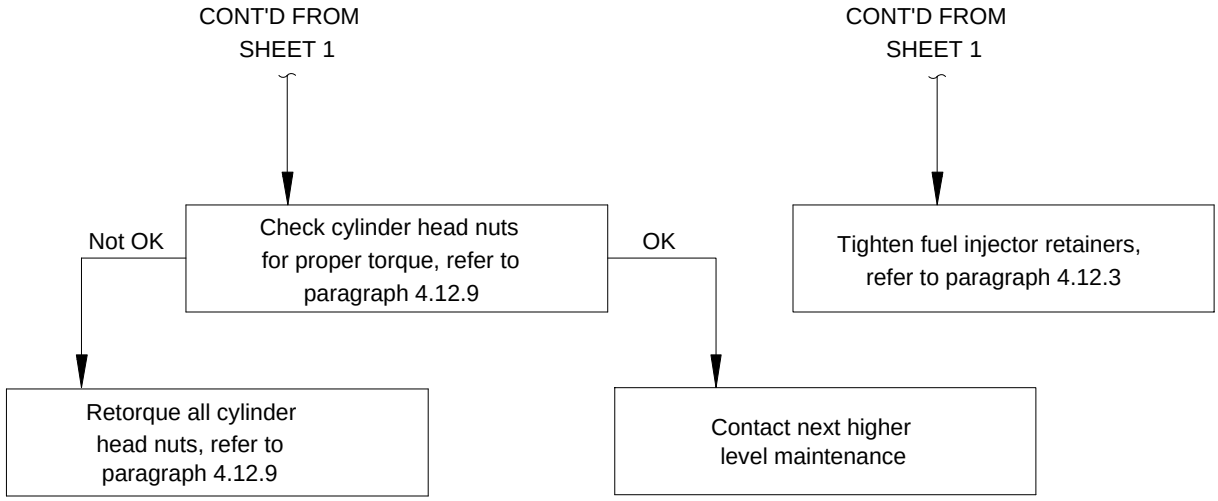


Table 4-7. Unexpected Reverse Rotation at Startup Troubleshooting

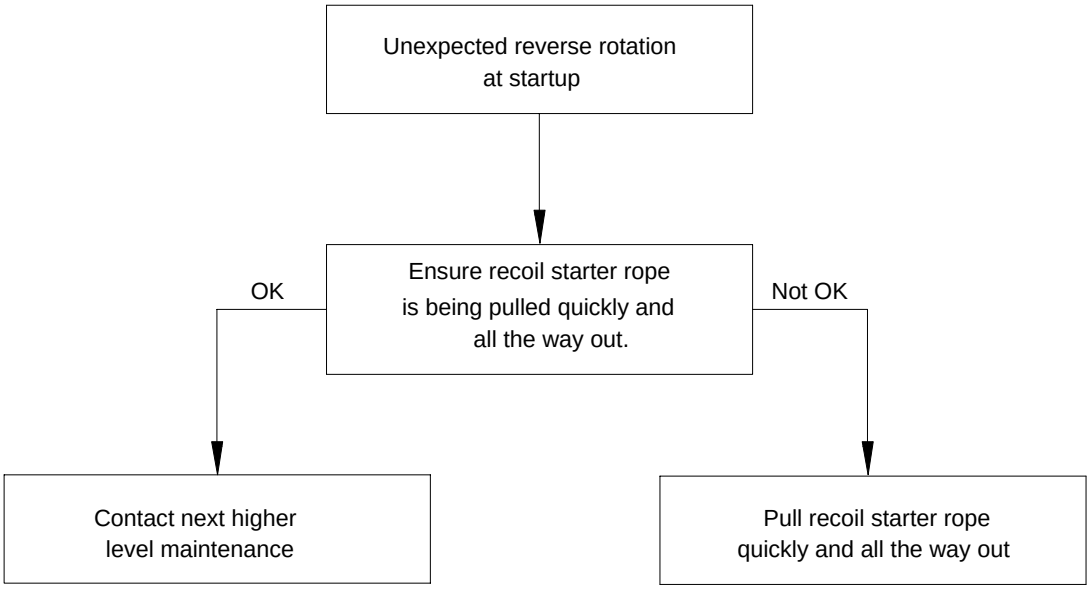


Table 4-8. Diesel Engine Stops During Operation Troubleshooting (Sheet 1 of 2)

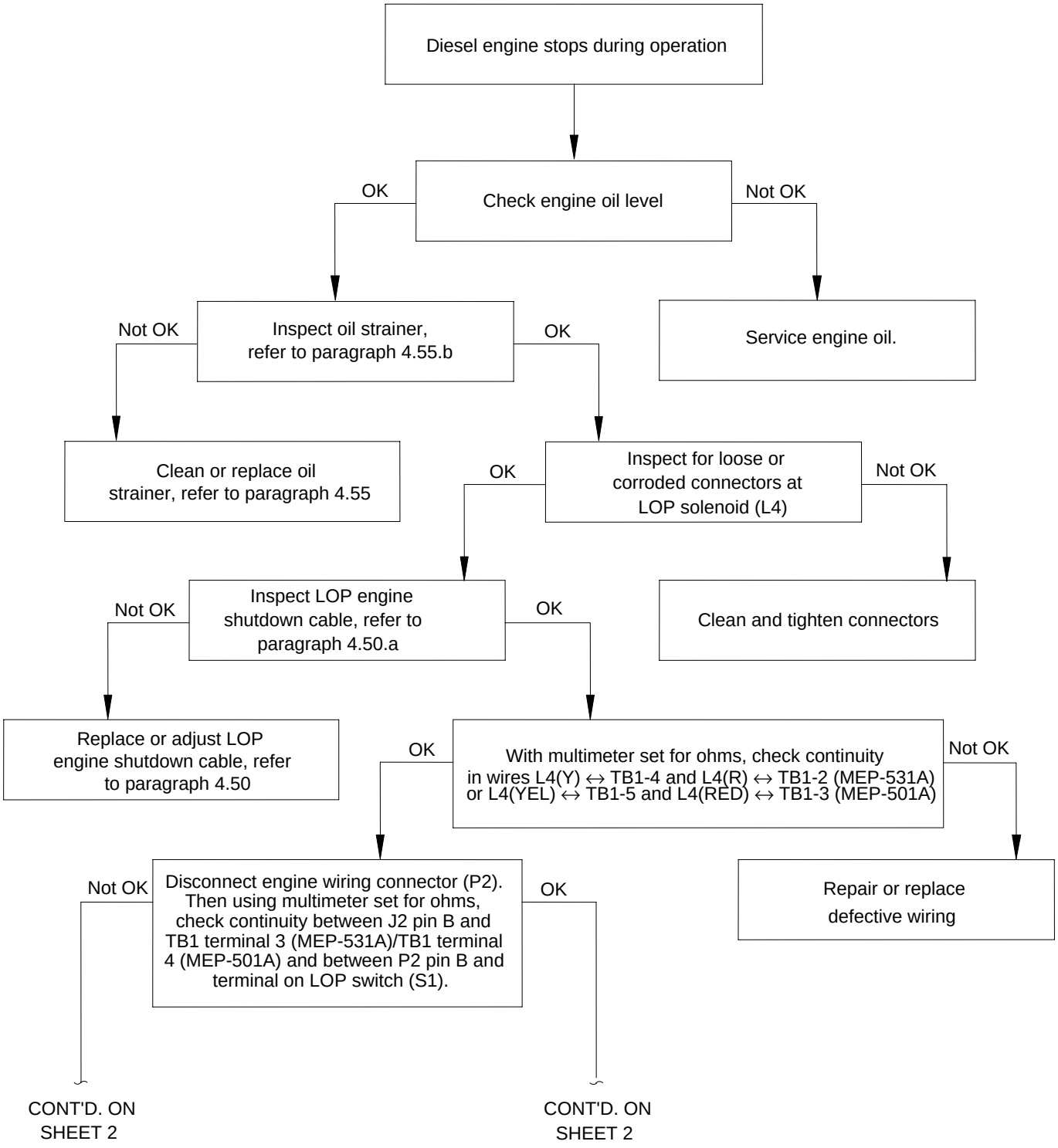


Table 4-8. Diesel Engine Stops During Operation Troubleshooting (Sheet 2 of 2)

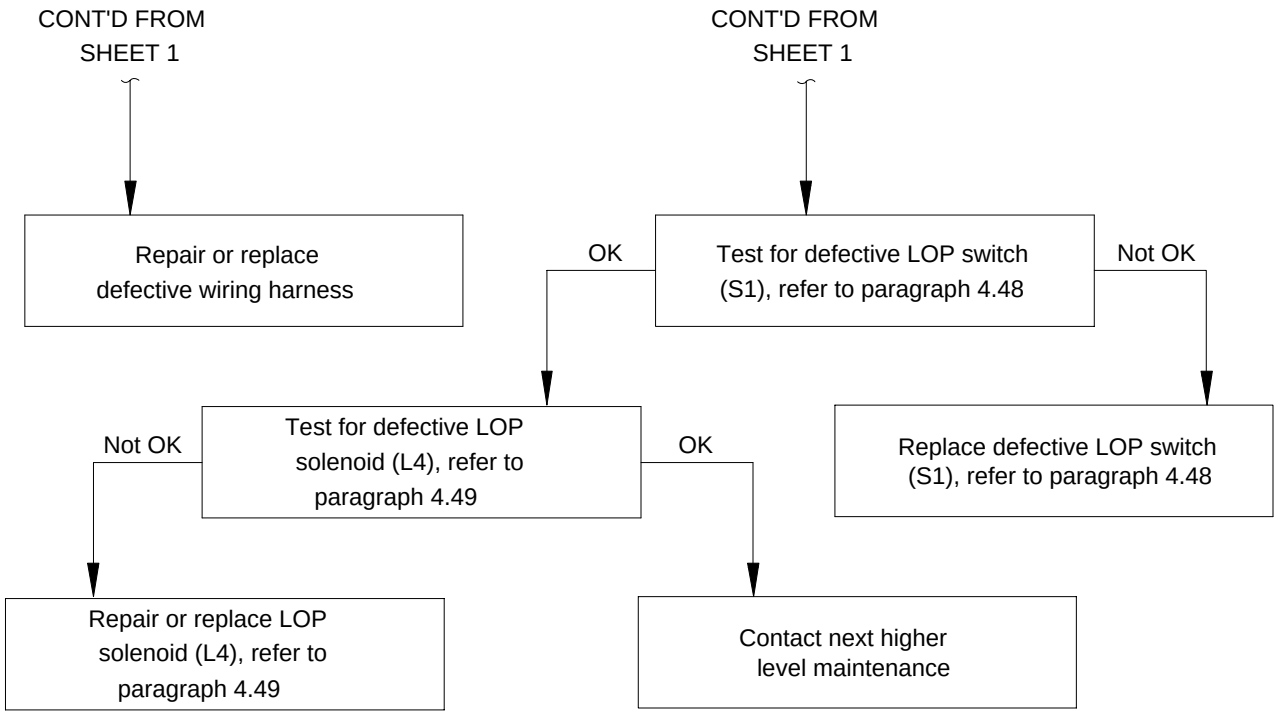


Table 4-9. Diesel Engine Exhausts Black Smoke Troubleshooting

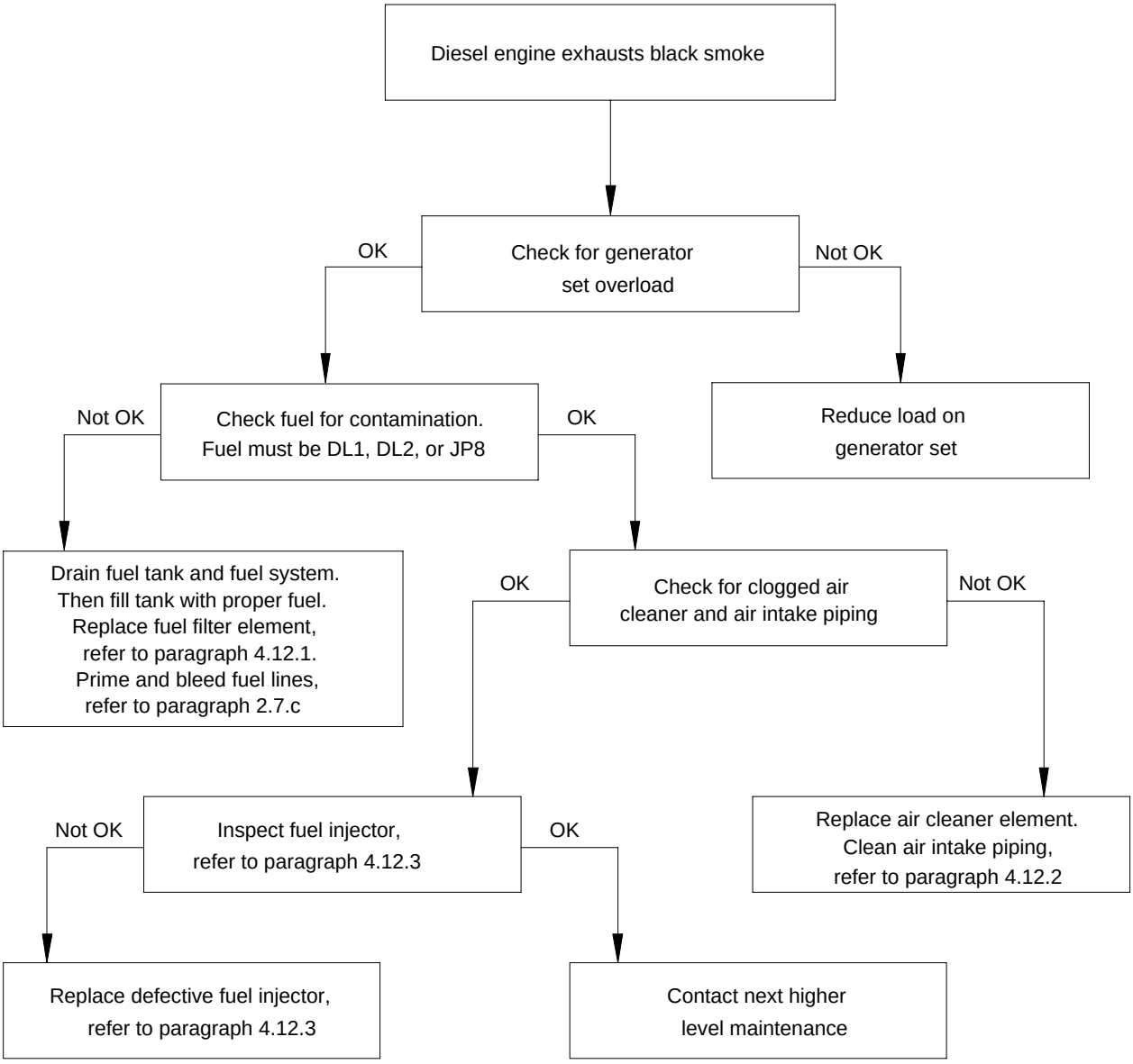


Table 4-10. Diesel Engine Exhausts Blue-White Smoke Troubleshooting

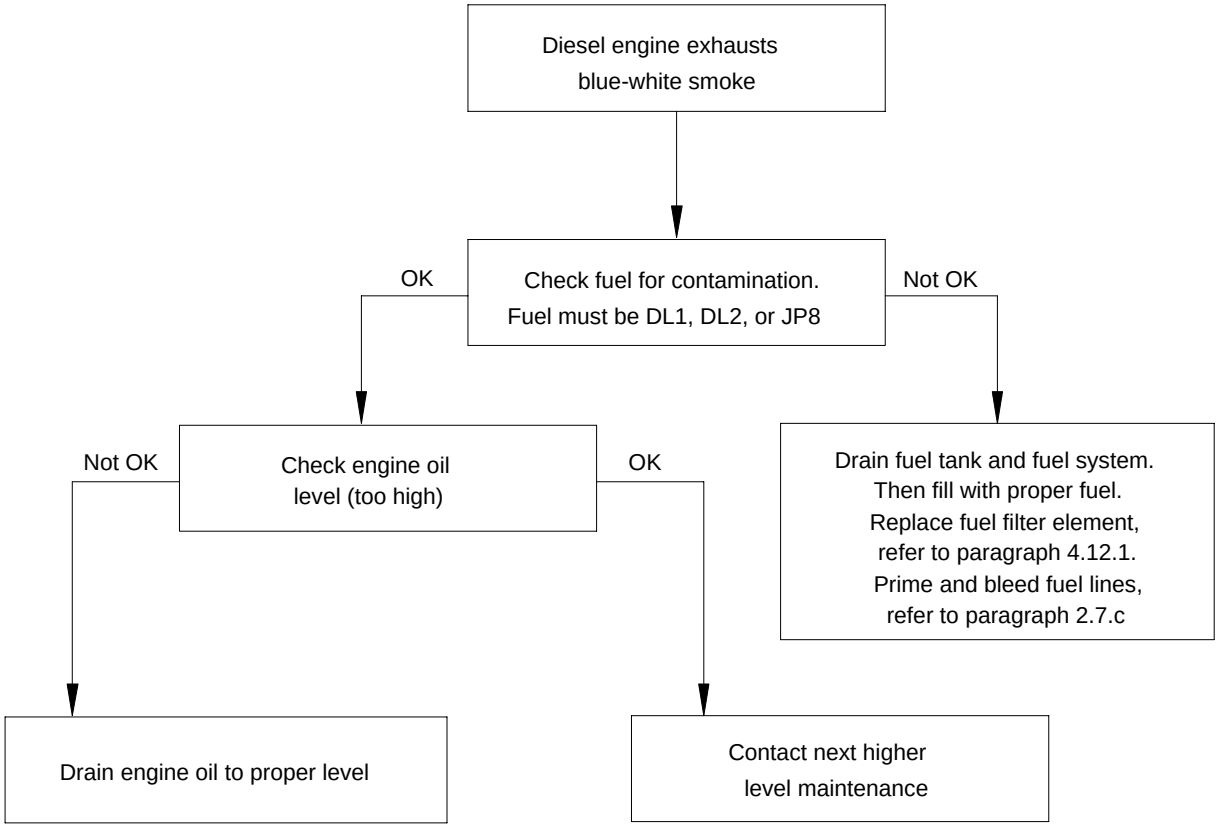


Table 4-11. Recoil Start Rope Hard to Pull Troubleshooting

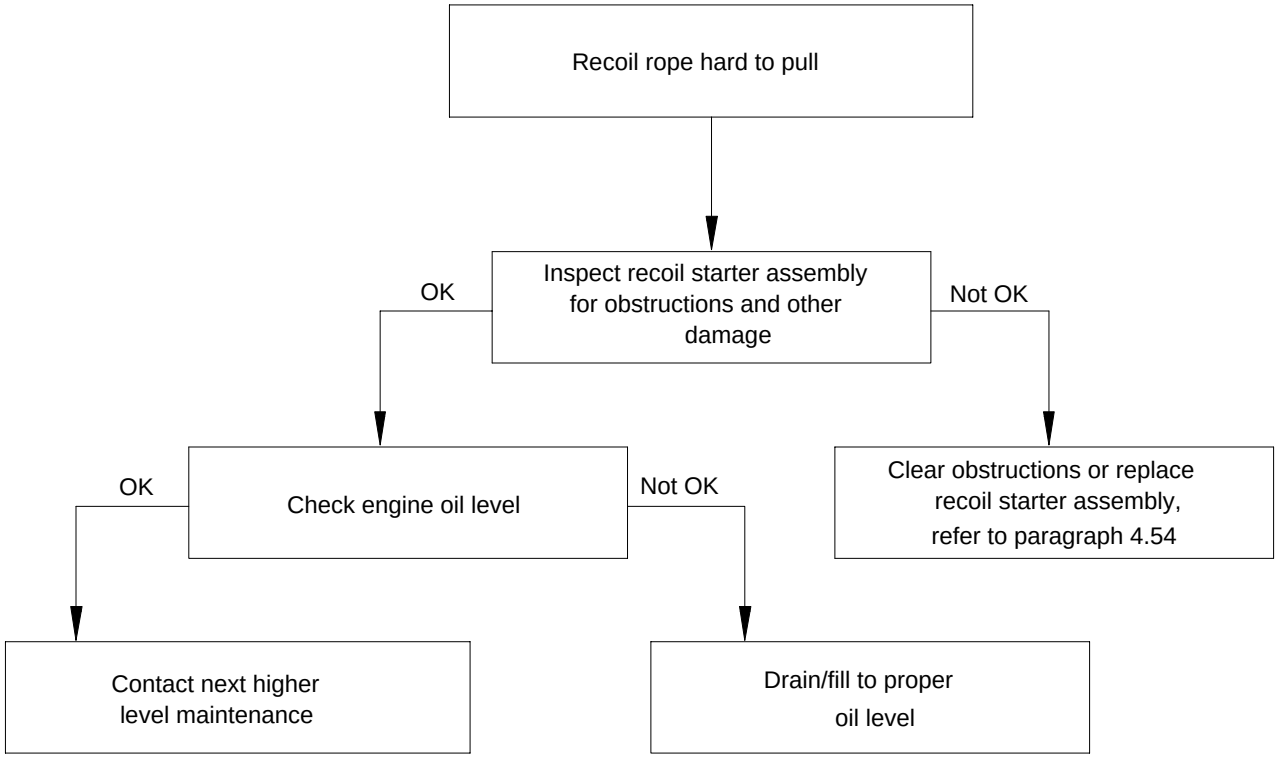


Table 4-12. Voltage Output Drops (MEP-531A) Troubleshooting

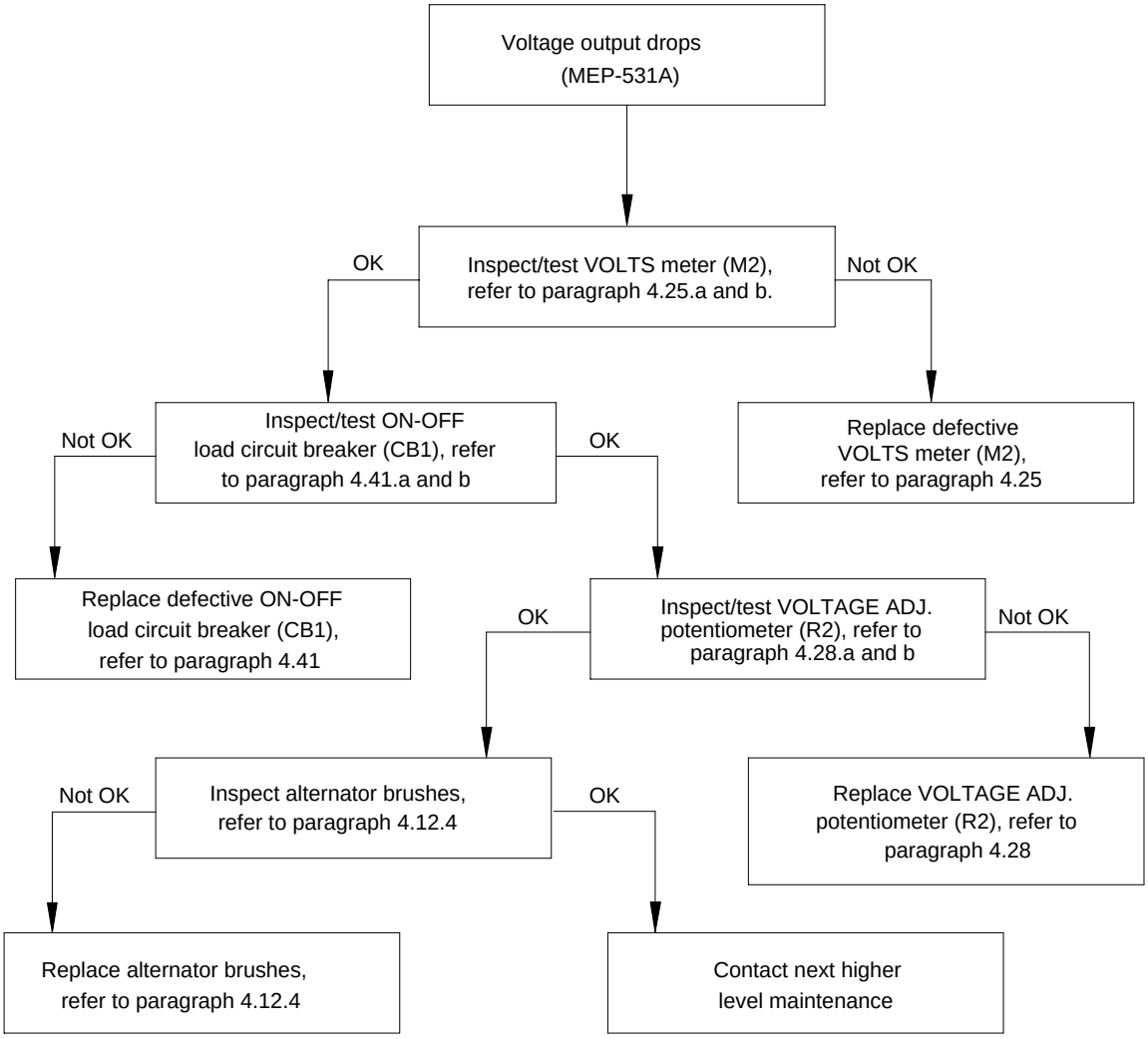


Table 4-13. Voltage Output Drops (MEP-501A) Troubleshooting

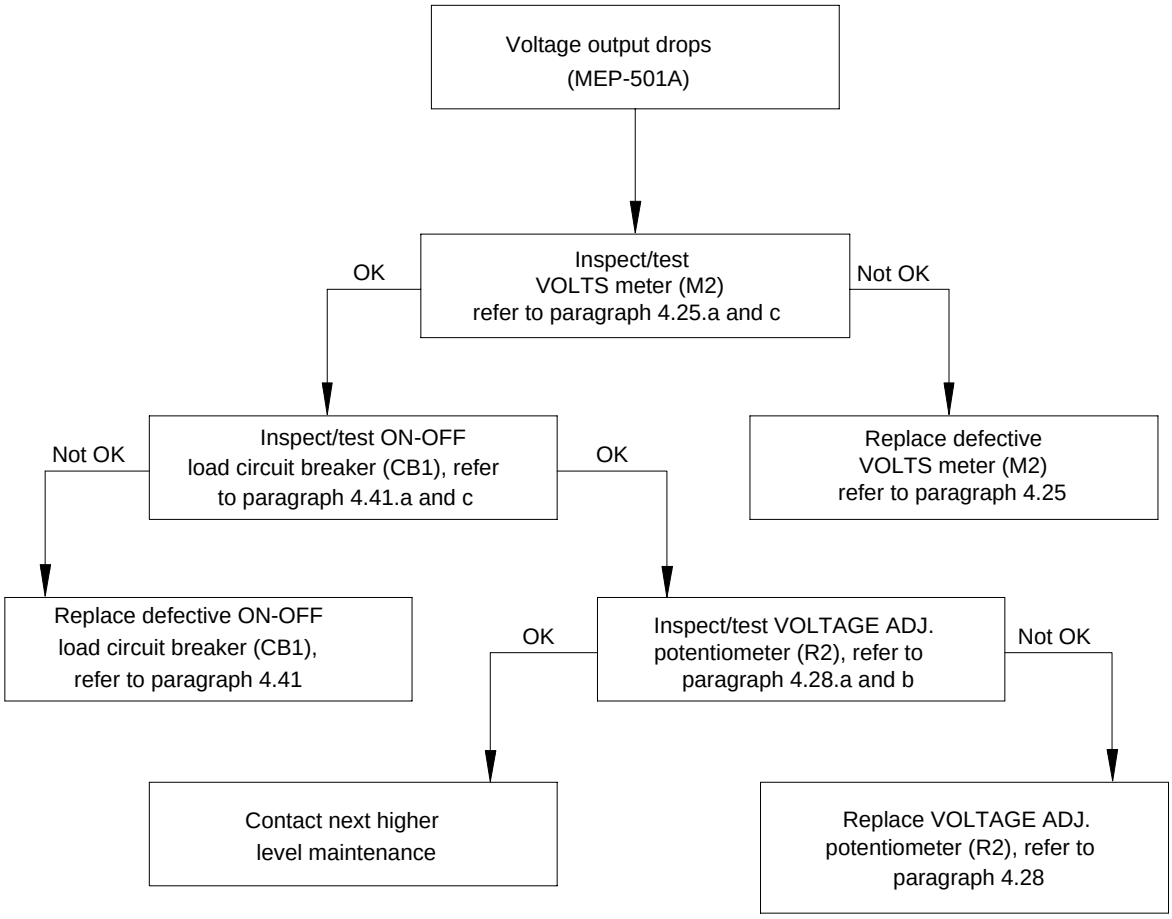


Table 4-14. Generator Set Vibrating/Bouncing Excessively Troubleshooting

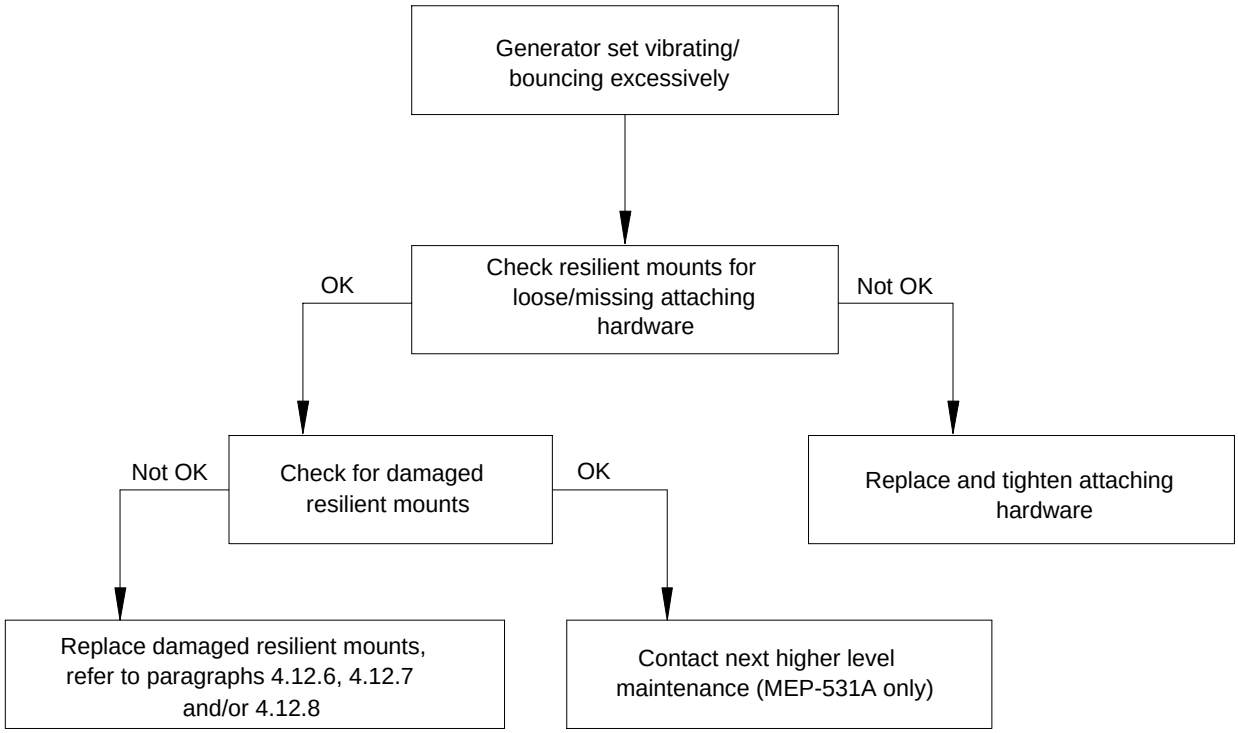


Table 4-15. No Voltage Indication On VOLTS Meter (M2) Troubleshooting

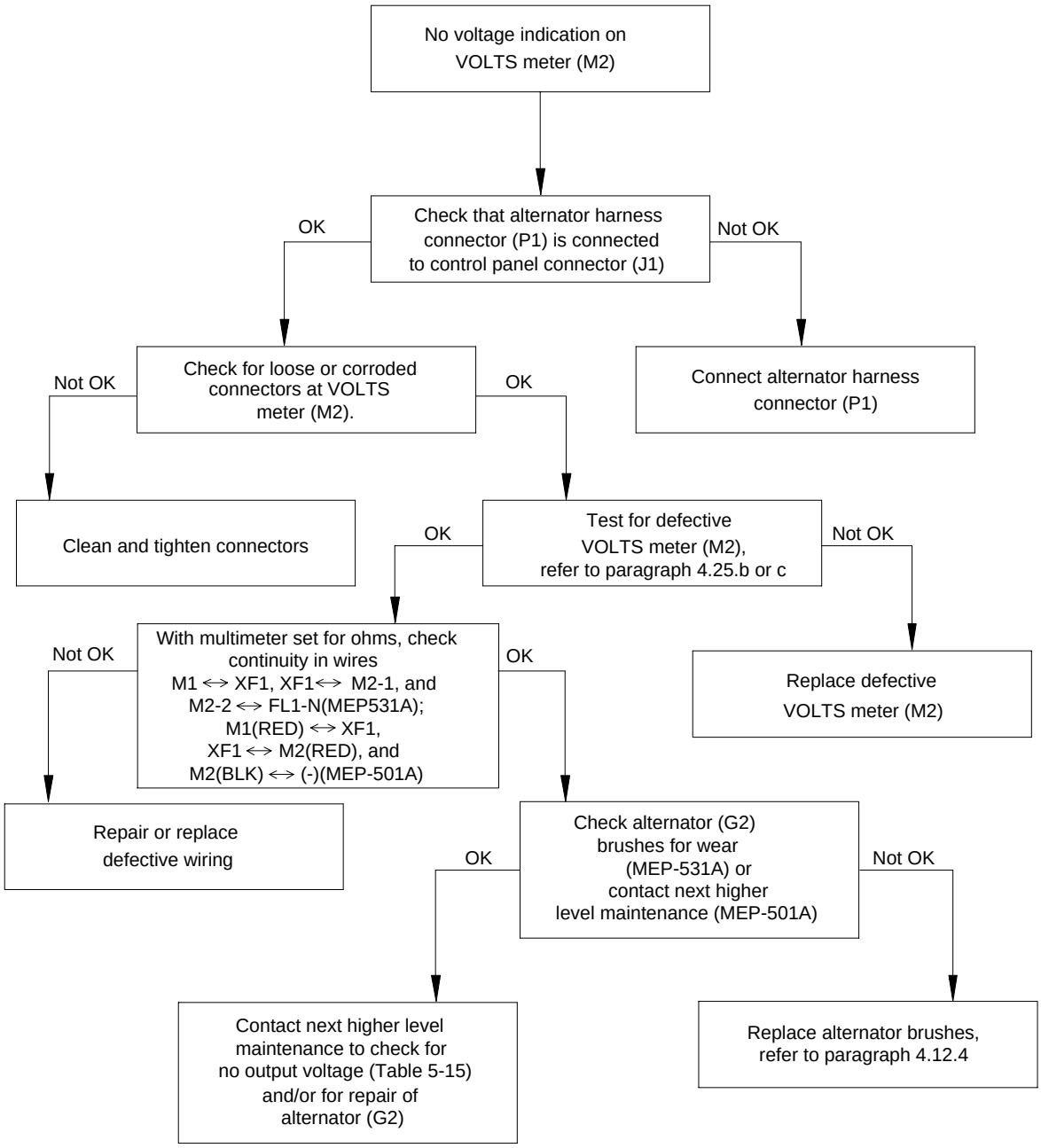


Table 4-16. No Indication On %LOAD Meter (M1) Troubleshooting (MEP-531A)

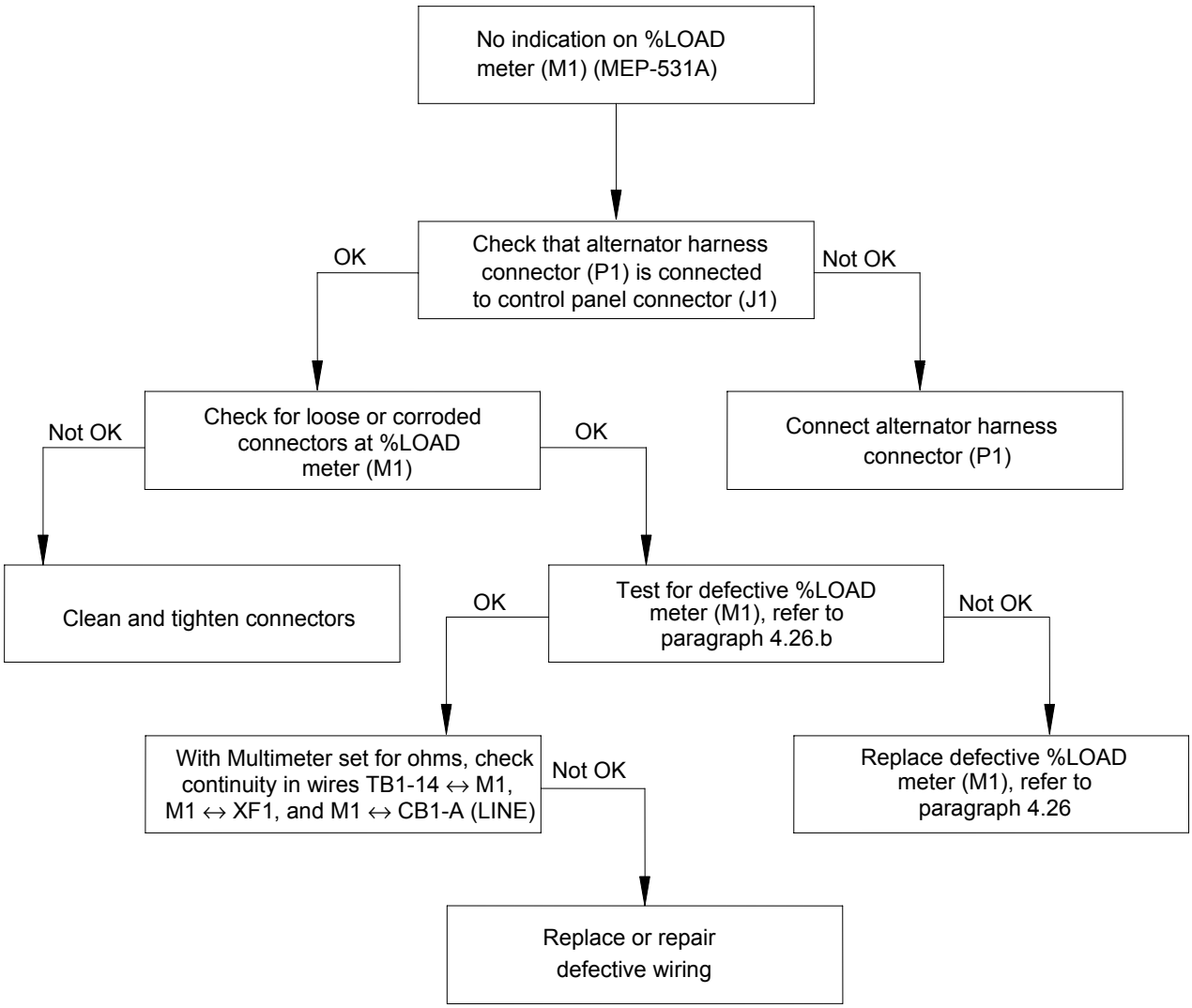


Table 4-17. No Indication On %LOAD Meter (M1) Troubleshooting (MEP-501A)

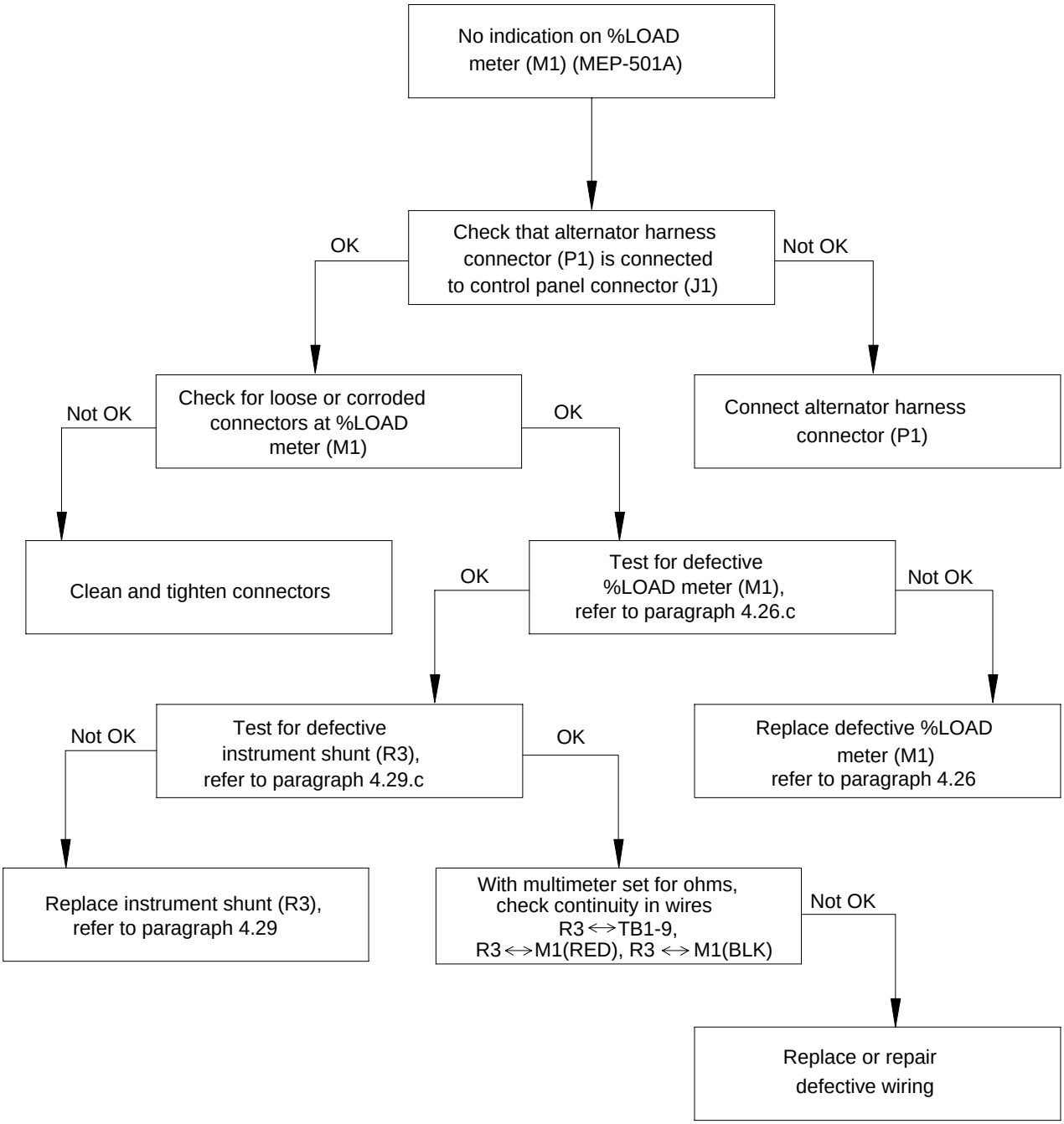


Table 4-18. No Indication On HERTZ Frequency Meter (M4) Troubleshooting (MEP-531A)

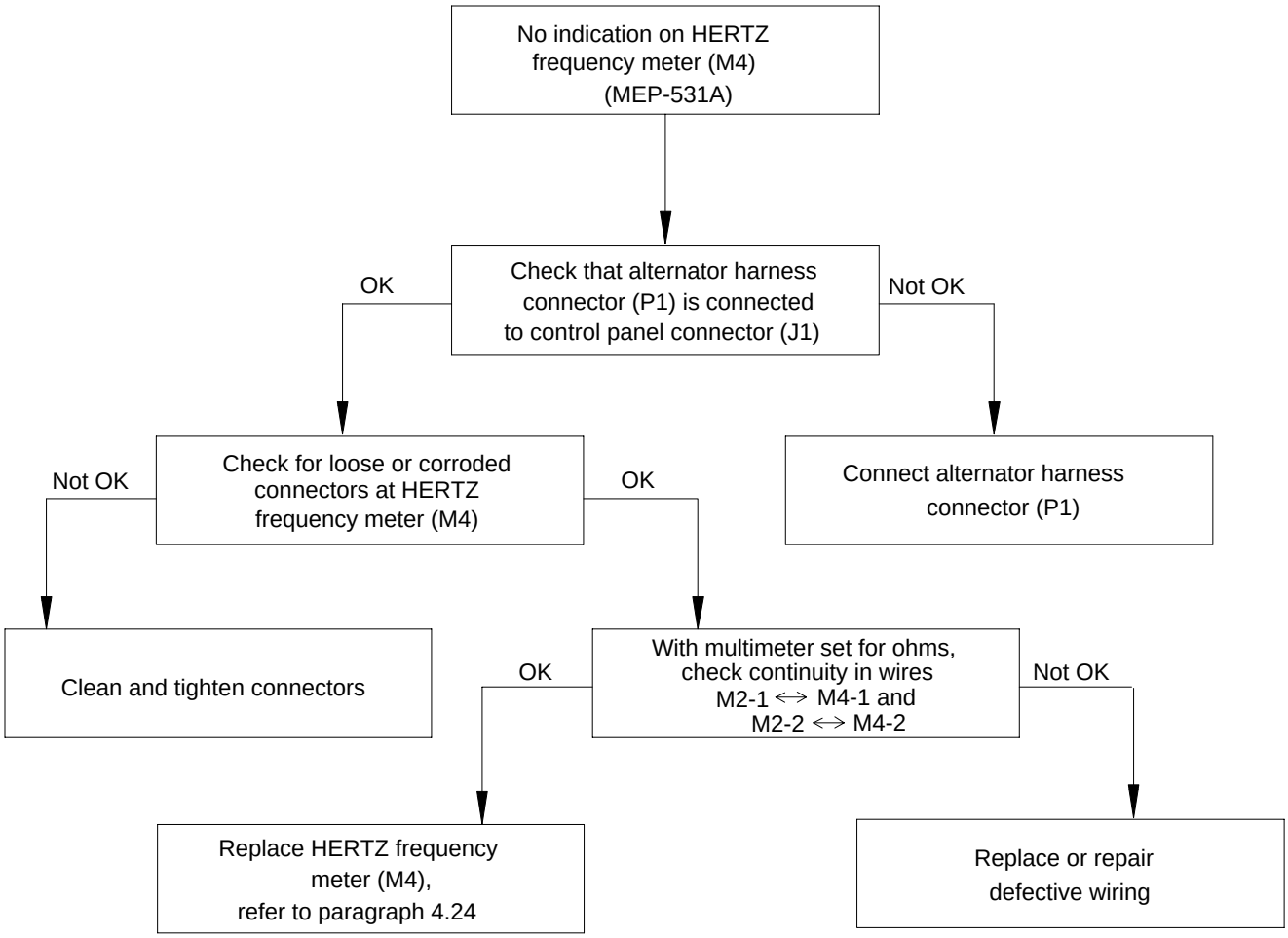


Table 4-19. No Indication On HOURS Meter (M3) Troubleshooting

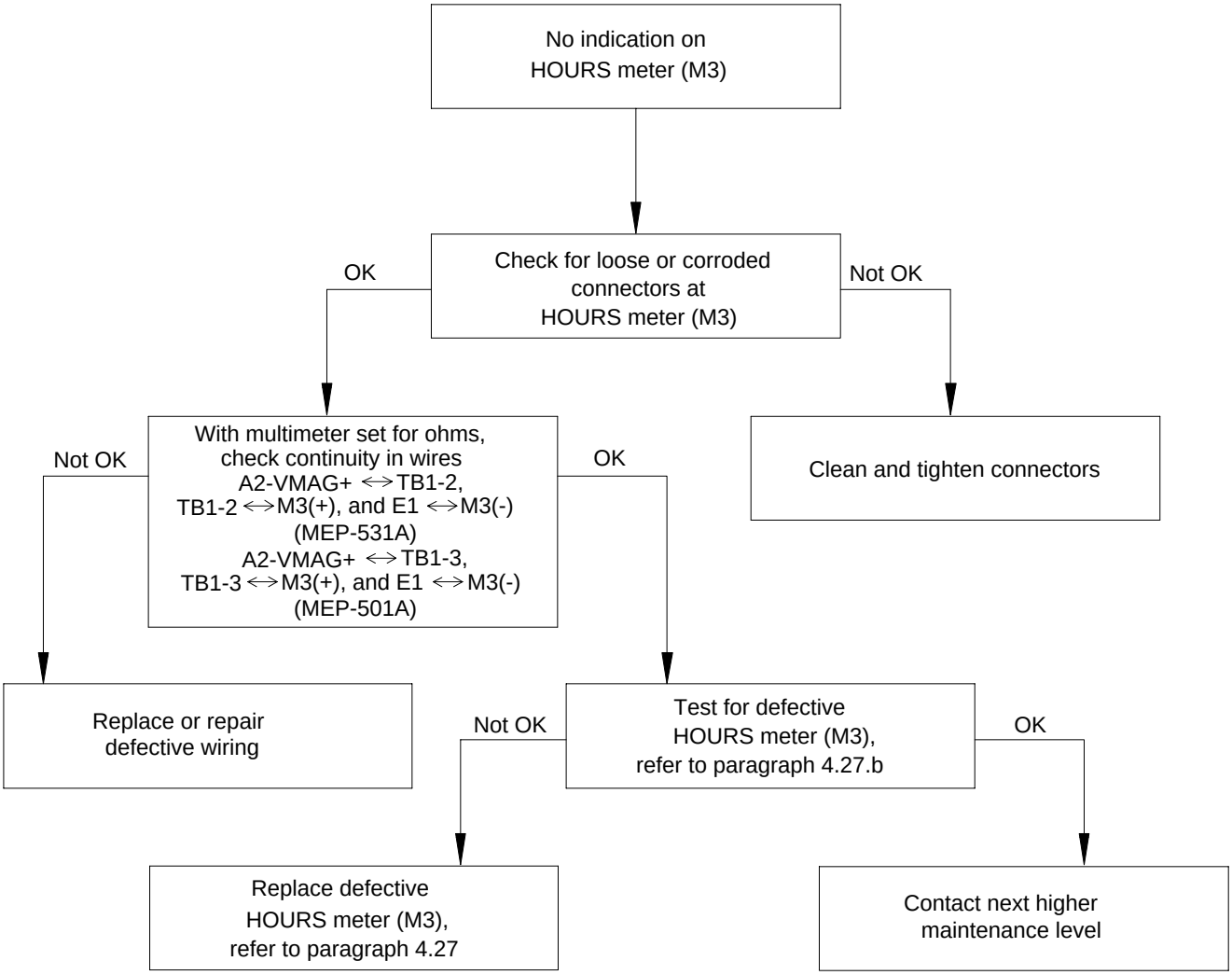


Table 4-20. No Output From Alternator Troubleshooting (MEP-531A)

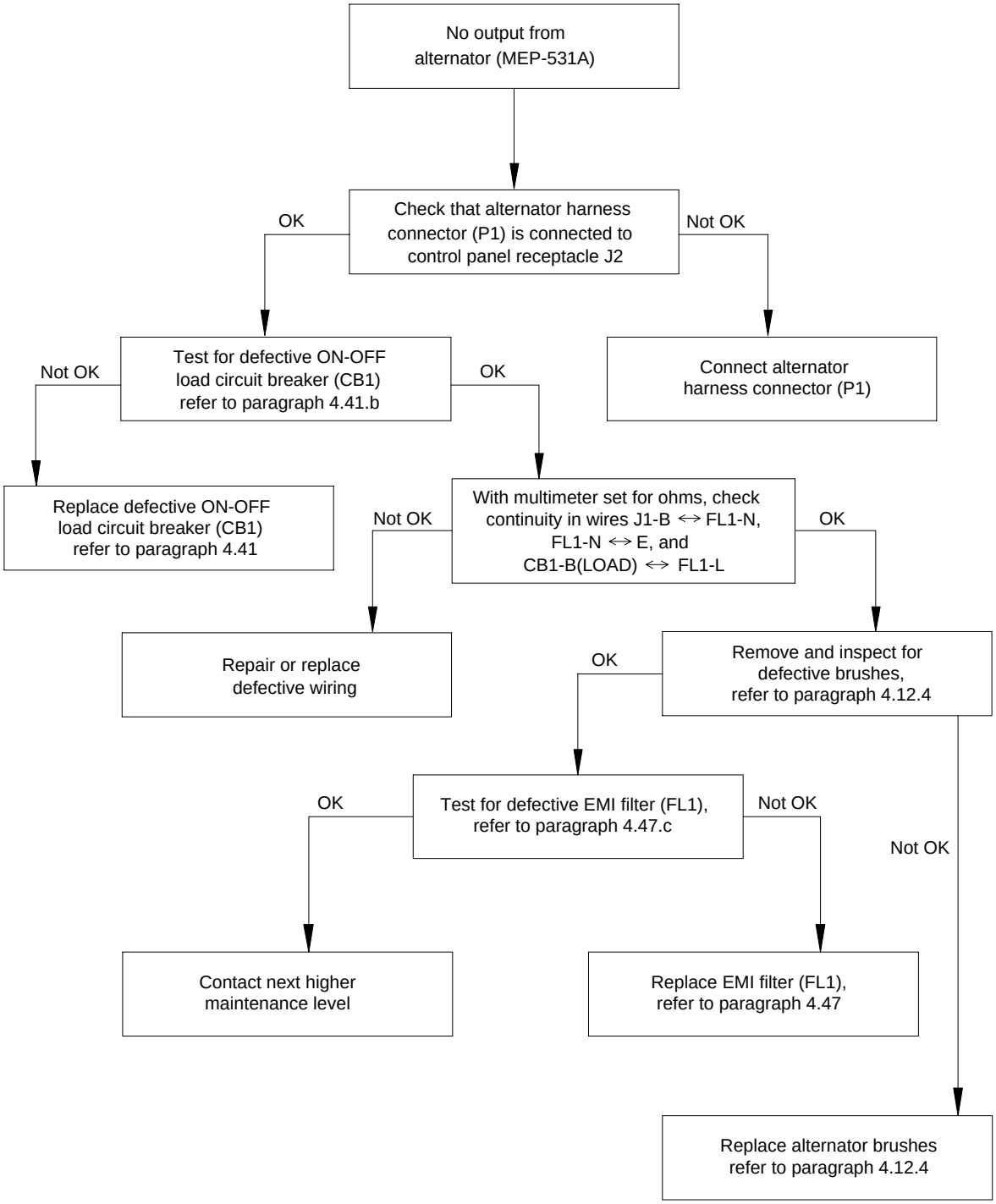


Table 4-21. No Output From Alternator Troubleshooting (MEP-501A)

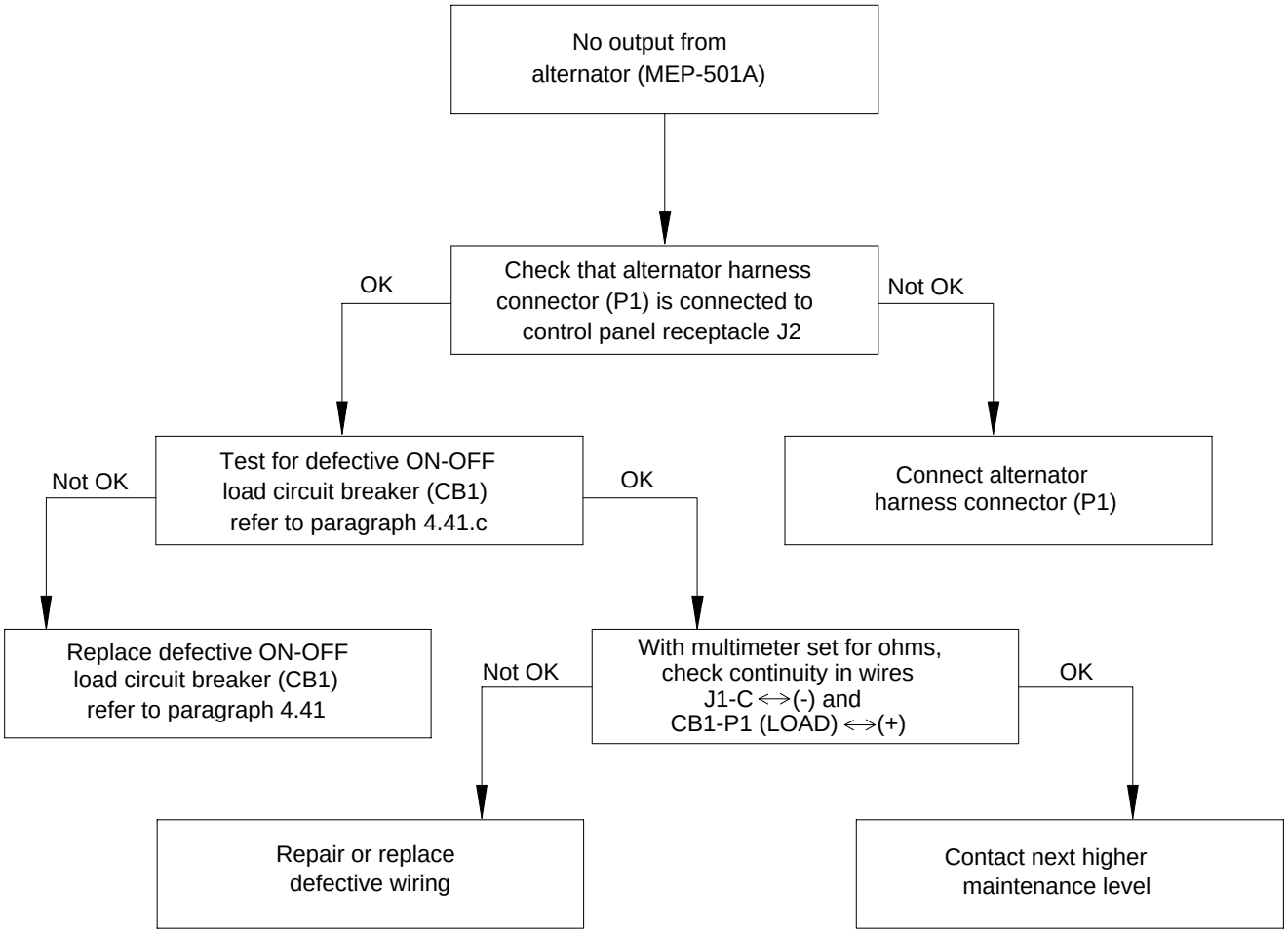


Table 4-22. Air Intake Preheaters Do Not Operate Troubleshooting

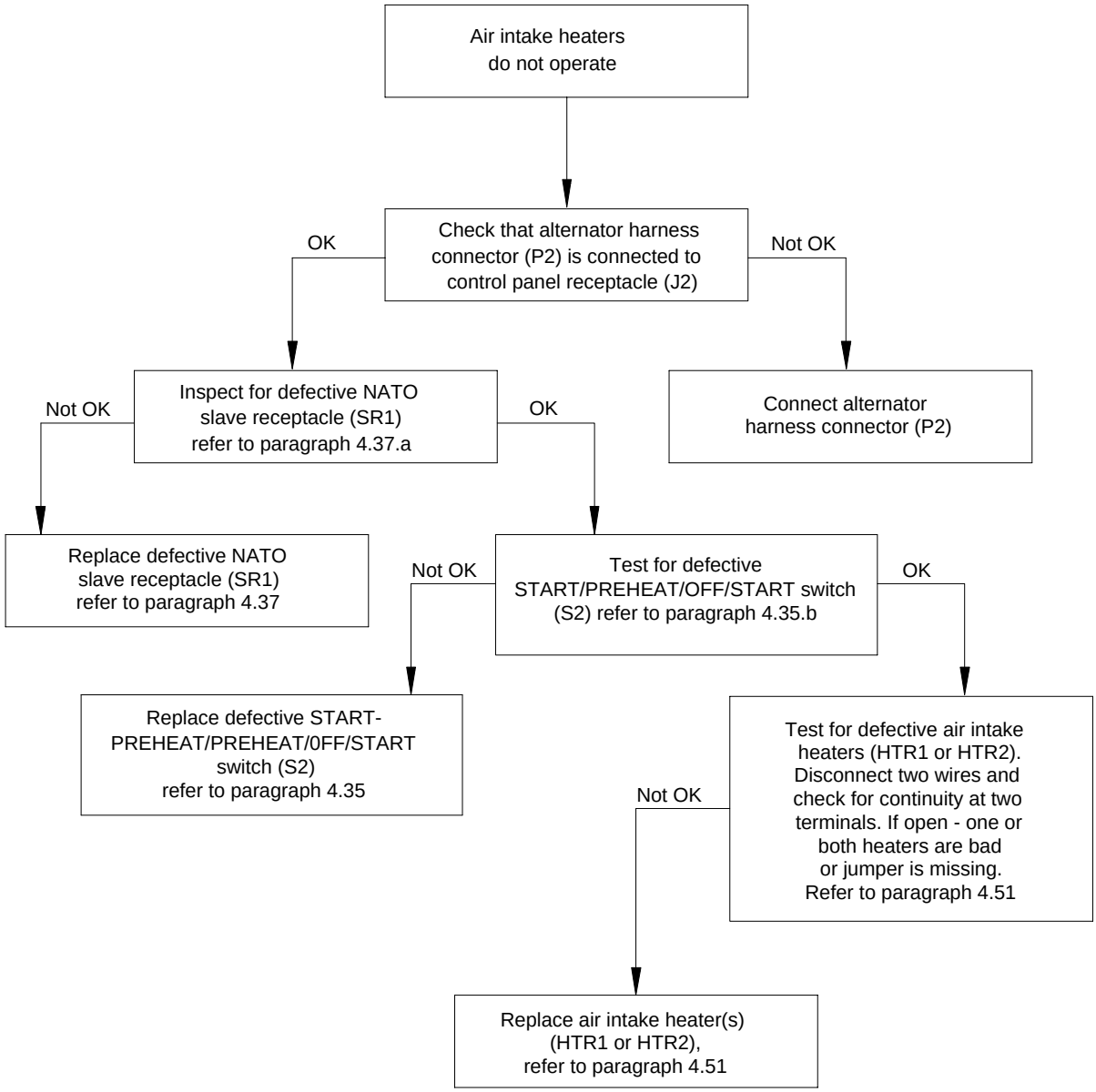
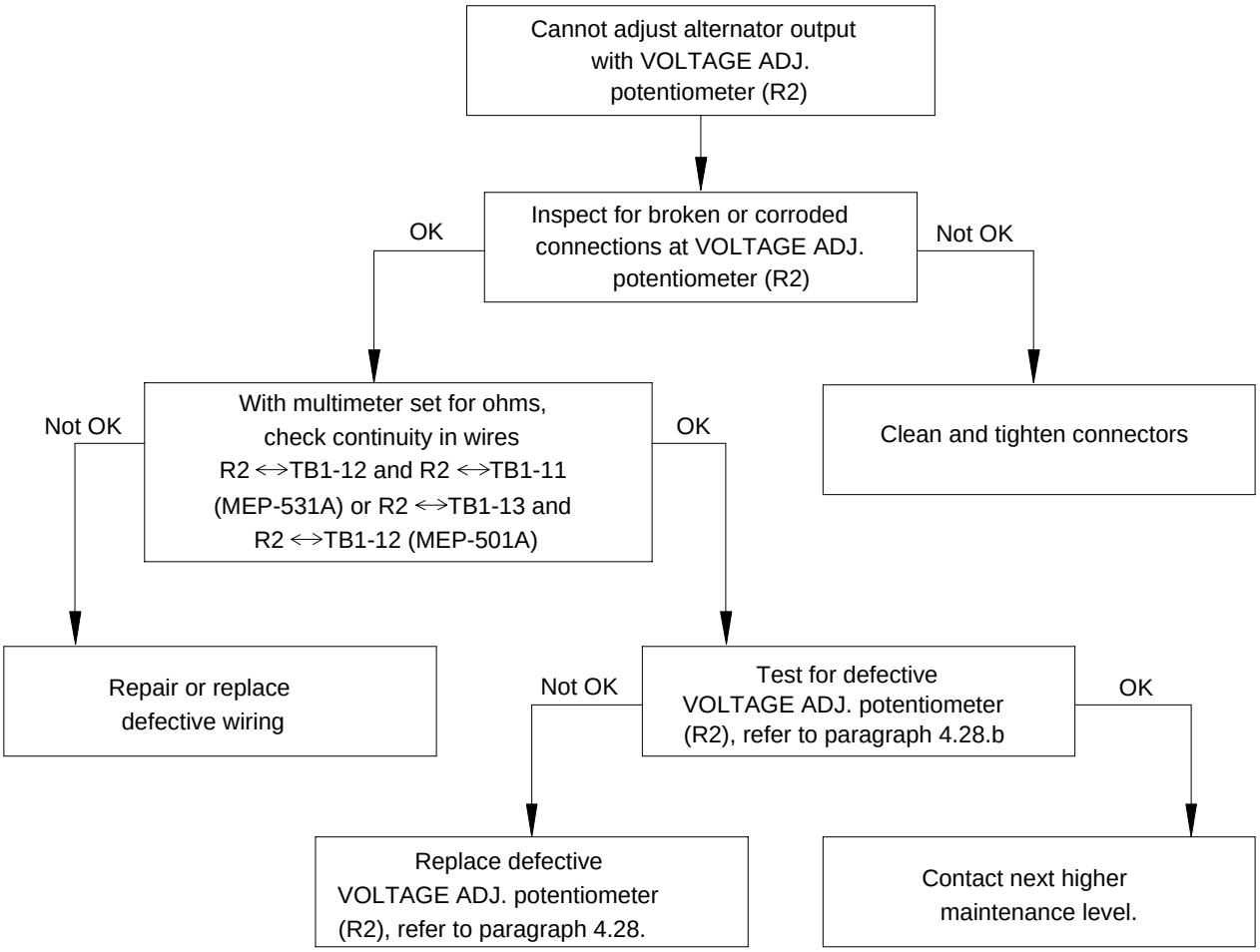


Table 4-23. Cannot Adjust Alternator Output With VOLTAGE ADJ. Potentiometer Troubleshooting



Section VI. UNIT MAINTENANCE PROCEDURES

NOTE

For generator sets manufactured by Mechron, wiring and component labeling differences exist between the text in this manual and the generator sets. Cross-reference tables and wiring diagrams are provided in Appendix J, Dewey/Mechron Cross-reference List.

4.14. FUEL LINES, CLAMPS, FITTINGS, ETC.

a. Removal.

(1) Shut down generator set.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

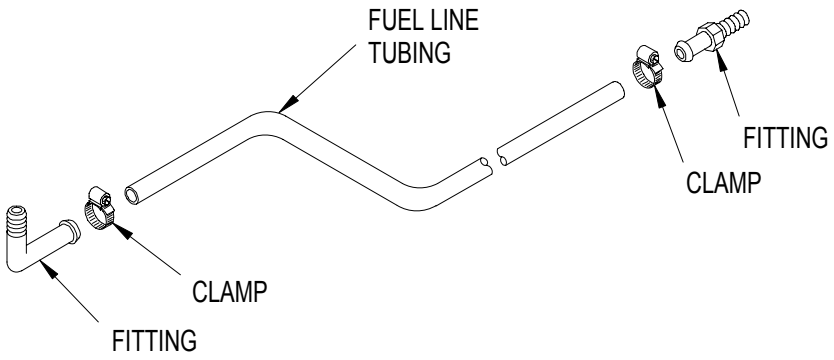


Figure 4-12. Fuel Lines, Clamps, Fittings (Typical)

NOTE

If removing tank-to-filter fuel line tubing, fuel tank must be drained.

(2) If necessary, open fuel tank drain cock (Figure 4-14) and drain fuel into suitable container. Close fuel tank drain cock. Fuel tank capacity is 1.6 gal. (6.1 L).

(3) Loosen hose clamps (Figure 4-12) and remove fuel line tubing.

(4) Remove fittings as necessary.

b. Installation.

(1) Install fittings (Figure 4-12) as necessary.

(2) Install fuel line tubing and tighten clamps.

(3) If drained, fill fuel tank with diesel fuel (DL-1, DL-2, or JP-8).

(4) Prime and bleed the fuel system. Refer to paragraph 2.7.c.

4.15. FUEL FILTER ASSEMBLY.

NOTE

For generator sets with the original Mechron configuration fuel filter assembly, replace entire assembly with the assembly listed in this manual. Shorten fuel line from fuel tank to fuel filter assembly by approximately two (2) inches to reduce slack in fuel line.

a. Removal.

(1) Shut down generator set.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

(2) Open fuel tank drain cock (Figure 4-14) and drain fuel into suitable container, and close fuel tank drain cock. Fuel tank capacity is 1.6 gal. (6.1 L).

(3) Loosen hose clamps (1 and 3, Figure 4-13) and disconnect tank-to-filter and filter-to-pump fuel line tubing (2 and 4) from fuel filter assembly.

(4) Remove nut (5), lockwasher (6), washer (7), capscrew (8), and washer (9) securing fuel filter assembly (10) to bracket (16).

(5) Remove fuel filter assembly (10) with washer (11) using care not to spill diesel fuel trapped in filter bowl.

(6) If necessary, remove bolts and capscrew (12, 14, and 17) and lockwashers (13 and 15) securing bracket (16) and stiffener (18) to diesel engine.

b. Inspection.

(1) Check fuel filter assembly (10, Figure 4-13) for nicks, cracks, or leaks. Replace if damaged.

(2) Inspect bracket (16) and stiffener (18) for cracks and deformation.

c. Installation.

(1) If removed, install bracket (16, Figure 4-13) and stiffener (18) to diesel engine with bolts and capscrew (12, 14, and 17) and lockwashers (13 and 15).

(2) Install fuel filter assembly (10) on bracket (16) and secure with capscrew (8), washer (9), washer (11), washer (7), lockwasher (6), and nut (5).

(3) Connect tank-to-filter and filter-to-pump fuel line tubing (2 and 4) to fuel filter assembly (10). Tighten hose clamps (1 and 3).

(4) Fill fuel tank with diesel fuel (DL-1, DL-2, or JP-8).

(5) Prime and bleed the fuel system, refer to paragraph 2.7.c.

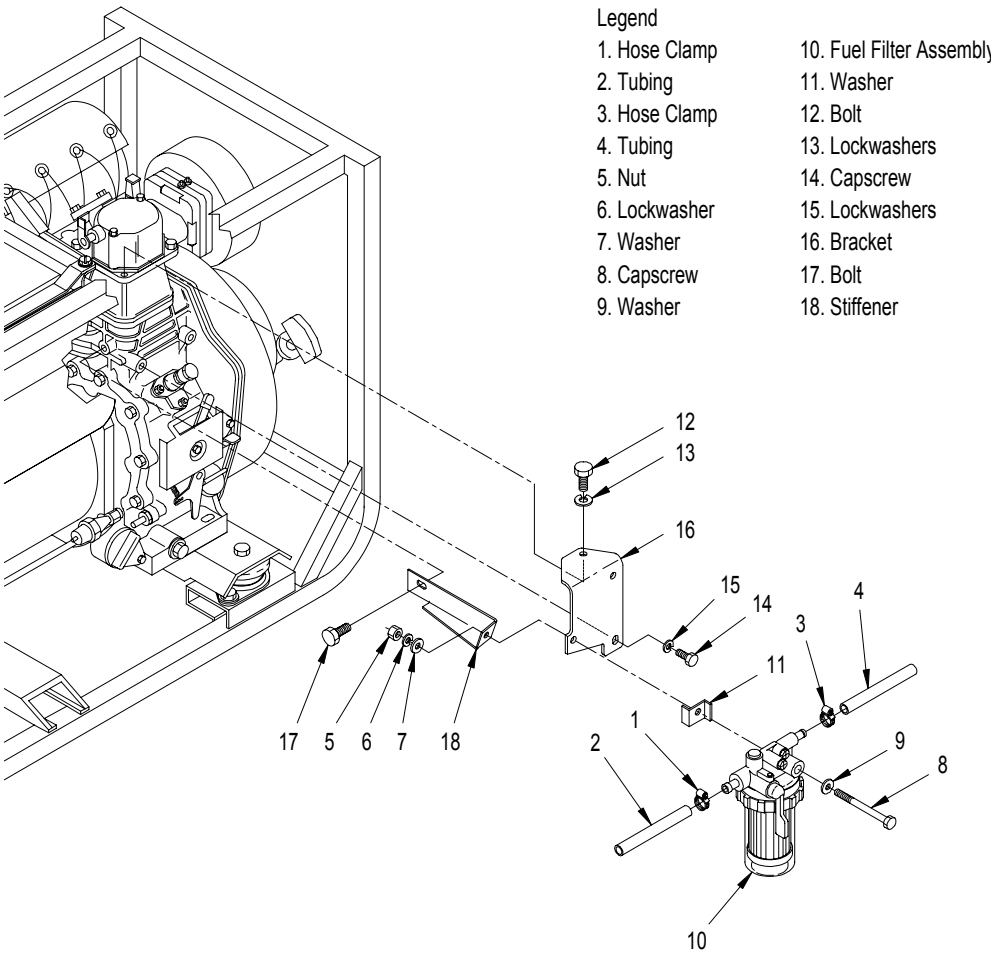


Figure 4-13. Fuel Filter Assembly

4.16. FUEL DRAIN COCK.

a. Removal.

(1) Shut down generator set.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

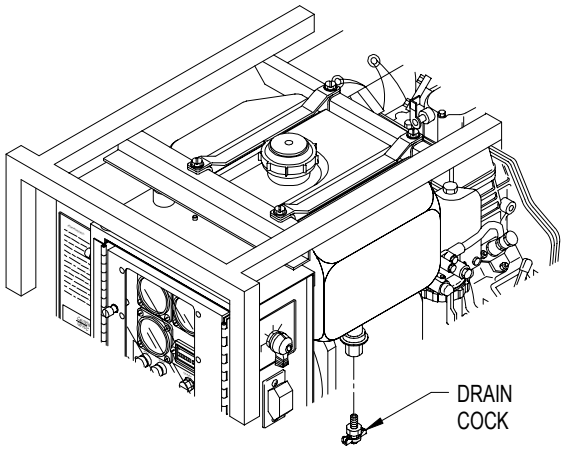


Figure 4-14. Fuel Drain Cock

(2) Open fuel tank drain cock (Figure 4-14), drain fuel into suitable container. Fuel tank capacity is 1.6 gal. (6.1 L).

(3) Remove drain cock.

b. Installation.

(1) Apply sealing compound (Item 20, Appendix E) to threads of drain cock and adapter.

(2) Install drain cock (Figure 4-14).

(3) Fill fuel tank with diesel fuel (DL-1, DL-2, or JP-8).

(4) Prime and bleed the fuel system, refer to paragraph 2.7.c.

4.17. FUEL TANK ASSEMBLY.

NOTE

For generator sets with Mechron configuration fuel tank. Replace fuel tank with assembly listed in this manual. Replacement tank will come with fuel drain cock installed.

a. Removal.

(1) Shut down generator set.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to

prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

(2) Open fuel tank drain cock (14, Figure 4-15) and drain fuel into suitable container. Close fuel tank drain cock. Fuel tank capacity is 1.6 gal. (6.1 L).

(3) Loosen hose clamp (1) and disconnect tank-to-filter fuel line tubing (2) from elbow (16) at bottom of fuel tank (9).

(4) Loosen hose clamp (3) and disconnect return fuel line tubing (4) from elbow (18) at front of fuel tank (9).

(5) Remove capscrews (5), lockwashers (6), washers (7), and upper fuel tank brackets (8).

(6) Remove fuel tank (9) from lower fuel tank brackets (10).

(7) Remove lower fuel tank brackets (10) and guard (11) from generator set frame.

b. Disassembly.

(1) Remove fuel cap (12, Figure 4-15) and filter (13) from fuel tank (9).

(2) Remove fuel drain cock (14) from adapter (15).

(3) Remove adapter (15) from fuel tank by holding adapter top plate with pliers and turning adapter fitting, refer to Detail A.

NOTE

Some fuel tanks may be equipped with a fuel drain adapter requiring removal from inside the tank and secured with a nut on the outside of the tank.

(4) Remove elbows (16 and 18) from bushings (17 and 19), and bushings from fuel tank.

(5) If necessary, remove rubber straps (20) from fuel tank. Remove all traces of adhesive from tank.

c. Inspection.

(1) Inspect fuel tank brackets (8 and 10, Figure 4-15) for damage that would prevent them from securely holding fuel tank.

WARNING

Cleaning solvents are flammable and toxic to eyes, skin, and respiratory tract. Skin/eye protection required. Avoid repeated/prolonged contact. Good general ventilation is normally adequate.

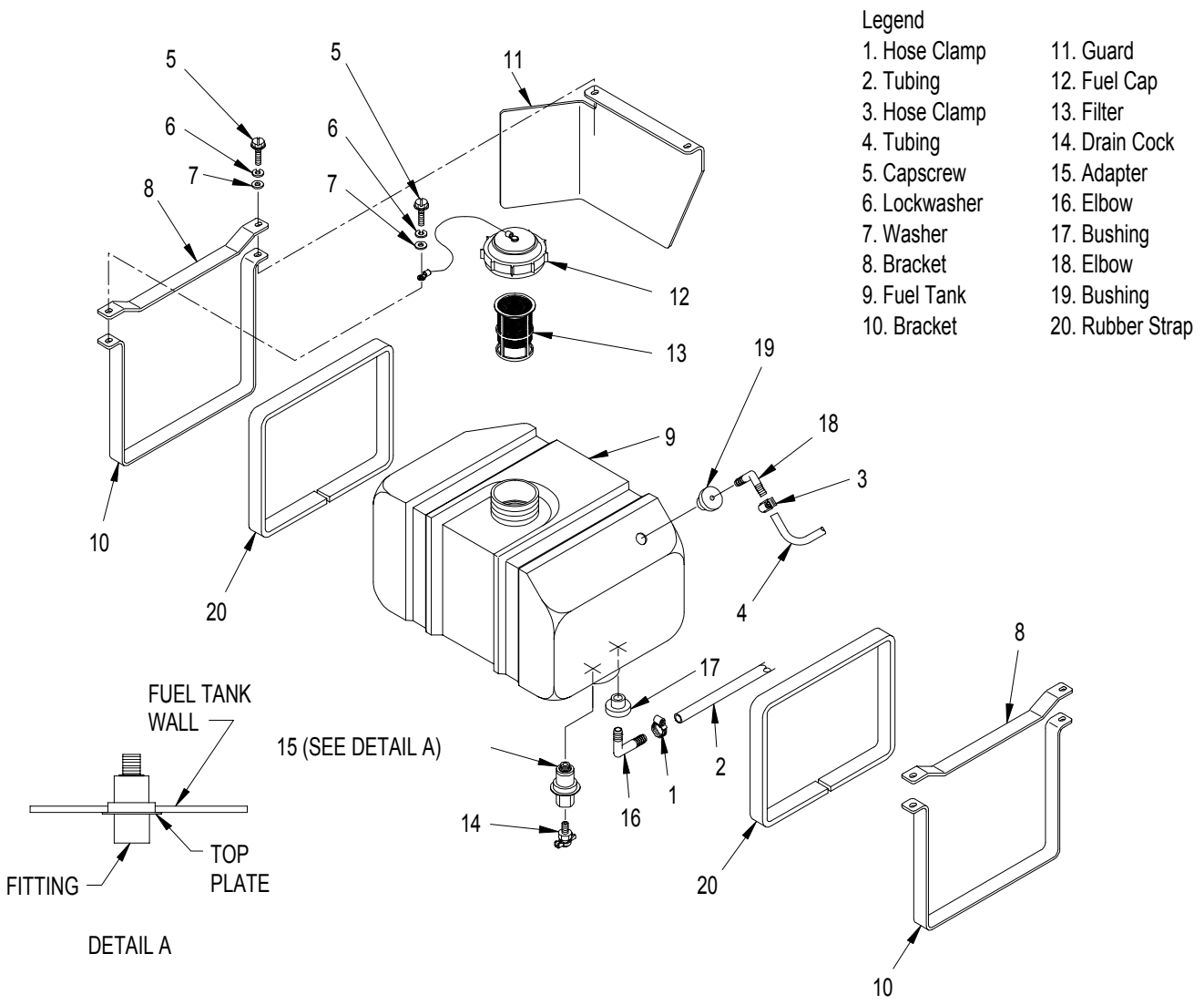


Figure 4-15. Fuel Tank Assembly

(2) Visually check fuel tank (9) for cracks or leaks. Ensure that fuel cap (12) fits securely onto tank and surrounding area is clean. Clean using approved cleaning solvent (Item 19, Appendix E) and cleaning cloth (Item 4, Appendix E).

(3) Check filter (13) for cracks or damage. Replace if defective.

(4) Inspect fuel cap (12) for physical damage. Repair or replace as necessary.

(5) Inspect fuel drain cock (14) and adapter (15) for damage and leaks. Replace if defective.

(6) Inspect elbows (16 and 18) and bushings (17 and 19) for physical damage, leaks, and security.

d. Assembly.

WARNING

Adhesive (Item 1, Appendix E) is flammable and toxic. Vapors may ignite explosively. Avoid breathing in vapors. Provide adequate ventilation to prevent vapor concentrations in excess of permissible exposure levels. Keep away from heat, sparks, and open flame. Do not smoke. Extinguish all flames and turn off non-explosion-proof electrical equipment during use until vapors are dissipated. Close container tightly after use. Contains Methylethketone. Avoid swallowing.

(1) If removed, install rubber straps (20, Figure 4-15) on fuel tank (9). Make sure fuel tank is clean and free of oil, dirt, and grease. Then cut rubber straps and secure with adhesive (Item 1, Appendix E). Follow adhesive manufacturer's instructions for application.

(2) Install bushings (19 and 17) in fuel tank (9), and elbows (18 and 16) in bushings.

(3) Install adapter (15) in fuel tank (9). Torque adapter to 40 lbs-in (4.5 Nm), then install fuel drain cock (14) in adapter.

(4) Install filter (13) and fuel cap (12) on fuel tank (9).

e. Installation.

(1) Position guard (11, Figure 4-15) and lower fuel tank brackets (10) in generator set frame.

(2) Place fuel tank (9) in lower fuel tank brackets (10).

(3) Secure fuel tank (9) in generator set with upper fuel tank brackets (8), washers (7), lockwashers (6), and capscrews (5) ensuring fuel cap (12) wire rope is secured under rear right side hardware.

(4) Connect fuel return line tubing (4) to elbow (18) with hose clamp (3).

(5) Connect tank-to-filter fuel line tubing (2) to elbow (16) with hose clamp (1).

(6) Fill fuel tank with diesel fuel (DL-1, DL-2, or JP-8).

(7) Prime and bleed the fuel system, refer to paragraph 2.7.c.

4.18. AIR INTAKE SYSTEM COMPONENTS.

a. Removal.

(1) Shut down generator set.

(2) Remove wing nut (Figure 4-16), cover, and filter element with pre-filter.

(3) Remove pre-filter from filter element.

(4) If necessary, remove gaskets from mounting plate and cover. Clean adhesive residue from surfaces.

b. Inspection/Cleaning.

(1) Inspect cover (Figure 4-16) for cleanliness, cracks and other damage. Clean cover with mild soap and water.

(2) Inspect filter element for cleanliness, dents, and crushed corrugations. Replace if damaged.

(3) Discard pre-filter.

(4) Replace damaged parts.

(5) If damaged, replace machine screw in mounting plate. Use locking compound (Item 6, Appendix E) to secure machine screw in mounting plate.

c. Installation.

(1) If removed, install new gasket (Figure 4-16) on cover.

(2) Position air filter element on mounting plate and mark position for gasket on plate. Remove air filter element and install new gasket on mounting plate with adhesive side toward mounting plate.

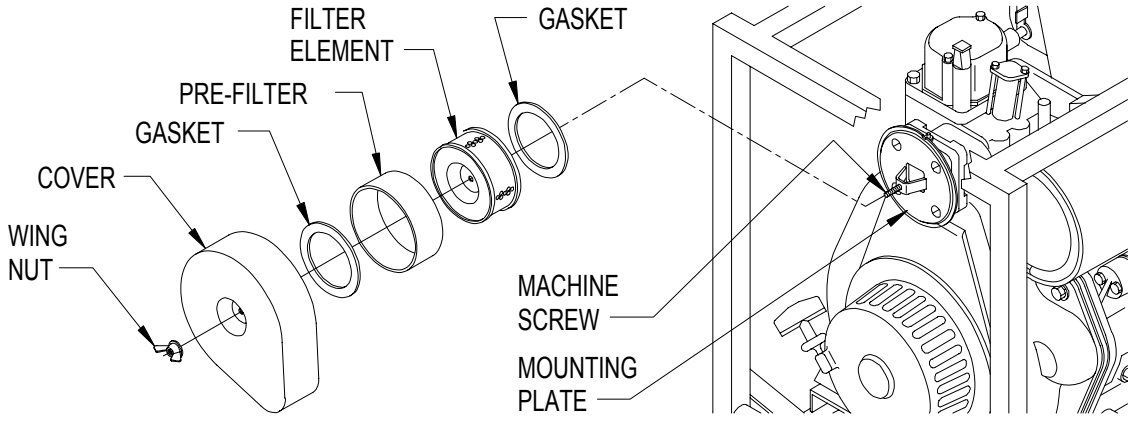


Figure 4-16. Air Intake System Components

(3) Soak new pre-filter in clean engine oil (Item 14, Appendix E) and squeeze out ALL excess oil.

(4) Install pre-filter over filter element. Pre-filter should fit snugly over filter element.

(5) Position filter element with pre-filter and cover on mounting plate.

(6) Install wing nut.

4.19. EXHAUST SYSTEM COMPONENTS.

a. Removal.

(1) Shut down generator set.

(2) Remove clamp (1, Figure 4-17) and spark arrestor (2) from muffler (11).

(3) Cut retaining wire (3) and remove retaining wire and blanket (4) from shroud (5).

(4) Remove capscrews (6), lockwashers (7), washers (8), and shroud (5) from muffler (11).

(5) If necessary, remove grommet (13) from shroud (5).

(6) If necessary, remove capscrews (9), nuts (10), muffler (11), and gasket (12).

b. Cleaning.

NOTE

Spark arrestor diffuser discs can become blocked with carbon deposits over time, making engine hard to start. Disassemble and clean spark arrestor as necessary to ensure proper operation.

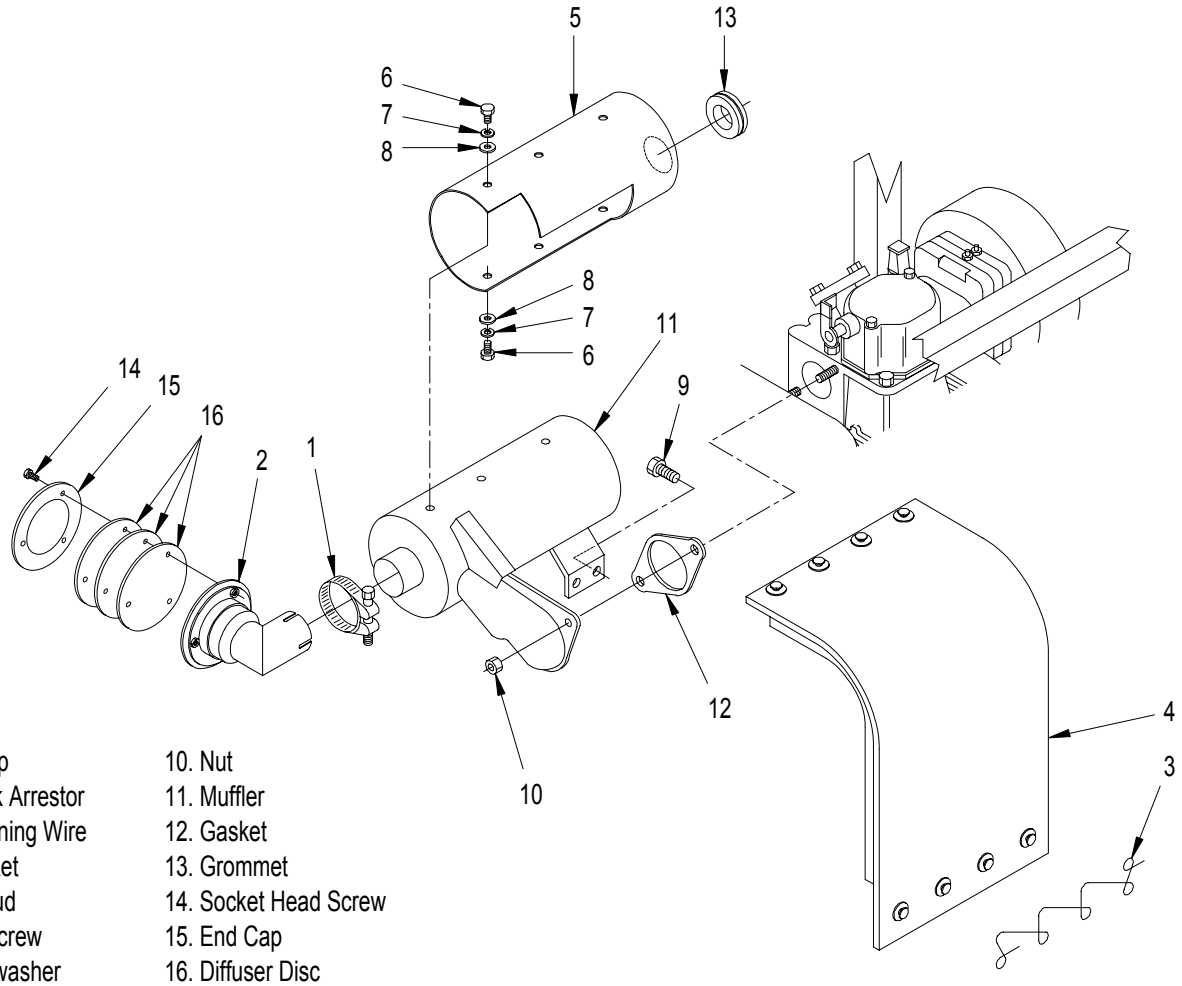
(1) Remove socket head screws (14, Figure 4-17), end cap (15), and diffuser discs (16) from spark arrestor (2).

WARNING

Cleaning solvents are flammable and toxic to eyes, skin, and respiratory tract. Skin/eye protection required. Avoid repeated/prolonged contact. Good general ventilation is normally adequate.

(2) Clean carbon deposits from diffuser discs, end cap, and spark arrestor using a wire brush and approved cleaning solvent (Item 19, Appendix E).

(3) Install diffuser discs (16) and end cap (15) on spark arrestor with socket head screws (14).



Legend

1. Clamp	10. Nut
2. Spark Arrestor	11. Muffler
3. Retaining Wire	12. Gasket
4. Blanket	13. Grommet
5. Shroud	14. Socket Head Screw
6. Capscrew	15. End Cap
7. Lockwasher	16. Diffuser Disc
8. Washer	
9. Capscrew	

Figure 4-17. Exhaust System Components

c. Installation.

(1) If removed, install new gasket (12, Figure 4-17) and muffler (11) with nuts (10), and capscrews (9). Torque capscrews (9) to 125 lbs-in (14 Nm) and nuts (10) to 225 lbs-in (25 Nm).

(2) If removed, install grommet (13) in shroud (5).

(3) Install shroud (5) on muffler with washers (8), lockwashers (7), and capscrews (6).

(4) Install muffler blanket (4) over shroud (5). Secure with retaining wire (3).

(5) Install spark arrestor (2) on muffler and secure with clamp (1), refer to Figure 4-18 for proper positioning of clamp. Torque clamp bolt to 150 lbs-in (17 Nm).

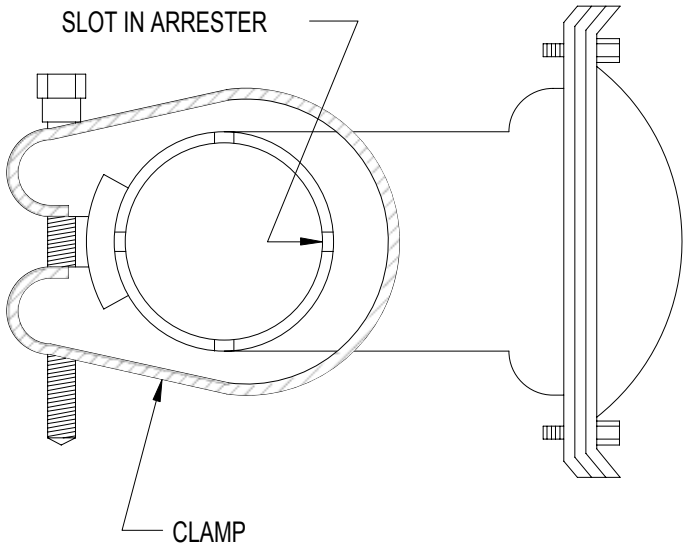


Figure 4-18. Spark Arrestor Clamp Positioning

4.20. CONTROL PANEL ASSEMBLY.

a. Inspection.

(1) Shut down generator set.

(2) Inspect control panel assembly for security, cracked and corroded panels, loose wires, missing parts, and other damage.

b. Removal.

(1) Shut down generator set.

(2) Unscrew and disconnect engine and alternator harness plugs (Figure 4-19) from receptacles at bottom of control panel assembly.

(3) Remove nut, lockwasher, and ground strap from frame.

(4) Remove LOP engine shutdown cable from control panel assembly, refer to paragraph 4.50.b., step 5 only.

(5) Remove locknuts that hold control panel assembly to frame.

(6) Remove control panel assembly from frame.

c. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Repair all dents and cracks, and remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

d. Installation.

(1) Position control panel assembly (Figure 4-19) in frame.

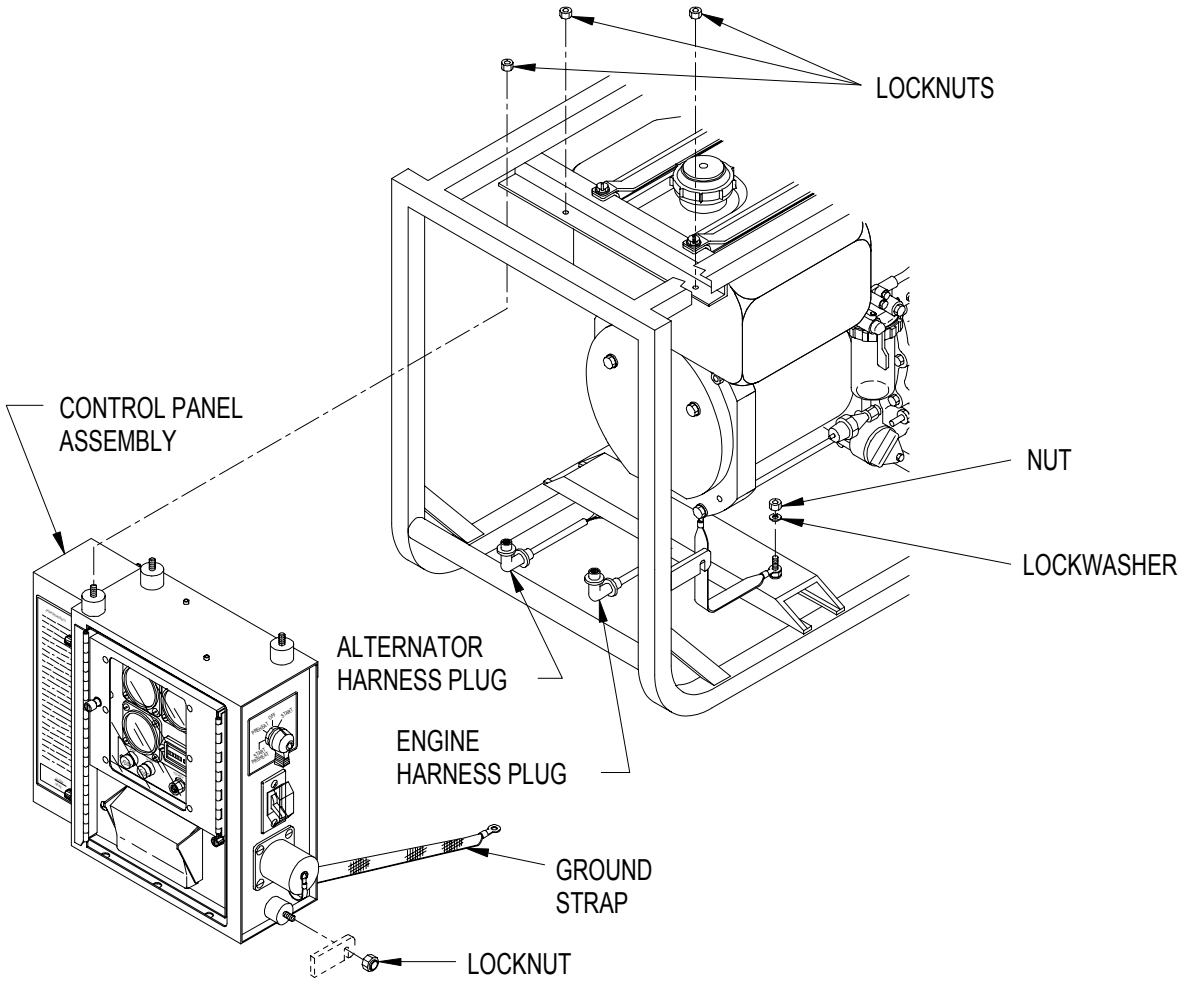


Figure 4-19. Control Panel Assembly

(2) Install locknuts to secure control panel assembly.

(3) Install LOP engine shutdown cable in control panel assembly, refer to paragraph 4.50.c., steps 5 and 6 only.

(4) Connect ground strap to frame with lockwasher and nut. Torque nut to 75 lbs-in (8.5 Nm).

(5) Connect engine and alternator harness plugs to receptacles at bottom of control panel assembly.

4.21. INSTRUCTION PLATE (S).

a. Removal.

(1) Drill out rivets (Figure 4-20) securing instruction plate to control panel assembly.

(2) Remove instruction plate.

b. Installation.

(1) Using new instruction plate (Figure 4-20) as a template, drill six new 1/16-in. holes in control panel assembly if necessary.

(2) Secure instruction plate with rivets.

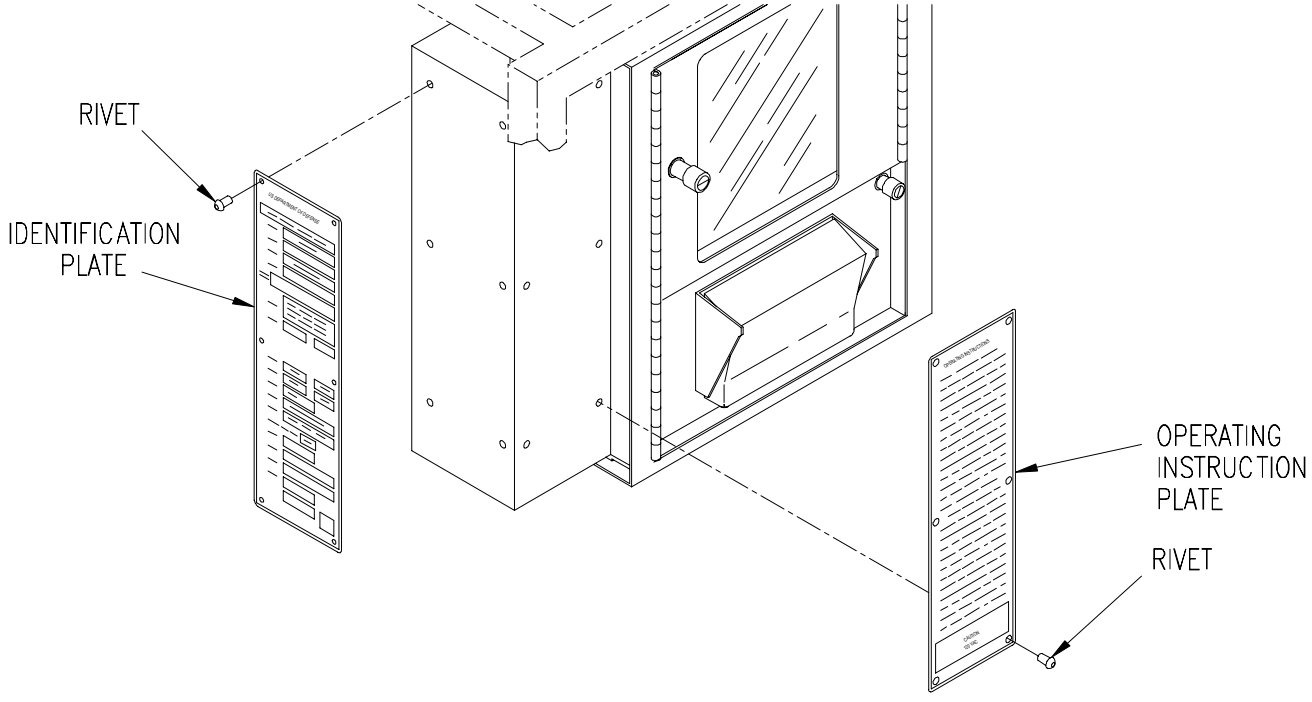


Figure 4-20. Instruction Plate(s)

4.22. INSTRUMENT COVER.

a. Inspection.

(1) Shut down generator set.

(2) Inspect instrument cover for security, cracks, corrosion, and other damage.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Release instrument cover by turning fastener, open instrument cover.

(4) Remove rivets (Figure 4-21) and instrument cover from instrument panel.

(5) If necessary, remove nut, lockwasher, washer, and standoff from instrument panel.

c. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Repair all dents and cracks, and remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

d. Installation.

(1) If removed, install standoff (Figure 4-21) on instrument panel with washer, lockwasher, and nut.

(2) Install instrument cover on instrument panel with new rivets.

(3) Close and secure instrument panel and instrument cover.

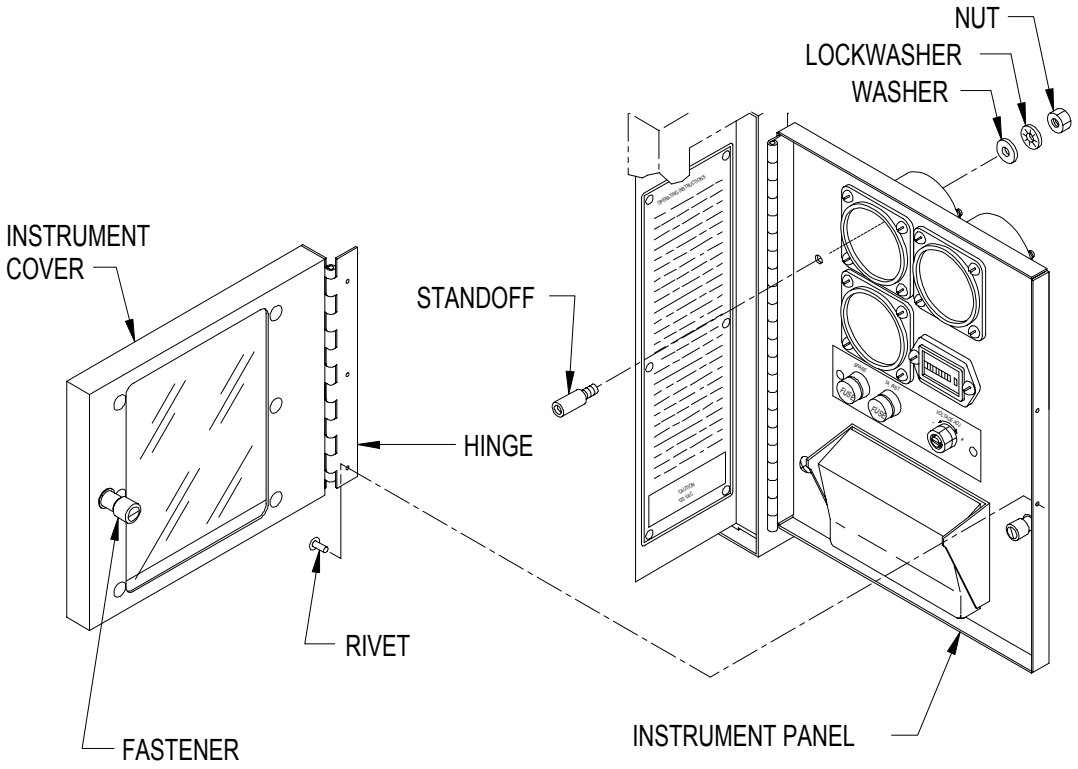


Figure 4-21. Instrument Cover

4.23. INSTRUMENT PANEL.

a. Inspection.

(1) Shut down generator set.

(2) Inspect instrument panel for security, cracks and other damage.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove nut (Figure 4-22), lockwasher, washer, and screw securing clamp and ground strap to instrument panel.

(4) If necessary, remove clamp from electrical harness and ground strap from lug terminal board mounting screw.

(5) Remove gauge protective cover. Then tag and disconnect electrical leads from HERTZ frequency meter (MEP-531 only), VOLTS meter, %LOAD meter, HOURS meter, VOLTAGE ADJ. potentiometer, GFCI receptacle (MEP-531 only), and INST. fuseholder.

(6) Remove rivets and instrument panel from control panel.

(7) If necessary, remove fastener from instrument panel and blind nut from control panel.

(8) If necessary, remove edge protector and adhesive residue from control panel.

(9) If necessary, remove instrument cover, refer to paragraph 4.22.b.

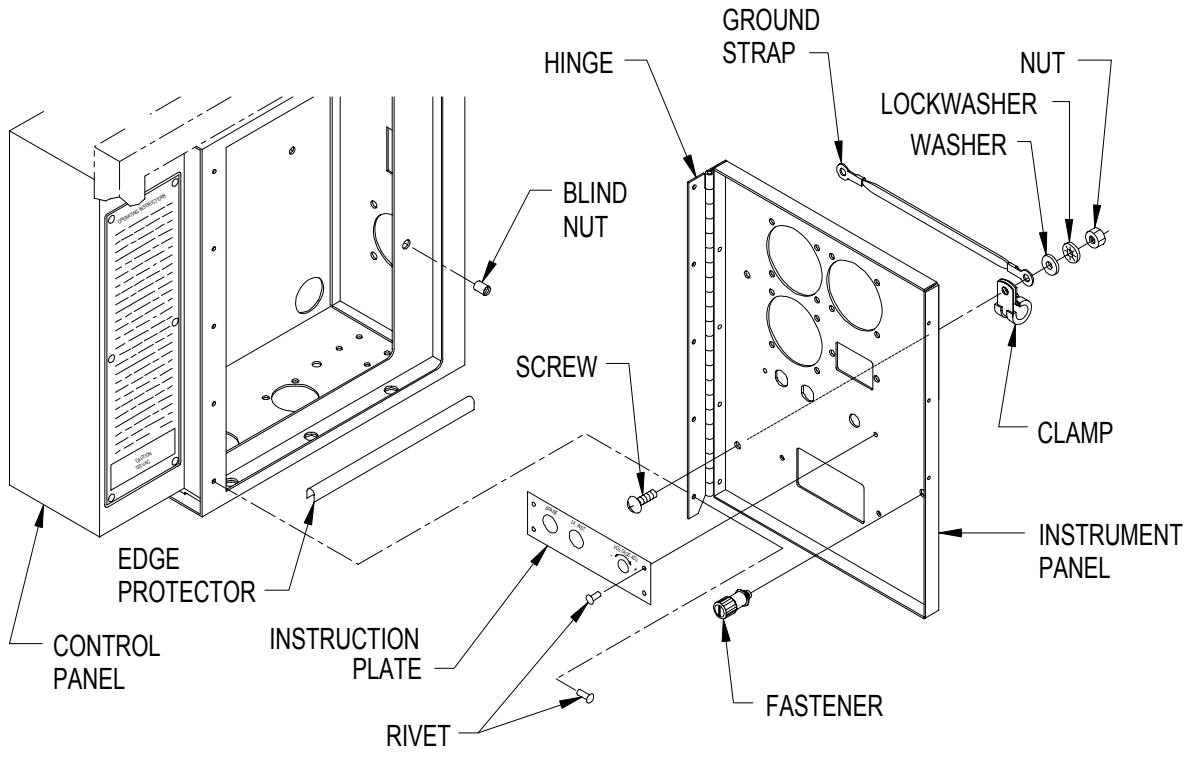


Figure 4-22. Instrument Panel

(10) If necessary, remove HERTZ frequency meter (MEP-531A only), VOLTS meter, %LOAD meter, HOURS meter, VOLTAGE ADJ. potentiometer, GFCI receptacle (MEP-531A only), and INST. fuseholders, refer to corresponding paragraphs.

(11) If necessary, remove rivets and instruction plate.

c. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Repair all dents and cracks, and remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

d. Installation.

(1) If removed, install instruction plate, refer to paragraph 4.21.b.

(2) If removed, install INST. fuseholders, GFCI receptacle (MEP-531A only), VOLTAGE ADJ. potentiometer, HOURS meter, %LOAD meter, VOLTS meter, and HERTZ frequency meter (MEP-531A only), refer to corresponding paragraphs.

(3) If removed, install instrument cover, refer to paragraph 4.22.d.

(4) If removed, install edge protector (Figure 4-22) on control panel with contact adhesive (Item 2, Appendix E).

(5) If removed, install blind nut in control panel and fastener in instrument panel.

(6) If removed, install hinge on instrument panel with new rivets.

(7) Install instrument panel on control panel with new rivets.

(8) If removed, install ground strap on lug terminal board mounting screw and position clamp on electrical harness.

(9) Secure ground strap and clamp to instrument panel with screw, washer, lockwasher, and nut.

(10) Connect electrical leads to HERTZ frequency meter (MEP-531 only), VOLTS meter, %LOAD meter, HOURS meter, VOLTAGE ADJ. potentiometer, GFCI receptacle (MEP-531 only), and INST. fuseholder. Remove tags. Then install gauge protective cover.

(11) Close and secure instrument panel.

4.24. HERTZ FREQUENCY METER. (MEP-531A)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect HERTZ frequency meter for security, cracked lens, corrosion, and other damage.

(5) Close and secure instrument panel and instrument cover.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover.

(4) Set multimeter for ohms and check for continuity in wires M4-1↔M2-1 and M4-2↔M2-2.

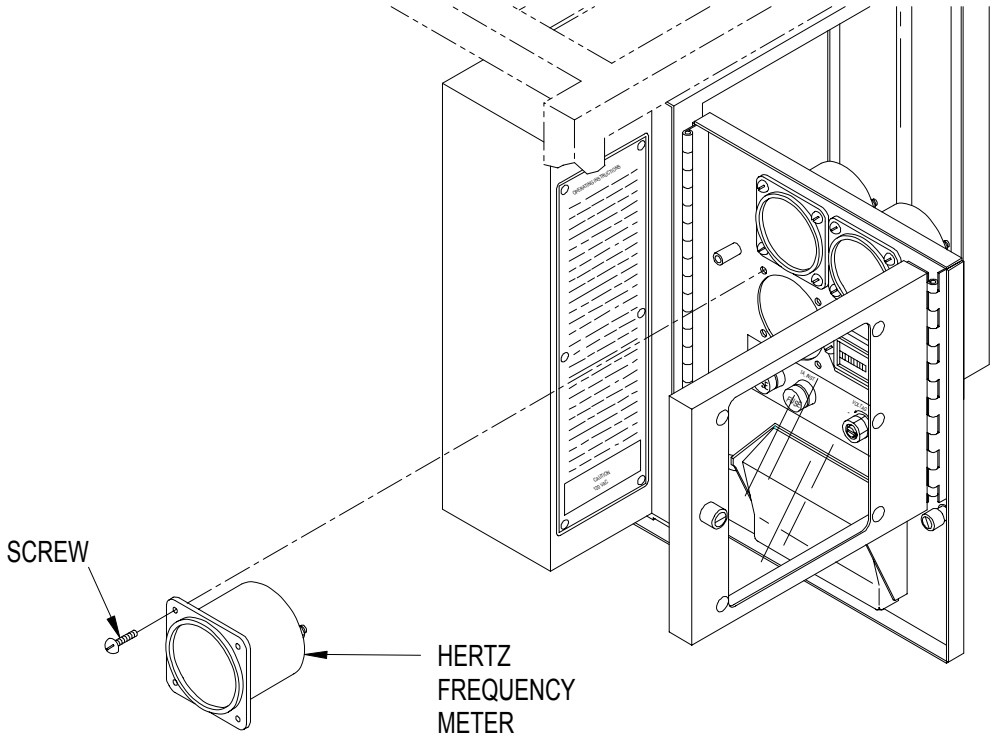


Figure 4-23. HERTZ Frequency Meter (MEP-531A)

(5) If continuity is present (step 4), replace HERTZ frequency meter.

(6) Install gauge protective cover.

(7) Close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover. Then tag and disconnect HERTZ frequency meter (Figure 4-23) electrical leads.

(4) Release instrument cover by turning fastener, open instrument cover.

(5) Remove screws.

(6) Remove HERTZ frequency meter from instrument panel.

d. Installation.

(1) Insert HERTZ frequency meter (Figure 4-23) into instrument panel.

(2) Apply locking compound (Item 6, Appendix E) to screws.

(3) Install screws.

(4) Connect electrical leads and remove tags. Then install gauge protective cover.

(5) Close and secure instrument panel and instrument cover.

4.25. VOLTS METER.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect VOLTS meter for security, cracked lens, corrosion, and other damage.

(5) Close and secure instrument panel and instrument cover.

b. Testing. (VOLTS AC Meter)

(1) Release instrument panel by turning fastener, open instrument panel slowly.

(2) Remove gauge protective cover.

(3) Set multimeter for AC volts and connect to VOLTS AC meter terminals 1 and 2.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(4) Start and operate generator set at rated voltage. Record multimeter indication.

(5) Shut down generator set.

(6) Replace VOLTS AC meter if multimeter indicates AC voltage within rated range (114-126 VAC) and meter does not.

(7) Install gauge protective cover.

(8) Close and secure instrument panel.

c. Testing. (VOLTS DC Meter)

(1) Release instrument panel by turning fastener, open instrument panel slowly.

(2) Remove gauge protective cover.

(3) Set multimeter for DC volts and connect to VOLTS DC meter terminals.

(4) Start and operate generator set at rated voltage (multimeter indication).

(5) Shut down generator set.

(6) Replace VOLTS DC meter if multimeter indicates DC voltage within rated range (26.6-32.2 VDC) and meter does not.

(7) Install gauge protective cover.

(8) Close and secure instrument panel.

d. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover. Then tag and disconnect VOLTS meter (Figure 4-24) electrical leads.

(4) Release instrument cover by turning fastener, open instrument cover.

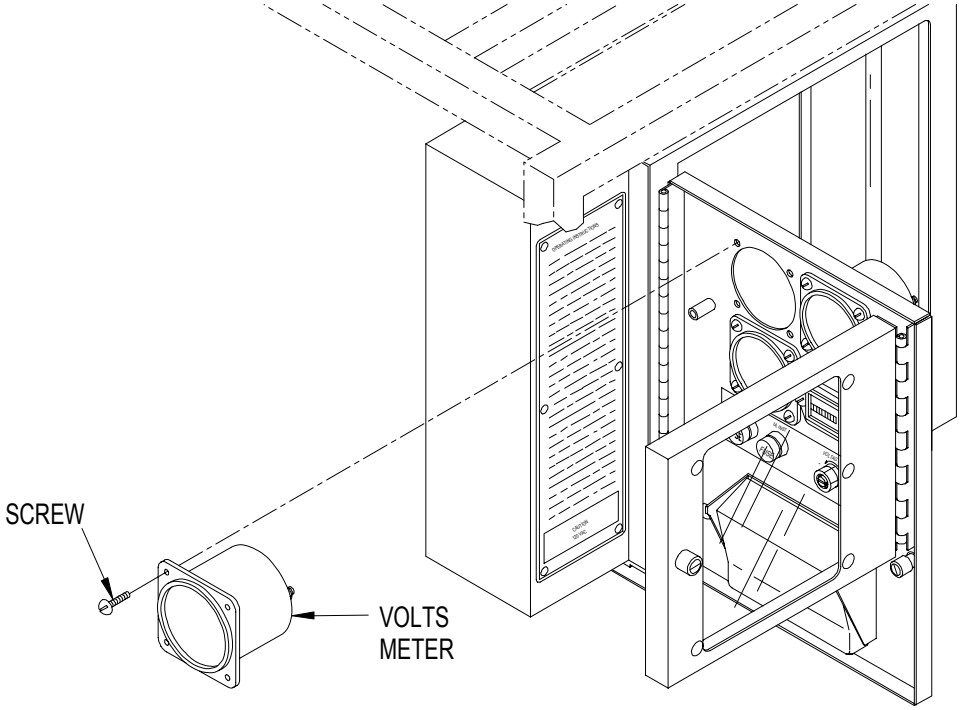


Figure 4-24. VOLTS Meter

(5) Remove screws.

(6) Remove VOLTS meter from instrument panel.

e. Installation.

(1) Insert VOLTS meter (Figure 4-24) into instrument panel.

(2) Apply locking compound (Item 6, Appendix E) to screws.

(3) Install screws.

(4) Connect electrical leads and remove tags. Then install gauge protective cover.

(5) Close and secure instrument panel and instrument cover.

4.26. %LOAD METER.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect %LOAD meter for security, cracked lens, corrosion, and other damage.

(5) Close and secure instrument panel and instrument cover.

b. Testing. (MEP-531A)

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover.

(4) Tag and disconnect wire M1↔TB1-14 at %LOAD meter.

(5) Set multimeter for amps and using alligator clips, connect multimeter between disconnected wire and terminal of %LOAD meter.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(6) Start and operate generator set at rated voltage and frequency. Apply some load to generator set.

(7) Observe and note indications on multimeter and %LOAD meter. If no indication on multimeter, then fault is in wiring to %LOAD meter.

(8) Shut down generator set.

(9) Calculate percent of current from multimeter indication using following formula:

$$\text{Percent of Current} = \frac{100 \times \text{Multimeter Indication}}{16.66}$$

(10) Compare calculated percent of current to %LOAD meter indication noted during operation. If difference is greater than 10%, replace %LOAD meter.

(11) Remove multimeter, connect wire M1↔TB1-14 to %LOAD meter.

(12) Install gauge protective cover.

(13) Close and secure instrument panel.

c. Testing. (MEP-501A)

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover.

(4) Tag and disconnect wire M1 (Red)↔R3 at %LOAD meter.

(5) Set multimeter for amps, and using alligator clips, connect multimeter between disconnected wire and terminal of %LOAD meter.

NOTE

If using a load greater than 10 amps, a shunt will be required.

(6) Start and operate generator set at rated voltage and frequency. Apply some load to generator set.

(7) Observe and note indications on multimeter and %LOAD meter. If no indication on multimeter, then fault is in wiring to %LOAD meter or in instrument shunt.

(8) Shut down generator set.

(9) Calculate percent of current from multimeter indication using following formula:

$$\text{Percent of Current} = \frac{100 \times \text{Multimeter Indication}}{71.44}$$

(10) Compare calculated percent of current to %LOAD meter indication noted during operation. If difference is greater than 10%, replace %LOAD meter.

(11) Remove multimeter, connect wire M1 (Red)↔R3 to %LOAD meter.

(12) Install gauge protective cover.

(13) Close and secure instrument panel.

d. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove gauge protective cover. Then tag and disconnect %LOAD meter (Figure 4-25) electrical leads.

(4) Release instrument cover by turning fastener, open instrument cover.

(5) Remove screws.

(6) Remove %LOAD meter from instrument panel.

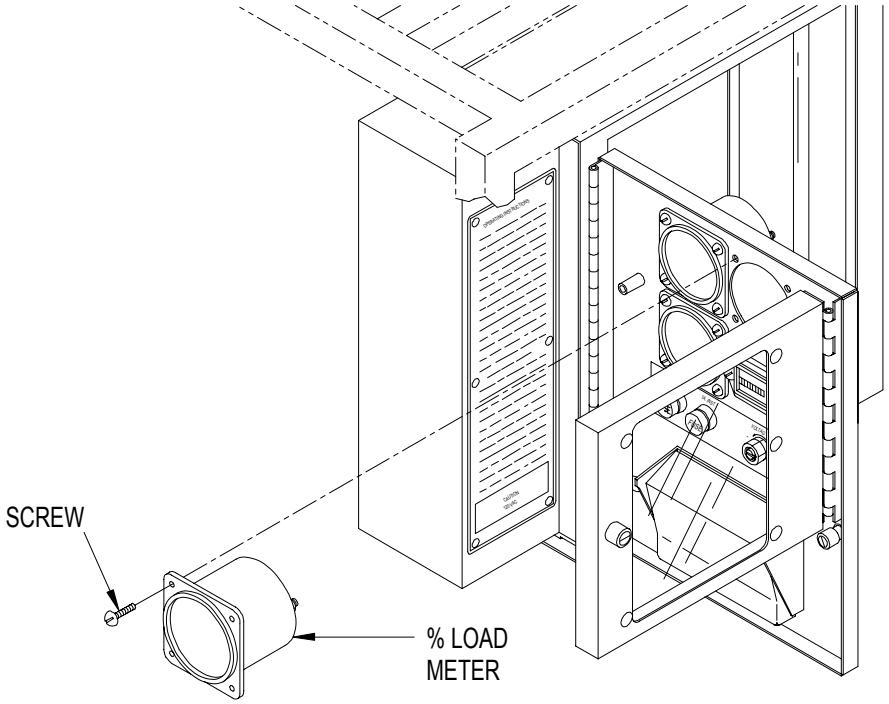


Figure 4-25. %LOAD Meter

e. Installation.

(1) Insert %LOAD meter (Figure 4-25) into instrument panel.

(2) Apply locking compound (Item 6, Appendix E) to screws.

(3) Install screws.

(4) Connect electrical leads and remove tags. Then install gauge protective cover.

(5) Close and secure instrument panel and instrument cover.

4.27. HOURS METER.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect HOURS meter for security, cracked lens, corrosion, and other damage.

(5) Close and secure instrument panel and instrument cover.

b. Testing.

(1) Release instrument panel by turning fastener, open instrument panel slowly.

(2) Set multimeter for DC volts and connect across terminals of HOURS meter.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(3) Start generator set and operate at rated voltage.

(4) If 35-45 VDC is present, wait approximately six (6) minutes. HOURS meter should move 1/10 of an hour.

(5) If HOURS meter does not operate properly, meter is defective and must be replaced.

(6) Disconnect multimeter, close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect HOURS meter (Figure 4-26) electrical leads.

(4) Release instrument cover by turning fastener, open instrument cover.

(5) Remove screws.

(6) Remove HOURS meter from instrument panel.

d. Installation.

(1) Insert HOURS meter (Figure 4-26) into instrument panel.

(2) Install screws.

(3) Connect electrical leads and remove tags.

(4) Close and secure instrument panel and instrument cover.

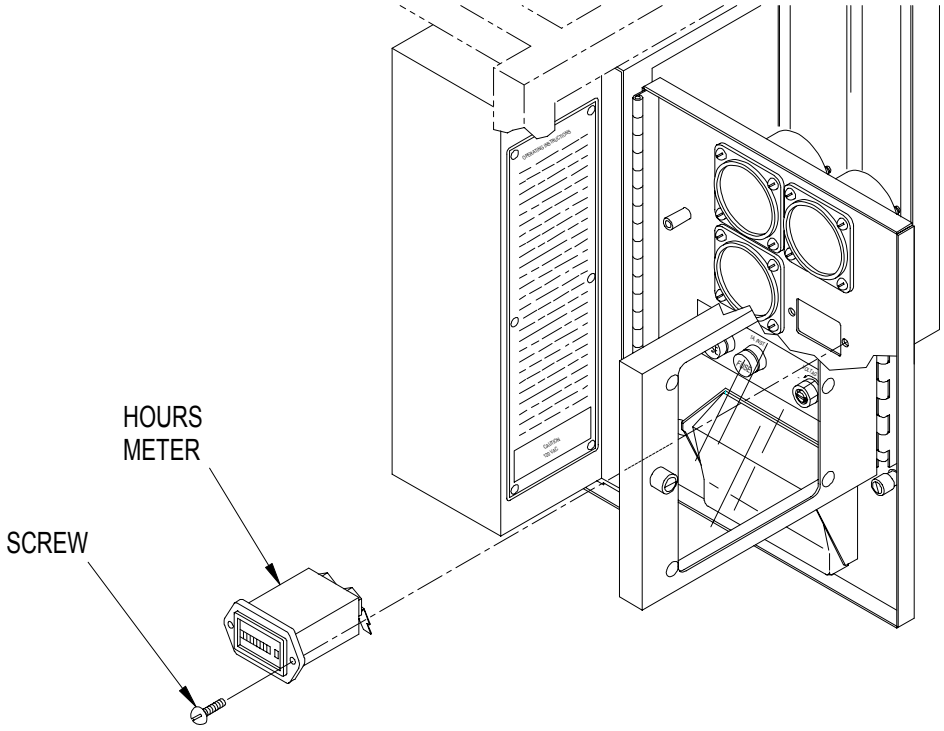


Figure 4-26. HOURS Meter

4.28. VOLTAGE ADJ. POTENTIOMETER.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect VOLTAGE ADJ. potentiometer for security, loose connections, and other damage.

(5) Close and secure instrument panel and instrument cover.

b. Testing.

(1) Remove VOLTAGE ADJ. potentiometer, paragraph 4.28.c.

(2) Set multimeter for ohms and connect across two outer terminals of VOLTAGE ADJ. potentiometer. Indication should be 900 to 1000 ohms (MEP-531A) or 9000 to 10000 ohms (MEP-501A).

(3) Rotate voltage adjust shaft counterclockwise as far as it will go.

(4) Connect multimeter between center terminal and either outer terminal.

(5) Slowly, at an even rate, rotate voltage adjust shaft clockwise as far as it will go while observing multimeter.

(6) Multimeter indication shall increase, at an even rate, from 0 to 900-1000 ohms (MEP-531A) or 0 to 9000-10000 ohms (MEP-501A).

(7) Repeat steps (3) through (6) for other outer terminal.

(8) If multimeter indication changes erratically or indications are not as stated above when rotation is complete, VOLTAGE ADJ. potentiometer is defective and must be replaced.

(9) If not defective, install VOLTAGE ADJ. potentiometer, paragraph 4.28.e.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads for VOLTAGE ADJ. potentiometer (Figure 4-27) from terminals of TB1.

(4) Release instrument cover by turning fastener, open instrument cover.

(5) Remove nuts, lockwasher and VOLTAGE ADJ. potentiometer from instrument panel.

d. Repair. Repair VOLTAGE ADJ. potentiometer by assembling the potentiometer, wires, and terminals in accordance with Appendix G, Figure G-1 (MEP-531A) or Figure G-2 (MEP-501A).

e. Installation.

(1) Insert VOLTAGE ADJ. potentiometer (Figure 4-27) into instrument panel and secure with lockwasher and nuts.

(2) Connect electrical leads to terminals of TB1 and remove tags.

(3) Close and secure instrument panel and instrument cover.

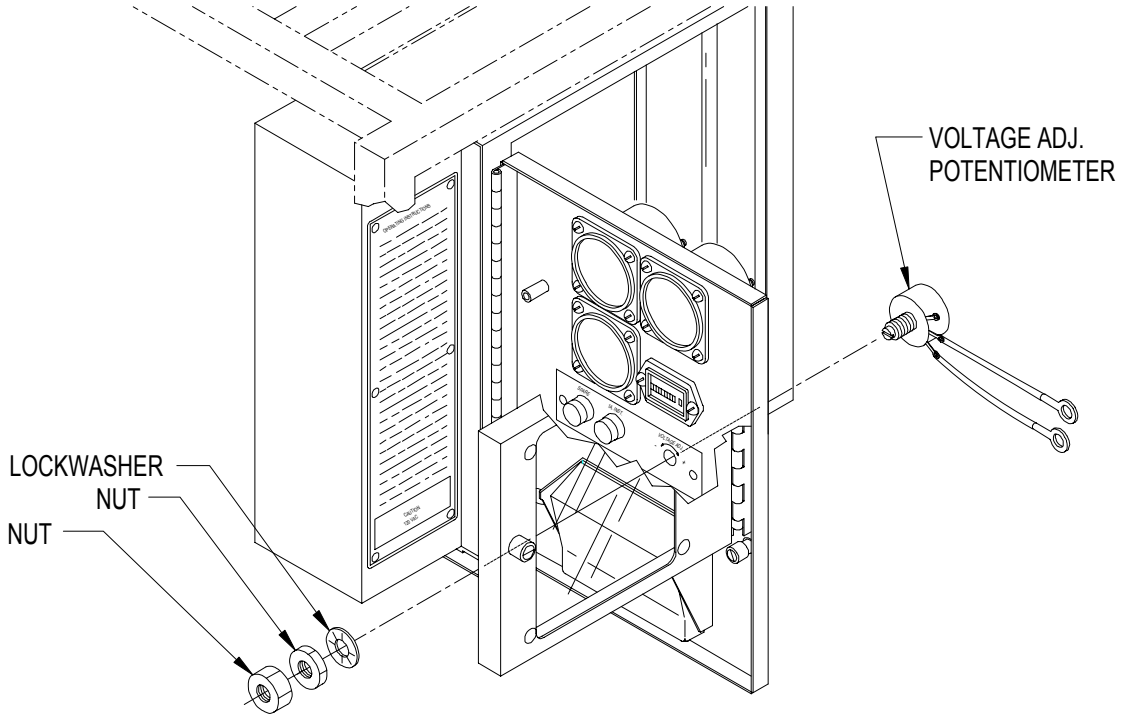


Figure 4-27. VOLTAGE ADJ. Potentiometer

4.29. INSTRUMENT SHUNT. (MEP-501A)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect instrument shunt for security, corrosion, and loose wires.

(4) Close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads to instrument shunt (Figure 4-28).

(4) Remove screws, lockwashers, and washers securing instrument shunt to control panel. Remove shunt resistor.

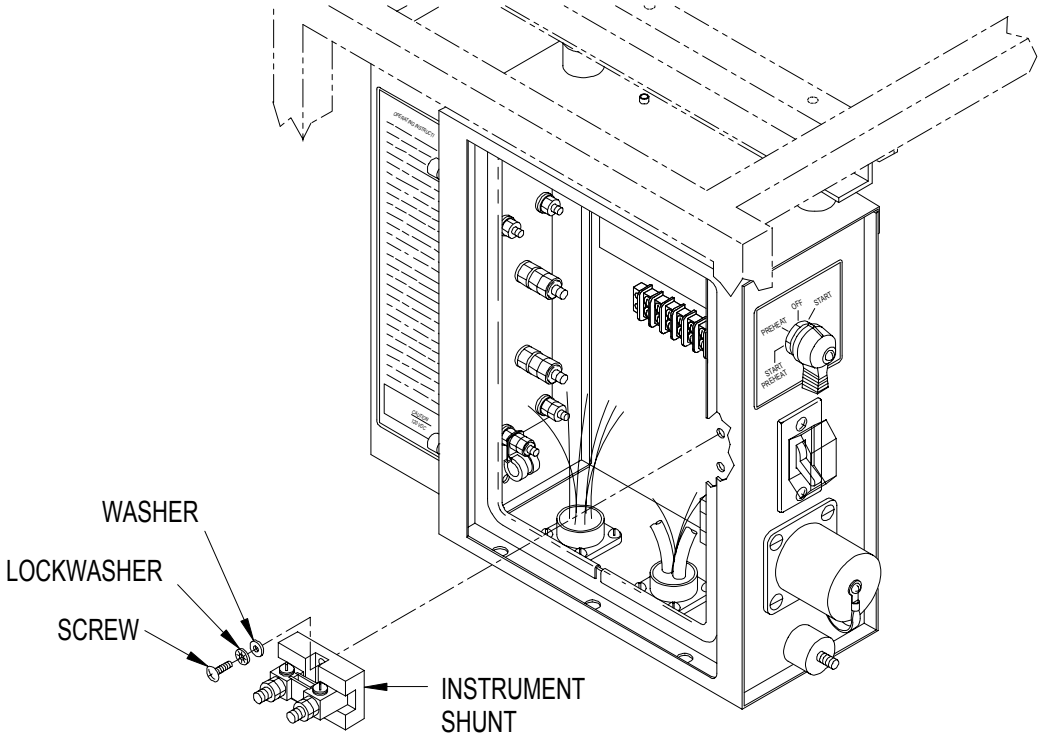


Figure 4-28. Instrument Shunt (MEP-501A)

c. Testing.

(1) Release instrument panel by turning fastener, open instrument panel slowly.

(2) Set multimeter for mVDC and connect to shunt terminals [M1- (RED) and M1- (BLK)].

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(3) Start generator set connected to load bank and operate at rated voltage at no load.

(4) Multimeter should indicate 0 mVDC.

(5) Increase load to 50 percent. Multimeter should indicate 20 mVDC.

(6) Increase load to 100 percent. Multimeter should indicate 40 mVDC.

(7) Shutdown generator set.

(8) Instrument shunt should be replaced if any of above multimeter readings are incorrect.

(9) Close and secure instrument panel.

d. Installation.

(1) Install instrument shunt (Figure 4-28) in control panel and secure with screws, lockwashers, and washers.

(2) Connect wires to instrument shunt terminals as tagged. Remove tags.

(3) Close and secure instrument panel.

4.30. CAPACITOR. (MEP-501A)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect capacitor for security, overheating, and other damage.

(4) Close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Cut tie down strap securing capacitor (Figure 4-29) to mount.

(4) Tag and disconnect capacitor at terminal board and at load terminal (-). Remove capacitor from control panel.

c. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect wire C1 (-)↔(-) at load terminal (-) and wire C1 (+)↔CB1-P1 (Line) at circuit breaker CB1.

(4) Using multimeter, set for ohms, note resistance across terminals. Reverse leads and note resistance.

(5) Resistance should be high in one direction and low in the other. If resistance is high or low in both directions, replace capacitor.

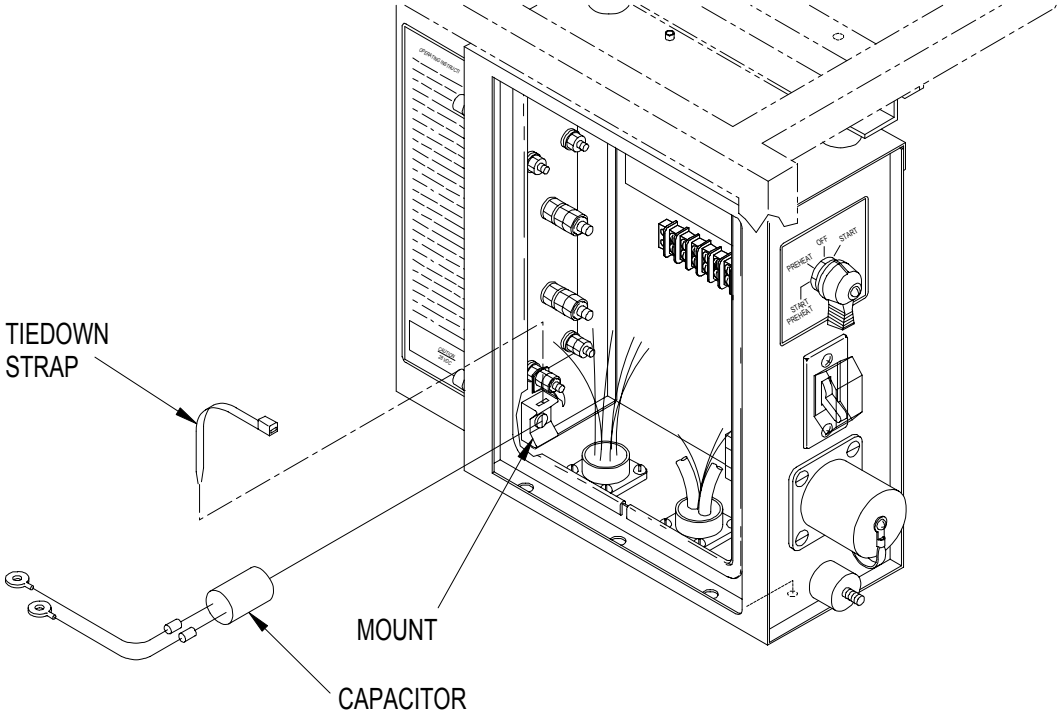


Figure 4-29. Capacitor (MEP-501A)

(6) Reconnect wires.

(7) Close and secure instrument panel.

d. Repair. Repair capacitor by assembling the capacitor and terminals in accordance with Appendix G, Figure G-4.

e. Installation.

(1) Connect capacitor leads at terminal board and at load terminal (-) as tagged. Remove tags.

(2) Secure capacitor (Figure 4-29) to mount with new tie down strap.

(3) Close and secure instrument panel.

4.31. TRANSIENT SUPPRESSOR ASSEMBLY. (MEP-501A)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect transient suppressor assembly for security and other damage.

(4) Close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove locknuts and washers (Figure 4-30) securing transient suppressor assembly to load terminals (+) and (-). Then remove transient suppressor assembly.

c. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect transient suppressor assembly from positive load terminal.

(4) Using multimeter, set for ohms, note resistance across terminals. Reverse leads and note resistance.

(5) Resistance should be high in one direction and low in the other. If resistance is high or low in both directions, replace suppressor.

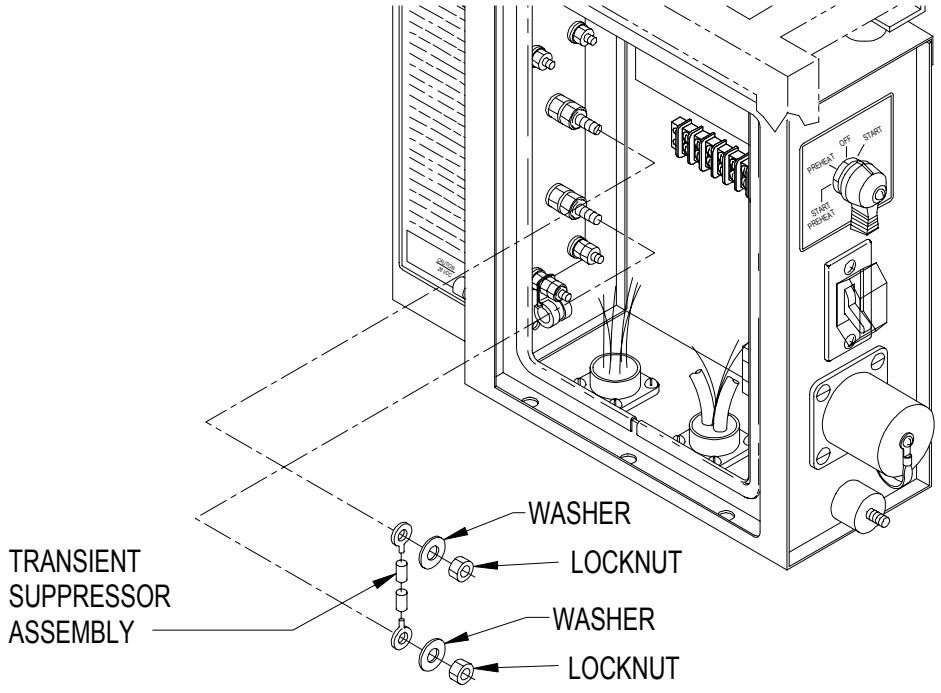


Figure 4-30. Transient Suppressor Assembly (MEP-501A)

(6) Reconnect transient suppressor assembly.

(7) Close and secure instrument panel.

d. Repair. Repair transient suppressor assembly by assembling the transient suppressor assembly and terminals in accordance with Appendix G, Figure G-14.

e. Installation.

(1) Install transient suppressor assembly (Figure 4-30) on load terminals (+) and (-) with locknuts and washers.

(2) Close and secure instrument panel.

4.32. FUSEHOLDER (S).

a. Inspection.

(1) Shut down generator set.

(2) Release instrument cover by turning fastener, open instrument cover.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Inspect fuseholder for security, cracked cap, corrosion, and other damage.

(5) Inspect fuse for cracks and burned out element.

(6) Close and secure instrument panel and instrument cover.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads from fuseholder (Figure 4-31).

(4) Release instrument cover by turning fastener, open instrument cover.

(5) Remove nut.

(6) Remove fuseholder, complete with fuse.

(7) If necessary, remove cap and fuse.

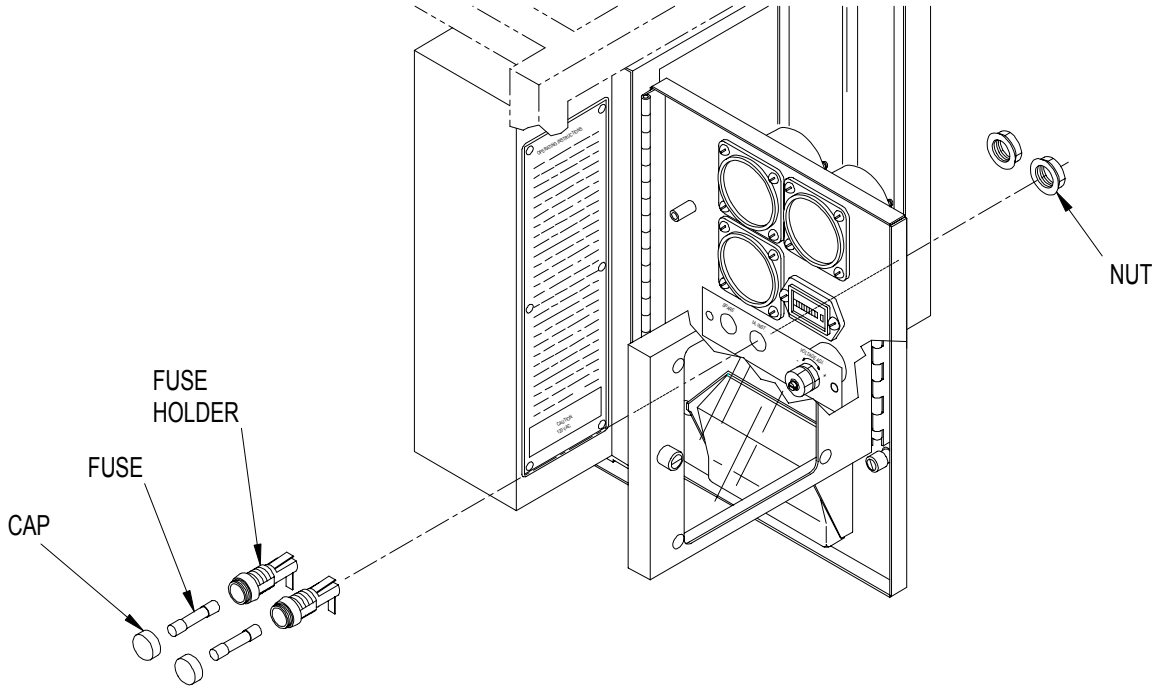


Figure 4-31. Fuseholder(s)

c. Installation.

(1) If removed, insert fuse (Figure 4-31) into fuseholder and install cap.

(2) Position fuseholder in instrument panel.

(3) Install nut.

(4) Connect electrical leads and remove tags.

(5) Close and secure instrument panel and instrument cover.

4.33. GROUND STRAP (S).

a. Inspection.

(1) Inspect braided strap for broken strands, corrosion, and damage.

(2) Inspect connectors for damage and corrosion.

b. Removal.

(1) Remove nuts, lockwashers, washers, and capscrews as applicable securing ground strap (Figure 4-32) at both ends.

(2) Remove ground strap.

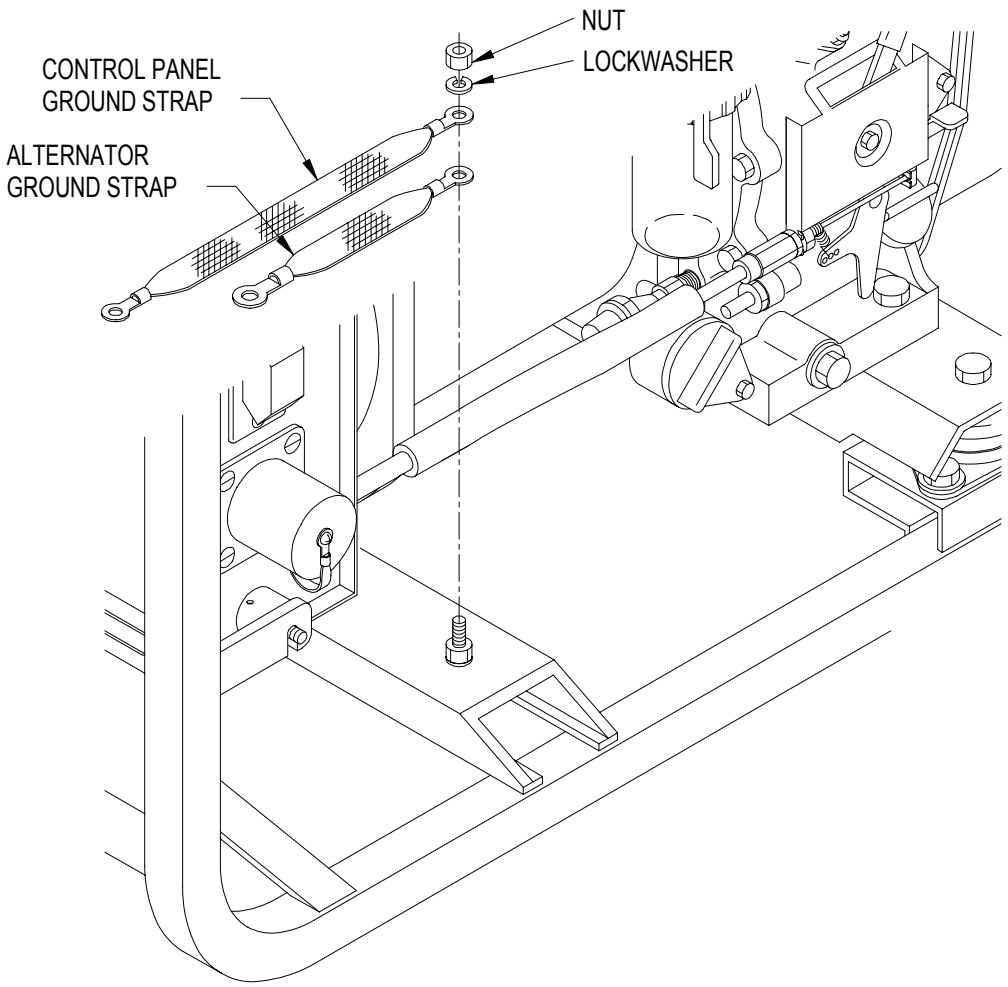


Figure 4-32. Ground Strap(s)

c. Installation.

(1) Position ground strap (Figure 4-32).

(2) Secure ground strap at both ends with nuts, lockwashers, washers, and capscrews as applicable. Torque nut to 75 lb-in. (8.5 Nm).

4.34. GFCI RECEPTACLE AND RECEPTACLE COVER. (MEP-531A)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect GFCI receptacle for security, cracks, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect GFCI receptacle (Figure 4-33) electrical leads.

(4) Set multimeter for ohms and check for continuity between side terminals of each plug outlet.

(5) Replace GFCI receptacle if continuity is indicated between terminals.

(6) Connect electrical leads to receptacle and remove tags.

(7) Close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect GFCI receptacle (Figure 4-33) electrical leads.

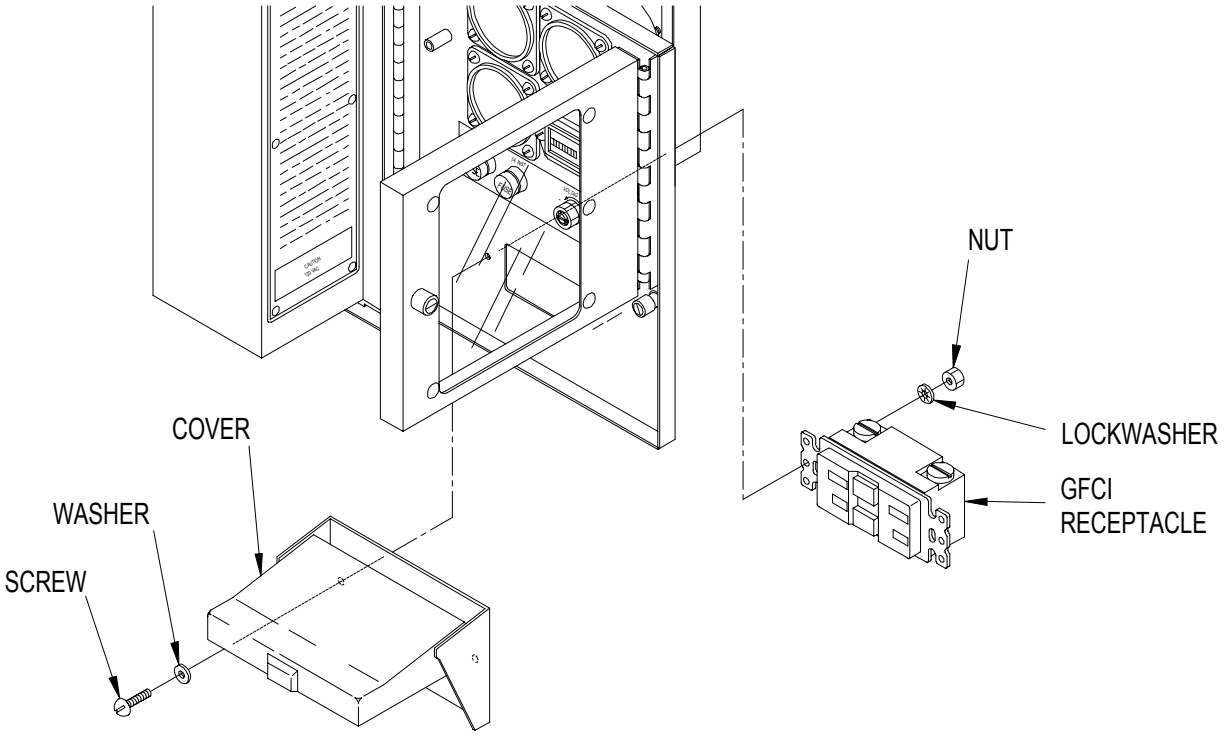


Figure 4-33. GFCI Receptacle and Receptacle Cover (MEP-531A)

(4) Remove nuts, lockwashers, screws, washers, and cover.

(5) Remove GFCI receptacle from instrument panel.

d. Installation.

(1) Insert GFCI receptacle (Figure 4-33) into instrument panel.

(2) Position cover over GFCI receptacle and secure both with washers, screws, lockwashers, and nuts.

(3) Connect electrical leads and remove tags.

(4) Close and secure instrument panel.

4.35. START-PREHEAT/PREHEAT/OFF/START ROTARY SWITCH.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect START-PREHEAT/PREHEAT/OFF/START rotary switch for security, cracks, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) If connected, disconnect power source at NATO slave receptacle.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

(4) Tag and disconnect START-PREHEAT/PREHEAT/OFF/START rotary switch (Figure 4-34) electrical leads and check switch for continuity using multimeter. Refer to Electrical Schematic Figure FO-1 (MEP-531A) or Figure FO-2 (MEP-501A) to determine circuits made to corresponding switch positions.

(5) Check continuity until all four positions have been checked.

(6) If readings are not as noted in schematic, switch is unserviceable and must be replaced.

(7) Connect electrical leads, remove tags, close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open control panel slowly.

(3) Tag and disconnect START-PREHEAT/PREHEAT/OFF/START rotary switch (Figure 4-34) electrical leads.

(4) Remove screw and knob from START-PREHEAT/PREHEAT/OFF/START rotary switch.

(5) Remove nut, instruction plate, and START-PREHEAT/PREHEAT/OFF/START rotary switch from control panel.

d. Installation.

(1) Insert START-PREHEAT/PREHEAT/OFF/START rotary switch (Figure 4-34) into control panel.

(2) Position instruction plate over START-PREHEAT/PREHEAT/OFF/START rotary switch and secure both in control panel with nut.

(3) Install screw and knob on START-PREHEAT/PREHEAT/OFF/START rotary switch.

(4) Connect electrical leads and remove tags.

(5) Close and secure instrument panel.

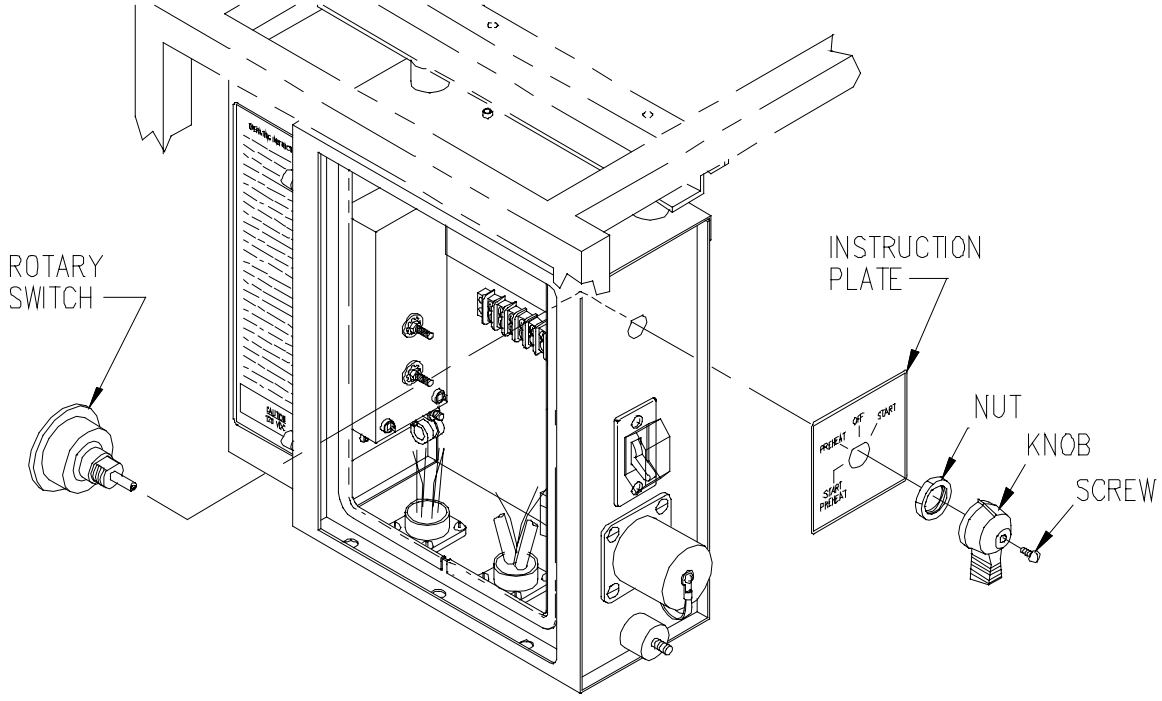


Figure 4-34. START-PREHEAT/PREHEAT/OFF/START Rotary Switch

4.36. DISCHARGE VARISTOR.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect the discharge varistor for security, cracks, broken wires, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing.

(1) Disconnect one lead from discharge varistor (Figure 4-35).

(2) Set multimeter for ohms and check across leads for continuity in both directions.

(3) Replace discharge varistor if continuity is indicated in either direction.

(4) Install disconnected lead of discharge varistor.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag electrical leads for discharge varistor (Figure 4-35) at terminals 5 and 6 of TB1 (MEP-531A) or terminals 6 and 7 of TB1 (MEP-501A).

(4) Remove screws and discharge varistor from control panel.

d. Installation.

(1) Install discharge varistor (Figure 4-35) in control panel with screws.

(2) Remove tags from electrical leads.

(3) Close and secure instrument panel.

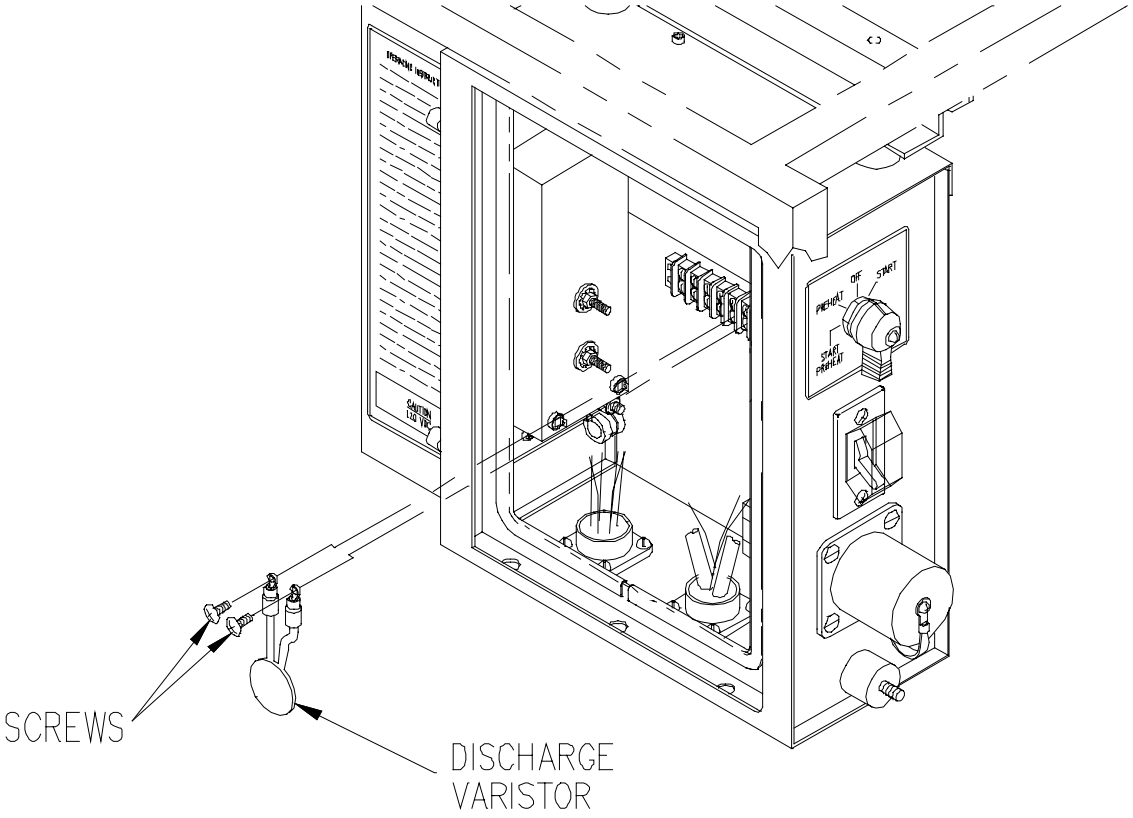


Figure 4-35. Discharge Varistor

4.37. NATO SLAVE RECEPTACLE.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect NATO slave receptacle for security, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads from NATO slave receptacle (Figure 4-36).

(4) Remove nuts, lockwashers, washers, screws, cover, bracket, and NATO slave receptacle with gasket from control panel.

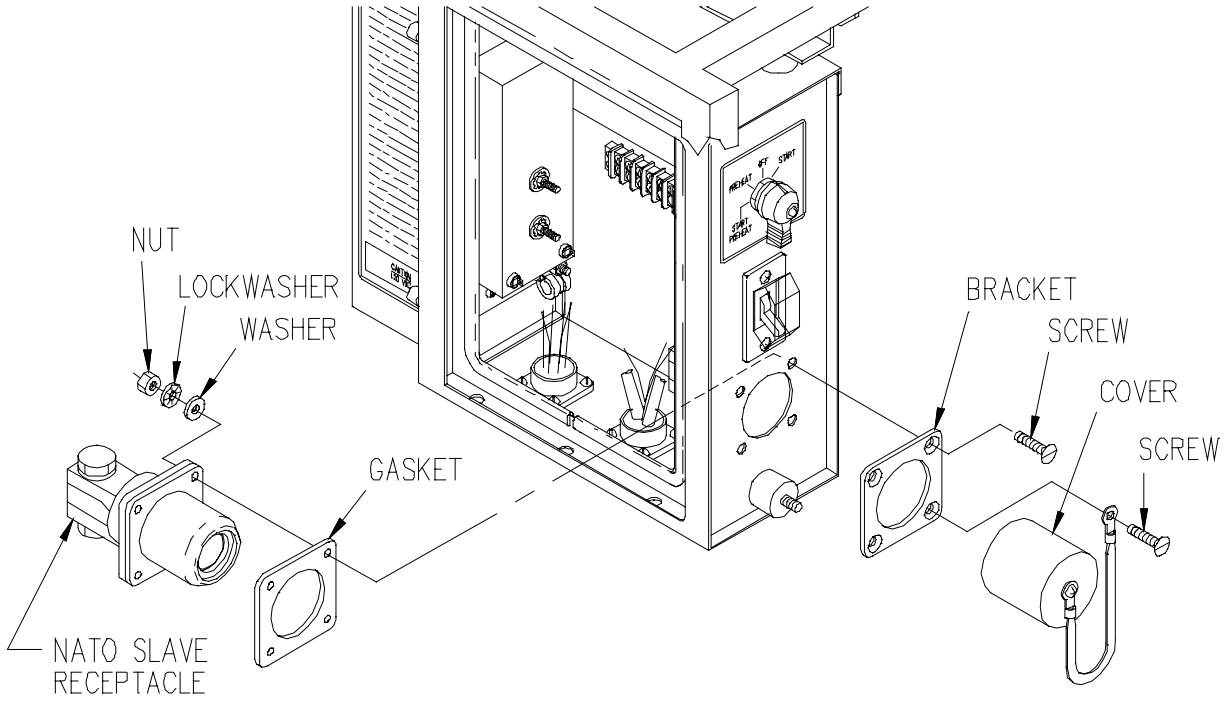


Figure 4-36. NATO Slave Receptacle

c. Installation.

(1) Insert NATO slave receptacle (Figure 4-36) with gasket into control panel.

(2) Position bracket and cover on NATO slave receptacle.

(3) Secure NATO slave receptacle, bracket, and cover to control panel with screws, washers, lockwashers, and nuts.

(4) Connect electrical leads to NATO slave receptacle and remove tags.

(5) Close and secure instrument panel.

4.38. LOAD TERMINAL (S). (MEP-501A AND MECHRON SETS)

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Release lug cover by turning two fasteners, open lug cover.

(4) Inspect the load terminals for deformed threads, corrosion, or other physical damage.

(5) Ensure that the connections to the load terminals are clean and tight. Replace if defective.

(6) Close and secure instrument panel.

(7) Close and secure lug cover.

b. Removal.

(1) Shut down generator set.

(2) Release lug cover by turning two fasteners, open lug cover.

(3) Disconnect load cables from load terminals (Figure 4-37) as necessary.

(4) Release instrument panel by turning fastener, open instrument panel slowly.

(5) Remove locknuts, washers, transient suppressor assembly, and nuts from load terminals.

(6) Tag and remove electrical leads from load terminals.

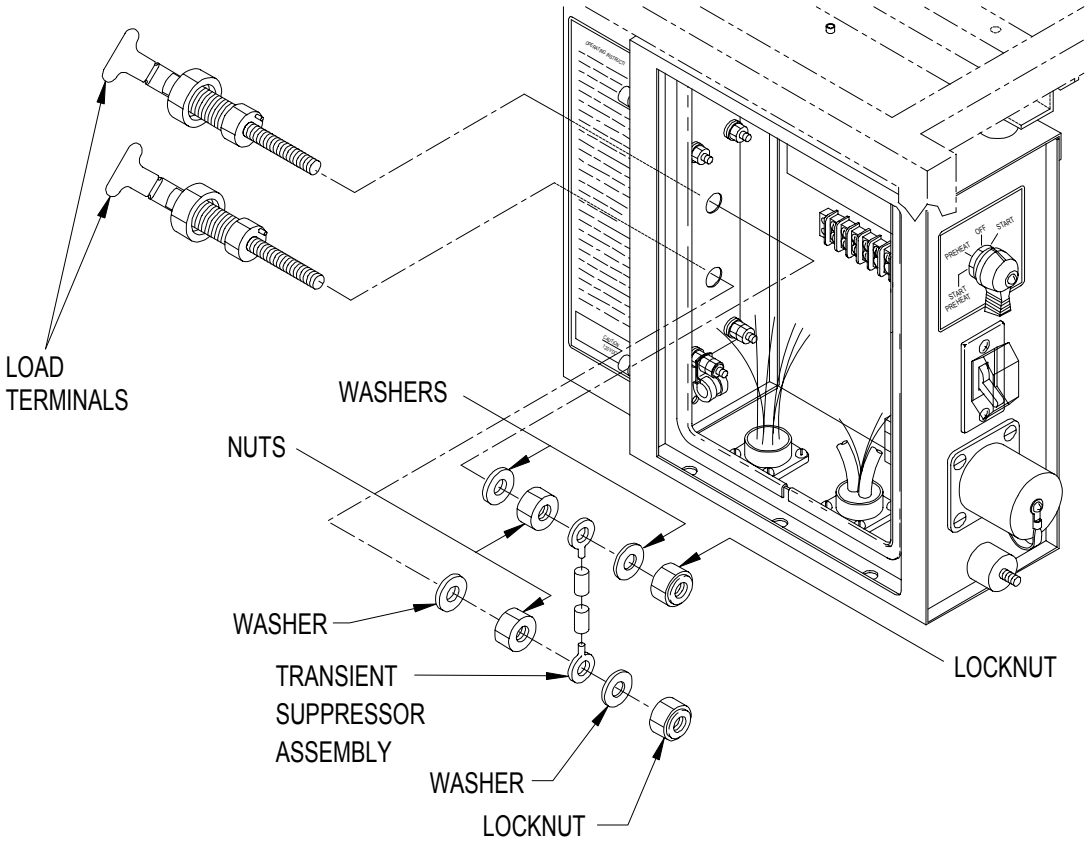


Figure 4-37. Load Terminal(s) (MEP-501A and Mechron Sets)

WARNING

Note the orientation of the load terminals before removing them. They must be installed in exactly the same way to preclude the possibility of accidental contact with the lug cover and the potential for electrical shock resulting from this contact.

(7) Hold terminal body hex with wrench and remove nuts, washers, and load terminals from load terminal board.

c. Installation.

WARNING

Be sure the load terminal retaining clip is closed to prevent contact with the lug cover as electrical shock could occur.

(1) Install load terminals (Figure 4-37) in load terminal board. Then hold terminal body hex with wrench and install washers and nuts.

(2) Position transient suppressor assembly and electrical leads on load terminals and secure with washers, nuts, and locknuts. Remove tags.

(3) Close and secure instrument panel.

(4) Connect load cables to load terminals as necessary.

(5) Close and secure lug cover.

4.39. TERMINAL BOARD.

a. Inspection.

NOTE

Terminal board numbering runs from left to right starting with number 1.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect terminal board for security, cracks, broken jumpers, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) If replacing terminal board remove and retain discharge varistor, refer to paragraph 4.36.c.

(4) Tag and disconnect electrical leads from terminal board (Figure 4-38).

(5) Tag and remove bus (MEP-531A) from terminal board.

(6) Remove screws, lockwashers, washers, and terminal board from control panel.

c. Testing.

(1) Remove terminal board. Refer to paragraph 4.39.b.

(2) Using multimeter set for ohms, check for continuity across each set of terminals. Replace terminal board if any terminal sets indicate an open circuit.

(3) Install terminal board. Refer to paragraph 4.39.d.

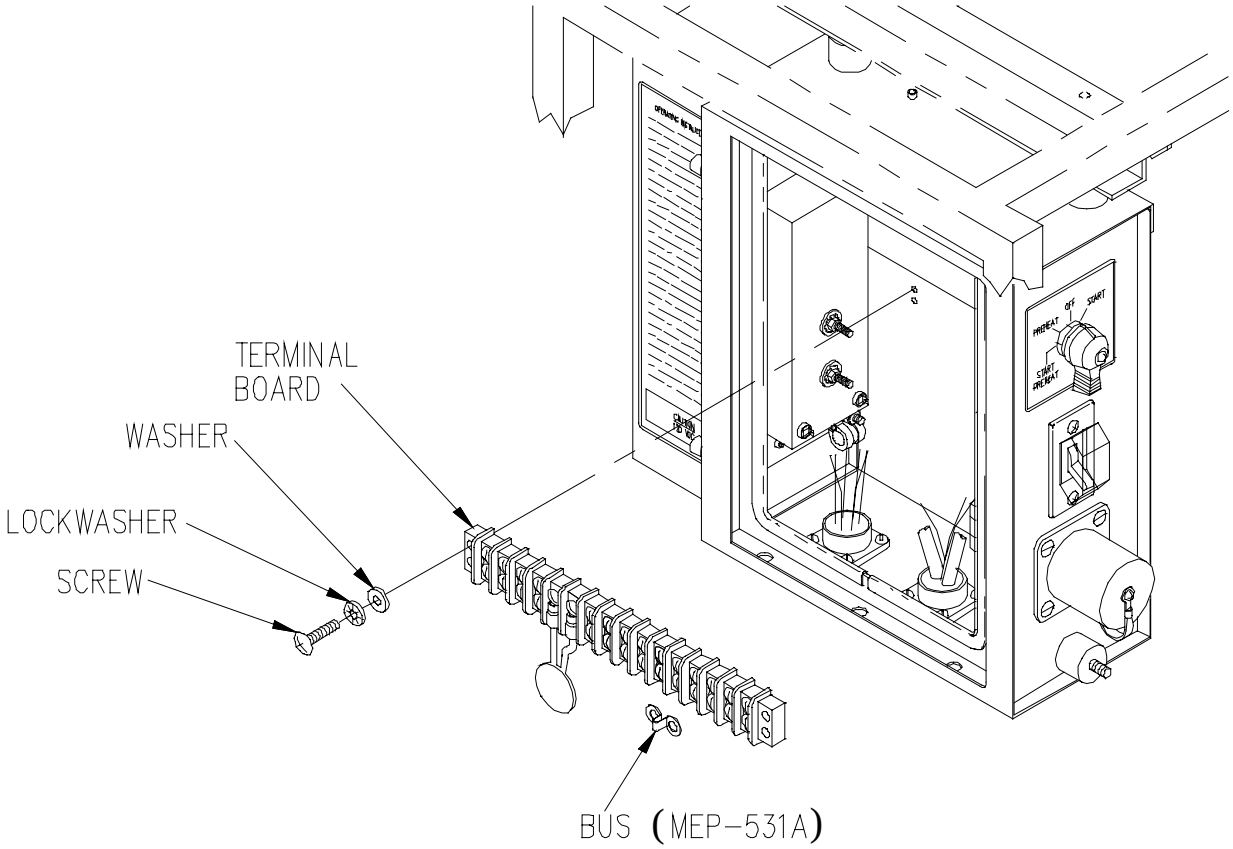


Figure 4-38. Terminal Board

d. Installation.

(1) Install terminal board (Figure 4-38) in control panel with washers, lockwashers, and screws.

(2) Connect bus (MEP-531A) and electrical leads to terminal board. Remove tags.

(3) If removed, install discharge varistor, refer to paragraph 4.36.d.

(4) Close and secure instrument panel.

4.40. LOAD TERMINAL BOARD. (MEP-501A AND MECHRON SETS).

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Release lug cover by turning two fasteners, open lug cover.

(4) Inspect load terminal board for security, cracks, deterioration, or other physical damage. Replace if defective.

(5) Close and secure instrument panel.

(6) Close and secure lug cover.

b. Removal.

(1) Shut down generator set.

(2) Remove load terminals, refer to paragraph 4.38.b.

(3) Remove nut (5, Figure 4-39), lockwashers (6), washers (7) and electrical wiring with p-clamp (3) from screw (8).

(4) Remove locknut (2), washers (7), lockwasher (6), ground strap (4), and nut (5) from screw (9).

(5) Remove nuts (5), lockwashers (6), washers (7), screws (10), and load terminal board (1) from control panel.

c. Installation.

(1) Install load terminal board (1, Figure 4-39) on control panel with screws (10), washers (7), lockwashers (6), and nuts (5).

(2) Install washers (7), lockwasher (6), nut (5), ground strap (4) and locknut (2) on screw (9).

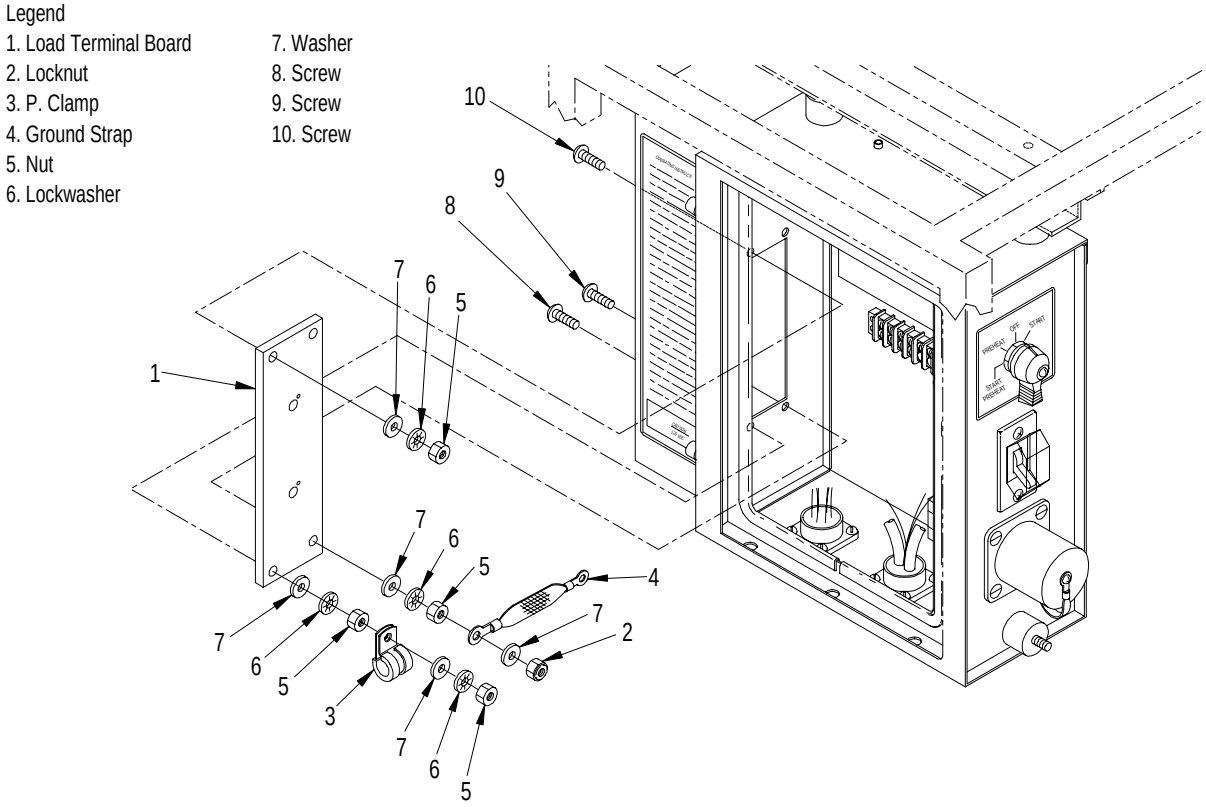


Figure 4-39. Load Terminal Board (MEP-501A and Mechron Sets)

(3) Install washers (7), lockwashers (6), nuts (5), and electrical wiring with p-clamp (3) on screw (8).

(4) Install load terminals, refer to paragraph 4.38.c.

4.41. ON-OFF LOAD CIRCUIT BREAKER ASSEMBLY AND BOOT.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect ON-OFF load circuit breaker assembly for security, cracks, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing. (MEP-531A)

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

NOTE

Refer to Wiring Diagram Figure FO-3 for terminal positions.

(3) Check for open circuits between terminals COM and NO, and terminals A and B.

(4) Place and hold ON-OFF load circuit breaker assembly in ON position.

(5) Check for continuity between terminals COM and NO, and terminals A and B.

(6) Remove shrink wrap and check diode assembly CR2 as follows:

(a) Using multimeter, set for ohms, note resistance across terminals. Reverse leads and note resistance.

(b) Resistance should be high in one direction and low in the other. If resistance is high or low in both directions, replace entire ON-OFF load circuit breaker assembly.

(7) Remove and replace entire assembly if any continuity/resistance check is other than indicated above.

(8) Close and secure instrument panel.

c. Testing. (MEP-501A)

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

NOTE

Refer to Wiring Diagram Figure FO-4 for terminal positions.

(3) Set multimeter to ohms and with ON-OFF load circuit breaker assembly in ON position, check for continuity between terminals P1 and P2.

(4) Check for open circuit between terminals P1 and P2 with load circuit breaker in OFF position.

(5) Repeat steps (3) and (4) for other half of ON-OFF load circuit breaker.

(6) Remove and replace entire ON-OFF load circuit breaker if any reading is other than indicated above.

(7) Close and secure instrument panel.

d. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads for ON-OFF load circuit breaker assembly (Figure 4-40) from TB1-2 and TB1-7 (MEP-531A).

(4) Tag and disconnect electrical leads from terminals on ON-OFF load circuit breaker assembly.

(5) Remove screws, boot, and ON-OFF load circuit breaker assembly from control panel.

e. Installation.

(1) Insert ON-OFF load circuit breaker assembly (Figure 4-40) into control panel.

(2) Position boot over ON-OFF load circuit breaker assembly and secure both to control panel with screws.

(3) Connect electrical leads to terminals on ON-OFF load circuit breaker assembly and remove tags.

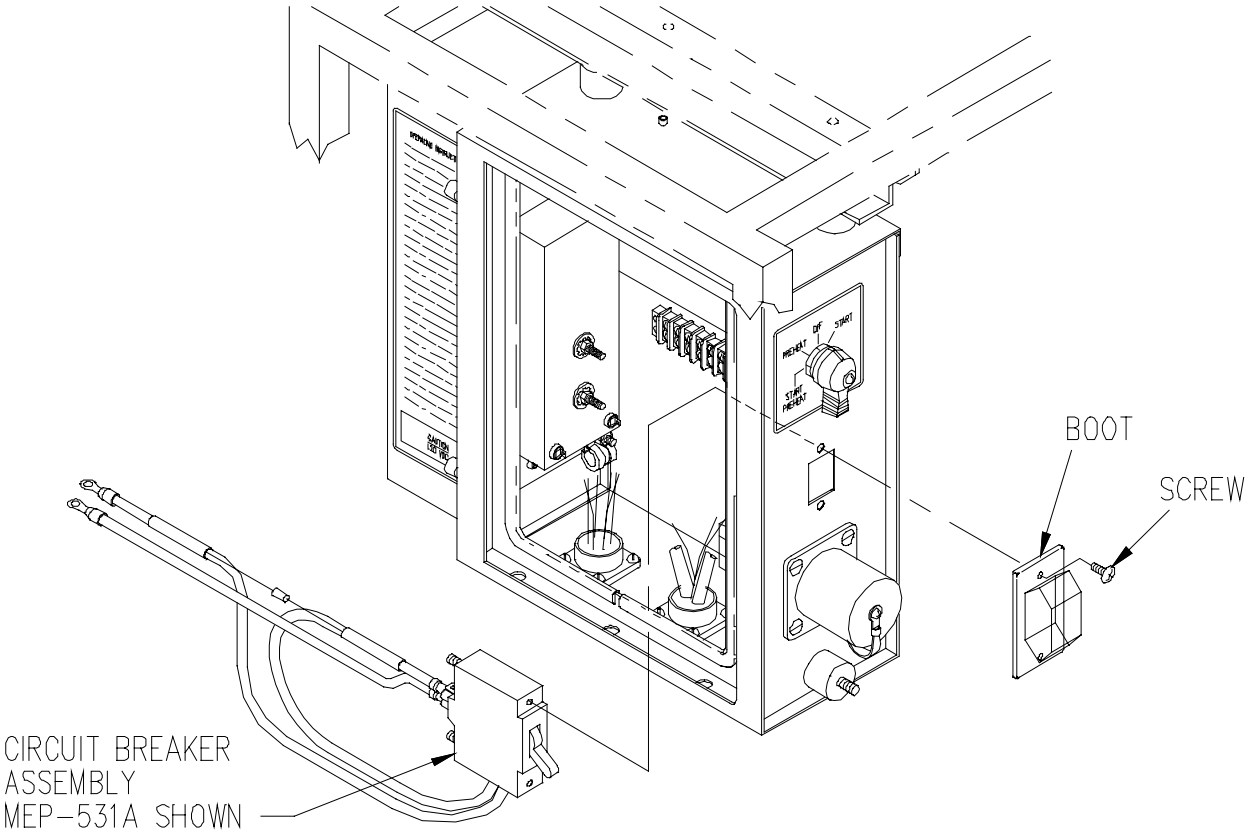


Figure 4-40. ON-OFF Load Circuit Breaker Assembly and Boot

(4) Connect electrical leads for ON-OFF load circuit breaker assembly to TB1-2 and TB1-7 (MEP-531A) and remove tags.

(5) Close and secure instrument panel.

4.42. FLYWHEEL DIODE ASSEMBLY.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect diode assembly for cracked or deteriorated insulation, broken terminals, and other damage.

(4) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect one end of flywheel diode assembly (CR1) at S2-S. Using multimeter set for ohms, test across disconnected end of CR1 to TB1-1. Then reverse leads and test again.

(4) Resistance (ohms) readings should be high in one direction and low in the other direction. If readings are high or low in both directions, diode is defective and must be replaced.

(5) Reconnect lead to S2-S.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove EMI filter, refer to paragraph 4.47.b (MEP-531A)

(4) Tag and disconnect flywheel diode assembly (Figure 4-41) at terminal board (TB1-1) and at START-PREHEAT/PREHEAT/OFF/START rotary switch (S2-S).

d. Repair. Repair flywheel diode assembly by assembling the flywheel diode assembly and terminals in accordance with Appendix G, Figure G-3.

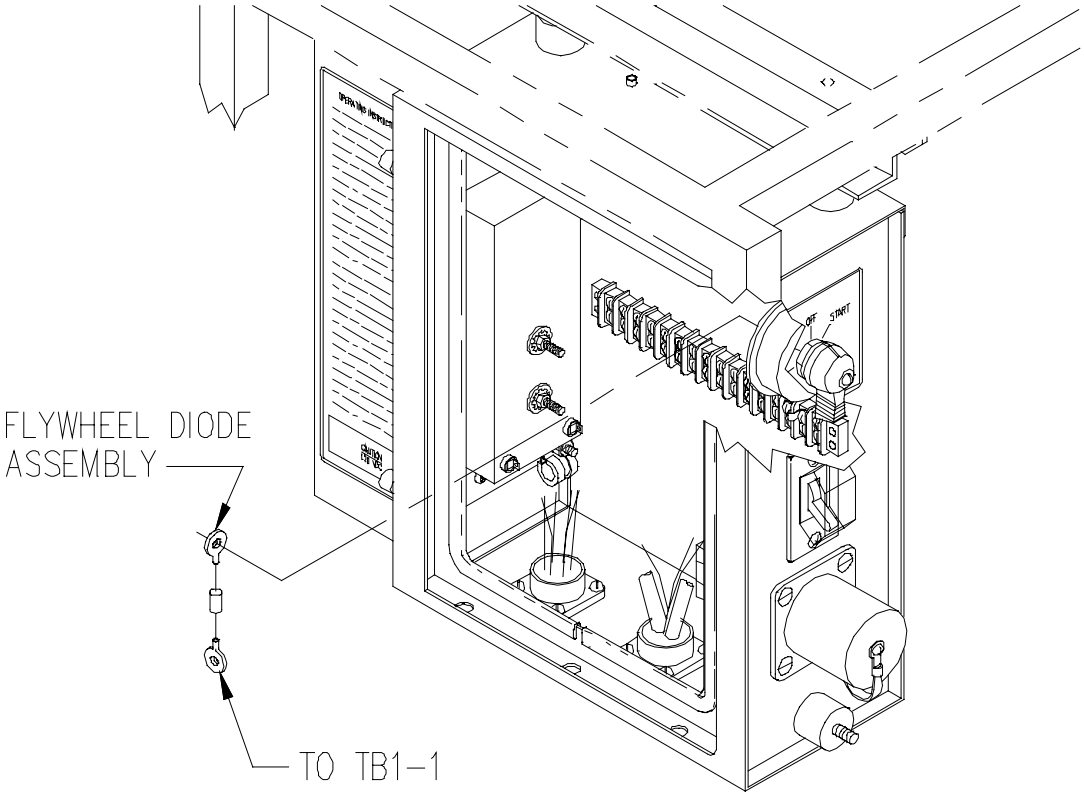


Figure 4-41. Flywheel Diode Assembly

e. Installation.

(1) Connect flywheel diode assembly (Figure 4-41) at terminal board and at START-PREHEAT/PREHEAT/OFF/START rotary switch. Remove tags.

(2) Install EMI filter, refer to paragraph 4.47.d (MEP-531A).

(3) Close and secure instrument panel.

4.43. DIESEL ENGINE WIRING HARNESS AND GASKET, CONTROL PANEL.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect control panel engine wiring harness wiring for cracked or deteriorated insulation, broken terminals, and other damage.

(4) Visually inspect the engine wiring harness receptacle for security, cracks, broken wires, and other damage.

(5) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect engine wiring harness plug (P2) from receptacle (J2) of control panel engine wiring harness (Figure 4-42).

(4) Set multimeter for ohms and check for continuity between J2 pin A and START-PREHEAT/PREHEAT/OFF/START switch (S2) pin H, J2 pin B and TB1 connector 3, J2 pin C and S2 pin S, J2 pin D and NATO slave receptacle (SR1) pin +, J2 pin E and TB1 connector 5, and J2 pin F and TB1 connector 6. (MEP-531A).

(5) Set multimeter for ohms and check for continuity between J2 pin A and START-PREHEAT/PREHEAT/OFF/START switch (S2) pin H, J2 pin B and TB1 connector 4, J2 pin C and S2 pin S, J2 pin D and NATO slave receptacle (SR1) pin +, J2 pin E and TB1 connector 6, and J2 pin F and TB1 connector 7. (MEP-501A).

(6) If necessary, repair wiring harness. Then connect engine wiring harness plug to control panel engine wiring harness receptacle.

(7) Close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect engine wiring harness plug from receptacle of control panel engine wiring harness (Figure 4-42).

(4) Cut cable ties as necessary.

(5) Tag and disconnect electrical leads for control panel engine wiring harness from terminals 3, 5, and 6 of TB1, terminals S and H of PREHEAT-START\PREHEAT\OFF\ START rotary switch, and + terminal of NATO slave receptacle. (MEP-531A)

(6) Tag and disconnect electrical leads for control panel engine wiring harness from terminals 4, 6, and 7 of TB1, terminals S and H of PREHEAT-START\PREHEAT\OFF\ START rotary switch, and + terminal of NATO slave receptacle. (MEP-501A)

(7) Remove screws, lockwashers, washers, control panel engine wiring harness, and gasket from control panel.

d. Repair.

(1) Cut cable ties as necessary.

(2) If replacing individual wires and/or connectors, tag and remove defective wires. Then install new cable ties as necessary and remove tags.

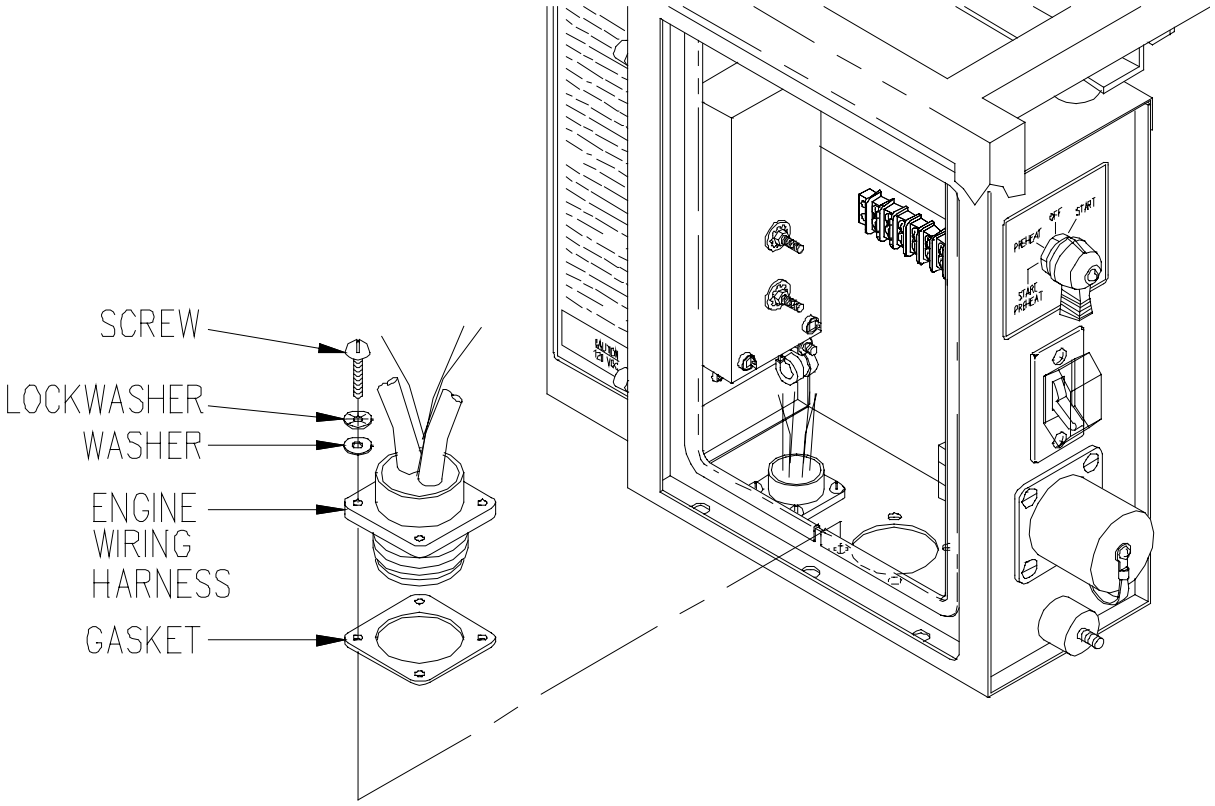


Figure 4-42. Diesel Engine Wiring Harness and Gasket, Control Panel

e. Installation.

(1) Install gasket and control panel engine wiring harness in control panel with washers, lockwashers, and screws.

(2) Connect engine wiring harness plug and control panel engine wiring harness electrical leads. Remove tags.

(3) Replace cable ties as necessary.

(4) Close and secure instrument panel.

4.44. ALTERNATOR WIRING HARNESS AND GASKET, CONTROL PANEL.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect control panel alternator wiring harness wiring for cracked or deteriorated insulation, broken terminals, and other damage.

(4) Visually inspect the wiring harness receptacle for security, cracks, broken wires, and other damage.

(5) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect alternator wiring harness plug (P1) from receptacle (J1) of control panel alternator wiring harness (Figure 4-43).

(4) Set multimeter for ohms and check for continuity between J1 pin A and TB1 connector 13, J1 pin B and EMI filter load terminal lug N, J1 pin C and TB1 connector 14, J1 pin D and TB1 connector 15, J1 pin E and TB1 connector 8, and J1 pin F and TB1 connector 9. (MEP-531A).

(5) Set multimeter for ohms and check for continuity between J1 pin A and shunt resistor (R3), J1 pin B and TB1 connector 10, J1 pin D and TB1 connector 11, and J1 pin C and load terminal lug (-). (MEP-501A).

(6) If necessary, repair wiring harness. Then connect alternator wiring harness plug to control panel alternator wiring harness receptacle.

(7) Close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect alternator wiring harness plug from receptacle of control panel alternator wiring harness (Figure 4-43).

(4) Cut cable ties as necessary.

(5) Tag and disconnect electrical leads for control panel alternator wiring harness from terminals 8, 9, 13, 14, and 15 of TB1, and EMI filter load terminal lug N. (MEP-531A)

(6) Tag and disconnect electrical leads for control panel alternator wiring harness from terminals 10 and 11 of TB1, shunt resistor (R3), and load terminal lug (-). (MEP-501A)

(7) Remove screws, lockwashers, washers, control panel alternator wiring harness, and gasket from control panel.

(8) If necessary, remove threaded inserts from control panel.

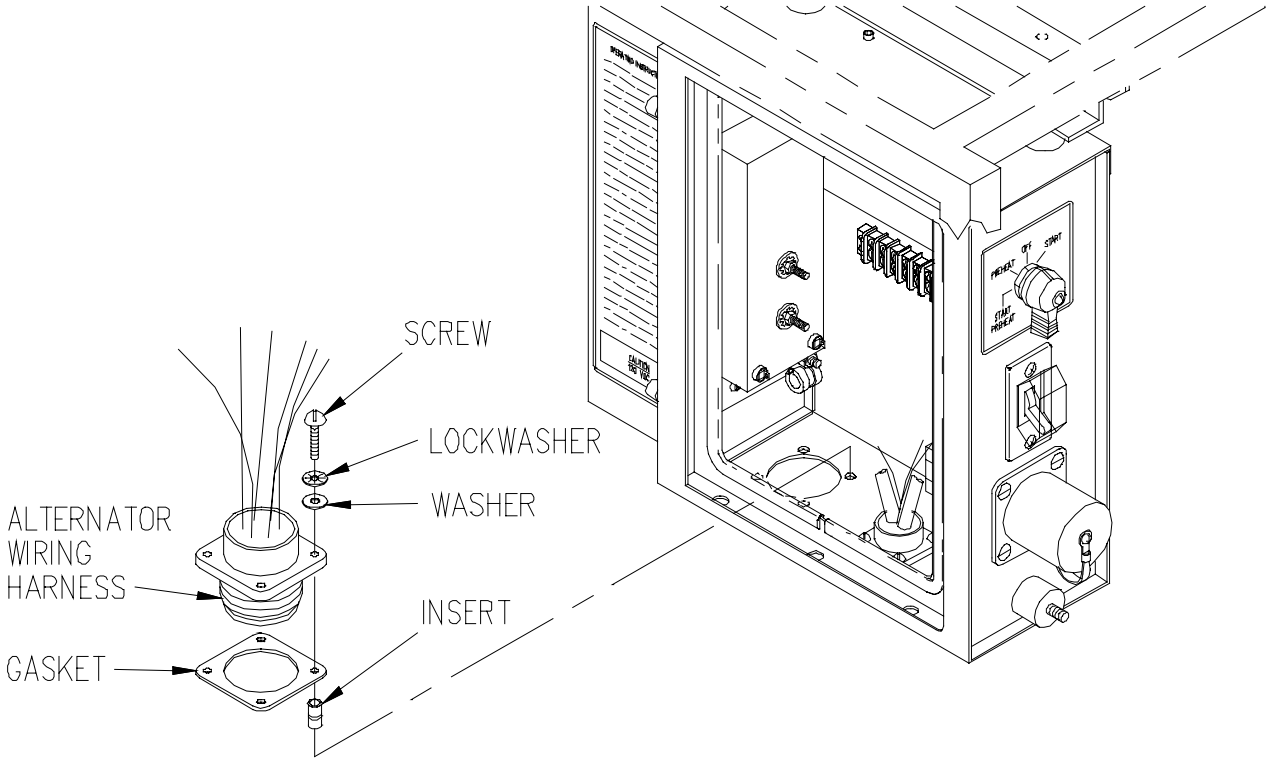


Figure 4-43. Alternator Wiring Harness and Gasket, Control Panel

d. Repair.

(1) Cut cable ties as necessary.

(2) If replacing individual wires and/or connectors, tag and remove defective wires. Then install new cable ties as necessary and remove tags.

e. Installation.

(1) If removed, install threaded inserts (Figure 4-43) in control panel.

(2) Install gasket and control panel alternator wiring harness in control panel with washers, lockwashers, and screws.

(3) Connect alternator wiring harness plug and control panel alternator wiring harness electrical leads. Remove tags.

(4) Replace cable ties as necessary.

(5) Close and secure instrument panel.

4.45. ELECTRICAL LEAD WIRE (S) (TYPICAL).

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect control panel electrical leads for cracked or deteriorated insulation, broken terminals, and other damage.

(4) Close and secure instrument panel.

b. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect control panel electrical lead (Figure 4-44).

(4) Set multimeter for ohms and check wire for continuity.

(5) Replace defective wires and electrical connectors. Refer to Appendix G, Table G-1 (MEP-531A) or Table G-2 (MEP-501A), for instructions on how to make each electrical lead.

(6) Connect control panel electrical lead as tagged. Remove tags.

(7) Close and secure instrument panel.

c. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect control panel electrical lead (Figure 4-44) from terminals.

d. Installation.

(1) Connect control panel electrical lead (Figure 4-44) as tagged. Remove tags.

(2) Close and secure instrument panel.

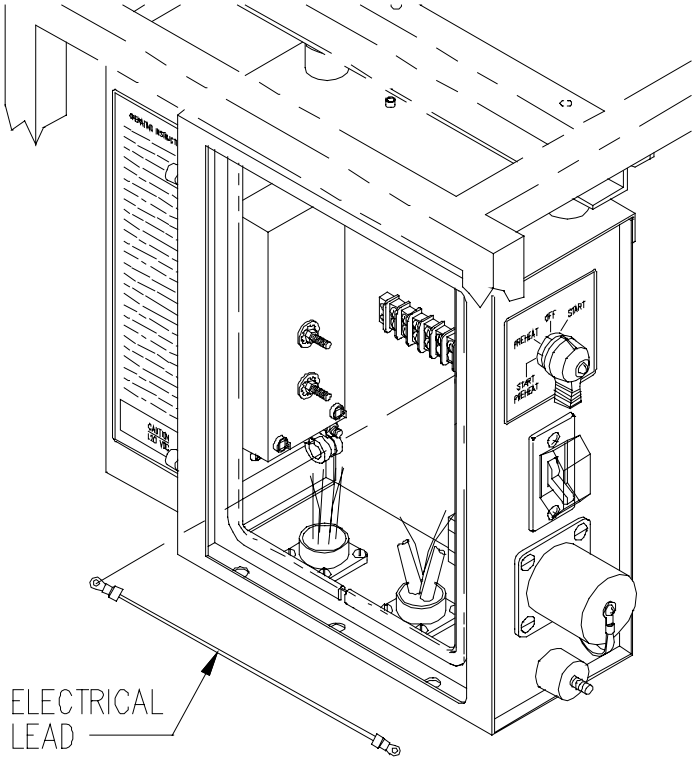


Figure 4-44. Electrical Lead Wire(s) (Typical)

4.46. LOAD TERMINAL BOARD COVER (LUG COVER).

a. Inspection.

(1) Shut down generator set.

(2) Inspect lug cover for security, cracks, corrosion, and other damage.

b. Removal.

(1) Shut down generator set.

(2) Release lug cover by turning two fasteners, open lug cover.

(3) Remove rivets (Figure 4-45) and lug cover from control panel.

(4) If necessary, remove rivets and operating instruction plate from lug cover.

(5) If necessary, remove rivets and identification plate from lug cover.

(6) If necessary, remove edge protector and adhesive residue from lug cover.

c. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Repair all dents and cracks, and remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

d. Installation.

(1) If removed, install edge protector (Figure 4-45) on lug cover with contact adhesive (Item 2, Appendix E). Follow manufacturer's instructions for application of contact adhesive.

(2) If removed, install identification plate on lug cover with new rivets.

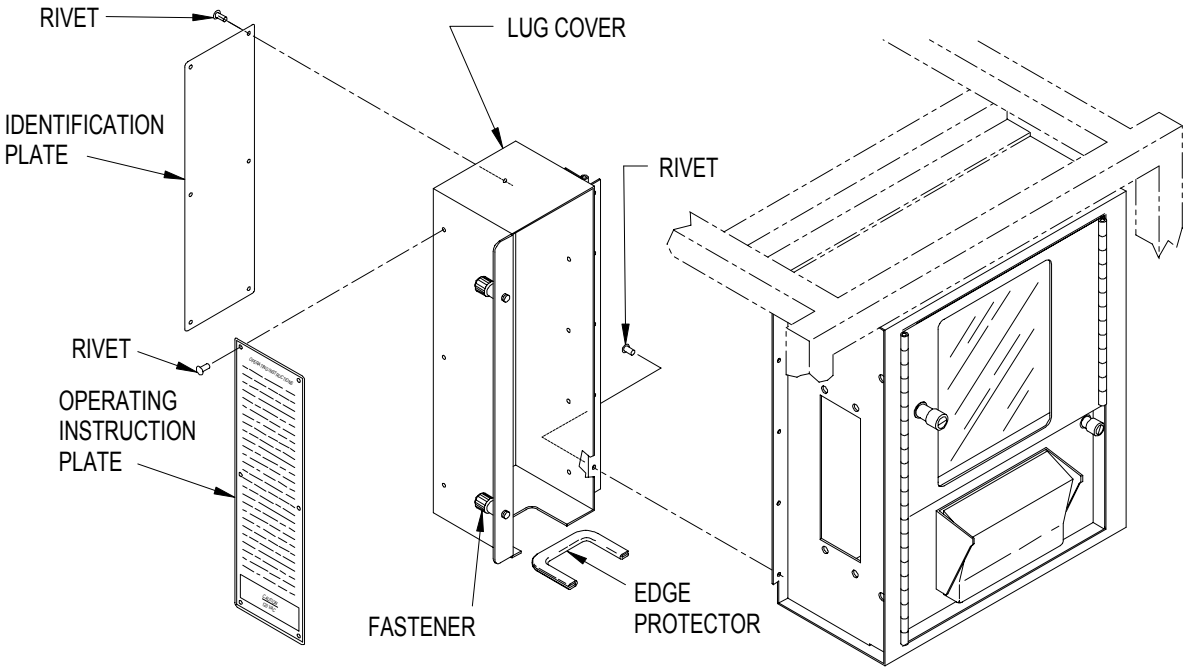


Figure 4-45. Load Terminal Board Cover (Lug Cover)

(3) If removed, install operating instructions plate on lug cover with new rivets.

(4) Install lug cover on control panel with new rivets.

(5) Close and secure lug cover.

4.47. EMI FILTER (MEP-531A).

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Release lug cover by turning two fasteners, open lug cover.

(4) Inspect load terminals of EMI filter for deformed threads, corrosion, and other physical damage.

(5) Ensure connections to EMI filter inside of the control box are clean and tight. Clean and tighten if necessary.

(6) Close and secure instrument panel.

(7) Close and secure lug cover.

b. Removal.

(1) Shut down generator set.

(2) Release lug cover by turning two fasteners, open lug cover.

(3) Disconnect load cables from EMI filter load terminals as necessary.

(4) Release instrument panel by turning fastener, open instrument panel slowly.

(5) Tag and disconnect two female quick-disconnects connected to bottom terminals on EMI filter (Figure 4-46).

(6) Tag and disconnect one wire lead connected to "L" terminal and four wire leads connected to "N" terminal on EMI filter.

(7) Remove screws, washers, lockwashers, and nuts securing bottom of EMI filter to control box. Note how instrument panel ground strap and wiring cable clamp are captured under the mounting hardware.

(8) Remove nuts, lockwashers, and washers securing top of EMI filter to control box.

(9) Remove EMI filter.

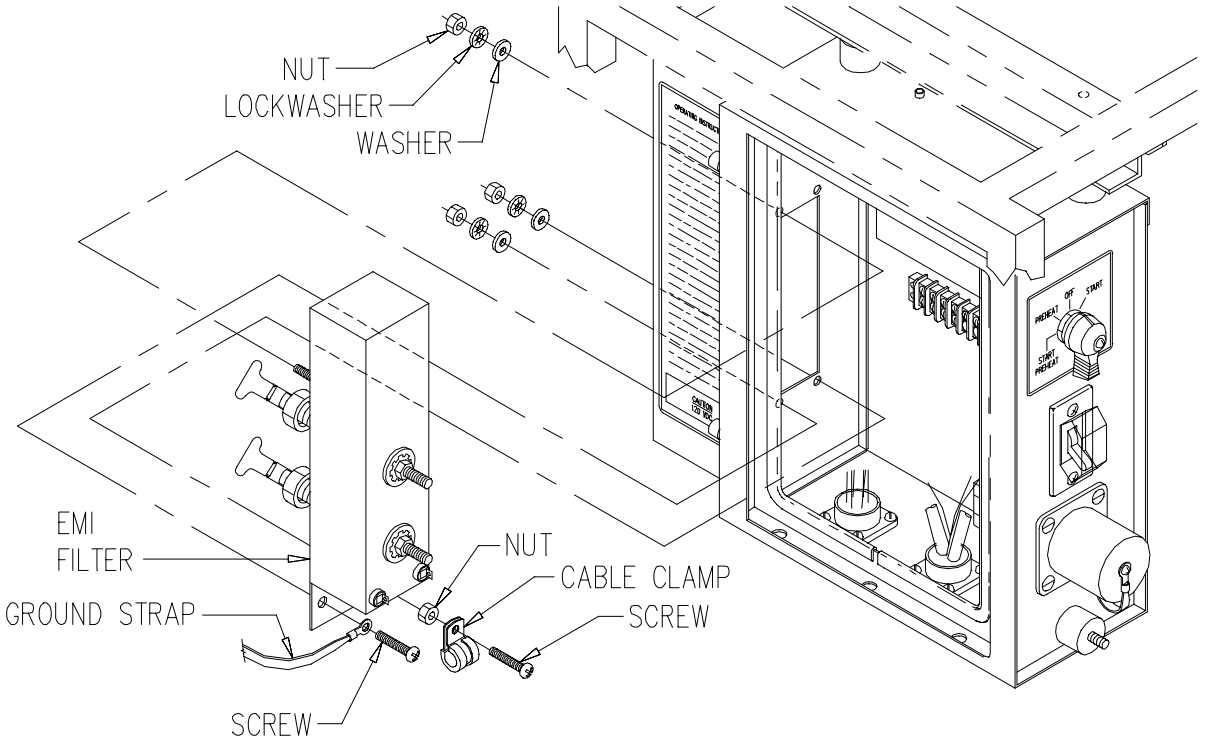


Figure 4-46. EMI Filter (MEP-531A)

c. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Release lug cover by turning two fasteners, open lug cover.

(4) Disconnect load cables from EMI filter load terminals as necessary.

(5) Tag and disconnect two female quick-disconnects connected to bottom terminals on EMI filter (Figure 4-46).

(6) Tag and disconnect one wire lead connected to "L" terminal and four wire leads connected to "N" terminal on EMI filter.

(7) Using multimeter set for ohms, check for open circuit across two upper EMI filter terminals "L" and "N". If not open, EMI filter is defective.

(8) Repeat step (7) for "L" and "N" terminals that connect to the GFCI convenience receptacle (lower).

(9) Using multimeter set for ohms, check for closed circuit across the lower "L" terminal (that connects to GFCI convenience receptacle) and load terminal "L". If not closed, EMI filter is defective.

(10) Repeat step (9) for the lower "N" terminal (that connects to GFCI convenience receptacle) and load terminal "N".

(11) Reconnect wire leads as tagged.

(12) Close and secure instrument panel.

(13) Reconnect load cables to EMI filter load terminals as necessary.

(14) Close and secure lug cover.

d. Installation.

(1) Install EMI filter (Figure 4-46) in control panel cutout with mounting studs on filter through holes in panel.

(2) Secure top of EMI filter to control panel with nuts, lockwashers, and washers.

(3) Secure bottom of EMI filter with screws, washers, lockwashers, and nuts. Be sure to secure instrument panel ground strap and cable clamp as noted during removal.

(4) Connect one wire lead to "L" terminal and four wire leads to "N" terminal on EMI filter as tagged. Remove tags.

(5) Connect two quick-disconnects to bottom two terminals on EMI filter as tagged. Remove tags.

(6) Connect load cables to EMI filter load terminals, if applicable.

(7) Close and secure instrument panel and cover.

4.48. LOW OIL PRESSURE (LOP) SWITCH.

a. Testing.

(1) Shut down generator set.

(2) Disconnect and isolate electrical lead from LOP switch (Figure 4-47).

(3) Using multimeter set for ohms, check for continuity between LOP switch terminal and ground. If continuity is not indicated, switch is defective and must be replaced.

(4) Start generator set.

(5) Using multimeter set for ohms, check for continuity between LOP switch terminal and ground. If continuity is indicated, switch is defective and must be replaced.

(6) Shut down generator set and connect electrical lead.

CAUTION

For the Mechron sets, a serious risk of cross-threading exists.

(a) On the Mechron 28 VDC sets, the LOP switch, which has standard threads, is screwed directly into metric threads in the engine block. Use extreme caution when removing. Add coupler listed in this TM when replacing LOP switch.

(b) On the Mechron 120 VAC sets, the original coupler has standard threading on both sides. This coupler is screwed directly into metric threads in the engine block. Use extreme caution when removing. Replace coupler with one listed in this TM.

(c) In the event of cross-threading, the engine opening will need to be re-tapped. Remove crankcase cover, following TM procedures and do not contaminate internal engine housing with metal filings.

b. Removal.

(1) Shut down generator set and drain diesel engine oil.

(2) Cut tie wraps as necessary. Then disconnect electrical lead from LOP switch (Figure 4-47).

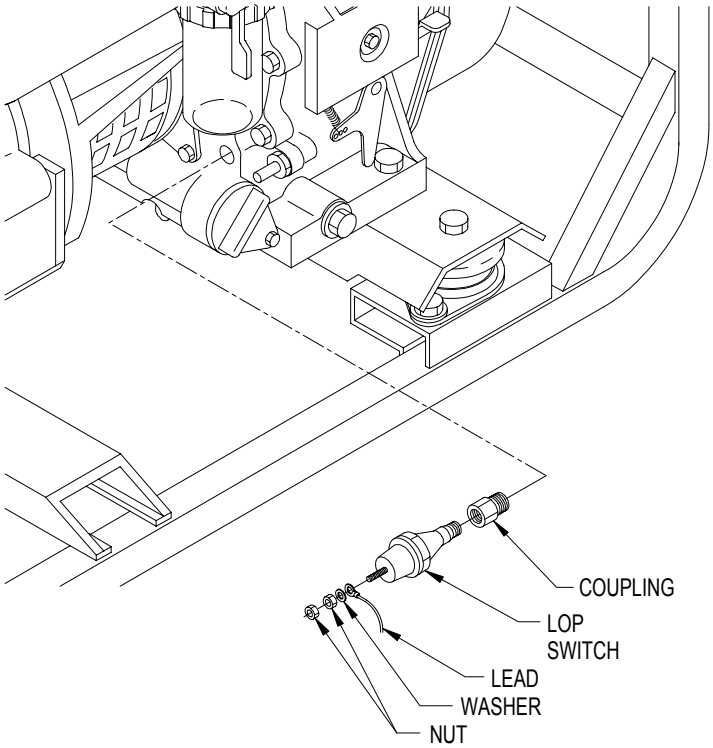


Figure 4-47. Low Oil Pressure (LOP) Switch

(3) Remove LOP switch and coupling by unscrewing coupling from diesel engine block.

(4) Separate LOP switch and coupling.

c. Installation.

(1) Apply thread sealant (Item 20, Appendix E) to threads of LOP switch (Figure 4-47). Then assemble LOP switch and coupling.

(2) Apply thread sealant (Item 20, Appendix E) to threads of coupling. Then install coupling in diesel engine block.

(3) Connect electrical lead.

(4) Use tie wraps to secure wiring to LOP shutdown cable as removed.

(5) Service diesel engine oil.

4.49. LOW OIL PRESSURE (LOP) SOLENOID ASSEMBLY.

a. Testing.

(1) Shut down generator set

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads for LOP solenoid from terminals 2 and 4 of TB1 (MEP-531A) or terminals 3 and 5 of TB1 (MEP-501A).

(4) Apply 24 VDC power source to disconnected wires (positive lead to wire disconnected from terminal 4 (MEP-531A) or terminal 5 (MEP-501A)). LOP solenoid should activate.

(5) If LOP solenoid does not activate, replace solenoid.

(6) Connect electrical leads, remove tags, close and secure instrument panel.

b. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads for LOP solenoid from terminals 2 and 4 of TB1 (MEP-531A) or terminals 3 and 5 of TB1 (MEP-501A).

(4) Remove screws (Figure 4-49), lockwashers, washers, and LOP solenoid from control panel.

(5) Loosen screw(s) attaching LOP engine shutdown cable to LOP solenoid plunger.

c. Cleaning and Inspection.

(1) Remove LOP solenoid, refer to paragraph 4.49.b.

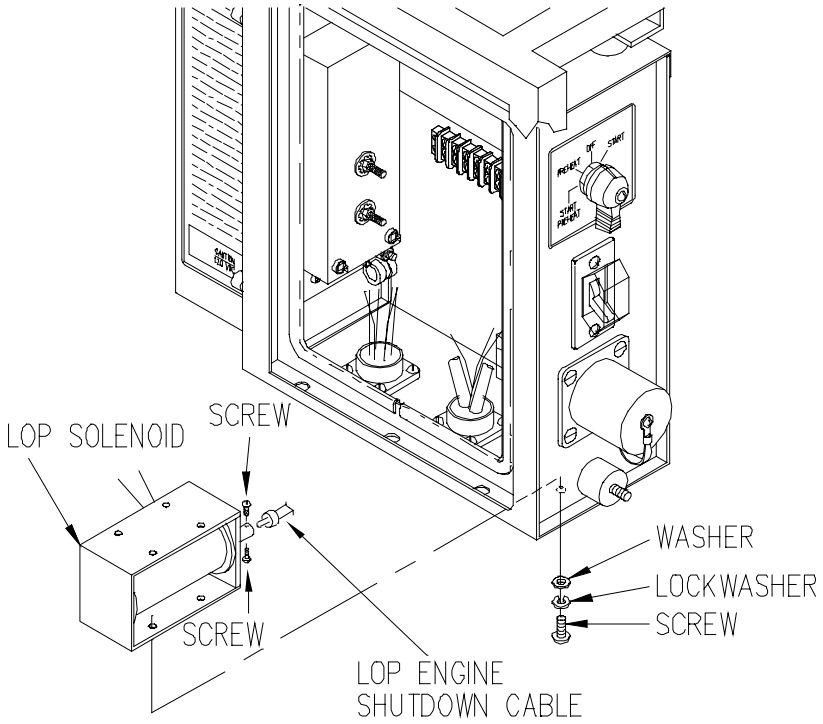


Figure 4-48. Low Oil Pressure (LOP) Solenoid Assembly

WARNING

When using compressed air, wear protective glasses and use clean, low-pressure air, 30 psi (206.8 kPa) maximum. Failure to follow these instructions could result in eye injury.

WARNING

Cleaning solvents are flammable and toxic to eyes, skin, and respiratory tract. Skin/eye protection required. Avoid repeated/prolonged contact. Good general ventilation is normally adequate.

(2) Clean LOP solenoid with dry, filtered, compressed air and electrician's brush or wipe with cleaning cloth (Item 4, Appendix E) lightly moistened with an approved cleaning solvent (Item 19, Appendix E).

(3) Inspect LOP solenoid for cracked casing, stripped or damaged threads, corrosion, deterioration of coil insulation, or other damage.

(4) Install LOP solenoid, refer to paragraph 4.49.e.

d. Repair. Repair LOP solenoid by cutting wires and installing terminals in accordance with Appendix G, Figure G-5.

e. Installation.

(1) Install LOP solenoid (Figure 4-48) in control panel, ensuring LOP solenoid plunger is attached to LOP engine shutdown cable and is inserted in solenoid, with washers, lockwashers, and screws.

(2) Connect electrical leads and remove tags.

(3) Close and secure instrument panel.

4.50. LOW OIL PRESSURE (LOP) ENGINE SHUTDOWN CABLE.

a. Inspection.

(1) Shut down generator set.

(2) Inspect LOP engine shutdown cable for security, broken cover, corrosion, and other damage.

(3) Replace LOP engine shutdown cable if damaged.

(4) Check adjustment of LOP engine shutdown cable. Refer to paragraph 4.50.d.

b. Removal.

(1) Shut down generator set.

(2) Cut cable ties securing LOP engine shutdown cable (Figure 4-49) to engine harness.

(3) Using flat tip screwdriver, pry open ears on red STOP lever (Figure 4-52) and disconnect LOP engine shutdown cable from red STOP lever and governor regulator bracket (Figure 4-49).

(4) Release instrument panel by turning fastener, open instrument panel slowly.

(5) Pull LOP engine shutdown cable, with cable guide and LOP solenoid plunger attached, from grommet in control panel assembly.

(6) If necessary, loosen screws and remove LOP solenoid plunger and cable guide from LOP engine shutdown cable.

(7) If necessary, remove offset from LOP engine shutdown cable.

(8) If necessary, remove grommet from control panel assembly.

c. Installation.

(1) If removed, install grommet (Figure 4-49) in control panel assembly.

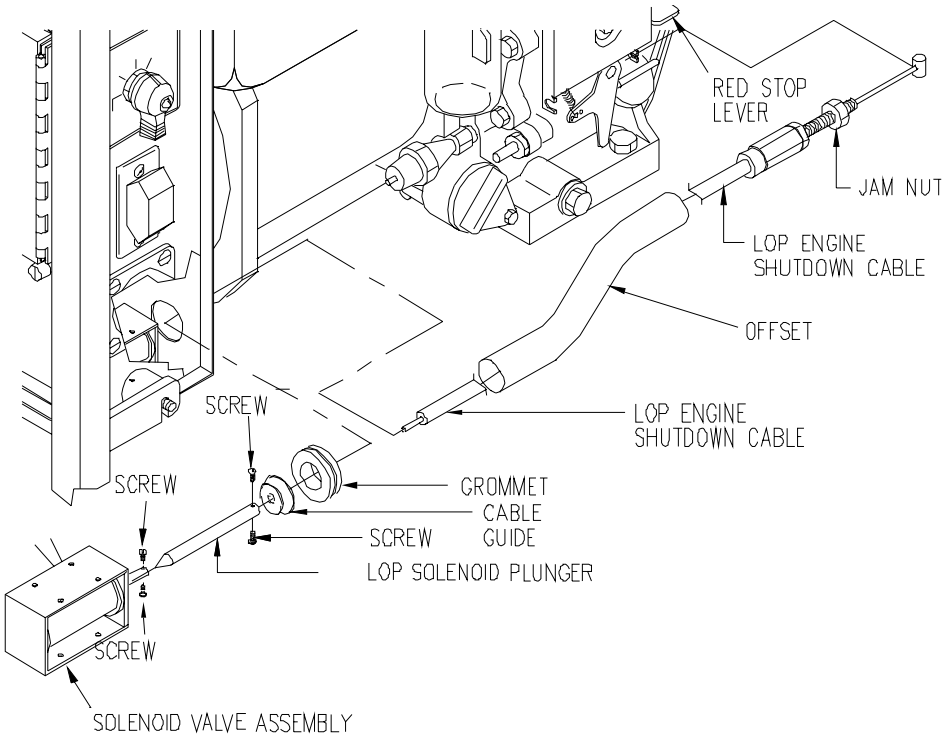


Figure 4-49. Low Oil Pressure (LOP) Engine Shutdown Cable

(2) If removed, install offset over LOP engine shutdown cable.

CAUTION

If installing new LOP engine shutdown cable, ensure inner cable is cut to a length of 16.54 in. (420.1 mm). If cable is too long it may not trip stop lever when LOP solenoid actuates. Refer to Appendix G, Figure G-11 for instructions on how to make the LOP shutdown cable.

(3) If removed, install cable guide on LOP engine shutdown cable.

(4) If removed, install LOP solenoid plunger on LOP engine shutdown cable with screws. Ensure cable is bottomed out in plunger before tightening screws.

(5) Insert LOP engine shutdown cable through grommet ensuring that LOP solenoid plunger enters cylinder of LOP solenoid.

(6) Seat cable guide in grommet.

(7) Close and secure instrument panel.

(8) Connect LOP engine shutdown cable to red STOP lever and governor regulator bracket. Pinch ears on red STOP lever to capture LOP engine shutdown cable.

(9) Install cable ties as necessary to secure LOP engine shutdown cable to engine harness.

(10) Check adjustment of LOP engine shutdown cable, refer to paragraph 4.50.d.

d. Adjustment. (Refer to Figure 4-50).

(1) Place engine RUN lever to RUN position.

(2) Pull slack from LOP engine shutdown cable in direction of arrow A.

(3) Measure for dimension B [0-0.02 in. (0-0.5 mm)].

(4) Pull cable from LOP solenoid and grommet. Remove LOP solenoid plunger, cut cable as necessary to achieve dimension B. Attach LOP solenoid plunger to LOP engine shutdown cable and install cable in LOP solenoid and grommet.

(5) Return engine RUN lever to STOP position.

4.51. AIR INTAKE HEATING ELEMENTS AND PIPE.

a. Removal.

(1) Shut down generator set.

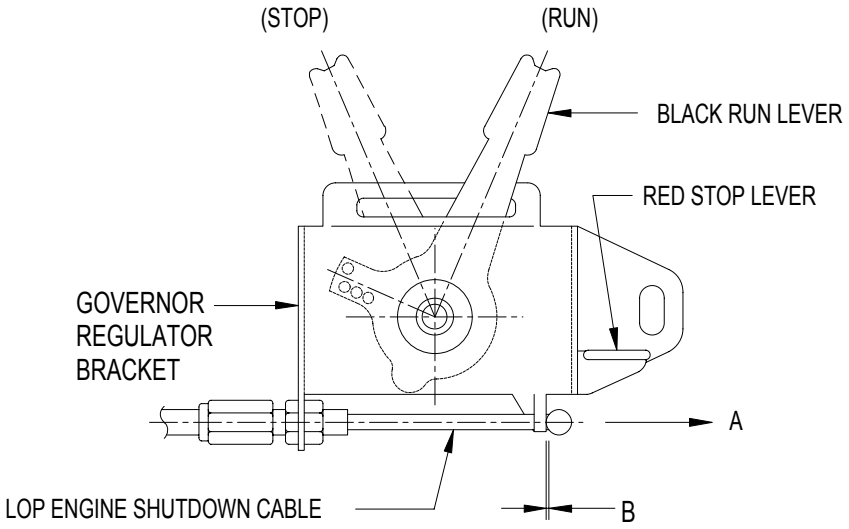


Figure 4-50. LOP Engine Shutdown Cable Adjustment

(2) Remove air intake system components, refer to paragraph 4.18.a.

(3) Tag and disconnect electrical leads from air intake heating elements (Figure 4-51).

(4) Remove screws, mounting plate, gaskets, and air intake heating elements from spacer.

(5) Remove jumper and separate air intake heating elements and gasket.

(6) Remove nuts and spacer from air intake pipe.

(7) Remove diesel engine cooling fan cover, refer to paragraph 4.53.b.

(8) Remove capscrew, air intake pipe, and gasket from cylinder head.

(9) If necessary, remove stud from air intake pipe.

b. Inspection.

(1) Inspect air intake heating elements for cracks, damaged heating elements, corrosion, and other damage.

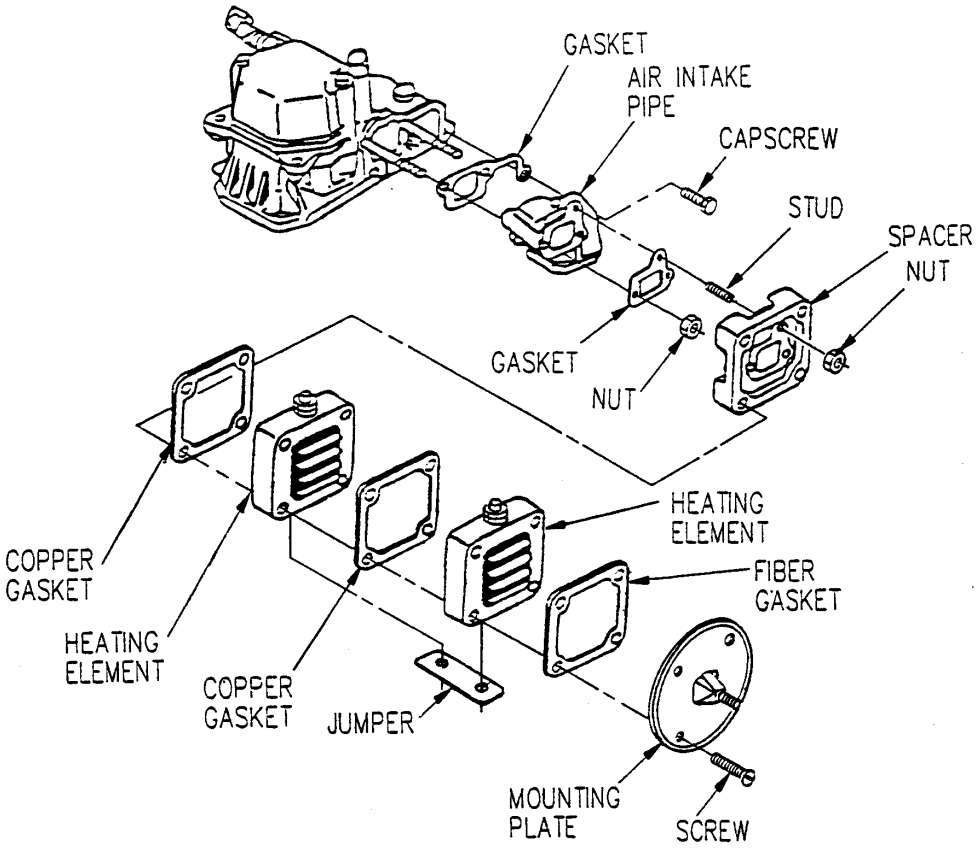


Figure 4-51. Air Intake Heating Elements and Pipe

(2) Inspect air intake pipe for cracks, corrosion, stripped threads, and other damage.

(3) Inspect gaskets for tears and other damage.

(4) Inspect mounting plate and spacer for cracks and other damage.

(5) Replace damaged parts.

c. Testing.

(1) Using multimeter set for ohms, check for continuity across air intake heating element (HTR2) terminals. If circuit is open, element is defective.

(2) Using multimeter set for ohms, check for continuity across air intake heating element (HTR1) terminals. If circuit is open, element is defective.

d. Installation.

(1) If removed, install stud (Figure 4-51) in air intake pipe.

CAUTION

Do not overtighten capscrew.

(2) Install gasket and air intake pipe on cylinder head with capscrew.

(3) Install diesel engine cooling fan cover, refer to paragraph 4.53.d.

(4) Install spacer on air intake pipe with nuts.

(5) Position gasket between air intake heating elements and secure together with jumper.

(6) Install gaskets, air intake heating elements, and mounting plate on spacer with screws. Use locking compound (Item 6, Appendix E) to secure machine screws in mounting plate. If damaged, replace machine screw in mounting plate.

(7) Install air intake system components, refer to paragraph 4.18.c.

(8) Connect electrical leads and remove tags.

4.52. GOVERNOR REGULATOR BRACKET.

a. Removal.

(1) Shut down generator set.

(2) Using flat tip screwdriver, pry open ears on red STOP lever and disconnect LOP engine shutdown cable (Figure 4-50) from STOP lever (Figure 4-52) and regulator bracket (3).

(3) Remove bolt (1), bolt (2), and regulator bracket (3), with STOP lever attached, from cylinder block.

(4) Disconnect spring (9) and spring (10) from governor lever (5).

(5) If governor lever (5) is damaged or seal (12) is leaking, remove pin (4), governor lever (5), and thrust plate (6) from governor shaft.

(6) Remove springs (9 and 10) from regulator bracket (3).

(7) If necessary, remove seal (12) from cylinder block.

b. Inspection.

(1) Inspect components for cracks, corrosion and other damage.

(2) Inspect springs for deformation.

(3) Replace damaged parts.

c. Repair. Replace spring(s) if damaged or missing.

d. Installation.

(1) If removed, press new seal (12, Figure 4-52) into cylinder block.

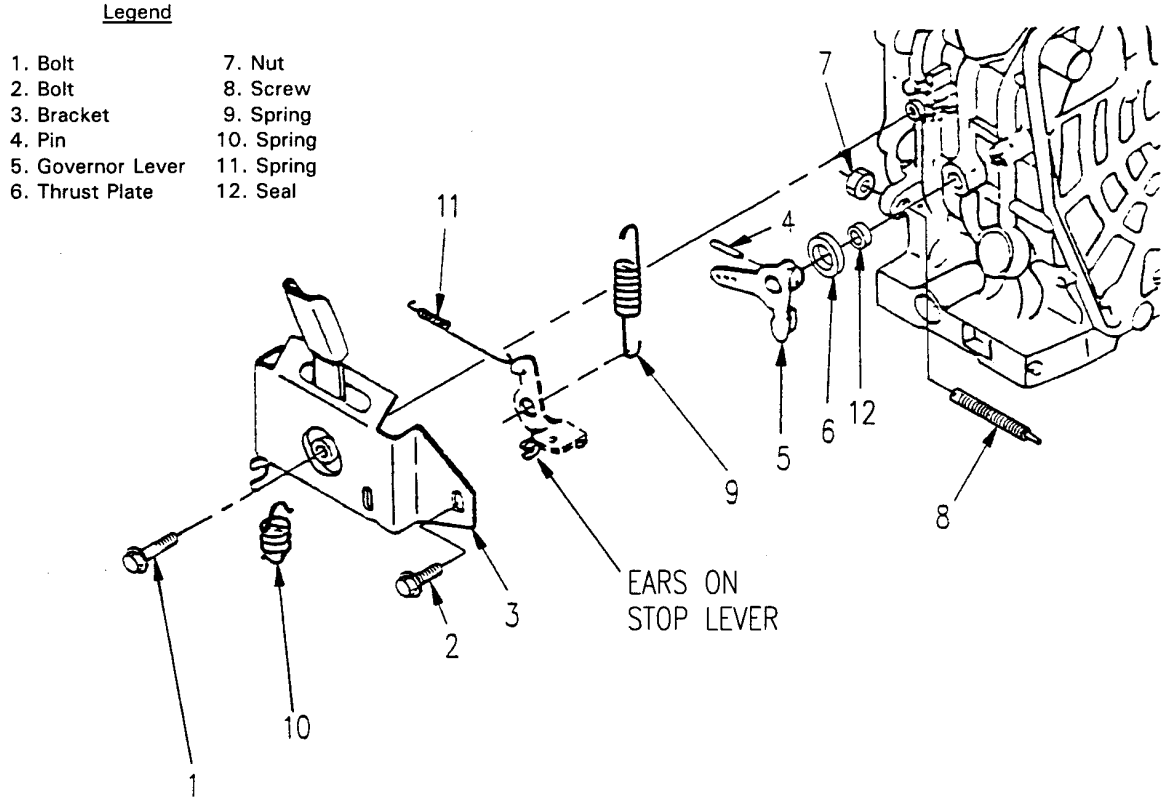


Figure 4-52. Governor Regulator Bracket

(2) If removed, position thrust plate (6) and governor lever (5) on governor shaft.

(3) Secure governor lever (5) to governor shaft with new pin (4).

(4) Attach springs (9 and 10) to regulator bracket (3) ensuring spring (9) is connected to lower outer hole on run lever, refer to Figure 4-53.

(5) Connect springs (9 and 10, Figure 4-52) to governor lever (5). Ensure spring (9) is connected in middle hole of governor lever arm, refer to Figure 4-53.

(6) Install regulator bracket (3, Figure 4-52), with STOP lever attached, on cylinder block with bolt (2) and bolt (1).

(7) Connect LOP engine shutdown cable to STOP lever and regulator bracket (3). Pinch ears on red STOP lever to capture LOP shutdown cable. Adjust LOP shutdown cable as necessary, refer to paragraph 4.50.d.

(8) To adjust diesel engine speed and generator set frequency, loosen pivot screw on regulator bracket and move regulator bracket down to increase speed (frequency) or up to decrease speed.

NOTE

Breaking seal on screw (8) to remove or adjust voids engine warranty.

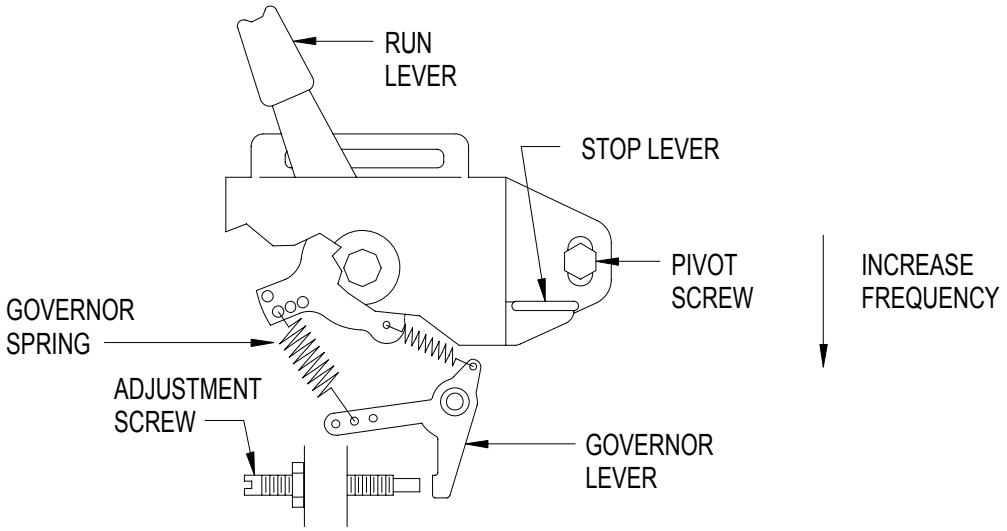


Figure 4-53. Governor Spring Positioning

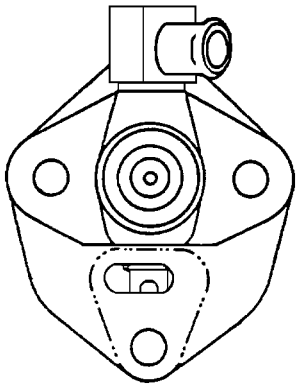


Figure 4-54. Fuel Injection Pump Mounting Flange

4.53. COOLING FAN COVER.

a. Inspection.

(1) Shut down generator set.

(2) Inspect cooling fan cover for security, cracks, corrosion, and other damage.

b. Removal.

(1) Shut down generator set.

(2) Remove air cleaner cover, refer to paragraph 4.12.2.a.

(3) Remove capscrews (Figure 4-55), washers, couplings, rubber retainers, cooling fan cover with recoil starter assembly, and seal from engine.

(4) If necessary, remove recoil starter assembly, refer to paragraph 4.54.b.

c. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

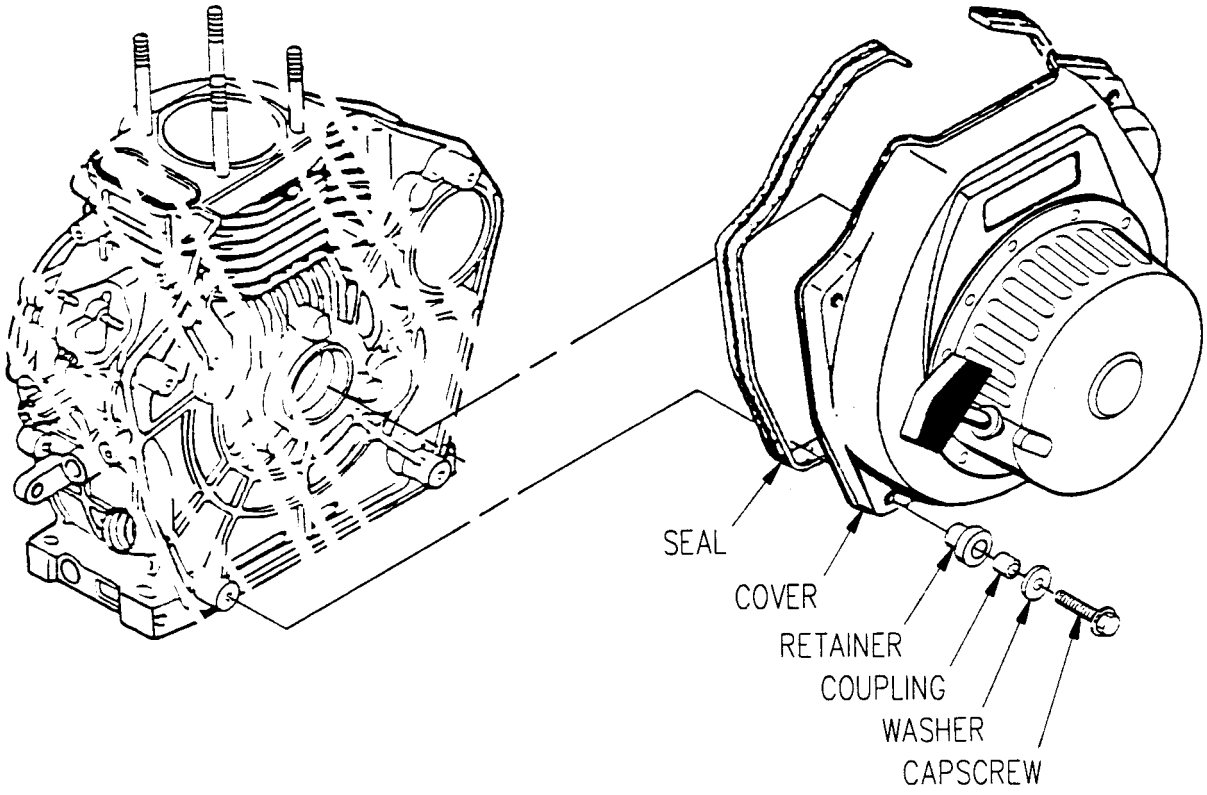


Figure 4-55. Cooling Fan Cover

d. Installation.

(1) If removed, install recoil starter assembly, refer to paragraph 4.54.c.

(2) Install seal (Figure 4-55) and cooling fan cover on engine with rubber retainers, couplings, washers, and capscrews.

(3) Install air cleaner cover, refer to paragraph 4.12.2.c.

4.54. RECOIL STARTER ASSEMBLY.

a. Inspection.

(1) Shut down generator set.

(2) Inspect recoil starter assembly for security, cracked housing, corrosion, frayed rope, obstructions, and other damage.

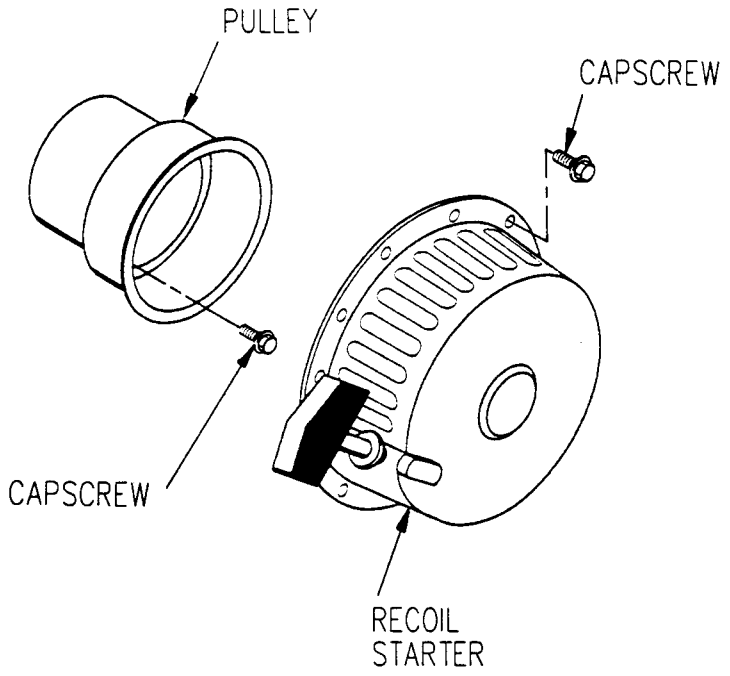


Figure 4-56. Recoil Starter Assembly

b. Removal.

(1) Shut down generator set.

(2) Note position of recoil starter assembly (Figure 4-56) to engine.

(3) Remove capscrews and recoil starter assembly from engine.

(4) If necessary, remove capscrews and pulley from engine flywheel.

c. Installation.

(1) If removed, install pulley (Figure 4-56) on engine flywheel with capscrews.

(2) Position recoil starter assembly on engine as noted when removed.

(3) Install capscrews and check recoil starter assembly for proper operation.

4.55. ENGINE OIL STRAINER.

a. Removal.

(1) Shut down diesel engine.

CAUTION

Avoid spilling of oil on ground to prevent environmental contamination. Use chemical resistant gloves for spill cleanup. Cleanup spills if you can do so without hazard to yourself.

Collect all cleanup materials, and report/coordinate incident to the local Installation Environmental Office (IEO).

(2) Remove oil drain plug and drain lubrication oil into an appropriate chemical resistant container for disposition/disposal through the local servicing Defense Reutilization and Marketing Office (DRMO). Install oil drain plug.

(3) Remove capscrew (Figure 4-57) and oil strainer from crankcase.

(4) Remove and discard o-ring from oil strainer.

(5) Coordinate disposition/disposal of waste oil with the IEO and DRMO.

b. Cleaning and Inspection.

WARNING

Cleaning solvents are flammable and toxic to eyes, skin, and respiratory tract. Skin/eye protection required. Avoid repeated/prolonged contact. Good general ventilation is normally adequate.

(1) Clean oil strainer (Figure 4-57) in approved solvent (Item 19, Appendix E).

(2) Inspect oil strainer for torn or crushed mesh, corrosion, and other damage.

(3) Replace oil strainer if damaged.

c. Installation.

CAUTION

Do not reuse the old o-ring.

(1) Install new o-ring (Figure 4-57) on engine oil strainer.

CAUTION

Ensure o-ring is properly seated (o-ring can be felt "popping" into groove) prior to tightening capscrew.

(2) Install oil strainer in crankcase with capscrew (hand tight and 1/8 turn).

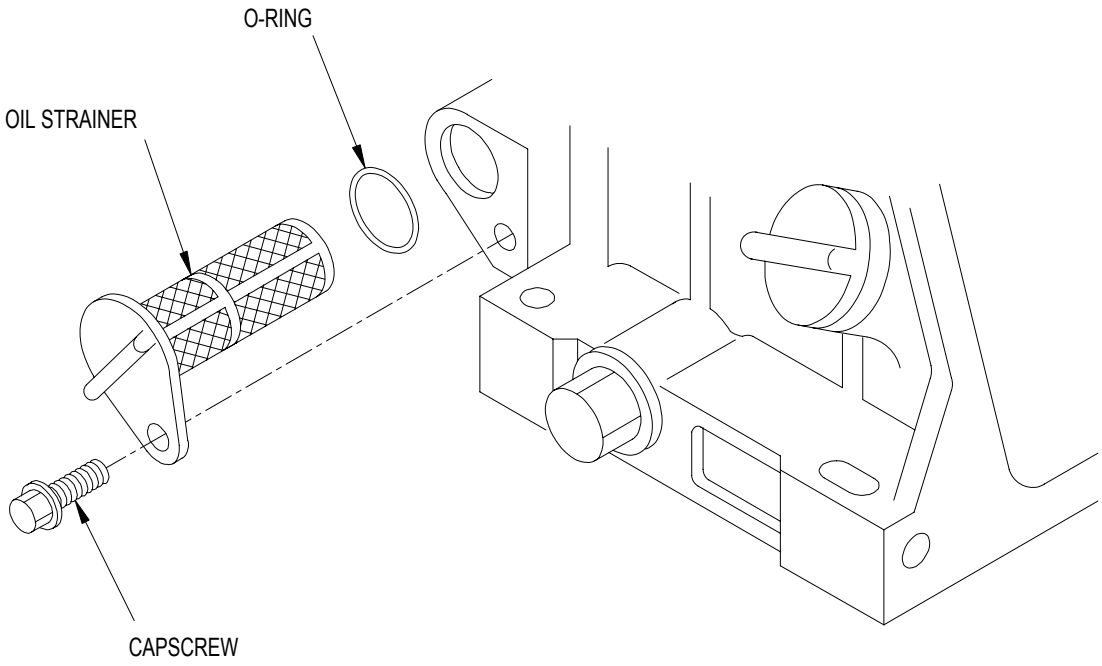


Figure 4-57. Engine Oil Strainer

(3) Service engine lubrication system.

(4) Thoroughly wash hands.

4.56. VALVE COVER.

a. Removal.

(1) Shut down generator set.

(2) Remove plunger (Figure 4-58) from valve cover.

(3) Remove bolts, valve cover, and gasket from cylinder head. Discard gasket.

b. Inspection.

(1) Inspect valve cover for cracks, corrosion, and other damage.

(2) Replace valve cover if damaged.

c. Installation.

(1) Install new gasket (Figure 4-58) and valve cover on cylinder head with bolts.

(2) Install plunger in valve cover.

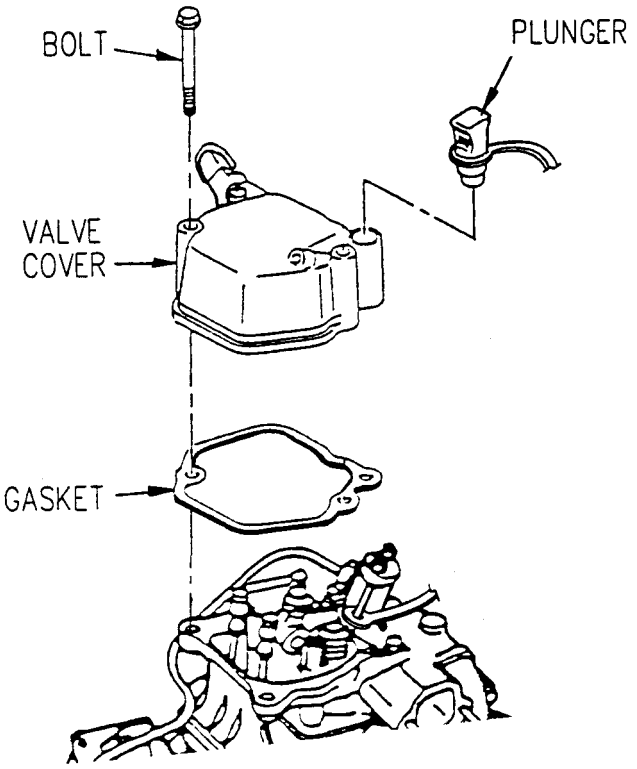


Figure 4-58. Valve Cover

4.57. STARTER ASSEMBLY. (MEP-501A)

a. Removal.

(1) Shut down generator set.

(2) Tag and disconnect electrical leads from starter assembly (Figure 4-59).

(3) Remove bolts and starter from engine.

b. Installation.

(1) Install starter assembly (Figure 4-59) on engine with bolts.

(2) Connect electrical leads and remove tags.

(3) Check starter assembly for proper operation.

4.58. ENGINE WIRING HARNESS.

a. Inspection.

(1) Shut down generator set.

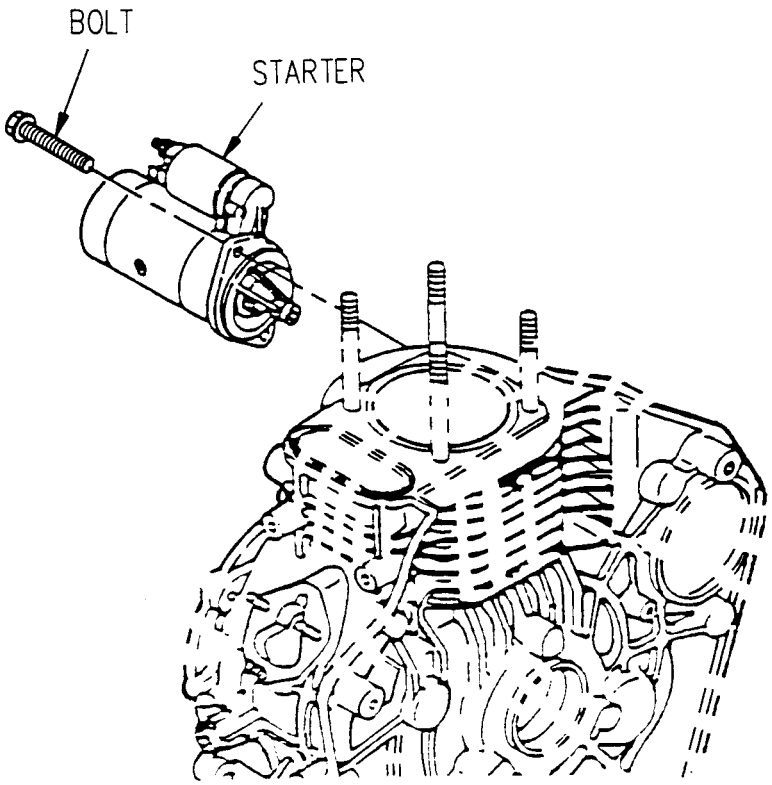


Figure 4-59. Starter Assembly

(2) Visually inspect engine-wiring harness wiring for cracked or deteriorated insulation, broken terminals, and other damage.

(3) Visually inspect the engine wiring harness receptacle for security, cracks, broken wires, and other damage.

b. Testing.

(1) Shut down generator set.

(2) Disconnect engine wiring harness plug (P2) (Figure 4-60) from receptacle on bottom of control panel.

(3) Set multimeter for ohms and check for continuity between P2 socket A and stud on air intake preheater (HTR2), P2 socket B and LOP switch (S1), P2 socket C and starter solenoid switch (L5) pin C, P2 socket D and starter solenoid switch (L5) pin S, P2 socket E and diesel engine dynamo, and P2 socket F and diesel engine dynamo.

(4) If necessary, repair wiring harness. Then connect plug to receptacle on bottom of control panel.

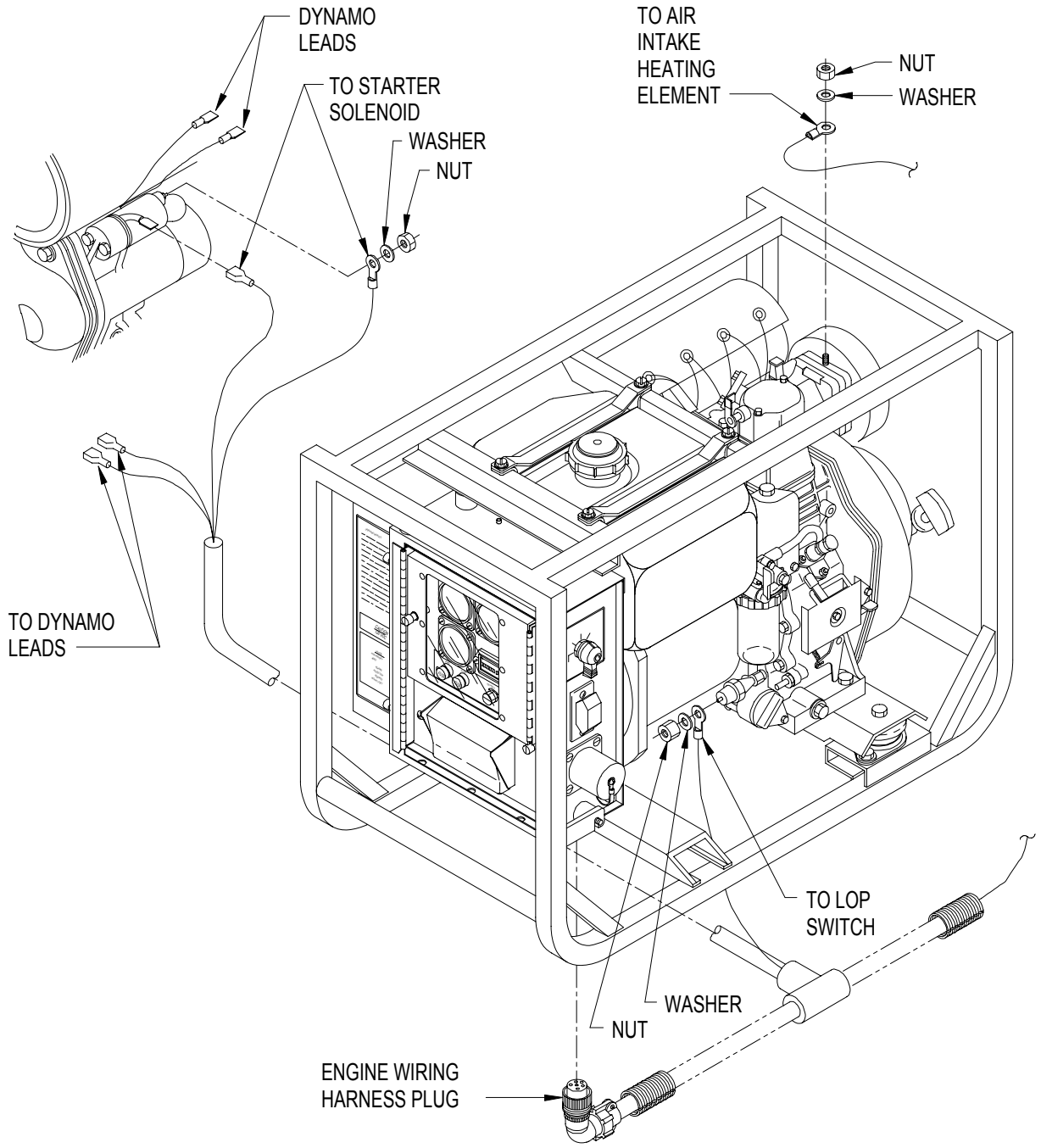


Figure 4-60. Engine Wiring Harness

c. Removal.

(1) Shut down generator set.

(2) Disconnect engine wiring harness plug (Figure 4-60) from receptacle on bottom of control panel.

(3) Tag and disconnect wiring harness leads at air intake heating elements, LOP switch, starter solenoid switch (2 places), and diesel engine dynamo (2 places).

(4) Cut cable ties as necessary and remove engine wiring harness.

d. Repair.

(1) Cut cable ties and flexible tubing as necessary.

(2) If replacing individual wires and/or connectors, tag and remove defective wires. Then install new cable ties and tape flexible tubing as necessary and remove tags.

e. Installation.

(1) Route engine wiring harness (Figure 4-60) as removed. Use new cable ties to secure harness where required.

(2) Connect engine wiring harness as tagged. Remove tags.

(3) Connect engine wiring harness plug to receptacle on bottom of control panel.

4.59. ALTERNATOR WIRING HARNESS. (MEP-501A)

a. Inspection.

(1) Shut down generator set.

(2) Visually inspect alternator wiring harness wiring for cracked or deteriorated insulation, broken terminals, and other damage.

(3) Visually inspect the alternator wiring harness receptacle for security, cracks, broken wires, and other damage.

b. Testing.

(1) Shut down generator set.

(2) Disconnect alternator wiring harness plug (P1) (Figure 4-61) from receptacle on bottom of control panel.

(3) Set multimeter for ohms and check for continuity between P1 socket A and alternator (G2) pin +, P1 socket B and alternator (G2) pin FLD, P1 socket D and alternator (G2) pin STA, P1 socket C and alternator (G2) pin -.

(4) If necessary, repair wiring harness. Then connect plug to receptacle on bottom of control panel.

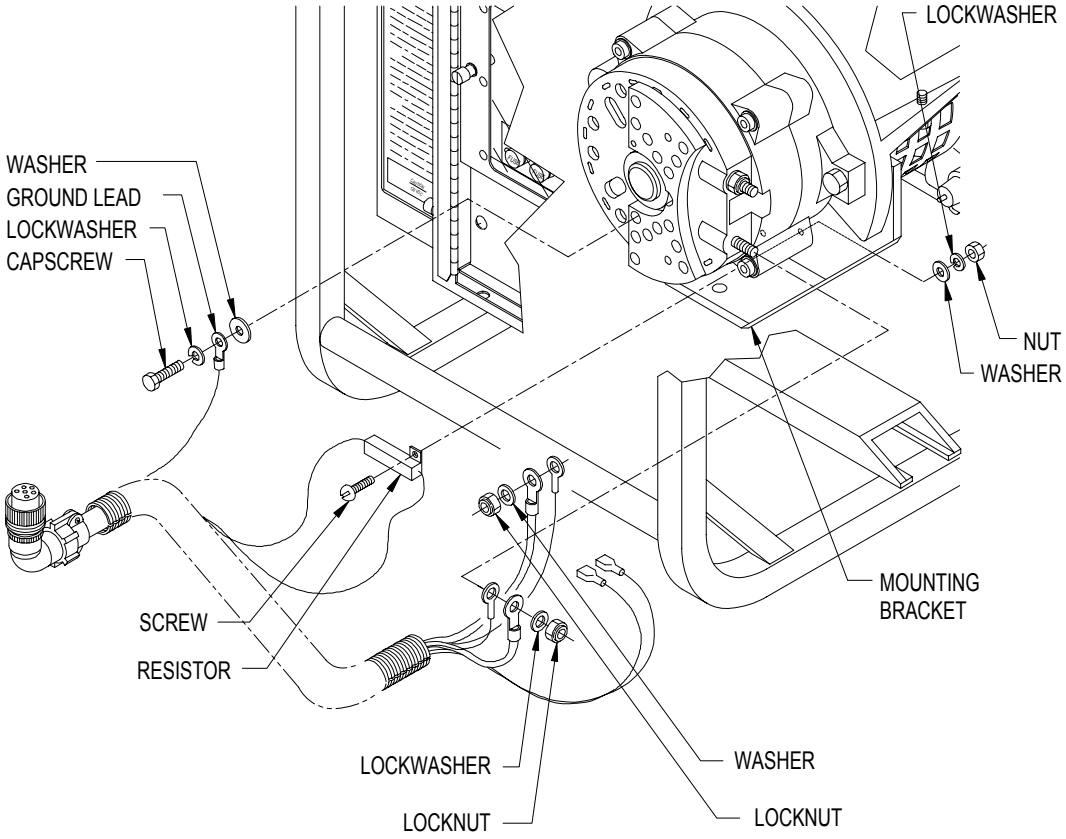


Figure 4-61. Alternator Wiring Harness

c. Removal.

(1) Shut down generator set.

(2) Disconnect alternator wiring harness plug (Figure 4-61) from receptacle on bottom of control panel.

(3) Remove capscrews, screws, lockwashers, washers and nut securing wiring harness ground lead to alternator and wiring harness resistor to mounting bracket.

(4) Tag and disconnect wiring harness leads at alternator at four places.

(5) Cut cable ties as necessary and remove generator wiring harness.

d. Repair.

(1) Cut cable ties and flexible tubing as necessary.

(2) If replacing individual wires and/or connectors, tag and remove defective wires. Then install new cable ties and tape flexible tubing as necessary and remove tags.

(3) If replacing the entire harness assembly, make new harness in accordance with Appendix G, Figure G-13.

e. Installation.

(1) Route alternator wiring harness (Figure 4-61) as removed. Use new cable ties to secure harness where required.

(2) Connect alternator wiring harness as tagged. Remove tags.

(3) Connect wiring harness ground lead to alternator and attach wiring harness resistor to mounting bracket with capscrews, screws, lockwashers, washers, and nut.

(4) Connect alternator wiring harness plug to receptacle on bottom of control panel.

4.60 PREHEATER LEAD.

a. Inspection.

(1) Shut down generator set.

(2) Visually inspect preheater lead for cracked or deteriorated insulation, broken terminals, and other damage.

b. Testing.

(1) Shut down generator set.

(2) Set multimeter for ohms and check for continuity between air intake heating elements stud and cylinder head bolt connecting preheater lead to ground.

(3) If necessary, repair preheater lead.

c. Removal.

(1) Shut down generator set.

(2) Remove nut (Figure 4-62) and disconnect preheater lead at stud on air intake heating elements. Then remove bolt, washer, and lockwasher securing other terminal of preheater lead to diesel engine.

(3) Cut tie wraps as necessary and remove preheater lead.

d. Repair. Replace individual connectors or assemble complete preheater lead in accordance with Appendix G, Figure G-12.

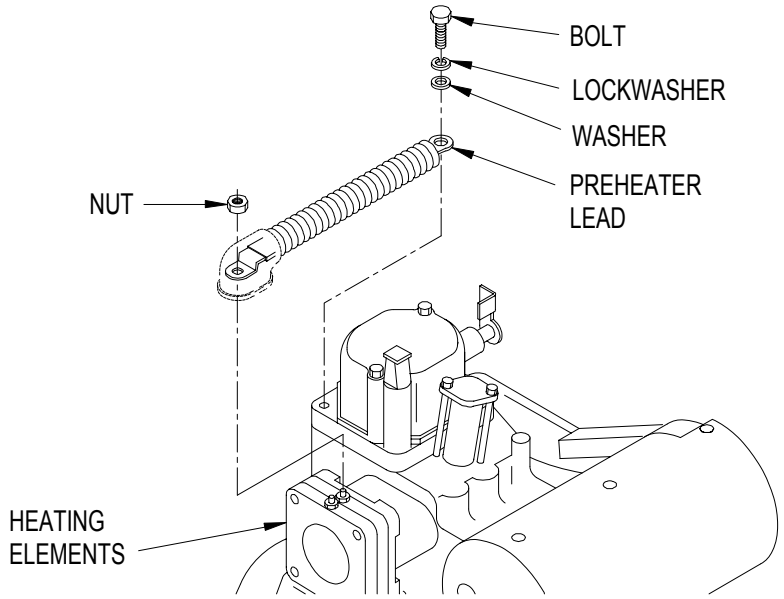


Figure 4-62. Preheater Lead

e. Installation.

(1) Route preheater lead (Figure 4-62) as removed. Use new cable ties to secure lead where required.

(2) Connect preheater lead at air intake heating elements stud with nut. Then connect other end to engine with bolt, lockwasher, and washer.

4.61. GROUND STUD TERMINAL.

a. Inspection.

(1) Shut down generator set.

(2) Inspect the ground stud terminal for deformed threads, corrosion, or other physical damage.

(3) Ensure that the connections to the terminal are clean and tight. Replace if defective.

b. Removal.

(1) Shut down generator set.

(2) Disconnect ground wire from ground stud terminal (Figure 4-63) as necessary.

(3) Hold terminal body hex with wrench and remove locknut, washer, and ground stud terminal from generator set frame.

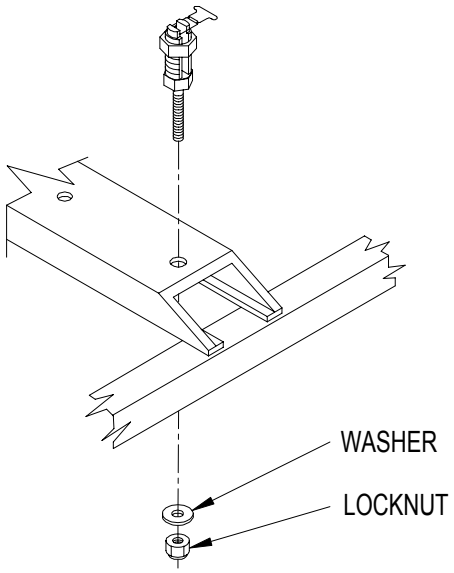


Figure 4-63. Ground Stud Terminal

c. Installation.

CAUTION

Ground stud terminal shears off easily if locknut is overtightened. Do not overtorque locknut.

(1) Apply corrosion preventive compound (Item 5, Appendix E) on frame contact points and install ground stud terminal (Figure 4-63) in generator set frame with washer and locknut. Hold terminal body hex with wrench. Torque locknut to 35 lbs-in. (3.95 Nm) from bottom. Apply insulating electrical compound (Item 22, Appendix E) to threads of locknut prior to assembly.

(2) Connect ground wire to ground stud terminal as necessary.

4.62. FRAME.

a. Inspection.

(1) Inspect frame (Figure 4-64) for chipped paint, and other damage.

(2) Inspect threaded inserts for debris and damage.

b. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

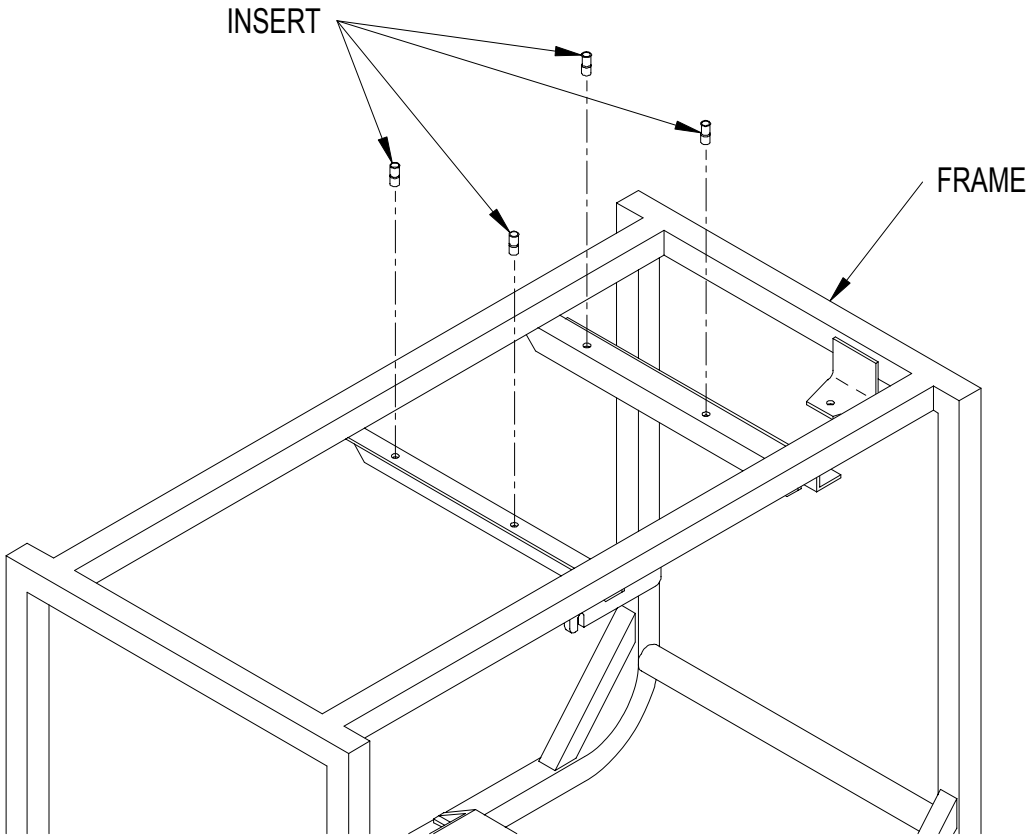


Figure 4-64. Frame

(1) Replace damaged threaded inserts and remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

Section VII. PREPARATION FOR SHIPMENT AND STORAGE

4.63. PRESERVATION.

For long term storage, an applicable DND procedure may be used, see procedure 7. However, if not available the following procedures, 1 through 6, may be used.

(1) If the engine is not warm, run it for about three minutes and then stop.

(2) Drain engine lube oil and fill with new oil.

(3) Remove rubber cylinder head plunger (Figure 4-65) and add 2 ml (¼ to ½ teaspoon) of clean engine oil, (Item 14, Appendix E). Install rubber plunger.

(4) Push decompression lever down and hold it while you pull recoil starter two or three times. DO NOT start engine.

(5) Pull decompression lever up. Pull recoil starter slowly. Stop when it feels tight. This closes intake and exhaust valves and helps prevent rust from forming.

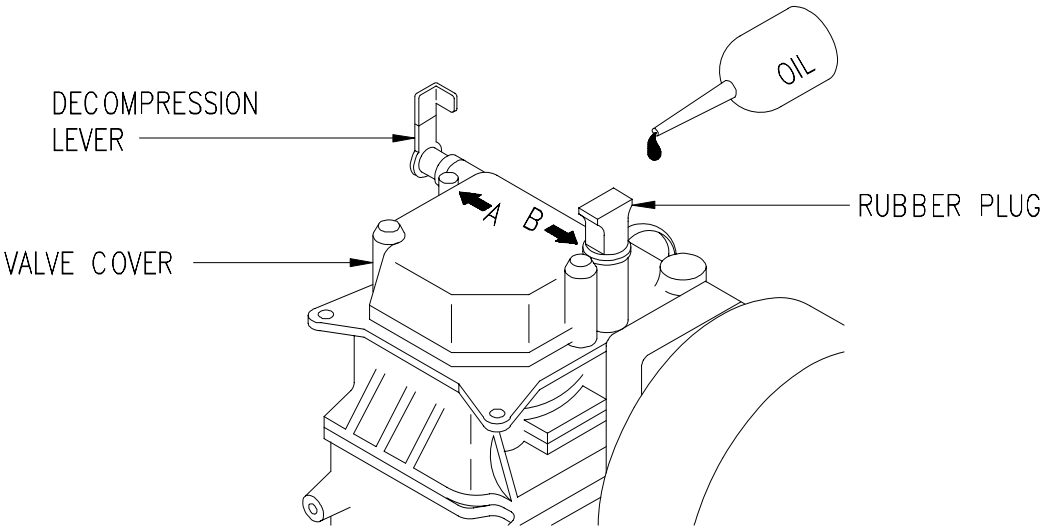


Figure 4-65. Adding Oil - Cylinder Head Plunger

(6) Wipe oil and dirt from generator set and store in a dry place.

(7) Preserve generator sets in accordance with levels A, B, or C of ASTM D 3951-98.

4.64. PACKING.

Before shipping the 2 kW Generator Set, it should be packed in accordance with "Special Packaging Instructions." See Appendix K.

4.65. MARKING.

Mark for shipment or storage in accordance with MIL-STD-129.

4.66. USE OF CORROSION-PREVENTIVE COMPOUNDS, MOISTURE BARRIERS, AND DESICCANT MATERIALS.

Refer to MIL-HDBK-729 for corrosion and corrosion prevention/metal.

4.67. STORAGE.

Refer to TB 740-97-2/TO 35-1-4 for storage information. Do not stack more than three (3) units high.

4.68. SPECIAL INSTRUCTIONS FOR ADMINISTRATIVE STORAGE.

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 time factors as determined by the directing authority. During the storage period, appropriate maintenance records shall be kept.

If the generator has been removed from its original packaging, checks and services should be completed. Shortcomings and deficiencies should be corrected, and all Modification Work Orders (MWO) should be applied before placing the generator into administrative storage.

Inside storage is required for items selected for administrative storage.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

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

5.1. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, or CTA 8-100, as applicable to your unit.

5.2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

A list of recommended tools, special tools, and support equipment required to maintain the generator set is contained in Appendix B, Section III. However, special tools can be fabricated using the directions provided in Appendix G, Figures G-15 and G-16.

5.3. REPAIR PARTS.

Repair parts and equipment are listed and illustrated in the repair parts and special tools list (Appendix F) covering Direct Support (DS) level maintenance for this equipment.

Section II. TROUBLESHOOTING

5.4 DIRECT SUPPORT TROUBLESHOOTING PROCEDURES.

5.4.1. Purpose of Logic Tree Table.

This section contains troubleshooting information for locating and correcting operating troubles which may develop in the generator set. Each malfunction listed for an individual component, unit, or system is followed by a go-no-go troubleshooting procedure that may help you determine what caused the trouble. Corrective action is provided to help you remedy the problem. If a malfunction is not listed or cannot be corrected by listed corrective actions, notify your supervisor.

NOTE

Before you use these procedures, be sure that the Operator and Unit level PMCS procedures have been performed.

NOTE

Ensure operator and Unit level troubleshooting has been performed prior to performing DS level troubleshooting.

NOTE

Refer to the Electrical Schematic Figure FO-1 (MEP-531A) or Figure FO-2 (MEP-501A) and Wiring Diagram Figure FO-3 (MEP-531A) or Figure FO-4 (MEP-501A) as troubleshooting aids. Refer to Electrical Schematic Figure FO-5 (Mechron 120 VAC) or Figure FO-6 (Mechron 28 VDC) as troubleshooting aids.

5.4.2. Symptom Index.

Table 5-1. Diesel Engine Will Not Start (Manual Starting) Troubleshooting

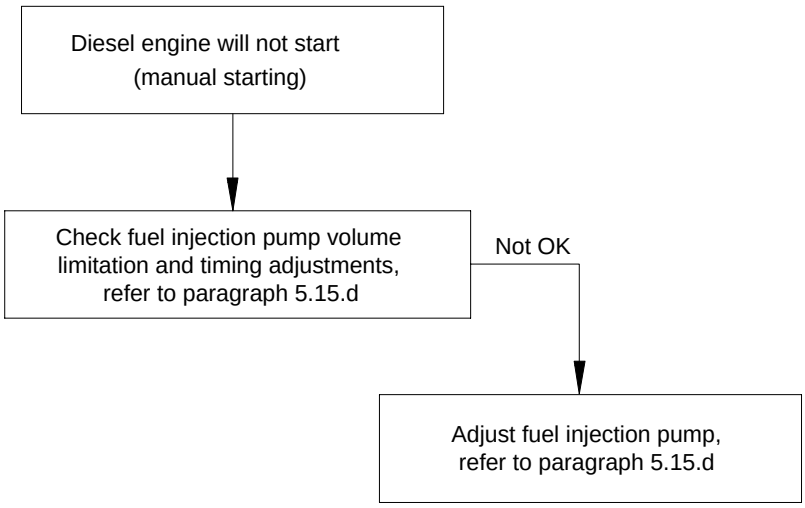


Table 5-2. Diesel Engine Hard To Start Troubleshooting

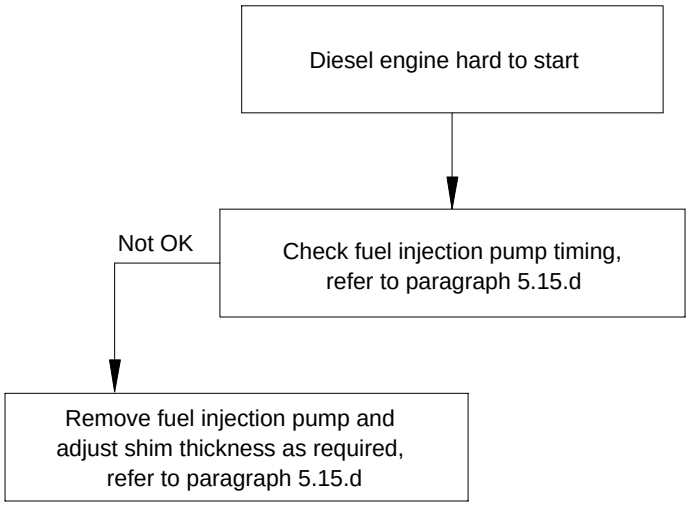


Table 5-3. Diesel Engine Starts But Fails to Keep Running Troubleshooting

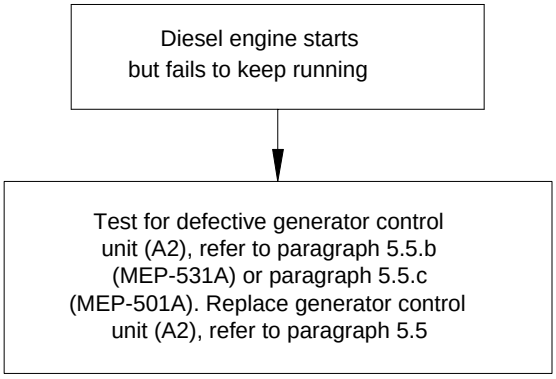


Table 5-4. Diesel Engine Runs Rough Troubleshooting

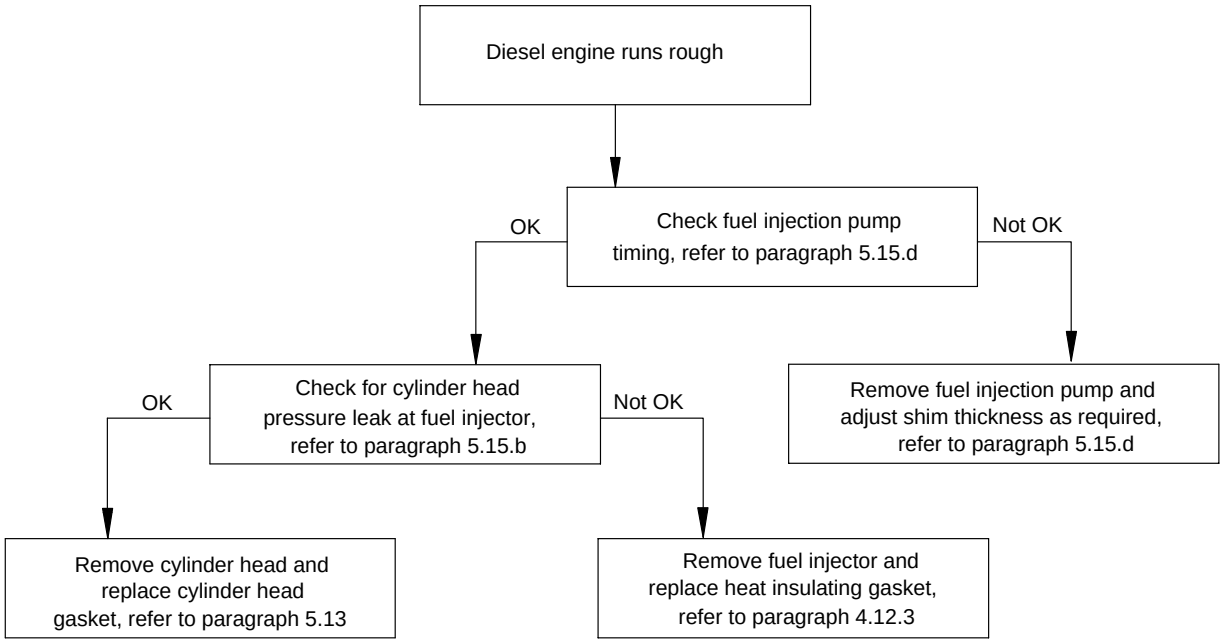


Table 5-5. Unexpected Reverse Rotation at Startup Troubleshooting

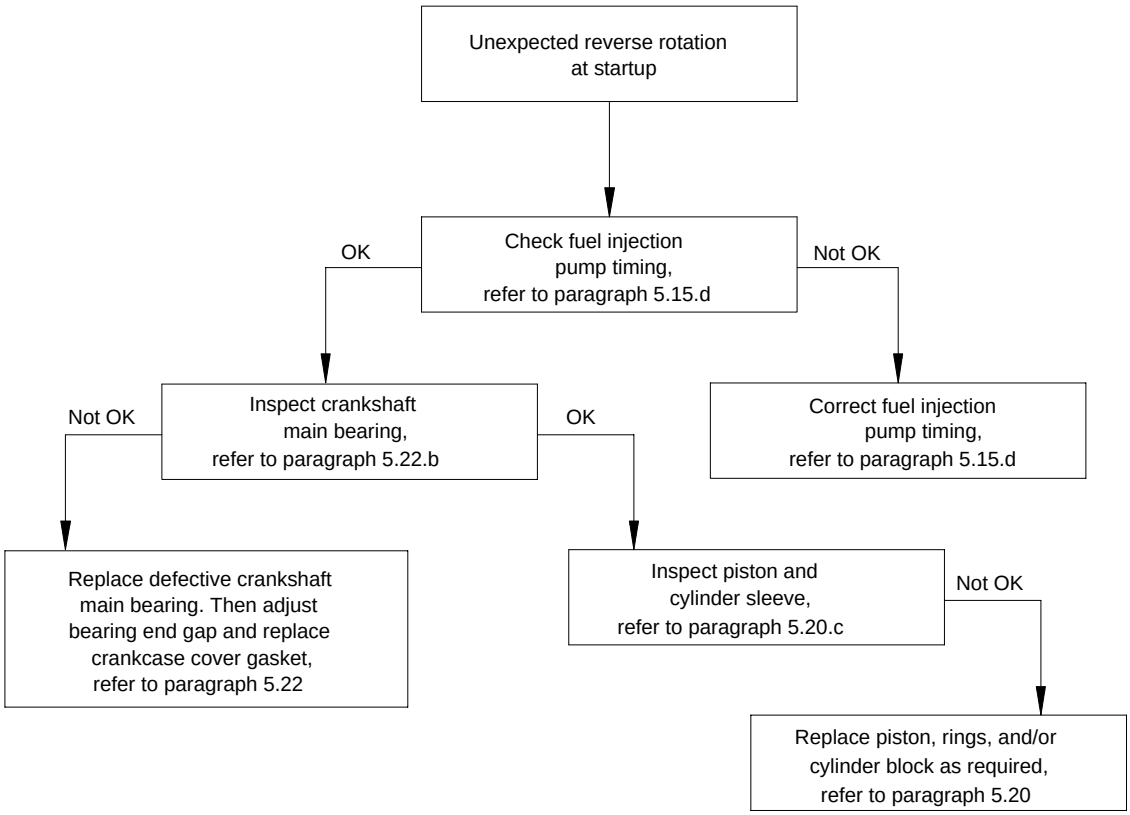


Table 5-6. Diesel Engine Races Exceeding Governed Speed Troubleshooting

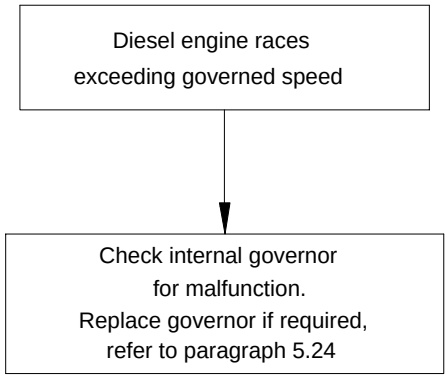


Table 5-7. Diesel Engine Runs Unevenly (Surges) Troubleshooting

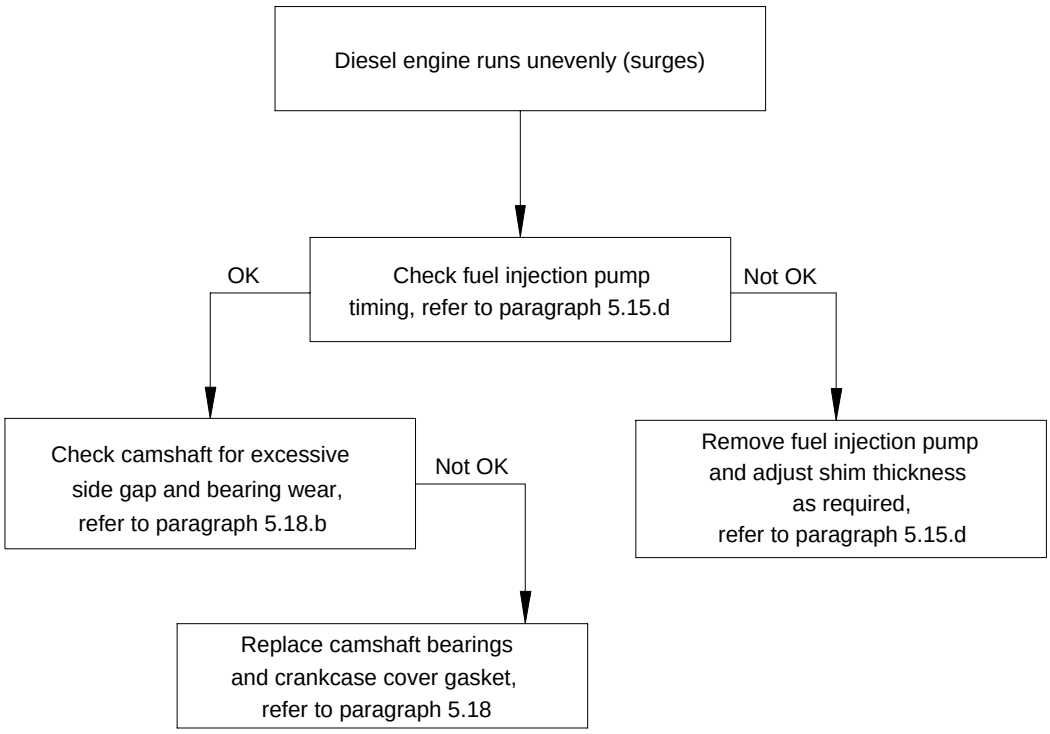


Table 5-8. Diesel Engine Seizes During Operation Troubleshooting

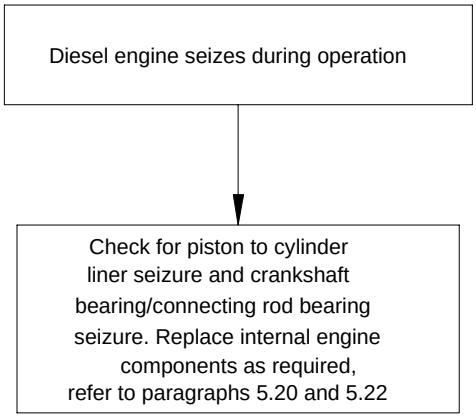


Table 5-9. Diesel Engine Exhausts Black Smoke Troubleshooting

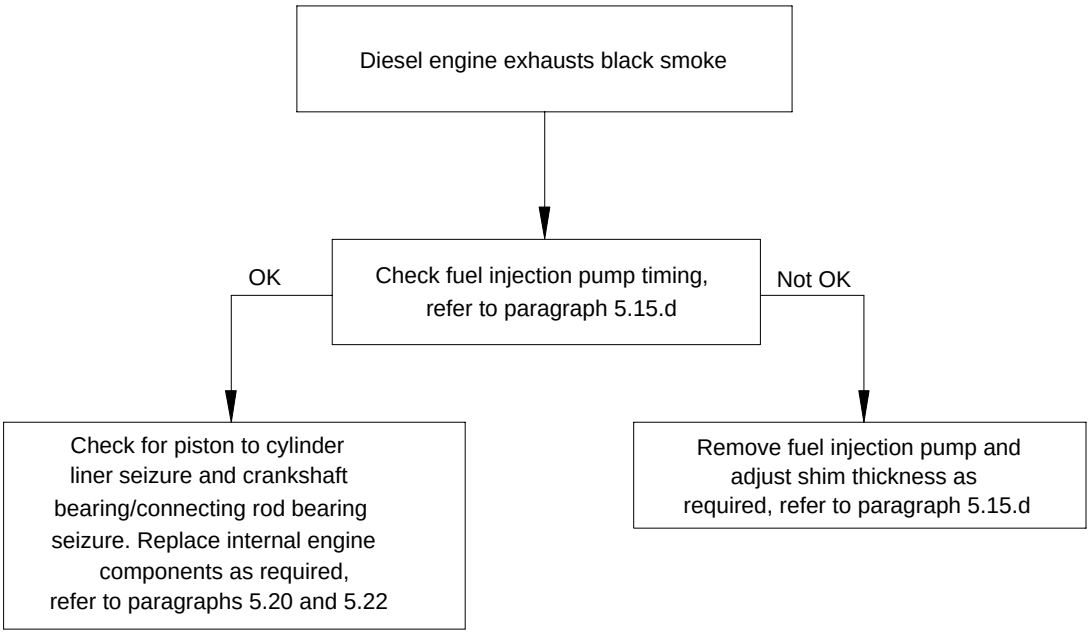


Table 5-10. Diesel Engine Exhausts Blue-White Smoke Troubleshooting

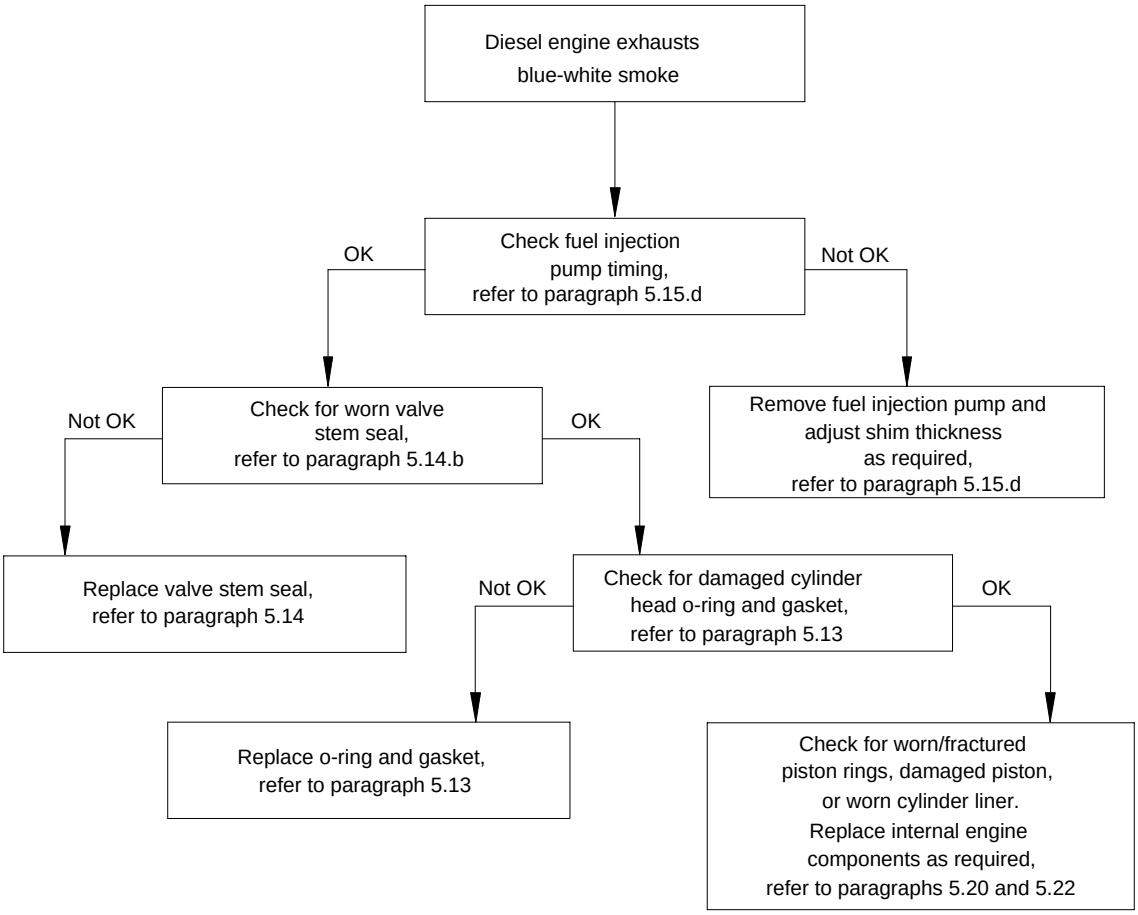


Table 5-11. Recoil Start Rope Hard To Pull Troubleshooting

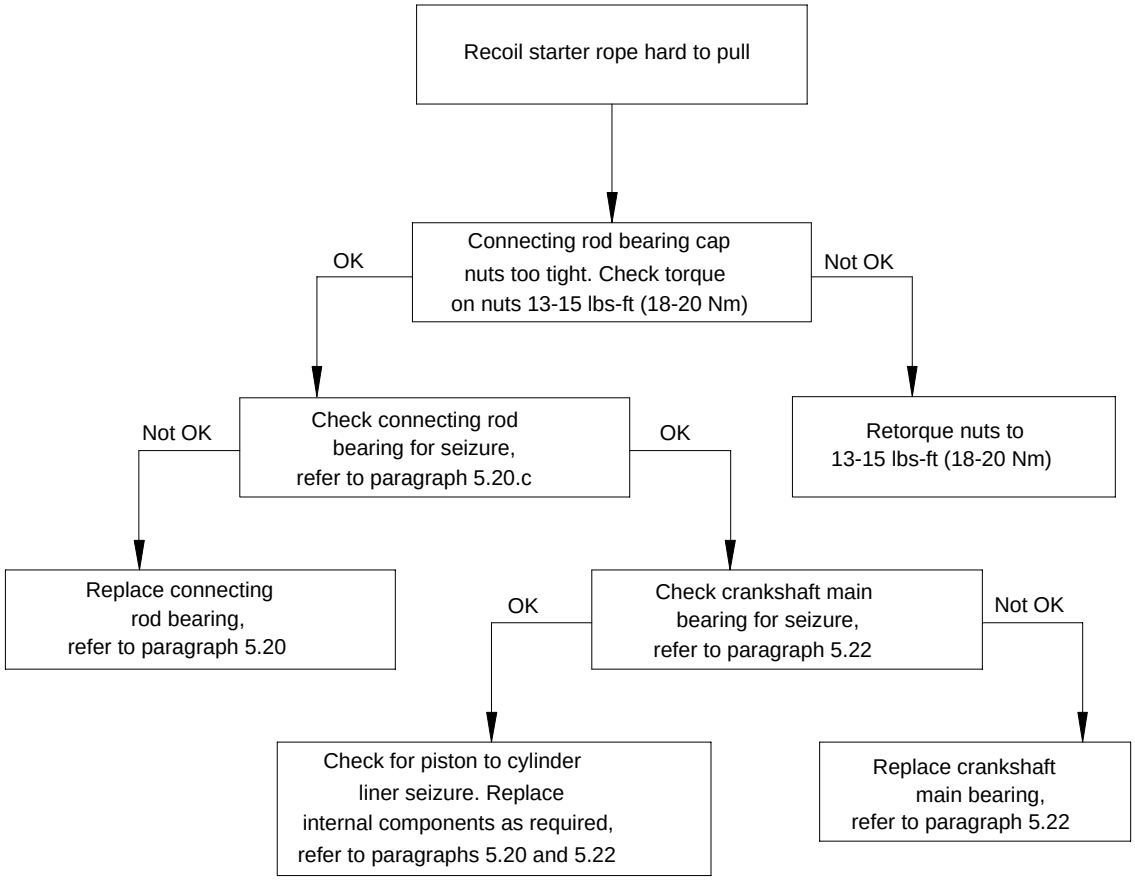


Table 5-12. Voltage Output Drops Troubleshooting

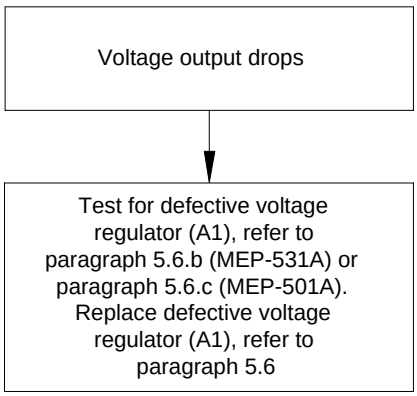


Table 5-13. Table Not Used

Table 5-14. No Indication On HOURS Meter (M3) Troubleshooting

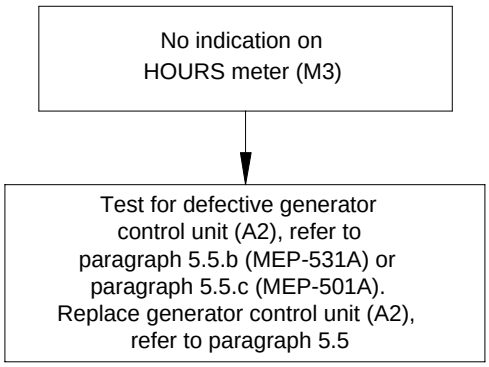


Table 5-15. No Output Voltage (MEP-531A) Troubleshooting

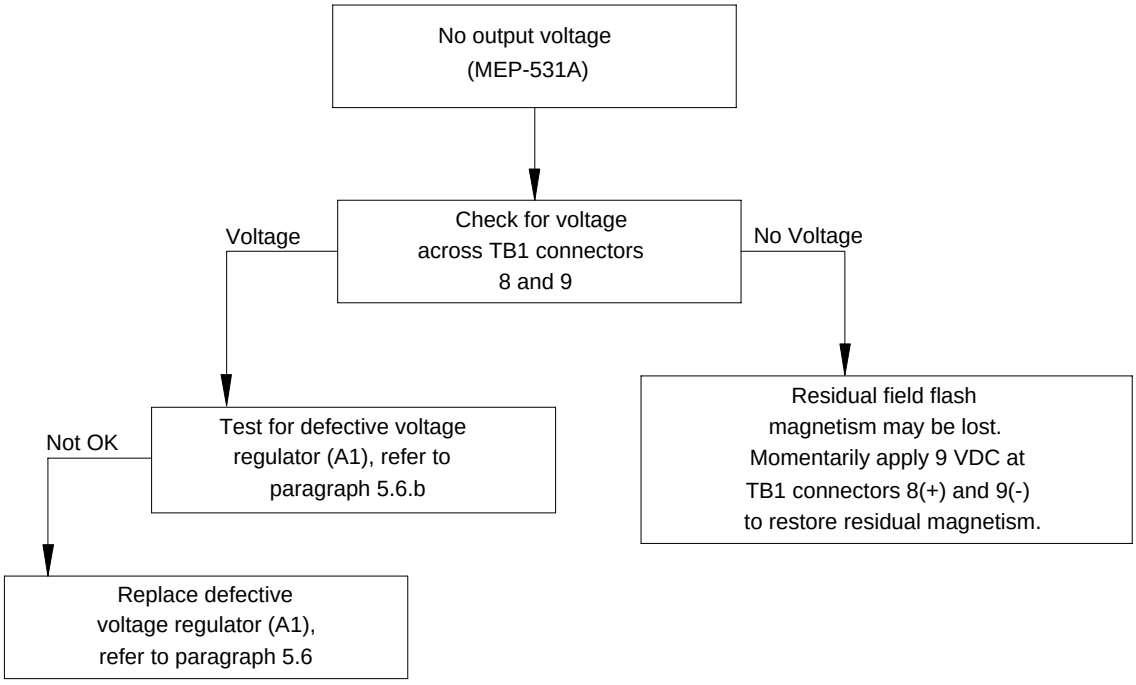


Table 5-16. No Output Voltage (MEP-501A) Troubleshooting

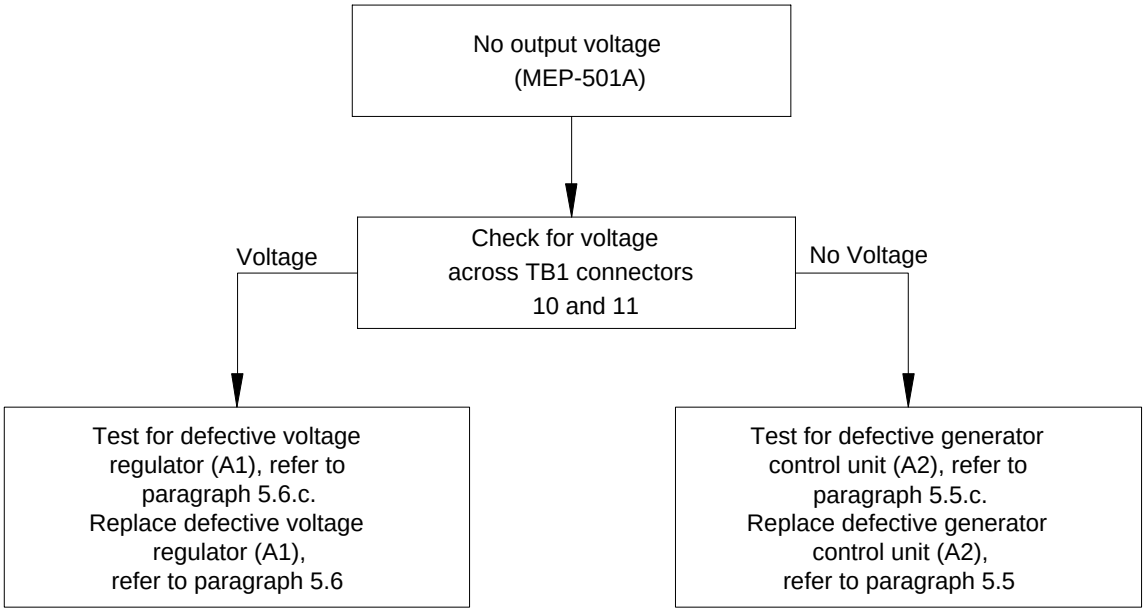


Table 5-17. Cannot Adjust Alternator Output With VOLTAGE ADJ. Potentiometer Troubleshooting

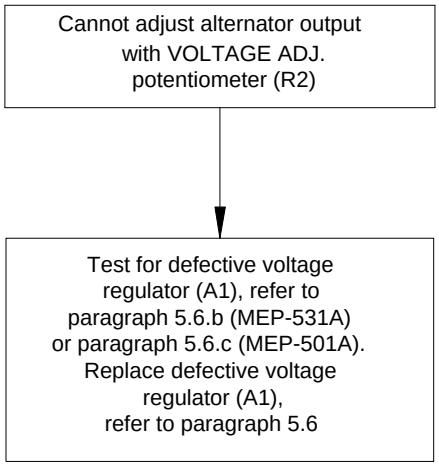
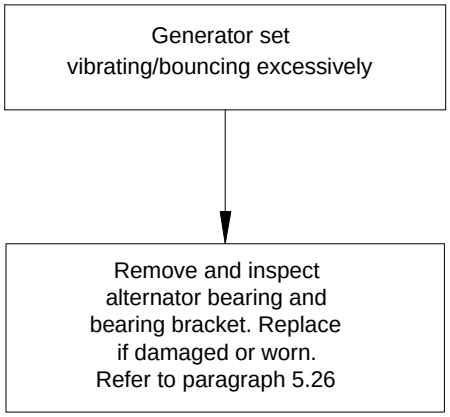


Table 5-18. Generator Set Vibrating/Bouncing Excessively (MEP-531A) Troubleshooting



Section III. DIRECT SUPPORT MAINTENANCE PROCEDURES

NOTE

For generator sets manufactured by Mechron, wiring and component labeling differences exist between the text in this manual and the generator sets. Cross-reference tables and wiring diagrams are provided in Appendix J, Dewey/Mechron Cross-reference List, and in fold-out sheets after Alphabetical Index.

5.5. GENERATOR CONTROL UNIT.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Visually inspect the generator control unit for security, cracks, broken wires, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing (MEP-531A).

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(3) Start generator set.

(4) Set multimeter to AC volts and connect positive lead of multimeter to terminal 5 on terminal board TB1 and negative lead to terminal 6 of TB1. Multimeter should indicate 40-50 VAC. If reading is low, dynamo is defective. Replace dynamo, refer to paragraph 5.23.b. If there is no voltage, check diesel engine dynamo (G1) and wiring between dynamo and TB1, refer to paragraph 5.23.a. Then redo step 4.

(5) Connect positive lead of multimeter to terminal 10 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 119-121 VAC. If reading is incorrect, check wiring between CB1-A (Line) and TB1. Then redo step 5.

(6) Set multimeter for DC volts and connect positive lead of multimeter to terminal 2 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 35-45 VDC.

(7) Connect positive lead of multimeter to terminal 4 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 35-45 VDC. If reading is incorrect, check LOP solenoid (L4) and wiring between solenoid and TB1. Then redo step 7.

(8) Connect positive lead of multimeter to terminal 3 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 18-22 VDC.

(9) Connect positive lead of multimeter to terminal 7 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 0-2 VDC with ON-OFF load circuit breaker CB1 in OFF position. With CB1 in ON position, multimeter should indicate 35-45 VDC.

(10) Apply a ground to LOP switch terminal. Diesel engine should stop.

CAUTION

The following steps are the only way to check the short circuit function of the generator control unit without special test equipment. If the ON-OFF load circuit breaker closes and does not open instantaneously, IMMEDIATELY open it manually. Electrical circuitry and component damage could occur in less than a second if short circuit function is inoperative.

(11) With diesel engine stopped, connect a piece of 18 AWG electrical wire across output load terminals. Loop wire so as to avoid contact with the generator set frame.

(12) Start diesel engine and attempt to close ON-OFF load circuit breaker. The circuit breaker should open instantaneously.

(13) Shutdown engine and remove cable from output load terminals.

(14) Replace generator control unit if any of the above readings are not as stated.

(15) Close and secure instrument panel.

c. Testing (MEP-501A).

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(3) Start generator set.

(4) Set multimeter to AC volts and connect positive lead of multimeter to terminal 6 on terminal board TB1 and negative lead to terminal 7 of TB1. Multimeter should indicate 40-50 VAC. If reading is incorrect, check diesel engine dynamo (G1) and wiring between dynamo and TB1. Then redo step 4.

(5). Set multimeter for DC volts and connect positive lead of multimeter to terminal 9 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 27-29 VDC. If reading is incorrect, check wiring between CB1-P1 (Line) and TB1. Then redo step 5.

(6) Connect positive lead of multimeter to terminal 3 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 35-45 VDC.

(7) Connect positive lead of multimeter to terminal 5 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 35-45 VDC. If reading is incorrect, check LOP solenoid (L4) and wiring between solenoid and TB1. Then redo step 7.

(8) Connect positive lead of multimeter to terminal 4 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 18-22 VDC.

(9) Connect positive lead of multimeter to terminal 8 of TB1 and negative lead to terminal 1 of TB1. Multimeter should indicate 0-1 VDC with ON-OFF load circuit breaker CB1 in OFF position. With CB1 in ON position, multimeter should indicate 35-45 VDC.

NOTE

At generator set startup, generator control (A2) momentarily applies current to field flash the alternator (G2). It can therefore be assumed that if the alternator is producing power, this function of A2 is satisfactory. However, if it is suspected that there is no field flash current for the alternator (G2), check A2 as follows.

(10) Shutdown diesel engine. Disconnect A2-VINDC at terminal 9 of TB1 and A2-F at terminal 10 of TB1. Connect positive lead of multimeter to disconnected A2-F wire and negative lead to terminal 1 of TB1. Then start diesel engine. Multimeter should indicate 35-45 VDC. Shutdown diesel engine and reconnect wires to terminals 9 and 10 of TB1.

(11) Start generator set.

(12) Apply a ground to LOP switch terminal. Diesel engine should stop.

CAUTION

The following steps are the only way to check the short circuit function of the generator control unit without special test equipment. If the ON-OFF load circuit breaker closes and does not open instantaneously, IMMEDIATELY open it manually. Electrical circuitry and component damage could occur in less than a second if short circuit function is inoperative.

(13) With diesel engine stopped, connect a piece of 4 AWG electrical wire across output load terminals. Loop wire so as to avoid contact with the generator set frame.

(14) Start diesel engine and attempt to close ON-OFF load circuit breaker. The circuit breaker should open instantaneously.

(15) Shutdown engine and remove cable from output load terminals.

(16) Replace generator control unit if any of above readings are not as stated.

(17) Close and secure instrument panel.

d. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Remove EMI filter (MEP-531A), refer to paragraph 4.47.b.

(4) Tag and disconnect electrical leads for generator control unit (Figure 5-1) from terminals on terminal board TB1.

(5) Remove screws, lockwashers, washers, and generator control unit from control panel.

e. Installation.

(1) Install generator control unit in control panel with washers, lockwashers, and screws.

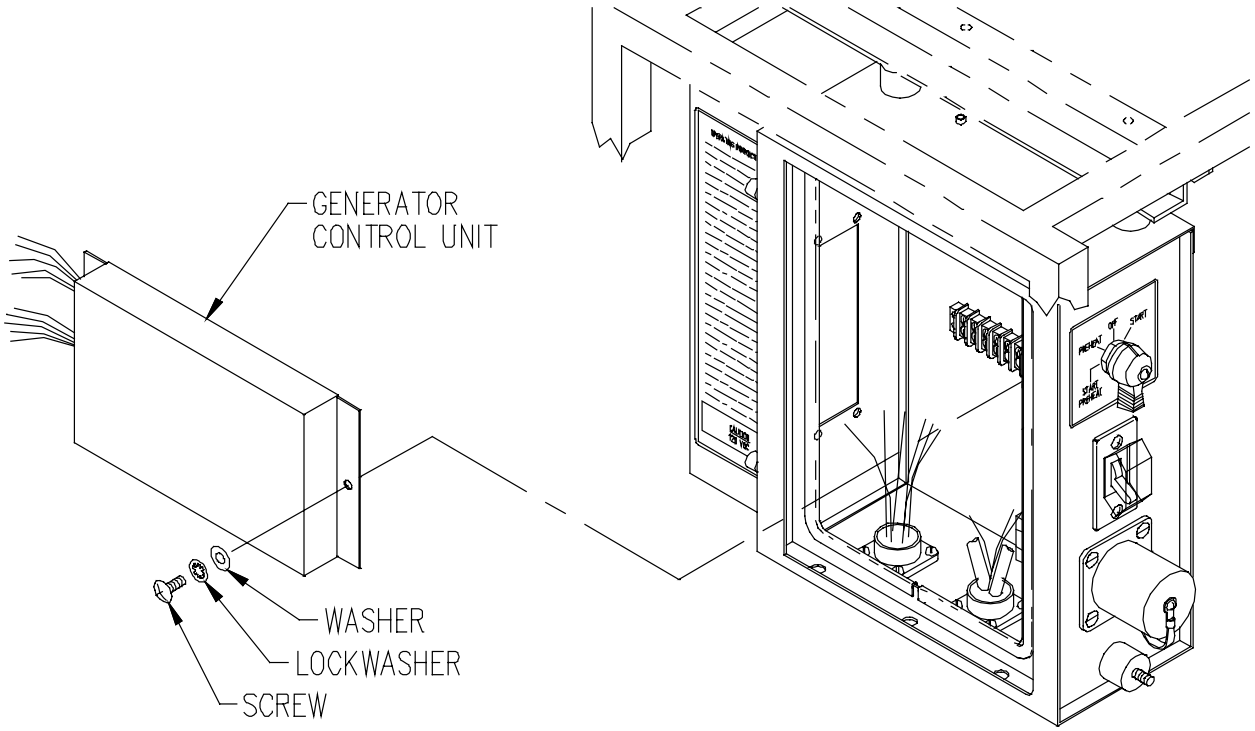


Figure 5-1. Generator Control Unit (MEP-531A)

(2) Connect electrical leads and remove tags.

(3) Install EMI filter (MEP-531A), refer to paragraph 4.47.d.

(4) Close and secure instrument panel.

5.6. VOLTAGE REGULATOR ASSEMBLY.

a. Inspection.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Inspect voltage regulator for security, cracked case, corrosion, and other damage.

(4) Close and secure instrument panel.

b. Testing (MEP-531A).

(1) Shut down generator set.

(2) Connect load bank to load terminals.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(4) Start generator set and turn VOLTAGE ADJ. potentiometer to verify adjustment range (114 to 126 VAC). If no voltage or low voltage was indicated, or voltage adjustment range could not be achieved, continue with the following steps. Otherwise, voltage regulator is serviceable.

(5) Test VOLTAGE ADJ. potentiometer, refer to paragraph 4.28.b. If defective, replace VOLTAGE ADJ. potentiometer and redo step (4).

(6) Set multimeter for AC volts and connect positive lead of multimeter to terminal 13 of TB1 and negative lead to terminal 15 of TB1. Multimeter should indicate approximately 114-126 VAC.

(7) Connect positive lead of multimeter to terminal 8 of TB1 and negative lead to terminal 15 of TB1. Multimeter should indicate 160-180 VAC. If reading is incorrect, check alternator G2, paragraph 5.26.a, and wiring between G2 and TB1. If defective, repair/replace alternator and/or wiring. Then redo step (4).

(8) With positive lead of multimeter connected to terminal 8 on TB1, move negative lead to terminal 9 of TB1. Place ON-OFF load circuit breaker CB1 to ON. Then using load bank, apply a load. Multimeter should indicate an increase until load stabilizes. If there is no increase, voltage regulator is defective.

(9) Shut down generator set and disconnect load bank.

(10) Replace voltage regulator if any of above readings are not as stated.

(11) Close and secure instrument panel.

c. Testing (MEP-501A).

(1) Shut down generator set.

(2) Connect load bank to load terminals.

(3) Release instrument panel by turning fastener, open instrument panel slowly.

WARNING

High voltage is produced when this generator set is in operation. Use care when working around an open control panel with the generator set operating. Improper operation and/or failure to follow this warning could result in personal injury or death by electrocution.

(4) Start generator set and turn VOLTAGE ADJ. potentiometer to verify adjustment range (26.6 to 32.2 VDC). If no voltage or low voltage was indicated on VOLTS DC meter, or voltage adjustment range could not be achieved, continue with the following steps. Otherwise, voltage regulator is serviceable.

(5) Test VOLTAGE ADJ. potentiometer, refer to paragraph 4.28.b. If defective, replace VOLTAGE ADJ. potentiometer and redo step (4).

(6) Set multimeter for DC volts and connect positive lead of multimeter to terminal 9 of TB1 and negative lead to terminal 2 of TB1. Multimeter should indicate approximately 26.6 to 32.2 VDC.

(7) Set multimeter to DC volts and connect positive lead of multimeter to terminal 11 of TB1 and negative lead to terminal 2 of TB1. Multimeter should indicate 12-16 VDC. If reading is incorrect, check alternator G2, paragraph 5.28.d, and wiring between G2 and TB1. If defective, repair/replace alternator and/or wiring. Then redo step (4).

(8) Connect positive lead of multimeter to terminal 10 on TB1 and negative lead to terminal 2 of TB1. Place ON-OFF load circuit breaker CB1 to ON. Then using load bank, apply a load. Multimeter should indicate an increase until load stabilizes. If no change is indicated, voltage regulator is defective.

(9) Shut down generator set.

(10) Replace voltage regulator if any of above readings are not as stated.

(11) Close and secure instrument panel.

d. Removal.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Tag and disconnect electrical leads for voltage regulator (Figure 5-2) from terminals of terminal board TB1.

(4) Remove screws, lockwashers, washers, and voltage regulator from control panel.

e. Installation.

(1) Install voltage regulator in control panel with washers, lockwashers, and screws.

(2) Connect electrical leads to terminal board TB1 and remove tags.

(3) Close and secure instrument panel.

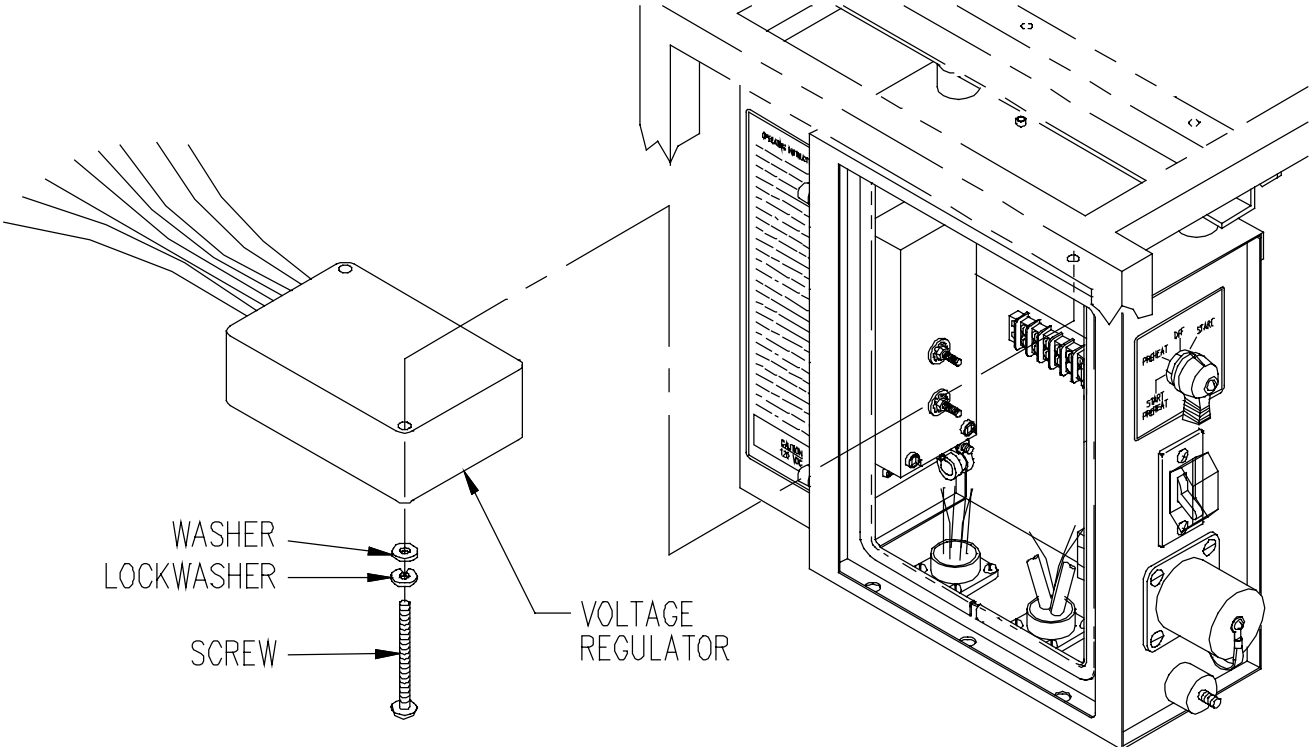


Figure 5-2. Voltage Regulator Assembly (MEP-531A)

5.7. DIESEL ENGINE WIRING HARNESS, CONTROL PANEL.

a. Testing.

(1) Shut down generator set.

(2) Release instrument panel by turning fastener, open instrument panel slowly.

(3) Disconnect harness, refer to paragraph 4.43.c.

(4) (MEP-531A). Set multimeter for ohms and check for continuity between J2 pin A and START-PREHEAT/PREHEAT/OFF/START rotary switch (S2) pin H, J2 pin B and TB1 connector 3, J2 pin C and S2 pin S, J2 pin D and NATO slave receptacle (SR1) pin +, J2 pin E and TB1 connector 5, and J2 pin F and TB1 connector 6.

(5) (MEP-501A). Set multimeter for ohms and check for continuity between J2 pin A and PREHEAT-START-PREHEAT/PREHEAT/OFF/START rotary switch (S2) pin H, J2 pin B and TB1 connector 4, J2 pin C and S2 pin S, J2 pin D and NATO slave receptacle (SR1) pin +, J2 pin E and TB1 connector 6, and J2 pin F and TB1 connector 7.

(6) Reconnect harness, refer to paragraph 4.43.e.

(7) Close and secure instrument panel.

b. Repair.

(1) Remove diesel engine wiring harness, control panel in accordance with paragraph 4.43.c.

(2) Repair diesel engine wiring harness, control panel by assembling wire, connector (J2), terminals, splices, insulation, and tiedown straps in accordance with Appendix G, Figures G-6 (MEP-531A) or G-7 (MEP-501A).

(3) Install diesel engine wiring harness, control panel in accordance with paragraph 4.43.e.

5.8 ALTERNATOR WIRING HARNESS, CONTROL PANEL.

a. Testing.

(1) Shut down generator set.

(2) Release instrument panel turning fastener, open instrument panel slowly.

(3) Disconnect harness, refer to paragraph 4.44.c.

(4) (MEP-531A). Set multimeter for ohms and check for continuity between J1 pin A and TB1 connector 13, J1 pin B and EMI filter load terminal lug N, J1 pin C and TB1 connector 14, J1 pin D and TB1 connector 15, J1 pin E and TB1 connector 8, and J1 pin F and TB1 connector 9.

(5) (MEP-501A). Set multimeter for ohms and check for continuity between J1 pin A and shunt resistor R3, J1 pin B and TB1 connector 10, J1 pin D and TB1 connector 11, and J1 pin C and load terminal lug-.

(6) Reconnect harness, refer to paragraph 4.44.e.

(7) Close and secure instrument panel.

b. Repair.

(1) Remove alternator wiring harness, control panel in accordance with paragraph 4.44.c.

(2) Repair alternator wiring harness, control panel by assembling wire, connector (J1), terminals, insulation, and tiedown straps in accordance with Appendix G, Figure G-8 (MEP-531A) or G-9 (MEP-501A).

(3) Install alternator wiring harness, control panel in accordance with paragraph 4.44.e.

5.9. ENGINE/ALTERNATOR ASSEMBLY.

a. Removal.

(1) Shut down generator set.

(2) Disconnect LOP engine shutdown cable from engine, refer to paragraph 4.50.b.

(3) Disconnect diesel engine wiring harness and alternator wiring harness connectors at bottom of control panel.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

(4) Open drain cock and drain fuel from fuel tank. Close drain cock.

(5) Loosen clamp and disconnect fuel supply line to fuel filter at fuel tank.

(6) Loosen clamp and disconnect fuel return line from fuel tank.

(7) Remove bolt (Figure 5-3), lockwasher, and washer securing engine ground strap to engine.

(8) Remove nuts, lockwashers, washers, and bolts securing engine to mounting bracket.

(9) Remove nut and lockwasher securing alternator ground strap to generator set frame.

(10) Remove nuts, lockwashers, washers, and bolts securing alternator resilient mount to generator set frame.

(11) Remove capscrews (5, Figure 4-15), lockwashers (6), washers (7), and fuel tank guard (11) from generator set.

WARNING

MEP-531A engine/alternator assembly weighs 100 lbs (45.4 kg). MEP-501A engine/alternator assembly weighs 80 lbs (36.2 kg). Use caution when removing assembly to prevent personal injury.

(12) Remove engine/alternator assembly from generator set.

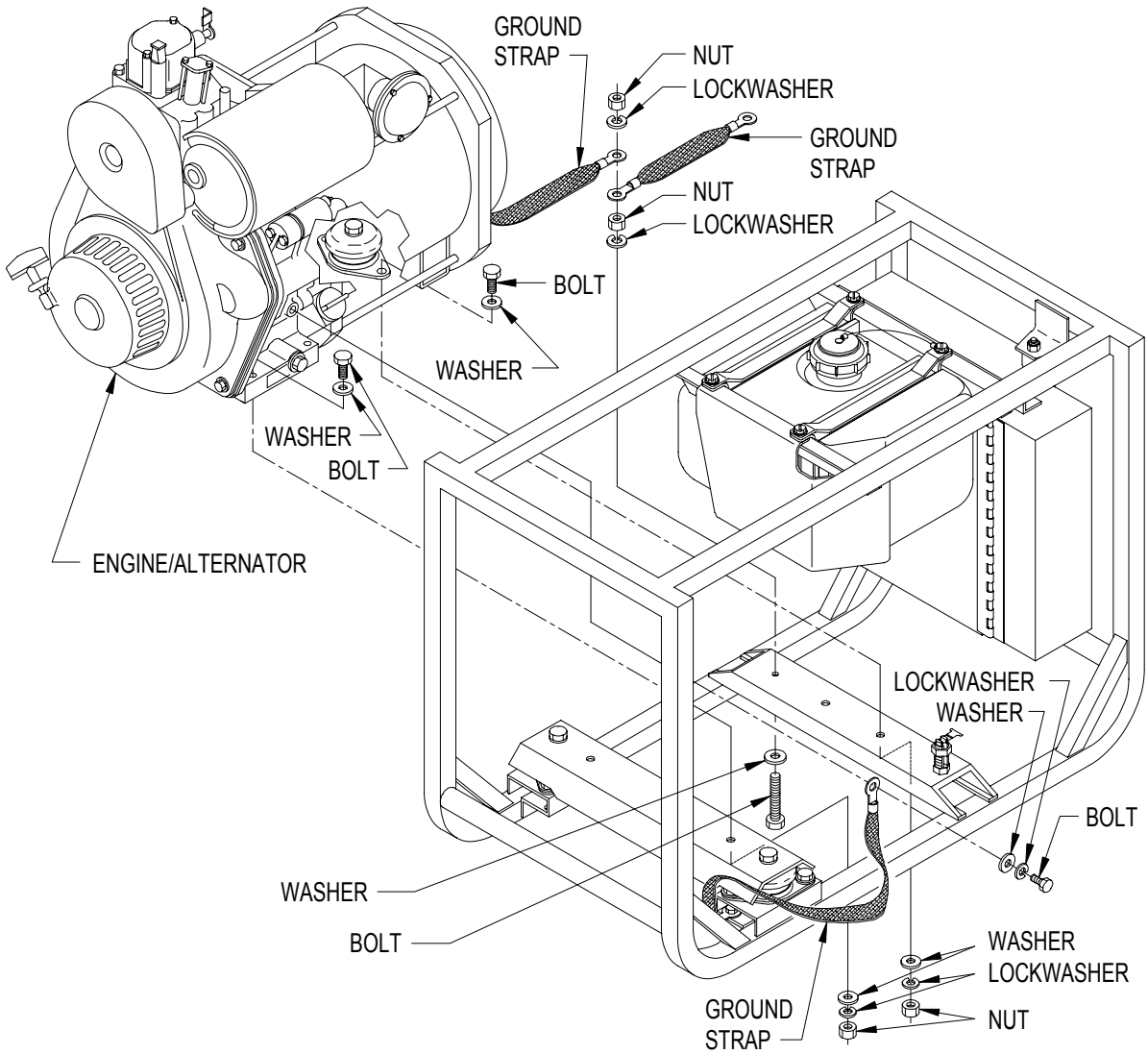


Figure 5-3 Engine/Alternator Assembly

b. Installation.

WARNING

MEP-531A engine/alternator assembly weighs 100 lbs (45.4 kg). MEP-501A engine/alternator assembly weighs 80 lbs (36.2 kg). Use caution when removing assembly to prevent personal injury.

(1) Position engine/alternator assembly (Figure 5-3) on generator set frame.

(2) Secure alternator resilient mount to generator set frame with bolts, washers, lockwashers, and nuts. Torque nuts to 17 lbs-ft.

(3) Secure engine to mounting bracket with bolts, washers, lockwashers, and nuts. Torque nuts to 35 lbs-ft.

(4) Secure alternator ground strap to generator set frame with lockwasher and nut.

(5) Attach engine ground strap to engine with washer, lockwasher, and bolt.

(6) Install fuel tank guard (11, Figure 4-15) on generator set with capscrews (5), lockwashers (6), and washers (7).

(7) Connect fuel return line to fuel tank. Tighten clamp.

(8) Connect fuel supply line to fuel tank. Tighten clamp.

(9) Connect and adjust LOP engine shutdown cable to engine, refer to paragraph 4.50.c/d.

(10) Connect diesel engine wiring harness and alternator wiring harness connectors at bottom of control panel.

(11) Fill fuel tank with diesel fuel.

(12) Prime and bleed the fuel system. Refer to paragraph 2.7.c.

5.10. DIESEL ENGINE.

a. Removal.

(1) Remove engine/alternator assembly, refer to paragraph 5.9.a.

(2) Remove alternator assembly, refer to paragraph 5.26.b (MEP-531A) or 5.28.a (MEP-501A).

(3) If replacing engine, remove the following:

(a) Engine wiring harness, refer to paragraph 4.58.c.

(b) LOP switch, refer to paragraph 4.48.b.

(c) Fuel filter assembly, refer to paragraph 4.15.a.

(d) Air intake system components, refer to paragraph 4.18.a.

(e) Air intake heating elements and pipe, refer to paragraph 4.51.a.

(f) Exhaust system components, refer to paragraph 4.19.a.

b. Installation.

(1) If removed, install the following:

(a) Exhaust system components, refer to paragraph 4.19.c.

(b) Air intake heating elements and pipe, refer to paragraph 4.51.d.

(c) Air intake system components, refer to paragraph 4.18.c.

(d) Fuel filter assembly, refer to paragraph 4.15.c.

(e) LOP switch, refer to paragraph 4.48.c.

(f) Engine wiring harness, refer to paragraph 4.58.e.

(2) Install alternator assembly, refer to paragraph 5.26.g (MEP-531A) or 5.28.f (MEP-501A).

(3) Install engine/alternator assembly, refer to paragraph 5.9.b.

NOTE

The diesel engine must be broken-in, avoiding heavy loads (no greater than 75%), for a period of twenty (20) hours to ensure proper operation of the generator set. After the initial break-in period, engine lubricating oil must be changed, cylinder head nuts torque must be checked, and intake and exhaust valve clearances must be checked and adjusted. Refer to paragraph 4.12.10.

5.11. STARTER. (MEP-531A)

a. Removal.

(1) Shut down generator set.

(2) Tag and disconnect electrical leads from starter assembly (Figure 5-4).

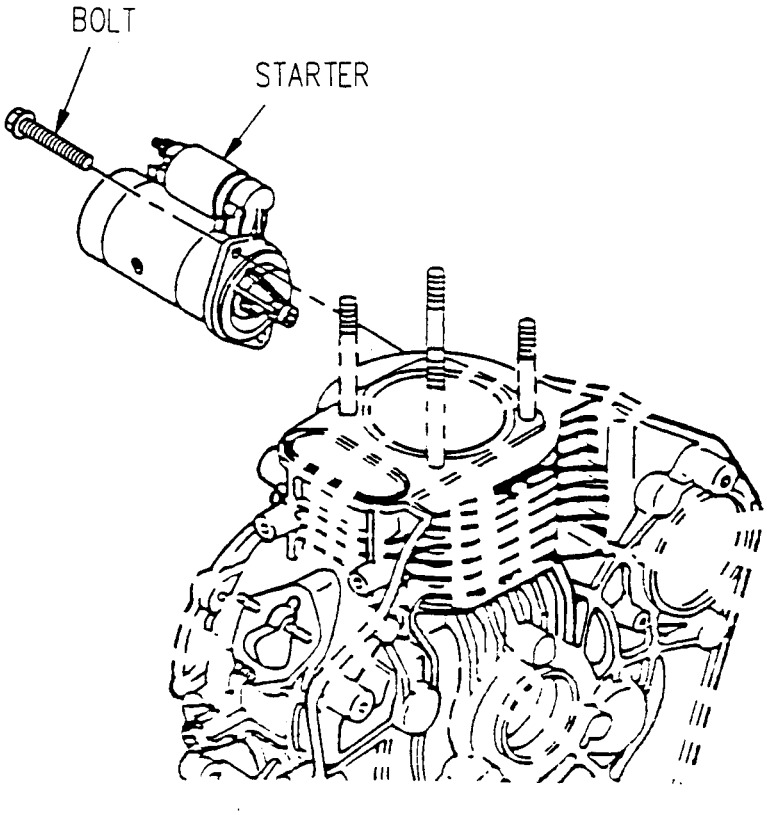


Figure 5-4. Starter (MEP-531A)

(3) Remove AC alternator assembly (MEP-531A), refer to paragraph 5.26.b.

(4) Remove bolts and starter from engine.

b. Installation.

(1) Install starter assembly (Figure 5-4) on engine with bolts.

(2) Install AC alternator assembly (MEP-531A), refer to paragraph 5.26.g.

(3) Connect electrical leads and remove tags.

(4) Check starter assembly for proper operation.

5.12. ROCKER ARMS AND PUSH RODS.

a. Removal.

(1) Shut down generator set.

(2) Remove valve cover, refer to paragraph 4.56.a.

(3) Remove bolt (Figure 5-5) and support with rocker arms attached.

(4) Remove valve inserts from valve stems so they don't get knocked off and lost.

(5) Remove intake rocker arm with locknut and adjusting screw from support.

(6) Remove exhaust rocker arm with locknut and adjusting screw from support.

(7) Remove push rods from cylinder head.

(8) If necessary, remove spring pin from cylinder head.

b. Inspection.

(1) Inspect components for nicks, cracks, scoring, corrosion, and other damage.

(2) Using a micrometer, measure outside diameter of rocker arm support shafts [0.4685 - 0.4724 in. (11.9 -12 mm)].

(3) Using a micrometer, measure inside diameter of rocker arms [0.4738 - 0.4764 in. (12.034 - 12.1 mm)].

(4) Measure push rod length and distortion:

(a) Length - 5.110 - 5.126 in. (129.8 - 130.2 mm)

(b) Distortion - 0.0020 - 0.0118 in. (0.05 - 0.3 mm)

(5) Replace defective parts.

c. Installation.

(1) If removed, install spring pin (Figure 5-5) in cylinder head.

(2) Insert push rods into cylinder head.

(3) Install exhaust rocker arm on support with adjusting screw and locknut.

(4) Install intake rocker arm on support with adjusting screw and locknut.

(5) Place valve inserts on valve stems.

(6) Position support, with rocker arms attached, in cylinder head ensuring spring pin is aligned with hole in support.

(7) Secure support in cylinder head with bolt. Torque bolt to 15 -17 lbs-ft (20-23 Nm).

(8) Adjust valve clearance, refer to paragraph 4.12.10.

(9) Install valve cover, refer to paragraph 4.56.c.

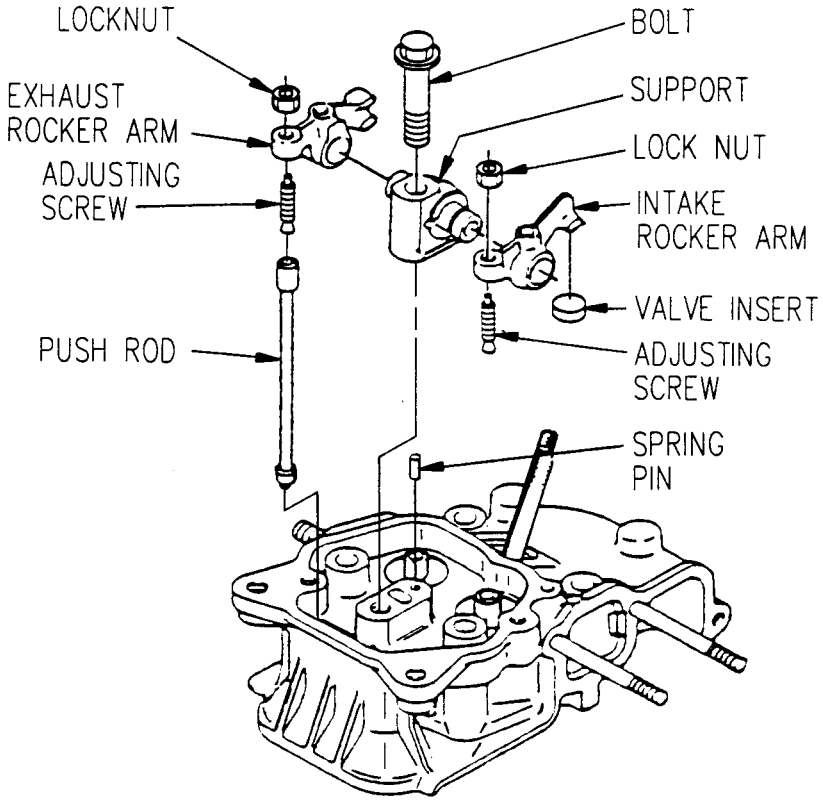


Figure 5-5. Rocker Arms and Push Rods Assembly

5.13. CYLINDER HEAD ASSEMBLY.

a. Removal.

(1) Shut down generator set.

(2) Remove air intake system components, refer to paragraph 4.18.a.

(3) Remove air intake heating elements and pipe, refer to paragraph 4.51.a.

(4) Remove exhaust system components, refer to paragraph 4.19.a.

(5) Remove fuel filter assembly, refer to paragraph 4.15.a.

(6) Remove fuel injector, refer to paragraph 4.12.3.a.

(7) Remove valve cover, refer to paragraph 4.56.a.

(8) Disconnect preheater lead from engine, refer to paragraph 4.60.c.

(9) Remove nuts (Figure 5-6), washers, cylinder head, gasket, and o-ring from cylinder block.

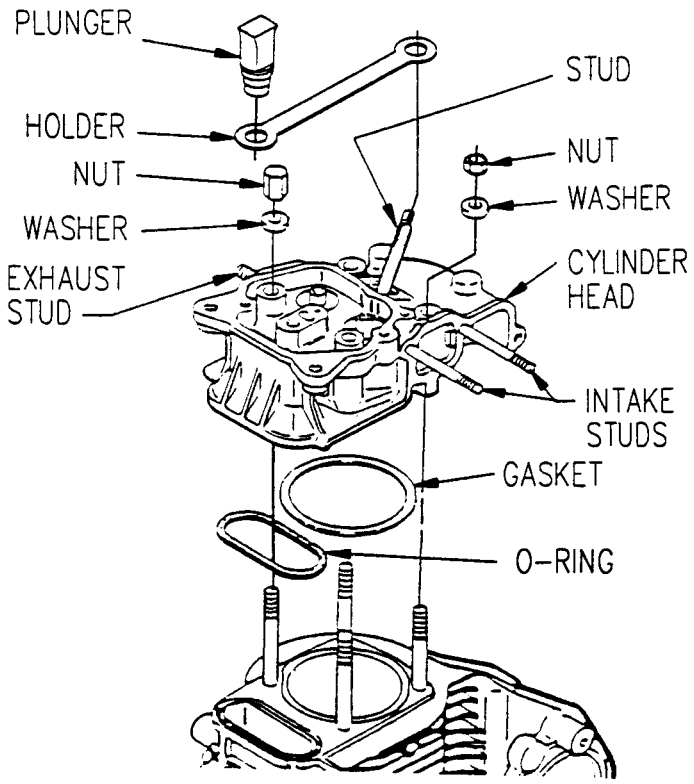


Figure 5-6. Cylinder Head Assembly

(10) If replacing cylinder head, remove the following:

(a) Remove plunger and holder from stud.

(b) Remove all studs.

(c) Remove valve rocker arm assembly, refer to paragraph 5.12.a.

(d) Remove intake and exhaust valves, refer to paragraph 5.14.a.

b. Inspection.

(1) Inspect cylinder head for nicks, pitting, corrosion, carbon build-up, and other damage.

(2) Using dye penetrant (Item 8, Appendix E), check cylinder head for cracks, paying particular attention to areas around valve and fuel injector ports.

(3) Replace cylinder head if damaged.

c. Installation.

(1) If removed, install the following:

(a) Install intake and exhaust valves, refer to paragraph 5.14.c.

(b) Apply locking compound (Item 6, Appendix E) to threads of studs. Install all studs and torque to 5 - 7 lbs-ft (6.8-9.8 Nm) (Figure 5-6).

(c) Install plunger and holder.

(2) Position o-ring, gasket, and cylinder head on cylinder block.

(3) Apply a light coat of lubricating oil (Item 14, Appendix E) to threads and seating surfaces of nuts. Install and cross torque nuts to 20 - 23 lbs-ft (27-31 Nm).

(4) Install valve rocker arm assembly, refer to paragraph 5.12.c.

(5) Install valve cover, refer to paragraph 4.56.c.

(6) Connect preheater lead to engine, refer to paragraph 4.60.e.

(7) Install fuel injector, refer to paragraph 4.12.3.c.

(8) Install fuel filter assembly, refer to paragraph 4.15.c.

(9) Install exhaust system components, refer to paragraph 4.19.c.

(10) Install air intake heating elements and pipe, refer to paragraph 4.51.d.

(11) Install air intake system components, refer to paragraph 4.18.c.

5.14. INTAKE AND EXHAUST VALVES.

a. Removal.

(1) Shut down generator set.

(2) Remove cylinder head, refer to paragraph 5.13.a.

(3) Using a valve spring compressor, compress valve spring and remove spring lock (Figure 5-7) and intake valve from cylinder head.

(4) Slowly release tension on valve spring compressor and remove spring seat, spring, and washer from cylinder head.

(5) Remove valve stem seal from cylinder head and discard.

(6) Repeat steps (3) through (5) to remove exhaust valve. Tag valve so as not to confuse exhaust valve with intake valve.

b. Inspection.

(1) Clean carbon deposits from components, check for corrosion, and other damage. Replace damaged parts.

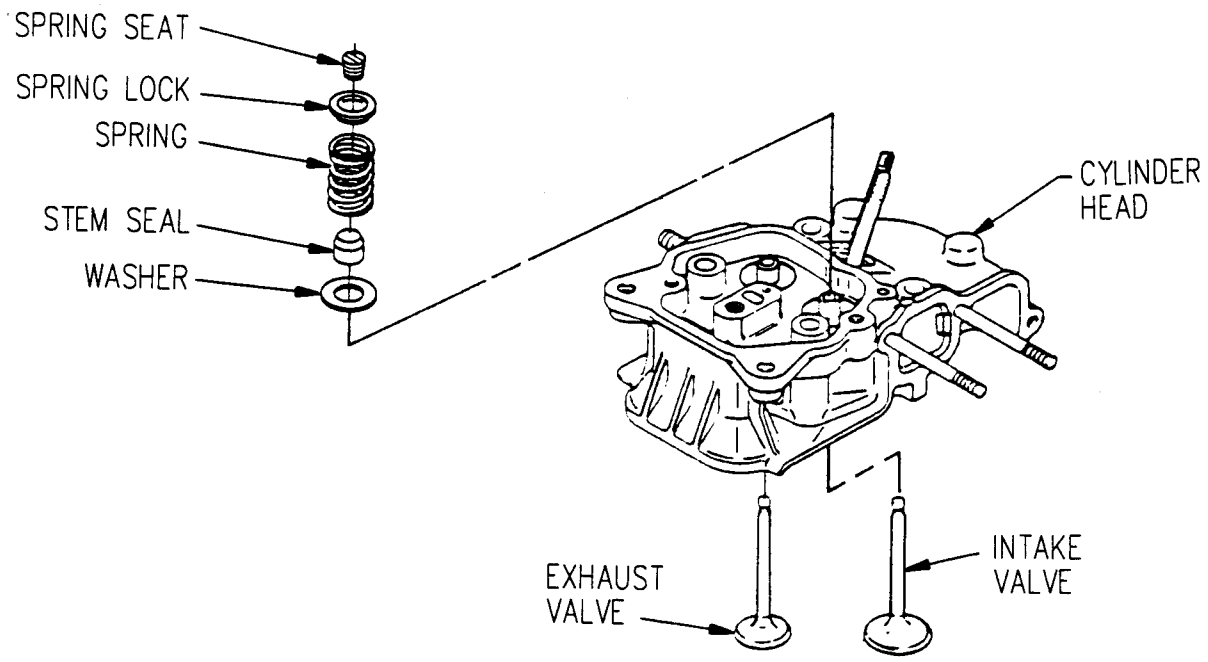
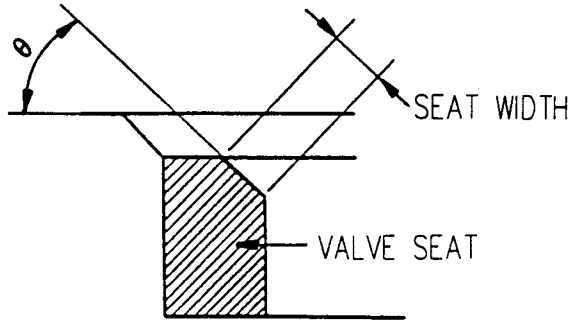


Figure 5-7. Intake and Exhaust Valves



SEAT ANGLE (θ) = 60°-90°
SEAT WIDTH = 0.059-0.118 in. (1.5-3.0 mm)

Figure 5-8. Valve Seat Measurements

(2) Measure valve seat angle and width (Figure 5-8). If out of limits, replace cylinder head.

(3) Using a micrometer, measure outside diameter of valve stems:

(a) Intake valve - 0.2126 - 0.2156 in. (5.40 - 5.475 mm).

(b) Exhaust valve - 0.2126 - 0.2150 in. (5.40 - 5.460 mm).

(c) Replace valves if out of limits.

(4) Using a micrometer, measure inside diameter of valve guides [0.2165 - 0.2197 in. (5.50 -5.58 mm)]. If out of limits, replace cylinder head.

(5) Measure valve sinkage [0.012 - 0.043 in. (0.3 -1.1 mm)] (Figure 5-9). Replace valves if out of limits.

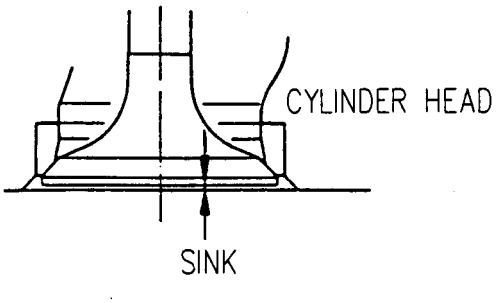


Figure 5-9. Measuring Valve Sinkage

(6) Measure springs:

(a) Free length - 1.043 - 1.102 in. (26.5 - 28 mm).

(b) Inclination (distance spring inclines left or right) - 0.030 in. (0.75 mm).

(c) Spring tension (using a spring tester) - 2.51-3.09 lbs/in. (1.14-1.4 kg/mm).

(d) Replace defective springs.

c. Installation.

(1) Install new intake valve stem seal (Figure 5-7) in cylinder head.

(2) Apply lubricating oil (Item 14, Appendix E) to valve stem and insert intake valve into cylinder head.

(3) Position washer, spring, and spring seat over valve stem.

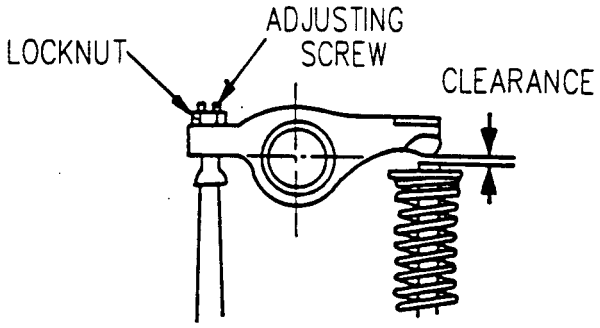
(4) Using valve spring compressor, compress valve spring and install spring lock.

(5) Repeat steps (1) through (4) to install exhaust valve in cylinder head.

(6) Install cylinder head, refer to paragraph 5.13.c.

d. Adjustment.

See paragraph 4.12.10 and Figure 4-11 or Figure 5-10.



5-10. Valve Adjustment

5.15. FUEL INJECTION PUMP.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

a. Removal.

(1) Shut down generator set.

(2) Close fuel shutoff valve at fuel filter assembly.

(3) Loosen hose clamp and disconnect suction fuel line from fuel injection pump (Figure 5-11).

(4) Disconnect pressure fuel line from fuel injection pump and from fuel injector. Move line aside.

(5) Remove nuts and pull fuel injection pump straight out of engine.

(6) Remove and retain shim set from engine.

NOTE

Do not remove fuel injection pump tappet from crankcase.

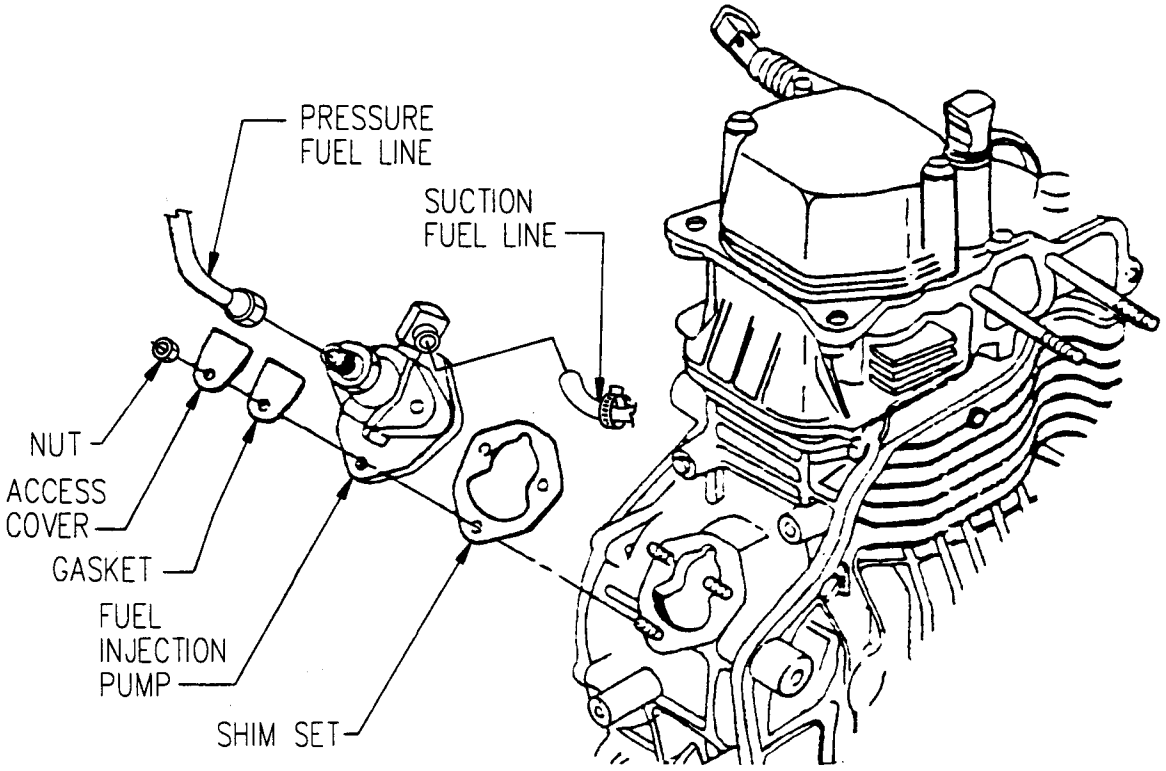


Figure 5-11. Fuel Injection Pump Removal

b. Inspection.

(1) Inspect fuel injection pump for nicks, cracks, scoring, corrosion, and other damage.

(2) Replace pump if damaged.

c. Installation.

(1) Position shim set (Figure 5-11) on engine.

(2) Move fork of governor lever (Figure 5-36) to center of fuel injection pump port in crankcase by moving RUN lever toward RUN position.

(3) Insert fuel injection pump into crankcase port ensuring that lever pointer (Figure 5-13) enters fork in governor lever (Figure 5-36).

(4) Secure fuel injection pump to engine with top two nuts. Torque nuts to 8 lbs-ft (10.8 Nm). Do not install cover and gasket at this time.

(5) While watching fuel injection pump lever pointer (Figure 5-13), move RUN lever back and forth several times ensuring pointer moves in each direction with RUN lever.

CAUTION

Failure to ensure lever pointer is positioned in governor fork could cause engine damage.

(6) Install gasket and access cover on fuel injection pump. Torque nut to 8 lbs-ft (10.8 Nm).

(7) Connect suction fuel line to fuel injection pump and perform adjustment procedures.

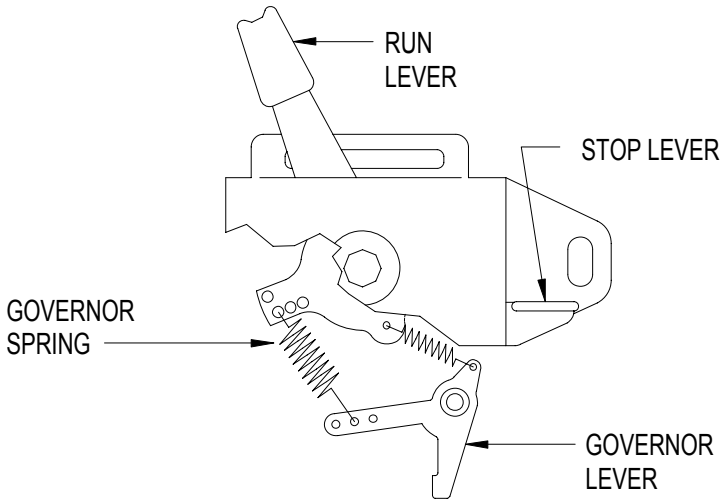


Figure 5-12. Governor Linkage Setting

d. Adjustment.

(1) Check fuel injection volume limitation setting:

(a) Ensure that governor linkage and spring position is properly set (Figure 5-12).

(b) Measure length of threaded portion of fuel limitation adjustment screw extending forward of adjustment screw casting (Figure 5-13). Measurement should be 0.516 in. (13.1 mm).

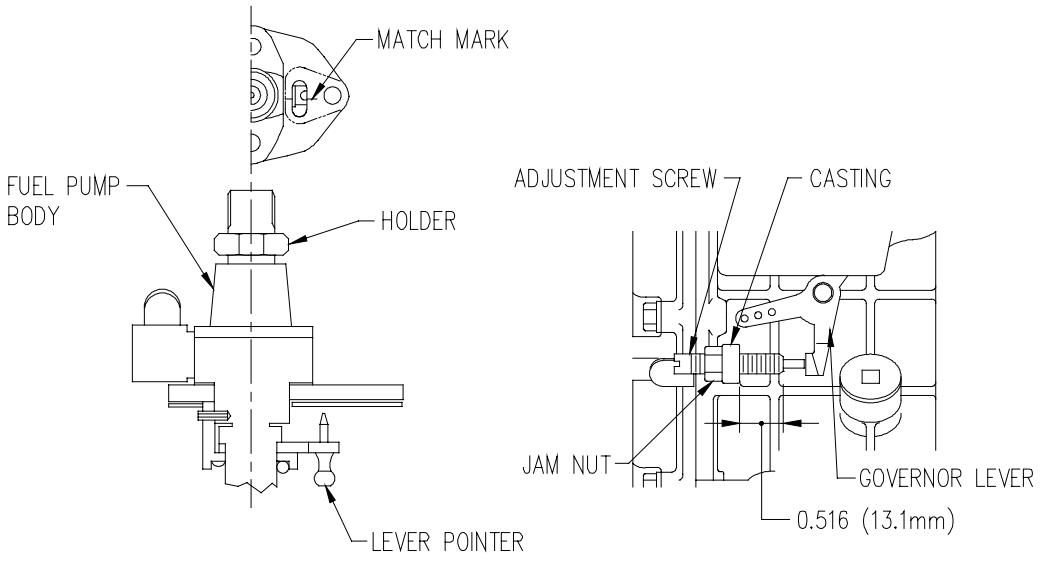


Figure 5-13. Fuel Injection Limitation Setting

CAUTION

Fuel limitation adjustment screw is factory set and sealed. Any adjustment of screw during warranty period will void warranty.

(c) If necessary, break seal on fuel limitation adjustment screw, loosen jam nut, and adjust screw to achieve measurement stated in step (b).

(d) Tighten jam nut and install new seal.

(2) Check fuel injection timing:

CAUTION

Two sets of timing marks may be stamped on the flywheel. These marks may be on engines with Serial Numbers 39795 and above. The following procedure must be followed:

First visually confirm that the flywheel has two distinct sets of marks stamped ninety degrees apart. To do this, locate a set of timing marks at the V notch line on the cylinder body fin (Figure 5-14). Rotate the flywheel 90 degrees clockwise as viewed from the flywheel side of the engine. Check for a second set of timing marks, if none are found, rotate the flywheel back to the original timing marks. Next, rotate the flywheel counterclockwise 90 degrees, checking for additional timing marks. If no additional marks are found, time the engine in accordance with the procedure below.

If two sets of timing marks are found, position the flywheel so that looking from the flywheel side, one set of timing marks at the 12 o'clock position are in line with the V notch line (Figure 5-14) on the cylinder body fin and the second set of marks are at the 3 o'clock position (90 degrees to the right). When the flywheel is in this position, the correct timing marks are visible at the V notch. Time the engine in accordance with the procedure below.

(a) Remove cooling fan cover, refer to paragraph 4.53.b.

(b) Align the T position mark on the flywheel with the V notch on the cylinder body fin (Figure 5-14).

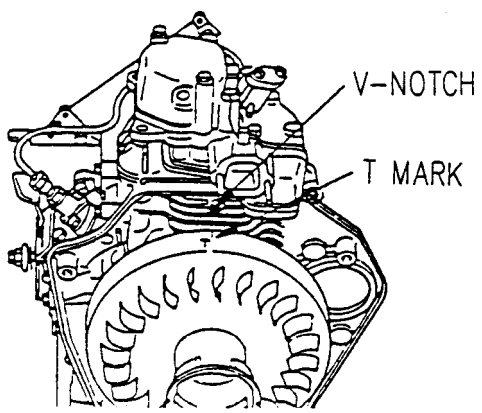


Figure 5-14. T Position Mark

(c) If installed, disconnect pressure fuel line from fuel injection pump and fuel injector, and move aside.

(d) Set start lever to RUN.

(e) Turn the flywheel counterclockwise approximately 30°, then turn flywheel clockwise back to T mark, and ensure fuel moves in fuel injection pump. If there is no fuel movement, turn flywheel one full turn clockwise and realign T mark.

(f) Turn flywheel counterclockwise approximately 30° from T, then turn flywheel clockwise until fuel just begins to move in fuel injection pump. Record angle before T that fuel begins to move. Each mark on flywheel is equal to 5°.

(g) Repeat step (f) three or four times to verify angle. The correct injection timing angle is 17° before T.

(h) Adjust injection timing:

1 Remove fuel injection pump, refer to paragraph 5.15.a.

2 Add shims (Figure 5-11) if timing angle is more than 17°, or remove shims if timing angle is less than 17°. Each 0.0039 in. (0.1 mm) shim changes timing by 1°.

3 Install fuel injection pump and check timing.

4 Repeat procedure until injection timing is correct.

(i) Reconnect pressure fuel line.

(j) Reinstall cooling fan cover, refer to paragraph 4.53.d.

(3) Bleed air from fuel system:

(a) Loosen holder (Figure 5-13) on fuel injection pump.

(b) Set start lever to RUN, depress and hold decompression lever down.

(c) Pull recoil starter rope until fuel flows from under delivery valve holder without air bubbles.

(d) Torque holder to 22 - 25 lbs-ft (30-34 Nm).

5.16. CRANKCASE COVER.

a. Removal.

(1) Shut down generator set.

(2) Remove diesel engine, refer to paragraph 5.10.a.

(3) Tag and disconnect electrical lead from low oil pressure switch.

(4) Drain diesel engine oil.

CAUTION

Be careful when removing crankcase cover to prevent damage to crankshaft oil seal.

(5) Remove capscrews, stiffener bolt, crankcase cover, and gasket from engine.

(6) If necessary, remove pins and oil inlet pipe from crankcase cover.

(7) If replacing crankcase cover, remove the following:

(a) Engine oil strainer, refer to paragraph 4.55.a

(b) Low oil pressure switch, refer to paragraph 4.48.b.

(c) Governor, refer to paragraph 5.24.b

(d) Oil pump, refer to paragraph 5.17.a.

(e) Oil fill cap/dipstick.

(f) Crankshaft bearing and seal, refer to paragraph 5.22.a.

(g) Camshaft bearing, refer to paragraph 5.18.a.

(h) Balancer shaft bearing, refer to paragraph 5.19.a.

b. Inspection.

(1) Inspect crankcase cover for cracks, corrosion, bent pins, damaged oil inlet pipe, and other

damage.

(2) Inspect for damage to crankshaft oil seal, refer to paragraph 5.22.b.

(3) Replace damaged parts.

c. Installation.

(1) If crankcase cover (Figure 5-15) was replaced, install the following:

(a) Balancer shaft bearing, refer to paragraph 5.19.c.

(b) Camshaft bearing, refer to paragraph 5.18.c.

(c) Crankshaft bearing and seal, refer to paragraph 5.22.c.

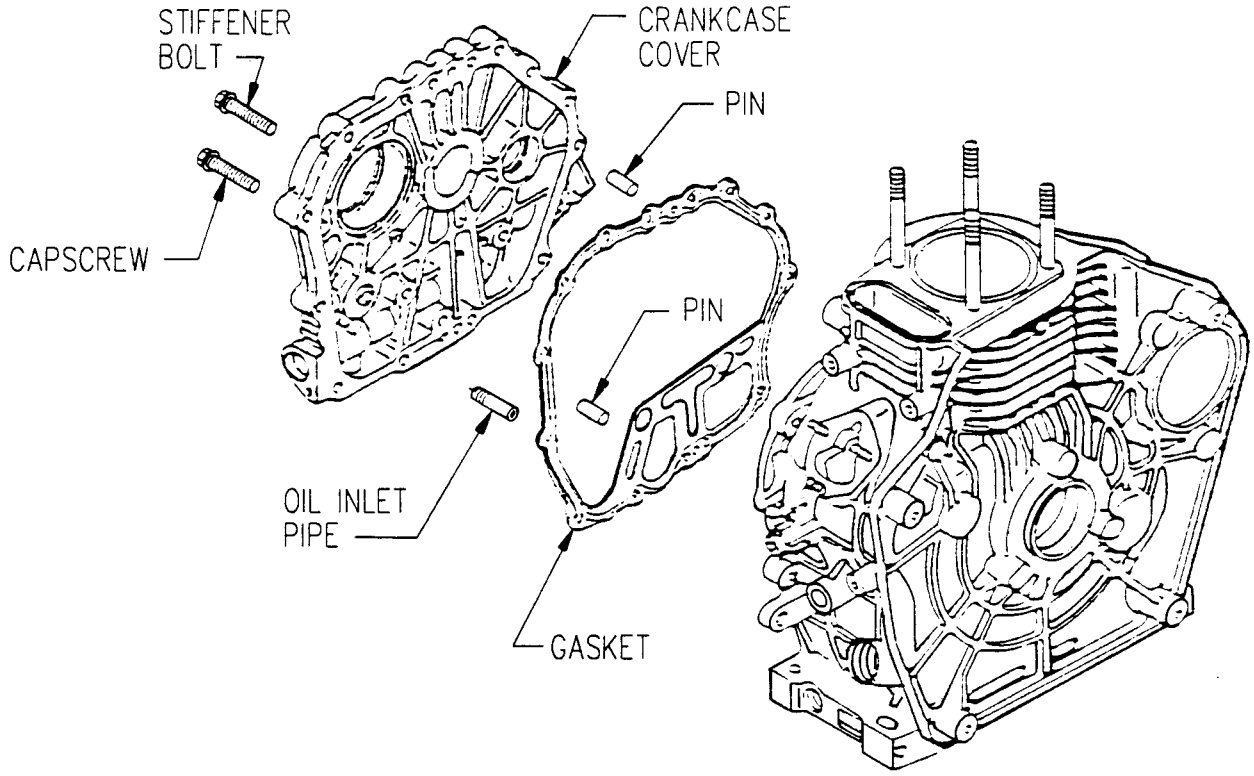


Figure 5-15. Crankcase Cover

(d) Oil fill cap/dipstick.

(e) Oil pump, refer to paragraph 5.17.c.

(f) Governor, refer to paragraph 5.24.c.

(g) Low oil pressure switch, refer to paragraph 4.48.c.

(h) Engine oil strainer, refer to paragraph 4.55.c.

(2) If removed, install oil inlet pipe and pins in crankcase cover.

(3) Remove oil pump cover, refer to paragraph 5.17.a.

CAUTION

Ensure crankshaft, camshaft, and balancer shaft are aligned with respective bearings and governor gear is aligned with cam shaft gear when positioning crankcase cover on engine. Improper alignment could damage parts.

Use care to prevent damage to crankshaft oil seal when installing crankcase cover.

(4) Position gasket and crankcase cover on engine while aligning shafts to bearings, governor gear to cam shaft gear by turning oil pump, and pins to holes in cylinder block.

(5) Ensure governor gear is aligned with camshaft gear by turning crankshaft and observing that oil pump turns.

(6) Install oil pump cover, refer to paragraph 5.17.c.

(7) Secure crankcase cover with stiffener bolt and capscrews. Torque capscrews to 7-9 lbs-ft (10-12 Nm) and stiffener bolt to 15-17 lbs-ft (20-23 Nm).

(8) Fill diesel engine with fresh engine oil (Items 13 and 14, Appendix E). Refer to Table 2-2, Operator Preventive Maintenance Checks and Services for proper oil for operating environment.

(9) Connect electrical lead to low oil pressure switch and remove tag.

(10) Install diesel engine, refer to paragraph 5.10.b.

5.17 OIL PUMP ASSEMBLY.

a. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove governor gear and spindle from oil pump shaft, refer to paragraph 5.24.b.

(4) Remove bolts (Figure 5-16), cover, and preformed packing from crankcase cover.

(5) Remove pin (from oil pump inner rotor and shaft), outer rotor, and inner rotor and shaft from crankcase cover.

b. Inspection.

(1) Inspect components for cracks, corrosion, signs of overheating, and other damage.

(2) Measure outside diameter of outer rotor [1.1378 - 1.1409 in. (28.90 - 28.98 mm)].

(3) Measure width of inner and outer rotors [0.3110 - 0.3150 in. (7.90 - 8.00 mm)].

(4) Measure clearance between inner and outer rotors [0.0055 - 0.0098 in. (0.14 - 0.25 mm)].

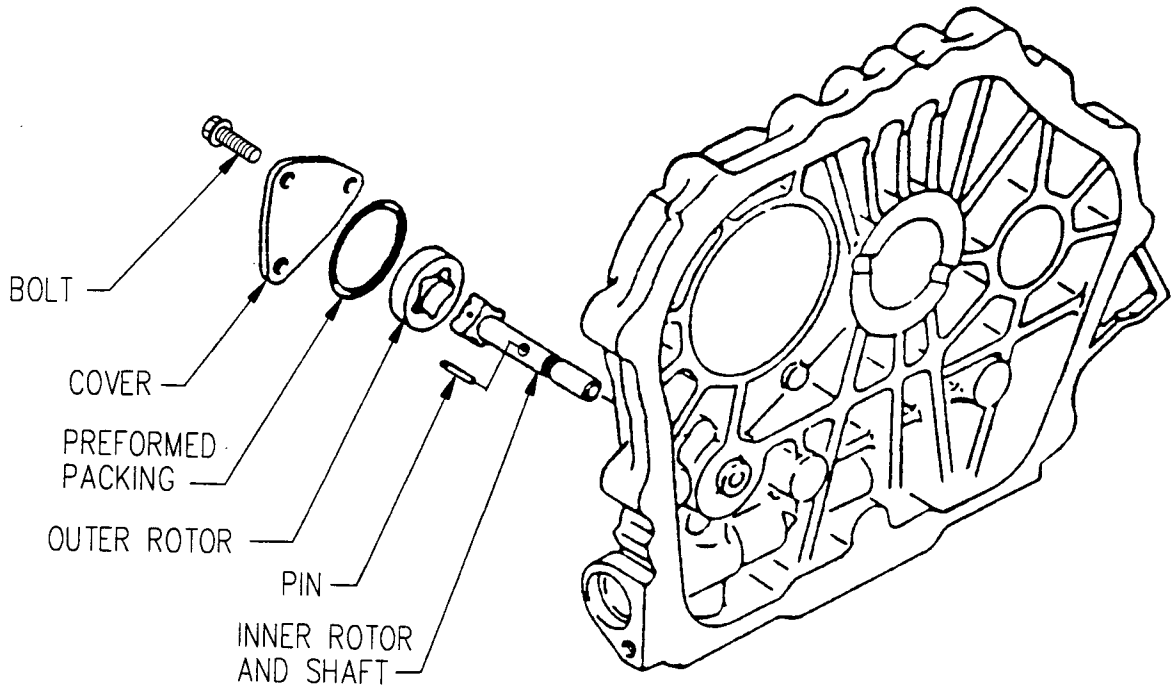


Figure 5-16. Oil Pump Assembly

(5) Measure oil pump housing in crankcase cover:

(a) Inside diameter - 1.1457 - 1.1488 in. (29.100 - 29.18 mm).

(b) Depth - 0.3157 - 0.3189 in. (8.02 - 8.10 mm).

(6) Replace damaged or worn parts.

c. Installation.

(1) Insert inner rotor and shaft (Figure 5-16) through crankcase cover and install pin in shaft so equal amounts protrude on each side.

(2) Install outer rotor over inner rotor and new preformed packing in crankcase cover.

(3) Install cover loosely with bolts, fill pump cavity with oil, and tighten bolts finger tight and 1/8 turn.

(4) Install governor gear and spindle, refer to paragraph 5.24.c.

(5) Install crankcase cover, refer to paragraph 5.16.c.

5.18. CAMSHAFT.

a. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove cylinder head assembly, refer to paragraph 5.13.a.

(4) Remove fuel injection pump, refer to paragraph 5.15.a.

CAUTION

Be careful when removing cam shaft to keep exhaust and intake valve tappets separate.

(5) Pull camshaft (Figure 5-17), valve tappets, and fuel injection pump tappet from cylinder block.

(6) If necessary, remove large bearing from crankcase cover.

(7) If necessary, remove small bearing from cylinder block.

b. Inspection.

(1) Inspect camshaft for cracks, corrosion, worn gears, and other damage.

(2) Measure diameter of camshaft at bearing surfaces:

(a) Crankcase cover side - 0.9803 - 0.9840 in. (24.90 - 24.99 mm).

(b) Cylinder block side - 0.5874 - 0.5906 in. (14.92 - 15.00 mm).

(3) Inspect bearings for excessive play, signs of overheating, scoring, and other damage.

(4) Measure inside diameter of camshaft bearings:

(a) Crankcase cover - 0.9839 - 0.9850 in. (24.990 - 25.02 mm).

(b) Cylinder block - 0.5912 - 0.5919 in. (15.016 - 15.034 mm).

(5) Measure inside diameter of crankcase cover bearing housing, only if bearing has to be removed, [2.0451 - 2.0455 in. (51.945 - 51.965 mm)].

(6) Measure inside diameter of cylinder block bearing housing, only if bearing has to be removed, [0.8251 - 0.8259 in. (20.957 - 20.978 mm)].

(7) Inspect tappet contact points for excessive or uneven wear and outer surfaces for wear and damage.

CAUTION

Keep exhaust and intake valve tappets separate.

(8) Measure outside diameter of valve tappet stems [0.2705 - 0.2740 in. (6.870 - 6.960 mm)].

(9) Measure outside diameter of fuel injection pump tappet [0.9405 - 0.9438 in. (23.890 – 23.972 mm)].

(10) Measure hole diameters in cylinder block for tappets:

(a) Valve tappet holes - 0.2756 - 0.2780 in. (7.000 - 7.060 mm).

(b) Fuel injection pump tappet hole - 0.9449 - 0.9472 in. (24.000 - 24.060 mm).

(11) Replace damaged or worn parts.

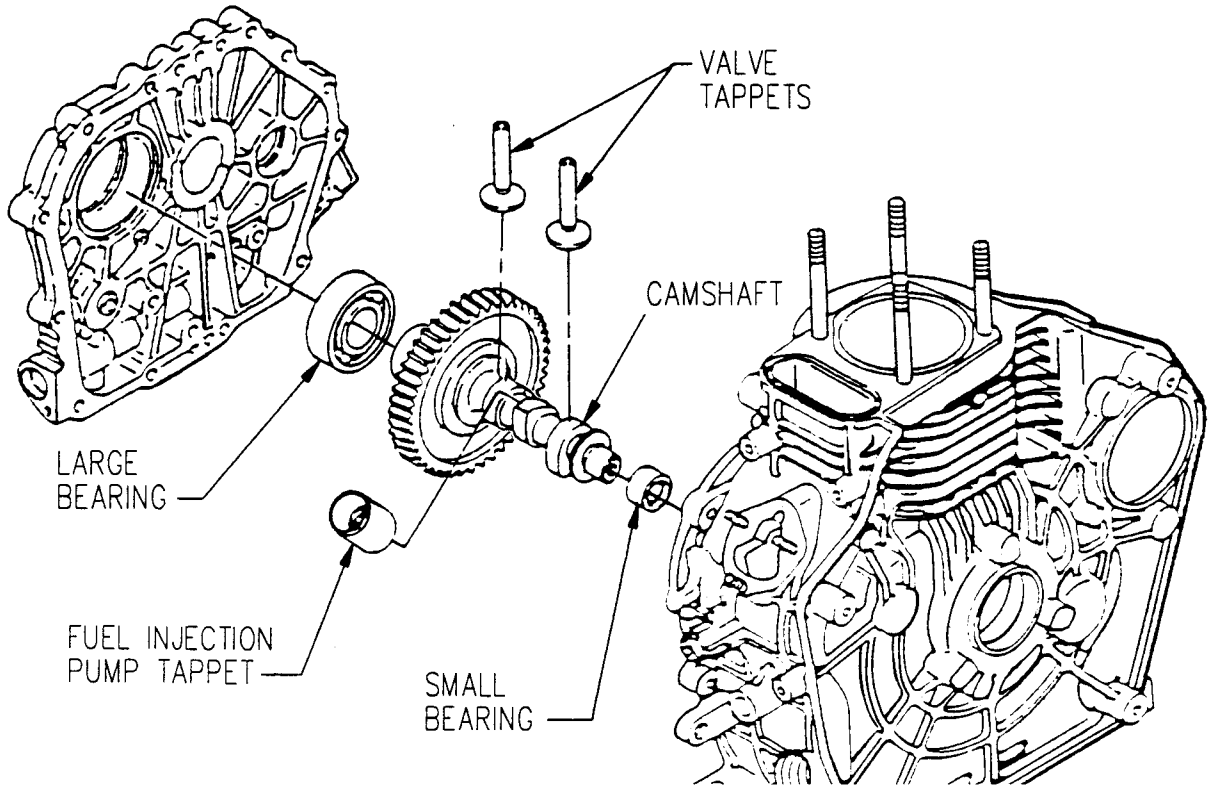


Figure 5-17. Camshaft

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c. Installation.

(1) If removed, install small bearing (Figure 5-17) in cylinder block (Figure 5-18).

(2) If removed, install large bearing (Figure 5-17) in crankcase cover so bearing is flush with surface of cover.

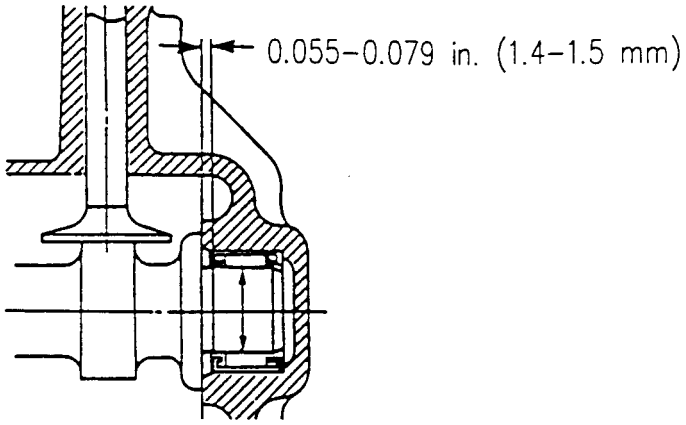

Figure 5-18. Positioning Camshaft Bearing in Cylinder Block

(3) Position fuel injection pump tappet and valve tappets in cylinder block.

(4) Carefully install camshaft in cylinder block.

(5) Align timing marks on gears (Figure 5-19).

(6) Install fuel injection pump, refer to paragraph 5.15.c.

(7) Install cylinder head assembly, refer to paragraph 5.13.c.

(8) Install crankcase cover, refer to paragraph 5.16.c.

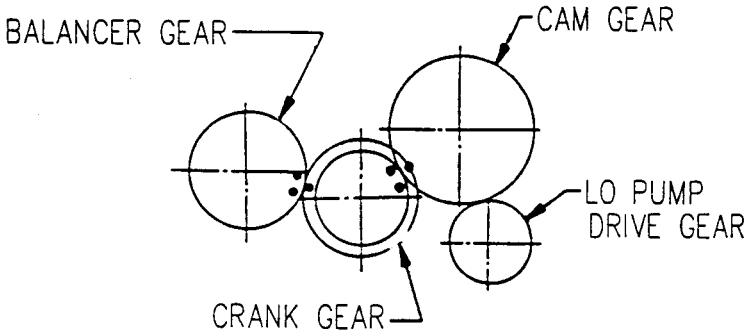

Figure 5-19. Aligning Timing Marks

5.19. BALANCER SHAFT.

a. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove balancer shaft (Figure 5-20) from cylinder block.

(4) If necessary, remove rear bearing from crankcase cover.

(5) If necessary, remove front bearing from cylinder block.

b. Inspection.

(1) Inspect balancer shaft for cracks, corrosion, worn gear, and other damage.

(2) Inspect bearings for excessive play, signs of overheating, scoring, and other damage.

(3) Replace damaged or worn parts.

c. Installation.

(1) If removed, install front bearing (Figure 5-20) in cylinder block so bearing is flush with surface of block.

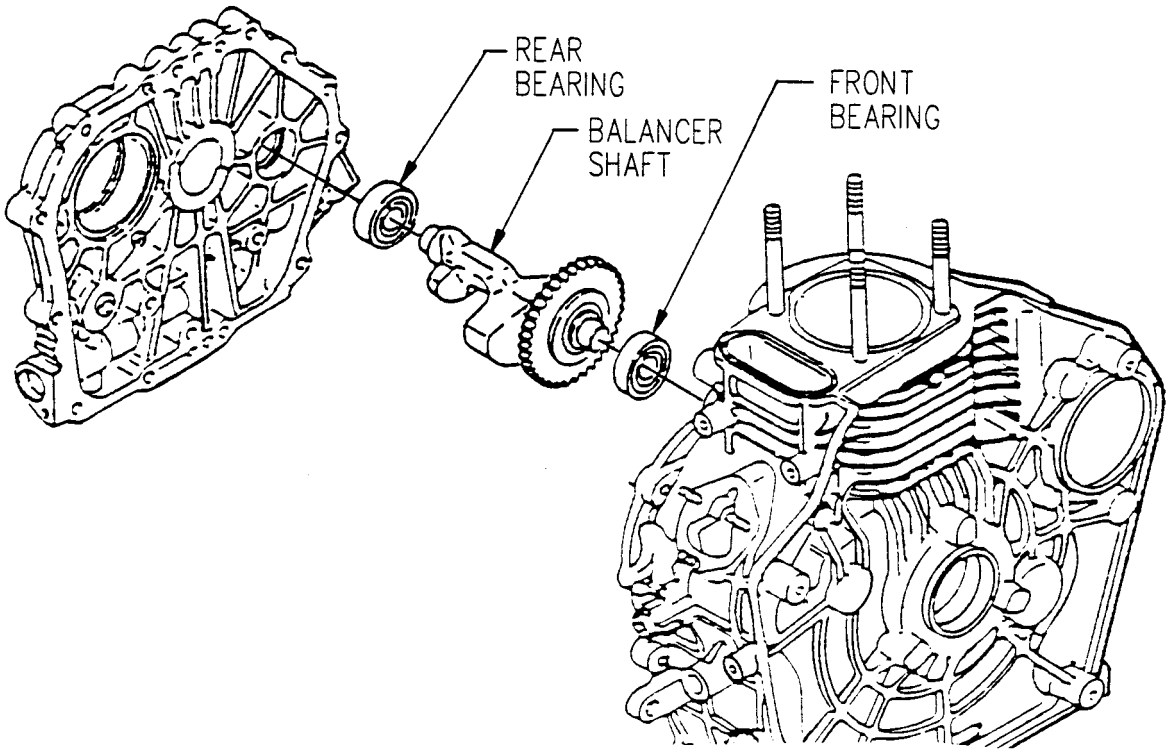

Figure 5-20 Balancer Shaft

(2) If removed, install rear bearing in crankcase cover so bearing is flush with surface of cover.

(3) Install balancer shaft in cylinder block.

(4) Align timing marks on gears, Figure 5-21.

(5) Install crankcase cover, refer to paragraph 5.16.c.

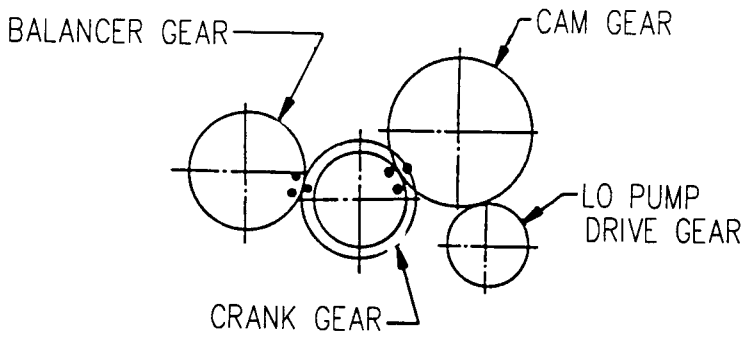

Figure 5-21. Aligning Timing Marks

5.20. PISTON AND CONNECTING ROD ASSEMBLY.

a. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove cylinder head assembly, refer to paragraph 5.13.a.

(3) Remove nuts (Figure 5-22), washers, and cap from connecting rod.

(4) Rotate crankshaft to top of stroke, and pull piston and connecting rod out top of cylinder block.

b. Disassembly.

(1) Remove bolts (Figure 5-22) from connecting rod.

CAUTION

Use piston ring remover to remove piston rings. Never stretch piston rings.

(2) Using piston ring remover, remove barrel face ring, tapered face ring, and oil ring from piston.

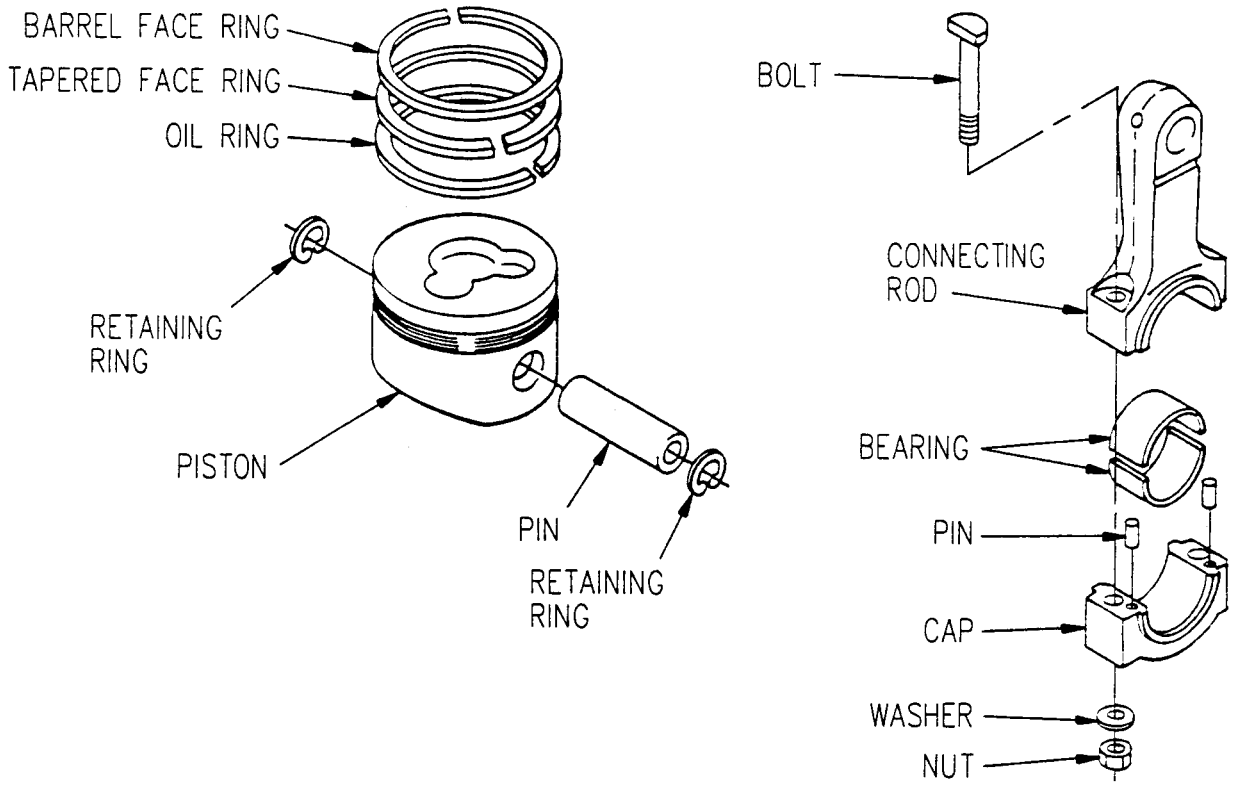

Figure 5-22. Piston and Connecting Rod Assembly

(3) Remove retaining rings from piston.

(4) Heat piston in oil to 158 – 176°F (70-80°C) and remove pin to separate piston and connecting rod.

(5) Remove bearings from connecting rod and cap.

(6) If necessary, remove pins from cap.

c. Inspection.

(1) Piston:

(a) Remove carbon build-up from combustion surface and inspect for scratches, burned spots, corrosion, and other damage.

(b) Inspect sides for scoring, damage to ring grooves and pin hole, and signs of overheating.

(c) Measure outside diameter, opposite the pin hole, and approximately 0.5 in. (12 mm) from bottom of piston [2.7441 - 2.7545 in. (69.70 - 69.965 mm)].

(d) Measure inside diameter of pin hole [0.7474 - 0.7508 in. (18.985 -19.07 mm)].

(2) Piston pin:

(a) Inspect pin for cracks, corrosion, and other damage.

(b) Measure outside diameter of pin at several points [0.7449 - 0.7480 in. (18.92 – 19.00 mm)].

(3) Piston rings:

(a) Inspect rings for cracks, signs of overheating, and other damage.

(b) Measure width of rings at several points (Figure 5-23):

1 Barrel face ring:

a) T = 0.1091 - 0.1260 in. (2.77 - 3.2 mm).

b) B = 0.0535 - 0.0585 in. (1.36 - 1.485 mm).

2 Tapered face ring:

a) T = 0.1091 - 0.1260 in. (2.77 - 3.2 mm).

b) B = 0.0535 - 0.0587 in. (1.36 - 1.49 mm).

3 Oil ring:

a) T = 0.0783 - 0.0945 in. (1.99 - 2.4 mm).

b) B = 0.1323 – 0.1374 in, (3.36 – 3.49 mm).

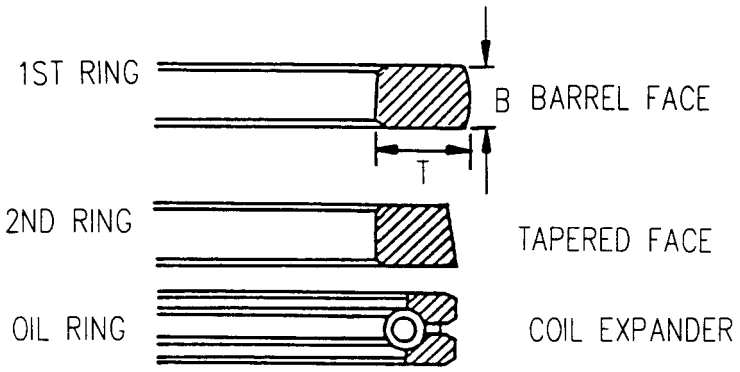

Figure 5-23. Measuring Piston Ring Width

(c) Measure side clearance between rings and piston grooves (Figure 5-24):

1 Barrel face ring - 0.0026 - 0.0059 in. (0.065 - 0.15 mm).

2 Tapered face ring - 0.0012 - 0.0059 in. (0.03 - 0.15 mm).

3 Oil ring - 0.0008 - 0.0059 in. (0.02 - 0.15 mm).

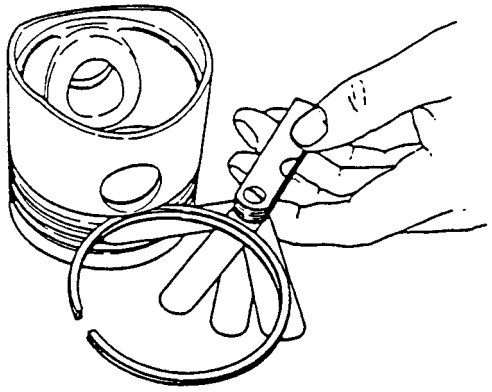

Figure 5-24. Measuring Side Clearance Between Ring and Piston Groove

(d) Measure end gap of rings (use lower part of cylinder where wear is less) (Figure 5-25):

1 Barrel face ring – 0.0078 – 0.0394 in. (0.20 -1.0 mm).

2 Tapered face ring - 0.0118 - 0.0394 in. (0.30 - 1.0 mm).

3 Oil ring – 0.0059 – 0.0394 in. (0.15 – 1.0 mm).

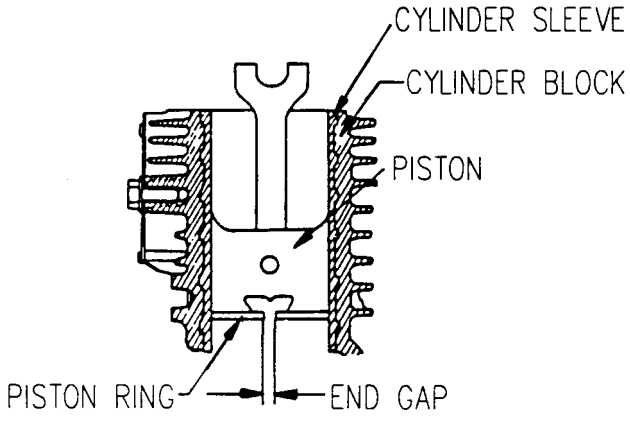

Figure 5-25. Measuring Piston Ring End Gap.

(4) Connecting rod:

(a) Inspect connecting rod and cap for cracks, corrosion, and other damage.

(b) Measure inside diameter of connecting rod holes:

1) Small end hole - 0.7485 - 0.7520 in. (19.012 - 19.10 mm).

2) Large end hole (Figure 5-26) - 1.1814 - 1.1846 in. (30.007 - 30.09 mm).

(c) Attach connecting rod to crankshaft and measure connecting rod side gap – 0.0079 - 0.0157 in. (0.2 - 0.4 mm).

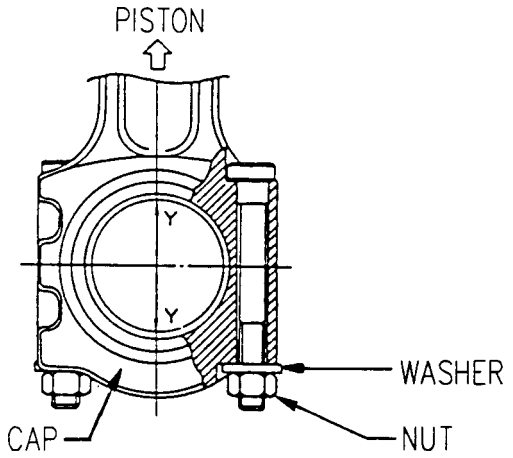

Figure 5-26. Measuring Large End Hole Diameter

(5) Connecting rod bearing:

(a) Inspect bearings for separation, melting, and other damage.

(b) Measure clearance between bearings and crankshaft:

1 Position PLASTIGAGE PR1 (Item 10, Appendix E) on cap (parallel to crankshaft) (Figure 5-27).

2 Attach connecting rod to crankshaft, tightening nuts to 13 - 15 lbs-ft (18-20Nm).

3 Remove connecting rod and measure width of crushed plastigage with scale [0.0020 - 0.0047 in. (0.050 - 0.12 mm)].

(6) Replace worn or damaged parts.

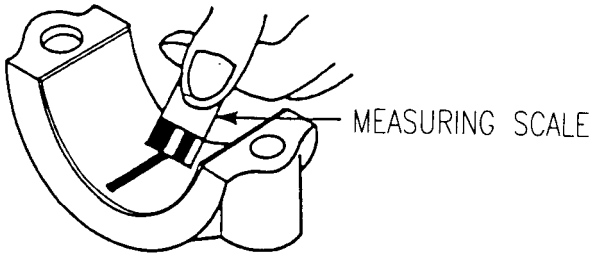

Figure 5-27. Measuring Crank Pin Clearance

d. Assembly.

(1) If removed, install pins (Figure 5-22) in cap.

(2) Remove bolts from connecting rod.

(3) Heat piston in oil to 158-176°F (70-80°C) and install on connecting rod with pin (Figure 5-28 for positioning).

(4) Install retaining rings in piston.

CAUTION

Use piston ring remover to install piston rings. Never stretch piston rings. Ensure manufacturer's symbol faces up.

(5) Install barrel face ring in top piston groove with end gap positioned toward intake side of piston.

(6) Install tapered face ring in middle piston groove with end gap positioned 120° from top ring end gap.

(7) Ensure joint of coil expander, installed in oil ring, is positioned opposite the ring end gap and install oil ring in bottom piston groove with end gap positioned 120° from middle ring end gap.

e. Installation.

(1) Apply lubricating oil (Item 14, Appendix E) to crank pin, outer surface of piston, and inner surface of sleeve. Using piston inserting tool, insert piston (Figure 5-22) and connecting rod into cylinder with top mark on piston facing crankcase cover side of engine.

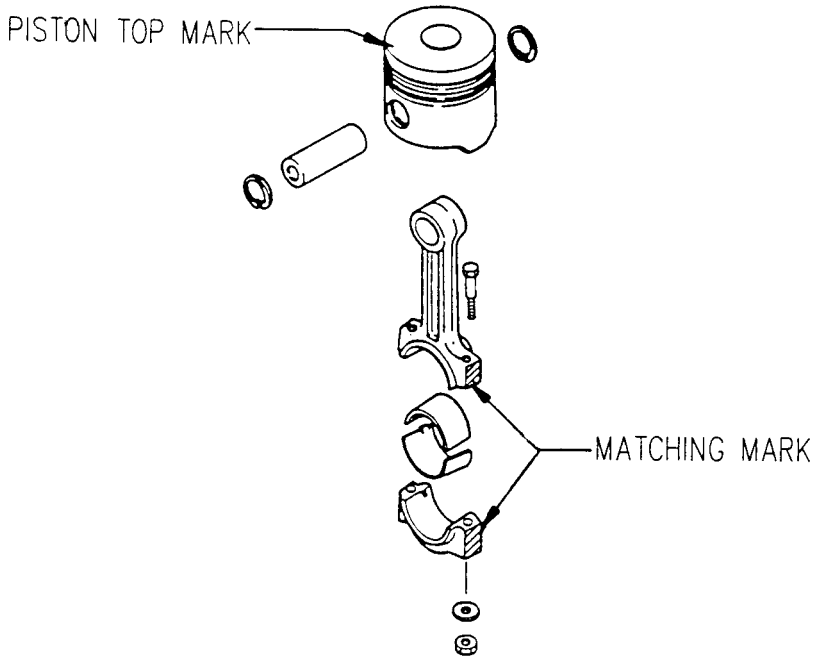

Figure 5-28. Installing Piston on Connecting Rod

(2) Turn crankshaft to Top Dead Center (TDC), position bearings in connecting rod and cap. Apply lubricating oil (Item 14, Appendix E) to nuts before installation. Then install bolts, washers, and nuts. Apply lubricating oil (Item 14, Appendix E) to nuts and torque to 13-15 lbs-ft (18-20 Nm).

(3) Install cylinder head, refer to paragraph 5.13.c.

(4) Install crankcase cover, refer to paragraph 5.16.c.

5.21. FLYWHEEL.

a. Removal.

(1) Shut down generator set.

(2) Remove cooling fan cover, refer to paragraph 4.53.b.

(3) Remove starter pulley from flywheel, refer to paragraph 4.54.b.

(4) Install flywheel locking handle (Figure 5-29).

(5) Remove nut (Figure 5-30) and washer securing flywheel to crankshaft.

(6) Using flywheel extractor, remove flywheel from crankshaft (Figure 5-31).

(7) Remove key from crankshaft.

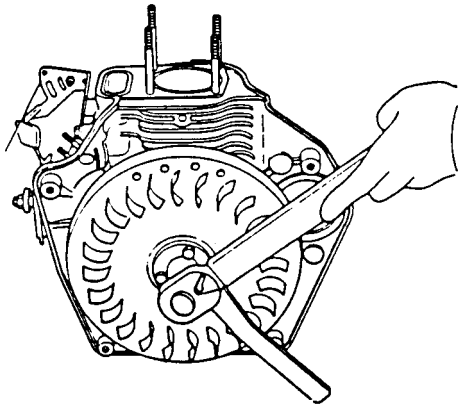

Figure 5-29. Flywheel Locking Handle

b. Inspection.

(1) Inspect flywheel for cracks, damaged cooling vanes, worn or broken teeth, and other damage.

(2) If replacing damaged flywheel, remove three screws securing rotor wheel to flywheel. Install rotor wheel on replacement flywheel.

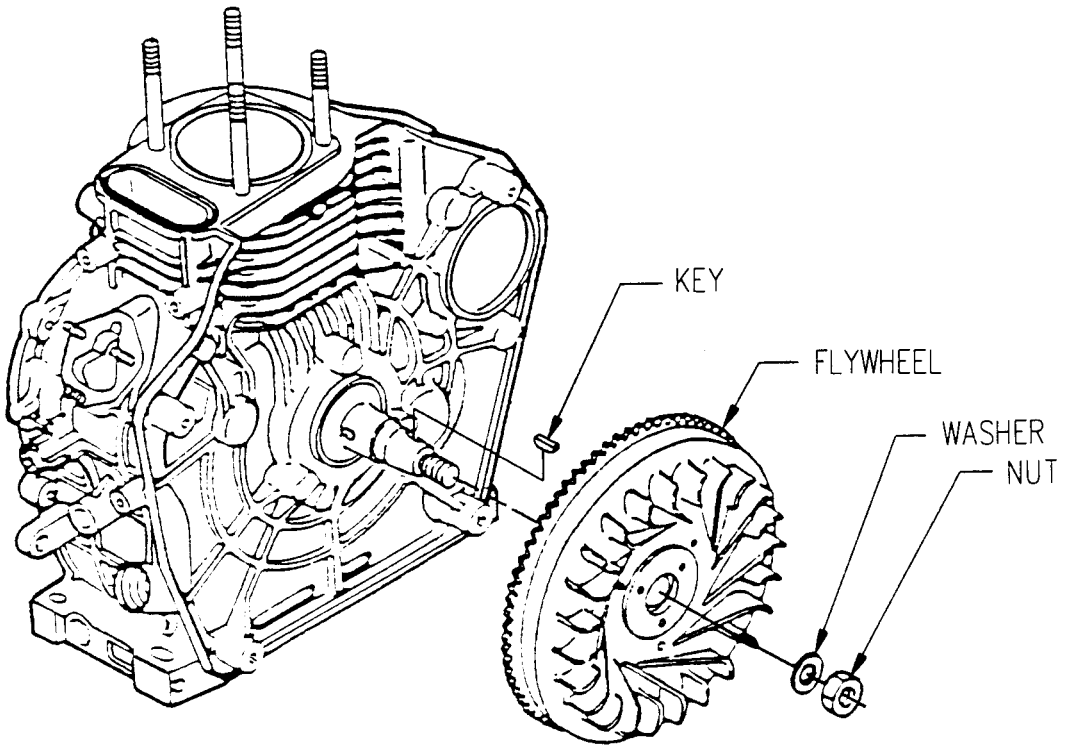

Figure 5-30. Flywheel

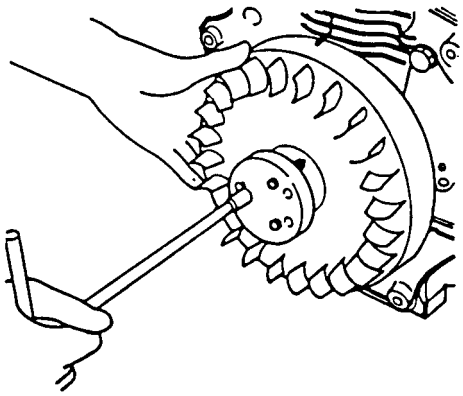

Figure 5-31. Flywheel Extractor

c. Installation.

(1) Position key (Figure 5-30) in slot on crankshaft.

(2) Install flywheel on crankshaft with washer and nut. Apply lubricating oil (Item 14, Appendix E) to nut. Using flywheel locking handle to hold flywheel, torque nut to 87-94 lbs-ft (118-127 Nm).

(3) Install starter pulley on flywheel, refer to paragraph 4.54.c.

(4) Install cooling fan cover, refer to paragraph 4.53.d.

5.22. CRANKSHAFT.

a. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove cylinder head assembly, refer to paragraph 5.13.a.

(4) Remove camshaft, refer to paragraph 5.18.a.

(5) Remove balancer shaft, refer to paragraph 5.19.a.

(6) Remove piston and connecting rod assembly, refer to paragraph 5.20.a.

(7) Remove flywheel, refer to paragraph 5.21.a.

(8) Remove bolt (Figure 5-32) and retaining plate from cylinder block.

CAUTION

Be careful when removing crankshaft to prevent damaging oil seal.

(9) Remove crankshaft from cylinder block.

(10) If necessary, remove front bearing from crankshaft.

(11) If necessary, remove front oil seal from cylinder block.

(12) If necessary, remove rear oil seal and rear bearing from crankcase cover.

b. Inspection.

(1) Inspect crankshaft for cracks, corrosion, worn gears, and other damage.

(2) Measure diameter of crankshaft journals:

(a) Connecting rod - 1.1772 -1.1804 in. (29.90 - 29.982 mm).

(b) Crankcase cover side - 1.1776 - 1.1817 in. (29.91 - 30.015 mm).

(c) Flywheel side - 1.1812 - 1.1817 in. (30.002 - 30.015 mm).

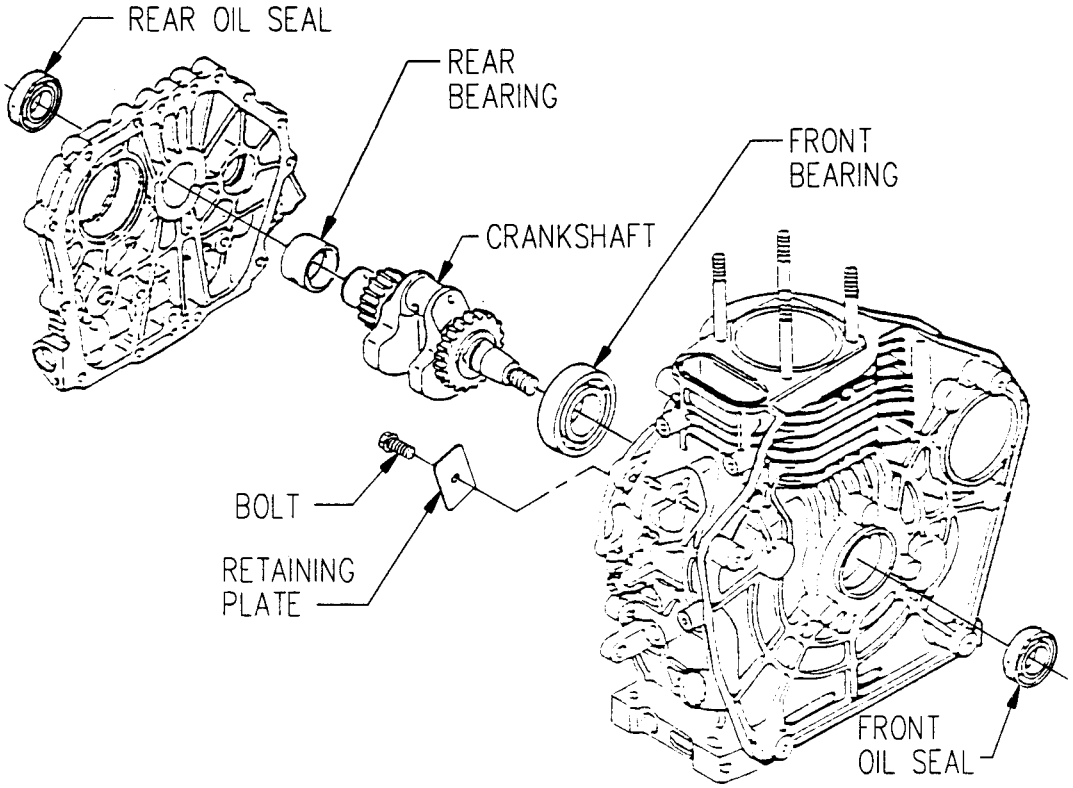

Figure 5-32. Crankshaft Assembly

(3) Inspect oil seals for tears and other damage.

(4) Inspect bearings for excessive play, signs of overheating, scoring, and other damage.

(5) Measure inside diameter of crankcase cover bearing [1.1811 - 1.1862 in. (30 - 30.13 mm)].

(6) Measure inside diameter of crankcase cover bearing housing, only if bearing has to be removed, [1.3386 - 1.3396 in. (34.000 - 34.025 mm)].

(7) Measure outside diameter of cylinder block side bearing [2.8341 - 2.8346 in. (71.987 - 72.000 mm)].

(8) Measure inside diameter of cylinder block bearing housing [2.8343 - 2.8350 in. (71.9905 - 72.0095 mm)].

(9) Replace damaged or worn parts.

c. Installation.

(1) If removed, install rear bearing (Figure 5-32) in crankcase cover (Figure 5-33).

(2) If removed, install rear oil seal in crankcase cover to depth of 0.1575 in. (4 mm) below surface of cover.

(3) If removed, install front oil seal in cylinder block so seal is flush with surface of block.

(4) If removed, install front bearing on crankshaft.

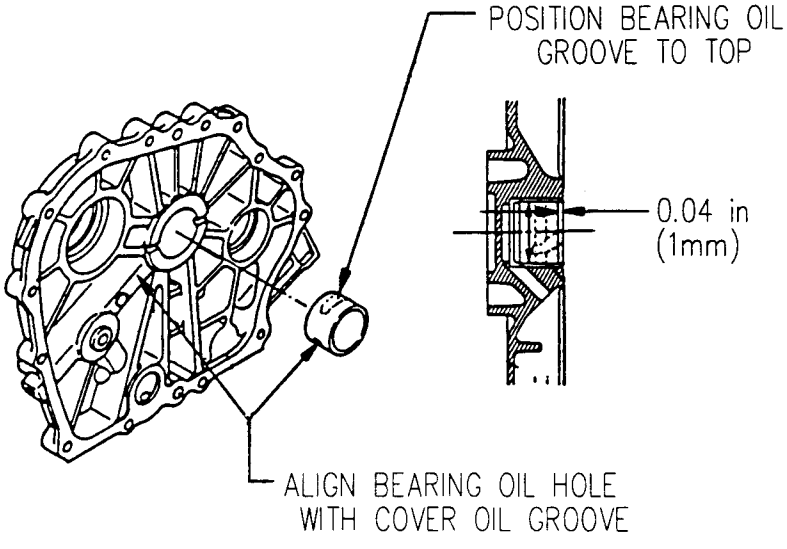

Figure 5-33. Positioning Crankshaft Bearing in Crankcase Cover.

CAUTION

Be careful when installing crankshaft to prevent damaging oil seal.

(5) Install crankshaft in cylinder block.

(6) Install retaining plate with bolt.

(7) Install flywheel, refer to paragraph 5.21.c.

(8) Install piston and connecting rod assembly, refer to paragraph 5.20.e.

(9) Install balancer shaft, refer to paragraph 5.19.c.

(10) Install camshaft, refer to paragraph 5.18.c.

(11) Align timing marks on gears (Figure 5-34).

(12) Install cylinder head assembly, refer to paragraph 5.13.c.

(13) Install crankcase cover, refer to paragraph 5.16.c.

5.23. DYNAMO.

a. Testing.

(1) Using multimeter set for volts AC, connect positive lead to TB1-5 and negative lead to TB1-6. (On MEP-501A connect positive lead to TB1-6 and negative lead to TB1-7.)

(2) Start generator set and check multimeter indication. Multimeter should indicate 40-50 VAC.

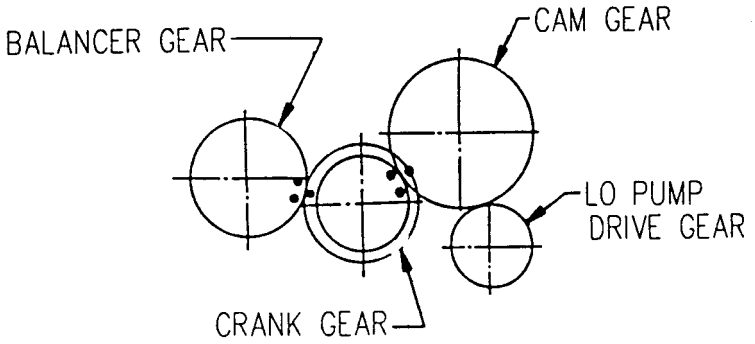

Figure 5-34. Aligning Timing Marks

(3) If voltage is too low, replace dynamo.

(4) If no voltage is indicated, shut down generator and perform the following:

(a) Tag and disconnect stator wires connected to engine harness at quick disconnects. Then using a multimeter, connect one multimeter lead to either quick disconnect and the other lead to ground. If continuity is indicated, replace dynamo.

(b) Disconnect engine harness plug (P2) from bottom of control panel assembly.

(c) Using multimeter, check for continuity between TB1-5 and pin J2-E and between TB1-6 and pin J2-F. (On MEP-501A check for continuity between TB1-6 and pin J2-E and between TB1-7 and pin J2-F.) If continuity is not indicated, repair defective wire.

(d) Using multimeter, check for continuity between sockets P2-E and P2-F. If continuity is not indicated, tag and disconnect stator wires from engine harness.

(e) Using multimeter, check engine harness wires P2-E and P2-F for continuity. If continuity is not indicated, repair defective wire.

(f) Connect engine harness plug (P2), disconnected stator wires, and remove tags.

b. Removal.

(1) Shut down generator set.

(2) Remove cooling fan cover, refer to paragraph 4.53.b.

(3) Remove flywheel, refer to paragraph 5.21.a.

(4) Tag and disconnect electrical leads for dynamo stator (Figure 5-35) from engine harness.

(5) Remove bolt and clamp securing wiring to cylinder block.

(6) Remove bolts and dynamo stator from cylinder block.

(7) If necessary, remove screws and dynamo wheel from flywheel.

c. Inspection.

(1) Inspect dynamo components for cracks, damaged insulation, and other damage.

(2) Replace damaged parts.

d. Installation.

(1) If removed, install dynamo wheel (Figure 5-35) on flywheel with screws.

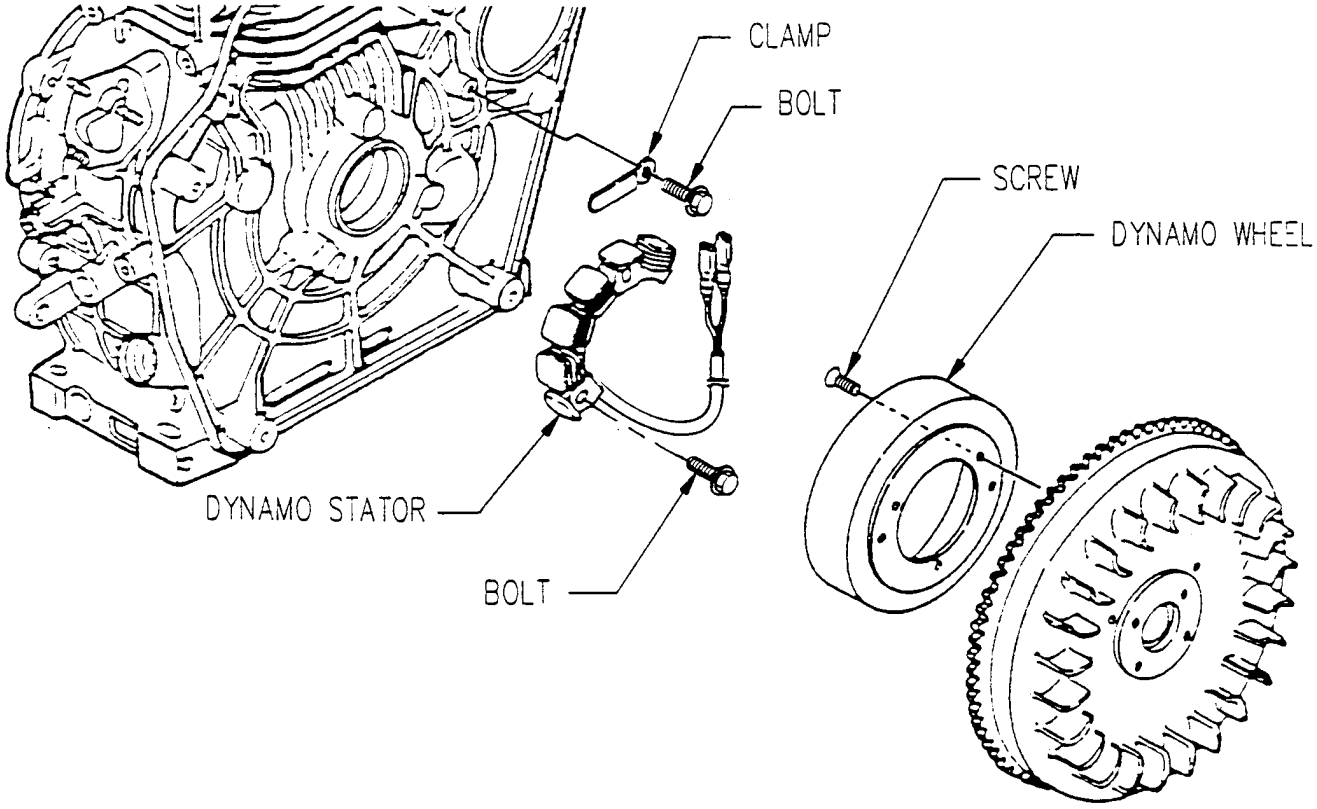

Figure 5-35. Dynamo

(2) Install dynamo stator on cylinder block with bolts.

(3) Route electrical leads through cylinder block, pull out excess wiring, and secure to cylinder block with clamp and bolt.

(4) Install flywheel, refer to paragraph 5.21.c.

(5) Install cooling fan cover, refer to paragraph 4.53.d.

(6) Perform performance test, refer to paragraph 5.23.a.

5.24. GOVERNOR GEAR.

a. Inspection.

(1) Inspect components for cracks, corrosion, signs of overheating, wear, and other damage.

(2) Replace damaged or worn parts.

b. Removal.

(1) Shut down generator set.

(2) Remove crankcase cover, refer to paragraph 5.16.a.

(3) Remove governor gear and spindle from oil pump shaft (Figure 5-36).

c. Installation.

(1) Lift weight on governor gear (Figure 5-36), position spindle under weight, and install governor gear and spindle on oil pump shaft so pin seats in gear (Figure 5-37).

(2) Place washer on lever assembly (Figure 5-36) and install lever assembly in cylinder block ensuring lever assembly is positioned over injection pump control lever.

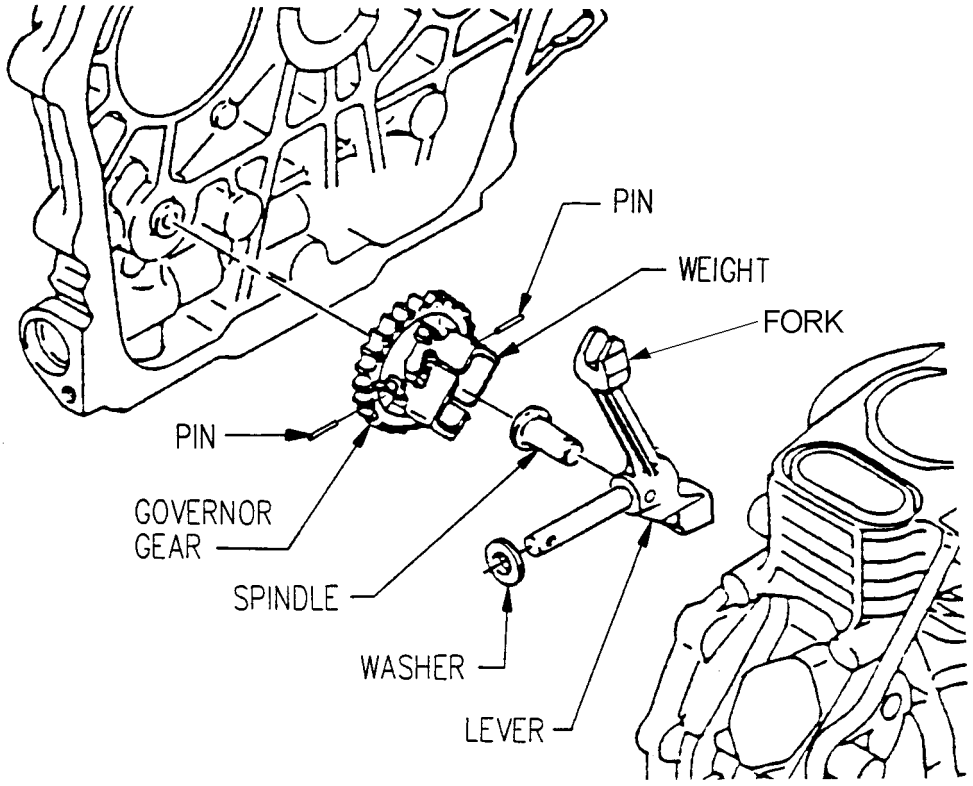

Figure 5-36. Governor Gear

(3) Install governor lever on outer end of lever assembly. If necessary, refer to paragraph 4.52.d.

(4) Install crankcase cover, refer to paragraph 5.16.c.

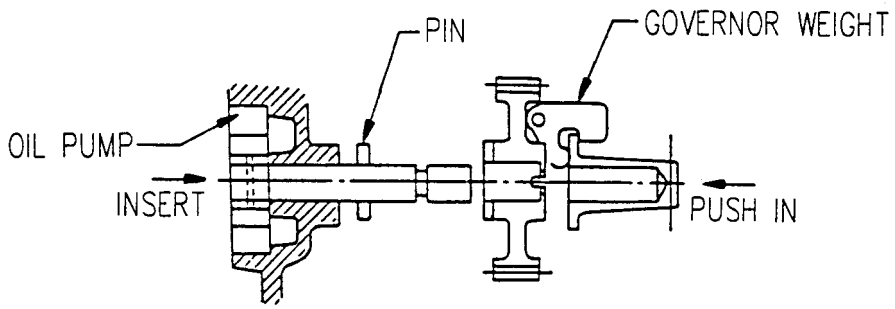

Figure 5-37. Installing Governor Gear on Oil Pump Shaft

5.25. CYLINDER BLOCK.

a. Removal.

(1) Shut down generator set.

(2) Remove diesel engine, refer to paragraph 5.10.a.

(3) Remove engine wiring harness, refer to paragraph 4.58.c.

(4) Remove crankcase cover, refer to paragraph 5.16.a.

(5) Remove crankshaft, refer to paragraph 5.22.a.

(6) Remove governor, refer to paragraph 5.24.b.

(7) Remove starter, refer to paragraph 4.57.a.

(8) Remove governor regulator bracket, refer to paragraph 4.52.a.

(9) Remove fuel filter assembly, refer to paragraph 4.15.a.

(10) Remove oil fill cap/dipstick.

(11) Remove studs (Figure 5-38) from cylinder block.

(12) Remove drain plugs from cylinder block.

b. Inspection.

(1) Inspect cylinder block for cracks, corrosion, and other damage.

(2) Measure inside diameter of cylinder sleeve [2.7559 - 2.7622 in. (70.00 - 70.16 mm)].

(3) Measure inside diameter of crankshaft bearing housing [2.8343 - 2.8350 in. (71.9905 – 72.0095 mm)].

(4) Measure inside diameter of camshaft bearing housing [0.8251 - 0.8259 in. (20.957 – 20.978 mm)].

(5) Inspect studs for stripped threads and other damage. Replace damaged studs.

(6) Replace cylinder block if cracked or damaged.

(7) Replace cylinder block if cylinder sleeve or bearing housings are worn beyond limits.

c. Installation.

(1) Install drain plugs (Figure 5-38) in cylinder block.

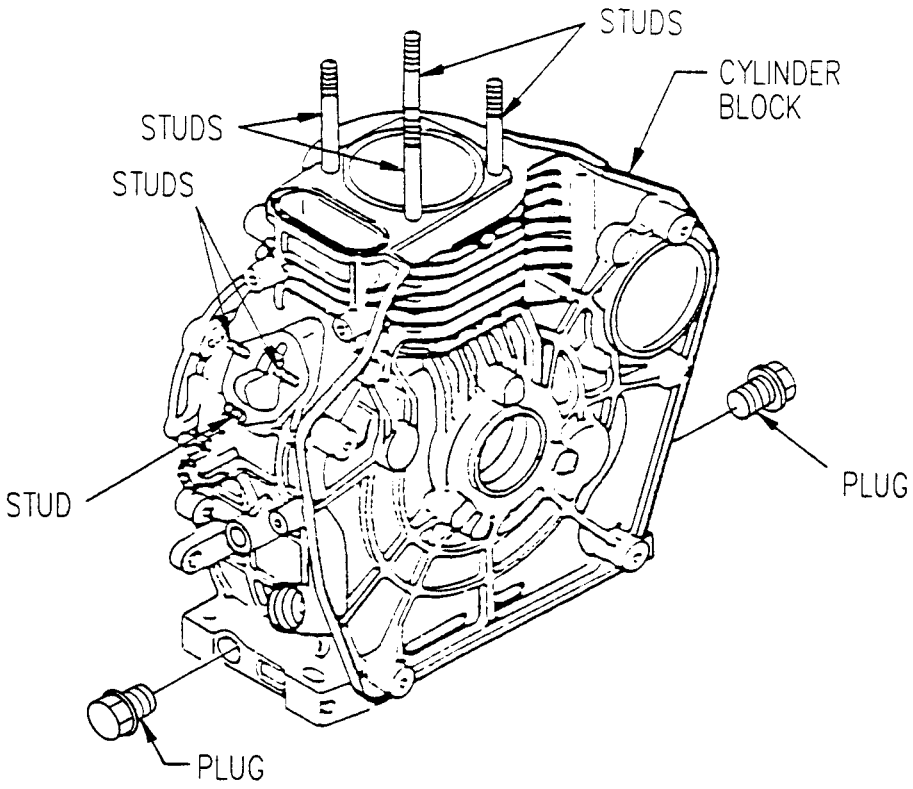

Figure 5-38. Cylinder Block

(2) Install studs in cylinder block. Apply locking compound (Item 6, Appendix E) to studs.

(a) Torque head studs to 9-11 lb ft (12.2 - 15.0 Nm).

(b) Torque fuel pump studs to 5-7 lb ft (6.8 - 9.5 Nm).

(3) Install oil fill cap/dipstick.

(4) Install fuel filter assembly, refer to paragraph 4.15.c.

(5) Install governor regulator bracket, refer to paragraph 4.52.d.

(6) Install starter, refer to paragraph 4.57.b.

(7) Install governor, refer to paragraph 5.24.c.

(8) Install crankshaft, refer to paragraph 5.22.c.

(9) Install crankcase cover, refer to paragraph 5.16.c.

(10) Install engine wiring harness, refer to paragraph 4.58.e.

(11) Install diesel engine, refer to paragraph 5.10.b.

5.26. AC ALTERNATOR ASSEMBLY. (MEP-531A)

a. Testing. (Alternator Installed)

(1) Rotor: Using multimeter, measure resistance across the windings at P1-E and P1-F. Resistance should be 13-18 ohms. If readings are not as stated, disassemble alternator and perform rotor testing, refer to paragraph 5.26.d.

(2) Stator:

(a) Using a multimeter, measure resistance between P1 sockets P1-A and P1-B. Resistance should be 0.7 -1.0 ohm. Replace stator if resistance is not as stated.

(b) Using a multimeter, measure resistance between P1 sockets P1-C and P1-D. Resistance should be 0.7 - 1.0 ohm. Replace stator if resistance is not as stated.

(c) Using a multimeter, check for open circuit between P1 sockets P1-A and P1-C, P1-A and P1-D, P1-B and P1-C, and P1-B and P1-D. Replace stator if resistance is found.

b. Removal.

(1) Remove engine/alternator assembly, refer to paragraph 5.9.a.

(2) Remove capscrews (1, Figure 5-39), lockwashers (2), washers (3), and alternator guard (4) from alternator.

(3) Tag stator wires and brush wires (6) connected by screws (5).

(4) Remove screws (5), brush wires (6), and stator wires from bearing bracket (16).

(5) Remove brush caps (7) and brushes (8) from bearing bracket (16).

(6) Remove nuts (9 and 10), lockwashers (11), washers (12), bolts (13), washers (14), ground strap (15), and bearing bracket (16) from stator assembly (18) and support bracket (17). Remove tie wraps as required.

CAUTION

Do not contact stator windings with rotor when removing stator assembly. Damage to stator and rotor may result. Also use care to avoid damage to LOP switch.

(7) Carefully remove stator assembly (18) and support bracket (17).

(8) Loosen capscrew (19) and remove C-washer (20) from capscrew.

CAUTION

Do not tap on rotor windings or allow rotor to fall when removing rotor from engine shaft. Damage to windings may result.

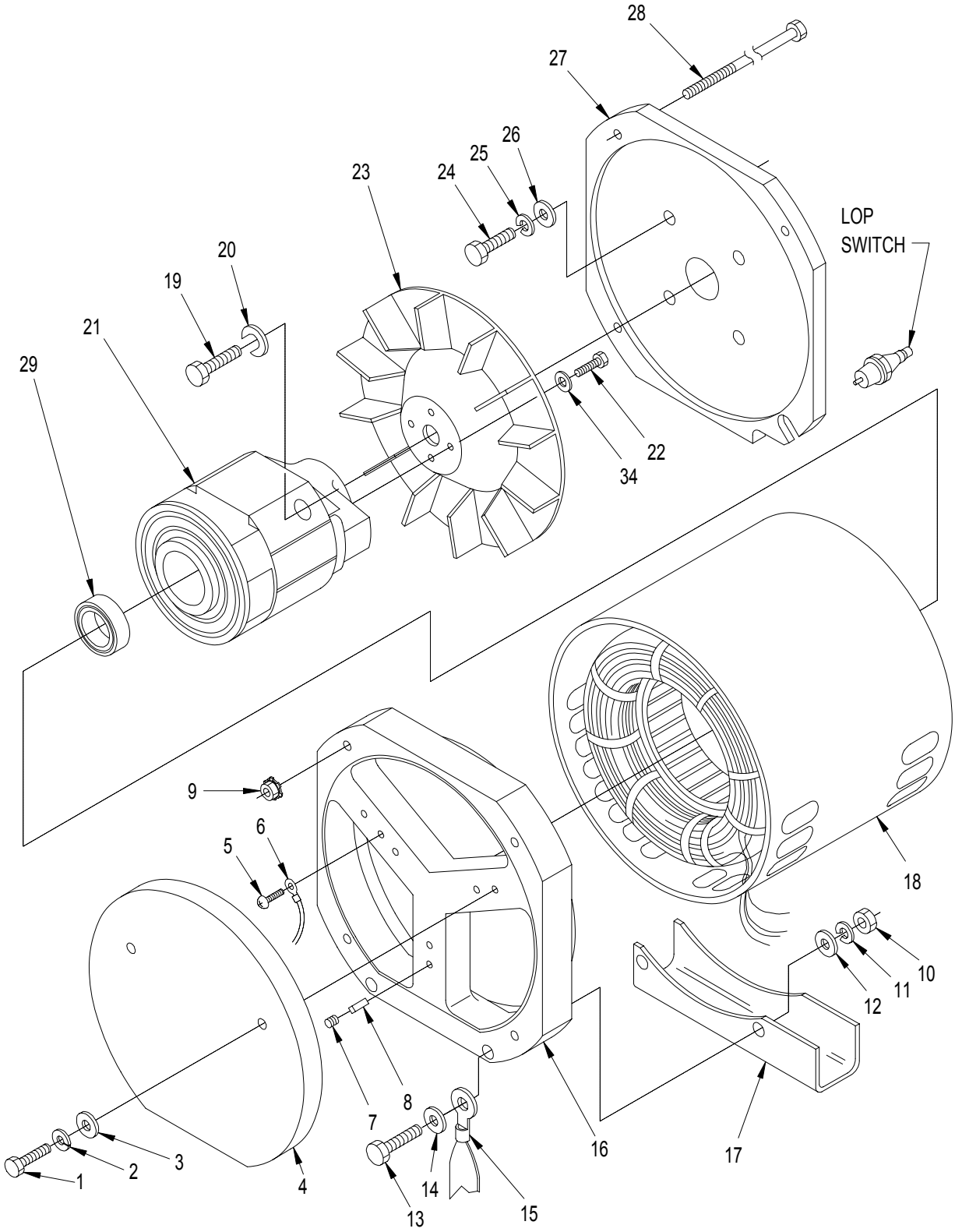

Figure 5-39. AC Alternator Assembly (MEP-531A) (Sheet 1 of 2)

Legend

1. Capscrew
2. Lockwasher
3. Washer
4. Alternator Guard
5. Screw
6. Wires
7. Brush Cap
8. Brush
9. Nut
10. Nut
11. Lockwasher
12. Washer
13. Bolt
14. Washer
15. Ground Strap
16. Bearing Bracket
17. Support Bracket
18. Stator Assembly
19. Capscrew
20. C-washer
21. Rotor
22. Bolt
23. Fan
24. Bolt
25. Lockwasher
26. Washer
27. Adapter Plate
28. Thru Bolt
29. Bearing
30. Tiedown Strap
31. Tubing
32. Clamp
33. Connector Plug
34. Washer
35. Clamp, Cable
36. Screw
37. Washer
38. Lockwasher
39. Nut
40. Insulation Sleeving
41. Grommet

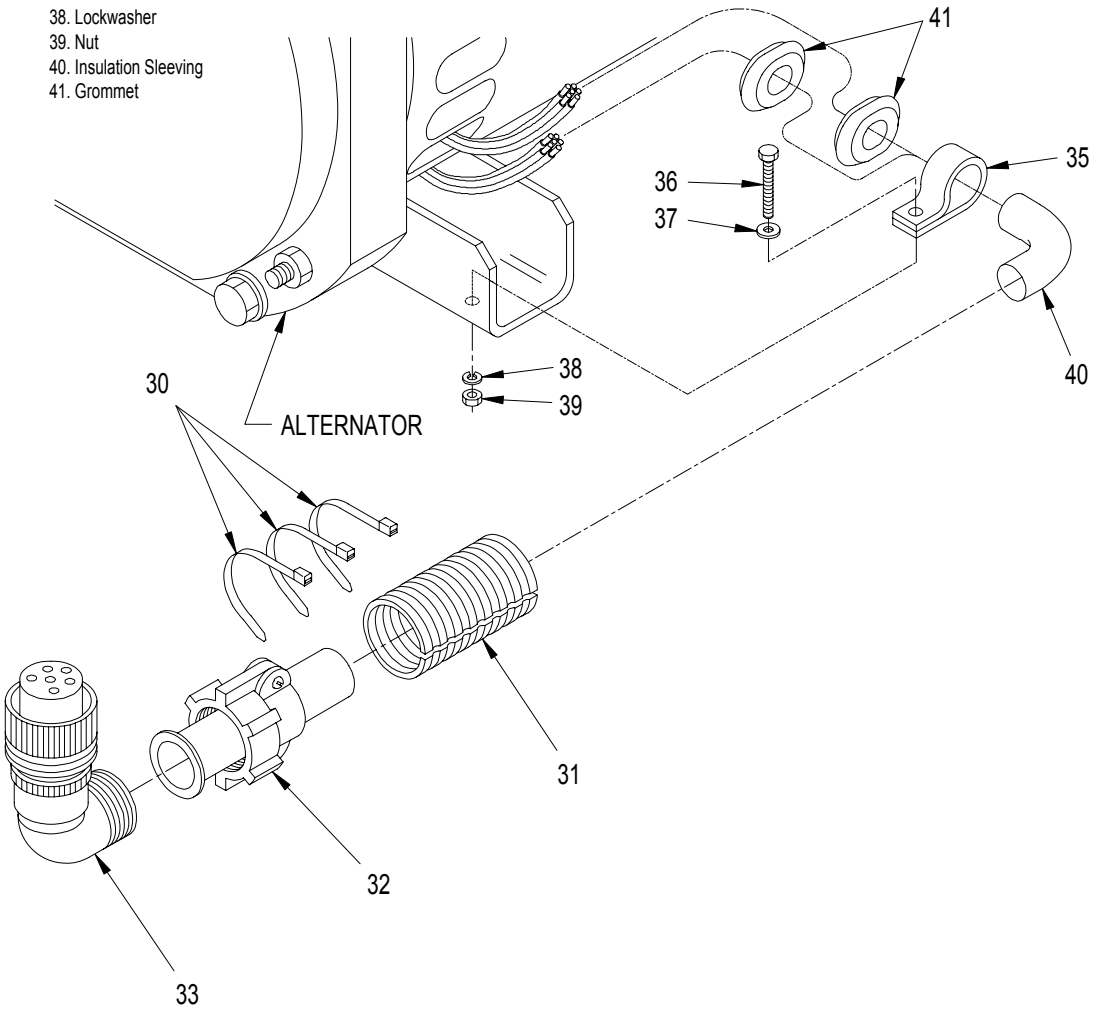

Figure 5-39. AC Alternator Assembly (MEP-531A) (Sheet 2 of 2)

(9) While supporting rotor (21), tap on rotor yoke casting using a brass drift and hammer. Tap with yoke parallel to work surface until rotor (21), with fan (23) attached, separates from engine shaft.

(10) Remove capscrew (19) from engine shaft.

(11) Remove bolts (24), lockwashers (25), washers (26), and adapter plate (27) from engine.

c. Inspection.

(1) Inspect all components for cracks, corrosion, stripped threads, and other damage.

(2) Inspect fan for damaged vanes.

(3) Inspect bearing bracket o-ring. If o-ring is damaged or missing, replace bearing bracket.

CAUTION

If there is any unusual wear to bearing (29, Figure 5-39), or if bearing bracket (16) does not meet minimum dimension stated in step 4, the bearing bracket must be replaced.

(4) Measure diameter of shaft on bearing bracket [minimum of 0.7868 in. (20.2 mm)].

(5) Inspect rotor windings for damage and slip rings for grooves and pitting.

(6) Inspect stator windings for damage and signs of overheating (discolored or burned windings).

(7) Replace damaged or worn parts.

d. Testing.

(1) Rotor:

(a) Using a multimeter, measure resistance across the windings. Resistance should be 13-14 ohms. Replace rotor if resistance is not as stated.

(b) Using a multimeter, check for continuity from each slip ring to ground. If continuity is indicated, rotor is defective and must be replaced.

e. Disassembly.

(1) Inspect alternator brushes, refer to paragraph 4.12.4.b.

(2) Remove bolts (22, Figure 5-39), washers (34), and fan (23) from rotor (21).

(3) Remove thru bolts (28) from adapter plate (27).

(4) If necessary, using suitable puller, remove bearing (29) from rotor (21).

CAUTION

DO NOT REMOVE power harness components unless testing results in a need to replace stator assembly. Unnecessary removal and installation of components is time consuming and damage may occur.

(5) If necessary to replace stator assembly (18), remove power harness components as follows:

(a) Remove nut (39), lockwasher (38), washer (37), and screw (36) securing clamp (35) to bracket (17).

(b) Cut tiedown straps (30) and remove convoluted tubing (31) and insulation sleeving (40) from cable.

(c) Cut cable wires four inches down from clamp (32).

(d) Remove grommets (41) from stator assembly (18) and slide off cable wires.

f. Assembly.

NOTE

If replacing rotor (21, Figure 5-39), also replace bearing bracket (16) and bearing (29).

(1) If stator assembly (18, Figure 5-39) was replaced, install power cable components as follows:

(a) Slide grommets (41) over cable wires and install in vent holes where cable wires exit stator

(b) Position insulation sleeving (40) on cable wiring. Then push wiring through clamp (32).

(c) Match cable wire numbers to corresponding plug wires and splice together. Refer to Table 5-19 for connection positions. Tighten clamp (32).

(d) Position convoluted tubing (31) on cable wires and secure with tiedown straps (30).

(e) Secure harness to support bracket (17) with clamp (35), screw (36), washer (37), lockwasher (38), and nut (39).

(2) If removed, install bearing (29) in rotor (21).

(3) Insert thru bolts (28) in adapter plate (27).

(4) Install fan (23) on rotor (21) with washers (34) and bolts (22).

Table 5-19. Power Harness Connector Plug Connections

WIRE NUMBER	TERMINATION	
	FROM	TO
S-1	G2-1	P1-A
S-2	G2-2	P1-B
S-3	G2-3	P1-C
S-4	G2-4	P1-D
S-5	G2(+)	P1-E
S-6	G2(-)	P1-F

g. Installation.

(1) Position adapter plate (27, Figure 5-39) with notch on LOP switch side. Then apply locking compound (Item 6, Appendix E) to threads of bolts (24) and install adapter plate (27) on engine with washers (26), lockwashers (25), and bolts (24).

(2) Install rotor (21) as follows:

CAUTION

Ensure inner taper of rotor and outer taper of engine shaft are clean of rust and oil.

(a) Apply locking compound (Item 6, Appendix E) to threads of capscrew (19) and screw capscrew (19) into end of engine shaft until there is approximately 3/8 in. (9.5 mm) between head of bolt and engine shaft.

CAUTION

Do not allow capscrew (19) to contact rotor windings. If necessary, screw the capscrew further into engine shaft.

(b) Carefully align rotor (21) and engine shaft and push rotor toward engine until shaft taper seats inside rotor yoke casting.

CAUTION

Do not allow C-washer (20) to shift while tightening capscrew (19). This could adversely affect the integrity of the attachment joint.

(c) Place a new C-washer (20) between the rotor yoke casting and head of capscrew (19). Tighten capscrew (19) until C-washer (20) starts to deform (properly deformed when .020 in. (0.51mm) feeler gauge will slip between C-washer and yoke of rotor).

CAUTION

Do not tap on stator assembly windings when seating stator on adapter plate.

(3) With stator assembly (18) shell seam down, position stator assembly over rotor and onto adapter plate (27). Using a soft faced mallet, tap on end of stator assembly shell to seat on adapter plate.

(4) With the vertical portion of the "Y" positioned at the bottom, align bearing bracket (16) to the stator assembly lip and the stub shaft with inner race of bearing (29).

CAUTION

Do not attempt to seat bearing bracket to stator assembly by tightening thru bolts (28). Seat bearing bracket by tapping in the center of the bracket. Tightening the thru bolts or tapping in other than the center of the bracket could cock the bearing or fracture the molded bearing support and slip ring of the rotor.

(5) Using a soft faced mallet, carefully tap on center of bearing bracket (16) until bracket is fully seated on shell of stator assembly (18) and stub shaft is seated in bearing (29).

CAUTION

The top surfaces of bearing bracket (16) and adapter plate (27) must be parallel to prevent twisting. If bracket and plate are not parallel, alternator can be severely damaged.

(6) Insert thru bolts (28) through bearing bracket (16), install keps nuts (9), and tighten nuts diagonally to 75 lbs-in. (8.5 Nm) making sure bottom of bracket remains perfectly straight.

(7) Secure support bracket (17) and ground strap (15) to bearing bracket (16) with washers (14), bolts (13), washers (12), lockwashers (11), and nuts (10).

(8) Ensure a clearance of .006 in. (.15 mm) exists between stator and rotor windings, and rotor turns freely with no interference.

(9) Install brushes (8) in bearing bracket with brush caps (7).

(10) Connect stator wires and brush wires (6) with screws (5) and remove tags.

(11) Install alternator guard (4) on alternator with washers (3), lockwashers (2), and screws (1). Cross tighten screws to 6 lbs-ft (8.2 Nm).

(12) Install engine/alternator assembly, refer to paragraph 5.9.b.

5.27. AC ALTERNATOR BEARING. (MEP-531A)

a. Removal.

(1) Remove control panel assembly, refer to paragraph 4.20.b.

(2) Remove bolts (Figure 5-40), lockwashers, washers and alternator guard from alternator.

(3) Tag and disconnect electrical leads secured by screws.

(4) Remove nuts, lockwashers, washers, bolts, and bearing bracket from alternator.

(5) Using suitable puller, pull bearing from alternator rotor.

b. Installation.

(1) Press bearing (Figure 5-40) into alternator rotor.

(2) With the vertical portion of the "Y" positioned at the bottom, align bearing bracket (16, Figure 5-39) to the stator assembly lip and the stub shaft with inner race of bearing (29).

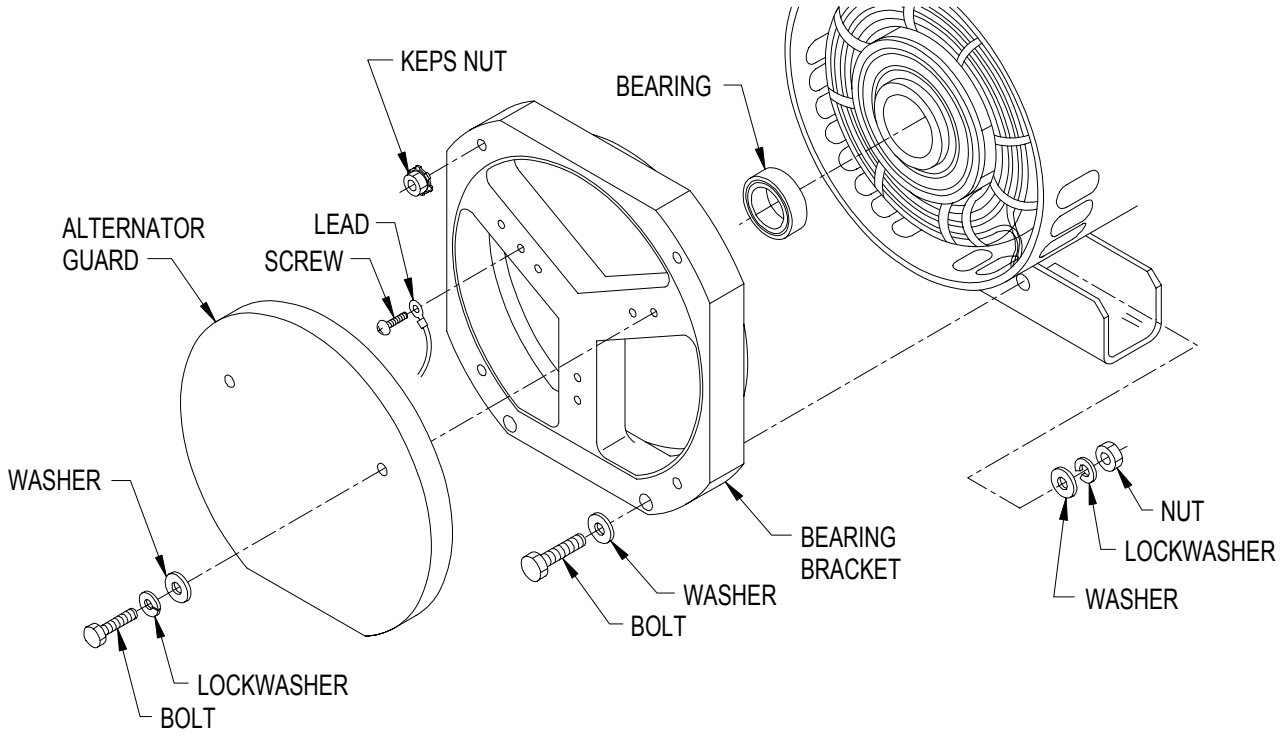

Figure 5-40. AC Alternator Bearing

CAUTION

Do not attempt to seat bearing bracket to stator by tightening thru bolts (28). Seat bearing bracket by tapping in the center of the bracket. Tightening the thru bolts or tapping in other than the center of the bracket could cock the bearing or fracture the molded bearing support and slip ring of the rotor.

(3) Using a soft faced mallet, carefully tap on center of bearing bracket (16) until bracket is fully seated on shell of stator assembly (18) and stub shaft is seated in bearing (29).

CAUTION

The top surfaces of bearing bracket (16) and adapter plate (27) must be parallel to prevent twisting. If bracket and plate are not parallel, alternator can be severely damaged.

(4) Insert thru bolts (28) through bearing bracket (16), install keps nuts (9), and tighten nuts diagonally to 75 lbs-in. (8.5 Nm) making sure bottom of bracket remains perfectly straight.

(5) Secure support bracket (17) and ground strap (15) to bearing bracket (16) with washers (14), bolts (13), washers (12), lockwashers (11), and nuts (10).

(6) Ensure a clearance of 0.006 in. (0.15 mm) exists between stator and rotor windings, and rotor turns freely with no interference.

(7) Install brushes (8) in bearing bracket with brush caps (7).

(8) Connect stator wires and brush wires (6) with screws (5) and remove tags.

(9) Install alternator guard (4) on alternator with washers (3), lockwashers (2), and screws (1). Cross tighten screws to 6 lbs-ft (8.2 Nm).

(10) Install control panel assembly, refer to paragraph 4.20.d.

5.28. DC ALTERNATOR ASSEMBLY. (MEP-501A)

a. Removal.

(1) Shut down generator set.

(2) Remove control panel assembly, refer to paragraph 4.20.b.

(3) Remove capscrews, lockwashers, washers, and guard from engine adapter (Figure 5-41).

(4) Tag and disconnect electrical leads from alternator, support rear of alternator, then remove self-locking nuts with washers and capscrews with washers and ground strap securing alternator to engine adapter. Carefully remove alternator and flexible sleeve coupling.

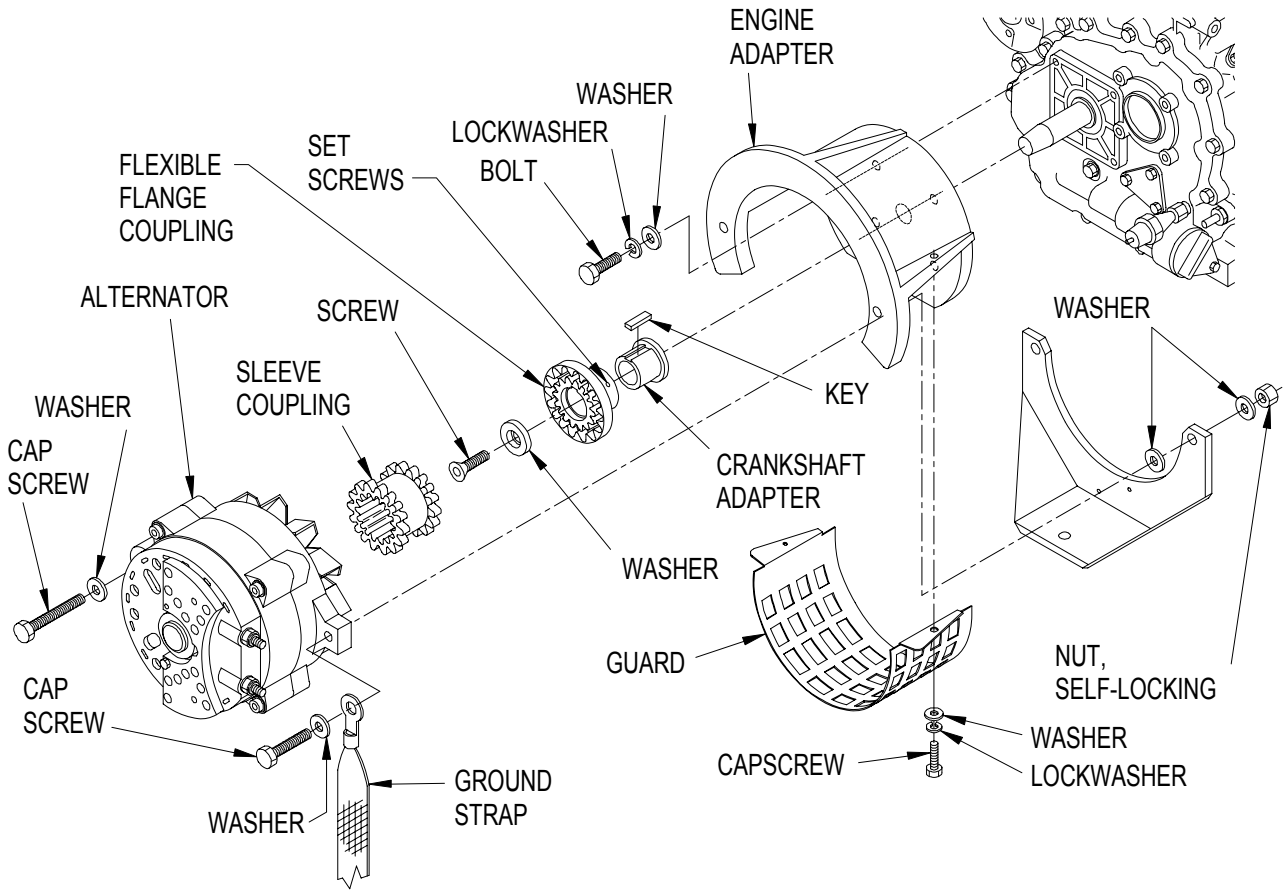

Figure 5-41. DC Alternator Installation (MEP-501A)

(5) Remove bolts, lockwashers, washers, and engine adapter from engine.

(6) Loosen setscrews and remove flexible flange coupling from crankshaft adapter using standard gear puller.

(7) If crankshaft adapter is damaged, apply heat to screw and remove screw and countersunk washer securing crankshaft adapter. Then apply heat to crankshaft adapter and using a suitable gear puller, remove crankshaft adapter from crankshaft. Discard screw, machine key, and adapter.

b. Disassembly.

(1) Hold rotor shaft from turning using an allen wrench inserted in end of shaft, and remove nut and lockwasher from rotor shaft (Figure 5-42).

(2) Loosen setscrews securing drive pulley to rotor shaft. Then using suitable puller, remove drive pulley. It may be necessary to gently tap the outside diameter of the pulley with a plastic mallet.

(3) Remove key, fan, and bushing.

(4) Match mark housings, remove four socket head screws, and carefully separate rear housing with stator from rotor and front housing.

NOTE

When separating the rear housing from the rotor, the brushes and springs will pop out. The brushes can be reinserted and retained by a pin (straightened paper clip, etc.) through the access hole in the back of the alternator housing. The pin will aid during alternator assembly.

(5) Tag stator leads. Then remove nuts from heat sink tie points (6 places) and carefully separate stator from rear housing. Reinstall nuts on tie points to retain diode leads (Figure 5-43).

(6) If necessary, remove nuts and washers securing brush holder. Remove brush holder.

(7) If necessary, separate rotor and front housing.

(8) If necessary, remove nuts, tie bar, washers, and insulators from positive terminals.

(9) If necessary, replace bearings. Refer to paragraph 5.29.b.

(10) If necessary, replace diodes and capacitors. Refer to paragraph 5.30.a.

c. Inspection.

(1) Inspect all components for damage and wear.

(2) Inspect alternator drive coupling (part of alternator) for damage and wear.

(3) Inspect brushes in brush holder for discoloration and wear.

(4) Inspect stator and rotor for discoloration and damage.

(5) Inspect bearings for wear.

d. Testing.

(1) Test diodes as follows:

(a) Disconnect diode assembly leads, then using multimeter set for ohms, connect one lead to disconnected diode leads and other lead to heat sink. Note ohms indication on multimeter.

NOTE

Ensure test point on external (negative) heat sink is bare metal.

(b) Reverse multimeter leads and note ohms indication on multimeter.

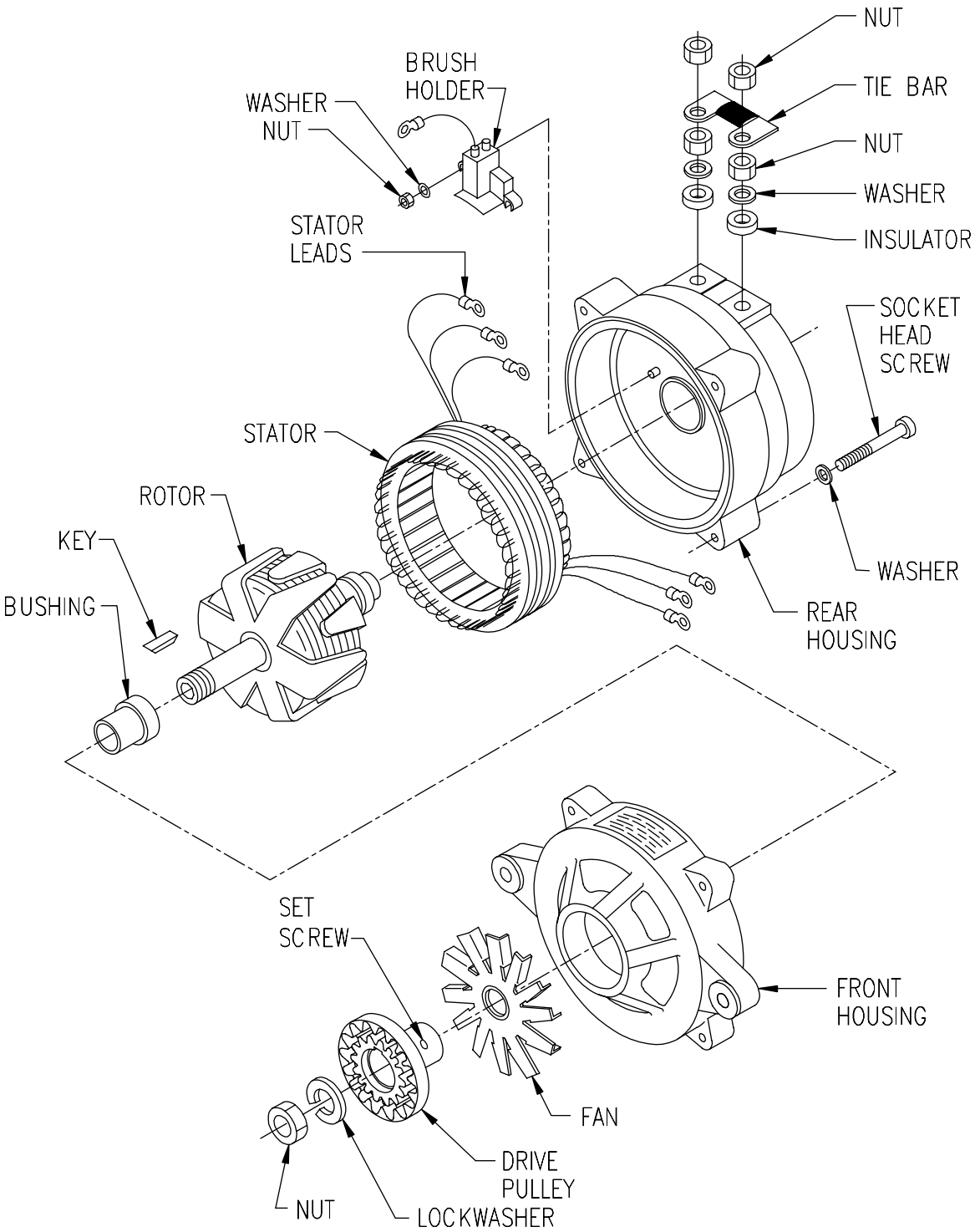

Figure 5-42. DC Alternator Assembly

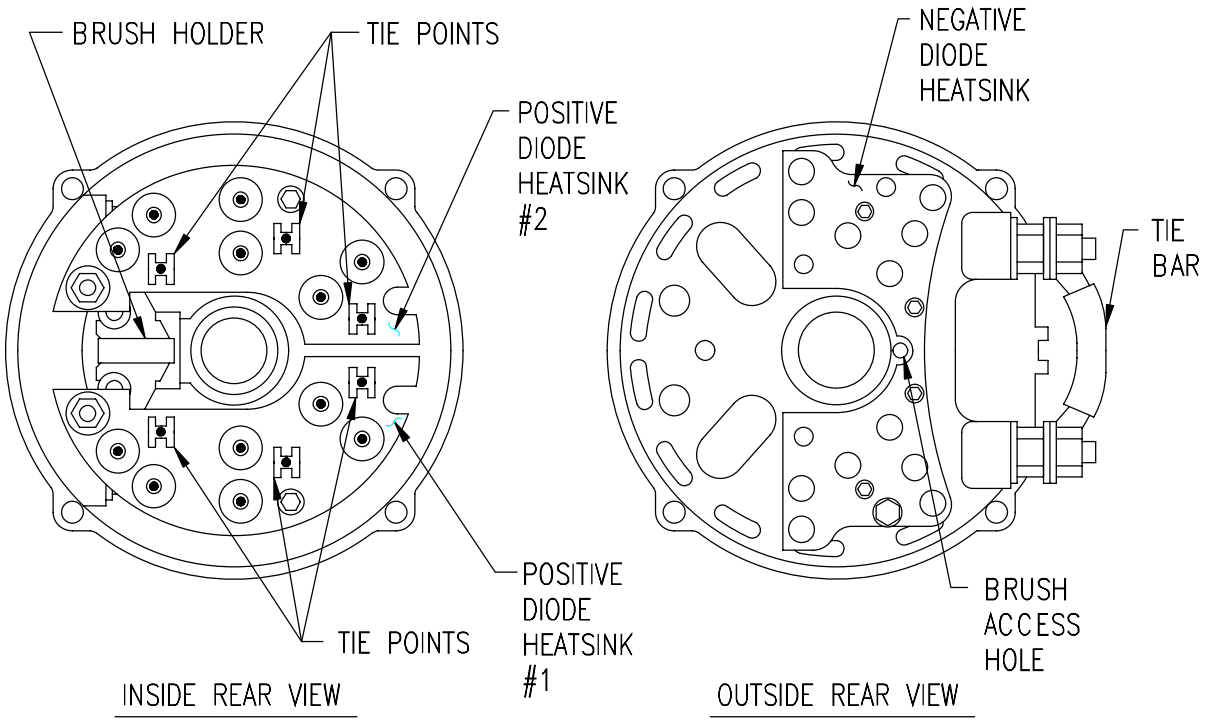

Figure 5-43. Heatsink Tie Point Locations

(c) Resistance (ohms) readings should be high in one direction and low in the other. If readings are high or low in both directions, diodes are defective and must be replaced.

(d) Repeat steps a, b, and c for each set of diodes.

(2) Using multimeter set for ohms, check for continuity between point A and brush B, between terminal C and brush spring D, and between terminal E and connector F (Figure 5-44). Replace brush or brush assembly as necessary if indications are other than stated.

(3) Using multimeter set for ohms, check stator for open circuits between point G (laminations) and each stator terminal (Figure 5-45). If continuity is noted between laminations and any terminal, stator is defective and must be replaced.

(4) Using multimeter set for ohms, check for continuity between all combinations of terminals A, B, and C. Check for continuity between all combinations of terminals D, E, and F. Check for open circuits between all combinations of terminals A, B, and C to terminals D, E, and F. Replace stator if indications are other than stated.

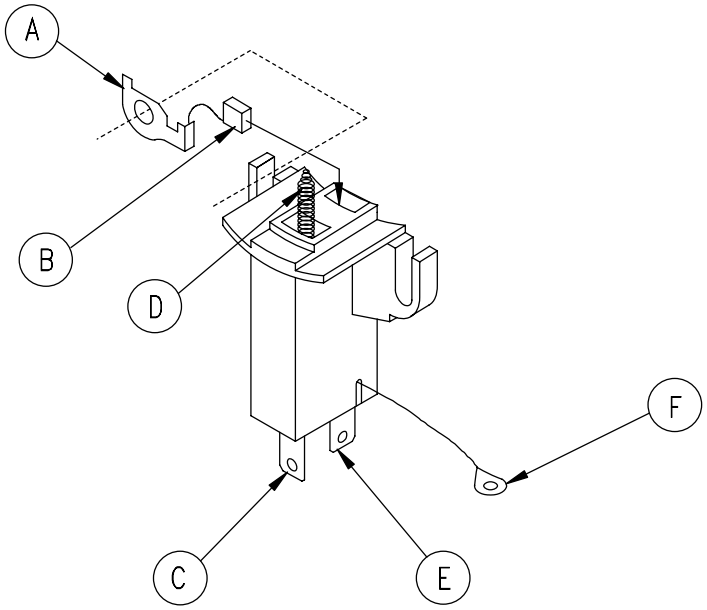

Figure 5-44. Brush Assembly Test

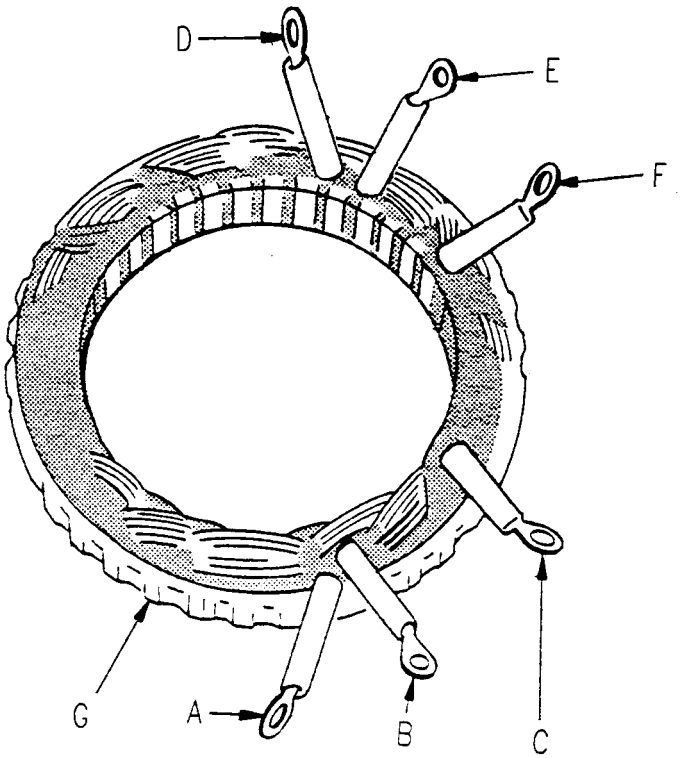

Figure 5-45. Stator Test

NOTE

Place multimeter test leads on edges of slip rings to avoid creating arcs on brush contact surfaces.

(5) Using multimeter set for ohms, check rotor for between 3 and 3.5 ohms between slip rings (Figure 5-46). Also check for open circuits between rotor body and each slip ring. Replace entire rotor assembly if indications are other than stated.

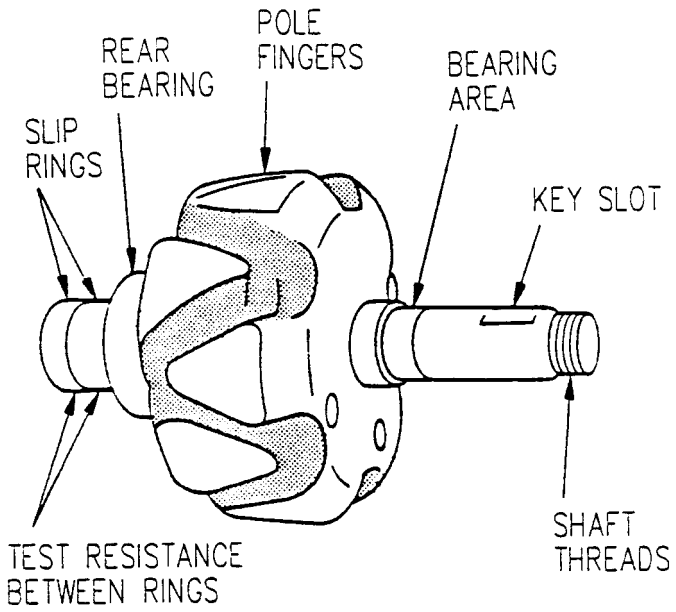

Figure 5-46. Rotor Test

(6) Inspect capacitors for evidence of overheating (burned wire/insulation).

(7) Test capacitors as follows:

(a) Using multimeter set for ohms, connect multimeter leads to capacitor wire lugs. Note ohms indication on multimeter.

(b) Reverse multimeter leads on capacitor wire lugs. Note ohms indication on multimeter.

(c) Resistance (ohms) readings should be high in one direction and low in the other. If readings are high or low in both directions, capacitor is defective and must be replaced.

e. Assembly.

(1) If removed, install diodes and capacitors. Refer to paragraph 5.30.c.

(2) If removed, install bearings. Refer to paragraph 5.29.c.

(3) If removed, carefully fit rotor shaft through front housing (Figure 5-42).

(4) Install new brush holder with brushes by aligning holder to mounting holes with arm over tie point. Ensure that lower brush lead is captured under right side mounting stud.

(5) Secure brush holder with two nuts and washers.

(6) Install three stator leads as tagged to heat sink terminals. Secure with nuts and remove tags.

(7) Insert a straight pin (straightened paper clip, for example) through brush access hole in rear housing to retain brushes (Figure 5-43 for location of brush access hole).

(8) Align rear housing with rotor and front housing match marks and carefully press components together. Then install thru bolts and lockwashers. Remove straight pin retaining brushes.

(9) Position bushing (Figure 5-42), fan, and key on rotor shaft.

(10) Apply locking compound (Item 6, Appendix E) to nut, then install drive pulley, lockwasher and nut. Hold rotor shaft with allen wrench and torque nut from 55 to 70 lbs-ft (75 to 95 Nm).

(11) Apply locking compound (Item 6, Appendix E) to threads of setscrews, torque setscrews to 50 lbs-in. (5.6 Nm) to secure drive pulley.

(12) If removed, install insulators, washers, nuts, and tie bar on positive terminals.

f. Installation.

(1) If crankshaft adapter (Figure 5-41) was removed, clean engine crankshaft with isopropyl alcohol (Item 12, Appendix E) to remove old retaining compound and let dry. Otherwise proceed to step (4).

(2) Apply retaining compound (Item 7, Appendix E) to the surface of engine crankshaft, and position new crankshaft adapter on crankshaft.

(3) Apply locking compound (Item 6, Appendix E) to threads of new screw and install screw with countersunk washer to secure crankshaft adapter. Torque screw to 22 lbs-ft (29.8 Nm).

(4) Install new machine key in slot of crankshaft adapter and position flexible flange coupling on adapter. Do not tighten setscrews.

(5) Install engine adapter on engine with washers, lockwashers, and capscrews.

(6) Install alternator with flexible sleeve coupling. Ensure that external teeth on flexible sleeve coupling engage the internal teeth of flexible flange couplings. Then secure alternator to engine adapter with capscrews, washers, and new self-locking nuts. Ensure ground strap is positioned under right side capscrew and washer. Torque self-locking nuts to 31 lbs-ft (42 Nm). Connect electrical leads and remove tags.

(7) Apply locking compound (Item 6, Appendix E) to threads of setscrews for flexible flange coupling on crankshaft, pull coupling toward alternator until a gap of 0.625 + 0.031 - 0 in. (15.875 + 0.787 - 0 mm) is obtained between the two flexible flange couplings, and torque setscrews to 50 lbs-in. (5.6 Nm).

(8) Install guard with washers, lockwashers, and capscrews.

(9) Install control panel, refer to paragraph 4.20.d.

5.29. DC ALTERNATOR BEARINGS. (MEP-501A)

a. Inspection.

(1) Disassemble alternator assembly. Refer to paragraph 5.28.b.

(2) Inspect bearings for wear.

(3) Assemble alternator assembly. Refer to paragraph 5.28.e.

b. Removal.

(1) Disassemble alternator assembly. Refer to paragraph 5.28.b.

(2) If necessary, using wheel puller, remove rotor bushing (Figure 5-47).

(3) Remove screws and washers securing front bearing. Using suitable press, press front bearing out of front housing.

(4) Using suitable press, press rear bearing and dust cap out of rear housing using a dowel with a diameter slightly less than outer race of rear housing bearing.

(5) Clean bearing cavities in front and rear housings with isopropyl alcohol (Item 12, Appendix E).

(6) Apply light coating of general purpose grease (Item 11, Appendix E) to each bearing cavity.

c. Installation.

(1) Press new front bearing into front housing (Figure 5-47).

(2) Install rotor bushing. Apply locking compound (Item 6, Appendix E) to threads of screws. Then install screws with washers. Torque screws 60 to 65 lbs-in. (6.8 to 7.3 Nm).

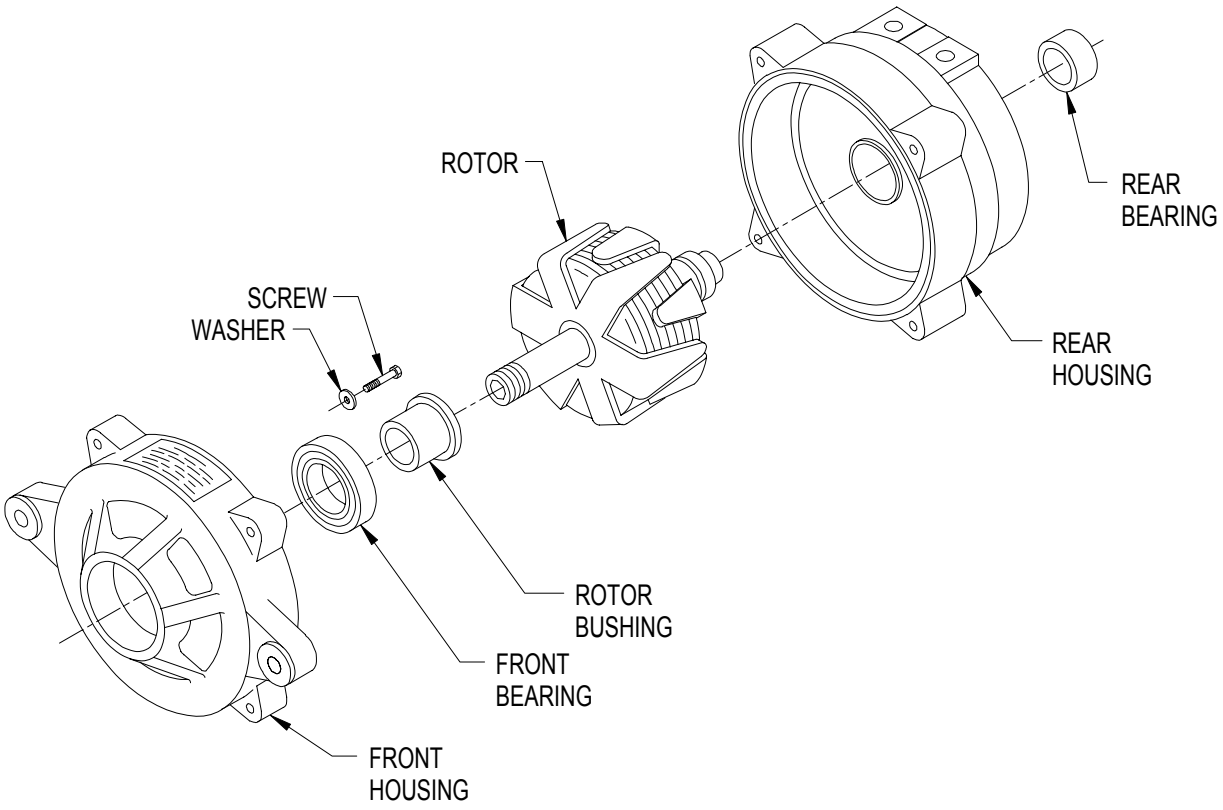

Figure 5-47. Alternator Bearing Replacement

(3) Press new rear bearing into rear housing. Then install dust cap.

(4) Assemble alternator assembly. Refer to paragraph 5.28.e.

5.30. DC ALTERNATOR DIODES AND CAPACITORS. (MEP-501A)

a. Removal.

(1) Remove four socket head screws (Figure 5-42) and carefully separate rear housing with stator from rotor and front housing.

(2) Remove brush holder and lift off capacitor leads (Figure 5-48).

(3) Tag stator leads. Then remove nuts from heat sink terminals (6 places) and carefully separate stator from rear housing.

(4) Tag ends of capacitors . Then remove screws and lockwashers securing capacitors to heat sink and remove capacitors.

(5) Tag and disconnect diode leads from heat sink terminals.

(6) Remove bolts and spacers securing positive heat sinks to rear housing. Retain all insulators.

(7) Lift positive heat sinks from rear housing. Ensure tie point insulators remain in place.

(8) Remove screws with spacers securing negative heat sink to rear housing.

(9) Using a suitable press and short hardwood dowel, remove defective diodes.

b. Testing.

(1) Using multimeter set for ohms, connect multimeter leads to diode wire lugs. Note ohms indication on multimeter.

(2) Reverse multimeter leads on diode wire lugs. Note ohms indication on multimeter.

(3) Resistance (ohms) readings should be high in one direction and low in the other. If readings are high or low in both directions, diode is defective and must be replaced.

(4) Repeat steps 1, 2, and 3 for each of the other diodes.

(5) Inspect capacitors for evidence of overheating (burned wire/insulation).

(6) Using multimeter set for ohms, connect multimeter leads to capacitor wire lugs. Note ohms indication on multimeter.

(7) Reverse multimeter leads on capacitor wire lugs. Note ohms indication on multimeter.

(8) Resistance (ohms) readings should be high in one direction and low in the other. If readings are high or low in both directions, capacitor is defective and must be replaced.

c. Installation.

(1) Install new lugs on each diode clipped during removal. Ensure that leads are long enough to reach tie points (Figure 5-48).

(2) Using suitable press, install replacement diodes into heat sinks.

(3) Install negative heat sink on outside of rear housing and secure with screws and spacers.

(4) Install positive heat sinks in inside of rear housing and secure with bolts and spacers. Ensure that negative diode leads are routed as tagged.

(5) Install new brush holder with brushes by aligning holder to mounting holes with arm over tie point. Ensure that lower brush lead is captured under right side mounting stud.

(6) Secure brush holder with nuts and washers.

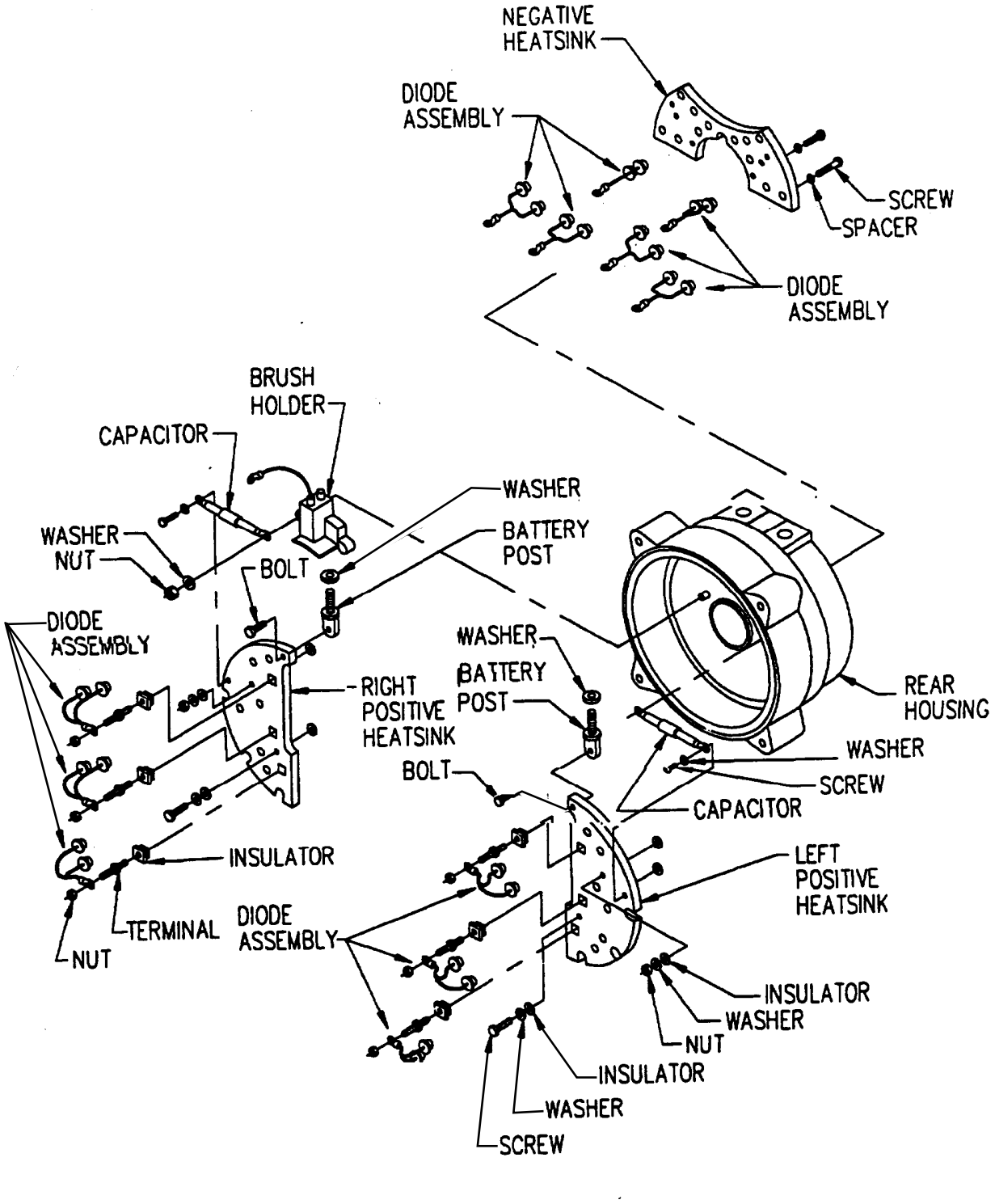

Figure 5-48. Diodes and Capacitor Replacement

NOTE

Install a new capacitor so that positive end of capacitor is connected under brush.

(7) Install capacitors as tagged and secure with screws and washers. Remove tags.

(8) Assemble alternator assembly. Refer to paragraph 5.28.e.

(9) Tighten nuts securing positive terminals to rear housing. Install capacitor leads. Install battery post strap and secure with nylon locknuts.

5.31. FRAME.

a. Removal.

(1) Remove control panel assembly. Refer to paragraph 4.20.b.

(2) Remove fuel tank and piping. Refer to paragraph 4.17.a.

(3) Remove engine harness assembly. Refer to paragraph 4.58.c.

(4) Remove alternator harness assembly (MEP-501A). Refer to paragraph 4.59.c.

(5) Remove diesel engine and alternator assembly. Refer to paragraph 5.9.a.

(6) Remove diesel engine resilient mounts. Refer to paragraph 4.12.6.a.

b. Repair.

WARNING

CARC paint dust is a health hazard. Wear protective eyewear, mask, and gloves when sanding CARC painted surfaces. Failure to comply can cause personal injury.

(1) Repair all dents and cracks. Replace damaged threaded inserts. Remove all loose paint.

(2) Remove light corrosion with fine grit abrasive paper (Item 16, Appendix E).

(3) Repaint surface in accordance with TM 43-0139/TO 35-1-3.

c. Installation.

(1) Install diesel engine resilient mounts. Refer to paragraph 4.12.6.b.

(2) Install diesel engine and alternator assembly. Refer to paragraph 5.9.b.

(3) Install alternator harness assembly (MEP-501A). Refer to paragraph 4.59.e.

(4) Install engine harness assembly. Refer to paragraph 4.58.e.

(5) Install fuel tank and piping. Refer to paragraph 4.17.e.

(6) Install control panel assembly. Refer to paragraph 4.20.d.

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APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists all forms and publications that are referenced in this manual. For publications and blank forms not referenced, use DA Pam 25-30.

A-2. PAMPHLETS

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms
(F) AFI 21-101	Maintenance Management of Aircraft
DA Pam 738-750	The Army Maintenance Management System (TAMMS)
(F) TO 00-20 Series	The Maintenance Data Collection System
(F) TO 00-5-1	Air Force Technical Order System
(F) AFI 37-160	Vol. 1, Air Force Publications and Forms Management Programs

A-3. FORMS

DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 5988E (ULSS)	Equipment Inspection and Maintenance Worksheet
(F) AFTO Form 349	Maintenance Data Collection System
DA Form 2408-9	Equipment Acceptance Report
(F) AFTO Form 95	Significant Historical Data
DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
(F) AFTO Form 22	Technical Order System Publication Improvement Report and Reply
SF 368	Product Quality Deficiency Report
(F) TO 00-35D-54	USAF Deficiency Reporting and Investigating System

A-4. TECHNICAL BULLETINS

TB 740-97-2	Preservation For USAMECOM Mechanical Equipment For Storage and Shipment
(F) TO 35-1-4	Processing and Inspection of Support Equipment for Storage and Shipment

A-5. TECHNICAL MANUALS

TM 750-244-3	Destruction of Materiel
TM 43-0139	Painting Instructions for Army Material
(F) TO 35-1-3	Corrosion Prevention, Painting, and Marking of USAF Support Equipment
(F) TO 38-1-23	Inspection and Installation of Spark Arrestors and Exhaust Purifiers on Non-Aircraft

A-6. FIELD MANUALS

FM 21-11	First Aid for Soldiers
FM 20-31	Electric Power Generation in the Field
FM 3-3	NBC Contamination Avoidance
FM 3-5	NBC Decontamination
FM 3-4	NBC Protection

A-7. MISCELLANEOUS PUBLICATIONS

CTA 50-970	Expendable Items (Except: Medical, Class V, Repair Parts and Heraldic Items)
CTA 8-100	Accountable Items (Except: Medical, Class V, Repair Parts and heraldic Items)
MIL-HDBK-729	Corrosion and Corrosion Prevention Metals
ASME-Y14.38M	Abbreviations For Use on Drawings, and in Specifications, Standards and Technical Documents
MIL-STD-129	Marking for Shipment and Storage
ASTM D 3951-98	Packaging, Commercial

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. THE ARMY MAINTENANCE SYSTEM

a. This introduction (Section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (operator/crew) and O (organizational) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

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 and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

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

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

B-2. MAINTENANCE FUNCTIONS - Continued

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

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

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

g. 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.

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

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

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

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II

a. Column (1) - Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules within 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 Function. Column 3 lists the functions to be performed on the item listed in column 2.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II - Continued

d. Column (4) - Maintenance Level. Column 4 specifies, by the listing 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 that maintenance function at the indicated level of maintenance. If the number or complexity of 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 and typical field operating conditions. This time includes preparation time, (including 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 function authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C - Operator/Crew (Unit Level Maintenance)
O - Organizational (Unit Level Maintenance)
F - Direct Support
H - General Support
D - Depot

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

f. Column (6) - Remarks. Column 6 identifies remarks defined in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III

a. Column (1) - Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, column 5.

b. Column (2) - Nomenclature. This column lists the name and nomenclature of the tools and test equipment required to perform the maintenance function.

c. Column (3) - Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

d. Column (4) - National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Column (5) - Tool Number. This column lists the manufacturer's part number of the tool followed by the Contractor and Government Entity (CAGE) code (five digit) in parenthesis.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV

a. Column (1) - Reference Code. This code refers to the appropriate item in Section II, Column 6 of the MAC.

b. Column (2) - Remarks. This column provides the required explanatory information necessary to clarify items appearing in Section II of the MAC.

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot		
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Tools and Equipment Ref Code	Remarks Code
00	GENERATOR SET, 2 kW (MEP-531A AND MEP-501A)	INSPECT TEST ADJUST REPAIR	.1	.1 .3 .3 1.0	.1 .5 .5 1.0			 5 1,2,3,4 1,2,3,4	A
01	FRAME ASSEMBLY (MEP-531A AND MEP-501A)	INSPECT REPAIR REPLACE	.1	.1 .1	.1 .1 1.5			 1,4 3	B
02	FUEL SYSTEM ASSY (MEP-531A AND MEP-501A)	INSPECT ADJUST REPAIR	.1	.1 .2 .2				 1 1	
0201	FUEL TANK ASSY	INSPECT REPAIR REPLACE	.1	.1 .2 .3				 1 1	
0202	FUEL FILTER ASSY	INSPECT REPAIR REPLACE	.1	.1 .1 .2				 1 1	
03	ENGINE/ALTERNATOR ASSEMBLY (MEP-531A AND MEP-501A)	INSPECT REPAIR REPLACE	.1	.1 .2	 1.0 1.5			 1,2,3,4 3,4	C
0301	ENGINE, DIESEL, MODIFIED	INSPECT REPAIR	.1	.1 .2	 1.0			1,2,3,4	
030101	ENGINE, DIESEL	INSPECT REPAIR REPLACE	.1	.1 .5	 3.0 1.0			 1,2,3,4 3,4,6,7	D
03010101	CYLINDER BLOCK INSTALLATION	INSPECT REPAIR		.1 .2	.1 2.0			 1,2,3,4	E

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A (continued)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment Ref Code	Remarks Code
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D		
03010102	CYLINDER HEAD INSTALLATION	INSPECT ADJUST REPAIR REPLACE		.1 .3	.1 2.0 2.5			 1 3,4 3,4	F
03010103	AIR CLEANER/ MUFFLER INST	INSPECT REPAIR		.1 .3				1	
03010104	CAM/CRANK/BALANCE INSTALLATION	REPAIR REPLACE			1.0 1.0			3,4 3,4	
0301010401	FLYWHEEL AND RING GEAR ASSEMBLY	REPAIR REPLACE			1.5 1.5			3,4 3,4,6,7	
03010105	PISTON AND ROD ASSEMBLY	REPAIR REPLACE			1.0 1.5			3,4 3,4	
03010106	LUBE OIL PUMP AND GOVERNOR	INSPECT REPAIR		.1 .2	.1 1.0			 1,2,3,4	G
0301010601	REGULATOR BRACKET ASSEMBLY	INSPECT REPAIR REPLACE	.1	.1 .2 .2				 1,2 1,2	H
03010107	COOLING/STARTING INSTALLATION	INSPECT REPAIR	.1	.1 .3	 .1			 1,3	
03010108	FUEL INJECTION PUMP/VALVE	INSPECT ADJUST REPAIR		.1	.1 .2 .2			 1	

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A (continued)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment Ref Code	(6) Remarks Code
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
0301010801	FUEL INJECTION PUMP	INSPECT ADJUST REPLACE		.1	.1 .2 .2			3 3,4	
0301010802	FUEL INJECTOR ASSY	INSPECT REPLACE		.1 .2	.1			3,4	
03010109	STARTING MOTOR AND DYNAMO	INSPECT REPAIR		.1	.1 .2			3,4	
0301010901	STARTING MOTOR	INSPECT TEST REPLACE		.1 .2 .2	.1 .2 1.0			4,5 1,2,3,4	I
0301010902	DYNAMO ASSEMBLY	TEST REPLACE			.1 .3			4 3,4	
0302	ALTERNATOR ASSY, AC(MEP-531A)	INSPECT TEST REPAIR REPLACE		.5 .5	.1 .5 2.0 1.0			1 4 1,2,3,4 3,4	J
0303	ALTERNATOR ASSY, DC (MEP-501A)	INSPECT TEST REPAIR REPLACE		.1	.1 .5 2.0 1.0			1 4 3,4 3,4	
04	CONTROL PANEL ASSY (MEP-531A AND MEP-501A)	INSPECT TEST REPAIR REPLACE	.1	.1 .2 .2 .2	.1 .2 .3			5 1,2,3,4 1	K

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A (continued)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot		
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Tools and Equipment Ref Code	Remarks Code
0401	PANEL CONSTRUCTION	INSPECT REPAIR		.1 .2				 1,2	
0402	POTENTIOMETER, VOLTAGE ADJUST	INSPECT TEST REPAIR REPLACE		.1 .2 .2 .2				 5 1,2 1,2	
0403	GENERATOR CONTROL UNIT	INSPECT TEST REPLACE		.1	.1 .2 .2			 4 3	
0404	VOLTAGE REGULATOR ASSEMBLY (MEP-531A)	INSPECT TEST REPLACE		.1	.1 .2 .3			 4 3	
0405	VOLTAGE REGULATOR ASSEMBLY (MEP-501A)	INSPECT TEST REPLACE		.1	.1 .2 .3			 4 3	
0406	DISCHARGE VARISTOR ASSEMBLY	INSPECT TEST REPLACE		.1 .2 .2				 5 1	
0407	LOW OIL PRESSURE SHUTDOWN SOLENOID ASSEMBLY	INSPECT TEST REPAIR REPLACE		.1 .2 .2 .5				 5 1,2 2	

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A (continued)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment Ref Code	Remarks Code
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D		
0408	WIRING HARNESS, CONTROL PANEL (ENGINE)	INSPECT TEST REPAIR REPLACE		.1 .3 .2 .3				5 1,2 1	
0409	WIRING HARNESS, CONTROL PANEL (ALTERNATOR)	INSPECT TEST REPAIR REPLACE		.1 .3 .2 .3				5 1,2 1	
0410	FLYWHEEL DIODE ASSY CIRCUIT BREAKER (MEP-531A)	INSPECT TEST REPLACE		.1 .2 .2				5 1,2 1	
0411	FLYWHEEL DIODE ASSEMBLY TB1-1 TO S2-S	INSPECT TEST REPAIR REPLACE		.1 .2 .2 .2				5 1,2 1	
0412	ELECTRICAL LEADS	INSPECT TEST REPAIR REPLACE		.1 .2 .2 .2				5 1,2 1	
0413	CAPACITOR ASSEMBLY (MEP-501A)	INSPECT TEST REPAIR REPLACE		.1 .1 .2 .1				5 1,2 1	
0414	TRANSIENT SUPPRESSOR (MEP-501A)	INSPECT TEST REPAIR REPLACE		.1 .1 .2 .2				5 1,2 1	

Section II. MAINTENANCE ALLOCATION CHART FOR MEP-501A AND MEP-531A (continued)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot		
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Tools and Equipment Ref Code	Remarks Code
0415	EMI FILTER (MEP-531A)	INSPECT TEST REPLACE		.1 .2 .2				 5 1	L
05	WIRING HARNESS, ENGINE (MEP-531A AND MEP-501A)	INSPECT TEST REPAIR REPLACE		.1 .2 .3 .3				 5 1,2 1	
06	CABLE ASSEMBLY, ENGINE SHUTDOWN (MEP-531A AND MEP-501A)	INSPECT REPAIR REPLACE		.1 .2 .2				 1 1	
07	LEAD, PREHEATER (MEP-531A AND MEP-501A)	INSPECT TEST REPAIR REPLACE		.1 .2 .2 .2				 5 1,2 1	
08	WIRING HARNESS, ALTERNATOR (MEP-501A)	INSPECT TEST REPAIR REPLACE		.1 .2 .3 .3				 5 1,2 1	
09	BULK MATERIALS								

Section III. TOOLS AND TEST EQUIPMENT REQUIREMENTS FOR MEP-501A AND MEP-531A

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	O	TOOL KIT, GENERAL MECHANIC'S AUTOMOTIVE	5180-00-177-7033	SC5180-90-CL-N26
2	O	SHOP EQUIPMENT, AUTOMOTIVE MAINT AND REPAIR, ORG LEVEL COMMON NO. 1	4910-00-754-0654	SC4910-95-CL-A74
3	F	TOOL KIT, MASTER MECHANIC'S	5180-00-699-5273	SC5180-90-CL-N05
4	F	SHOP EQUIPMENT, AUTOMOTIVE MAINT AND REPAIR, FIELD, BASIC, LESS POWER	4910-00-754-0705	SC4940-95-CL-A31
5	O	MULTIMETER, DIGITAL	6625-01-139-2512	N60449
6	F	FLYWHEEL TIGHTENING HANDLE	5120-01-415-8266	114250-92101 (0AK42)
7	F	FLYWHEEL EXTRACTOR	5120-01-416-0424	114250-92130 (0AK42)

Section IV. REMARKS

REMARKS CODE	REMARKS
A	There are two generator set models covered by this Maintenance Allocation Chart. MEP-501A is a 2 kW, 28 VDC Military Tactical Generator Set. MEP-531A is a 2 kW, 120 VAC Military Tactical Generator Set.
B	Repair of the frame at the Organizational level limited to replacement of damaged threaded inserts.
C	Repair of the engine/alternator at the Organizational level is limited to the replacement of ground straps, wiring, and data plates, etc.
D	Repair of the diesel engine at the Organizational level is limited to the replacement of the governor regulator bracket, recoil starter, engine oil strainer, valve cover, and starter (MEP-501A).
E	Repair of the cylinder block installation at the Organizational level is limited to the replacement of oil fill cap and oil drain plugs.
F	Adjustment of the cylinder head installation consists of checking torque on cylinder head nuts and valve adjustment.
G	Repair of the lube oil pump and governor at the Organizational level is limited to the replacement of the regulator bracket and external lever.
H	Repair of the regulator bracket is limited to the replacement of a spring.
I	Replace starter motor at Direct Support for MEP-531A since the alternator must also be removed.
J	Repair of the alternator at the Organizational level is limited to the replacement of the brushes (MEP-531A).
K	All control panel repairs can be performed at the Organizational level except for the replacement of the governor control unit and the voltage regulator.
L	EMI filter installed in MEP-531A only.

APPENDIX C
COMPONENTS OF END ITEM (COEI)
AND
BASIC ISSUE ITEMS LISTS (BIIL)

Section I. INTRODUCTION

C-1. SCOPE

This appendix lists components of end item and basic issue items for 2 kW Military Tactical Generator Sets, MEP-531A and MEP-501A to help you inventory items required for safe and efficient operation.

C-2. GENERAL

The components of end item and basic issue items lists are divided into the following sections.

C-2.1 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 and 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.

C-2.2 Section III. Basic Issue Items. These are the minimum essential items required to place the generator set in operation, to operate it, and perform emergency repairs. Although shipped separately, packaged BII must be with the generator set 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.

C-3.1 Column (1) - Illustration Number (Illus No.). This column indicates the number of the illustration in which the item is shown.

C-3.2 Column (2) - National Stock Number. Indicates the national stock number assigned to the item and will be used for requisitioning purposes.

C-3. EXPLANATION OF COLUMNS - Continued

C-3.3 Column (3) – Description, (CAGEC) and Part Number. Indicates the 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 (CAGE) Code (in parentheses) followed by the part number.

C-3.4 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).

C-3.5 Column (5) - Quantity Required (Qty Reqd). Indicates the quantity of the item authorized to be used with/on the equipment.

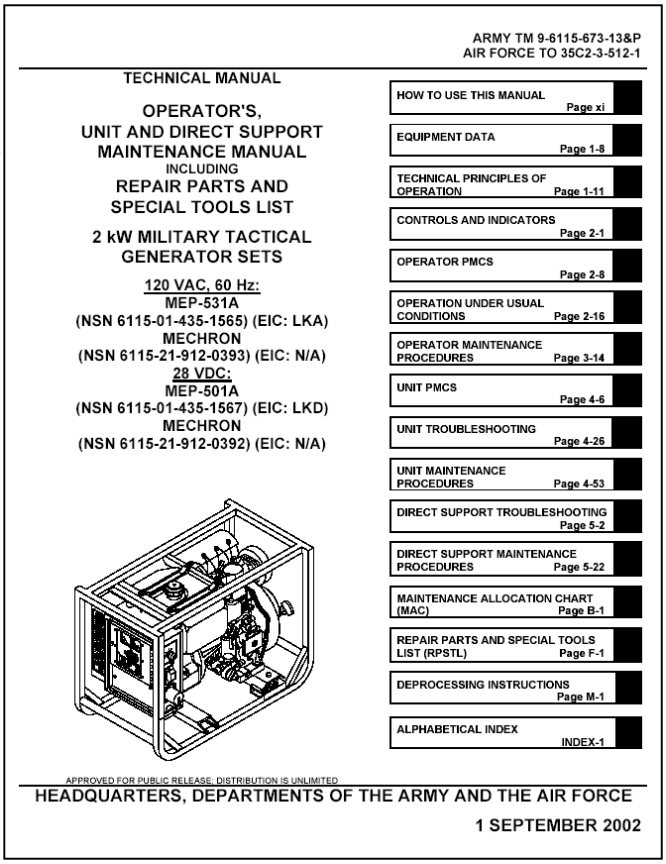
Section II. COMPONENTS OF END ITEM

2 kW Military Tactical Generator Sets

NONE

Section III. BASIC ISSUE ITEMS

1



ARMY TM 9-6115-673-13&P
AIR FORCE TO 35C2-3-512-1

TECHNICAL MANUAL

OPERATOR'S,
UNIT AND DIRECT SUPPORT
MAINTENANCE MANUAL
INCLUDING
REPAIR PARTS AND
SPECIAL TOOLS LIST

2 kW MILITARY TACTICAL
GENERATOR SETS

120 VAC, 60 Hz:
MEP-531A
(NSN 6115-01-435-1565) (EIC: LKA)
MECHRON
(NSN 6115-21-912-0393) (EIC: N/A)
28 VDC:
MEP-501A
(NSN 6115-01-435-1567) (EIC: LKD)
MECHRON
(NSN 6115-21-912-0392) (EIC: N/A)

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HEADQUARTERS, DEPARTMENTS OF THE ARMY AND THE AIR FORCE

1 SEPTEMBER 2002

2

(1) Illus. No.	(2) National Stock Number	(3) Description (CAGEC) and Part Number	(4) U/M	(5) Qty Reqd
1		Technical Manual TM 9-6115-673-13&P	EA	1
2	5975-00-878-3791	Ground Rod, Electrical Equipment	EA	1

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APPENDIX D
ADDITIONAL AUTHORIZATION LIST
Section I. INTRODUCTION

D-1. SCOPE

This appendix lists additional items you are authorized for the support of the 2 kW Military Tactical Generator Sets MEP-531A and MEP-501A.

D-2. GENERAL

The list identifies items that do not have to accompany the generator set and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTING

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

a. Column (1) - National Stock Number

Indicates the national stock number assigned to the item and will be used for requisitioning purposes.

b. Column (2) - Description [Description (CAGE) and Part Number]

Indicates the national 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 (CAGE) Code (in parentheses) followed by the part number.

c. Column (3) - 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).

d. Column (4) - Quantity Required (Qty Reqd)

Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. ADDITIONAL AUTHORIZATION LIST - 2 kW Military Tactical Generator Sets

(1) National Stock Number	(2) Description (CAGEC) and Part Number	Usable On Code	(3) U/M	(4) Qty Reqd
2910-00-066-1235	Adapter, Container (97403) 13211E7541		EA	1
7240-00-222-3088	Can, Gasoline, Military (80372) 42-D-1280		EA	1
4210-00-270-4512	Extinguisher, Fire, Carbon Dioxide (81348) O-E-910		EA	1
6545-00-912-1200	Kit, First Aid		EA	1
5120-01-013-1676	Slide Hammer, Ground (97403) 13226E7741		EA	1
7240-00-177-6154	Spout, Can, Flexible (81349) A-A-59592		EA	1

APPENDIX E

EXPENDABLE AND DURABLE ITEMS LIST

Section I. INTRODUCTION

E-1. SCOPE

This appendix lists the expendable supplies and materials you will need to operate and maintain the generator set. These items are authorized to you by CTA 50-970, Expendable Items (except Medical, Class V, Repair Parts and Heraldic 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 cleaning compound, Item 1, Appendix E).

b. Column (2) – Level. This column identifies the lowest level of maintenance that requires the listed item. One of the following codes appears in column (2).

C - Operator/Crew Maintenance
O - Organizational/Unit Maintenance
F - Direct 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 Federal item name and, if required, a description to identify the item. The last line for each item indicates the part number where applicable.

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

Section II. EXPENDABLE AND DURABLE ITEMS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	O	8040-00-273-8697	Adhesive, C-111	BT
2	O	8040-00-181-8374	Adhesive, Contact R-27780	PT
3	O	8020-00-721-9657	Brush, Paint, 2-in. wide	EA
4	O	7920-01-338-3329	Cloth, Cleaning TX-1250	EA
5	O	- - -	Compound, Corrosion Preventive	
6	O	8030-01-025-1692	Compound, Locking, LOCTITE 242	BT
7	O	- - -	Compound, Retaining 62040	BT
8	F	- - -	Dye Penetrant	BT
9	O	8040-01-137-8418	Epoxy, Two-Part, EA9330	KT
10	F	5210-00-640-6178	Gage, Bearing Clear, PLASTIGAGEPR1	BX
11	F	9150-00-663-1770	Grease, General Purpose, 630AA, 6 LB Can	LB
12	F	- - -	Isopropyl Alcohol, TT-I-735A	OZ
13	O	- - -	Lubricating Oil, MIL-PRF-46167 OW30 [-40° to 0°F (-40° to -18°C)]	QT
14	O	9150-00-152-4117	Lubricating Oil, MIL-PRF-2104 15W40 [0° to 120°F (-18° to 49°C)]	QT
15	O	8010-01-229-7546	Paint, Green (Color #383) MIL-C-53039	QT
16	O	5330-00-543-3600	Paper, Abrasive, ALOXGRIT 80	SH
17	F	- - -	Paper, Abrasive, 500-600 Grit	SH
18	F	- - -	Sealant, M6389 (Teflon thread tape)	OZ
19	O	- - -	Solvent, Cleaning, Approved	OZ
20	O	- - -	Thread Sealant, Permatex 2B	CN
21	F	- - -	Wire, Steel 0.019 in.	FT
22	O	- - -	Compound, Insulating, Electrical, Dow Corning 4	BT

APPENDIX F

UNIT AND DIRECT SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

SECTION I

INTRODUCTION

F-1. SCOPE

This manual lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of unit, direct support and general support maintenance with depot maintenance of the 2 kW Military Tactical Generator Sets. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

F-2. GENERAL

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

a. Section II. Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. This list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending item number sequence, with the parts in each group listed in ascending item number sequence. Figure numbers are listed directly beneath the group header. Bulk materials are listed in item name sequence. Repair parts kits are listed separately in their own functional group within Section II. Repair parts for reparable special tools are also listed in this section. Items listed are shown on the associated illustration.

b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL as indicated by Basis of Issue (BOI) information [column (5)] for the performance of maintenance.

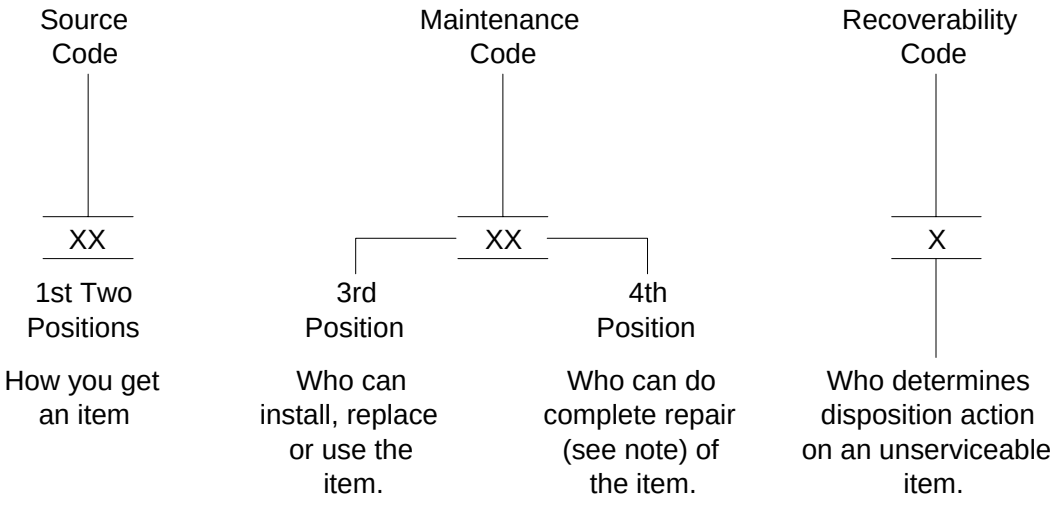
c. Section IV. Cross-Reference Indexes. A list, in National Item Identification Number (NIIN) sequence, of all National Stock Numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National Stock Numbers and part numbers are cross-referenced to each illustration figure and item number appearance. The figure number and item number index lists figure and item numbers in numeric sequence and cross-references National Stock Number, Commercial and Government Entity Code, and part numbers.

F-3. EXPLANATION OF COLUMNS (Sections II and III)

a. Item No. [Column (1)]. Indicates the number used to identify items called out in the illustrations.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

b. SMR Code [Column (2)]. The Source, Maintenance, and Recoverability (SMR) code is a five-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



NOTE

Complete repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

Code	Explanation
PA PB PC PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the third position of the SMR code. **NOTE** Items coded PC are subject to deterioration.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

Code	Explanation
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MO - Made at org/AVUM category MF - Made at DS/AVIM category MH - Made at GS category ML - Made at Specialized Repair Activity (SRA) MD - Made at Depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the description and usable on code (UOC) column and listed in the Bulk Material group of the repair parts list. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at a higher category, order the item from the higher category of maintenance.
AO - Assembled by org/AVUM category AF - Assembled by DS/AVIM category AH - Assembled by GS category AL - Assembled by SRA AD - Assembled by Depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the category of maintenance indicated by the source code. If the third position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher category, order the item from the higher category of maintenance.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

Code	Explanation
XA -	Do not requisition an "XA" coded item. Order its next higher assembly.
XB -	If an "XB" item is not available from salvage, order it using the CAGEC and part number given.
XC -	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD -	Item is not stocked. Order an "XD" coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

(2) Maintenance Code. Maintenance codes tell you the category of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR Code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following categories of maintenance.

Code	Application/Explanation
C -	Crew or operator maintenance done within organization or aviation unit maintenance.
O -	Organizational or aviation unit category can remove, replace, and use the item.
F -	Direct support or aviation intermediate category can remove, replace, and use the item.
H -	General support category can remove, replace, and use the item.
L -	Specialized repair activity can remove, replace, and use the item.
D -	Depot category can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions). This position will contain one of the following maintenance codes.

NOTE

Some limited repair may be done on the item at a lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

Code	Explanation
O -	Organizational or aviation unit is the lowest category that can do complete repair of the item.
F -	Direct support or aviation intermediate is the lowest category that can do complete repair of the item.
H -	General support is the lowest category that can do complete repair of the item.
L -	Specialized repair activity (designate the specialized repair activity) is the lowest category that can do complete repair of the item.
D -	Depot is the lowest category that can do complete repair of the item.
Z -	Non-repairable. No repair is authorized.
B -	No repair is authorized. (No parts or special tools are assigned for the maintenance of a "B" coded item). However, the item may be reconditioned by adjusting, lubricating, etc., at the user category.

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

Recoverability Code	Application/Explanation
Z -	Non-repairable item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in third position of SMR Code.
O -	Repairable item. When uneconomically repairable, condemn and dispose of the item at organizational or aviation unit category.
F -	Repairable item. When uneconomically repairable, condemn and dispose of the item at the direct support or aviation intermediate category.
H -	Repairable item. When uneconomically repairable, condemn and dispose of the item at the general support category.
D -	Repairable item. When beyond lower category repair capability, return to depot. Condemnation and disposal of item not authorized below depot category.
L -	Repairable item. Condemnation and disposal not authorized below specialized repair activity (SRA).
A -	Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. CAGEC [Column (3)]. The Commercial and Government Entity Code (CAGEC) is a five digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

d. Part Number [Column (4)]. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the part ordered.

e. Description and Usable on Code (UOC) [Column (5)]. This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) The physical security classification of the item is indicated by the parenthetical entry, e.g. Phy Sec C1 (C) - Confidential, Phy Sec C1 (S) -Secret, Phy Sec C1 (T) - Top Secret.

(3) Items that are included in kits and sets are listed below the name of the kit or set.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(5) Part numbers for bulk materials are referenced in this column in the line item entry for the item to be manufactured/fabricated.

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line of the description (before UOC).

(7) UOC, when applicable (see paragraph 5, Special Information).

(8) In the Special Tools section, the Basis of Issue (BOI) appears as the last line in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the BOI, the total authorization is increased proportionately.

(9) The statement "END OF FIGURE" appears just below the last item description in Column (5) for a given figure in Sections II and III.

F-3. EXPLANATION OF COLUMNS (Sections II and III) - Continued

f. QTY [Column (6)]. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

g. USMC Qty Per Equip [Column (7)]. Indicates the quantity of the item used in the generator set (end item). A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable.

F-4. EXPLANATION OF COLUMNS (Section IV)

a. National Stock Number (NSN) Index.

(1) Stock number column. This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN. When requisitioning items use the complete NSN (13 digits) sequence.

(2) Fig. column. This column lists the number of the figure where the item is identified/located. The illustrations are in numerical sequence in Sections II and III.

(3) Item column. The item number identifies the item associated with the figure listed in the adjacent Fig. column. This item is also identified by the NSN listed on the same line.

b. Part Number Index. Part numbers in this index are listed by part number in ascending alphanumeric sequence.

(1) CAGEC column. This column lists the Commercial and Government Entity Code (CAGEC).

(2) Part Number column. This column indicates the part number assigned to the item.

(3) Stock Number column. This column lists the National Stock Number for the associated part number and manufacturer identified in the part number and CAGEC columns to the left.

(4) Fig. column. This column lists the number of the figure where the item is identified/located in Sections II and III.

(5) Item column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

F-4. EXPLANATION OF COLUMNS (Section IV) - Continued

c. Figure and Item Number Index.

(1) Fig. column. This column lists the number of the figure where the item is identified/located in Sections II and III.

(2) Item column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) Stock number column. This column lists the National Stock Number for the item.

(4) CAGEC column. The Commercial and Government Entity Code (CAGEC) is a five digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

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

F-5. SPECIAL INFORMATION

National Stock Numbers. National Stock Numbers (NSN's) that are missing from P source coded items have been applied for and will be added to this TM by future change/revision when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, US Army Communications - Electronics Command and Fort Monmouth, Fort Monmouth, New Jersey, 07703 for the part required to support your equipment.

F-6. HOW TO LOCATE REPAIR PARTS

a. When National Stock Number or part number is not known.

(1) First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the assembly group or subassembly group to which the item belongs.

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

(4) Fourth. Refer to the Repair Parts List for the figure to find the part number for the item number noted on the figure.

(5) Fifth. Refer to the Part Number Index to find the NSN, if assigned.

F-6. HOW TO LOCATE REPAIR PARTS - Continued

b. When National Stock Number or part number is known.

(1) First. Using the index of National Stock Numbers and part numbers, find the pertinent National Stock Number or part number. The NSN index is in National Item Identification Number (NIIN) sequence [see paragraph F-4.a(1)]. The part numbers in the part number index are listed in ascending alphanumeric sequence (see paragraph F-4.b(2)). Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

(2) Second. After finding the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

F-7. ABBREVIATIONS

Not applicable.

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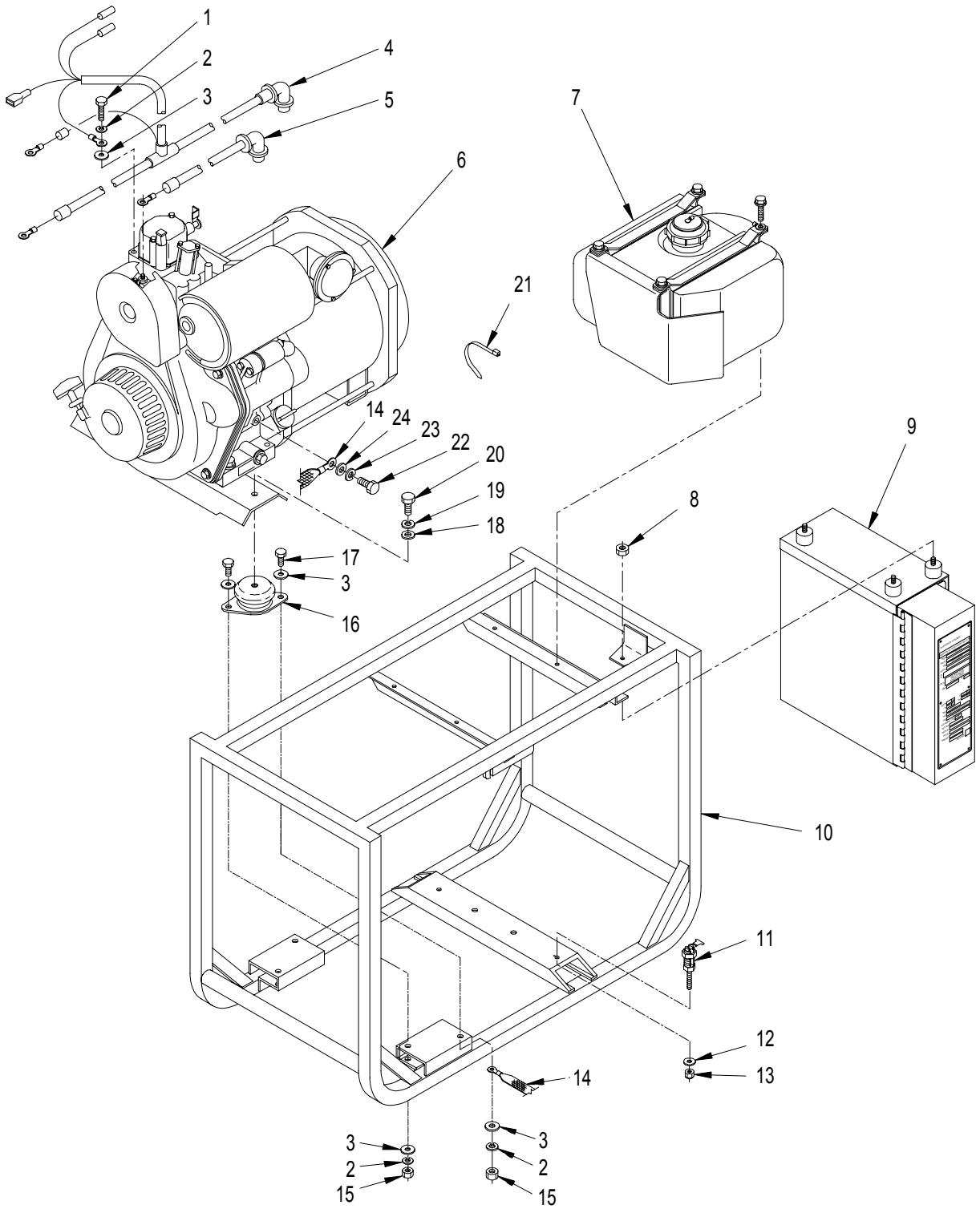

Figure F-1. Generator Set Assembly, 2kW (MEP531A/501A) (Sheet 1 of 2)

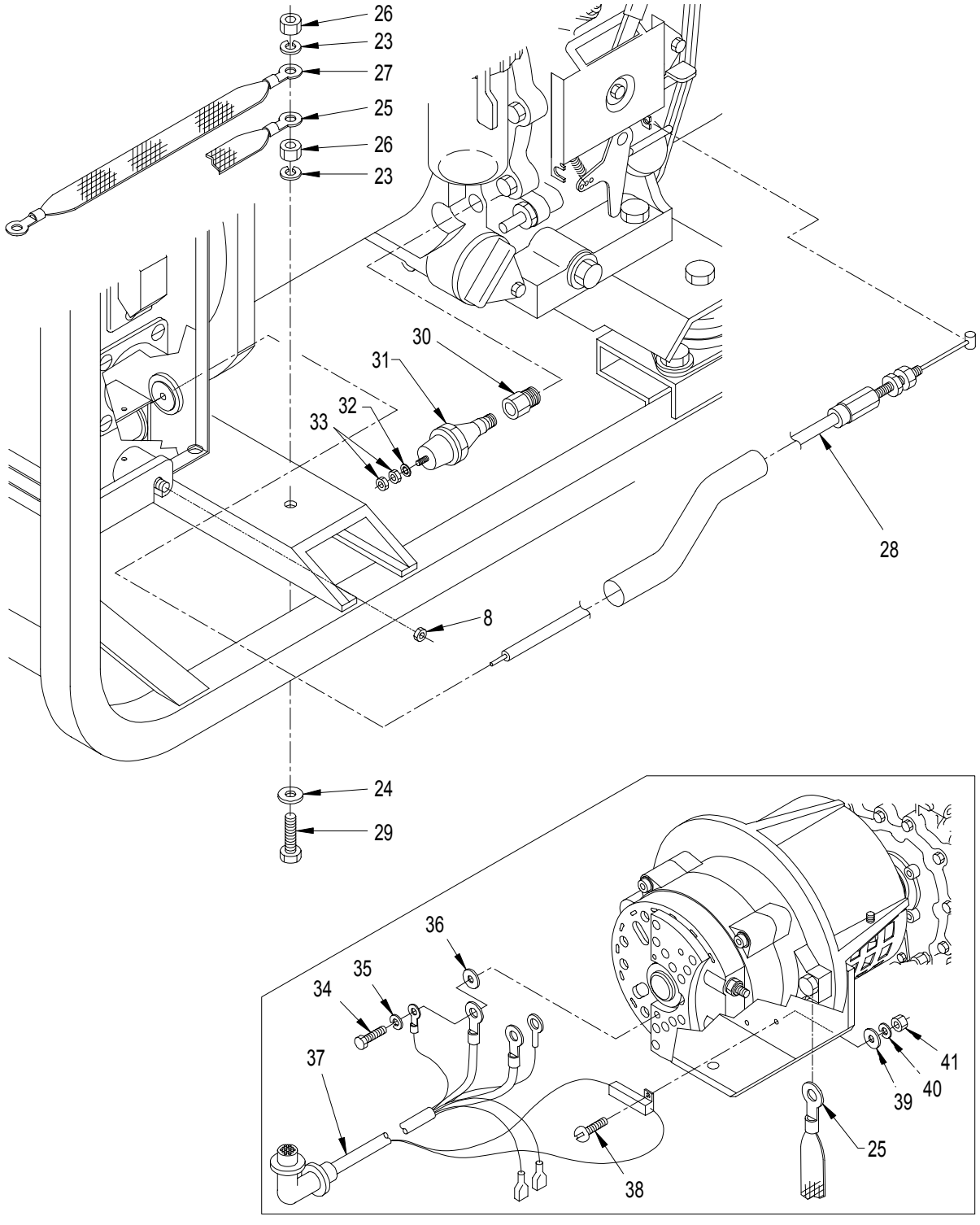

Figure F-1. Generator Set Assembly, 2kW (MEP-531A/501A) (Sheet 2 of 2)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 00 - GENERATOR SET ASSEMBLY, 2kW (MEP-531A/501A)		
							FIG. F-1 GENERATOR SET ASSEMBLY, 2kW (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B08016N	BOLT, MACHINE	1	2
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER, LOCK-SPRING (MEP-531A)	7	14
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER, LOCK-SPRING (MEP-501A)	7	12
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH080R	WASHER, PLAIN (MEP-531A)	13	19
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH080R	WASHER, PLAIN (MEP-501A)	13	17
4	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8029	WIRING HARNESS, ENG Breakdown, See Fig. F-33	1	1
5	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8141	LEAD, ELECTRICAL Breakdown, See Fig. F-35	1	1
6	XCFFF	XCFFF	XCFFF	XCFFF	30554	95-8064	ENGINE/ALTERNATOR Breakdown, See Fig. F-6 (MEP-531A)	1	1
6	XCFFF	XCFFF	XCFFF	XCFFF	30554	95-8040	ENGINE/ALTERNATOR Breakdown, See Fig. F-7 (MEP-501A)	1	1
7	XCOOO	XCOOO	XCOOO	XCOOO	30554	95-8030	FUEL SYSTEM ASSEMBLY Breakdown, See Fig. F-3	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-040	NUT, SELF-LOCKING (MEP-531A)	4	10
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-040	NUT, SELF-LOCKING (MEP-501A)	4	8
9	XBOFF	XBOFF	XBOFF	XBOFF	30554	95-8005	CONTROL PANEL ASSY Breakdown, See Fig. F-22 (MEP-501A)	1	1
9	XBOFF	XBOFF	XBOFF	XBOFF	30554	95-8021	CONTROL PANEL ASSY Breakdown, See Fig. F-21(MEP-531A)	1	1
10	XBFFF	XBFFF	XBFFF	XBFFF	30554	95-8000	FRAME, GENERATOR Breakdown, See Fig. F-2	1	1
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	11530	588558-01	TERMINAL, STUD	1	1
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-14	WASHER, FLAT	1	1
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-058	NUT, SELF-LOCKING	1	1
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-2	STRAP, GROUND	1	1
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18241B080	NUT, PLAIN, HEXAGON (MEP-531A)	6	8
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18241B080	NUT, PLAIN, HEXAGON (MEP-501A)	6	6
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	39020	RA 40EMB SPECIAL	MOUNT, RESILIENT (MEP-531A)	2	3
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	39020	RA 40EMB SPECIAL	MOUNT, RESILIENT (MEP-501A)	3	3
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B08020N	SCREW, CAP, HEXAGON (MEP-531A)	4	6
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B08020N	SCREW, CAP, HEXAGON (MEP-501A)	6	6
18	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH100R	WASHER, FLAT (MEP-531A)	2	7
18	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH100R	WASHER, FLAT (MEP-501A)	3	7
19	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ100	WASHER, LOCK-SPRING (MEP-531A)	2	5
19	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ100	WASHER, LOCK-SPRING (MEP-501A)	3	5
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B10025NF	SCREW, CAP, HEXAGON (MEP-531A)	2	3
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B10025NF	SCREW, CAP, HEXAGON (MEP-501A)	3	3
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN,ELEC.	8	29
22	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B06014N	SCREW, HEX CAP	1	1
23	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ060	WASHER, LOCK-SPRING	3	9
24	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH060R	WASHER, PLAIN	2	10
25	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-3	STRAP, GROUND (MEP-531A)	1	1
25	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-5	STRAP, GROUND (MEP-501A)	1	1
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7)
									USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 00 - GENERATOR SET ASSEMBLY, 2kW (MEP-531A/501A)		
							FIG. F-1 GENERATOR SET ASSEMBLY, 2kW (MEP-531A/501A)		
26	XBOZZ	XBOZZ	XBOZZ	XBOZZ	56161	10501762	NUT,PLAIN, HEXAGON	2	3
27	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-4	STRAP, GROUND	1	1
28	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8082	CABLE ASSEMBLY, ENG. Breakdown, See Fig. F-34	1	1
29	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B06025N	SCREW, CAP, HEXAGON	1	1
30	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81343	2-2 130139C	COUPLING, PIPE	1	1
31	PAOZZ	PAOZZ	PAOZZ	PAOZZ	13445	8600-01	SWITCH, LOW OIL	1	1
32	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-100	WASHER, LOCK	1	1
33	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-8	NUT, PLAIN	2	13
34	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1821BH025F075N	SCREW, CAP HEX HEAD	1	1
35	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-44	WASHER, LOCK-SPRING (MEP-531A)	1	5
35	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-44	WASHER, LOCK-SPRING (MEP-501A)	1	3
36	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-2	WASHER, FLAT (MEP-531A)	1	5
36	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-2	WASHER, FLAT (MEP-501A)	1	3
37	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8028	WIRING HARNESS, ENG. Breakdown, See Fig. F-36 (MEP-501A)	1	1
38	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1250PIC	SCREW, MACHINE	2	2
39	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-23	WASHER, FLAT	2	10
40	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-70	WASHER, LOCK, FLAT	2	10
41	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-1	NUT, PLAIN	2	2
							END OF FIGURE		

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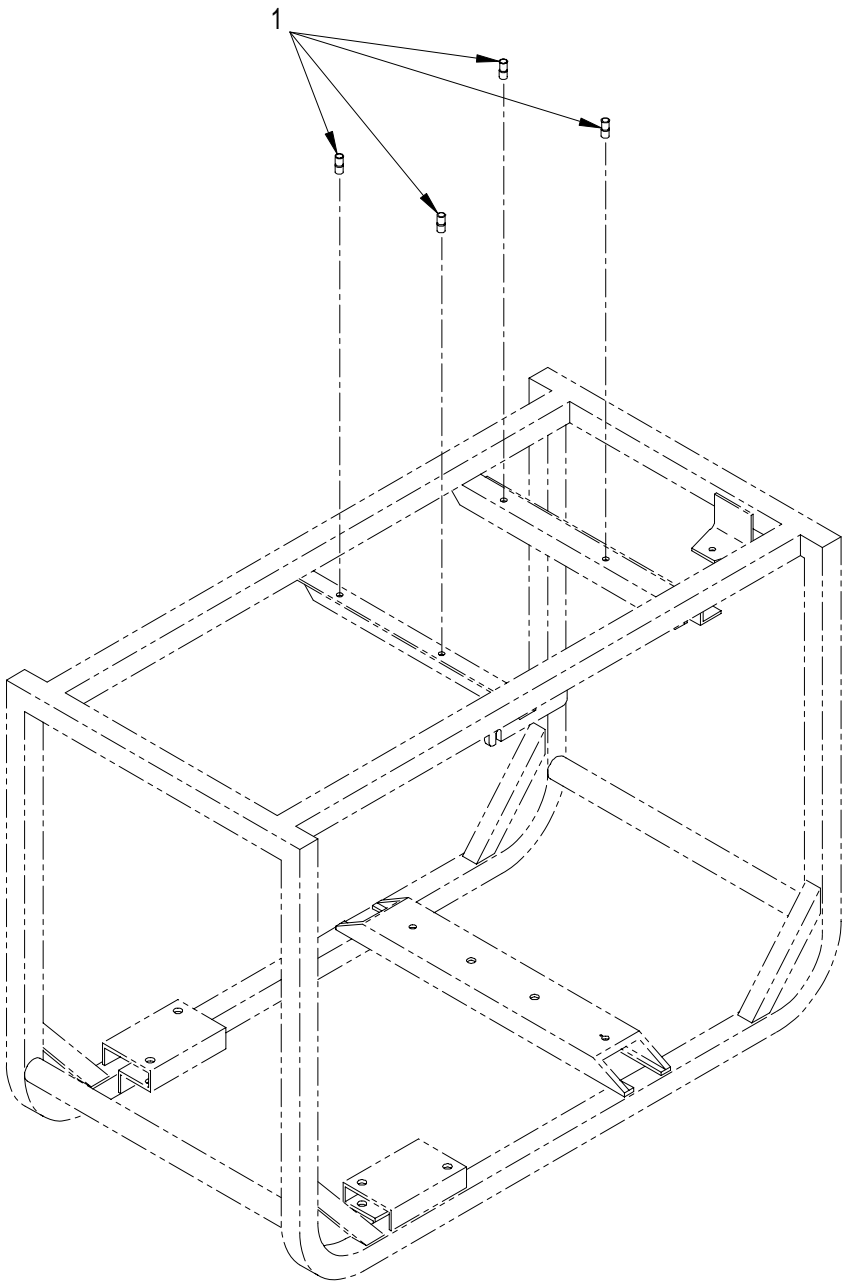

Figure F-2. Frame Assembly (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 01 - FRAME ASSEMBLY (MEP-531A/501A) FIG. F-2 FRAME ASSEMBLY (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	19738	9667-1018	INSERT, THREADED END OF FIGURE	4	4

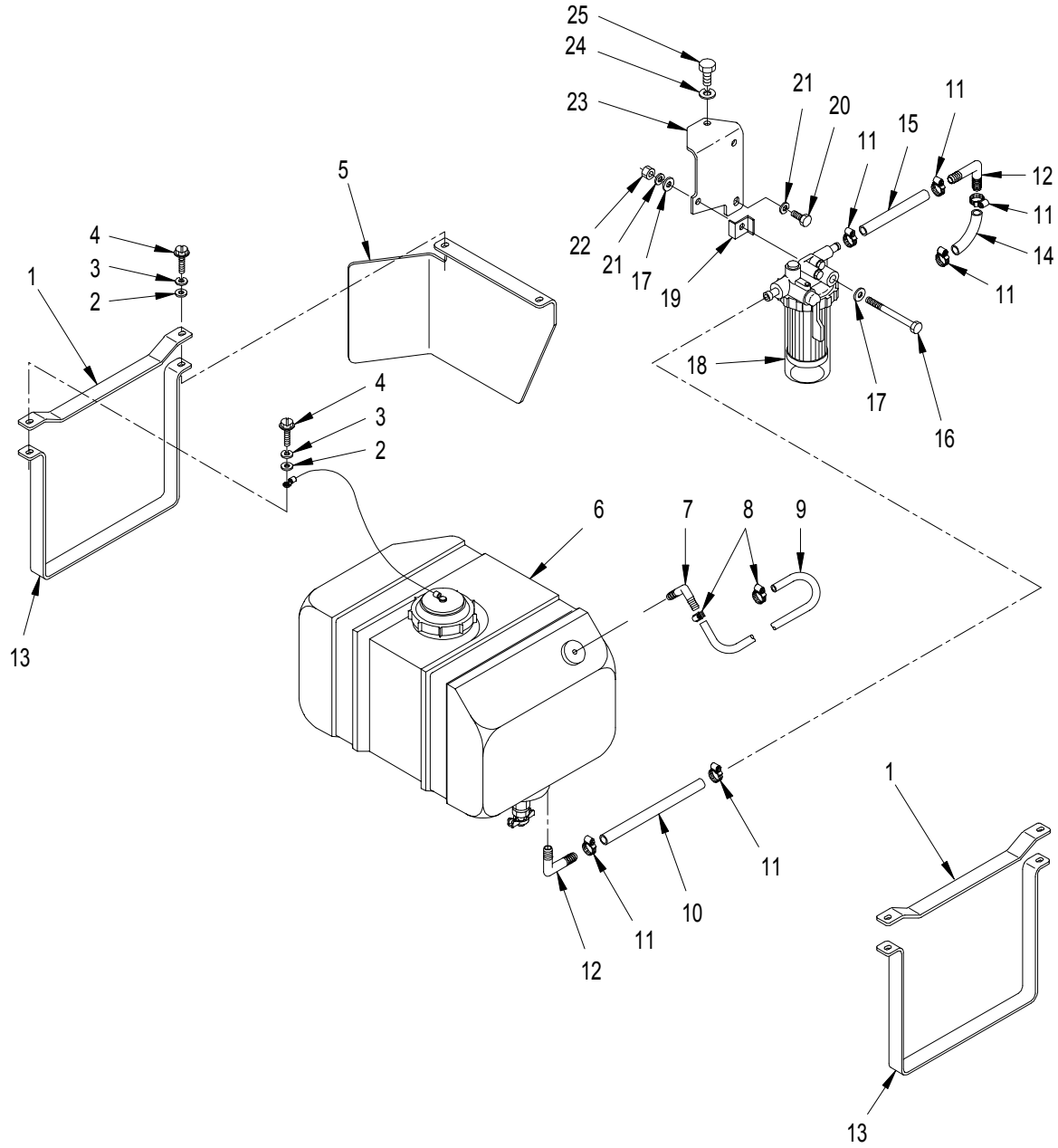

Figure F-3. Fuel System Assembly (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7)
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 02 - FUEL SYSTEM ASSEMBLY (MEP-531A/501A) FIG. F-3 FUEL SYSTEM ASSEMBLY (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8035	BRACKET, FUEL TANK	2	2
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-1	WASHER, FLAT	4	4
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-43	WASHER, LOCK-SPRING	4	4
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20260-25	SCREW, CAP, HEXAGON	4	4
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8039	GUARD, FUEL TANK	1	1
6	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8031	FUEL TANK ASSEMBLY Breakdown, See Fig. F-4	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98883	414 580 600	ELBOW, REDUCING	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81343	SAEJ1508	HOSE, CLAMP, TYPE M	2	2
9	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8030-27	TUBING, FLEXIBLE Make from AEM02012, Fig BULK, Item 3, 19-3/4 in. required.	1	1
10	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8030-25	TUBING, FLEXIBLE Make from AEM02022, Fig BULK, Item 2, 3-1/2 in. required.	1	1
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3S708	331-003	CLAMP, HOSE	6	6
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98883	414 650 200	ELBOW, HOSE FITTING	2	2
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8036	BRACKET, FUEL TANK	2	2
14	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8030-20	TUBING, FLEXIBLE Make from AEM02022, Fig BULK, Item 2, 2 in. required.	1	1
15	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8030-18	TUBING, FLEXIBLE Make from AEM02022, Fig BULK, Item 2, 3-11/16 in. required.	1	1
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B06070N	SCREW, CAP HEX HEAD	1	1
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH060R	WASHER, PLAIN	2	10
18	PAOOO	PAOOO	PAOOO	PAOOO	0AK42	114789-55500	FILTER, FUEL Assembly Breakdown, See Fig. F-5	1	1
19	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8038	WASHER, FUEL FILTER	1	1
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B06016N	SCREW, CAP HEXAGON	1	1
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZNO60	WASHER, LOCK-SPRING	2	2
22	XBOZZ	XBOZZ	XBOZZ	XBOZZ	56161	10501762	NUT, PLAIN, HEXAGON	1	3
23	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8037	BRACKET, FUEL FILTER	1	1
24	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER,LOCK-SPRING (MEP-531A)	1	14
24	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER,LOCK-SPRING (MEP-501A)	1	12
25	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B08016N	BOLT, MACHINE	1	2
							END OF FIGURE		

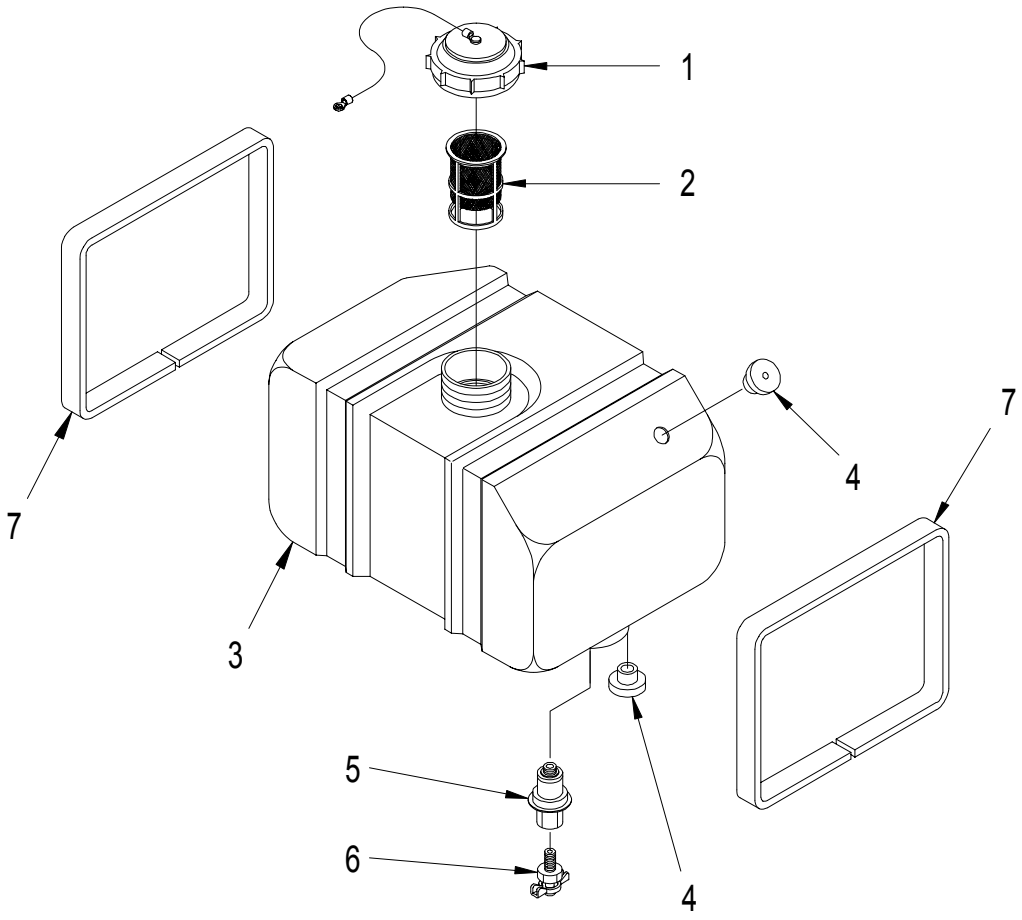

Figure F-4. Fuel Tank Assembly

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 02 – FUEL SYSTEM ASSEMBLY (MEP-531A/501A) FIG. F-4 FUEL TANK ASSEMBLY		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8033	FUEL TANK CAP ASSY	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-55100	FILTER, GAS	1	1
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8032	TANK, FUEL	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8137	BUSHING, RUBBER	2	2
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	59647	57558	ADAPTER, DRAIN, FUEL	1	1
6	PAOZZ	PAOZZ	PAOZZ	PAOZZ	04627	12878	COCK, DRAIN	1	1
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8031-4	RUBBER, CLOSED-CELL Make from ASTM D 1056, Fig BULK, Item 1, approx. 28 in. required.	2	2
							END OF FIGURE		

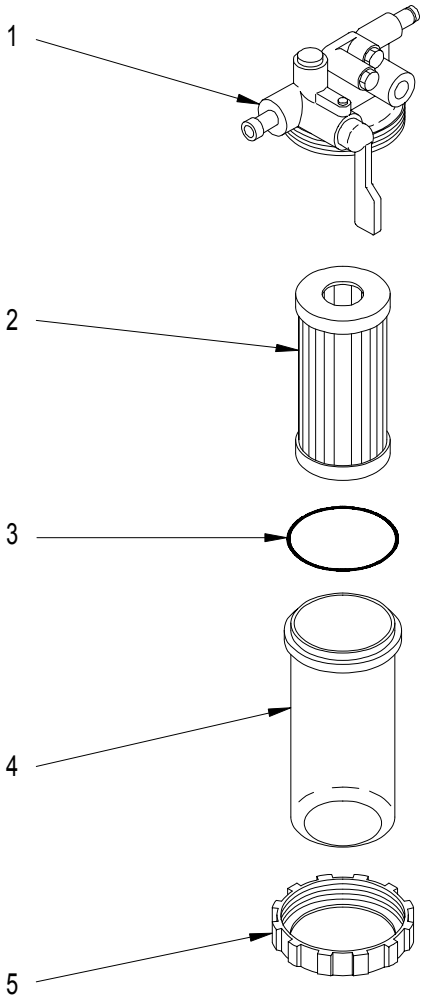

Figure F-5. Fuel Filter Assembly

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 02 - FUEL SYSTEM ASSEMBLY (MEP-531A/501A)		
							FIG. F-5 FUEL FILTER ASSEMBLY		
1	XAOZZ	XAOZZ	XAOZZ	XAOZZ	0AK42	HEAD-1	HEAD, FILTER	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-55510	FILTER ELEMENT	1	1
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	102103-55520	O-RING	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	124064-55510	BOWL, SEDIMENT	1	1
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	114250-55610	RETAINER	1	1
							END OF FIGURE		

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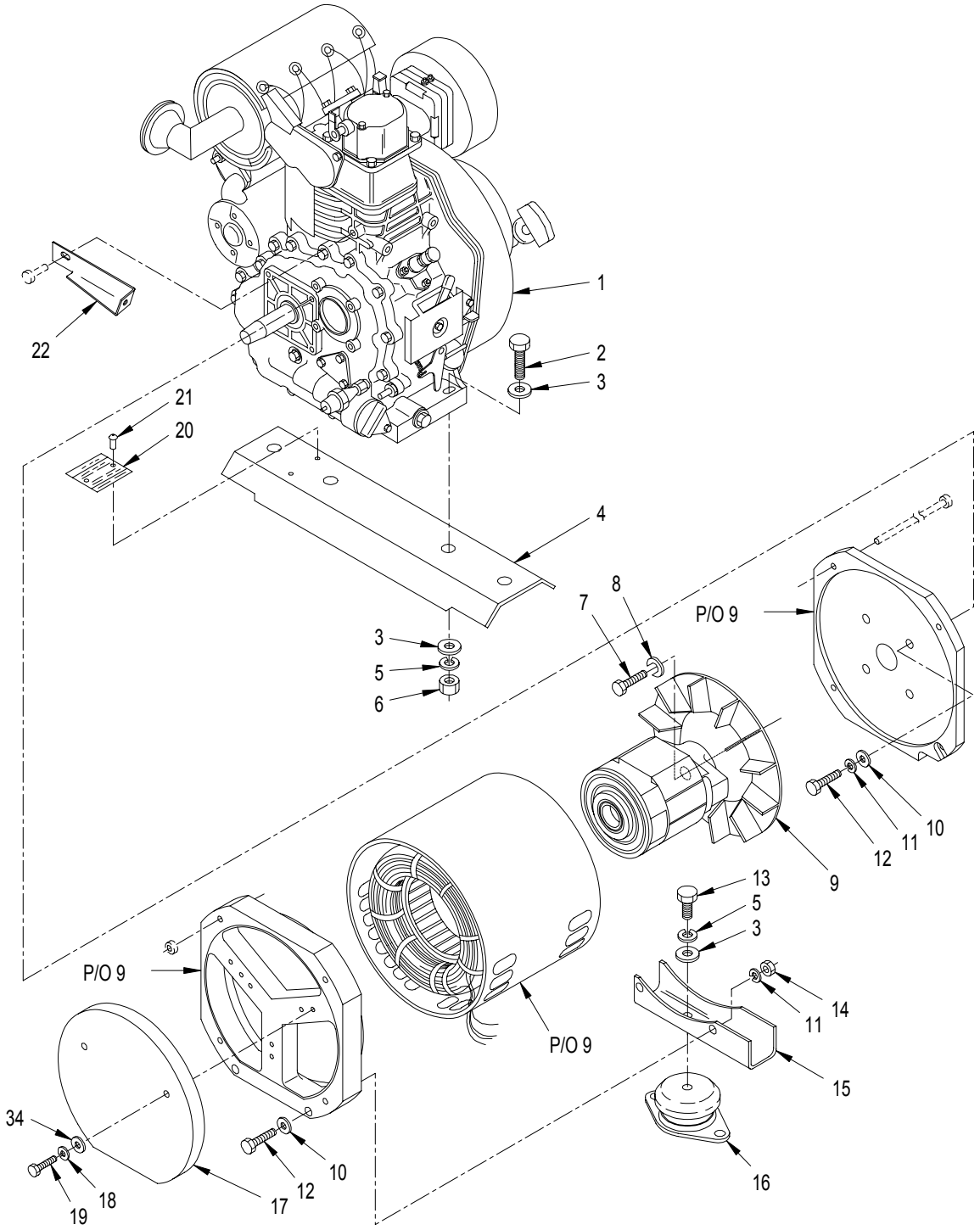

Figure F-6. Engine Alternator Assembly (MEP-531A) (Sheet 1 of 2)

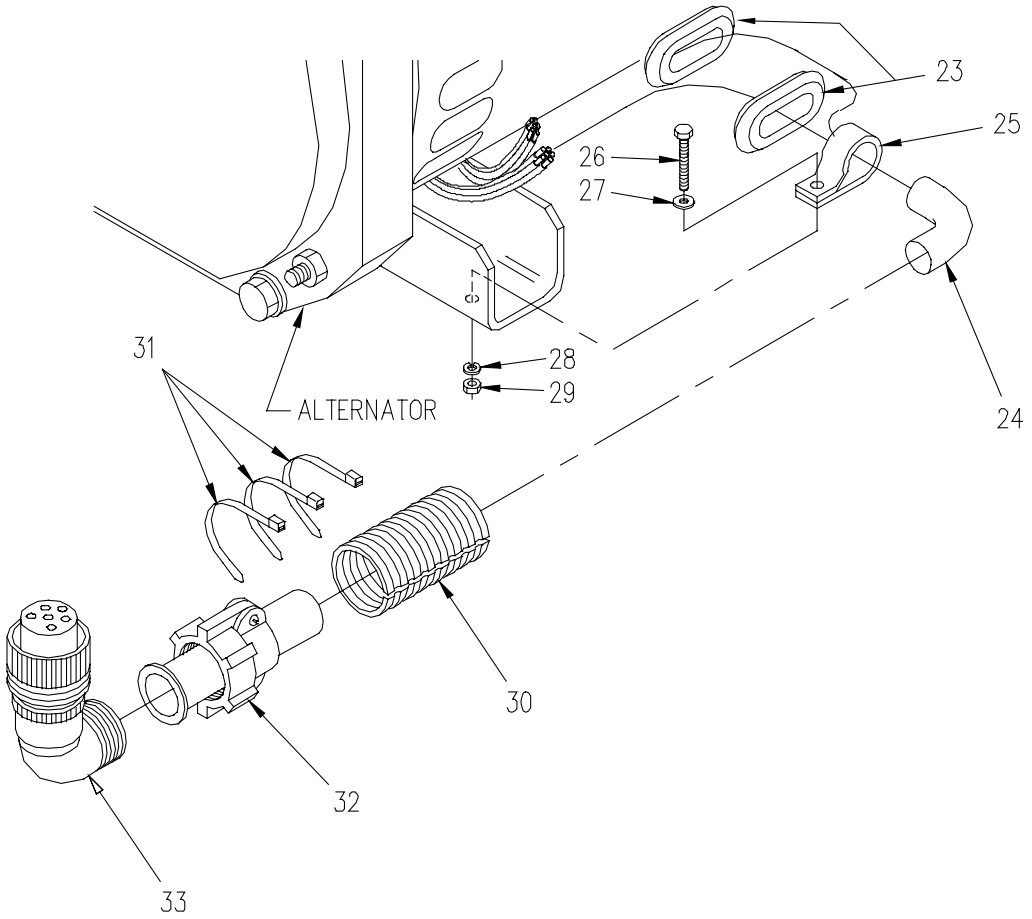

Figure F-6. Engine Alternator Assembly (MEP-531A) (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY	(7) USMC QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A) FIG. F-6 ENGINE ALTERNATOR ASSEMBLY (MEP-531A)		
1	XCFFF	XCFFF	XCFFF	XCFFF	30554	95-8055	ENGINE DIESEL, 4.7 Breakdown, See Fig. F-8	1	1
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18231B10040N	BOLT, MACHINE	2	2
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	80204	B1822BH100R	WASHER, FLAT	5	7
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8043	BRACKET, ENGINE MOUNT	1	1
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18212HRCZ100	WASHER, LOCK-SPRING	3	5
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18241B100	NUT, PLAIN, HEXAGON	2	2
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B1821BH031F075N	BOLT, MACHINE	1	1
8	PAFZZ	PAFZZ	PAFZZ	PAFZZ	51879	390-00000	C-WASHER	1	1
9	PAFFF	PAFFF	PAFFF	PAFFF	35537	D02134	ALTERNATOR, 120 VAC Breakdown, See Fig. F-19	1	1
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH080R	WASHER, PLAIN	6	19
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER, LOCK-SPRING	6	14
12	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18231B08030N	BOLT, MACHINE	6	6
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	80204	B18231B10025NF	SCREW, CAP, HEXAGON	1	3
14	PAOZZ	PAOZZ	PAOZZ	PAOZZ	80204	B18241B080	NUT, PLAIN, HEXAGON	2	8
15	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8065	BRACKET, ALTERNATOR	1	1
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	39020	RA 40EMB SPECIAL	MOUNT, RESILIENT	1	3
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8073	GUARD, ALTERNATOR	1	1
18	PAOZZ	PAOZZ	PAOZZ	PAOZZ	97403	13230E6744-44	WASHER, LOCK-SPRING	2	5
19	PAOZZ	PAOZZ	PAOZZ	PAOZZ	80204	B1821BH025C125N	SCREW, CAP, HEXAGON	2	2
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8061	PLATE, INSTRUCTION	1	1
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A403H	RIVET, BLIND	2	9
22	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8045	STIFFENER, FUEL FILTER	1	1
23	XBFZZ	XBFZZ	XBFZZ	XBFZZ	70485	AN931-10-14	GROMMET, NONMETALLIC	2	2
24	MFFZZ	MFFZZ	MFFZZ	MFFZZ	30554	95-8064-29	SLEEVING, INSULATION Make from ST-301-1/2 BLACK, Fig BULK, Item 6, approx. 4 in. req.	1	1
25	XBFZZ	XBFZZ	XBFZZ	XBFZZ	22175	44LC76WDC-10YN	CLAMP, LOOP	1	1
26	XBFZZ	XBFZZ	XBFZZ	XBFZZ	97403	13218E0493-2769PIC	SCREW, MACHINE	1	1
27	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	88-20564-18	WASHER, FLAT	1	11
28	XBFZZ	XBFZZ	XBFZZ	XBFZZ	97403	13230E6744-138	WASHER, LOCK	1	1
29	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8159-8	NUT, HEX, PLAIN	1	13
30	MFFZZ	MFFZZ	MFFZZ	MFFZZ	30554	95-8064-25	TUBING, CONVOLUTED Make from 012FEJSX000-0XBS, Fig BULK, Item 5, 12 in. required.	1	1
31	XBFZZ	XBFZZ	XBFZZ	XBFZZ	43999	LE127-0011-0005	STRAP, TIEDOWN, ELEC.	3	29
32	XBFZZ	XBFZZ	XBFZZ	XBFZZ	71468	M85049/41-12A WITH BUSHING	CLAMP, CABLE, ELEC.	1	2
33	XBFZZ	XBFZZ	XBFZZ	XBFZZ	71468	CA3108R20-15S-F80	CONNECTOR, PLUG, ELEC.	1	1
34	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-2	WASHER, FLAT	2	5
							END OF FIGURE		

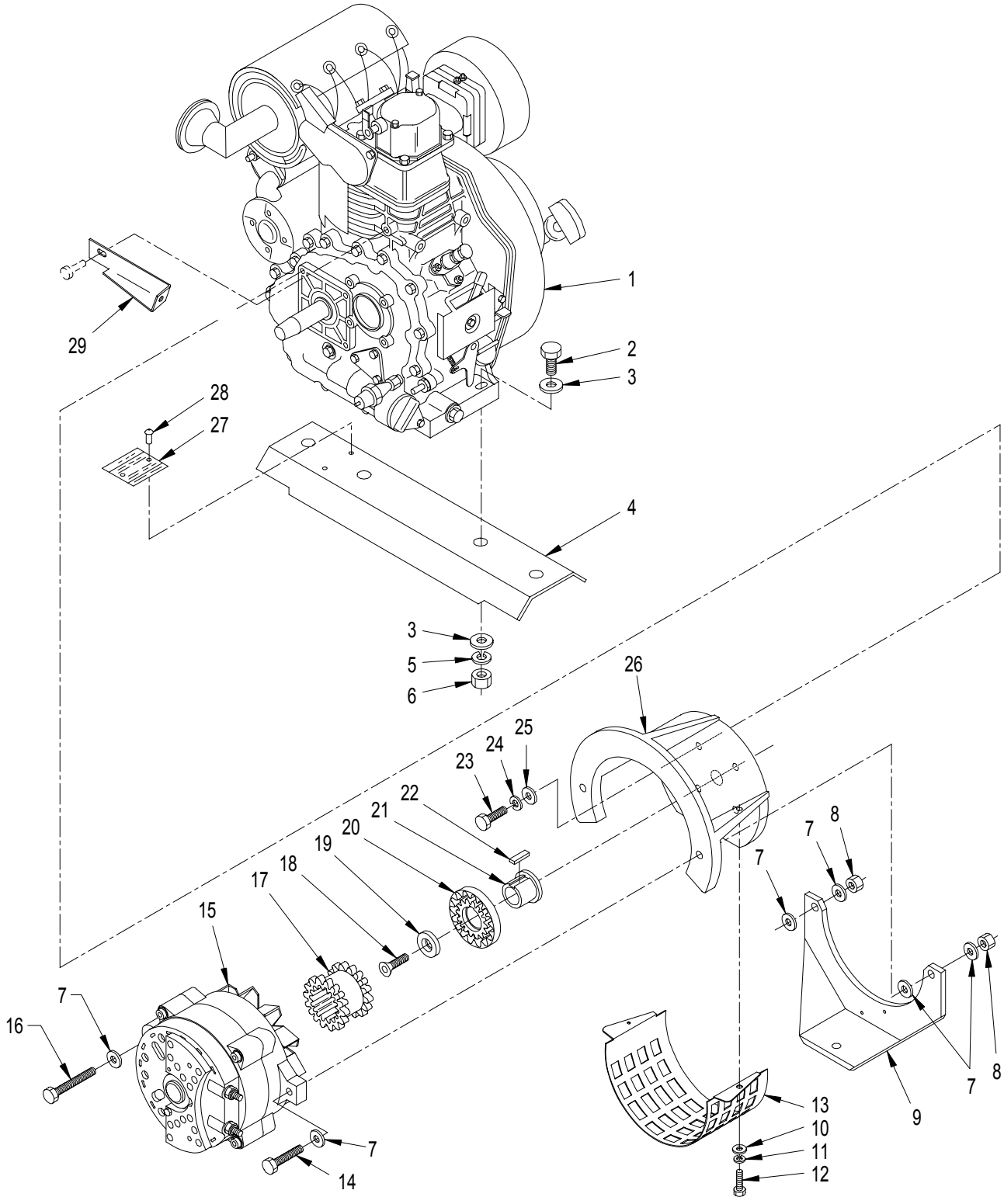

Figure F-7. Engine Alternator Assembly (MEP-501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-501A)		
							FIG. F-7 ENGINE ALTERNATOR ASSEMBLY (MEP-501A)		
1	XCFFF	XCFFF	XCFFF	XCFFF	30554	95-8055	ENGINE DIESEL, 4.7 Breakdown, See Fig. F-8	1	1
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18231B10040N	BOLT, MACHINE	2	2
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	80204	B1822BH100R	WASHER, FLAT	4	7
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8043	BRACKET, ENGINE MOUNT	1	1
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18212HRCZ100	WASHER, LOCK-SPRING	2	5
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18241B100	NUT, PLAIN, HEXAGON	2	2
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	88-20564-22	WASHER, FLAT	6	6
8	XBFZZ	XBFZZ	XBFZZ	XBFZZ	019L2	79NE-066	NUT, SELF-LOCKING	2	2
9	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8042	BRACKET, ALTERNATOR	1	1
10	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	88-20564-24	WASHER, FLAT	2	4
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	97403	13230E6744-42	WASHER, LOCK-SPRING	2	4
12	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8040-8	SCREW, HEX WASHERHD	2	2
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8041	GUARD, ALTERNATOR	1	1
14	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B1821BH038C250N	SCREW, CAP HEX HEAD	1	1
15	XCFFF	XCFFF	XCFFF	XCFFF	0L9X3	10-94-24-M2-PC	ALTERNATOR, 28 VDC Breakdown, See Fig. F-20	1	1
16	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B1821BH038C375N	SCREW, CAP HEX HEAD	1	1
17	PAFZZ	PAFZZ	PAFZZ	PAFZZ	79425	4JE	COUPLING SLEEVE	1	1
18	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	20-TS-0246042	SCREW, FLAT HEAD	1	1
19	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8127	WASHER, FLAT, COUNT	1	1
20	XBFZZ	XBFZZ	XBFZZ	XBFZZ	79425	4J X1.000	FLANGE, FLEXIBLE	1	1
21	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8003	ADAPTER, CRANKSHAFT	1	1
22	XBFZZ	XBFZZ	XBFZZ	XBFZZ	30554	95-8004	KEY, MACHINE	1	1
23	XBFZZ	XBFZZ	XBFZZ	XBFZZ	80204	B18231B08024N	BOLT, MACHINE	4	4
24	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ080	WASHER, LOCK-SPRING	4	12
25	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH080R	WASHER, PLAIN	4	17
26	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	20-277-M	ADAPTER, ENGINE	1	1
27	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8061	PLATE, INSTRUCTION	1	1
28	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A403H	RIVET, BLIND	2	9
29	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8045	STIFFENER, FUEL FILTER	1	1
							END OF FIGURE		

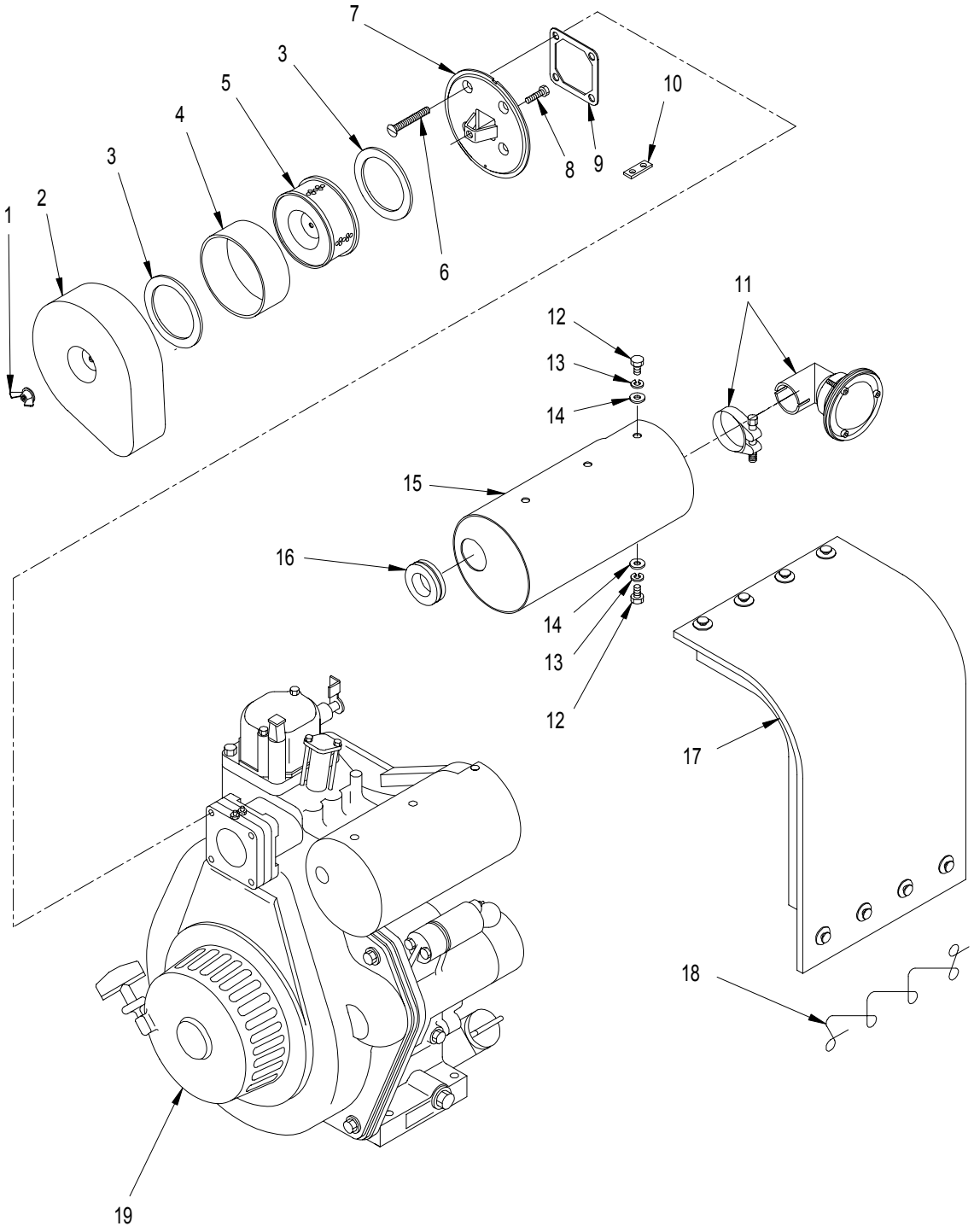

Figure F-8. Diesel Engine Modified

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-8 DIESEL ENGINE MODIFIED		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	97403	13227E6348-9	NUT WING, WASHER	1	1
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8054	COVER, AIR FILTER	1	1
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	83104	95-8053-1	GASKET, AIR FILTER	2	2
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-12580F	FILTER, ELEMENT	1	1
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-12580	FILTER, ELEMENT	1	1
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1867BA080550	SCREW, MACHINE	4	4
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8052	PLATE, MOUNTING	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1375PIC	SCREW, MACHINE	1	1
9	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8051	GASKET, AIR FILTER	1	1
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8057	JUMPER, AIR HEATER	1	1
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0LPU3	3S1125C3BE3	SPARK ARRESTOR	1	1
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18231B06012N	SCREW, CAP, HEXAGON	6	11
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRCZ060	WASHER, LOCK-SPRING	6	9
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH060R	WASHER, PLAIN	6	10
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8049	SHROUD, MUFFLER	1	1
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	96906	MS35489-23	GROMMET, NONMETALLIC	1	1
17	PAOZZ	PAOZZ	PAOZZ	PAOZZ	77227	TA97-0030	BLANKET, MUFFLER	1	1
18	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8055-11	WIRE, RETAINING Make from SAE 30305, Figure BULK, Item 4, 56-1/4 inches required.	1	1
19	PAFFF	PAFFF	PAFFF	PAFFF	0AK42	L48AE-DEG	ENGINE, DIESEL, AIR Breakdown, See Fig. F-9 END OF FIGURE	1	1

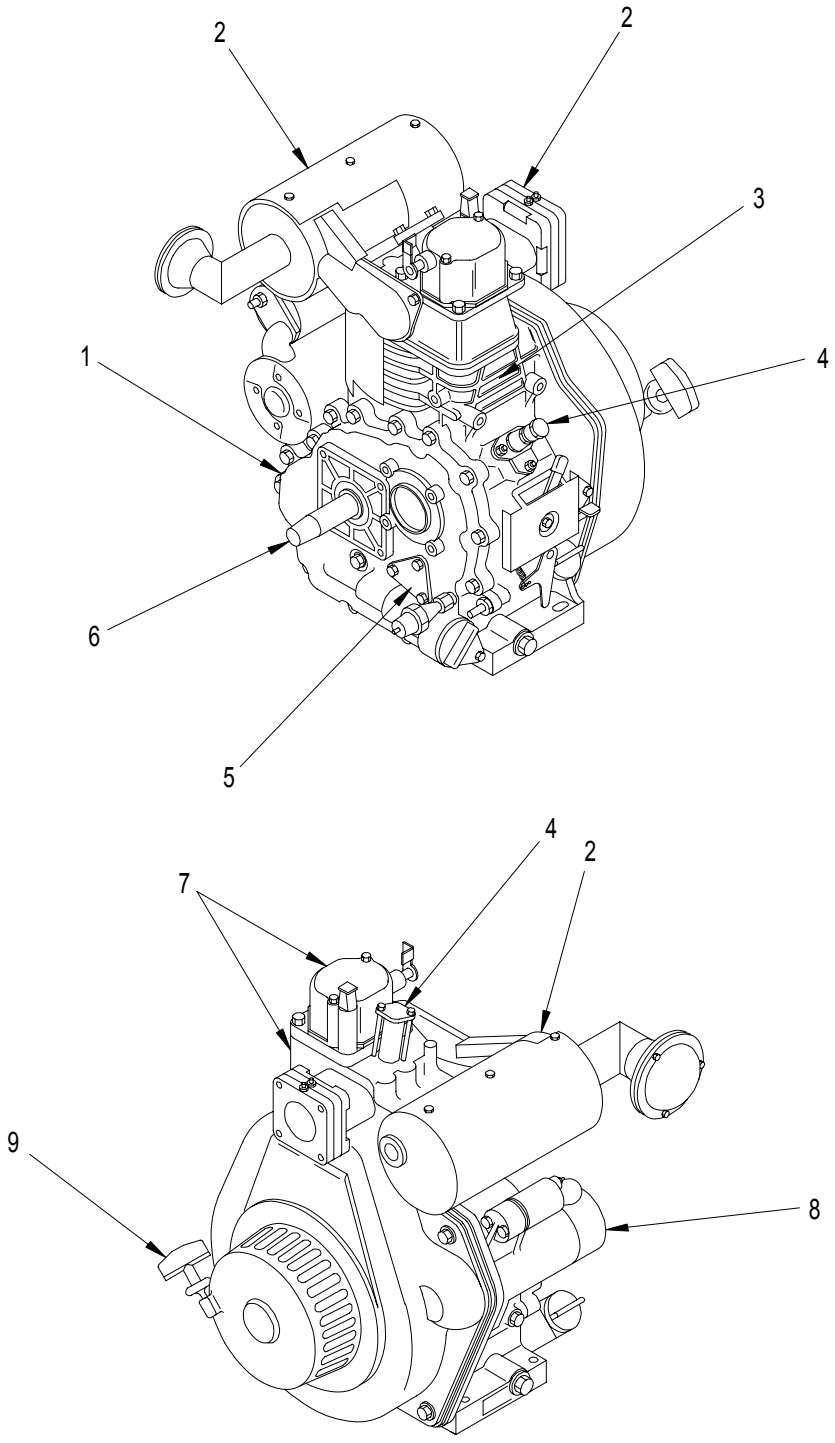

Figure F-9. Diesel Engine Assembly

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-9 DIESEL ENGINE ASSEMBLY		
1	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1B03	CYLINDER BLOCK Breakdown, See Fig. F-10	1	1
2	XCFZZ	XCFZZ	XCFZZ	XCFZZ	0AK42	1B05	AIR CLEANER & MUFFL Breakdown, See Fig. F-12	1	1
3	XCOOO	XCOOO	XCOOO	XCOOO	0AK42	1B07	PISTON & ROD Breakdown, See Fig. F-14	1	1
4	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1B11	FUEL INJECTION PUMP Breakdown, See Fig. F-17	1	1
5	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1A10	LUBE OIL PUMP & GOV. Breakdown, See Fig. F-15	1	1
6	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1B06	CAM/CRANK/BALANCER Breakdown, See Fig. F-13	1	1
7	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1B04	CYLINDER HEAD & COV. Breakdown, See Fig. F-11	1	1
8	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1B15	STARTING MOTOR & DYNAMO Breakdown, See Fig. F-18	1	1
9	XCFFF	XCFFF	XCFFF	XCFFF	0AK42	1A11	COOLING & STARTING Breakdown, See Fig. F-16 END OF FIGURE	1	1

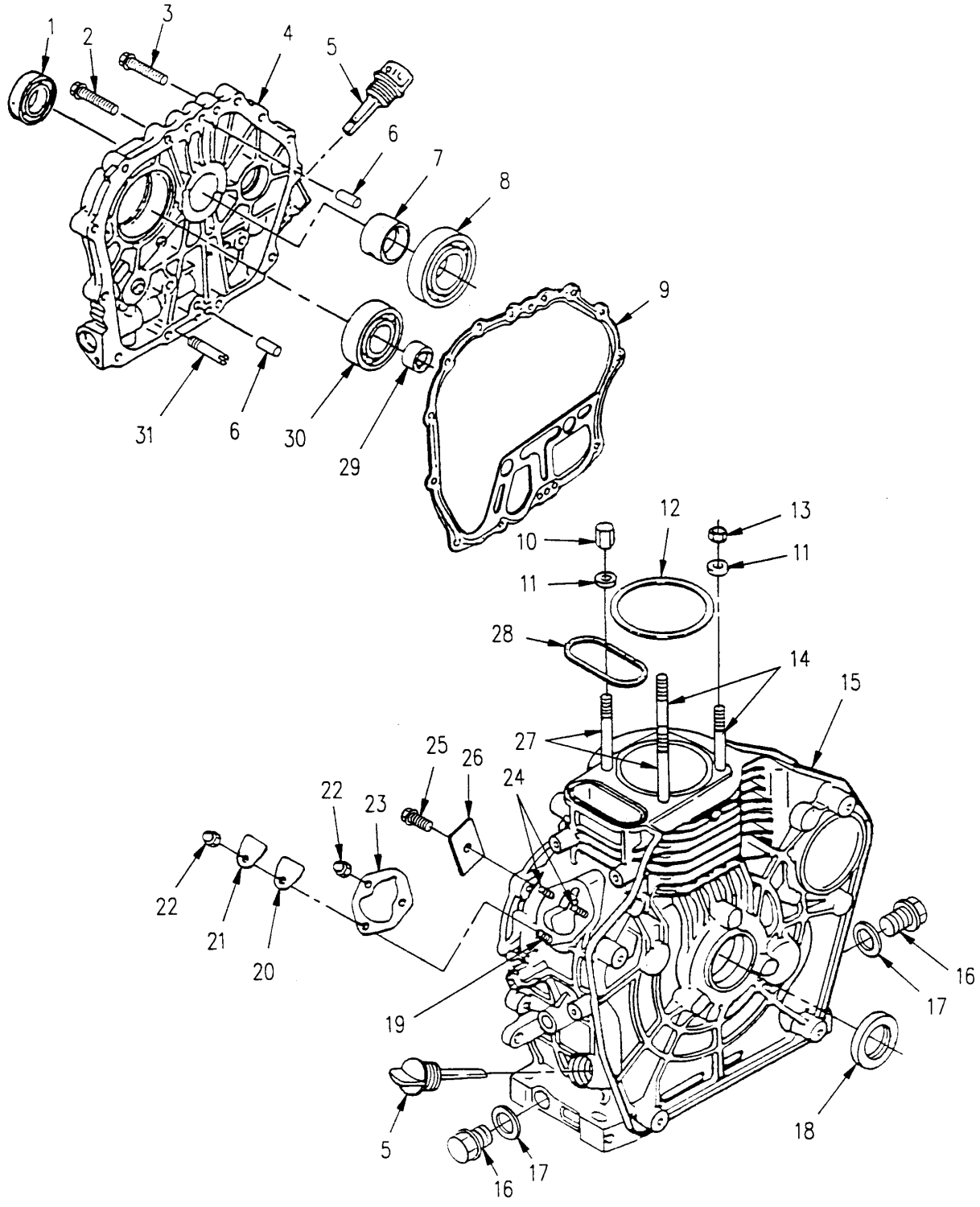

Figure F-10. Cylinder Block Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A)		
							FIG. F-10 CYLINDER BLOCK INSTALLATION		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	160210-02220	SEAL, PLAIN ENCASED	1	1
2	PAFZZ	PAFZZ	PAFZZ	PAFZZ	62866	10512	SCREW, CAP, HEXAGON	14	15
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26106-080352	BOLT, MACHINE	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	114260-01453	COVER, CRANKCASE	1	1
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	160710-01760	CAP, FILLER OPENING	2	2
6	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	22312-080120	PIN, STRAIGHT, HEAD	2	2
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-02210	BEARING, MAIN 0.50	1	1
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-02200	BEARING, MAIN 0.25	1	1
7	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-02100	BEARING, SLEEVE	1	1
8	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-02113	BALL, BEARING	1	1
9	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0GUY0	114250-01412	GASKET	1	1
10	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-01220	NUT, PLAIN, HEXAGON	2	2
11	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	124950-01250	WASHER	4	4
12	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114770-01340	O-RING	1	1
13	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-01250	NUT, PLAIN, HEXAGON	2	2
14	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-01210	STUD, CYLINDER HEAD	2	2
15	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714771-01560	BLOCK ASSY, CYLINDER	1	1
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	105425-01690	PLUG, M16	2	2
17	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	22190-160002	GASKET	4	4
18	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	160110-02220	SEAL, PLAIN ENCASED	1	1
19	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26226-060182	STUD, M6 X 18 PLATE	1	1
20	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-01841	GASKET	1	1
21	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-01830	COVER, ACCESS	1	1
22	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26366-060002	NUT, PLAIN, HEXAGON	3	7
23	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-01800	SHIM SET	1	1
24	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26226-060222	STUD, M6 X 22 PLATE	2	2
25	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26106-080122	BOLT, M8 X 12 PLATE	1	1
26	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-02030	PLATE, RETAINING	1	1
27	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-01200	STUD, CYLINDER HEAD	2	2
28	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0GUY0	114250-01380	O-RING	1	1
29	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	24162-152112	BEARING, ROLLER	1	1
30	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	24101-062050	BEARING, BALL	1	1
31	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-35150	PIPE, L.O. INLET	1	1
							END OF FIGURE		

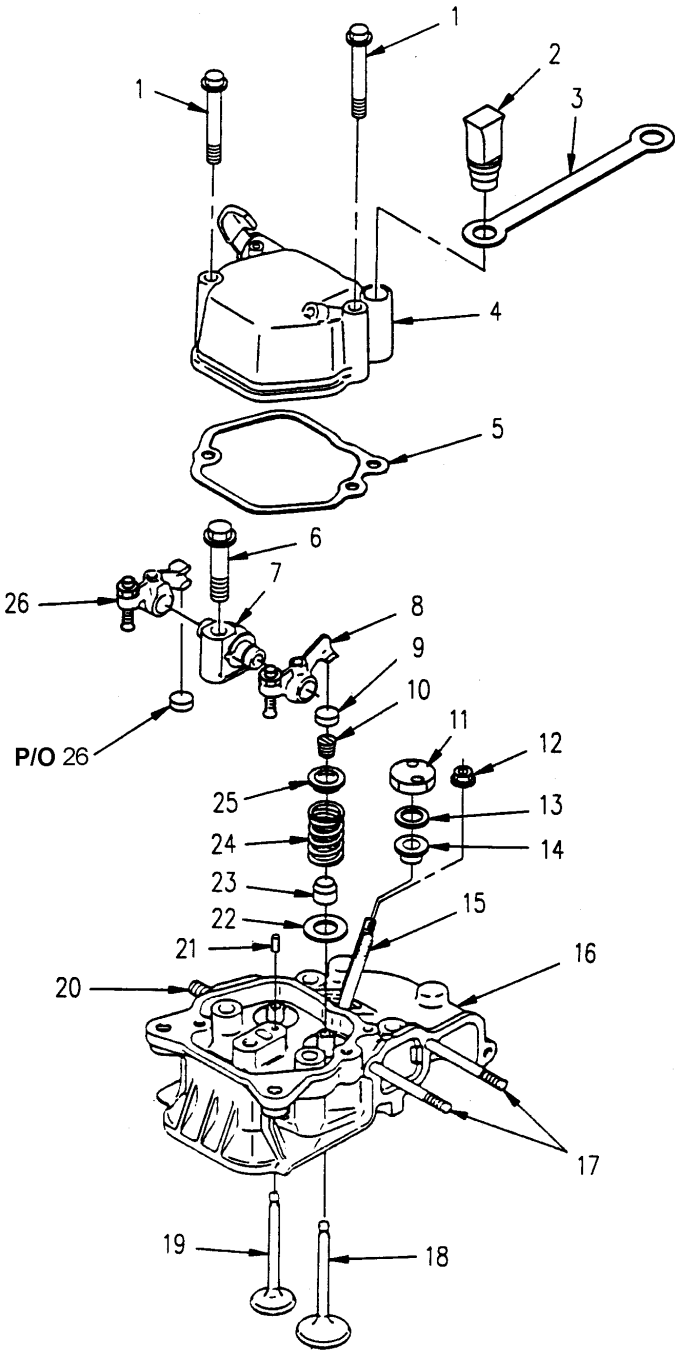

Figure F-11. Cylinder Head Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A)		
							FIG. F-11 CYLINDER HEAD INSTALLATION		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26106-060552	BOLT, MACHINE	2	2
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-76600	PLUNGER, DETENT	1	1
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	114250-76610	PLUNGER, QUICK RELEASE	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-11951	BONNET ASSEMBLY, HEAD	1	1
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-11310	GASKET	1	1
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26106-080452	BOLT, MACHINE	1	1
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-11290	SUPPORT, ROCKER ARM	1	1
8	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-11651	CRANK, HAND	1	1
9	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	119260-11370	INSERT, ENGINE VALVE	1	1
10	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	714250-11570	LOCK, VALVE SPRING	2	2
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-11900	RETAINER, DIESEL ENG.	1	1
12	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26366-060002	NUT, PLAIN, HEXAGON	2	7
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114350-11470	SPACER, SLEEVE	1	1
14	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-11460	GASKET	1	1
15	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26226-060502	STUD, PLAIN	2	2
16	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0GUY0	114250-11020	CYLINDER HEAD, DIESEL	1	1
17	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26226-060552	STUD, PLAIN	2	2
18	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11101	VALVE, POPPET, ENGINE	1	1
19	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11113	VALVE, POPPET, ENGINE	1	1
20	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26216-080182	STUD, PLAIN	2	2
21	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	22351-040008	PIN, SPRING	1	1
22	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11600	WASHER, FLAT	2	2
23	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11340	O-RING	2	2
24	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11120	SPRING, HELICAL	2	2
25	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-11180	SEAT, HELICAL COMPR.	2	2
26	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714270-11660	ARM ASSEMBLY, EXHAUST	1	1
							END OF FIGURE		

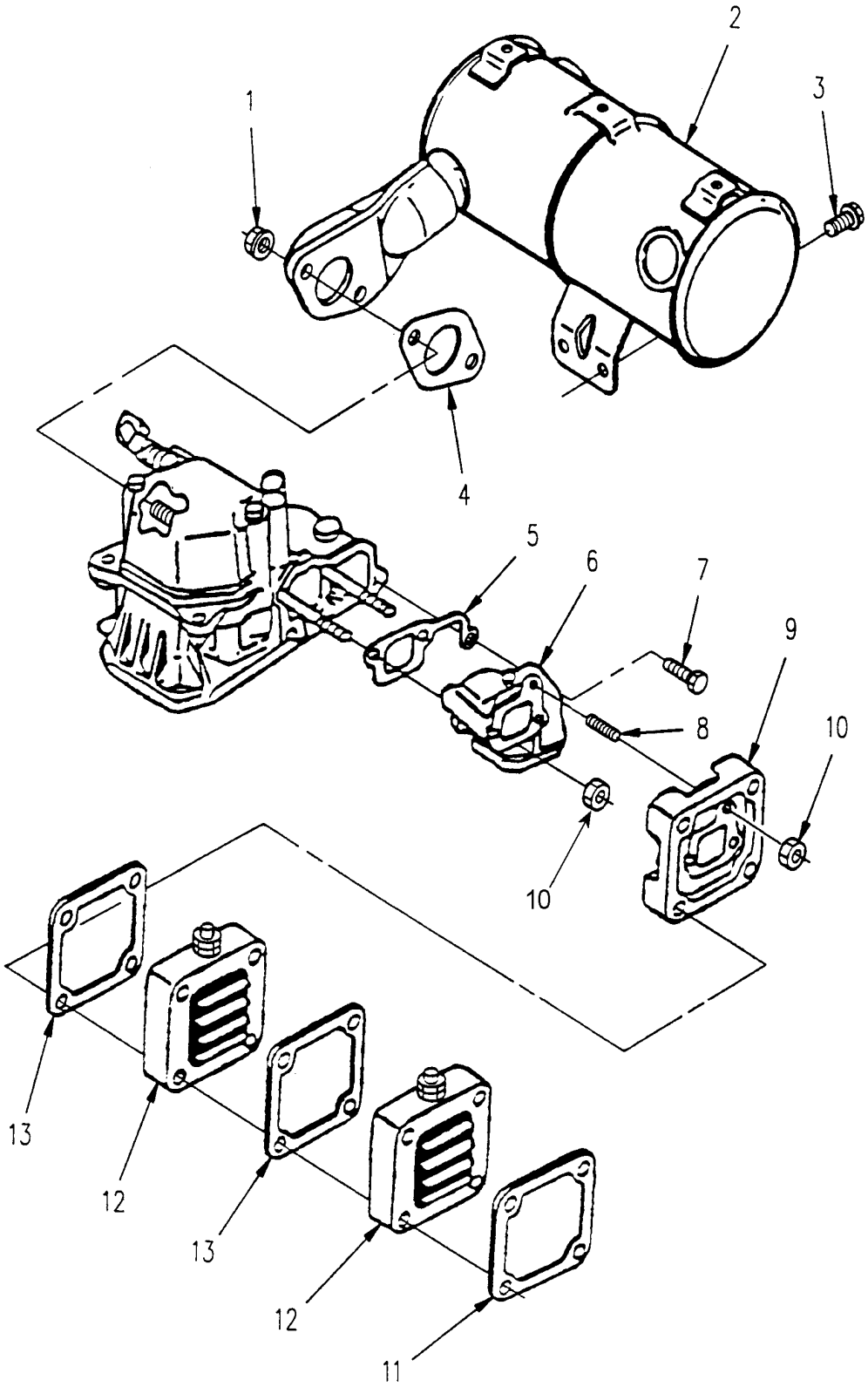

Figure F-12. Air Intake Pipe and Muffler

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-12 AIR INTAKE PIPE AND MUFFLER		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26366-080002	NUT, PLAIN, HEXAGON	2	2
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114268-13510	MUFFLER, EXHAUST	1	1
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	80204	B18231B06012N	SCREW, CAP, HEX	2	11
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-13200	GASKET	1	1
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-12200	GASKET	1	1
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	114250-12010	PIPE, AIR INTAKE	1	1
7	PAOZZ	PAOZZ	PAOZZ	PAOZZ	62866	10512	SCREW, CAP, HEX	1	15
8	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26226-060142	STUD, PLAIN	1	1
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	183375-77560	SPACER, PLATE	1	1
10	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26366-060002	NUT, PLAIN, HEXAGON	2	7
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-12210	O-RING	1	1
12	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	129400-77501	HEATING ELEMENT	2	2
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0AK42	129100-77510	GASKET	2	2
							END OF FIGURE		

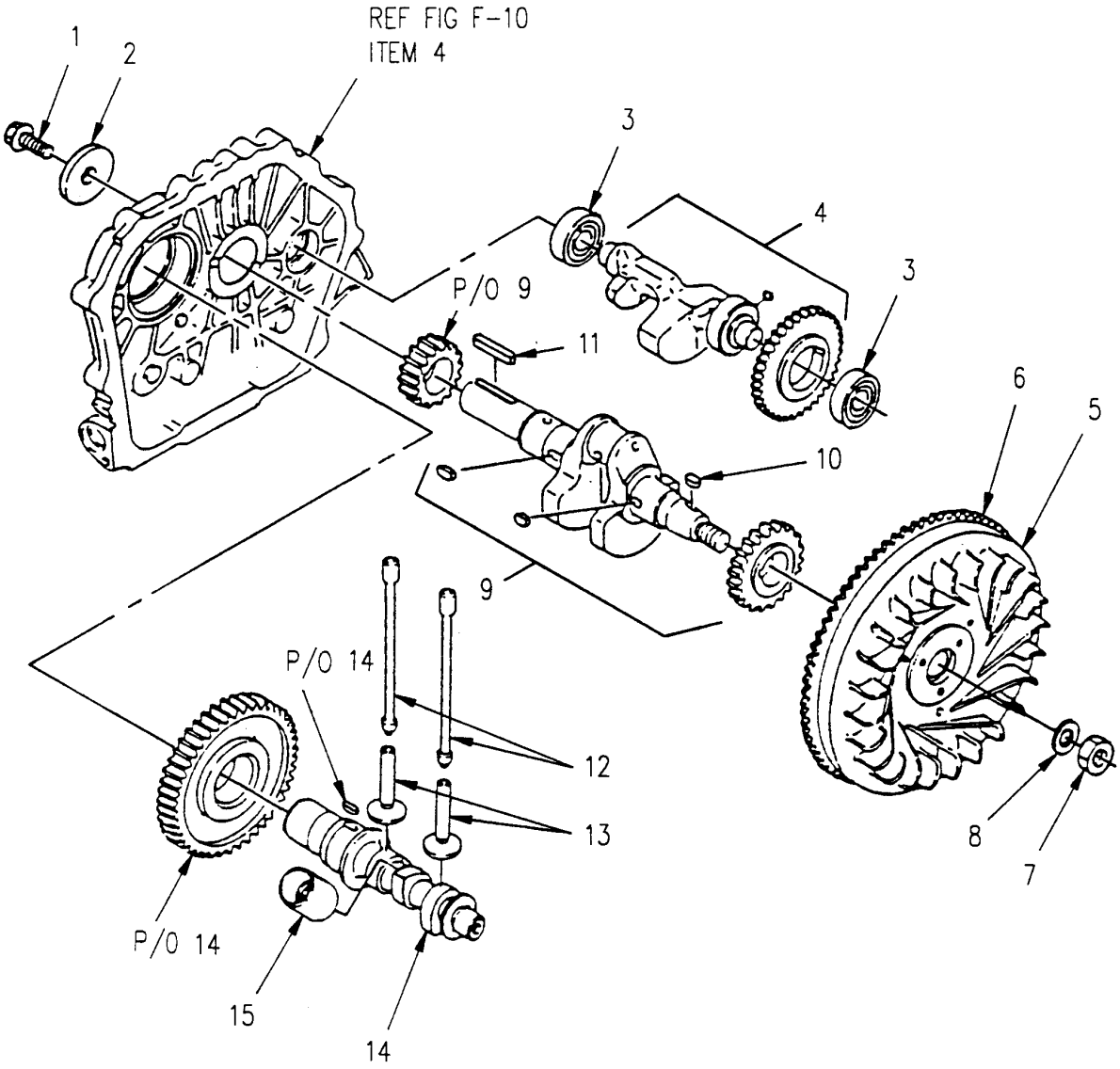

Figure F-13. Cam/Crankshaft/Balancer Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-13 CAM/ CRANKSHAFT/BALANCER INSTALLATION		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	160642-21250	BOLT, MACHINE	1	1
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	160310-14550	WASHER	1	1
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	24101-062024	BEARING, BALL	2	2
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714770-28510	SHAFT ASSEMBLY	1	1
5	XBFFF	XBFFF	XBFFF	XBFFF	0AK42	114781-21590	FLYWHEEL, W/GEAR	1	1
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114262-21600	.GEAR, RING	1	1
7	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	103854-01221	NUT, PLAIN, HEXAGON	1	1
8	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-21550	WASHER, FLAT	1	1
9	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714288-21700	CRANKSHAFT ASSY	1	1
10	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	22512-040120	KEY, MACHINE	1	1
11	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	160642-21150	KEY, MACHINE	1	1
12	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-14450	PUSH ROD, ENGINE	2	2
13	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-14200	TAPPET, ENGINE POPPET	2	2
14	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0GUY0	714780-14580	CAMSHAFT, ENGINE	1	1
15	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-14260	TAPPET, ENGINE POPPET	1	1
							END OF FIGURE		

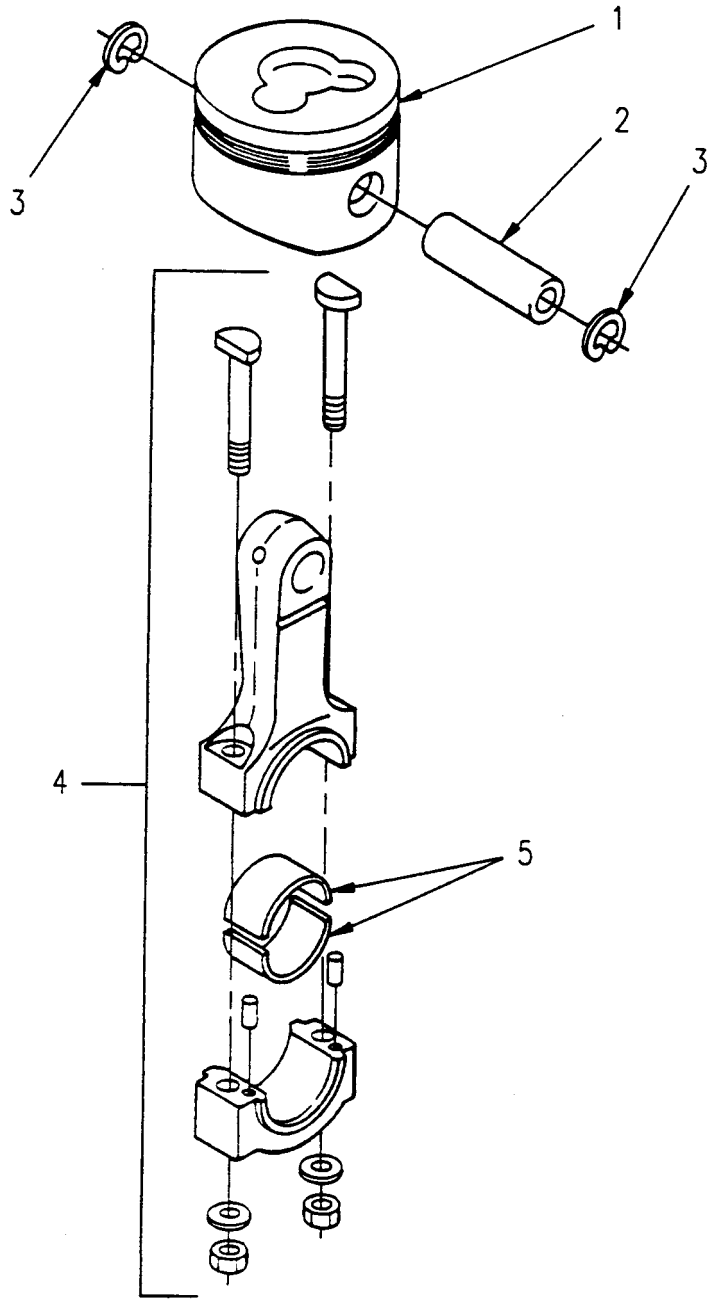

Figure F-14. Piston and Rod Assembly

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-14 PISTON AND ROD ASSEMBLY		
1	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714780-22720	PISTON W/RINGS	1	1
1	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714780-22620	PISTON W/RING OS	1	1
1	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714780-22580	PISTON W/RING OS	1	1
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-22302	PIN, PISTON	1	1
3	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	22252-000190	RING, RETAINING	2	2
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714250-23703	CONNECTING ROD, PIS	1	1
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714250-23620	BEARING, PIN US=0.5	1	1
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	714250-23610	BEARING, PIN US=0.2	1	1
							END OF FIGURE		

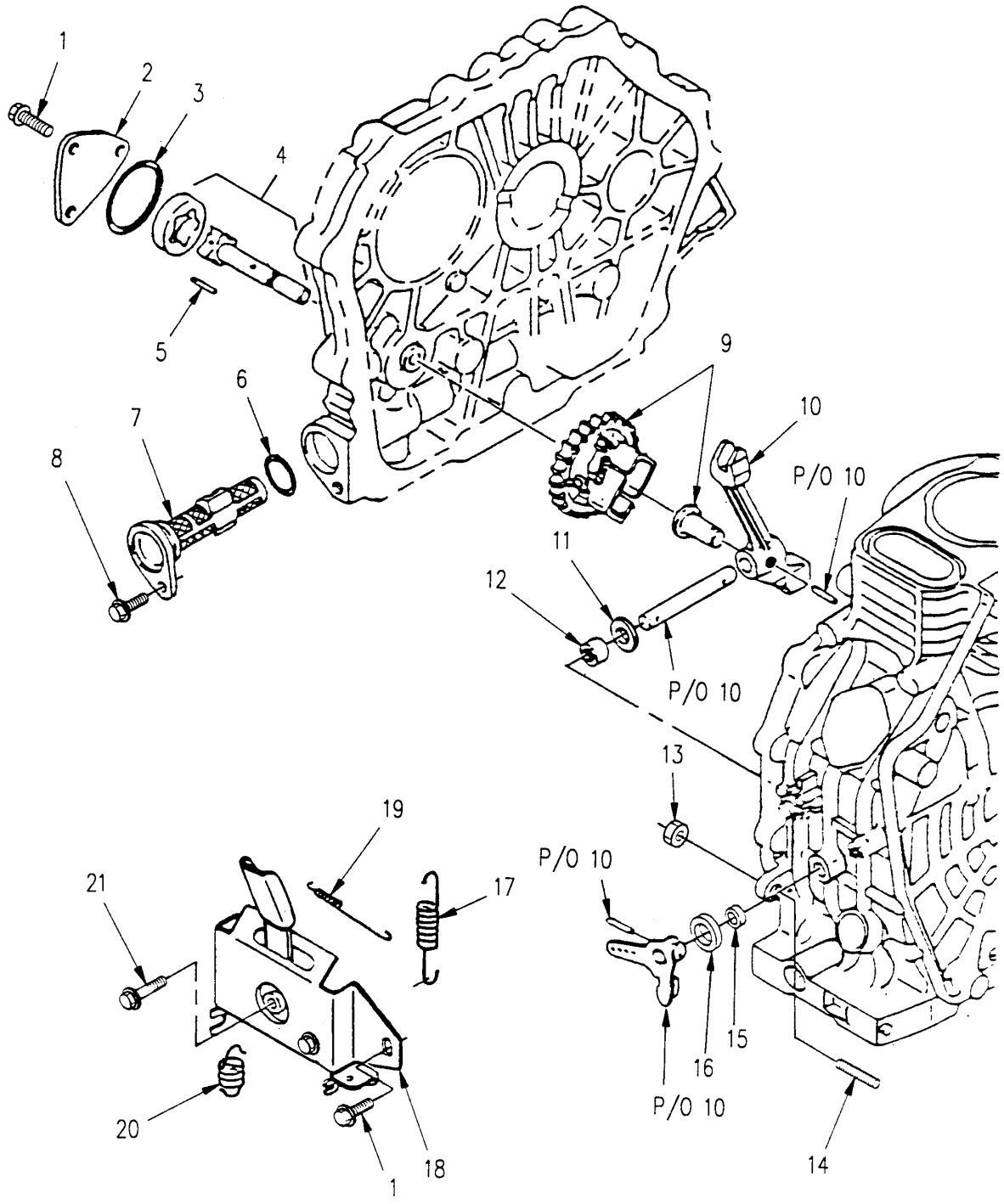

Figure F-15. Lube Oil Pump and Governor

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A)		
							FIG. F-15 LUBE OIL PUMP AND GOVERNOR		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26476-060142	BOLT, MACHINE	4	6
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-32070	COVER, ACCESS	1	1
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	103338-32570	O-RING	1	1
4	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-32010	PUMP, ROTARY	1	1
5	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	22312-030160	PIN, STRAIGHT, HEAD	1	1
6	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	24341-000224	O-RING	1	1
7	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0GUY0	114250-35070	STRAINER, OIL PUMP	1	1
8	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26106-060162	SCREW, CAP, HEX	1	1
9	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0GUY0	714770-61700	GOVERNOR, DIESEL ENG.	1	1
10	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	714250-61500	LEVER, REMOTE CONTROL	1	1
11	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	22137-080000	WASHER, FLAT	1	1
12	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114270-61520	BEARING, ROLLER	2	2
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26696-100002	NUT, PLAIN, HEXAGON	1	1
14	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-66550	SPRING, HELICAL	1	1
15	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114770-61600	SEAL, PLAIN ENCASED	1	1
16	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114770-61610	THRUST PLATE, TRANS.	1	1
17	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114770-66010	SPRING, HELICAL	1	1
18	XBOOO	XBOOO	XBOOO	PAOOO	0AK42	183250-66511	BRACKET, REGULATOR	1	1
19	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	183250-66331	.SPRING, HELICAL	1	1
20	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114250-66200	SPRING, HELICAL	1	1
21	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	26106-060202	BOLT, MACHINE	1	1
							END OF FIGURE		

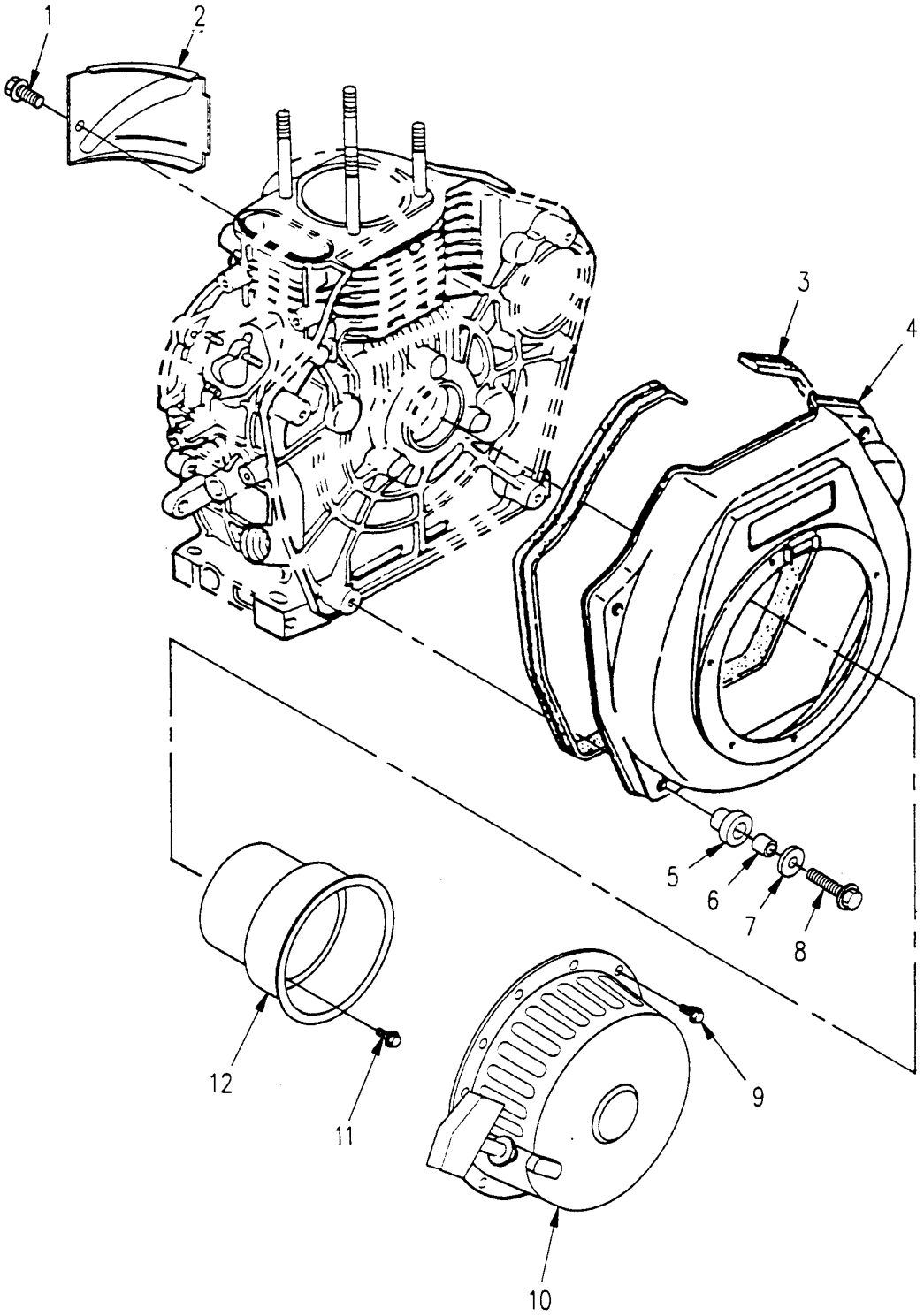

Figure F-16. Cooling/Starting Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A)		
							FIG. F-16 COOLING/ STARTING INSTALLATION		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26476-060142	BOLT, MACHINE	1	6
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-45211	COVER, ACCESS	1	1
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-45330	SEAL, PLAIN ENCASED	1	1
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114780-45100	GUARD, MECHANICAL DR	1	1
5	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-45300	RETAINER, ENGINE	4	4
6	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-45310	COUPLING, CLAMP	4	4
7	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	160120-76940	WASHER, FLAT	4	4
8	PAFZZ	PAFZZ	PAFZZ	PAFZZ	61080	50025900	SCREW, CAP, HEX	4	4
9	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15526	933-M6X8	SCREW, CAP, HEX	4	4
10	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	714260-76821	RECOIL STARTER ASSY	1	1
11	PAFZZ	PAFZZ	PAFZZ	PAFZZ	80204	B18231B06012N	SCREW, CAP, HEX	3	11
12	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	114250-76590	PULLEY, STARTER	1	1
							END OF FIGURE		

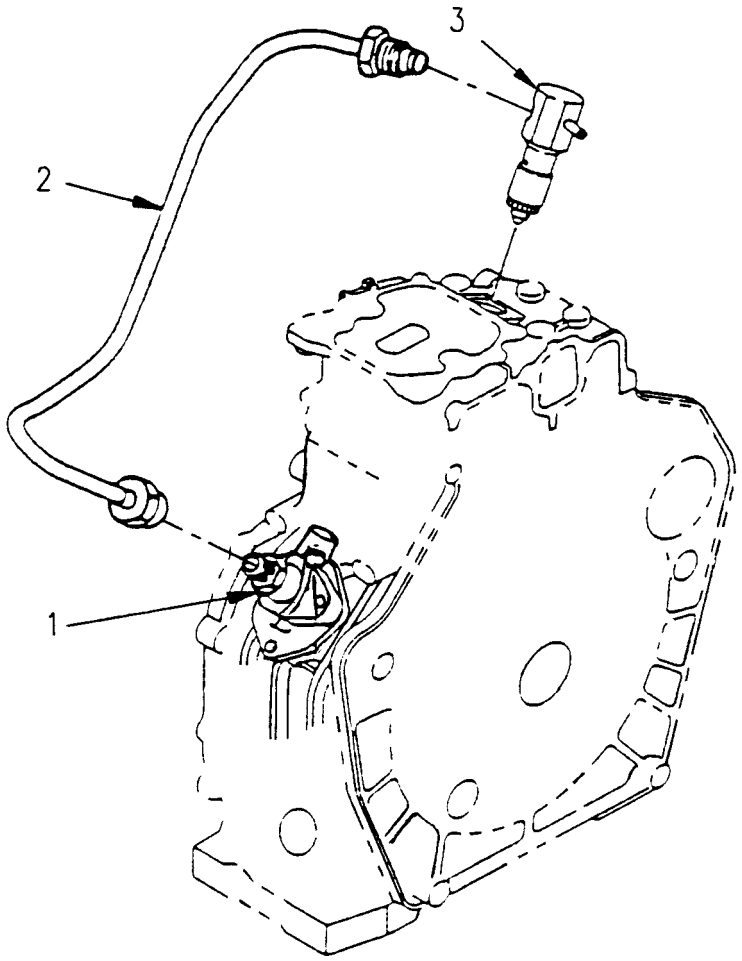

Figure F-17. Fuel Injection Pump/Injector Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-17 FUEL INJECTION PUMP/INJECTOR INSTALLATION		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	714770-51700	INJECTION CONTROL	1	1
2	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-59800	TUBE ASSEMBLY, METAL	1	1
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	714250-53101	PUMP, FUEL, METERING	1	1
							END OF FIGURE		

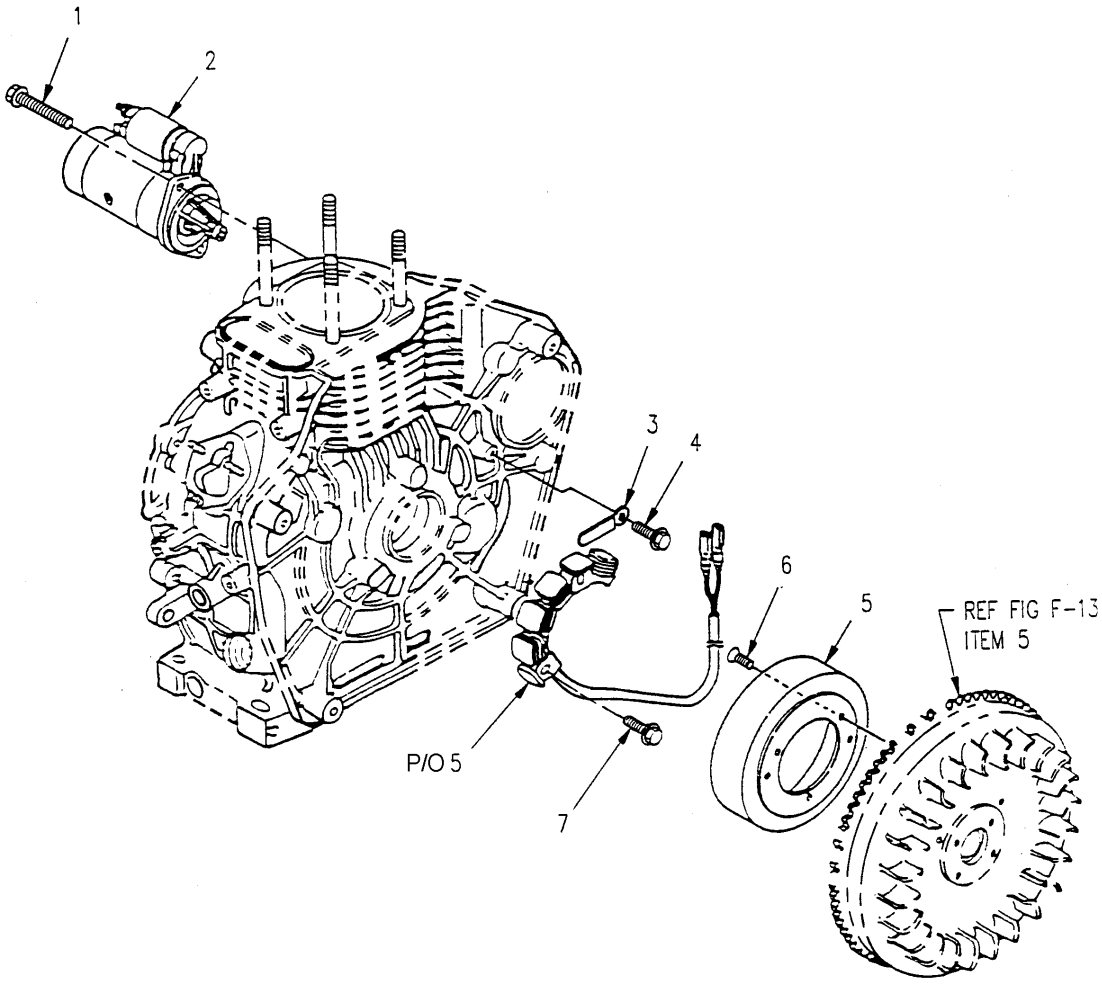

Figure F-18. Starting Motor and Dynamo Installation

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A/501A) FIG. F-18 STARTING MOTOR AND DYNAMO INSTALLATION		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	26106-100302	BOLT, MACHINE	2	2
2	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114362-77019	STARTER, ENGINE, ELEC	1	1
3	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	160710-78710	CLAMP, CORD	1	1
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26476-060142	BOLT, MACHINE	1	6
5	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114351-78260	GENERATOR, ENGINE (DYNAMO)	1	1
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26577-060142	SCREW, M6 X 14	3	3
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0AK42	26476-060202	BOLT	3	3
							END OF FIGURE		

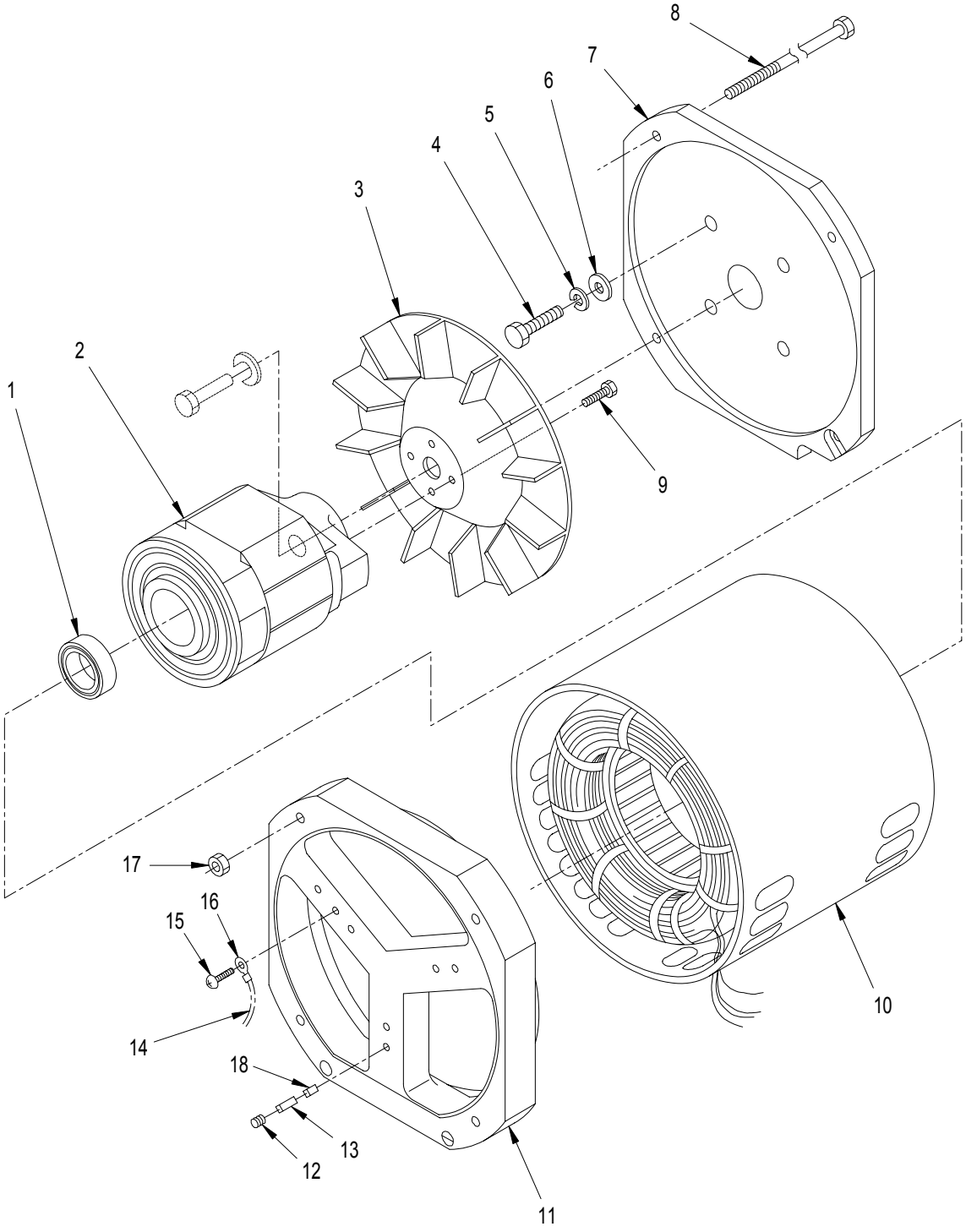

Figure F-19. AC Alternator Assembly (MEP-531A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 – ENGINE/ ALTERNATOR ASSEMBLY (MEP-531A) FIG. F-19 AC ALTERNATOR ASSEMBLY (MEP-531A)		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	14058	31665	BEARING	1	1
2	PAFZZ	PAFZZ	PAFZZ	PAFZZ	51879	65.00022	ROTOR	1	1
3	PAFZZ	PAFZZ	PAFZZ	PAFZZ	51879	340.00000	FAN	1	1
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	35537	608-370	SCREW, CAP	4	4
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	35537	740-008	WASHER, LOCK	4	4
6	XBFZZ	XBFZZ	XBFZZ	XBFZZ	35537	730-008	WASHER, FLAT	4	4
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	14058	41432	ADAPTER, ENGINE	1	1
8	PAFZZ	PAFZZ	PAFZZ	PAFZZ	51879	480.00020	BOLT, STATOR	4	4
9	XBFZZ	XBFZZ	XBFZZ	XBFZZ	96906	MS16998-28	SCREW, CAP, SOCKET HD	4	4
10	PAFZZ	PAFZZ	PAFZZ	PAFZZ	14058	41446-501	STATOR ASSEMBLY	1	1
11	XBFZZ	XBFZZ	XBFZZ	XBFZZ	14058	41433	BRACKET, BEARING	1	1
12	PAOZZ	PAOZZ	PAOZZ	PAOZZ	51879	660-00000	CAP, BRUSH	4	4
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	51879	640-00000	BRUSH	4	4
14	MFFZZ	MFFZZ	MFFZZ	MFFZZ	35537	D02134-4/5	WIRE, 14AWG Make from M44A0111-14-0, Figure BULK, Item 19, 6 inches required.	1	1
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	35537	D02134-6	SCREW, 10-32	2	2
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	35537	P14-6RM	RING, LUG	4	4
17	XBFZZ	XBFZZ	XBFZZ	XBFZZ	14058	31669	NUT, KEPS	4	4
18	XBFZZ	XBFZZ	XBFZZ	XBFZZ	14058	31666	HOLDER, BRUSH	4	4
							END OF FIGURE		

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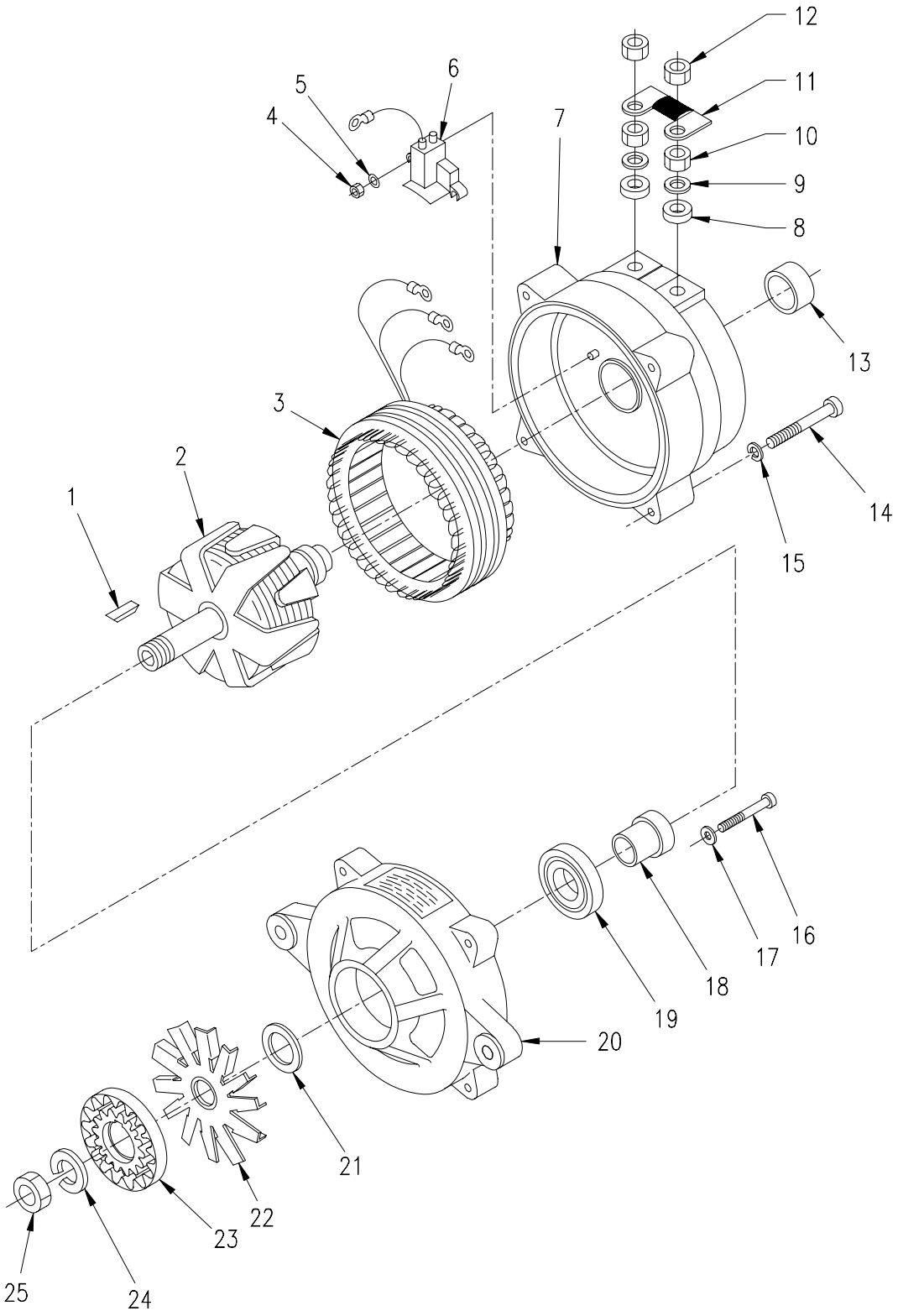

Figure F-20. DC Alternator Assembly (MEP-501A) (Sheet 1 of 2)

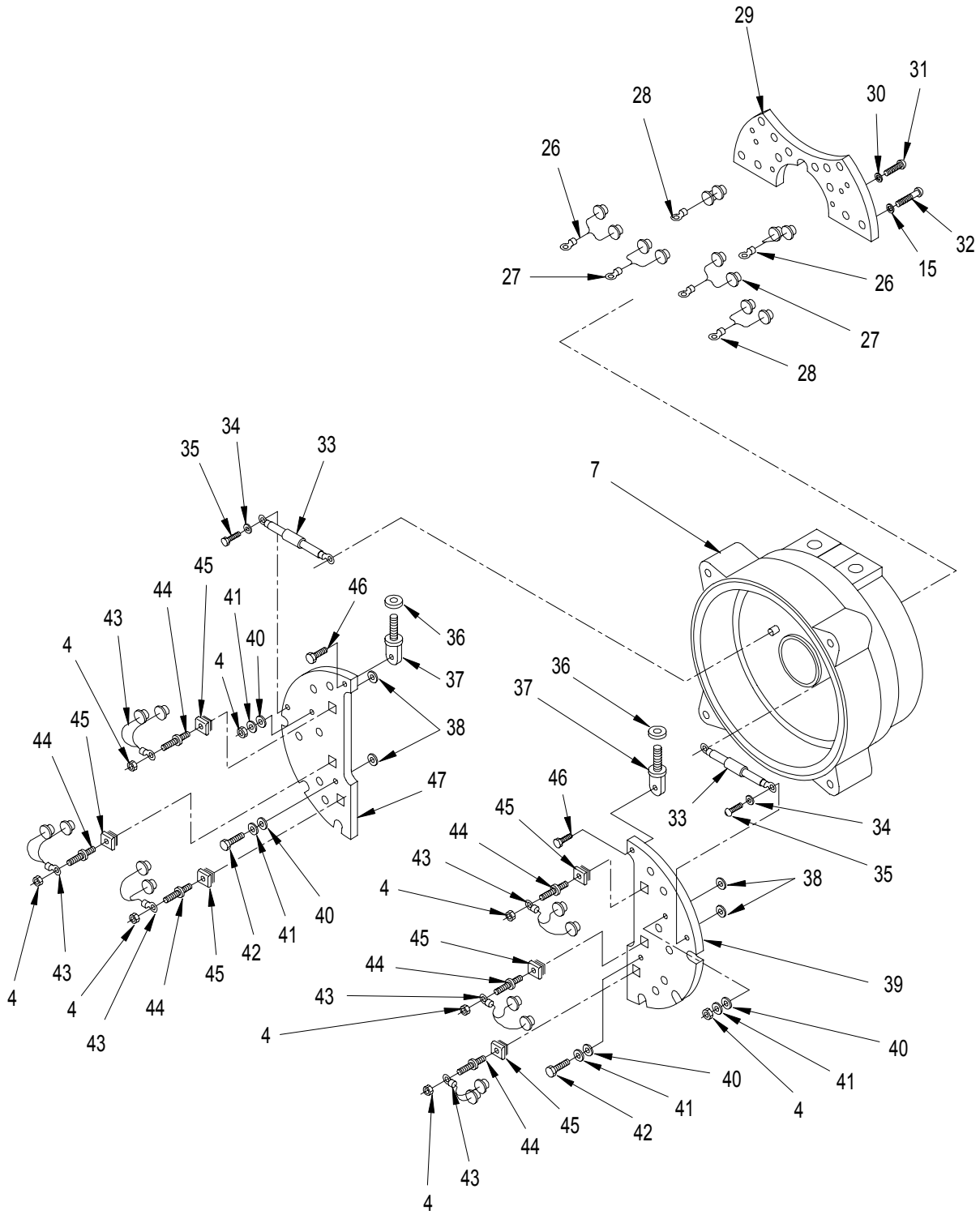

Figure F-20. DC Alternator Assembly (MEP-501A) (Sheet 2 of 2)

1	2 SMR CODE				3	4	5	6	7 USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-501A)		
							FIG. F-20 DC ALTERNATOR ASSEMBLY (MEP-501A)		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-2710	KEY	1	1
2	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3010	ROTOR, GENERATOR	1	1
3	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2045	STATOR, 45	1	1
4	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1097	NUT, KEPS	10	10
5	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1081	WASHER, FLAT	2	2
6	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-2712	BRUSH HOLDER	1	1
7	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2723	HOUSING, REAR	1	1
8	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1093	INSULATOR	2	2
9	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3308	WASHER, FLAT	2	2
10	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3309	NUT, FLANGE	2	2
11	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2709	STRAP, BATTERY POST	1	1
12	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3310	NUT, LOCK, NYLON	2	2
13	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-1072-1	BEARING, REAR	1	1
14	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2701	BOLT, THRU, ALLEN	4	4
15	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2703	WASHER, LOCK	5	5
16	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3306	SCREW, RETAINER	3	3
17	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3302	WASHER, RETAINER	3	3
18	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-3304	BUSHING, ROTOR	1	1
19	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-3303-1	BEARING, FRONT	1	1
20	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-3300	HOUSING, FRONT	1	1
21	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-3305	BUSHING	1	1
22	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0L9X3	11-3301	FAN	1	1
23	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	20-271-17MM	PULLEY, GEAR DRIVE	1	1
24	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1025	WASHER, LOCK	1	1
25	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1030	NUT	1	1
26	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-5531	SEMICONDUCTOR DEVICE	2	2
27	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-5531-2	DIODE ASSEMBLY, 3-3	2	2
28	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-5531-1	DIODE ASSEMBLY, 2-1	2	2
29	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	10-2718	HEATSINK, NEGATIVE	1	1
30	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2717-3	SPACERS	4	4
31	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2713	SCREW, CAP	4	4
32	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2707	BOLT, HEX	1	1
33	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1503	CAPACITOR	2	2
34	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1070	WASHER, LOCK	2	2
35	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1099	SCREW	2	2
36	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1094	WASHER, FIBER	2	2
37	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1113	POST, BATTERY	2	2
38	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2745	INSULATOR	4	4
39	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2715-1	HEATSINK, LEFT POS.	1	1
40	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1083	INSULATOR	4	4
41	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2708	WASHER, FLAT	4	4
42	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1109	SCREW	2	2
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 03 - ENGINE/ ALTERNATOR ASSEMBLY (MEP-501A) FIG. F-20 DC ALTERNATOR ASSEMBLY (MEP-501A)		
43	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-8303	DIODE ASSEMBLY, DUAL	6	6
44	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1080	TERMINAL, HEATSINK	6	6
45	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1079	INSULATOR, HEATSINK	6	6
46	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-1098	BOLT, FLANGE	2	2
47	XBFZZ	XBFZZ	XBFZZ	XBFZZ	0L9X3	11-2714-1	HEATSINK, RIGHT POS.	1	1
							END OF FIGURE		

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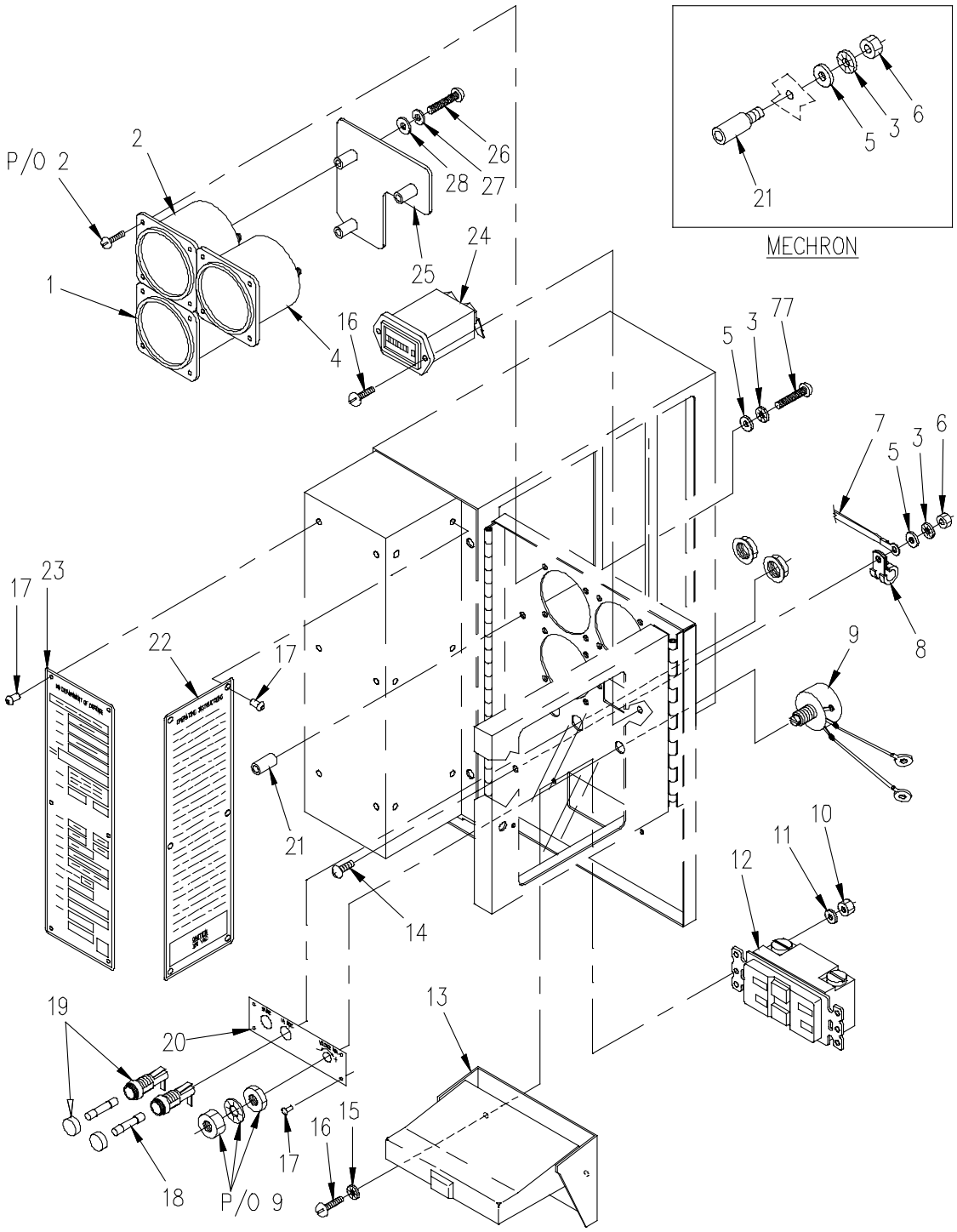

Figure F-21. Control Panel Assembly (MEP-531A) (Sheet 1 of 3)

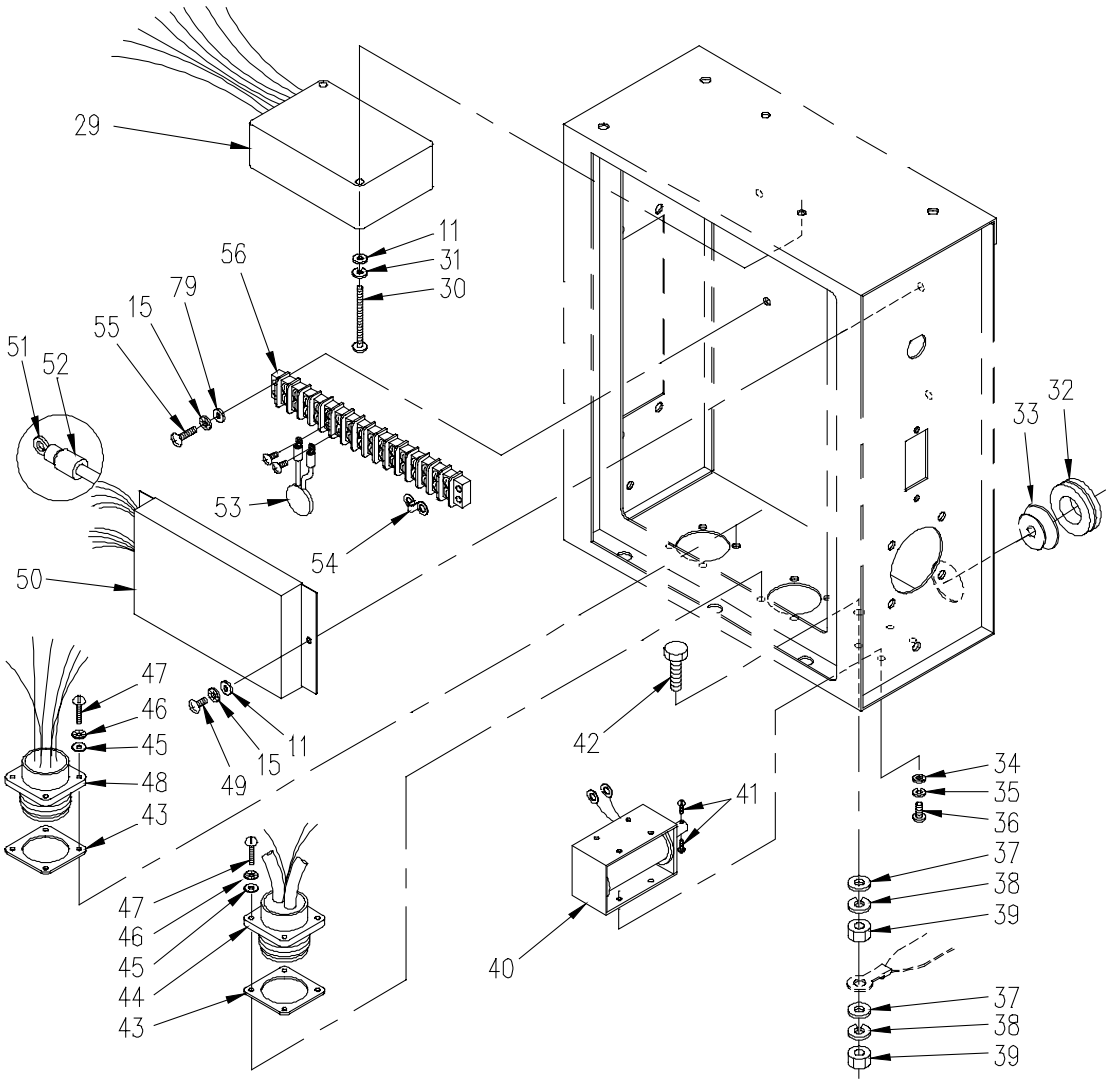

Figure F-21. Control Panel Assembly (MEP-531A) (Sheet 2 of 3)

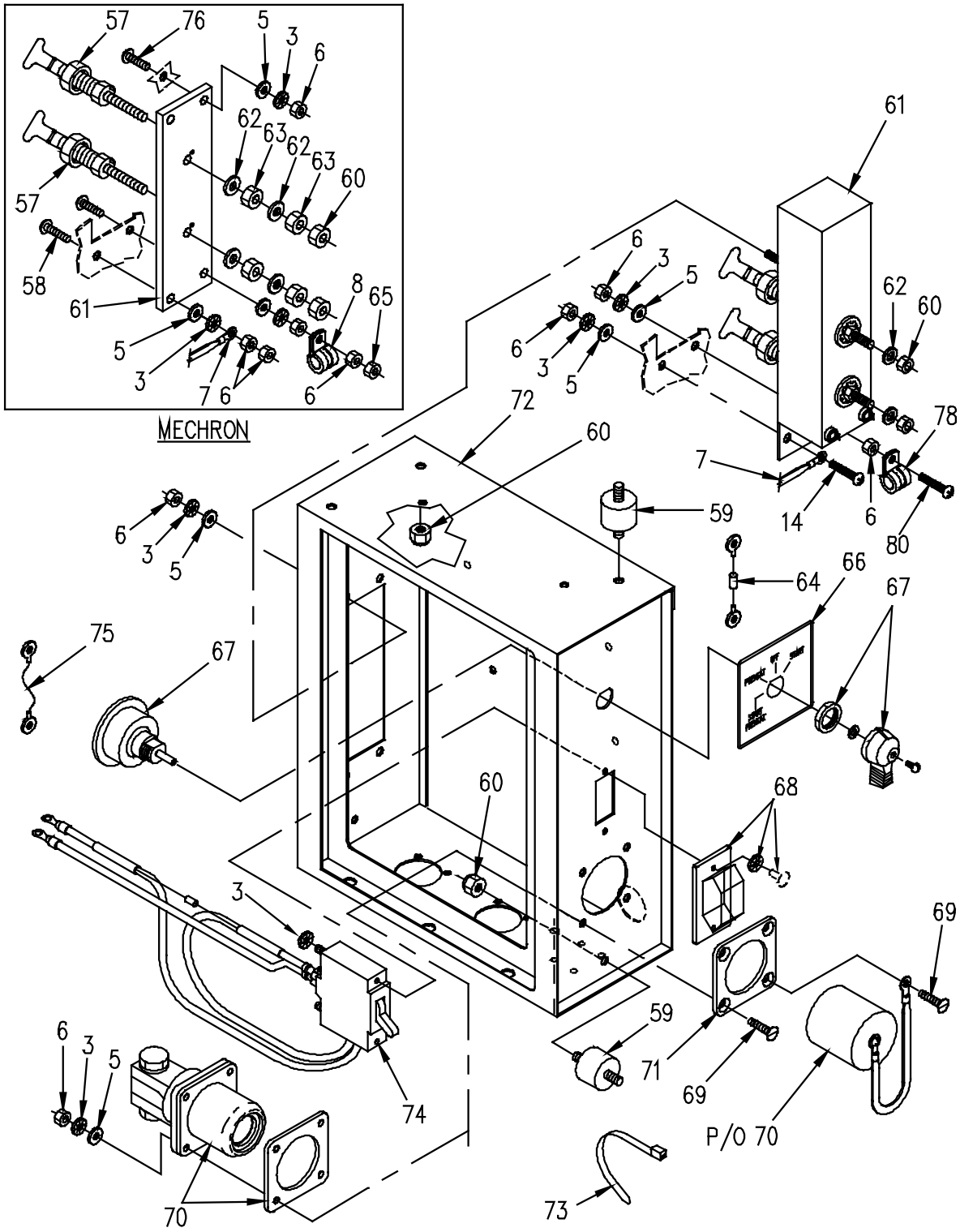

Figure F-21. Control Panel Assembly (MEP-531A) (Sheet 3 of 3)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-21 CONTROL PANEL ASSEMBLY (MEP-531A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	K6197	083-41S2-211485	METER, FREQUENCY	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	OBHF9	0200A1805AB0001	VOLTMETER, AC	1	1
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-73	WASHER, LOCK, FLAT	12	12
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	K6197	083-75A2-211841	AMMETER	1	1
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-18	WASHER, FLAT	10	11
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-8	NUT, PLAIN, HEX (MEP-531A)	10	13
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-8	NUT, PLAIN, HEX (MECHRON 120 VAC)	12	12
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-1	STRAP, GROUND	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	22175	44LC76WDC-7YN	CLAMP, LOOP, CUSHION (MEP-531A)	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	22175	44LC76WDC-6YN	CLAMP, LOOP, CUSHION (MECHRON 120 VAC)	2	2
9	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8077	POTENTIOMETER, VOLT. Breakdown, See Fig. F-24	1	1
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-3	NUT, PLAIN, HEX	2	2
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-17	WASHER, FLAT	6	6
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	BRYAN	GFR83FT	RECEPTACLE, GROUND	1	1
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81703	30451	COVER, RECEPTACLE	1	1
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2767PIC	SCREW, MACHINE (MECHRON 120 VAC)	1	1
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2767PIC	SCREW, MACHINE (MEP-531A)	2	2
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-71	WASHER, LOCK, FLAT	6	6
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1287PIC	SCREW, MACHINE	4	4
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A402H	RIVET, BLIND	16	55
18	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81349	F02A250V1A	FUSE, CARTRIDGE	2	2
19	PAOZZ	PAOZZ	PAOZZ	PAOZZ	59873	352-0362-00	FUSEHOLDER, EXTRACT.	2	2
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8013	PLATE, INSTRUMENT	1	1
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	51506	1250-R-SS-.625-12	STANDOFF,FEMALE (MEP-531A)	1	1
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	55566	4077-1032-SS-20	STANDOFF, MALE-FEMALE (MECHRON 120 VAC)	1	1
22	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8048	PLATE, INSTRUCTION	1	1
23	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8060	PLATE, IDENTIFICATION	1	1
24	PAOZZ	PAOZZ	PAOZZ	PAOZZ	74400	85311	METER, TIME TOTALIZING	1	1
25	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8184	COVER, PROTECTIVE	1	1
26	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	M4X0.7X22M	SCREW, PAN HEAD	3	3
27	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-42	WASHER, LOCK-SPRING	3	3
28	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-24	WASHER, FLAT	3	3
29	PAFZZ	PAFZZ	PAFZZ	PAFZZ	30554	95-8076	VOLTAGE REGULATOR	1	1
30	XBFZZ	XBFZZ	XBFZZ	XBFZZ	97403	13218E0493-1296PIC	SCREW, MACHINE	2	2
31	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-41	WASHER, LOCK-SPRING	2	2
32	PAOZZ	PAOZZ	PAOZZ	PAOZZ	70485	804	GROMMET, NONMETALLIC	1	1
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-21 CONTROL PANEL ASSEMBLY (MEP-531A)		
33	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8026	GUIDE, CABLE	1	1
34	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH030R	WASHER, FLAT	4	4
35	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRRN030	WASHER, LOCK-SPRING	4	4
36	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1867EC030080	SCREW, MACHINE	4	4
37	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-2	WASHER, FLAT	2	5
38	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-44	WASHER, LOCK-SPRING	2	5
39	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-22790-1	NUT, HEXAGON	2	2
40	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8019-2	SOLENOID VALVE ASSY Breakdown, See Fig. F-25	1	1
41	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1867BC040060	SCREW, MACHINE	2	2
42	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1821BH025C100N	SCREW, CAP, HEXAGON	1	1
43	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8047-1	GASKET, CONNECTOR	2	2
44	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8084	WIRING HARNESS, CON. Breakdown, See Fig. F-26	1	1
45	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-23	WASHER, FLAT	8	10
46	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-70	WASHER, LOCK, FLAT	8	10
47	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1249PIC	SCREW, MACHINE	8	8
48	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8075	WIRING HARNESS, CON. Breakdown, See Fig. F-27	1	1
49	XBFZZ	XBFZZ	XBFZZ	XBFZZ	97403	13218E0493-1285PIC	SCREW, MACHINE	2	2
50	PBFZZ	PBFZZ	PBFZZ	PBFZZ	14058	41435-501	CONTROL, GENERATOR	1	1
51	PAFZZ	PAFZZ	PAFZZ	PAFZZ	06383	P14-6R	TERMINAL, LUG	8	V
52	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8021-92	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Fig BULK, Item 12, 8 in. required.	1	1
53	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8027	DISCHARGE VARISTOR	1	1
54	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80063	SM-A-57192-53	BUS, CONDUCTOR	1	1
55	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1289PIC	SCREW, MACHINE	2	2
56	XBOZZ	XBOZZ	XBOZZ	XBOZZ	73631	1516	BOARD, TERMINAL	1	1
57	PAOZZ	PAOZZ	PAOZZ	PAOZZ	82168	DG3M2F-S-RPC	TERMINAL, STUD (MECHRON 120 VAC)	2	3
58	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2771PIC	SCREW, MACHINE (MECHRON 120 VAC)	2	2
59	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81860	A22-131	MOUNT, RESILIENT	4	4
60	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-040	NUT, SELF-LOCKING	6	10
61	XBOOO	XBOOO	XBOOO	XBOOO	OAM43	F18356	FILTER, EMI (MEP-531A)	1	1
61	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8149	BOARD, LOAD TERMINAL (MECHRON 120 VAC)	1	1
62	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-26	WASHER, FLAT (MEP-531A)	2	2
62	XBOOO	XBOOO	XBOOO	XBOOO	30554	88-20564-19	WASHER, FLAT (MECHRON 120 VAC)	4	4

(CONTINUED)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7)
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-21 CONTROL PANEL ASSEMBLY (MEP-531A)		
63	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-22336-3	NUT, HEX, JAM (MECHRON 120 VAC)	4	4
64	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8050	FLYWHEEL DIODE ASSY Breakdown, See Fig. F-28	1	1
65	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NM-02	NUT, SELF-LOCKING (MECHRON 120 VAC)	1	1
66	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8015	PLATE, INSTRUCTION	1	1
67	PAOZZ	PAOZZ	PAOZZ	PAOZZ	13445	95509-01	SWITCH, ROTARY	1	1
68	PAOZZ	PAOZZ	PAOZZ	PAOZZ	97942	342C698H06	BOOT, DUST AND MOIS.	1	1
69	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8158-274	SCREW, MACHINE FLAT	4	4
70	XBOZZ	XBOZZ	XBOZZ	XBOZZ	19207	11674728	CONNECTOR, RECEPTACLE	1	1
71	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8018	BRACKET, SLAVE RECEPT.	1	1
72	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8066	PANEL CONSTRUCTION Breakdown, See Fig. F-23	1	1
73	XBOZZ	XBOZZ	XBOZZ	XBOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN	1	29
74	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8078	FLYWHEEL DIODE ASSY	1	1
75	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166	LEAD, ELECTRICAL Breakdown, See Fig. F-29	1	1
76	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2769PIC	SCREW, MACHINE (MECHRON 120 VAC)	2	2
77	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2764PIC	SCREW, MACHINE (MEP-531A)	1	1
78	XBOZZ	XBOZZ	XBOZZ	XBOZZ	22175	44LC76WDC-8YN	CLAMP, LOOP (MEP-531A)	1	1
79	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-27	WASHER, FLAT (MEP-531A)	2	2
80	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2771PIC	SCREW, MACHINE (MEP-531A)	1	1
							END OF FIGURE		

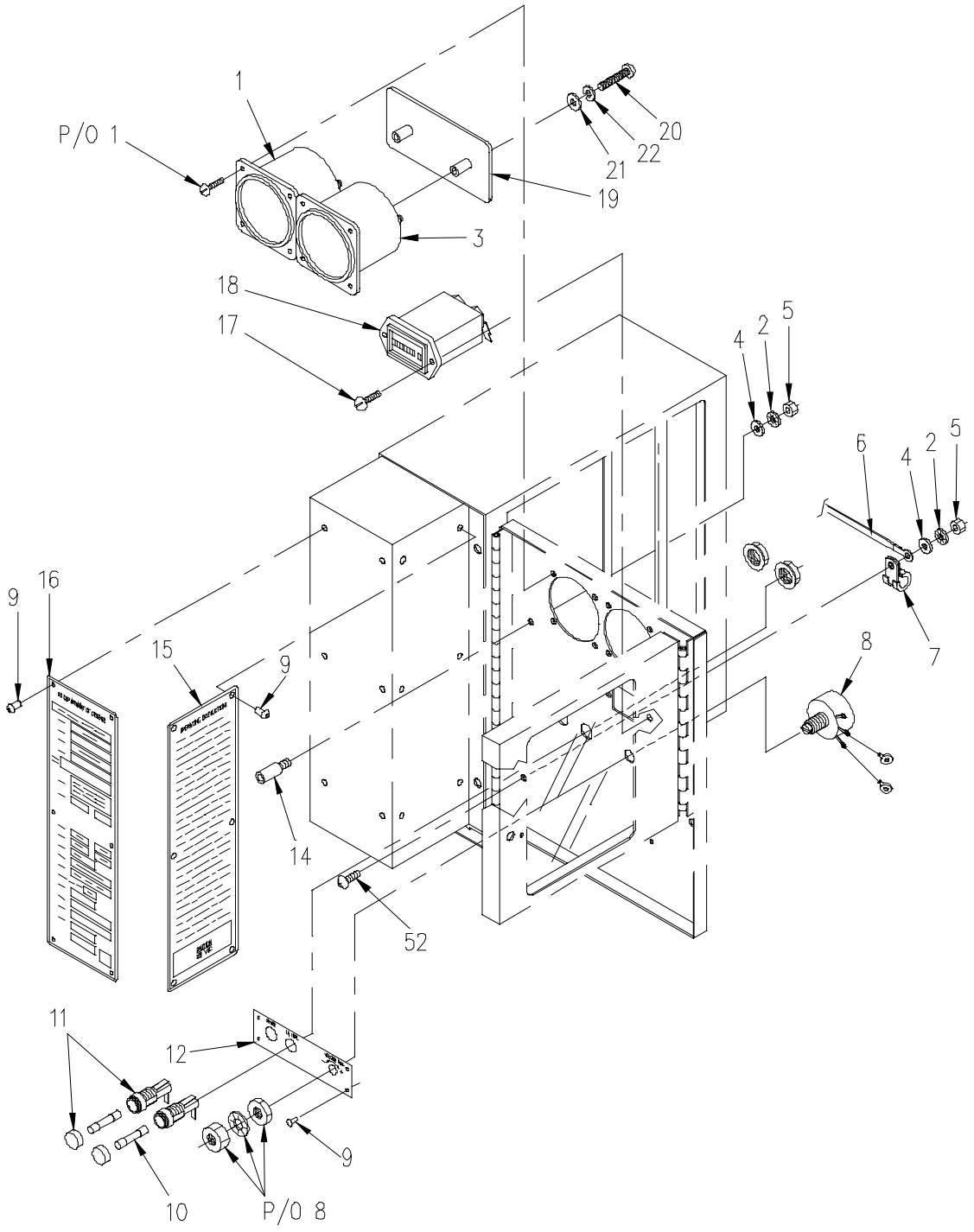

Figure F-22. Control Panel Assembly (MEP-501A) (Sheet 1 of 3)

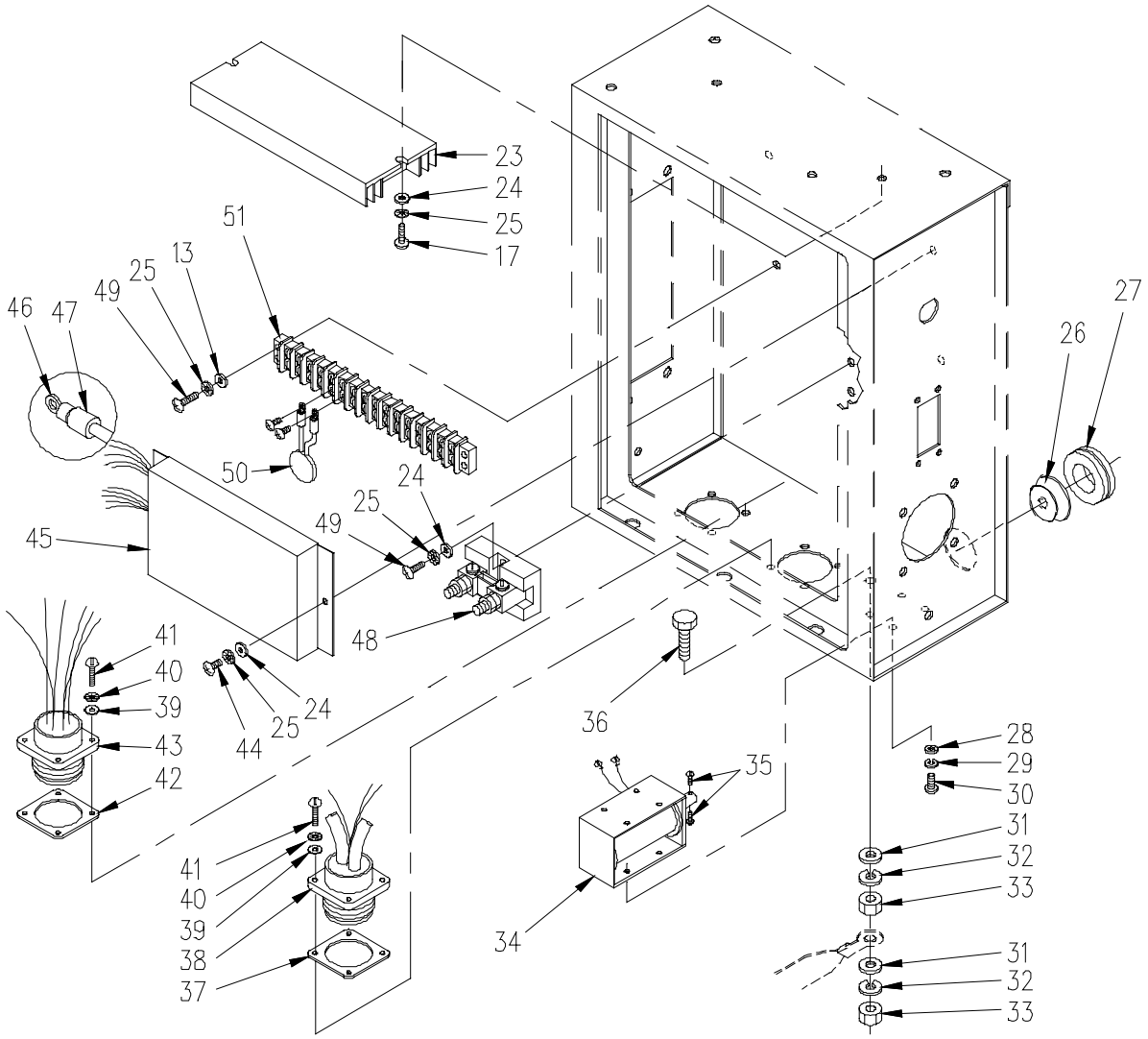

Figure F-22. Control Panel Assembly (MEP-501A) (Sheet 2 of 3)

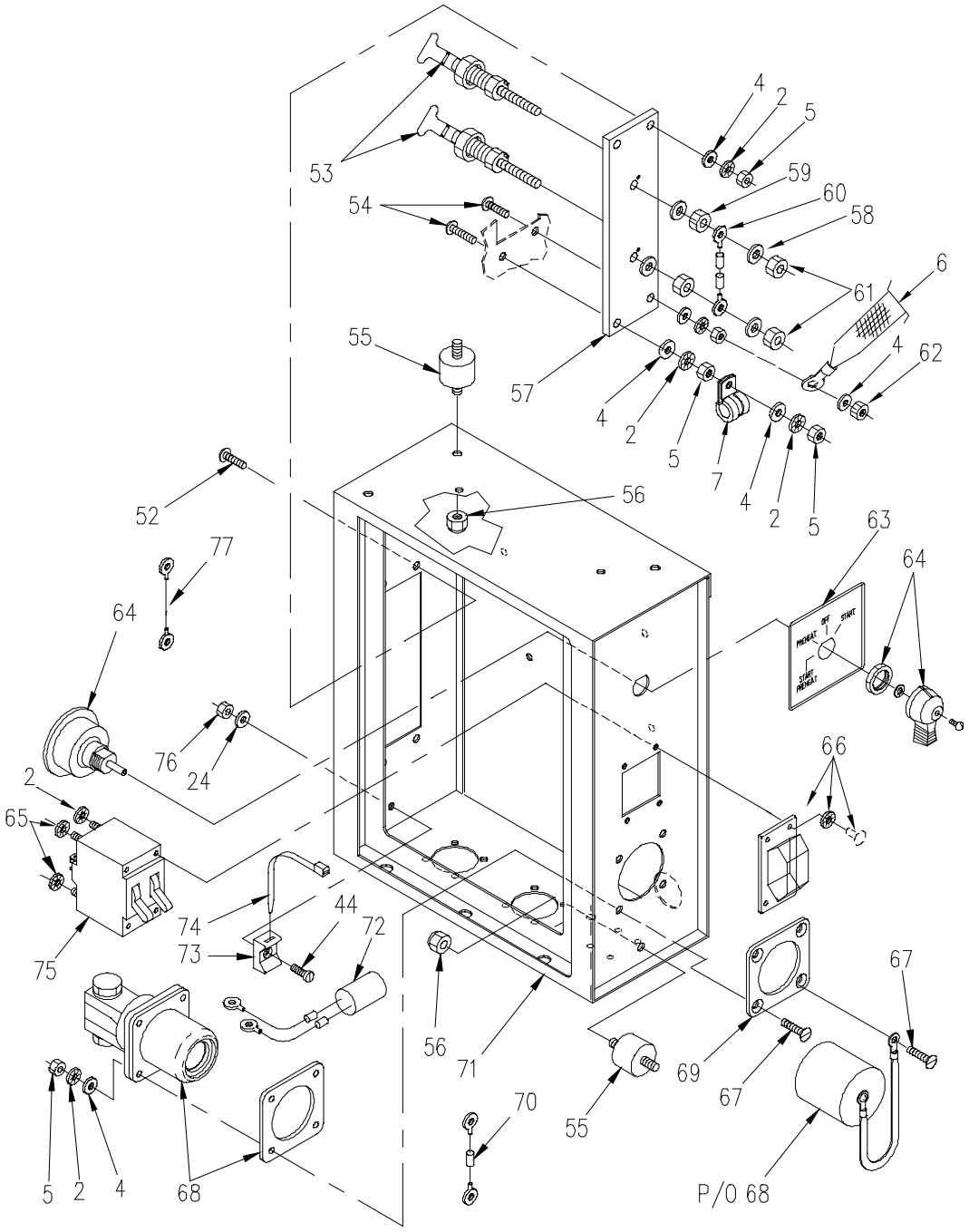

Figure F-22. Control Panel Assembly (MEP-501A) (Sheet 3 of 3)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A) FIG. F-22 CONTROL PANEL ASSEMBLY (MEP-501A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	K6197	083-80V2-211843	VOLTMETER, DC	1	1
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-73	WASHER, LOCK, FLAT	13	13
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	K6197	083-80A2-211844	AMMETER	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-18	WASHER, FLAT	12	12
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8159-8	NUT, PLAIN, HEX	11	13
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8024-1	STRAP, GROUND	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	22175	44LC76WDC-6YN	CLAMP, LOOP, CUSHION	2	2
8	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8014	POTENTIOMETER, VOLT. Breakdown, See Fig. F-24	1	1
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A402H	RIVET, BLIND	16	55
10	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81349	F02A250V1A	FUSE, CARTRIDGE	2	2
11	PAOZZ	PAOZZ	PAOZZ	PAOZZ	59873	352-0362-00	FUSEHOLDER, EXTRACT	2	2
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8013	PLATE, INSTRUMENT	1	1
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-27	WASHER, FLAT	2	2
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	55566	4077-1032-SS-20	STANDOFF, MALE-FEMALE	1	1
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8011	PLATE, INSTRUCTION	1	1
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8010	PLATE, IDENTIFICATION	1	1
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1287PIC	SCREW, MACHINE	4	4
18	PAOZZ	PAOZZ	PAOZZ	PAOZZ	74400	85311	METER, TIME TOTALIZING	1	1
19	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8185	COVER, PROTECTIVE	1	1
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	M4X0.7X22M	SCREW, PAN HEAD	2	2
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-24	WASHER, FLAT	2	4
22	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-42	WASHER, LOCK-SPRING	2	4
23	PAFZZ	PAFZZ	PAFZZ	PAFZZ	55156	20124SR	REGULATOR, VOLTAGE	1	1
24	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-17	WASHER, FLAT	7	7
25	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-71	WASHER, LOCK, FLAT	8	8
26	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8026	GUIDE, CABLE	1	1
27	PAOZZ	PAOZZ	PAOZZ	PAOZZ	70485	804	GROMMET, NONMETALLIC	1	1
28	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1822BH030R	WASHER, FLAT	4	4
29	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B18212HRRN030	WASHER, LOCK-SPRING	4	4
30	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1867EC030080	SCREW, MACHINE	4	4
31	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-2	WASHER, FLAT	2	3
32	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6744-44	WASHER, LOCK-SPRING	2	3
33	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-22790-1	NUT, HEXAGON	2	2
34	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8019-1	SOLENOID VALVE ASSY Breakdown, See Fig. F-25	1	1
35	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1867BC040060	SCREW, MACHINE	2	2
36	XBOZZ	XBOZZ	XBOZZ	XBOZZ	80204	B1821BH025C100N	SCREW, CAP, HEXAGON	1	1
37	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8047-1	GASKET, CONNECTOR	1	1
38	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8023	WIRING HARNESS, CON. Breakdown, See Fig. F-26	1	1
39	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-23	WASHER, FLAT	8	10
40	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-70	WASHER, LOCK, FLAT	8	10
							(CONTINUED)		

1	2 SMR CODE				3	4	5	6	7
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A)		
							FIG. F-22 CONTROL PANEL ASSEMBLY (MEP-501A)		
41	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1249PIC	SCREW, MACHINE	8	8
42	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8047-2	GASKET, CONNECTOR	1	1
43	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8022	WIRING HARNESS, CON. Breakdown, See Fig. F-27	1	1
44	XBFZZ	XBFZZ	XBFZZ	XBFZZ	97403	13218E0493-1285PIC	SCREW, MACHINE	3	3
45	PBFZZ	PBFZZ	PBFZZ	PBFZZ	14058	41435-501	CONTROL, GENERATOR	1	1
46	PAFZZ	PAFZZ	PAFZZ	PAFZZ	06383	P14-6R	TERMINAL, LUG	9	V
47	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8005-99	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Fig BULK, Item 12, 8 in. required.	1	1
48	XBOZZ	XBOZZ	XBOZZ	XBOZZ	K6197	871-92V3-000029	SHUNT, INSTRUMENT	1	1
49	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-1289PIC	SCREW, MACHINE	4	4
50	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8027	DISCHARGE VARISTOR	1	1
51	XBOZZ	XBOZZ	XBOZZ	XBOZZ	73631	1514	TERMINAL BOARD, MOLD.	1	1
52	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2769PIC	SCREW, MACHINE	3	3
53	PAOZZ	PAOZZ	PAOZZ	PAOZZ	82168	DG3M6F-S-RPC	TERMINAL, STUD	2	2
54	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13218E0493-2771PIC	SCREW, MACHINE	2	2
55	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81860	A22-131	MOUNT, RESILIENT	4	4
56	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-040	NUT, SELF-LOCKING	4	8
57	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8016	BOARD, LOAD TERMINAL	1	1
58	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	88-20564-25	WASHER, FLAT	4	4
59	XBOZZ	XBOZZ	XBOZZ	XBOZZ	63857	BS4-1801PC15	NUT, PLAIN, HEXAGON	2	2
60	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8025	TRANSIENT SUPPRESSOR Breakdown, See Fig. F-32	1	1
61	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NE-083	NUT, SELF-LOCKING	2	2
62	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NM-02	NUT, SELF-LOCKING	1	1
63	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8015	PLATE, INSTRUCTION	1	1
64	PAOZZ	PAOZZ	PAOZZ	PAOZZ	13445	95509-01	SWITCH, ROTARY	1	1
65	XBOZZ	XBOZZ	XBOZZ	XBOZZ	97403	13230E6743-74	WASHER, LOCK, FLAT	2	2
66	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81349	M5423/14-06	BOOT, DUST AND MOIS.	1	1
67	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8158-274	SCREW, MACHINE FLAT	4	4
68	XBOZZ	XBOZZ	XBOZZ	XBOZZ	19207	11674728	CONNECTOR, RECEPTACLE	1	1
69	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8018	BRACKET, SLAVE RECEP.	1	1
70	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8050	FLYWHEEL DIODE ASSY Breakdown, See Fig. F-28	1	1
71	XBOOO	XBOOO	XBOOO	XBOOO	30554	95-8006	PANEL CONSTRUCTION Breakdown, See Fig. F-23	1	1
72	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8017	CAPACITOR ASSEMBLY Breakdown, See Fig. F-31	1	1
73	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	TM3S8-C100	MOUNT, CABLE TIE	1	1
74	XBOZZ	XBOZZ	XBOZZ	XBOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN, ELEC.	1	29
75	PAOZZ	PAOZZ	PAOZZ	PAOZZ	74193	AM2S-Z272-1	CIRCUIT BREAKER, 2-POLE	1	1
76	XBOZZ	XBOZZ	XBOZZ	XBOZZ	019L2	79NM-62	NUT, SELF-LOCKING	1	1
77	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056	LEAD, ELECTRICAL Breakdown, See Fig. F-30	1	1
							END OF FIGURE		

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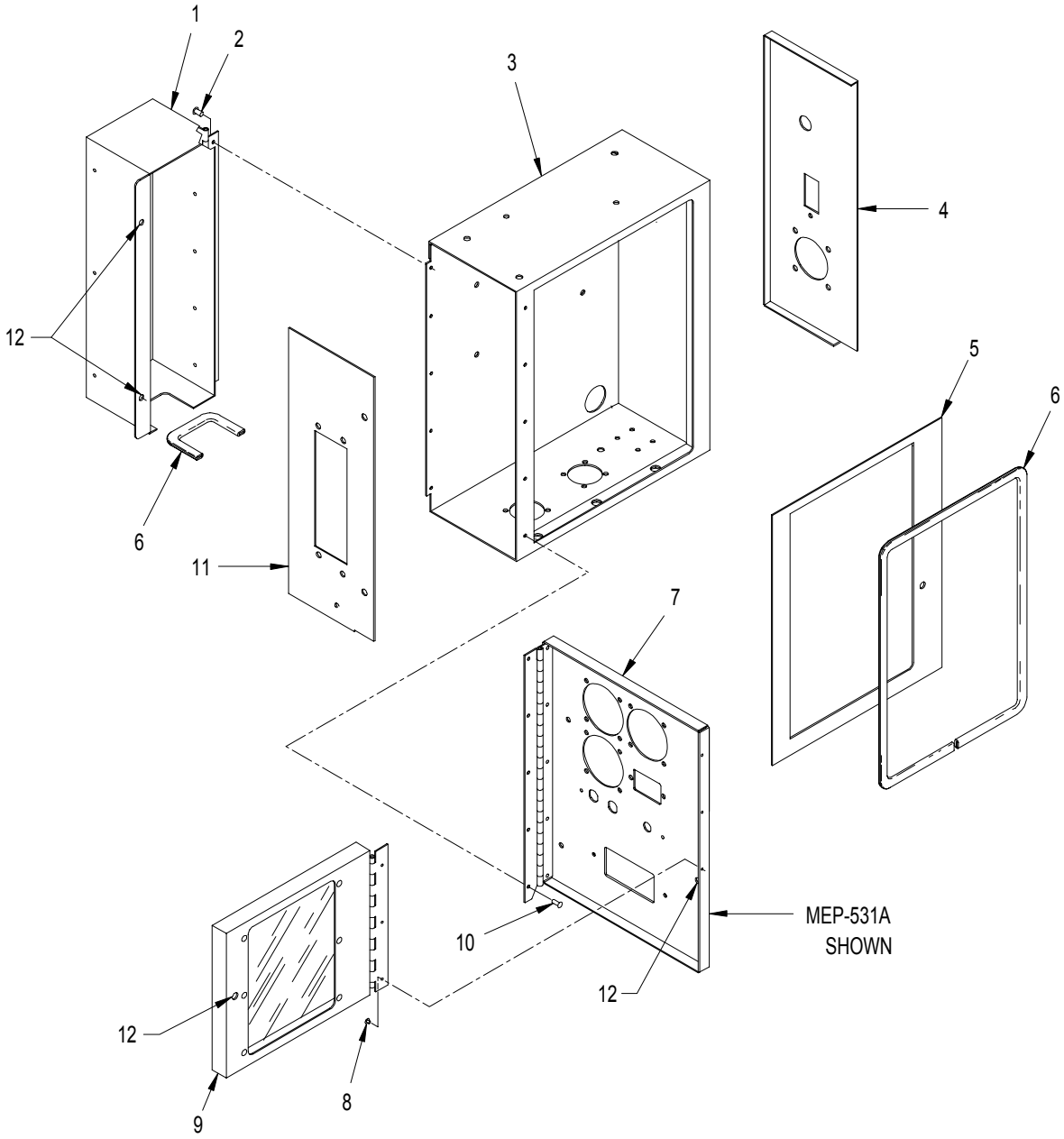
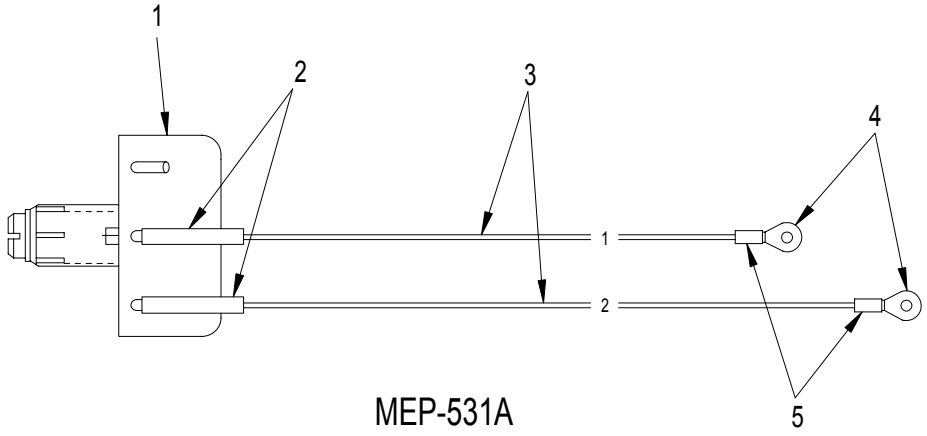
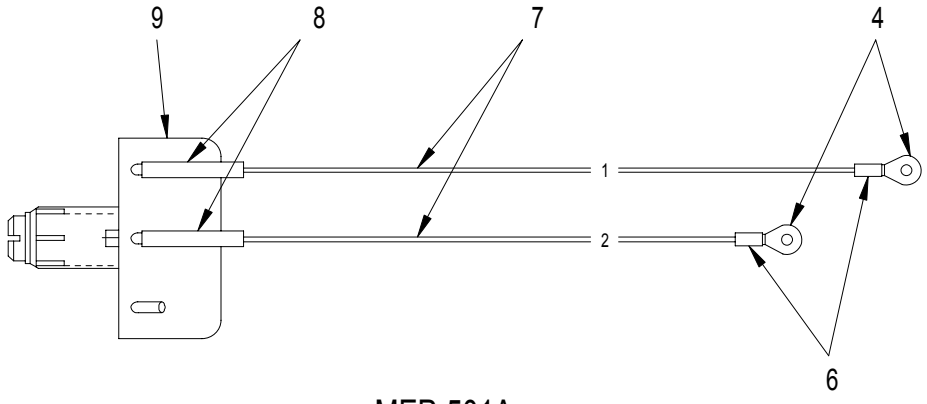


Figure F-23. Control Panel Construction (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSY (MEP-531A/501A) FIG. F-23 CONTROL PANEL CONSTRUCT (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8176	LUG COVER ASSY	1	1
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A403H	RIVET, BLIND	7	9
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8068	HOUSING, CTROL PNL (MEP-531A)	1	1
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8085	HOUSING, CTROL PNL (MEP-501A)	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8067	PANEL, RIGHT (MEP-531A)	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8086	PANEL, RIGHT (MEP-501A)	1	1
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8091	PANEL, FRONT	1	1
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8066-14	PROTECTOR, EDGE (MEP-531A) Make from RW-25SBR, Figure BULK, Item 7, 45 in. required.	1	1
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8006-14	PROTECTOR, EDGE (MEP-501A) Make from RW-25SBR, Figure BULK, Item 7, 45 in. required	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8179	PANEL, DOOR CONSTR. (MEP-531A)	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8178	PANEL, DOOR ASSY (MEP-501A)	1	1
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	11815	BSP-32	RIVET, BLIND, PRO.	3	3
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8177	COVER,INSTR ASSY	1	1
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	81349	M24243/6-A402H	RIVET, BLIND	39	55
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8087	PANEL, LEFT	1	1
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	94222	47-62-512-50	FASTENER, PNL	4	4
							END OF FIGURE		



MEP-531A



MEP-501A

Figure F-24. Voltage Adjust Potentiometer

(1) ITEM NO.	(2) SMR CODE a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY	(7) USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSY (MEP-531A/501A) FIG. F-24 VOLTAGE ADJUST POTENTIOMETER		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81349	RV4LAYSA102A	POTENTIOMETER	1	1
2	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8077-3	SLEEVING, INSULAT'N Make from ST-301-1/8 BLACK, Figure BULK, Item 8, 1 in. required.	1	1
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8077-4	WIRE, ELECTRICAL 16 Make from 16878/3BJE-9, Figure BULK, Item 9, approx. 49 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	TERMINAL, LUG	2	V
5	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8077-5	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 2 in. required.	1	1
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8014-5	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 2 in. required.	1	1
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8014-4	WIRE, ELECTRICAL 16 Make from 16878/3BJE-9, Figure BULK, Item 9, approx. 46 in. required.	1	1
8	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8014-2	SLEEVING, INSULATION Make from ST-301-1/8 BLACK, Figure BULK, Item 8, 1 in. required.	1	1
9	PAOZZ	PAOZZ	PAOZZ	PAOZZ	81349	RV4LAYSA104A	POTENTIOMETER END OF FIGURE	1	1

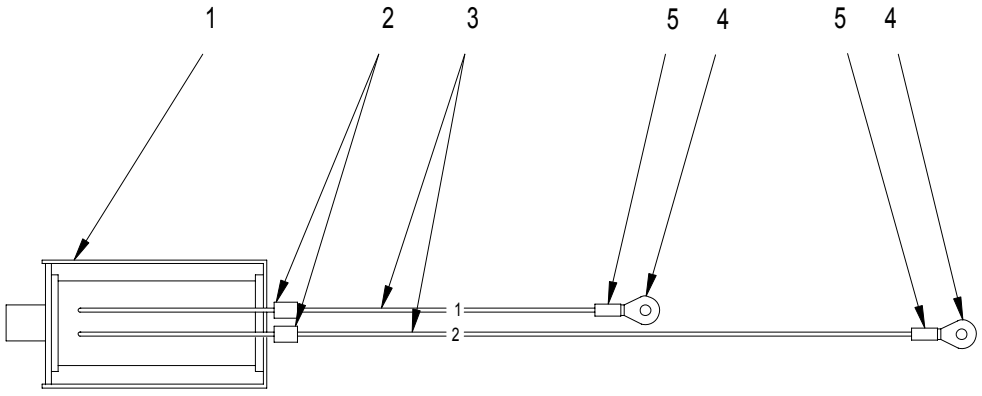


Figure F-25. LOP Shutdown Solenoid Assembly

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSY (MEP-531A/501A) FIG. F-25 LOP SHUTDOWN SOLENOID ASSEMBLY		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	183266-91690	SOLENOID, ELECTRICAL	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	34068	SPLICE, CONDUCTOR (MEP-531A)	2	3
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	34068	SPLICE, CONDUCTOR (MEP-501A)	2	6
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8019-4	WIRE, ELECTRICAL 16 Make from 6878/3BJE-9, Fig BULK, Item 9, 21-1/2 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	TERMINAL, LUG	2	V
5	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8019-5	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 2 in. required. END OF FIGURE	1	1

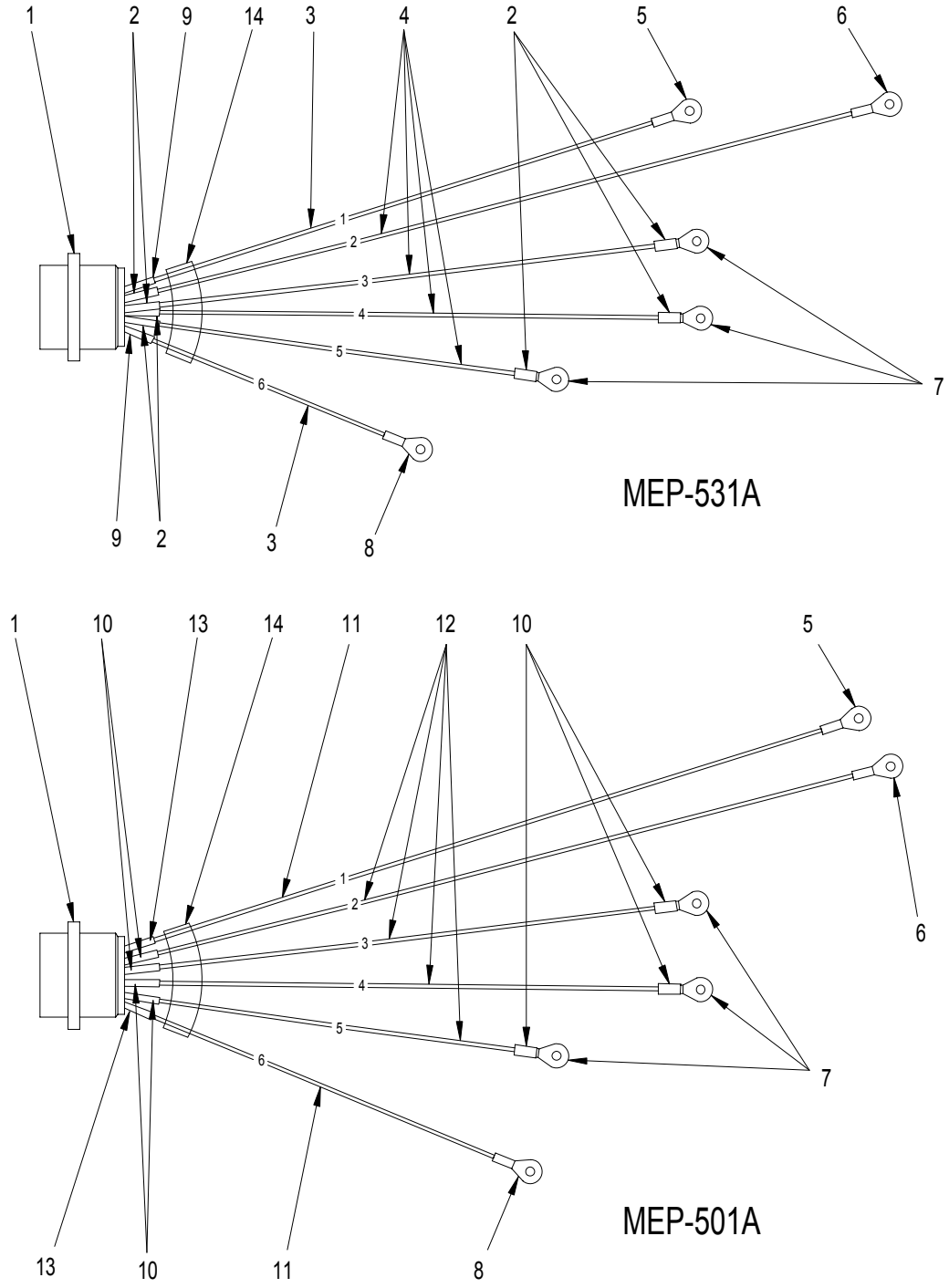


Figure F-26. Control Panel Engine Wiring Harnesses (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A/501A) FIG. F-26 CONTROL PANEL ENGINE WIRING HARNESSES (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	CA3102R20-8P- F80	CONNECTOR, RECEPTACLE	1	1
2	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8084-9	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 7 in. required.	1	1
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8084-6	WIRE, ELECTRICAL 8 Make from 16878/3BNL-9, Fig BULK, Item 10, 21-1/2 in. required.	1	1
4	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8084-7	WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Fig BULK, Item 9, 39-3/8 in. required.	1	1
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV8-10R-Q	TERMINAL, LUG	1	V
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98410	BB-837-10	TERMINAL, LUG	1	V
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P14-6R	TERMINAL, LUG	3	V
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV8-38R-Q	TERMINAL, LUG	1	V
9	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8084-8	SLEEVING, INSULATION Make from ST-301-3/8 BLACK, Fig BULK, Item 11, 2 in. required.	1	1
10	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8023-2	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Fig BULK, Item 12, 7 in. required.	1	1
11	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8023-8	WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Fig BULK, Item 10, 21-1/2 in. required.	1	1
12	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8023-9	WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Fig BULK, Item 9, 39-3/8 in. required.	1	1
13	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8023-7	SLEEVING, INSULATION Make from ST-301-3/8 BLACK, Fig BULK, Item 11, 2 in. required.	1	1
14	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8084-10	SLEEVING, INSULATION (MEP-531A), Make from ST-301-1-1/2 BLACK, Fig BULK, Item 21, 3 in. required.	1	1
14	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8023-10	SLEEVING, INSULATION (MEP-501A), Make from ST-301-1-1/2 BLACK, Fig BULK, Item 21, 3 in. required. END OF FIGURE	1	1

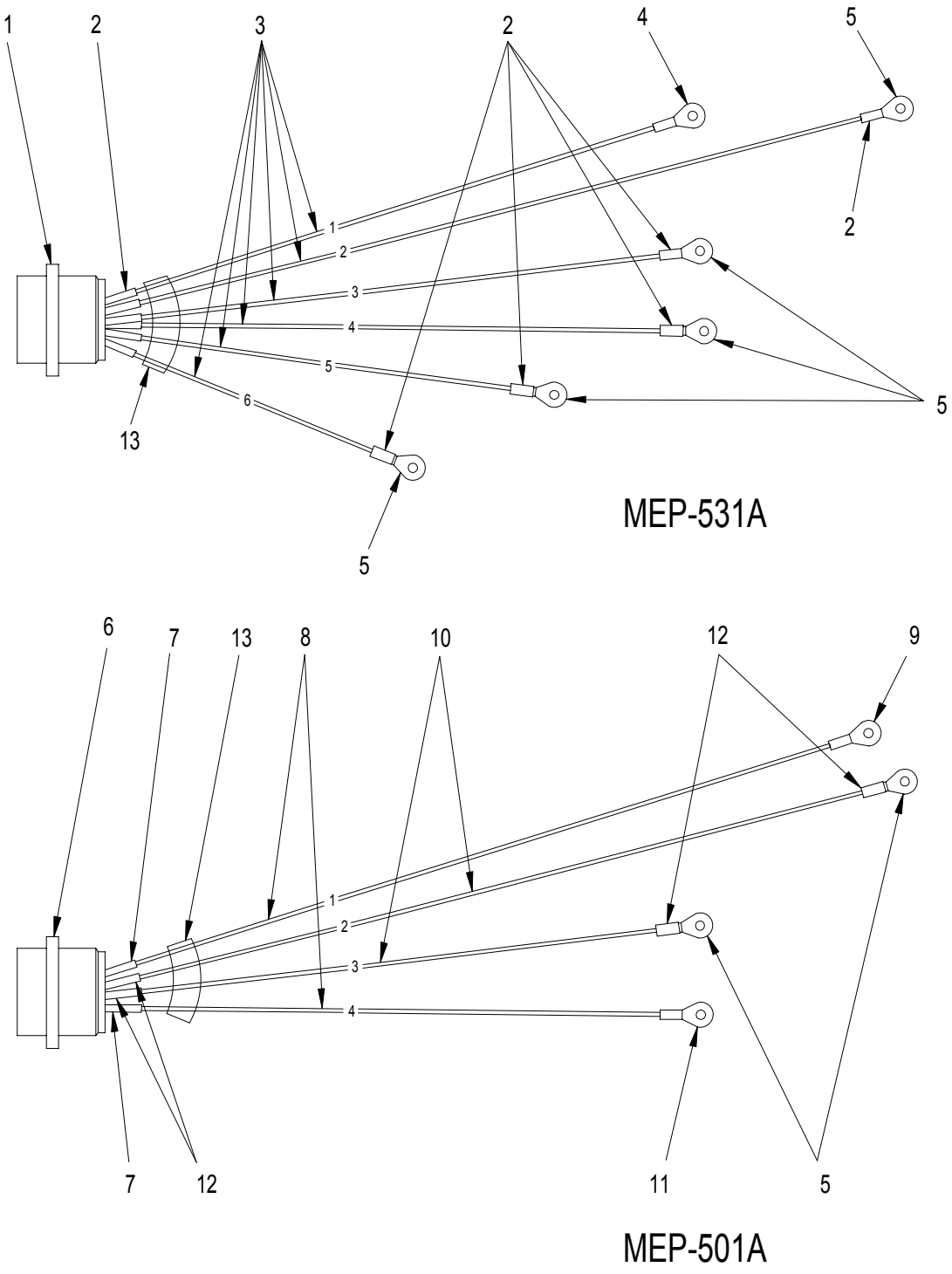


Figure F-27. Control Panel Alternator Wiring Harnesses (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7)
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A/501A) FIG. F-27 CONTROL PANEL ALTERNATOR WIRING HARNESSES (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	CA3102R20-15P-F80	CONNECTOR, RECEPTACLE	1	1
2	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8075-4	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 11 in. required.	1	1
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8075-5	WIRE, ELECTRICAL 14 Make from 16878/3BKE-9, Figure BULK, Item 13, 65-1/2 in. required.	1	1
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98410	BB-825-14	TERMINAL, LUG	1	V
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P14-6R	TERMINAL, LUG (MEP-531A)	5	V
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P14-6R	TERMINAL, LUG (MEP-501A)	2	V
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	CA3102R24-12P-F80	CONNECTOR, RECEPTACLE	1	1
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8022-2	SLEEVING, INSULATION Make from ST-301-3/8 BLACK, Figure BULK, Item 11, 2 in. required.	1	1
8	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8022-8	WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 9-1/2 in. required.	1	1
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV4-14R-E	TERMINAL, LUG	1	V
10	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8022-7	WIRE, ELECTRICAL 14 Make from 16878/3BKE-9, Figure BULK, Item 13, 20-3/4 in. required.	1	1
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV4-12R-E	TERMINAL, LUG	1	V
12	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8022-6	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 4 in. required.	1	1
13	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8022-9	SLEEVING, INSULATION (MEP-501A), Make from ST-301-1-1/2 BLACK, Figure BULK, Item 21, 3 in. required.	1	1
13	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8075-6	SLEEVING, INSULATION (MEP-531A), Make from ST-301-1-1/2 BLACK, Figure BULK, Item 21, 3 in. required. END OF FIGURE	1	1

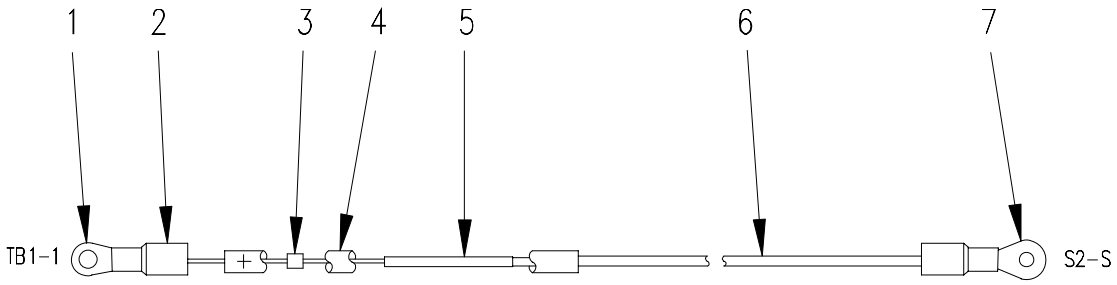


Figure F-28. Flywheel Diode Assembly

(1) ITEM NO.	(2) SMR CODE a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY	(7) USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-531A/501A) FIG. F-28 FLYWHEEL DIODE ASSEMBLY		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P14-6R	TERMINAL, LUG	1	V
2	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8050-7	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required.	1	1
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	01295	IN4006	SEMICONDUCTOR DEVICE	1	1
4	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8058-1	MARKER, INSULATION Make from ST-301-3/16 WHITE, Figure BULK, Item 15, approx. 3 in. required.	1	1
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	00779	34068	SPLICE, CONDUCTOR (MEP-531A)	1	3
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	00779	34068	SPLICE, CONDUCTOR (MEP-501A)	1	6
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8050-6	WIRE, ELECTRICAL 16 Make from 16878/3BJE-9, Figure BULK, Item 9, 13-1/2 in. required.	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98410	BB-837-10	TERMINAL, LUG END OF FIGURE	1	V

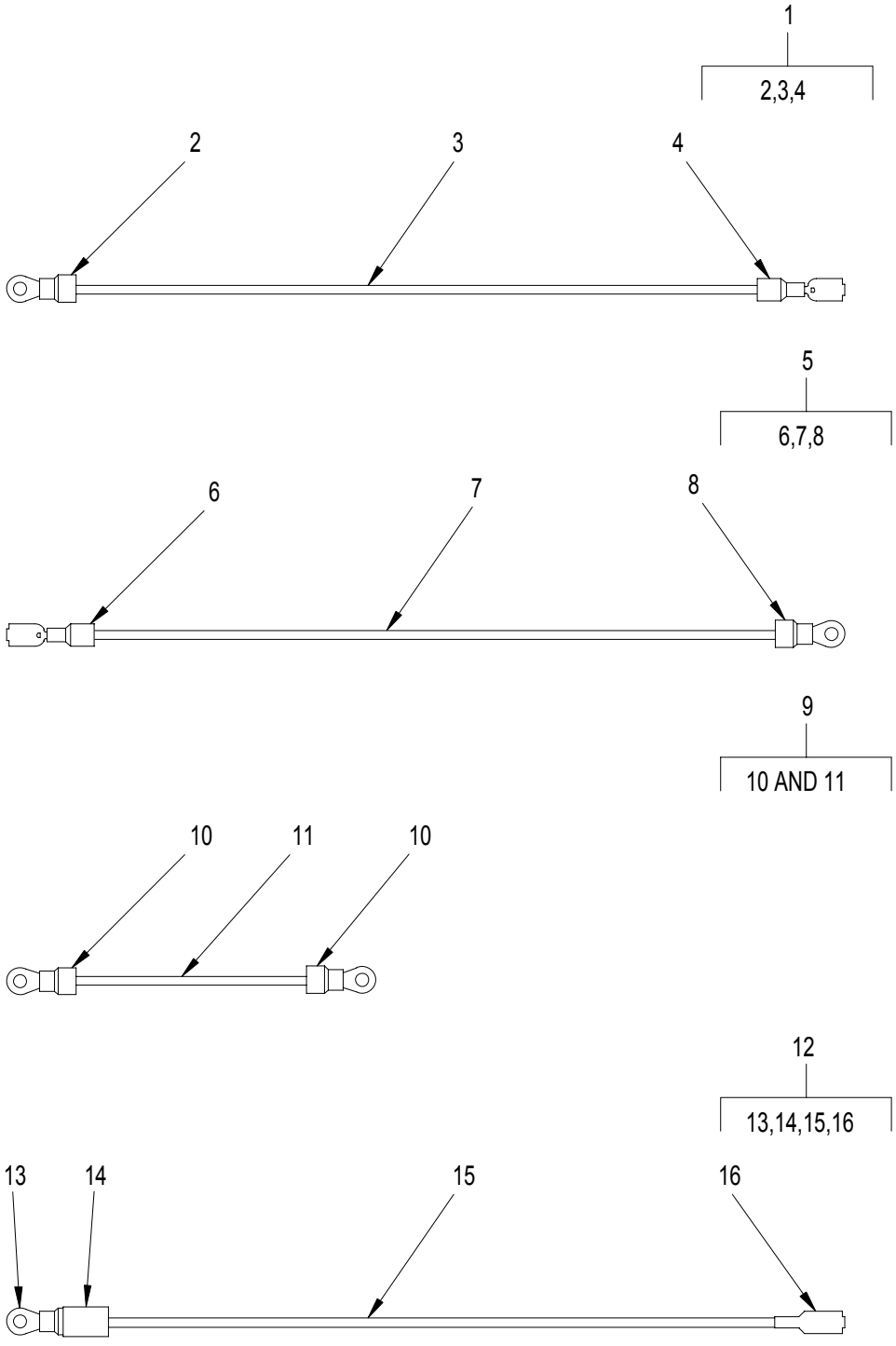


Figure F-29. Control Panel Electrical Leads (MEP-531A) (Sheet 1 of 5)

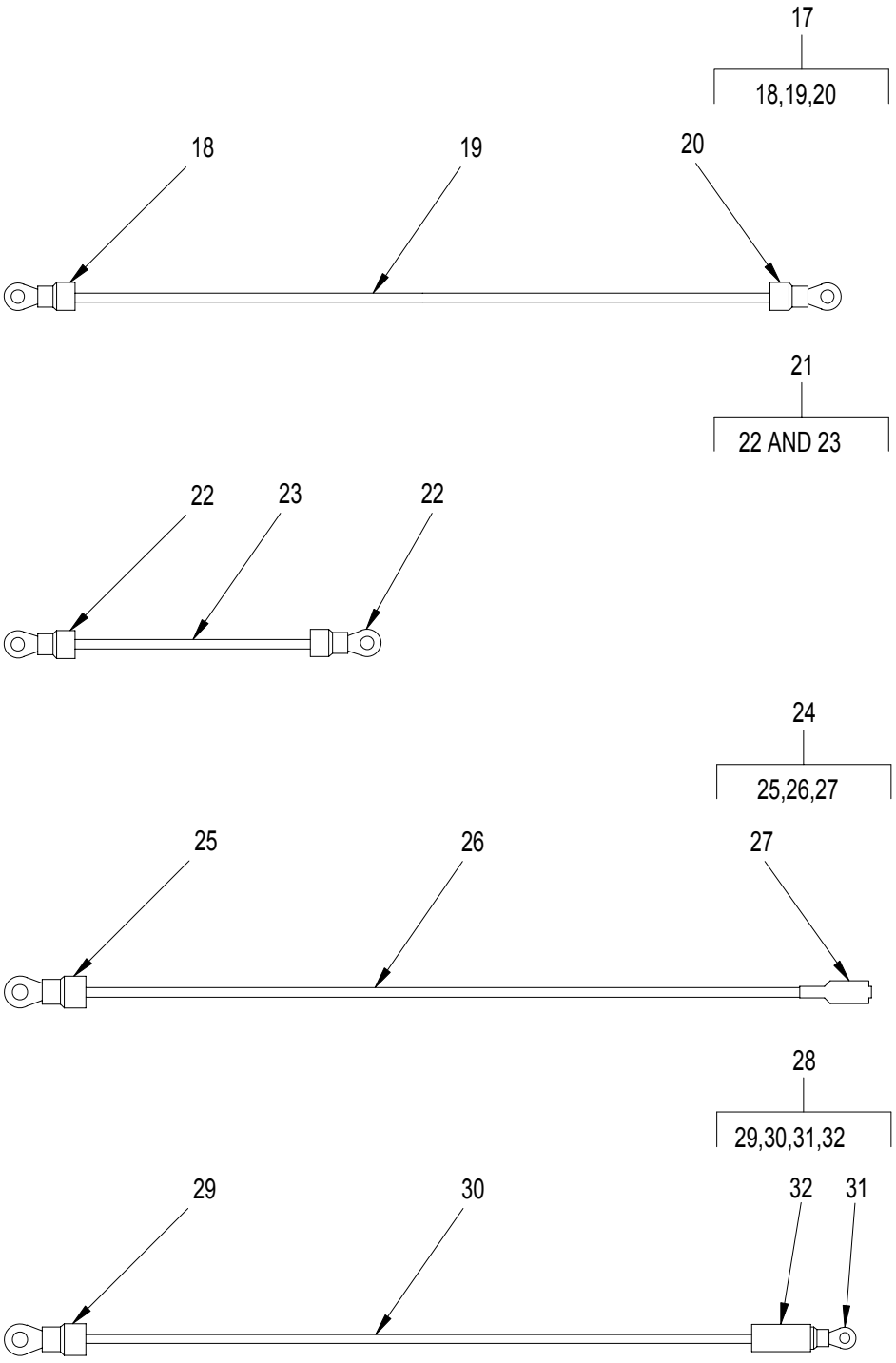


Figure F-29. Control Panel Electrical Leads (MEP-531A) (Sheet 2 of 5)

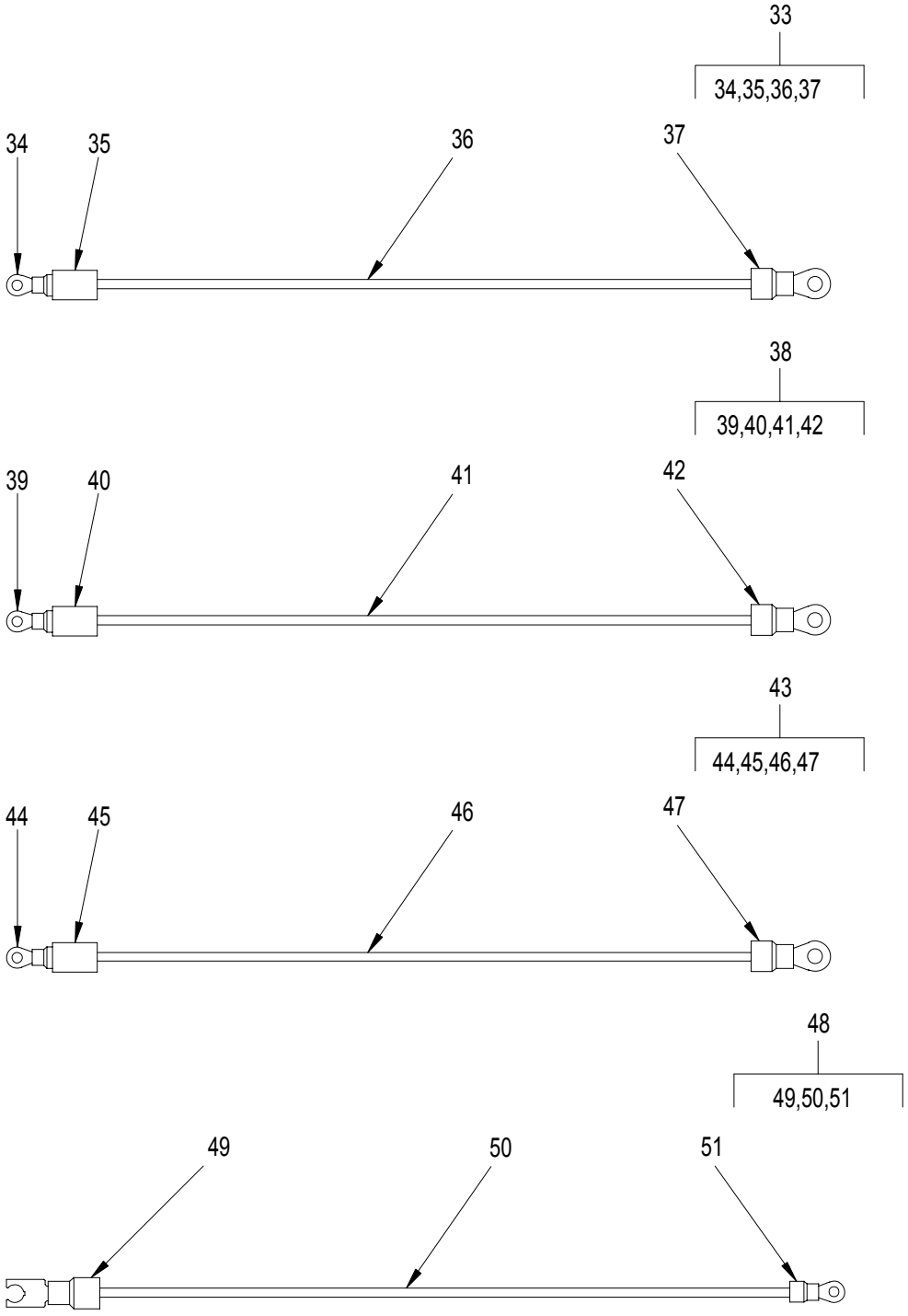


Figure F-29. Control Panel Electrical Leads (MEP-531A) (Sheet 3 of 5)

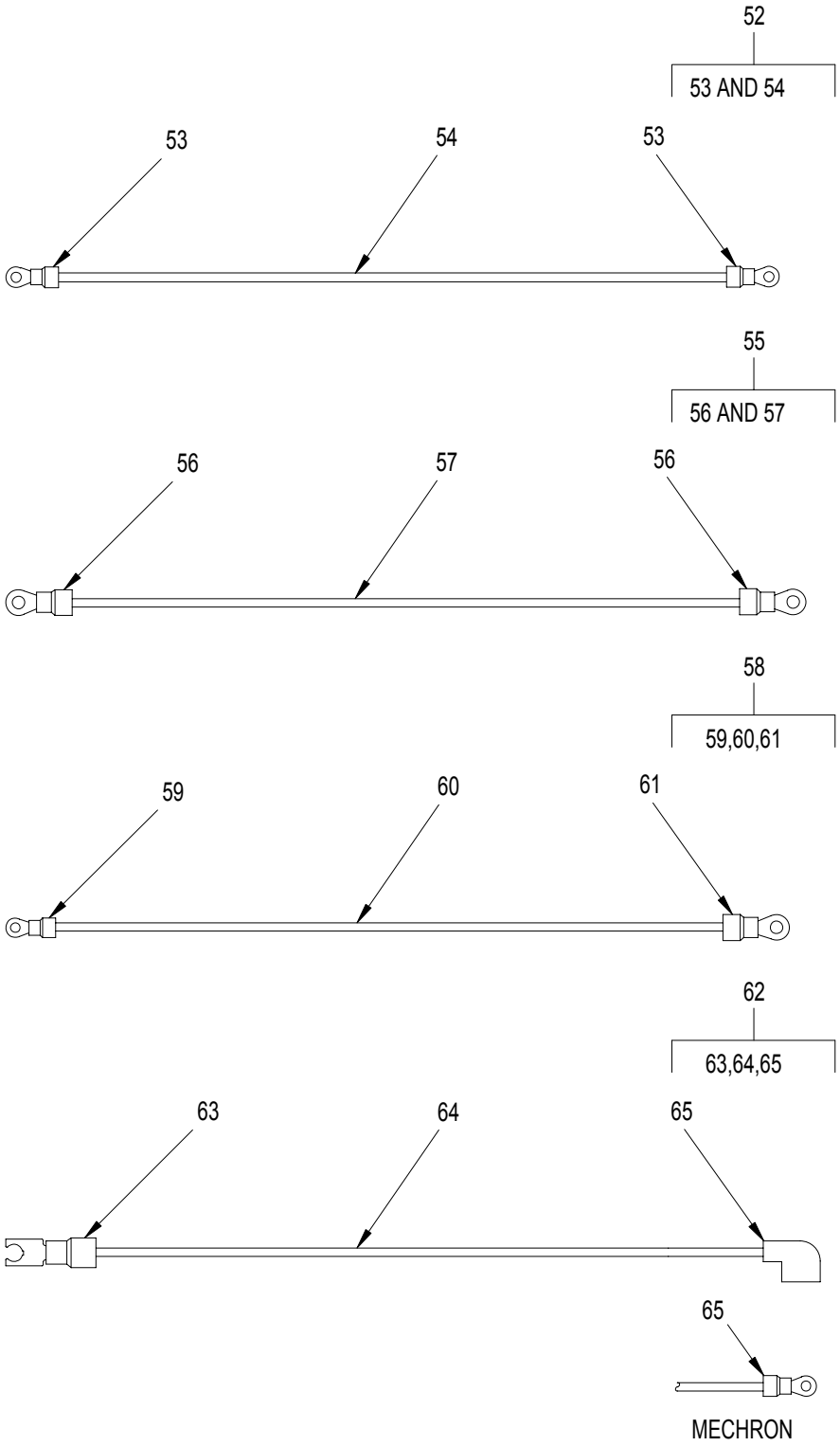


Figure F-29. Control Panel Electrical Leads (MEP-531A) (Sheet 4 of 5)

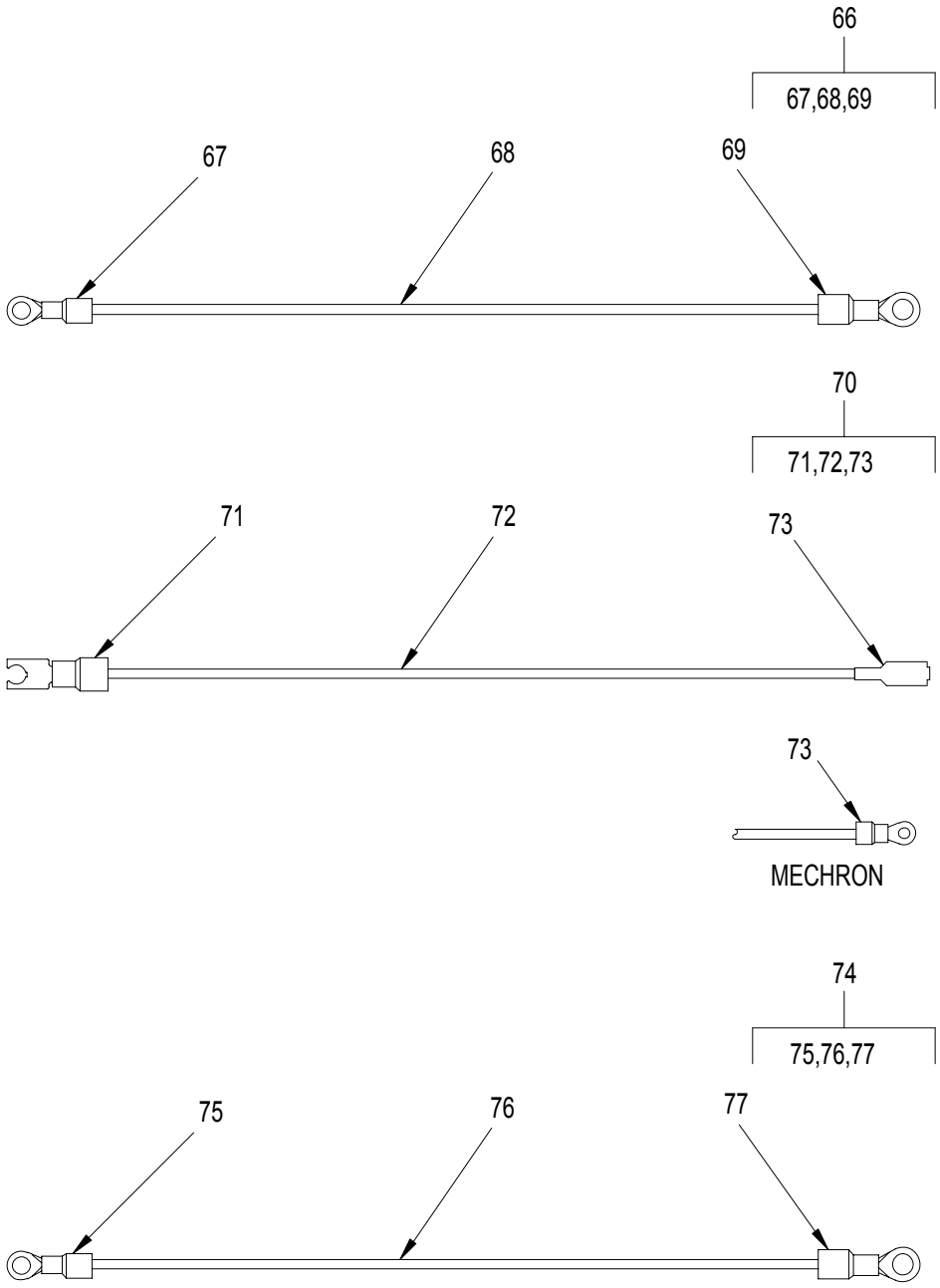


Figure F-29. Control Panel Electrical Leads (MEP-531A) (Sheet 5 of 5)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 – CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-29 CONTROL PANEL ELECTRICAL LEADS (MEP-531A)		
1	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-1	LEAD, ELECTRICAL	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-1-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 12-1/4 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	640919-1	.TERMINAL, QUICK DISC	1	V
5	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-2	LEAD, ELECTRICAL	1	1
6	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	640919-1	.TERMINAL, QUICK DISC	1	V
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-2-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 11-1/2 in. required.	1	1
8	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
9	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-3	LEAD, ELECTRICAL	1	1
10	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	2	V
11	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-3-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 2-3/4 in. required.	1	1
12	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-4	LEAD, ELECTRICAL	1	1
13	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
14	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-4-13	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
15	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-4-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 23-1/2 in. required.	1	1
16	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC.	1	V
17	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-5	LEAD, ELECTRICAL	1	1
18	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
19	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-5-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 22-1/2 in. required.	1	1
20	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
21	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-6	LEAD, ELECTRICAL	1	1
22	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	2	V
23	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-6-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 2-3/4 in. required. (CONTINUED)	1	1

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 – CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-29 CONTROL PANEL ELECTRICAL LEADS (MEP-531A)		
24	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-7	LEAD, ELECTRICAL	1	1
25	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
26	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-7-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 29 in. required.	1	1
27	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC.	1	V
28	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-8	LEAD, ELECTRICAL	1	1
29	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
30	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-8-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 9-3/4 in. required.	1	1
31	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
32	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-8-13	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required.	1	1
33	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-9	LEAD, ELECTRICAL	1	1
34	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
35	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-9-13	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
36	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-9-11	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 8-3/4 in. required.	1	1
37	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
38	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-10	LEAD, ELECTRICAL	1	1
39	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
40	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-10-13	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required.	1	1
41	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-10-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 31-1/2 in. required.	1	1
42	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
43	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-11	LEAD, ELECTRICAL	1	1
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 – CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-29 CONTROL PANEL ELECTRICAL LEADS (MEP-531A)		
44	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
45	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-11-13	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required.	1	1
46	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-11-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 12-3/4 in. required.	1	1
47	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
48	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-12	LEAD, ELECTRICAL	1	1
49	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-8194-08	.TERMINAL, LUG	1	V
50	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-12-12	.WIRE ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 21 in. required.	1	1
51	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
52	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-13	LEAD, ELECTRICAL	1	1
53	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	2	V
54	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-13-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 11-1/2 in. required.	1	1
55	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-14	LEAD, ELECTRICAL	1	1
56	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	2	V
57	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-14-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 32-3/4 in. required.	1	1
58	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-15	LEAD, ELECTRICAL	1	1
59	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
60	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-15-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 15 in. required.	1	1
61	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
62	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-16	LEAD, ELECTRICAL	1	1
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 – CONTROL PANEL ASSEMBLY (MEP-531A) FIG. F-29 CONTROL PANEL ELECTRICAL LEADS (MEP-531A)		
63	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-8194-08	.TERMINAL, LUG	1	V
64	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-16-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 21-1/2 in. required.	1	1
65	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG (MECHRON 120 VAC)	1	V
65	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB-2577F	.TERMINAL, QUICK DISC. FEM 90° (MEP-531A)	1	V
66	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-17	LEAD, ELECTRICAL	1	1
67	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV8-10R-Q	.TERMINAL, LUG	1	V
68	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-17-5	.WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Figure BULK, Item 10, 8 in. required.	1	1
69	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV8-38R-Q	.TERMINAL, LUG	1	V
70	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-18	LEAD, ELECTRICAL	1	1
71	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-8194-08	.TERMINAL, LUG	1	V
72	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-18-12	.WIRE, ELECTRICAL 14 Make from M16878/3BKE-9 Figure BULK, Item 13, 18-1/2 in. required.	1	1
73	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, Quick Disc. (MEP-531A)	1	V
73	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG (MECHRON 120 VAC)	1	V
74	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8166-19	LEAD, ELECTRICAL	1	1
75	PAOZZ	PAOZZ	PAOZZ	PAOZZ	96906	MS25036-115	.TERMINAL, LUG	1	1
76	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8166-19-5	.WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Figure BULK, Item 10, 5 in. required.	1	1
77	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV8-38R-Q	.TERMINAL, LUG END OF FIGURE	1	V

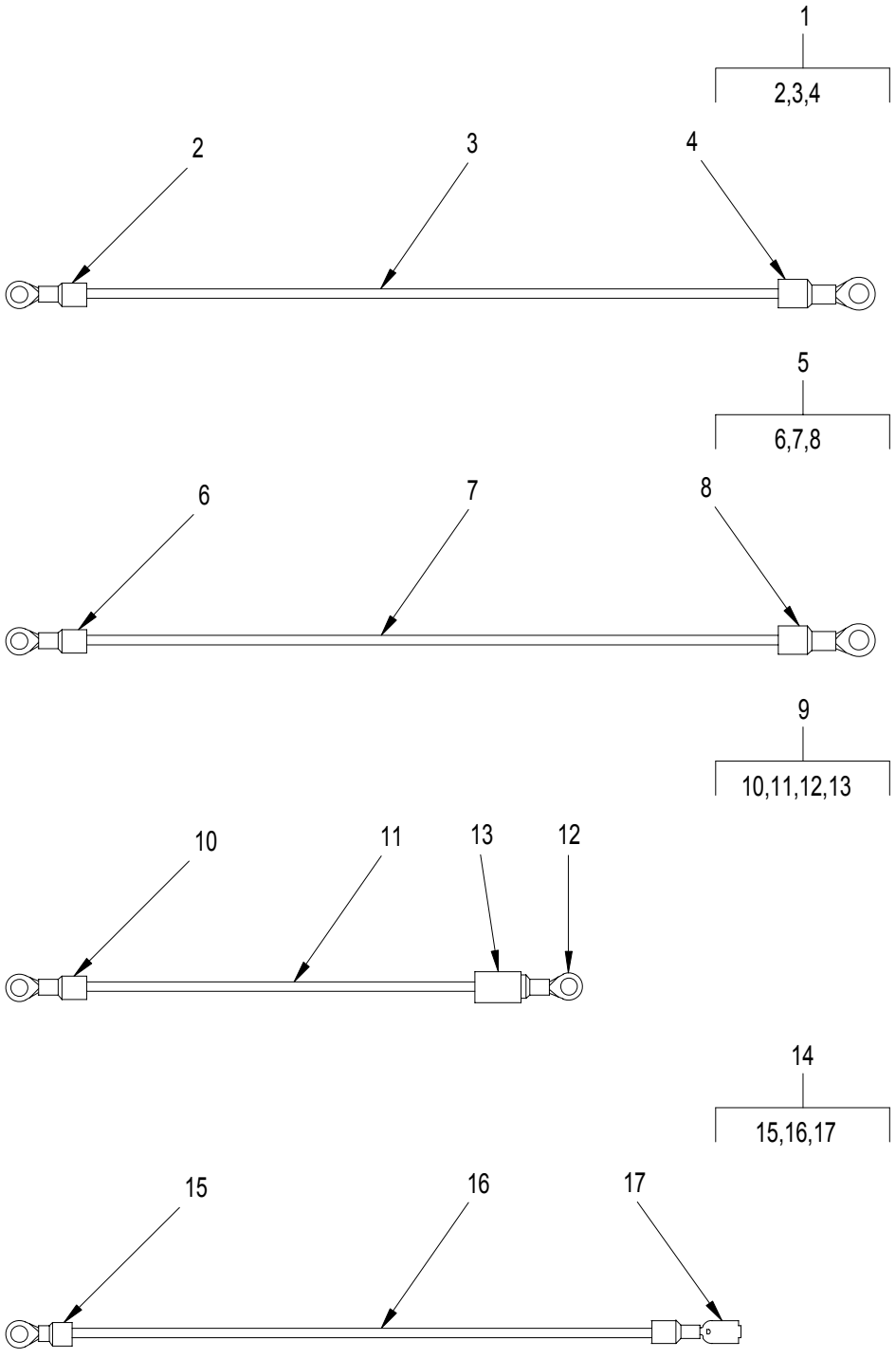


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 1 of 6)

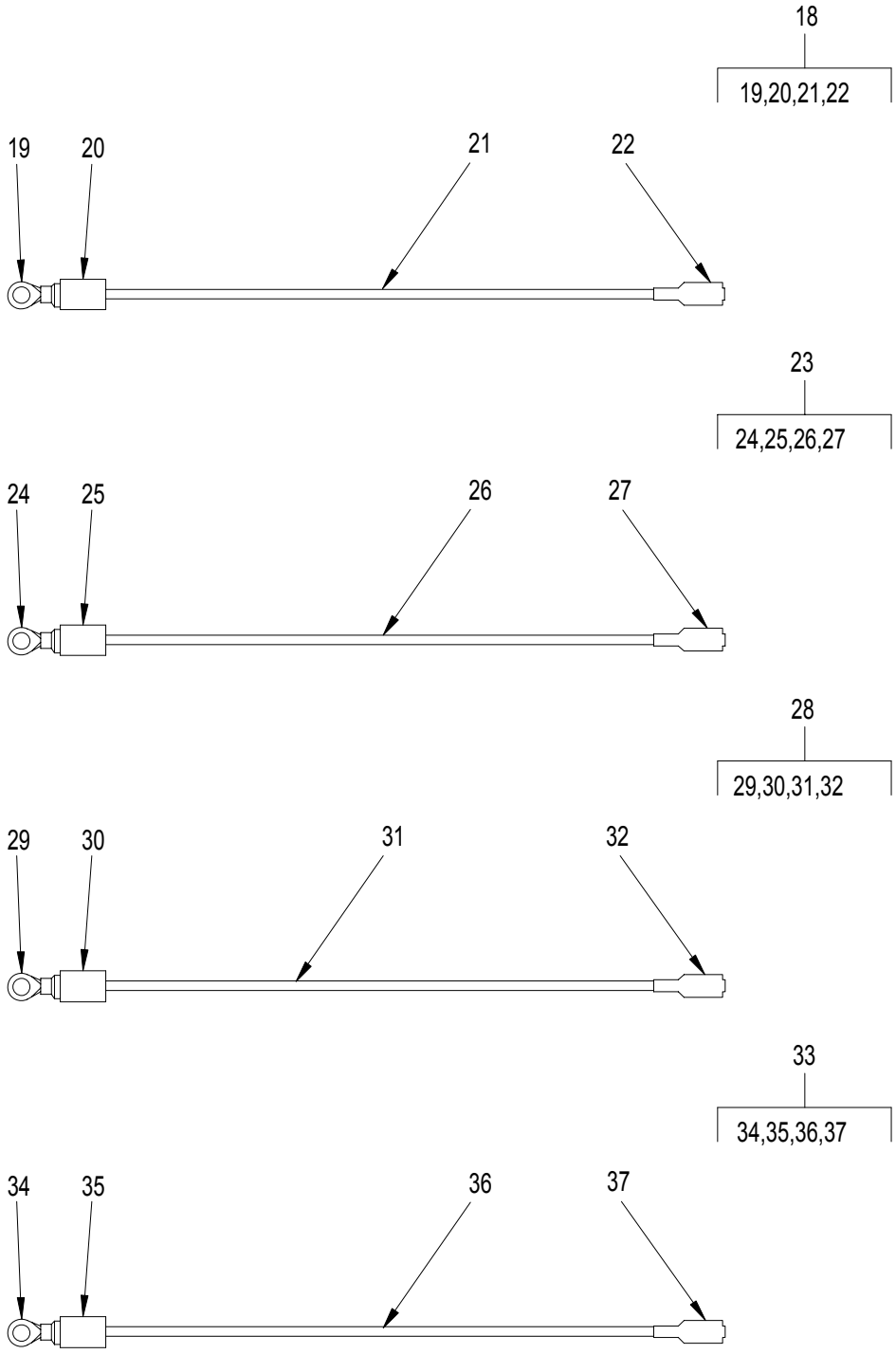


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 2 of 6)

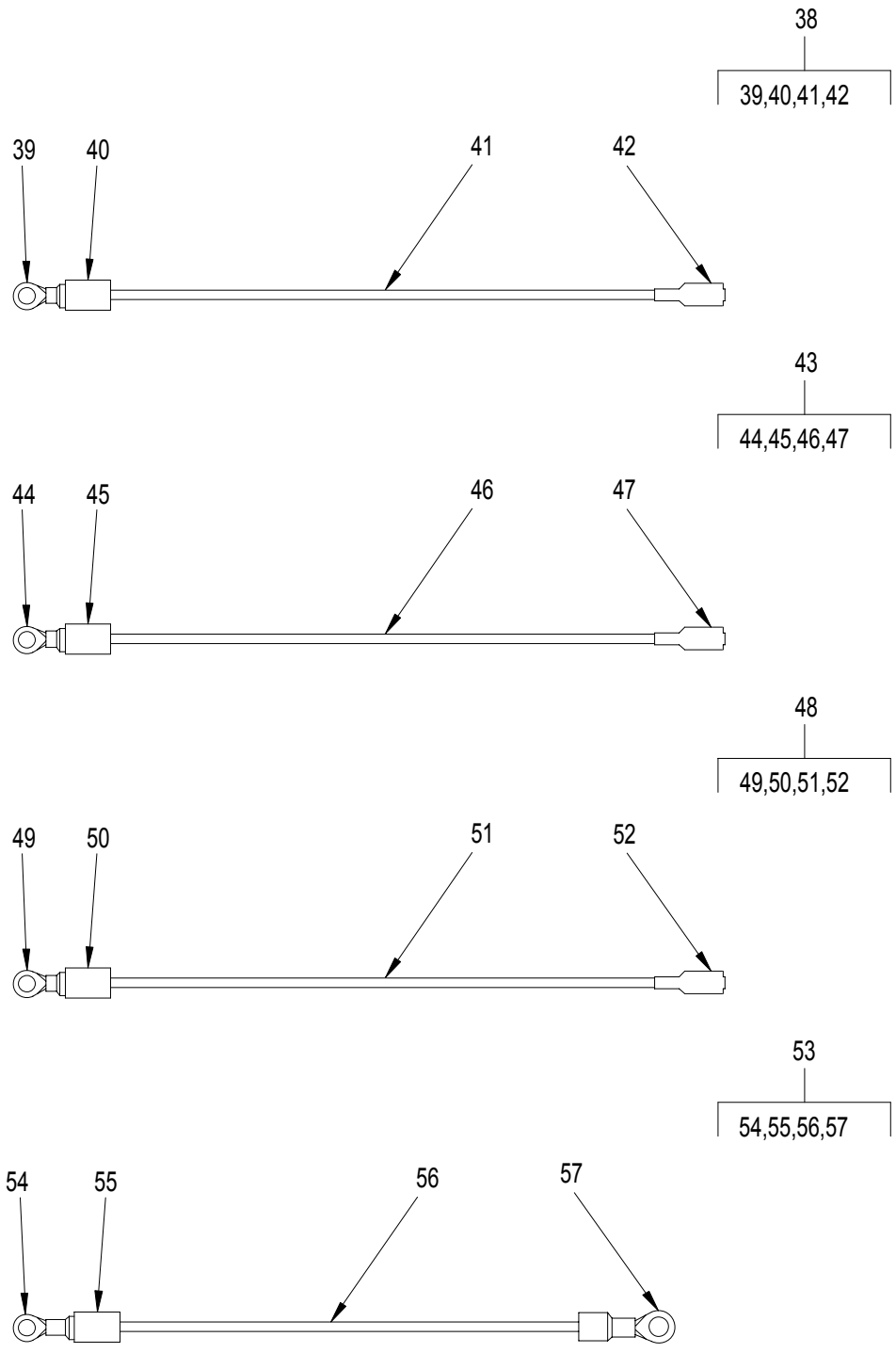


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 3 of 6)

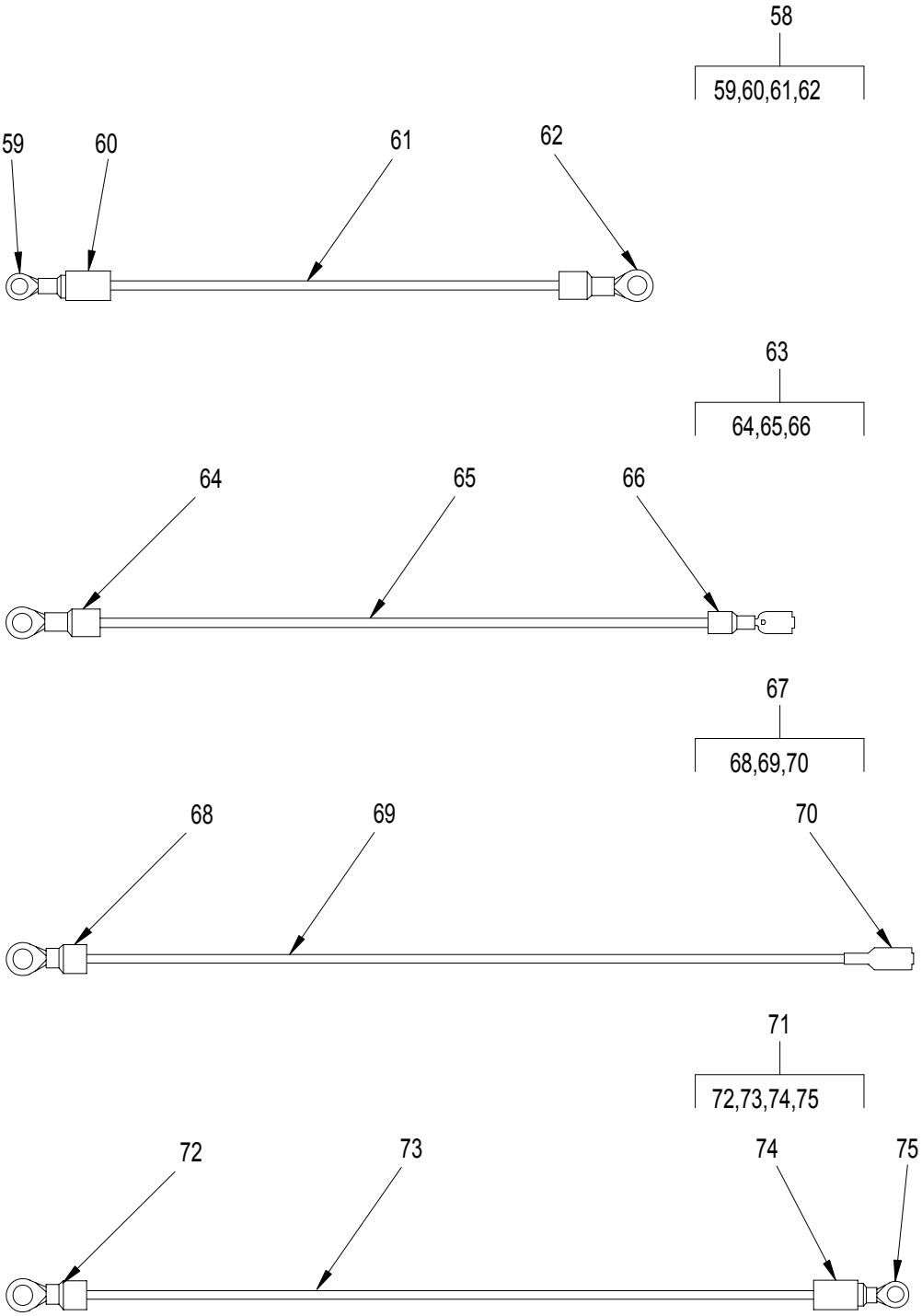


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 4 of 6)

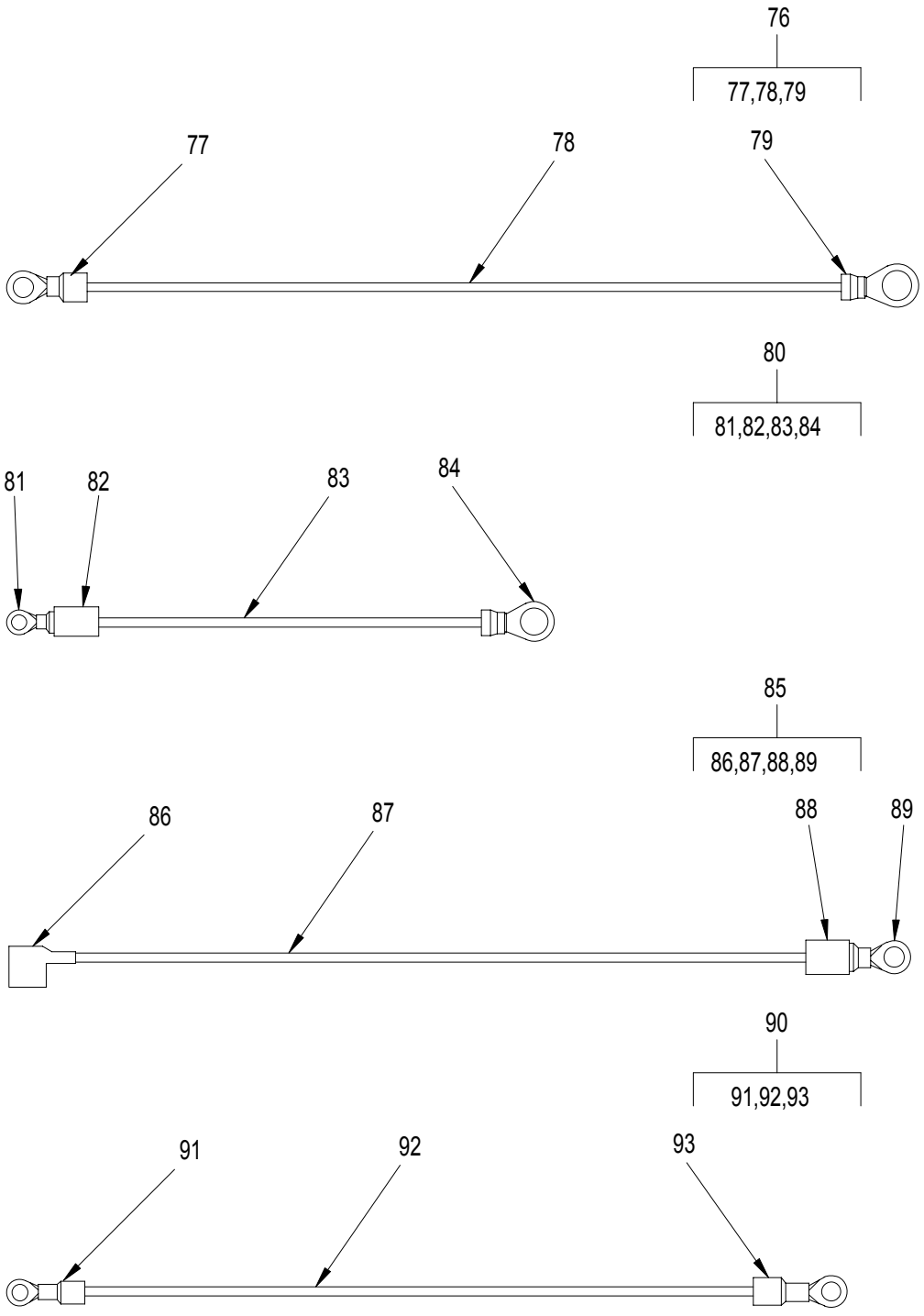


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 5 of 6)

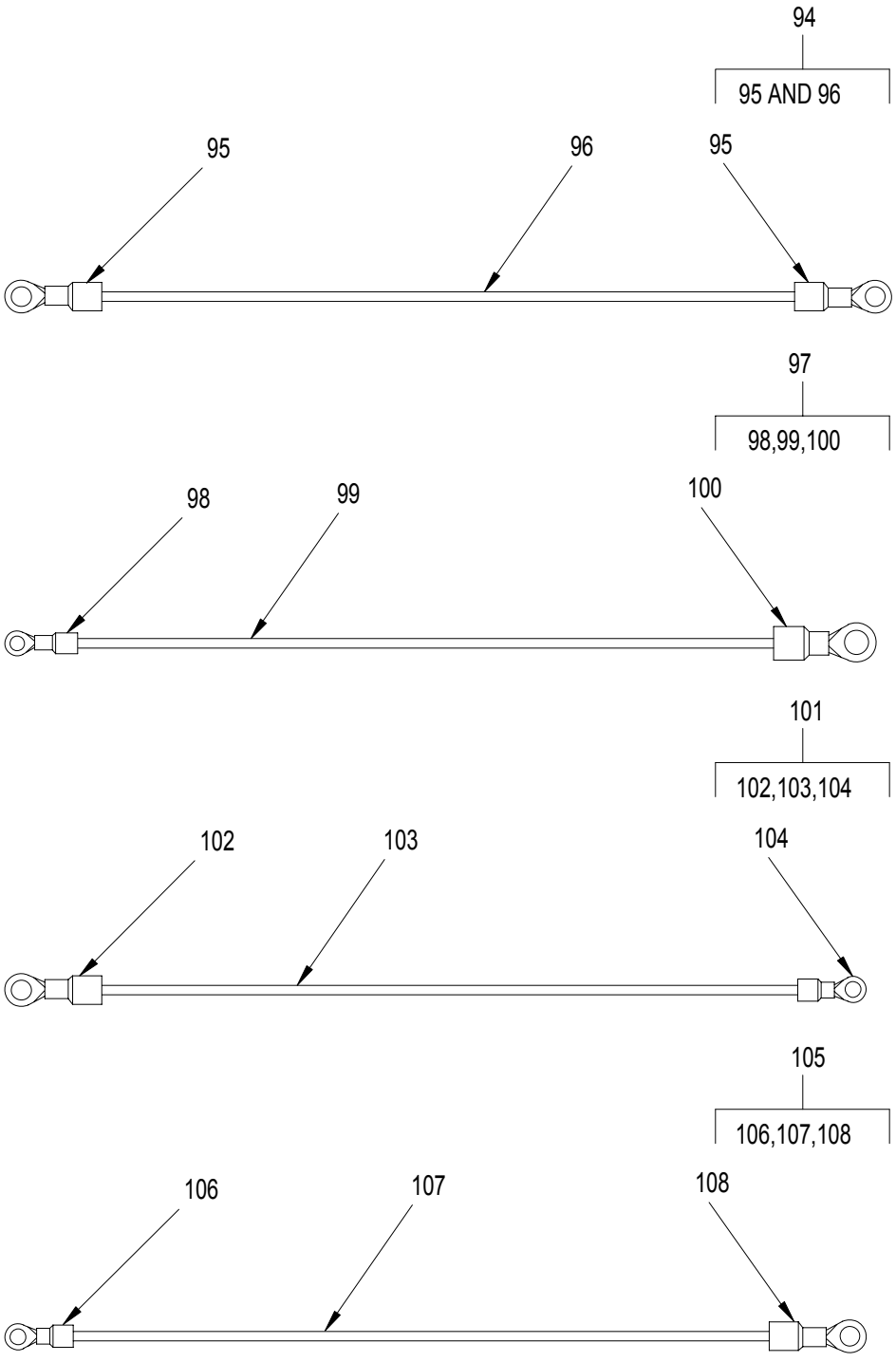


Figure F-30. Control Panel Electrical Leads (MEP-501A) (Sheet 6 of 6)

(1)	SMR CODE (2)				(3)	(4)	(5)	(6)	(7)
ITEM NO	a ARMY	b AIR FORCE	c NAVY	d USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A) FIG F-30 CONTROL PANEL ELECTRICAL LEADS (MEP-501A)		
1	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-1	LEAD, ELECTRICAL	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	96906	MS25036-153	.TERMINAL, LUG	1	V
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-1-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 23-3/4 in. required	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
5	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-2	LEAD, ELECTRICAL	1	1
6	PAOZZ	PAOZZ	PAOZZ	PAOZZ	96906	MS25036-153	.TERMINAL, LUG	1	V
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-2-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 27-1/2 in. required	1	1
8	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
9	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-3	LEAD, ELECTRICAL	1	1
10	PAOZZ	PAOZZ	PAOZZ	PAOZZ	96906	MS25036-153	.TERMINAL, LUG	1	V
11	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-3-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 5 in. required	1	1
12	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
13	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-3-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
14	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-4	LEAD, ELECTRICAL	1	1
15	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
16	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-4-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 9 in. required	1	1
17	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	640919-1	.TERMINAL, QUICK DISC.	1	V
18	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-5	LEAD, ELECTRICAL	1	1
19	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
20	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-5-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
21	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-5-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 14-1/2 in. required	1	1
22	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
23	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-6	LEAD, ELECTRICAL	1	1
24	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V

(CONTINUED)

(1)	SMR CODE (2)				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO	a ARMY	b AIR FORCE	c NAVY	d USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A)		
							FIG F-30 CONTROL PANEL ELECTRICAL LEADS (MEP-501A)		
25	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-6-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
26	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-6-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 13-7/8 in. required	1	1
27	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
28	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-7	LEAD, ELECTRICAL	1	1
29	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
30	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-7-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
31	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-7-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 13-5/8 in. required	1	1
32	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
33	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-8	LEAD, ELECTRICAL	1	1
34	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
35	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-8-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
36	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-8-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 13-1/2 in. required	1	1
37	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
38	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-9	LEAD, ELECTRICAL	1	1
39	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
40	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-9-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
41	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-9-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 14 in. required	1	1
42	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
43	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-10	LEAD, ELECTRICAL	1	1
44	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
45	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-10-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required (CONTINUED)	1	1

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7)
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	USMC QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A) FIG F-30 CONTROL PANEL ELECTRICAL LEADS (MEP-501A)		
46	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-10-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 13-5/8 in. required	1	1
47	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
48	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-11	LEAD, ELECTRICAL	1	1
49	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
50	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-11-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
51	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-11-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 20-3/4 in. required	1	1
52	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC	1	V
53	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-12	LEAD, ELECTRICAL	1	1
54	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
55	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-12-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
56	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-12-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 8 in. required	1	1
57	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
58	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-13	LEAD, ELECTRICAL	1	1
59	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
60	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-13-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
61	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-13-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 7 in. required	1	1
62	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
63	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-14	LEAD, ELECTRICAL	1	1
64	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
65	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-14-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 13 in. required	1	1
66	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	640919-1	.TERMINAL, QUICK DISC.	1	V
67	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-15	LEAD, ELECTRICAL	1	1
68	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG (CONTINUED)	1	V

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A)		
							Fig. F-30 CONTROL PANEL ELECTRICAL LEADS (MEP-501A)		
69	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-15-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 29-1/4 in. required	1	1
70	PAOZZ	PAOZZ	PAOZZ	PAOZZ	15912	RB2573	.TERMINAL, QUICK DISC.	1	V
71	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-16	LEAD, ELECTRICAL	1	1
72	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	.TERMINAL, LUG	1	V
73	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-16-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 10 in. required	1	1
74	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-16-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
75	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
76	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-17	LEAD, ELECTRICAL	1	1
77	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-837-10	.TERMINAL, LUG	1	V
78	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-17-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 26-1/2 in. required	1	1
79	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB14-12	.TERMINAL, LUG	1	V
80	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-18	LEAD, ELECTRICAL	1	1
81	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
82	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-18-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
83	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-18-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 5 in. required	1	1
84	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB14-12	.TERMINAL, LUG	1	V
85	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-19	LEAD, ELECTRICAL	1	1
86	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB-2577F	.TERMINAL, QUICK DISC	1	1
87	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-19-13	.WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 9-1/8 in. required	1	1
							(CONTINUED)		

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO	a ARMY	b AIR FORCE	c NAVY	d USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A)		
							FIG F-30 CONTROL PANEL ELECTRICAL LEADS (MEP-501A)		
88	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-19-16	.SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 1 in. required	1	1
89	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P14-6R	.TERMINAL, LUG	1	V
90	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-20	LEAD, ELECTRICAL	1	1
91	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV8-10R-Q	.TERMINAL, LUG	1	V
92	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-20-6	.WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Figure BULK, Item 10, 8-1/2 in. required	1	1
93	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV8-38R-Q	.TERMINAL, LUG	1	V
94	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-21	LEAD, ELECTRICAL	1	1
95	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-14R-E	.TERMINAL, LUG	2	V
96	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-21-4	.WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 13 in. required	1	1
97	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-22	LEAD, ELECTRICAL	1	1
98	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-14R-E	.TERMINAL, LUG	1	V
99	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-22-4	.WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 15-1/4 in. required	1	1
100	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-12R-E	.TERMINAL, LUG	1	V
101	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-23	LEAD, ELECTRICAL	1	1
102	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-12R-E	.TERMINAL, LUG	1	V
103	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-23-4	.WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 11-1/4 in. required	1	1
104	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-38R-E	.TERMINAL, LUG	1	V
105	AOOOO	AOOOO	AOOOO	AOOOO	30554	95-8056-24	LEAD, ELECTRICAL	1	1
106	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-14R-E	.TERMINAL, LUG	1	V
107	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8056-24-4	.WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 5-5/8 in. required	1	1
108	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	PV4-38R-E	.TERMINAL, LUG	1	V
							END OF FIGURE		

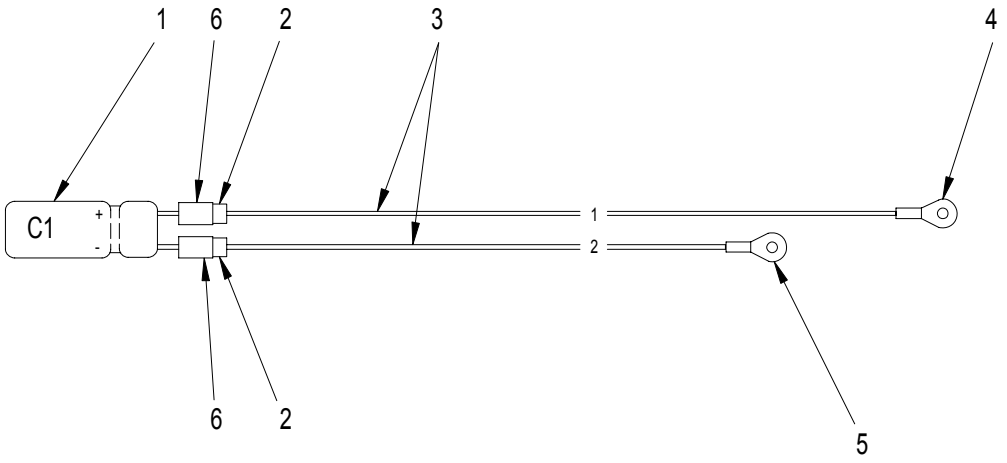


Figure F-31. Capacitor Assembly (MEP-501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A) FIG. F-31 CAPACITOR ASSEMBLY (MEP-501A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	62643	LXF63VB102M16X40LL	CAPACITOR, FIXED, E	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	34068	SPLICE, CONDUCTOR	2	6
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8017-5	WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 23-1/4 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	98410	BB-825-14	TERMINAL, LUG	1	V
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB14-12	TERMINAL, LUG	1	V
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8017-6	SLEEVING, INSULATION Make from ST-301-3/64 BLACK, Figure BULK, Item 20, 2 in. required. END OF FIGURE	1	1

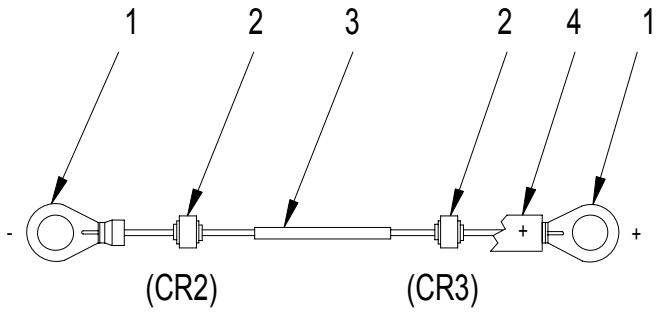


Figure F-32. Transient Suppressor Assembly (MEP-501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 04 - CONTROL PANEL ASSEMBLY (MEP-501A) FIG. F-32 TRANSIENT SUPPRESSOR ASSEMBLY (MEP-501A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	56501	RB14-12	TERMINAL, LUG	2	V
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	04713	MR2535L	DIODE, TRANSIENT SUPP.	2	2
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	00779	34068	SPLICE, CONDUCTOR	1	6
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	95-8139	MARKER, IDENTIFICATION	1	1
							END OF FIGURE		

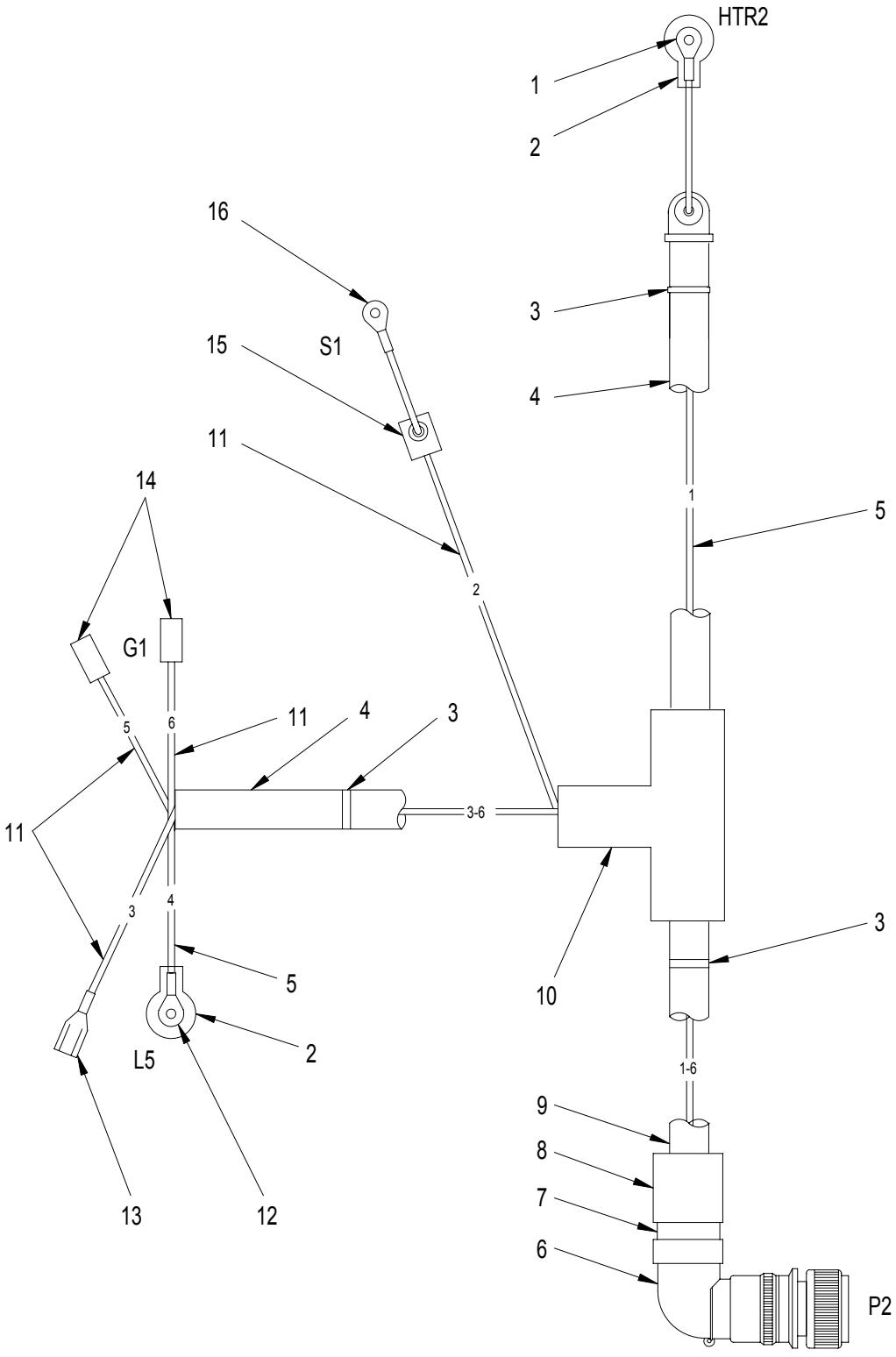


Figure F-33. Engine Wiring Harness (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 05 - ENGINE WIRING HARNESS (MEP-531A/501A) FIG. F-33 ENGINE WIRING HARNESS (MEP-531A/501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P8-14R	TERMINAL, LUG	1	V
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3AE86	76-0706	CABLE NIPPLE, ELECT	2	3
3	XBOZZ	XBOZZ	XBOZZ	XBOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN, ELEC.	15	29
4	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8029-7	TUBING, CONVOLUTED Make from 038FEJSX0000XBS, Figure BULK, Item 17, approx. 41 in. required.	1	1
5	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8029-14	WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Figure BULK, Item 10, 72-1/4 in. required.	1	1
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	CA3108R20-8S-F80	CONNECTOR, PLUG, ELEC.	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	M85049/41-12A WITH BUSHING	CLAMP, CABLE ELEC. (MEP-531A)	1	2
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	M85049/41-12A WITH BUSHING	CLAMP, CABLE ELEC. (MEP-501A)	1	1
8	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8029-16	SLEEVING, INSULATION Make from ST-301-1-1/2 BLACK, Figure BULK, Item 21, 2 in. required.	1	1
9	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8029-3	TUBING, CONVOLUTED Make from 012FEJSX0000XBS, Figure BULK, Item 5, approx. 10-1/2 in. required.	1	1
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	77060	08917000	TEE, ELECTRICAL CON.	1	1
11	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8029-13	WIRE, ELECTRICAL 16 Make from M16878/3BJE-9, Figure BULK, Item 9, 120 in. required.	1	1
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P8-56R-Q	TERMINAL, LUG	1	V
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	15912	RB2573	TERMINAL, QUICK DISC.	1	V
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	14726	MP4847F	TERMINAL, QUICK DISC.	2	2
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	35537	A00864	BOOT, RUBBER	1	1
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	P14-10R	TERMINAL, LUG (END OF FIGURE)	1	V

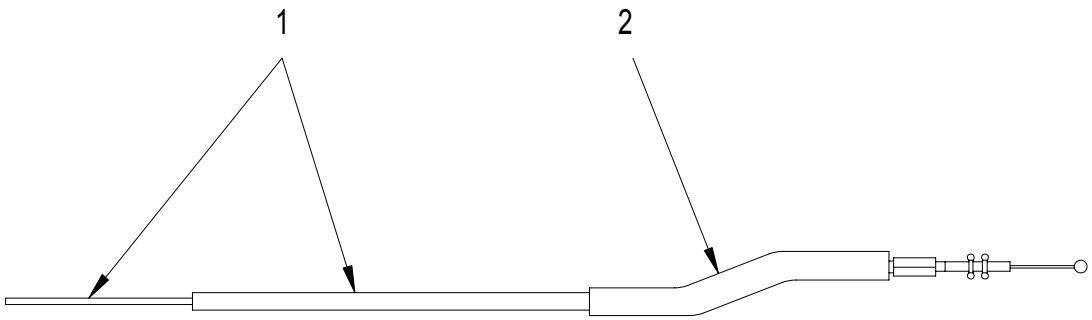


Figure F-34. LOP Engine Shutdown Cable Assembly (MEP-531A/501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 06 - LOP ENGINE SHUTDOWN CABLE ASSEMBLY (MEP-531A/501A) FIG. F-34 LOP ENGINE SHUTDOWN CABLE ASSEMBLY (MEP-531A/501A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	0AK42	114970-66400	CONTROL ASSEMBLY	1	1
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	30554	95-8081	TUBE, CABLE OFFSET	1	1
							END OF FIGURE		

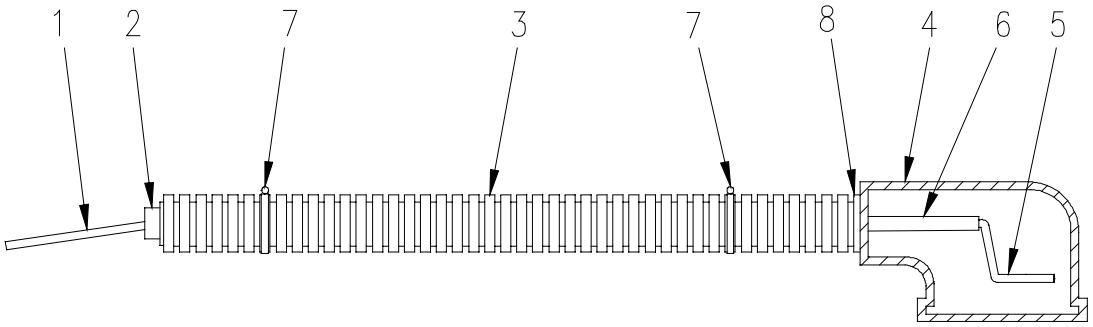


Figure F-35. Preheater Lead Assembly (MEP-531A/501A)

(1) ITEM NO.	(2) SMR CODE a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY	(7) USMC QTY PER EQUIP
							GROUP 07 - PREHEATER LEAD ASSEMBLY (MEP-531A/501A) FIG. F-35 PREHEATER LEAD ASSEMBLY (MEP-531A/501A)		
1	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P8-56R-Q	TERMINAL, LUG	1	V
2	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8141-8	SLEEVING, INSULATION Make from ST-301-3/8 BLACK, Figure BULK, Item 11, 1 in. required.	1	1
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8141-2	TUBING, CONVOLUTED Make from 038FEJSX0000XBS, Figure BULK, Item 17, 6 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	3AE86	76-0706	CABLE NIPPLE, ELEC.	1	3
5	PAOZZ	PAOZZ	PAOZZ	PAOZZ	06383	P8-14R	TERMINAL, LUG	1	V
6	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8141-5	WIRE, ELECTRICAL 8 Make from M16878/3BNL-9, Figure BULK, Item 10, 8 in. required.	1	1
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN, ELEC.	2	29
8	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8141-7	SLEEVING, INSULATION Make from ST-301-3/4 BLACK, Figure BULK, Item 22, 2 in. required. END OF FIGURE	1	1

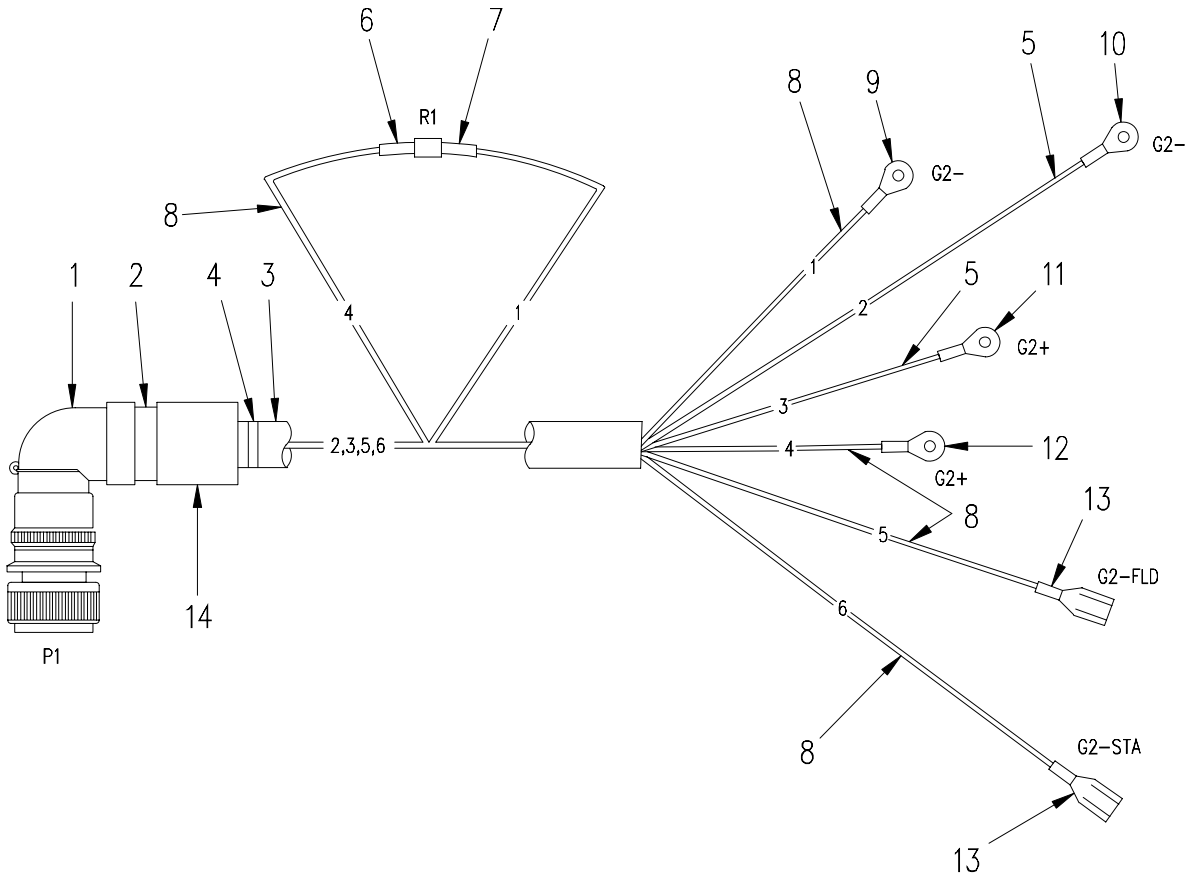


Figure F-36. Alternator Wiring Harness (MEP-501A)

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 08 - ALTERNATOR WIRING HARNESS (MEP-501A) FIG. F-36 ALTERNATOR WIRING HARNESS (MEP-501A)		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	CA3108R24-12S-F80	CONNECTOR, PLUG, ELEC.	1	1
2	XBOZZ	XBOZZ	XBOZZ	XBOZZ	71468	M85049/41-16A WITH BUSHING	CLAMP, CABLE, ELEC.	1	1
3	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8028-3	TUBING, CONVOLUTED Make from 034FEJSX0000XBS, Figure BULK, Item 18, 8 in. required.	1	1
4	PAOZZ	PAOZZ	PAOZZ	PAOZZ	43999	LE127-0011-0005	STRAP, TIEDOWN, ELEC.	3	29
5	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8028-10	WIRE, ELECTRICAL 4 Make from M16878/3BRL-9, Figure BULK, Item 14, 25-3/4 in. required.	1	1
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	17826	RH50	RESISTOR, FIXED, WIRE	1	1
7	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8028-13	SLEEVING, INSULATION Make from ST-301-3/16 BLACK, Figure BULK, Item 12, 2 in. required.	1	1
8	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8028-11	WIRE, ELECTRICAL 14 Make from M16878/3BKE-9, Figure BULK, Item 13, 55-1/2 in. required.	1	1
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	98410	BB-825-14	TERMINAL, LUG	1	V
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV4-14R-E	TERMINAL, LUG	1	V
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	06383	PV4-56R	TERMINAL, LUG	1	1
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	96906	MS25036-109	TERMINAL, LUG, SMALL	1	1
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	00779	42282-2	TERMINAL, QUICK DISC.	2	2
14	MOOZZ	MOOZZ	MOOZZ	MOOZZ	30554	95-8028-14	SLEEVING, INSULATION Make from ST-301-1-1/2 BLACK, Figure BULK, Item 21, 2 in. required. END OF FIGURE	1	1

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(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 09 - BULK MATERIALS		
							FIG. BULK		
1	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	ASTM D 1056	RUBBER, CLOSED-CELL	V	V
2	PAOZZ	PAOZZ	PAOZZ	PAOZZ	1DS07	AEM02022	TUBING, FLEXIBLE	V	V
3	PAOZZ	PAOZZ	PAOZZ	PAOZZ	1DS07	AEM02012	TUBING, FLEXIBLE	V	V
4	XBOZZ	XBOZZ	XBOZZ	XBOZZ	30554	SAE 30305	WIRE, RETAINING	V	V
5	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0FB20	012FEJSX0000XBS	TUBING, CONVOLUTED	V	V
6	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-1/2 BLACK	SLEEVING, INSULATION	V	V
7	XBOZZ	XBOZZ	XBOZZ	XBOZZ	94223	RW-25SBR	PROTECTOR, EDGE	V	V
8	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-1/8 BLACK	SLEEVING, INSULATION	V	V
9	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3N861	M16878/3BJE-9	WIRE, ELECTRICAL 16	V	V
10	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3N861	M16878/3BNL-9	WIRE, ELECTRICAL 8	V	V
11	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-3/8 BLACK	SLEEVING, INSULATION	V	V
12	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-3/16 BLACK	SLEEVING, INSULATION	V	V
13	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3N861	M16878/3BKE-9	WIRE, ELECTRICAL 14	V	V
14	XBOZZ	XBOZZ	XBOZZ	XBOZZ	3N861	M16878/3BRL-9	WIRE, ELECTRICAL 4	V	V
15	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-1/4 WHITE	SLEEVING, INSULATION	V	V
16	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0FB20	716FEJSX0000XBS	TUBING, CONVOLUTED	V	V
17	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0FB20	038FEJSX0000XBS	TUBING, CONVOLUTED	V	V
18	XBOZZ	XBOZZ	XBOZZ	XBOZZ	0FB20	034FEJSX0000XBS	TUBING, CONVOLUTED	V	V
19	XBOZZ	XBOZZ	XBOZZ	XBOZZ	35537	M44A0111-14-0	WIRE, 14AWG, TY	V	V
20	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-3/64 BLACK	SLEEVING, INSULATION	V	V
21	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-1-1/2 BLACK	SLEEVING, INSULATION	V	V
22	XBOZZ	XBOZZ	XBOZZ	XBOZZ	28105	ST-301-3/4 BLACK	SLEEVING, INSULATION	V	V
							END OF FIGURE		

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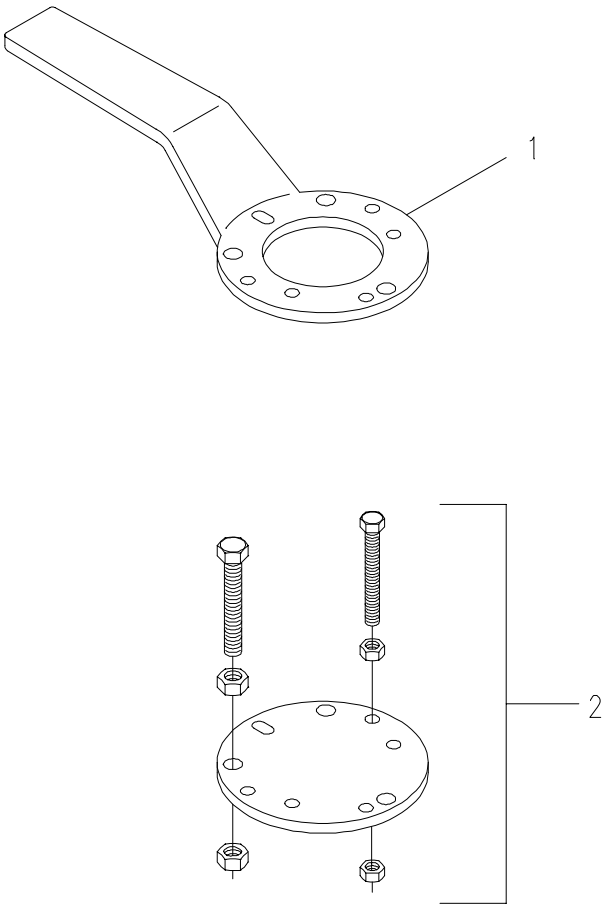

(1)	(2) SMR CODE				(3)	(4)	(5)	(6)	(7) USMC
ITEM NO.	a. ARMY	b. AIR FORCE	c. NAVY	d. USMC	CAGEC	PART NUMBER	DESCRIPTION AND USABLE ON CODE (UOC)	QTY	QTY PER EQUIP
							GROUP 10 - SPECIAL TOOLS FIG. F-37 SPECIAL TOOLS		
1	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-92101	FLYWHEEL TIGHTENING HANDLE	1	1
2	PAFZZ	PAFZZ	PAFZZ	PAFZZ	0AK42	114250-92130	FLYWHEEL EXTRACTOR END OF FIGURE	1	1

Figure F-37. Special Tools for Direct Support Maintenance (Diesel Engine)

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CROSS REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG	ITEM
5940-00-021-3321	F-21	57		F-30	72
5306-00-050-1238	F-6	7		F-31	4
5305-00-068-0509	F-6	19		F-36	9
4730-00-071-7890	F-3	8	5940-00-243-0409	F-21	51
5975-00-111-3208	F-1	21		F-22	46
	F-6	31		F-24	4
	F-21	73		F-25	4
	F-22	74		F-26	7
	F-33	3		F-27	5
	F-35	7		F-28	1
	F-36	4		F-29	13
5940-00-143-4774	F-30	2		F-29	31
	F-30	6		F-29	34
	F-30	10		F-29	39
5940-00-143-4780	F-26	6		F-29	44
	F-28	7		F-30	12
	F-29	2		F-30	19
	F-29	8		F-30	24
	F-29	10		F-30	29
	F-29	18		F-30	34
	F-29	22		F-30	39
	F-29	37		F-30	44
	F-29	42		F-30	49
	F-29	56		F-30	54
	F-29	59		F-30	59
	F-30	4		F-30	75
	F-30	8		F-30	81
	F-30	15		F-30	89
	F-30	57	5925-00-267-1447	F-22	66
	F-30	62	5325-00-276-6343	F-8	16
	F-30	64	5920-00-280-8342	F-21	18
	F-30	77		F-22	10
5940-00-143-5284	F-29	75	5325-00-281-1557	F-6	23
5325-00-174-9038	F-21	32	5940-00-283-5281	F-36	12
	F-22	27	4820-00-495-9680	F-4	6
5310-00-189-8467	F-22	59	5305-00-543-2866	F-7	14
5305-00-225-3843	F-21	42	5940-00-620-9780	F-36	13
	F-22	36	6150-00-632-7234	F-21	54
5940-00-230-0515	F-27	4	5940-00-636-5536	F-25	2
	F-29	20		F-28	5
	F-29	25		F-31	2
	F-29	29		F-32	3
	F-29	47	5905-00-646-5958	F-24	1
	F-29	51	5905-00-665-4992	F-24	9
	F-29	53	5320-00-882-8388	F-6	21
	F-29	61		F-7	28
	F-29	65		F-23	2
	F-29	73	4730-00-930-7776	F-1	30
	F-30	68	5320-00-932-1972	F-21	17

CROSS REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG	ITEM
5320-00-932-1972	F-22	9	5935-01-316-8302	F-33	6
	F-23	10	5935-01-317-6752	F-27	1
5940-00-958-1214	F-22	53	2815-01-319-3174	F-11	16
5305-00-983-7429	F-19	9	5310-01-319-8589	F-6	8
5305-00-990-8632	F-7	16	4730-01-322-4956	F-10	16
5975-00-992-8396	F-21	68	3020-01-322-5785	F-16	4
5961-00-997-8021	F-28	3	5310-01-322-8607	F-12	1
5920-01-005-9621	F-21	19	5360-01-322-8631	F-15	20
	F-22	11	5325-01-322-8679	F-14	3
5940-01-068-1879	F-29	65	5365-01-322-8692	F-11	13
	F-30	86	3110-01-322-9532	F-13	3
5305-01-069-8235	F-16	8	2815-01-323-0286	F-14	2
5940-01-082-3321	F-29	16	2815-01-323-0290	F-11	18
	F-29	27	2815-01-323-0291	F-11	19
	F-29	73	4320-01-323-0298	F-15	4
	F-30	22	2990-01-323-0307	F-16	10
	F-30	27	2815-01-323-0351	F-14	4
	F-30	32	2815-01-323-0352	F-13	13
	F-30	37	2815-01-323-0353	F-13	15
	F-30	42	2815-01-323-1352	F-11	10
	F-30	47	5306-01-323-5440	F-11	1
	F-30	52	5307-01-323-5503	F-11	15
	F-30	70	5307-01-323-5504	F-11	17
	F-33	13	5307-01-323-5505	F-12	8
5975-01-090-8876	F-21	13	5342-01-323-7866	F-16	6
5935-01-097-9974	F-21	70	5342-01-324-0772	F-21	59
	F-22	68		F-22	55
5977-01-105-6201	F-19	13	5360-01-324-3995	F-11	24
3010-01-149-7959	F-7	17	3120-01-324-5762	F-10	7
5310-01-155-3857	F-1	26	2815-01-324-6801	F-11	11
	F-3	22	2815-01-324-6802	F-11	4
5305-01-163-5075	F-16	9	5330-01-324-8253	F-10	1
5999-01-210-6449	F-19	12	5330-01-324-8254	F-10	18
5940-01-233-1810	F-21	56	5331-01-324-8279	F-15	3
5305-01-255-6548	F-10	2	5330-01-324-8287	F-12	5
	F-12	7	3110-01-324-8815	F-10	30
5940-01-259-2190	F-29	49	3110-01-324-8817	F-10	29
	F-29	63	5331-01-324-8831	F-11	23
	F-29	71	5340-01-324-8850	F-11	25
5305-01-300-6263	F-3	20	2815-01-324-9200	F-16	5
5305-01-300-6264	F-8	12	5330-01-326-2669	F-10	17
	F-12	3	5330-01-326-4773	F-12	11
	F-16	11	5330-01-326-4780	F-12	4
5306-01-300-6265	F-6	12	5331-01-326-8017	F-15	6
5305-01-303-5631	F-1	17	5330-01-326-8021	F-11	14
2940-01-310-4495	F-8	5	5330-01-326-8022	F-11	5
2910-01-310-4522	F-17	3	5331-01-328-4148	F-10	28
5940-01-316-4525	F-33	14	5330-01-328-4171	F-10	20

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG	ITEM
4240-01-328-4878	F-4	2	5945-01-416-0380	F-25	1
5310-01-328-7657	F-1	15	5120-01-416-0424	F-37	2
	F-6	14	3110-01-417-1057	F-10	26
5330-01-330-9564	F-16	3	3110-01-417-1465	F-15	12
5940-01-336-7253	F-33	1	5315-01-419-3159	F-20	1
	F-35	5	3010-01-419-3164	F-20	23
2815-01-348-5888	F-13	14	6115-01-419-3165	F-20	2
5330-01-353-6007	F-10	9	6115-01-419-3166	F-20	22
2815-01-353-7523	F-15	7	3110-01-419-3167	F-20	19
2990-01-353-7531	F-15	9	6115-01-419-3170	F-19	2
3110-01-354-3572	F-10	8	5306-01-419-3173	F-19	8
5940-01-356-6456	F-29	4	5310-01-419-3175	F-20	25
	F-29	6	6110-01-419-3179	F-22	23
	F-30	17	6115-01-419-3193	F-7	15
	F-30	66	5305-01-419-3551	F-23	12
5342-01-359-6858	F-10	5	5306-01-419-4096	F-6	2
5305-01-365-6314	F-3	4		F-7	2
5310-01-366-3539	F-6	6	5365-01-419-5477	F-12	9
	F-7	6	5340-01-419-5478	F-5	5
5305-01-373-4831	F-1	34	5331-01-419-5479	F-10	12
5940-01-374-3138	F-1	11	2920-01-419-5481	F-18	5
5305-01-380-3395	F-1	20	2990-01-419-5482	F-12	2
	F-6	13	5360-01-419-5483	F-15	17
5305-01-388-6229	F-15	8	2910-01-419-5484	F-17	1
5306-01-388-6230	F-11	6	5930-01-419-6559	F-21	67
5306-01-388-7402	F-15	1		F-22	64
	F-16	1	2815-01-419-8704	F-8	19
	F-18	4	3120-01-419-9010	F-20	18
5310-01-388-8806	F-16	7	5910-01-420-0466	F-31	1
5310-01-388-8825	F-15	11	5961-01-420-0966	F-20	27
5310-01-388-8826	F-10	22	2910-01-420-9067	F-5	2
	F-11	12	2940-01-421-1106	F-8	4
	F-12	10	5306-01-423-2038	F-1	1
5315-01-388-8937	F-13	11		F-3	25
5340-01-389-1309	F-16	2	4520-01-424-6353	F-12	12
3010-01-389-9003	F-15	16	5961-01-425-0277	F-20	28
2815-01-389-9590	F-13	12	2910-01-425-1722	F-5	4
3040-01-389-9592	F-15	10	4710-01-425-8674	F-17	2
5305-01-391-3563	F-21	36	5977-01-426-1442	F-20	6
	F-22	30	2990-01-428-4216	F-11	8
2815-01-393-9880	F-11	9	5360-01-431-3108	F-15	14
5310-01-398-0737	F-13	7	5310-01-431-4064	F-11	22
5310-01-411-0862	F-21	34	5310-01-431-4066	F-15	13
	F-22	28	5310-01-431-4067	F-10	13
5340-01-415-3789	F-10	21	5310-01-431-4068	F-10	10
5330-01-415-3802	F-15	15	5310-01-431-4069	F-13	2
5365-01-415-6744	F-10	23	5310-01-431-4070	F-13	8
5120-01-415-8266	F-37	1	5307-01-431-7454	F-11	20
5360-01-415-8733	F-15	19	5306-01-431-7457	F-15	21

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG	ITEM
5306-01-431-7460	F-18	1	5310-01-467-2665	F-8	1
5306-01-431-7461	F-10	3	5950-01-467-3238	F-8	11
5306-01-431-7462	F-13	1	5330-01-467-6273	F-8	9
5331-01-431-7566	F-5	3	5975-01-467-6588	F-34	2
5315-01-431-8229	F-15	5	5961-01-467-6714	F-32	2
5315-01-431-8230	F-11	21	4330-01-467-6774	F-3	23
5315-01-432-1210	F-13	10	5310-01-467-6832	F-1	35
5315-01-432-2457	F-10	6		F-6	18
5340-01-433-5457	F-15	2		F-21	38
5340-01-433-5460	F-11	2		F-22	32
5305-01-435-4122	F-21	41	5925-01-467-7122	F-22	75
	F-22	35	2930-01-467-7548	F-4	1
5305-01-435-6260	F-1	29	2990-01-467-7570	F-34	1
5310-01-436-4437	F-1	18	6620-01-467-7571	F-21	2
	F-6	3	6620-01-467-7577	F-22	1
	F-7	3	2835-01-467-7598	F-8	17
5340-01-449-3915	F-11	3	3110-01-467-7863	F-19	1
5961-01-450-6429	F-20	26	5940-01-467-8190	F-27	11
2920-01-452-8409	F-18	2		F-30	100
3110-01-458-4163	F-20	13		F-30	102
5930-01-458-5607	F-1	31	5940-01-467-8197	F-27	9
6645-01-458-7278	F-21	24		F-30	95
	F-22	18		F-30	98
5310-01-458-7561	F-7	11		F-30	106
	F-21	27		F-36	10
	F-22	22	5940-01-467-8203	F-30	104
6125-01-458-7856	F-6	9		F-30	108
5940-01-458-9497	F-30	79	5975-01-467-9255	F-33	2
	F-30	84		F-35	4
	F-31	5	4330-01-468-5065	F-6	22
	F-32	1		F-7	29
5310-01-458-9991	F-10	11	5330-01-472-5601	F-8	3
5975-01-461-2989	F-20	21	6115-01-472-5875	F-19	10
4720-01-464-0400	BULK	2	5340-01-472-8707	F-21	25
4720-01-464-0411	BULK	3	5340-01-473-4697	F-22	19
5925-01-464-2030	F-21	74	6115-01-474-6268	F-19	3
5940-01-465-3177	F-33	12	6110-01-474-8025	F-21	50
	F-35	1		F-22	45
5940-01-465-3185	F-26	5	5365-01-479-1380	F-4	4
	F-29	67	4820-01-480-0846	F-4	5
	F-30	91	2910-01-488-7002	F-3	18
5905-01-465-3266	F-21	53	2910-01-497-1023	F-4	3
	F-22	50	5342-21-914-6301	F-1	16
5940-01-465-4413	F-26	8		F-6	16
	F-29	69	6625-99-562-7769	F-21	1
	F-29	77	6625-99-623-6974	F-21	4
	F-30	93	6625-99-629-8742	F-22	3
6110-01-465-5952	F-21	29			

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
1DS07	AEM02012	4720-01-464-0411	BULK	3
1DS07	AEM02022	4720-01-464-0400	BULK	2
74193	AM2S-Z272-1	5925-01-467-7122	F-22	75
70485	AN931-10-14	5325-00-281-1557	F-6	23
30554	ASTM D 1056	- -	BULK	1
35537	A00864	- -	F-33	15
81860	A22-131	5342-01-324-0772	F-21	59
			F-22	55
98410	BB-8194-08	5940-01-259-2190	F-29	49
			F-29	63
			F-29	71
98410	BB-825-14	5940-00-230-0515	F-27	4
			F-29	20
			F-29	25
			F-29	29
			F-29	47
			F-29	51
			F-29	53
			F-29	61
			F-29	65
			F-29	73
			F-30	68
			F-30	72
			F-31	4
			F-36	9
98410	BB-837-10	5940-00-143-4780	F-26	6
			F-28	7
			F-29	2
			F-29	8
			F-29	10
			F-29	18
			F-29	22
			F-29	37
			F-29	42
			F-29	56
			F-29	59
			F-30	4
			F-30	8
			F-30	15
			F-30	57
			F-30	62

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
98410	BB-837-10	5940-00-143-4780	F-30	64
			F-30	77
11815	BSP-32	- -	F-23	8
63857	BS4-1801PC15	5310-00-189-8467	F-22	59
80204	B1821BH025C100N	5305-00-225-3843	F-21	42
			F-22	36
80204	B1821BH025C125N	5305-00-068-0509	F-6	19
80204	B1821BH025F075N	5305-01-373-4831	F-1	34
80204	B1821BH031F075N	5306-00-050-1238	F-6	7
80204	B1821BH038C250N	5305-00-543-2866	F-7	14
80204	B1821BH038C375N	5305-00-990-8632	F-7	16
80204	B18212HRCZN060	- -	F-3	21
80204	B18212HRCZ060	- -	F-1	23
			F-8	13
80204	B18212HRCZ080	- -	F-1	2
			F-3	24
			F-6	11
			F-7	24
80204	B18212HRCZ100	- -	F-1	19
			F-6	5
			F-7	5
80204	B18212HRRN030	- -	F-21	35
			F-22	29
80204	B1822BH030R	5310-01-411-0862	F-21	34
			F-22	28
80204	B1822BH060R	- -	F-1	24
			F-3	17
			F-8	14
80204	B1822BH080R	- -	F-1	3
			F-6	10
			F-7	25
80204	B1822BH100R	5310-01-436-4437	F-1	18
			F-6	3
			F-7	3
80204	B18231B06012N	5305-01-300-6264	F-8	12
			F-12	3
			F-16	11
80204	B18231B06014N	- -	F-1	22
80204	B18231B06016N	5305-01-300-6263	F-3	20
80204	B18231B06025N	5305-01-435-6260	F-1	29
80204	B18231B06070N	- -	F-3	16
80204	B18231B08016N	5306-01-423-2038	F-1	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80204	B18231B08016N	5306-01-423-2038	F-3	25
80204	B18231B08020N	5305-01-303-5631	F-1	17
80204	B18231B08024N	- -	F-7	23
80204	B18231B08030N	5306-01-300-6265	F-6	12
80204	B18231B10025NF	5305-01-380-3395	F-1	20
			F-6	13
80204	B18231B10040N	5306-01-419-4096	F-6	2
			F-7	2
80204	B18241B080	5310-01-328-7657	F-1	15
			F-6	14
80204	B18241B100	5310-01-366-3539	F-6	6
			F-7	6
80204	B1867BA080550	- -	F-8	6
80204	B1867BC040060	5305-01-435-4122	F-21	41
			F-22	35
80204	B1867EC030080	5305-01-391-3563	F-21	36
			F-22	30
71468	CA3102R20-15P-F80	5935-01-317-6752	F-27	1
71468	CA3102R20-8P-F80	- -	F-26	1
71468	CA3102R24-12P-F80	- -	F-27	6
71468	CA3108R20-15S-F80	- -	F-6	33
71468	CA3108R20-8S-F80	5935-01-316-8302	F-33	6
71468	CA3108R24-12S-F80	- -	F-36	1
82168	DG3M2F-S-RPC	5940-00-021-3321	F-21	57
82168	DG3M6F-S-RPC	5940-00-958-1214	F-22	53
35537	D02134	6125-01-458-7856	F-6	9
35537	D02134-4/5	- -	F-19	14
35537	D02134-6	- -	F-19	15
81349	F02A250V1A	5920-00-280-8342	F-21	18
			F-22	10
0AM43	F18356	- -	F-21	61
BRYAN	GFR83FT	- -	F-21	12
0AK42	HEAD-1	- -	F-5	1
01295	IN4006	5961-00-997-8021	F-28	3
43999	LE127-0011-0005	5975-00-111-3208	F-1	21
			F-6	31
			F-21	73
			F-22	74
			F-33	3
			F-35	7
			F-36	4
62643	LXF63VB102M16X40LL	5910-01-420-0466	F-31	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	L48AE-DEG	2815-01-419-8704	F-8	19
14726	MP4847F	5940-01-316-4525	F-33	14
04713	MR2535L	5961-01-467-6714	F-32	2
96906	MS16998-28	5305-00-983-7429	F-19	9
96906	MS25036-109	5940-00-283-5281	F-36	12
96906	MS25036-115	5940-00-143-5284	F-29	75
96906	MS25036-153	5940-00-143-4774	F-30	2
			F-30	6
			F-30	10
96906	MS35489-23	5325-00-276-6343	F-8	16
3N861	M16878/3BJE-9	- -	BULK	9
3N861	M16878/3BKE-9	- -	BULK	13
3N861	M16878/3BNL-9	- -	BULK	10
3N861	M16878/3BRL-9	- -	BULK	14
81349	M24243/6-A402H	5320-00-932-1972	F-21	17
			F-22	9
			F-23	10
81349	M24243/6-A403H	5320-00-882-8388	F-6	21
			F-7	28
			F-23	2
30554	M4X0.7X22M	- -	F-21	26
			F-22	20
35537	M44A0111-14-0	- -	BULK	19
81349	M5423/14-06	5925-00-267-1447	F-22	66
71468	M85049/41-12A WITH BUSHING	- -	F-6	32
			F-33	7
71468	M85049/41-16A WITH BUSHING	- -	F-36	2
06383	PV4-12R-E	5940-01-467-8190	F-27	11
			F-30	100
			F-30	102
06383	PV4-14R-E	5940-01-467-8197	F-27	9
			F-30	95
			F-30	98
			F-30	106
			F-36	10
06383	PV4-38R-E	5940-01-467-8203	F-30	104
			F-30	108
06383	PV4-56R	- -	F-36	11
06383	PV8-10R-Q	5940-01-465-3185	F-26	5
			F-29	67

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
06383	PV8-10R-Q	5940-01-465-3185	F-30	91
06383	PV8-38R-Q	5940-01-465-4413	F-26	8
			F-29	69
			F-29	77
			F-30	93
06383	P14-6R	5940-00-243-0409	F-21	51
			F-22	46
			F-24	4
			F-25	4
			F-26	7
			F-27	5
			F-28	1
			F-29	13
			F-29	31
			F-29	34
			F-29	39
			F-29	44
			F-30	12
			F-30	19
			F-30	24
			F-30	29
			F-30	34
			F-30	39
			F-30	44
			F-30	49
			F-30	54
			F-30	59
			F-30	75
			F-30	81
			F-30	89
35537	P14-6RM	- -	F-19	16
06383	P14-10R	- -	F-33	16
06383	P8-14R	5940-01-336-7253	F-33	1
			F-35	5
06383	P8-56R-Q	5940-01-465-3177	F-33	12
			F-35	1
39020	RA 40EMB SPECIAL	5342-21-914-6301	F-1	16
			F-6	16
56501	RB-2577F	5940-01-068-1879	F-29	65
			F-30	86
56501	RB14-12	5940-01-458-9497	F-30	79
			F-30	84

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
56501	RB14-12	5940-01-458-9497	F-31	5
			F-32	1
15912	RB2573	5940-01-082-3321	F-29	16
			F-29	27
			F-29	73
			F-30	22
			F-30	27
			F-30	32
			F-30	37
			F-30	42
			F-30	47
			F-30	52
			F-30	70
			F-33	13
17826	RH50	- -	F-36	6
81349	RV4LAYSA102A	5905-00-646-5958	F-24	1
81349	RV4LAYSA104A	5905-00-665-4992	F-24	9
94423	RW-25SBR	- -	BULK	7
30554	SAE 30305	- -	BULK	4
81343	SAEJ1508	4730-00-071-7890	F-3	8
80063	SM-A-57192-53	6150-00-632-7234	F-21	54
28105	ST-301-1-1/2 BLACK	- -	BULK	21
28105	ST-301-1/2 BLACK	- -	BULK	6
28105	ST-301-1/4 WHITE	- -	BULK	15
28105	ST-301-1/8 BLACK	- -	BULK	8
28105	ST-301-3/16 BLACK	- -	BULK	12
28105	ST-301-3/64 BLACK	- -	BULK	20
28105	ST-301-3/8 BLACK	- -	BULK	11
28105	ST-301-3/4 BLACK	- -	BULK	22
77227	TA97-0030	2835-01-467-7598	F-8	17
06383	TM3S8-C100	- -	F-22	73
0FB20	012FEJSX0000XBS	- -	BULK	5
0BHF9	0200A1805AB0001	6620-01-467-7571	F-21	2
0FB20	034FEJSX0000XBS	- -	BULK	18
0FB20	038FEJSX0000XBS	- -	BULK	17
K6197	083-41S2-211485	6625-99-562-7769	F-21	1
K6197	083-75A2-211841	6625-99-623-6974	F-21	4
K6197	083-80A2-211844	6625-99-629-8742	F-22	3
K6197	083-80V2-211843	6620-01-467-7577	F-22	1
77060	08917000	- -	F-33	10
0AK42	1A10	- -	F-9	5
0AK42	1A11	- -	F-9	9

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	1B03	- -	F-9	1
0AK42	1B04	- -	F-9	7
0AK42	1B05	- -	F-9	2
0AK42	1B06	- -	F-9	6
0AK42	1B07	- -	F-9	3
0AK42	1B11	- -	F-9	4
0AK42	1B15	- -	F-9	8
0L9X3	10-2718	- -	F-20	29
0L9X3	10-94-24-M2-PC	6115-01-419-3193	F-7	15
0AK42	102103-55520	5331-01-431-7566	F-5	3
0AK42	103338-32570	5331-01-324-8279	F-15	3
0AK42	103854-01221	5310-01-398-0737	F-13	7
56161	10501762	5310-01-155-3857	F-1	26
			F-3	22
62866	10512	5305-01-255-6548	F-10	2
			F-12	7
0AK42	105425-01690	4730-01-322-4956	F-10	16
0L9X3	11-1025	- -	F-20	24
0LX93	11-1030	5310-01-419-3175	F-20	25
0L9X3	11-1070	- -	F-20	34
0L9X3	11-1072-1	3110-01-458-4163	F-20	13
0L9X3	11-1079	- -	F-20	45
0L9X3	11-1080	- -	F-20	44
0L9X3	11-1081	- -	F-20	5
0L9X3	11-1083	- -	F-20	40
0L9X3	11-1093	- -	F-20	8
0L9X3	11-1094	- -	F-20	36
0L9X3	11-1097	- -	F-20	4
0L9X3	11-1098	- -	F-20	46
0L9X3	11-1099	- -	F-20	35
0L9X3	11-1109	- -	F-20	42
0L9X3	11-1113	- -	F-20	37
0L9X3	11-1503	- -	F-20	33
0L9X3	11-2045	- -	F-20	3
0L9X3	11-2701	- -	F-20	14
0L9X3	11-2703	- -	F-20	15
0L9X3	11-2707	- -	F-20	32
0L9X3	11-2708	- -	F-20	41
0L9X3	11-2709	- -	F-20	11
0L9X3	11-2710	5315-01-419-3159	F-20	1
0L9X3	11-2712	5977-01-426-1442	F-20	6
0L9X3	11-2713	- -	F-20	31

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0L9X3	11-2714-1	- -	F-20	47
0L9X3	11-2715-1	- -	F-20	39
0L9X3	11-2717-3	- -	F-20	30
0L9X3	11-2723	- -	F-20	7
0L9X3	11-2745	- -	F-20	38
0L9X3	11-3010	6115-01-419-3165	F-20	2
0L9X3	11-3300	- -	F-20	20
0L9X3	11-3301	6115-01-419-3166	F-20	22
0L9X3	11-3302	- -	F-20	17
0L9X3	11-3303-1	3110-01-419-3167	F-20	19
0L9X3	11-3304	3120-01-419-9010	F-20	18
0L9X3	11-3305	5975-01-461-2989	F-20	21
0L9X3	11-3306	- -	F-20	16
0L9X3	11-3308	- -	F-20	9
0L9X3	11-3309	- -	F-20	10
0L9X3	11-3310	- -	F-20	12
0L9X3	11-5531	5961-01-450-6429	F-20	26
0L9X3	11-5531-1	5961-01-425-0277	F-20	28
0L9X3	11-5531-2	5961-01-420-0966	F-20	27
0L9X3	11-8303	- -	F-20	43
0AK42	114250-01200	- -	F-10	27
0AK42	114250-01210	- -	F-10	14
0AK42	114250-01220	5310-01-431-4068	F-10	10
0AK42	114250-01250	5310-01-431-4067	F-10	13
0GUY0	114250-01380	5331-01-328-4148	F-10	28
0GUY0	114250-01412	5330-01-353-6007	F-10	9
0AK42	114250-01800	5365-01-415-6744	F-10	23
0AK42	114250-01830	5340-01-415-3789	F-10	21
0AK42	114250-01841	5330-01-328-4171	F-10	20
0AK42	114250-02030	3110-01-417-1057	F-10	26
0AK42	114250-02100	3120-01-324-5762	F-10	7
0AK42	114250-02113	3110-01-354-3572	F-10	8
0AK42	114250-02200	- -	F-10	7
0AK42	114250-02210	- -	F-10	7
0GUY0	114250-11020	2815-01-319-3174	F-11	16
0AK42	114250-11101	2815-01-323-0290	F-11	18
0AK42	114250-11113	2815-01-323-0291	F-11	19
0AK42	114250-11120	5360-01-324-3995	F-11	24
0AK42	114250-11180	5340-01-324-8850	F-11	25
0AK42	114250-11290	- -	F-11	7
0AK42	114250-11310	5330-01-326-8022	F-11	5
0AK42	114250-11340	5331-01-324-8831	F-11	23

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	114250-11460	5330-01-326-8021	F-11	14
0AK42	114250-11600	5310-01-431-4064	F-11	22
0AK42	114250-11651	2990-01-428-4216	F-11	8
0AK42	114250-11900	2815-01-324-6801	F-11	11
0AK42	114250-11951	2815-01-324-6802	F-11	4
0AK42	114250-12010	- -	F-12	6
0AK42	114250-12200	5330-01-324-8287	F-12	5
0AK42	114250-12210	5330-01-326-4773	F-12	11
0AK42	114250-12580	2940-01-310-4495	F-8	5
0AK42	114250-12580F	2940-01-421-1106	F-8	4
0AK42	114250-13200	5330-01-326-4780	F-12	4
0AK42	114250-14200	2815-01-323-0352	F-13	13
0AK42	114250-14260	2815-01-323-0353	F-13	15
0AK42	114250-14450	2815-01-389-9590	F-13	12
0AK42	114250-21550	5310-01-431-4070	F-13	8
0AK42	114250-22302	2815-01-323-0286	F-14	2
0AK42	114250-32010	4320-01-323-0298	F-15	4
0AK42	114250-32070	5340-01-433-5457	F-15	2
0GUY0	114250-35070	2815-01-353-7523	F-15	7
0AK42	114250-35150	- -	F-10	31
0AK42	114250-45211	5340-01-389-1309	F-16	2
0AK42	114250-45300	2815-01-324-9200	F-16	5
0AK42	114250-45310	5342-01-323-7866	F-16	6
0AK42	114250-45330	5330-01-330-9564	F-16	3
0AK42	114250-55100	4240-01-328-4878	F-4	2
0AK42	114250-55510	2910-01-420-9067	F-5	2
0AK42	114250-55610	5340-01-419-5478	F-5	5
0AK42	114250-59800	4710-01-425-8674	F-17	2
0AK42	114250-66200	5360-01-322-8631	F-15	20
0AK42	114250-66550	5360-01-431-3108	F-15	14
0AK42	114250-76590	- -	F-16	12
0AK42	114250-76600	5340-01-433-5460	F-11	2
0AK42	114250-76610	5340-01-449-3915	F-11	3
0AK42	114250-92101	5120-01-415-8266	F-37	1
0AK42	114250-92130	5120-01-416-0424	F-37	2
0AK42	114260-01453	- -	F-10	4
0AK42	114262-21600	- -	F-13	6
0AK42	114268-13510	2990-01-419-5482	F-12	2
0AK42	114270-61520	3110-01-417-1465	F-15	12
0AK42	114350-11470	5365-01-322-8692	F-11	13
0AK42	114351-78260	2920-01-419-5481	F-18	5
0AK42	114362-77019	2920-01-452-8409	F-18	2

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	114770-01340	5331-01-419-5479	F-10	12
0AK42	114770-61600	5330-01-415-3802	F-15	15
0AK42	114770-61610	3010-01-389-9003	F-15	16
0AK42	114770-66010	5360-01-419-5483	F-15	17
0AK42	114780-45100	3020-01-322-5785	F-16	4
0AK42	114781-21590	- -	F-13	5
0AK42	114789-55500	2910-01-488-7002	F-3	18
0AK42	114970-66400	2990-01-467-7570	F-34	1
19207	11674728	5935-01-097-9974	F-21	70
			F-22	68
0AK42	119260-11370	2815-01-393-9880	F-11	9
0AK42	124064-55510	2910-01-425-1722	F-5	4
0AK42	124950-01250	5310-01-458-9991	F-10	11
51506	1250-R-SS-.625-12	- -	F-21	21
04627	12878	4820-00-495-9680	F-4	6
0AK42	129100-77510	- -	F-12	13
0AK42	129400-77501	4520-01-424-6353	F-12	12
97403	13218E0493-1249PIC	- -	F-21	47
			F-22	41
97403	13218E0493-1250PIC	- -	F-1	38
97403	13218E0493-1285PIC	- -	F-21	49
			F-22	44
97403	13218E0493-1287PIC	- -	F-21	16
			F-22	17
97403	13218E0493-1289PIC	- -	F-21	55
			F-22	49
97403	13218E0493-1296PIC	- -	F-21	30
97403	13218E0493-1375PIC	- -	F-8	8
97403	13218E0493-2764PIC	- -	F-21	77
97403	13218E0493-2767PIC	- -	F-21	14
97403	13218E0493-2769PIC	- -	F-6	26
			F-21	76
			F-22	52
97403	13218E0493-2771PIC	- -	F-21	58
			F-21	80
			F-22	54
97403	13227E6348-9	5310-01-467-2665	F-8	1
97403	13230E6743-70	- -	F-1	40
			F-21	46
			F-22	40
97403	13230E6743-71	- -	F-21	15
			F-22	25

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
97403	13230E6743-73	- -	F-21	3
			F-22	2
97403	13230E6743-74	- -	F-22	65
97403	13230E6744-100	- -	F-1	32
97403	13230E6744-138	- -	F-6	28
97403	13230E6744-41	- -	F-21	31
97403	13230E6744-42	5310-01-458-7561	F-7	11
			F-21	27
			F-22	22
97403	13230E6744-43	- -	F-3	3
97403	13230E6744-44	5310-01-467-6832	F-1	35
			F-6	18
			F-21	38
			F-22	32
73631	1514	- -	F-22	51
73631	1516	5940-01-233-1810	F-21	56
0AK42	160110-02220	5330-01-324-8254	F-10	18
0AK42	160120-76940	5310-01-388-8806	F-16	7
0AK42	160210-02220	5330-01-324-8253	F-10	1
0AK42	160310-14550	5310-01-431-4069	F-13	2
0AK42	160642-21150	5315-01-388-8937	F-13	11
0AK42	160642-21250	5306-01-431-7462	F-13	1
0AK42	160710-01760	5342-01-359-6858	F-10	5
0AK42	160710-78710	- -	F-18	3
0AK42	183250-66331	5360-01-415-8733	F-15	19
0AK42	183250-66511	- -	F-15	18
0AK42	183266-91690	5945-01-416-0380	F-25	1
0AK42	183375-77560	5365-01-419-5477	F-12	9
81343	2-2 130139C	4730-00-930-7776	F-1	30
0L9X3	20-TS-0246042	- -	F-7	18
0L9X3	20-271-17MM	3010-01-419-3164	F-20	23
0L9X3	20-277-M	- -	F-7	26
0L9X3	20124SR	6110-01-419-3179	F-22	23
0AK42	22137-080000	5310-01-388-8825	F-15	11
0AK42	22190-160002	5330-01-326-2669	F-10	17
0AK42	22252-000190	5325-01-322-8679	F-14	3
0AK42	22312-030160	5315-01-431-8229	F-15	5
0AK42	22312-080120	5315-01-432-2457	F-10	6
0AK42	22351-040008	5315-01-431-8230	F-11	21
0AK42	22512-040120	5315-01-432-1210	F-13	10
0AK42	24101-062024	3110-01-322-9532	F-13	3
0AK42	24101-062050	3110-01-324-8815	F-10	30

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	24162-152112	3110-01-324-8817	F-10	29
0AK42	24341-000224	5331-01-326-8017	F-15	6
0AK42	26106-060162	5305-01-388-6229	F-15	8
0AK42	26106-060202	5306-01-431-7457	F-15	21
0AK42	26106-060552	5306-01-323-5440	F-11	1
0AK42	26106-080122	- -	F-10	25
0AK42	26106-080352	5306-01-431-7461	F-10	3
0AK42	26106-080452	5306-01-388-6230	F-11	6
0AK42	26106-100302	5306-01-431-7460	F-18	1
0AK42	26216-080182	5307-01-431-7454	F-11	20
0AK42	26226-060142	5307-01-323-5505	F-12	8
0AK42	26226-060182	- -	F-10	19
0AK42	26226-060222	- -	F-10	24
0AK42	26226-060502	5307-01-323-5503	F-11	15
0AK42	26226-060552	5307-01-323-5504	F-11	17
0AK42	26366-060002	5310-01-388-8826	F-10	22
			F-11	12
			F-12	10
0AK42	26366-080002	5310-01-322-8607	F-12	1
0AK42	26476-060142	5306-01-388-7402	F-15	1
			F-16	1
			F-18	4
0AK42	26476-060202	- -	F-18	7
0AK42	26577-060142	- -	F-18	6
0AK42	26696-100002	5310-01-431-4066	F-15	13
0LPU3	3S1125C3BE3	5950-01-467-3238	F-8	11
81703	30451	5975-01-090-8876	F-21	13
14058	31665	3110-01-467-7863	F-19	1
14058	31666	- -	F-19	18
14058	31669	- -	F-19	17
3S708	331-003	- -	F-3	11
51879	340.00000	6115-01-474-6268	F-19	3
00779	34068	5940-00-636-5536	F-25	2
			F-28	5
			F-31	2
			F-32	3
97942	342C698H06	5975-00-992-8396	F-21	68
59873	352-0362-00	5920-01-005-9621	F-21	19
			F-22	11
51879	390-00000	5310-01-319-8589	F-6	8
79425	4J X1.000	- -	F-7	20
79425	4JE	3010-01-149-7959	F-7	17

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
55566	4077-1032-SS-20	- -	F-21	21
			F-22	14
98883	414 580 600	- -	F-3	7
98883	414 650 200	- -	F-3	12
14058	41432	- -	F-19	7
14058	41433	- -	F-19	11
14058	41435-501	6110-01-474-8025	F-21	50
			F-22	45
14058	41446-501	6115-01-472-5875	F-19	10
00779	42282-2	5940-00-620-9780	F-36	13
22175	44LC76WDC-6YN	- -	F-21	8
			F-22	7
22175	44LC76WDC-7YN	- -	F-21	8
22175	44LC76WDC-8YN	- -	F-21	78
22175	44LC76WDC-10YN	- -	F-6	25
94222	47-62-512-50	5305-01-419-3551	F-23	12
51879	480.00020	5306-01-419-3173	F-19	8
61080	50025900	5305-01-069-8235	F-16	8
59647	57558	4820-01-480-0846	F-4	5
11530	588558-01	5940-01-374-3138	F-1	11
35537	608-370	- -	F-19	4
51879	640-00000	5977-01-105-6201	F-19	13
00779	640919-1	5940-01-356-6456	F-29	4
			F-29	6
			F-30	17
			F-30	66
51879	65.00022	6115-01-419-3170	F-19	2
51879	660-00000	5999-01-210-6449	F-19	12
0AK42	714250-11570	2815-01-323-1352	F-11	10
0AK42	714250-23610	- -	F-14	5
0AK42	714250-23620	- -	F-14	5
0AK42	714250-23703	2815-01-323-0351	F-14	4
0AK42	714250-53101	2910-01-310-4522	F-17	3
0AK42	714250-61500	3040-01-389-9592	F-15	10
0AK42	714260-76821	2990-01-323-0307	F-16	10
0AK42	714270-11660	- -	F-11	26
0AK42	714288-21700	- -	F-13	9
0AK42	714770-28510	- -	F-13	4
0AK42	714770-51700	2910-01-419-5484	F-17	1
0GUY0	714770-61700	2990-01-353-7531	F-15	9
0AK42	714771-01560	- -	F-10	15
0GUY0	714780-14580	2815-01-348-5888	F-13	14

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
0AK42	714780-22580	- -	F-14	1
0AK42	714780-22620	- -	F-14	1
0AK42	714780-22720	- -	F-14	1
0FB20	716FEJSX0000XBS	- -	BULK	16
35537	730-008	- -	F-19	6
35537	740-008	- -	F-19	5
3AE86	76-0706	5975-01-467-9255	F-33	2
			F-35	4
019L2	79NE-040	- -	F-1	8
			F-21	60
			F-22	56
019L2	79NE-058	- -	F-1	13
019L2	79NE-066	- -	F-7	8
019L2	79NE-083	- -	F-22	61
019L2	79NM-02	- -	F-21	65
			F-22	62
019L2	79NM-62	- -	F-22	76
70485	804	5325-00-174-9038	F-21	32
			F-22	27
74400	85311	6645-01-458-7278	F-21	24
			F-22	18
13445	8600-01	5930-01-458-5607	F-1	31
K6197	871-92V3-000029	- -	F-22	48
30554	88-20260-25	5305-01-365-6314	F-3	4
30554	88-20564-1	- -	F-3	2
30554	88-20564-2	- -	F-1	36
			F-6	34
			F-21	37
			F-22	31
30554	88-20564-14	- -	F-1	12
30554	88-20564-17	- -	F-21	11
			F-22	24
30554	88-20564-18	- -	F-6	27
			F-21	5
			F-22	4
30554	88-20564-19	- -	F-21	62
30554	88-20564-22	- -	F-7	7
30554	88-20564-23	- -	F-1	39
			F-21	45
			F-22	39
30554	88-20564-24	- -	F-7	10
			F-21	28

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	88-20564-24	- -	F-22	21
30554	88-20564-25	- -	F-22	58
30554	88-20564-26	- -	F-21	62
30554	88-20564-27	- -	F-21	79
			F-22	13
30554	88-22336-3	- -	F-21	63
30554	88-22790-1	- -	F-21	39
			F-22	33
15526	933-M6X8	5305-01-163-5075	F-16	9
30554	95-8000	- -	F-1	10
30554	95-8003	- -	F-7	21
30554	95-8004	- -	F-7	22
30554	95-8005	- -	F-1	9
30554	95-8005-99	- -	F-22	47
30554	95-8006	- -	F-22	71
30554	95-8006-14	- -	F-23	6
30554	95-8010	- -	F-22	16
30554	95-8011	- -	F-22	15
30554	95-8013	- -	F-21	20
			F-22	12
30554	95-8014	- -	F-22	8
30554	95-8014-2	- -	F-24	8
30554	95-8014-4	- -	F-24	7
30554	95-8014-5	- -	F-24	6
30554	95-8015	- -	F-21	66
			F-22	63
30554	95-8016	- -	F-22	57
30554	95-8017	- -	F-22	72
30554	95-8017-5	- -	F-31	3
30554	95-8017-6	- -	F-31	6
30554	95-8018	- -	F-21	71
			F-22	69
30554	95-8019-1	- -	F-22	34
30554	95-8019-2	- -	F-21	40
30554	95-8019-4	- -	F-25	3
30554	95-8019-5	- -	F-25	5
30554	95-8021	- -	F-1	9
30554	95-8021-92	- -	F-21	52
30554	95-8022	- -	F-22	43
30554	95-8022-2	- -	F-27	7
30554	95-8022-6	- -	F-27	12
30554	95-8022-7	- -	F-27	10

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8022-8	- -	F-27	8
30554	95-8022-9	- -	F-27	13
30554	95-8023	- -	F-22	38
30554	95-8023-2	- -	F-26	10
30554	95-8023-7	- -	F-26	13
30554	95-8023-8	- -	F-26	11
30554	95-8023-9	- -	F-26	12
30554	95-8023-10	- -	F-26	14
30554	95-8024-1	- -	F-21	7
			F-22	6
30554	95-8024-2	- -	F-1	14
30554	95-8024-3	- -	F-1	25
30554	95-8024-4	- -	F-1	27
30554	95-8024-5	- -	F-1	25
30554	95-8025	- -	F-22	60
30554	95-8026	- -	F-21	33
			F-22	26
30554	95-8027	5905-01-465-3266	F-21	53
			F-22	50
30554	95-8028	- -	F-1	37
30554	95-8028-3	- -	F-36	3
30554	95-8028-10	- -	F-36	5
30554	95-8028-11	- -	F-36	8
30554	95-8028-13	- -	F-36	7
30554	95-8028-14	- -	F-36	14
30554	95-8029	- -	F-1	4
30554	95-8029-3	- -	F-33	9
30554	95-8029-7	- -	F-33	4
30554	95-8029-13	- -	F-33	11
30554	95-8029-14	- -	F-33	5
30554	95-8029-16	- -	F-33	8
30554	95-8030	- -	F-1	7
30554	95-8030-18	- -	F-3	15
30554	95-8030-20	- -	F-3	14
30554	95-8030-25	- -	F-3	10
30554	95-8030-27	- -	F-3	9
30554	95-8031	- -	F-3	6
30554	95-8031-4	- -	F-4	7
30554	95-8032	2910-01-497-1023	F-4	3
30554	95-8033	2930-01-467-7548	F-4	1
30554	95-8035	- -	F-3	1
30554	95-8036	- -	F-3	13

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8037	4330-01-467-6774	F-3	23
30554	95-8038	- -	F-3	19
30554	95-8039	- -	F-3	5
30554	95-8040	- -	F-1	6
30554	95-8040-8	- -	F-7	12
30554	95-8041	- -	F-7	13
30554	95-8042	- -	F-7	9
30554	95-8043	- -	F-6	4
			F-7	4
30554	95-8045	4330-01-468-5065	F-6	22
			F-7	29
30554	95-8047-1	- -	F-21	43
			F-22	37
30554	95-8047-2	- -	F-22	42
30554	95-8048	- -	F-21	22
30554	95-8049	- -	F-8	15
30554	95-8050	- -	F-21	64
			F-22	70
30554	95-8050-6	- -	F-28	6
30554	95-8050-7	- -	F-28	2
30554	95-8051	5330-01-467-6273	F-8	9
30554	95-8052	- -	F-8	7
83104	95-8053-1	5330-01-472-5601	F-8	3
30554	95-8054	- -	F-8	2
30554	95-8055	- -	F-6	1
			F-7	1
30554	95-8055-11	- -	F-8	18
30554	95-8056	- -	F-22	77
30554	95-8056-1	- -	F-30	1
30554	95-8056-1-13	- -	F-30	3
30554	95-8056-2	- -	F-30	5
30554	95-8056-2-13	- -	F-30	7
30554	95-8056-3	- -	F-30	9
30554	95-8056-3-13	- -	F-30	11
30554	95-8056-3-16	- -	F-30	13
30554	95-8056-4	- -	F-30	14
30554	95-8056-4-13	- -	F-30	16
30554	95-8056-5	- -	F-30	18
30554	95-8056-5-13	- -	F-30	21
30554	95-8056-5-16	- -	F-30	20
30554	95-8056-6	- -	F-30	23
30554	95-8056-6-13	- -	F-30	26

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8056-6-16	- -	F-30	25
30554	95-8056-7	- -	F-30	28
30554	95-8056-7-13	- -	F-30	31
30554	95-8056-7-16	- -	F-30	30
30554	95-8056-8	- -	F-30	33
30554	95-8056-8-13	- -	F-30	36
30554	95-8056-8-16	- -	F-30	35
30554	95-8056-9	- -	F-30	38
30554	95-8056-9-13	- -	F-30	41
30554	95-8056-9-16	- -	F-30	40
30554	95-8056-10	- -	F-30	43
30554	95-8056-10-13	- -	F-30	46
30554	95-8056-10-16	- -	F-30	45
30554	95-8056-11	- -	F-30	48
30554	95-8056-11-13	- -	F-30	51
30554	95-8056-11-16	- -	F-30	50
30554	95-8056-12	- -	F-30	53
30554	95-8056-12-13	- -	F-30	56
30554	95-8056-12-16	- -	F-30	55
30554	95-8056-13	- -	F-30	58
30554	95-8056-13-13	- -	F-30	61
30554	95-8056-13-16	- -	F-30	60
30554	95-8056-14	- -	F-30	63
30554	95-8056-14-13	- -	F-30	65
30554	95-8056-15	- -	F-30	67
30554	95-8056-15-13	- -	F-30	69
30554	95-8056-16	- -	F-30	71
30554	95-8056-16-13	- -	F-30	73
30554	95-8056-16-16	- -	F-30	74
30554	95-8056-17	- -	F-30	76
30554	95-8056-17-13	- -	F-30	78
30554	95-8056-18	- -	F-30	80
30554	95-8056-18-13	- -	F-30	83
30554	95-8056-18-16	- -	F-30	82
30554	95-8056-19	- -	F-30	85
30554	95-8056-19-13	- -	F-30	87
30554	95-8056-19-16	- -	F-30	88
30554	95-8056-20	- -	F-30	90
30554	95-8056-20-6	- -	F-30	92
30554	95-8056-21	- -	F-30	94
30554	95-8056-21-4	- -	F-30	96
30554	95-8056-22	- -	F-30	97

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PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8056-22-4	- -	F-30	99
30554	95-8056-23	- -	F-30	101
30554	95-8056-23-4	- -	F-30	103
30554	95-8056-24	- -	F-30	105
30554	95-8056-24-4	- -	F-30	107
30554	95-8057	- -	F-8	10
30554	95-8058-1	- -	F-28	4
30554	95-8060	- -	F-21	23
30554	95-8061	- -	F-6	20
			F-7	27
30554	95-8064	- -	F-1	6
30554	95-8064-25	- -	F-6	30
30554	95-8064-29	- -	F-6	24
30554	95-8065	- -	F-6	15
30554	95-8066	- -	F-21	72
30554	95-8066-14	- -	F-23	6
30554	95-8067	- -	F-23	4
30554	95-8068	- -	F-23	3
30554	95-8073	- -	F-6	17
30554	95-8075	- -	F-21	48
30554	95-8075-4	- -	F-27	2
30554	95-8075-5	- -	F-27	3
30554	95-8075-6	- -	F-27	13
30554	95-8076	6110-01-465-5952	F-21	29
30554	95-8077	- -	F-21	9
30554	95-8077-3	- -	F-24	2
30553	95-8077-4	- -	F-24	3
30554	95-8077-5	- -	F-24	5
30554	95-8078	5925-01-464-2030	F-21	74
30554	95-8081	5975-01-467-6588	F-34	2
30554	95-8082	- -	F-1	28
30554	95-8084	- -	F-21	44
30554	95-8084-6	- -	F-26	3
30554	95-8084-7	- -	F-26	4
30554	95-8084-8	- -	F-26	9
30554	95-8084-9	- -	F-26	2
30554	95-8084-10	- -	F-26	14
30554	95-8085	- -	F-23	3
30554	95-8086	- -	F-23	4
30554	95-8087	- -	F-23	11
30554	95-8091	- -	F-23	5
30554	95-8127	- -	F-7	19

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PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8137	5365-01-479-1380	F-4	4
30554	95-8139	- -	F-32	4
30554	95-8141	- -	F-1	5
30554	95-8141-2	- -	F-35	3
30554	95-8141-5	- -	F-35	6
30554	95-8141-7	- -	F-35	8
30554	95-8141-8	- -	F-35	2
30554	95-8149	- -	F-21	61
30554	95-8158-274	- -	F-21	69
			F-22	67
30554	95-8159-1	- -	F-1	41
30554	95-8159-3	- -	F-21	10
30554	95-8159-8	- -	F-1	33
			F-6	29
			F-21	6
			F-22	5
30554	95-8166	- -	F-21	75
30554	95-8166-1	- -	F-29	1
30554	95-8166-1-11	- -	F-29	3
30554	95-8166-2	- -	F-29	5
30554	95-8166-2-11	- -	F-29	7
30554	95-8166-3	- -	F-29	9
30554	95-8166-3-11	- -	F-29	11
30554	95-8166-4	- -	F-29	12
30554	95-8166-4-11	- -	F-29	15
30554	95-8166-4-13	- -	F-29	14
30554	95-8166-5	- -	F-29	17
30554	95-8166-5-11	- -	F-29	19
30554	95-8166-6	- -	F-29	21
30554	95-8166-6-11	- -	F-29	23
30554	95-8166-7	- -	F-29	24
30554	95-8166-7-11	- -	F-29	26
30554	95-8166-8	- -	F-29	28
30554	95-8166-8-11	- -	F-29	30
30554	95-8166-8-13	- -	F-29	32
30554	95-8166-9	- -	F-29	33
30554	95-8166-9-11	- -	F-29	36
30554	95-8166-9-13	- -	F-29	35
30554	95-8166-10	- -	F-29	38
30554	95-8166-10-12	- -	F-29	41
30554	95-8166-10-13	- -	F-29	40
30554	95-8166-11	- -	F-29	43

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
30554	95-8166-11-12	- -	F-29	46
30554	95-8166-11-13	- -	F-29	45
30554	95-8166-12	- -	F-29	48
30554	95-8166-12-12	- -	F-29	50
30554	95-8166-13	- -	F-29	52
30554	95-8166-13-12	- -	F-29	54
30554	95-8166-14	- -	F-29	55
30554	95-8166-14-12	- -	F-29	57
30554	95-8166-15	- -	F-29	58
30554	95-8166-15-12	- -	F-29	60
30554	95-8166-16	- -	F-29	62
30554	95-8166-16-12	- -	F-29	64
30554	95-8166-17	- -	F-29	66
30554	95-8166-17-5	- -	F-29	68
30554	95-8166-18	- -	F-29	70
30554	95-8166-18-12	- -	F-29	72
30554	95-8166-19	- -	F-29	74
30554	95-8166-19-5	- -	F-29	76
30554	95-8176	- -	F-23	1
30554	95-8177	- -	F-23	9
30554	95-8178	- -	F-23	7
30554	95-8179	- -	F-23	7
30554	95-8184	5340-01-472-8707	F-21	25
30554	95-8185	5340-01-473-4697	F-22	19
13445	95509-01	5930-01-419-6559	F-21	67
			F-22	64
19738	9667-1018	- -	F-2	1

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-1	1	5306-01-423-2038	80204	B18231B08016N
F-1	2	- -	80204	B18212HRCZ080
F-1	3	- -	80204	B1822BH080R
F-1	4	- -	30554	95-8029
F-1	5	- -	30554	95-8141
F-1	6	- -	30554	95-8040
F-1	6	- -	30554	95-8064
F-1	7	- -	30554	95-8030
F-1	8	- -	019L2	79NE-040
F-1	9	- -	30554	95-8005
F-1	9	- -	30554	95-8021
F-1	10	- -	30554	95-8000
F-1	11	5940-01-374-3138	11530	588558-01
F-1	12	- -	30554	88-20564-14
F-1	13	- -	019L2	79NE-058
F-1	14	- -	30554	95-8024-2
F-1	15	5310-01-328-7657	80204	B18241B080
F-1	16	5342-21-914-6301	39020	RA 40EMB SPECIAL
F-1	17	5305-01-303-5631	80204	B18231B08020N
F-1	18	5310-01-436-4437	80204	B1822BH100R
F-1	19	- -	80204	B18212HRCZ100
F-1	20	5305-01-380-3395	80204	B18231B10025NF
F-1	21	5975-00-111-3208	43999	LE127-0011-0005
F-1	22	- -	80204	B18231B06014N
F-1	23	- -	80204	B18212HRCZ060
F-1	24	- -	80204	B1822BH060R
F-1	25	- -	30554	95-8024-3
F-1	25	- -	30554	95-8024-5
F-1	26	5310-01-155-3857	56161	10501762
F-1	27	- -	30554	95-8024-4
F-1	28	- -	30554	95-8082
F-1	29	5305-01-435-6260	80204	B18231B06025N
F-1	30	4730-00-930-7776	81343	2-2 130139C
F-1	31	5930-01-458-5607	13445	8600-01
F-1	32	- -	97403	13230E6744-100
F-1	33	- -	30554	95-8159-8
F-1	34	5305-01-373-4831	80204	B1821BH025F075N
F-1	35	5310-01-467-6832	97403	13230E6744-44
F-1	36	- -	30554	88-20564-2
F-1	37	- -	30554	95-8028
F-1	38	- -	97403	13218E0493-1250PIC

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-1	39	- -	30554	88-20564-23
F-1	40	- -	97403	13230E6743-70
F-1	41	- -	30554	95-8159-1
F-2	1	- -	19738	9667-1018
F-3	1	- -	30554	95-8035
F-3	2	- -	30554	88-20564-1
F-3	3	- -	97403	13230E6744-43
F-3	4	5305-01-365-6314	30554	88-20260-25
F-3	5	- -	30554	95-8039
F-3	6	- -	30554	95-8031
F-3	7	- -	98883	414 580 600
F-3	8	4730-00-071-7890	81343	SAEJ1508
F-3	9	- -	30554	95-8030-27
F-3	10	- -	30554	95-8030-25
F-3	11	- -	3S708	331-003
F-3	12	- -	98883	414 650 200
F-3	13	- -	30554	95-8036
F-3	14	- -	30554	95-8030-20
F-3	15	- -	30554	95-8030-18
F-3	16	- -	80204	B18231B06070N
F-3	17	- -	80204	B1822BH060R
F-3	18	2910-01-488-7002	0AK42	114789-55500
F-3	19	- -	30554	95-8038
F-3	20	5305-01-300-6263	80204	B18231B06016N
F-3	21	- -	80204	B18212HRCZN060
F-3	22	5310-01-155-3857	56161	10501762
F-3	23	4330-01-467-6774	30554	95-8037
F-3	24	- -	80204	B18212HRCZ080
F-3	25	5306-01-423-2038	80204	B18231B08016N
F-4	1	2930-01-467-7548	30554	95-8033
F-4	2	4240-01-328-4878	0AK42	114250-55100
F-4	3	2910-01-497-1023	30554	95-8032
F-4	4	5365-01-479-1380	30554	95-8137
F-4	5	4820-01-480-0846	59647	57558
F-4	6	4820-00-495-9680	04627	12878
F-4	7	- -	30554	95-8031-4
F-5	1	- -	0AK42	HEAD-1
F-5	2	2910-01-420-9067	0AK42	114250-55510
F-5	3	5331-01-431-7566	0AK42	102103-55520
F-5	4	2910-01-425-1722	0AK42	124064-55510
F-5	5	5340-01-419-5478	0AK42	114250-55610
F-6	1	- -	30554	95-8055

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-6	2	5306-01-419-4096	80204	B18231B10040N
F-6	3	5310-01-436-4437	80204	B1822BH100R
F-6	4	- -	30554	95-8043
F-6	5	- -	80204	B18212HRCZ100
F-6	6	5310-01-366-3539	80204	B18241B100
F-6	7	5306-00-050-1238	80204	B1821BH031F075N
F-6	8	5310-01-319-8589	51879	390-00000
F-6	9	6125-01-458-7856	35537	D02134
F-6	10	- -	80204	B1822BH080R
F-6	11	- -	80204	B18212HRCZ080
F-6	12	5306-01-300-6265	80204	B18231B08030N
F-6	13	5305-01-380-3395	80204	B18231B10025NF
F-6	14	5310-01-328-7657	80204	B18241B080
F-6	15	- -	30554	95-8065
F-6	16	5342-21-914-6301	39020	RA 40EMB SPECIAL
F-6	17	- -	30554	95-8073
F-6	18	5310-01-467-6832	97403	13230E6744-44
F-6	19	5305-00-068-0509	80204	B1821BH025C125N
F-6	20	- -	30554	95-8061
F-6	21	5320-00-882-8388	81349	M24243/6-A403H
F-6	22	4330-01-468-5065	30554	95-8045
F-6	23	5325-00-281-1557	70485	AN931-10-14
F-6	24	- -	30554	95-8064-29
F-6	25	- -	22175	44LC76WDC-10YN
F-6	26	- -	97403	13218E0493-2769PIC
F-6	27	- -	30554	88-20564-18
F-6	28	- -	97403	13230E6744-138
F-6	29	- -	30554	95-8159-8
F-6	30	- -	30554	95-8064-25
F-6	31	5975-00-111-3208	43999	LE127-0011-0005
F-6	32	- -	71468	M85049/41-12A WITH BUSHING
F-6	33	- -	71468	CA3108R20-15S-F80
F-6	34	- -	30554	88-20564-2
F-7	1	- -	30554	95-8055
F-7	2	5306-01-419-4096	80204	B18231B10040N
F-7	3	5310-01-436-4437	80204	B1822BH100R
F-7	4	- -	30554	95-8043
F-7	5	- -	80204	B18212HRCZ100
F-7	6	5310-01-366-3539	80204	B18241B100
F-7	7	- -	30554	88-20564-22
F-7	8	- -	019L2	79NE-066
F-7	9	- -	30554	95-8042

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-7	10	- -	30554	88-20564-24
F-7	11	5310-01-458-7561	97403	13230E6744-42
F-7	12	- -	30554	95-8040-8
F-7	13	- -	30554	95-8041
F-7	14	5305-00-543-2866	80204	B1821BH038C250N
F-7	15	6115-01-419-3193	0L9X3	10-94-24-M2-PC
F-7	16	5305-00-990-8632	80204	B1821BH038C375N
F-7	17	3010-01-149-7959	79425	4JE
F-7	18	- -	0L9X3	20-TS-0246042
F-7	19	- -	30554	95-8127
F-7	20	- -	79425	4J X1.000
F-7	21	- -	30554	95-8003
F-7	22	- -	30554	95-8004
F-7	23	- -	80204	B18231B08024N
F-7	24	- -	80204	B18212HRCZ080
F-7	25	- -	80204	B1822BH080R
F-7	26	- -	0L9X3	20-277-M
F-7	27	- -	30554	95-8061
F-7	28	5320-00-882-8388	81349	M24243/6-A403H
F-7	29	4330-01-468-5065	30554	95-8045
F-8	1	5310-01-467-2665	97403	13227E6348-9
F-8	2	- -	30554	95-8054
F-8	3	5330-01-472-5601	83104	95-8053-1
F-8	4	2940-01-421-1106	0AK42	114250-12580F
F-8	5	2940-01-310-4495	0AK42	114250-12580
F-8	6	- -	80204	B1867BA080550
F-8	7	- -	30554	95-8052
F-8	8	- -	97403	13218E0493-1375PIC
F-8	9	5330-01-467-6273	30554	95-8051
F-8	10	- -	30554	95-8057
F-8	11	5950-01-467-3238	0LPU3	3S1125C3BE3
F-8	12	5305-01-300-6264	80204	B18231B06012N
F-8	13	- -	80204	B18212HRCZ060
F-8	14	- -	80204	B1822BH060R
F-8	15	- -	30554	95-8049
F-8	16	5325-00-276-6343	96906	MS35489-23
F-8	17	2835-01-467-7598	77227	TA97-0030
F-8	18	- -	30554	95-8055-11
F-8	19	2815-01-419-8704	0AK42	L48AE-DEG
F-9	1	- -	0AK42	1B03
F-9	2	- -	0AK42	1B05
F-9	3	- -	0AK42	1B07

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-9	4	- -	0AK42	1B11
F-9	5	- -	0AK42	1A10
F-9	6	- -	0AK42	1B06
F-9	7	- -	0AK42	1B04
F-9	8	- -	0AK42	1B15
F-9	9	- -	0AK42	1A11
F-10	1	5330-01-324-8253	0AK42	160210-02220
F-10	2	5305-01-255-6548	62866	10512
F-10	3	5306-01-431-7461	0AK42	26106-080352
F-10	4	- -	0AK42	114260-01453
F-10	5	5342-01-359-6858	0AK42	160710-01760
F-10	6	5315-01-432-2457	0AK42	22312-080120
F-10	7	3120-01-324-5762	0AK42	114250-02100
F-10	7	- -	0AK42	114250-02200
F-10	7	- -	0AK42	114250-02210
F-10	8	3110-01-354-3572	0AK42	114250-02113
F-10	9	5330-01-353-6007	0GUY0	114250-01412
F-10	10	5310-01-431-4068	0AK42	114250-01220
F-10	11	5310-01-458-9991	0AK42	124950-01250
F-10	12	5331-01-419-5479	0AK42	114770-01340
F-10	13	5310-01-431-4067	0AK42	114250-01250
F-10	14	- -	0AK42	114250-01210
F-10	15	- -	0AK42	714771-01560
F-10	16	4730-01-322-4956	0AK42	105425-01690
F-10	17	5330-01-326-2669	0AK42	22190-160002
F-10	18	5330-01-324-8254	0AK42	160110-02220
F-10	19	- -	0AK42	26226-060182
F-10	20	5330-01-328-4171	0AK42	114250-01841
F-10	21	5340-01-415-3789	0AK42	114250-01830
F-10	22	5310-01-388-8826	0AK42	26366-060002
F-10	23	5365-01-415-6744	0AK42	114250-01800
F-10	24	- -	0AK42	26226-060222
F-10	25	- -	0AK42	26106-080122
F-10	26	3110-01-417-1057	0AK42	114250-02030
F-10	27	- -	0AK42	114250-01200
F-10	28	5331-01-328-4148	0GUY0	114250-01380
F-10	29	3110-01-324-8817	0AK42	24162-152112
F-10	30	3110-01-324-8815	0AK42	24101-062050
F-10	31	- -	0AK42	114250-35150
F-11	1	5306-01-323-5440	0AK42	26106-060552
F-11	2	5340-01-433-5460	0AK42	114250-76600
F-11	3	5340-01-449-3915	0AK42	114250-76610

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-11	4	2815-01-324-6802	0AK42	114250-11951
F-11	5	5330-01-326-8022	0AK42	114250-11310
F-11	6	5306-01-388-6230	0AK42	26106-080452
F-11	7	- -	0AK42	114250-11290
F-11	8	2990-01-428-4216	0AK42	114250-11651
F-11	9	2815-01-393-9880	0AK42	119260-11370
F-11	10	2815-01-323-1352	0AK42	714250-11570
F-11	11	2815-01-324-6801	0AK42	114250-11900
F-11	12	5310-01-388-8826	0AK42	26366-060002
F-11	13	5365-01-322-8692	0AK42	114350-11470
F-11	14	5330-01-326-8021	0AK42	114250-11460
F-11	15	5307-01-323-5503	0AK42	26226-060502
F-11	16	2815-01-319-3174	0GUY0	114250-11020
F-11	17	5307-01-323-5504	0AK42	26226-060552
F-11	18	2815-01-323-0290	0AK42	114250-11101
F-11	19	2815-01-323-0291	0AK42	114250-11113
F-11	20	5307-01-431-7454	0AK42	26216-080182
F-11	21	5315-01-431-8230	0AK42	22351-040008
F-11	22	5310-01-431-4064	0AK42	114250-11600
F-11	23	5331-01-324-8831	0AK42	114250-11340
F-11	24	5360-01-324-3995	0AK42	114250-11120
F-11	25	5340-01-324-8850	0AK42	114250-11180
F-11	26	- -	0AK42	714270-11660
F-12	1	5310-01-322-8607	0AK42	26366-080002
F-12	2	2990-01-419-5482	0AK42	114268-13510
F-12	3	5305-01-300-6264	80204	B18231B06012N
F-12	4	5330-01-326-4780	0AK42	114250-13200
F-12	5	5330-01-324-8287	0AK42	114250-12200
F-12	6	- -	0AK42	114250-12010
F-12	7	5305-01-255-6548	62866	10512
F-12	8	5307-01-323-5505	0AK42	26226-060142
F-12	9	5365-01-419-5477	0AK42	183375-77560
F-12	10	5310-01-388-8826	0AK42	26366-060002
F-12	11	5330-01-326-4773	0AK42	114250-12210
F-12	12	4520-01-424-6353	0AK42	129400-77501
F-12	13	- -	0AK42	129100-77510
F-13	1	5306-01-431-7462	0AK42	160642-21250
F-13	2	5310-01-431-4069	0AK42	160310-14550
F-13	3	3110-01-322-9532	0AK42	24101-062024
F-13	4	- -	0AK42	714770-28510
F-13	5	- -	0AK42	114781-21590
F-13	6	- -	0AK42	114262-21600

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-13	7	5310-01-398-0737	0AK42	103854-01221
F-13	8	5310-01-431-4070	0AK42	114250-21550
F-13	9	- -	0AK42	714288-21700
F-13	10	5315-01-432-1210	0AK42	22512-040120
F-13	11	5315-01-388-8937	0AK42	160642-21150
F-13	12	2815-01-389-9590	0AK42	114250-14450
F-13	13	2815-01-323-0352	0AK42	114250-14200
F-13	14	2815-01-348-5888	0GUY0	714780-14580
F-13	15	2815-01-323-0353	0AK42	114250-14260
F-14	1	- -	0AK42	714780-22580
F-14	1	- -	0AK42	714780-22620
F-14	1	- -	0AK42	714780-22720
F-14	2	2815-01-323-0286	0AK42	114250-22302
F-14	3	5325-01-322-8679	0AK42	22252-000190
F-14	4	2815-01-323-0351	0AK42	714250-23703
F-14	5	- -	0AK42	714250-23610
F-14	5	- -	0AK42	714250-23620
F-15	1	5306-01-388-7402	0AK42	26476-060142
F-15	2	5340-01-433-5457	0AK42	114250-32070
F-15	3	5331-01-324-8279	0AK42	103338-32570
F-15	4	4320-01-323-0298	0AK42	114250-32010
F-15	5	5315-01-431-8229	0AK42	22312-030160
F-15	6	5331-01-326-8017	0AK42	24341-000224
F-15	7	2815-01-353-7523	0GUY0	114250-35070
F-15	8	5305-01-388-6229	0AK42	26106-060162
F-15	9	2990-01-353-7531	0GUY0	714770-61700
F-15	10	3040-01-389-9592	0AK42	714250-61500
F-15	11	5310-01-388-8825	0AK42	22137-080000
F-15	12	3110-01-417-1465	0AK42	114270-61520
F-15	13	5310-01-431-4066	0AK42	26696-100002
F-15	14	5360-01-431-3108	0AK42	114250-66550
F-15	15	5330-01-415-3802	0AK42	114770-61600
F-15	16	3010-01-389-9003	0AK42	114770-61610
F-15	17	5360-01-419-5483	0AK42	114770-66010
F-15	18	- -	0AK42	183250-66511
F-15	19	5360-01-415-8733	0AK42	183250-66331
F-15	20	5360-01-322-8631	0AK42	114250-66200
F-15	21	5306-01-431-7457	0AK42	26106-060202
F-16	1	5306-01-388-7402	0AK42	26476-060142
F-16	2	5340-01-389-1309	0AK42	114250-45211
F-16	3	5330-01-330-9564	0AK42	114250-45330
F-16	4	3020-01-322-5785	0AK42	114780-45100

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-16	5	2815-01-324-9200	0AK42	114250-45300
F-16	6	5342-01-323-7866	0AK42	114250-45310
F-16	7	5310-01-388-8806	0AK42	160120-76940
F-16	8	5305-01-069-8235	61080	50025900
F-16	9	5305-01-163-5075	15526	933-M6X8
F-16	10	2990-01-323-0307	0AK42	714260-76821
F-16	11	5305-01-300-6264	80204	B18231B06012N
F-16	12	- -	0AK42	114250-76590
F-17	1	2910-01-419-5484	0AK42	714770-51700
F-17	2	4710-01-425-8674	0AK42	114250-59800
F-17	3	2910-01-310-4522	0AK42	714250-53101
F-18	1	5306-01-431-7460	0AK42	26106-100302
F-18	2	2920-01-452-8409	0AK42	114362-77019
F-18	3	- -	0AK42	160710-78710
F-18	4	5306-01-388-7402	0AK42	26476-060142
F-18	5	2920-01-419-5481	0AK42	114351-78260
F-18	6	- -	0AK42	26577-060142
F-18	7	- -	0AK42	26476-060202
F-19	1	3110-01-467-7863	14058	31665
F-19	2	6115-01-419-3170	51879	65.00022
F-19	3	6115-01-474-6268	51879	340.00000
F-19	4	- -	35537	608-370
F-19	5	- -	35537	740-008
F-19	6	- -	35537	730-008
F-19	7	- -	14058	41432
F-19	8	5306-01-419-3173	51879	480.00020
F-19	9	5305-00-983-7429	96906	MS16998-28
F-19	10	6115-01-472-5875	14058	41446-501
F-19	11	- -	14058	41433
F-19	12	5999-01-210-6449	51879	660-00000
F-19	13	5977-01-105-6201	51879	640-00000
F-19	14	- -	35537	D02134-4/5
F-19	15	- -	35537	D02134-6
F-19	16	- -	35537	P14-6RM
F-19	17	- -	14058	31669
F-19	18	- -	14058	31666
F-20	1	5315-01-419-3159	0L9X3	11-2710
F-20	2	6115-01-419-3165	0L9X3	11-3010
F-20	3	- -	0L9X3	11-2045
F-20	4	- -	0L9X3	11-1097
F-20	5	- -	0L9X3	11-1081
F-20	6	5977-01-426-1442	0L9X3	11-2712

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-20	7	- -	0L9X3	11-2723
F-20	8	- -	0L9X3	11-1093
F-20	9	- -	0L9X3	11-3308
F-20	10	- -	0L9X3	11-3309
F-20	11	- -	0L9X3	11-2709
F-20	12	- -	0L9X3	11-3310
F-20	13	3110-01-458-4163	0L9X3	11-1072-1
F-20	14	- -	0L9X3	11-2701
F-20	15	- -	0L9X3	11-2703
F-20	16	- -	0L9X3	11-3306
F-20	17	- -	0L9X3	11-3302
F-20	18	3120-01-419-9010	0L9X3	11-3304
F-20	19	3110-01-419-3167	0L9X3	11-3303-1
F-20	20	- -	0L9X3	11-3300
F-20	21	5975-01-461-2989	0L9X3	11-3305
F-20	22	6115-01-419-3166	0L9X3	11-3301
F-20	23	3010-01-419-3164	0L9X3	20-271-17MM
F-20	24	- -	0L9X3	11-1025
F-20	25	5310-01-419-3175	0LX93	11-1030
F-20	26	5961-01-450-6429	0L9X3	11-5531
F-20	27	5961-01-420-0966	0L9X3	11-5531-2
F-20	28	5961-01-425-0277	0L9X3	11-5531-1
F-20	29	- -	0L9X3	10-2718
F-20	30	- -	0L9X3	11-2717-3
F-20	31	- -	0L9X3	11-2713
F-20	32	- -	0L9X3	11-2707
F-20	33	- -	0L9X3	11-1503
F-20	34	- -	0L9X3	11-1070
F-20	35	- -	0L9X3	11-1099
F-20	36	- -	0L9X3	11-1094
F-20	37	- -	0L9X3	11-1113
F-20	38	- -	0L9X3	11-2745
F-20	39	- -	0L9X3	11-2715-1
F-20	40	- -	0L9X3	11-1083
F-20	41	- -	0L9X3	11-2708
F-20	42	- -	0L9X3	11-1109
F-20	43	- -	0L9X3	11-8303
F-20	44	- -	0L9X3	11-1080
F-20	45	- -	0L9X3	11-1079
F-20	46	- -	0L9X3	11-1098
F-20	47	- -	0L9X3	11-2714-1
F-21	1	6625-99-562-7769	K6197	083-41S2-211485

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-21	2	6620-01-467-7571	0BHF9	0200A1805AB0001
F-21	3	- -	97403	13230E6743-73
F-21	4	6625-99-623-6974	K6197	083-75A2-211841
F-21	5	- -	30554	88-20564-18
F-21	6	- -	30554	95-8159-8
F-21	7	- -	30554	95-8024-1
F-21	8	- -	22175	44LC76WDC-6YN
F-21	8	- -	22175	44LC76WDC-7YN
F-21	9	- -	30554	95-8077
F-21	10	- -	30554	95-8159-3
F-21	11	- -	30554	88-20564-17
F-21	12	- -	BRYAN	GFR83FT
F-21	13	5975-01-090-8876	81703	30451
F-21	14	- -	97403	13218E0493-2767PIC
F-21	15	- -	97403	13230E6743-71
F-21	16	- -	97403	13218E0493-1287PIC
F-21	17	5320-00-932-1972	81349	M24243/6-A402H
F-21	18	5920-00-280-8342	81349	F02A250V1A
F-21	19	5920-01-005-9621	59873	352-0362-00
F-21	20	- -	30554	95-8013
F-21	21	- -	51506	1250-R-SS-.625-12
F-21	21	- -	55566	4077-1032-SS-20
F-21	22	- -	30554	95-8048
F-21	23	- -	30554	95-8060
F-21	24	6645-01-458-7278	74400	85311
F-21	25	5340-01-472-8707	30554	95-8184
F-21	26	- -	30554	M4X0.7X22M
F-21	27	5310-01-458-7561	97403	13230E6744-42
F-21	28	- -	30554	88-20564-24
F-21	29	6110-01-465-5952	30554	95-8076
F-21	30	- -	97403	13218E0493-1296PIC
F-21	31	- -	97403	13230E6744-41
F-21	32	5325-00-174-9038	70485	804
F-21	33	- -	30554	95-8026
F-21	34	5310-01-411-0862	80204	B1822BH030R
F-21	35	- -	80204	B18212HRRN030
F-21	36	5305-01-391-3563	80204	B1867EC030080
F-21	37	- -	30554	88-20564-2
F-21	38	5310-01-467-6832	97403	13230E6744-44
F-21	39	- -	30554	88-22790-1
F-21	40	- -	30554	95-8019-2
F-21	41	5305-01-435-4122	80204	B1867BC040060

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-21	42	5305-00-225-3843	80204	B1821BH025C100N
F-21	43	- -	30554	95-8047-1
F-21	44	- -	30554	95-8084
F-21	45	- -	30554	88-20564-23
F-21	46	- -	97403	13230E6743-70
F-21	47	- -	97403	13218E0493-1249PIC
F-21	48	- -	30554	95-8075
F-21	49	- -	97403	13218E0493-1285PIC
F-21	50	6110-01-474-8025	14058	41435-501
F-21	51	5940-00-243-0409	06383	P14-6R
F-21	52	- -	30554	95-8021-92
F-21	53	5905-01-465-3266	30554	95-8027
F-21	54	6150-00-632-7234	80063	SM-A-57192-53
F-21	55	- -	97403	13218E0493-1289PIC
F-21	56	5940-01-233-1810	73631	1516
F-21	57	5940-00-021-3321	82168	DG3M2F-S-RPC
F-21	58	- -	97403	13218E0493-2771PIC
F-21	59	5342-01-324-0772	81860	A22-131
F-21	60	- -	019L2	79NE-040
F-21	61	- -	0AM43	F18356
F-21	61	- -	30554	95-8149
F-21	61	- -	30554	88-20564-19
F-21	62	- -	30554	88-20564-26
F-21	63	- -	30554	88-22336-3
F-21	64	- -	30554	95-8050
F-21	65	- -	019L2	79NM-02
F-21	66	- -	30554	95-8015
F-21	67	5930-01-419-6559	13445	95509-01
F-21	68	5975-00-992-8396	97942	342C698H06
F-21	69	- -	30554	95-8158-274
F-21	70	5935-01-097-9974	19207	11674728
F-21	71	- -	30554	95-8018
F-21	72	- -	30554	95-8066
F-21	73	5975-00-111-3208	43999	LE127-0011-0005
F-21	74	5925-01-464-2030	30554	95-8078
F-21	75	- -	30554	95-8166
F-21	76	- -	97403	13218E0493-2769PIC
F-21	77	- -	97403	13218E0493-2764PIC
F-21	78	- -	22175	44LC76WDC-8YN
F-21	79	- -	30554	88-20564-27
F-21	80	- -	97403	13218E0493-2771PIC
F-22	1	6620-01-467-7577	K6197	083-80V2-211843

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-22	2	- -	97403	13230E6743-73
F-22	3	6625-99-629-8742	K6197	083-80A2-211844
F-22	4	- -	30554	88-20564-18
F-22	5	- -	30554	95-8159-8
F-22	6	- -	30554	95-8024-1
F-22	7	- -	22175	44LC76WDC-6YN
F-22	8	- -	30554	95-8014
F-22	9	5320-00-932-1972	81349	M24243/6-A402H
F-22	10	5920-00-280-8342	81349	F02A250V1A
F-22	11	5920-01-005-9621	59873	352-0362-00
F-22	12	- -	30554	95-8013
F-22	13	- -	30554	88-20564-27
F-22	14	- -	55566	4077-1032-SS-20
F-22	15	- -	30554	95-8011
F-22	16	- -	30554	95-8010
F-22	17	- -	97403	13218E0493-1287PIC
F-22	18	6645-01-458-7278	74400	85311
F-22	19	5340-01-473-4697	30554	95-8185
F-22	20	- -	30554	M4X0.7X22M
F-22	21	- -	30554	88-20564-24
F-22	22	5310-01-458-7561	97403	13230E6744-42
F-22	23	6110-01-419-3179	0L9X3	20124SR
F-22	24	- -	30554	88-20564-17
F-22	25	- -	97403	13230E6743-71
F-22	26	- -	30554	95-8026
F-22	27	5325-00-174-9038	70485	804
F-22	28	5310-01-411-0862	80204	B1822BH030R
F-22	29	- -	80204	B18212HRRN030
F-22	30	5305-01-391-3563	80204	B1867EC030080
F-22	31	- -	30554	88-20564-2
F-22	32	5310-01-467-6832	97403	13230E6744-44
F-22	33	- -	30554	88-22790-1
F-22	34	- -	30554	95-8019-1
F-22	35	5305-01-435-4122	80204	B1867BC040060
F-22	36	5305-00-225-3843	80204	B1821BH025C100N
F-22	37	- -	30554	95-8047-1
F-22	38	- -	30554	95-8023
F-22	39	- -	30554	88-20564-23
F-22	40	- -	97403	13230E6743-70
F-22	41	- -	97403	13218E0493-1249PIC
F-22	42	- -	30554	95-8047-2
F-22	43	- -	30554	95-8022

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-22	44	- -	97403	13218E0493-1285PIC
F-22	45	6110-01-474-8025	14058	41435-501
F-22	46	5940-00-243-0409	06383	P14-6R
F-22	47	- -	30554	95-8005-99
F-22	48	- -	K6197	871-92V3-000029
F-22	49	- -	97403	13218E0493-1289PIC
F-22	50	5905-01-465-3266	30554	95-8027
F-22	51	- -	73631	1514
F-22	52	- -	97403	13218E0493-2769PIC
F-22	53	5940-00-958-1214	82168	DG3M6F-S-RPC
F-22	54	- -	97403	13218E0493-2771PIC
F-22	55	5342-01-324-0772	81860	A22-131
F-22	56	- -	019L2	79NE-040
F-22	57	- -	30554	95-8016
F-22	58	- -	30554	88-20564-25
F-22	59	5310-00-189-8467	63857	BS4-1801PC15
F-22	60	- -	30554	95-8025
F-22	61	- -	019L2	79NE-083
F-22	62	- -	019L2	79NM-02
F-22	63	- -	30554	95-8015
F-22	64	5930-01-419-6559	13445	95509-01
F-22	65	- -	97403	13230E6743-74
F-22	66	5925-00-267-1447	81349	M5423/14-06
F-22	67	- -	30554	95-8158-274
F-22	68	5935-01-097-9974	19207	11674728
F-22	69	- -	30554	95-8018
F-22	70	- -	30554	95-8050
F-22	71	- -	30554	95-8006
F-22	72	- -	30554	95-8017
F-22	73	- -	06383	TM3S8-C100
F-22	74	5975-00-111-3208	43999	LE127-0011-0005
F-22	75	5925-01-467-7122	74193	AM2S-Z272-1
F-22	76	- -	019L2	79NM-62
F-22	77	- -	30554	95-8056
F-23	1	- -	30554	95-8176
F-23	2	5320-00-882-8388	81349	M24243/6-A403H
F-23	3	- -	30554	95-8068
F-23	3	- -	30554	95-8085
F-23	4	- -	30554	95-8067
F-23	4	- -	30554	95-8086
F-23	5	- -	30554	95-8091
F-23	6	- -	30554	95-8006-14

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-23	6	- -	30554	95-8066-14
F-23	7	- -	30554	95-8178
F-23	7	- -	30554	95-8179
F-23	8	- -	11815	BSP-32
F-23	9	- -	30554	95-8177
F-23	10	5320-00-932-1972	81349	M24243/6-A402H
F-23	11	- -	30554	95-8087
F-23	12	5305-01-419-3551	94222	47-62-512-50
F-24	1	5905-00-646-5958	81349	RV4LAYSA102A
F-24	2	- -	30554	95-8077-3
F-24	3	- -	30553	95-8077-4
F-24	4	5940-00-243-0409	06383	P14-6R
F-24	5	- -	30554	95-8077-5
F-24	6	- -	30554	95-8014-5
F-24	7	- -	30554	95-8014-4
F-24	8	- -	30554	95-8014-2
F-24	9	5905-00-665-4992	81349	RV4LAYSA104A
F-25	1	5945-01-416-0380	0AK42	183266-91690
F-25	2	5940-00-636-5536	00779	34068
F-25	3	- -	30554	95-8019-4
F-25	4	5940-00-243-0409	06383	P14-6R
F-25	5	- -	30554	95-8019-5
F-26	1	- -	71468	CA3102R20-8P-F80
F-26	2	- -	30554	95-8084-9
F-26	3	- -	30554	95-8084-6
F-26	4	- -	30554	95-8084-7
F-26	5	5940-01-465-3185	06383	PV8-10R-Q
F-26	6	5940-00-143-4780	98410	BB-837-10
F-26	7	5940-00-234-0409	06383	P14-6R
F-26	8	5940-01-465-4413	06383	PV8-38R-Q
F-26	9	- -	30554	95-8084-8
F-26	10	- -	30554	95-8023-2
F-26	11	- -	30554	95-8023-8
F-26	12	- -	30554	95-8023-9
F-26	13	- -	30554	95-8023-7
F-26	14	- -	30554	95-8023-10
F-26	14	- -	30554	95-8084-10
F-27	1	5935-01-317-6752	71468	CA3102R20-15P-F80
F-27	2	- -	30554	95-8075-4
F-27	3	- -	30554	95-8075-5
F-27	4	5940-00-230-0515	98410	BB-825-14
F-27	5	5940-00-243-0409	06383	P14-6R

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-27	6	- -	71468	CA3102R24-12P-F80
F-27	7	- -	30554	95-8022-2
F-27	8	- -	30554	95-8022-8
F-27	9	5940-01-467-8197	06383	PV4-14R-E
F-27	10	- -	30554	95-8022-7
F-27	11	5940-01-467-8190	06383	PV4-12R-E
F-27	12	- -	30554	95-8022-6
F-27	13	- -	30554	95-8022-9
F-27	13	- -	30554	95-8075-6
F-28	1	5940-00-243-0409	06383	P14-6R
F-28	2	- -	30554	95-8050-7
F-28	3	5961-00-997-8021	01295	IN4006
F-28	4	- -	30554	95-8058-1
F-28	5	5940-00-636-5536	00779	34068
F-28	6	- -	30554	95-8050-6
F-28	7	5940-00-143-4780	98410	BB-837-10
F-29	1	- -	30554	95-8166-1
F-29	2	5940-00-143-4780	98410	BB-837-10
F-29	3	- -	30554	95-8166-1-11
F-29	4	5940-01-356-6456	00779	640919-1
F-29	5	- -	30554	95-8166-2
F-29	6	5940-01-356-6456	00779	640919-1
F-29	7	- -	30554	95-8166-2-11
F-29	8	5940-00-143-4780	98410	BB-837-10
F-29	9	- -	30554	95-8166-3
F-29	10	5940-00-143-4780	98410	BB-837-10
F-29	11	- -	30554	95-8166-3-11
F-29	12	- -	30554	95-8166-4
F-29	13	5940-00-243-0409	06383	P14-6R
F-29	14	- -	30554	95-8166-4-13
F-29	15	- -	30554	95-8166-4-11
F-29	16	5940-01-082-3321	15912	RB2573
F-29	17	- -	30554	95-8166-5
F-29	18	5940-00-143-4780	98410	BB-837-10
F-29	19	- -	30554	95-8166-5-11
F-29	20	5940-00-230-0515	98410	BB-825-14
F-29	21	- -	30554	95-8166-6
F-29	22	5940-00-143-4780	98410	BB-837-10
F-29	23	- -	30554	95-8166-6-11
F-29	24	- -	30554	95-8166-7
F-29	25	5940-00-230-0515	98410	BB-825-14
F-29	26	- -	30554	95-8166-7-11

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-29	27	5940-01-082-3321	15912	RB2573
F-29	28	- -	30554	95-8166-8
F-29	29	5940-00-230-0515	98410	BB-825-14
F-29	30	- -	30554	95-8166-8-11
F-29	31	5940-00-243-0409	06383	P14-6R
F-29	32	- -	30554	95-8166-8-13
F-29	33	- -	30554	95-8166-9
F-29	34	5940-00-243-0409	06383	P14-6R
F-29	35	- -	30554	95-8166-9-13
F-29	36	- -	30554	95-8166-9-11
F-29	37	5940-00-143-4780	98410	BB-837-10
F-29	38	- -	30554	95-8166-10
F-29	39	5940-00-243-0409	06383	P14-6R
F-29	40	- -	30554	95-8166-10-13
F-29	41	- -	30554	95-8166-10-12
F-29	42	5940-00-143-4780	98410	BB-837-10
F-29	43	- -	30554	95-8166-11
F-29	44	5940-00-243-0409	06383	P14-6R
F-29	45	- -	30554	95-8166-11-13
F-29	46	- -	30554	95-8166-11-12
F-29	47	5940-00-230-0515	98410	BB-825-14
F-29	48	- -	30554	95-8166-12
F-29	49	5940-01-259-2190	98410	BB-8194-08
F-29	50	- -	30554	95-8166-12-12
F-29	51	5940-00-230-0515	98410	BB-825-14
F-29	52	- -	30554	95-8166-13
F-29	53	5940-00-230-0515	98410	BB-825-14
F-29	54	- -	30554	95-8166-13-12
F-29	55	- -	30554	95-8166-14
F-29	56	5940-00-143-4780	98410	BB-837-10
F-29	57	- -	30554	95-8166-14-12
F-29	58	- -	30554	95-8166-15
F-29	59	5940-00-143-4780	98410	BB-837-10
F-29	60	- -	30554	95-8166-15-12
F-29	61	5940-00-230-0515	98410	BB-825-14
F-29	62	- -	30554	95-8166-16
F-29	63	5940-01-259-2190	98410	BB-8194-08
F-29	64	- -	30554	95-8166-16-12
F-29	65	5940-00-230-0515	98410	BB-825-14
F-29	65	5940-01-068-1879	56501	RB-2577F
F-29	66	- -	30554	95-8166-17
F-29	67	5940-01-465-3185	06383	PV8-10R-Q

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-29	68	- -	30554	95-8166-17-5
F-29	69	5940-01-465-4413	06383	PV8-38R-Q
F-29	70	- -	30554	95-8166-18
F-29	71	5940-01-259-2190	98410	BB-8194-08
F-29	72	- -	30554	95-8166-18-12
F-29	73	5940-01-082-3321	15912	RB2573
F-29	73	5940-00-230-0515	98410	BB-825-14
F-29	74	- -	30554	95-8166-19
F-29	75	5940-00-143-5284	96906	MS25036-115
F-29	76	- -	30554	95-8166-19-5
F-29	77	5940-01-465-4413	06383	PV8-38R-Q
F-30	1	- -	30554	95-8056-1
F-30	2	5940-00-143-4774	96906	MS25036-153
F-30	3	- -	30554	95-8056-1-13
F-30	4	5940-00-143-4780	98410	BB-837-10
F-30	5	- -	30554	95-8056-2
F-30	6	5940-00-143-4774	96906	MS25036-153
F-30	7	- -	30554	95-8056-2-13
F-30	8	5940-00-143-4780	98410	BB-837-10
F-30	9	- -	30554	95-8056-3
F-30	10	5940-00-143-4774	96906	MS25036-153
F-30	11	- -	30554	95-8056-3-13
F-30	12	5940-00-243-0409	06383	P14-6R
F-30	13	- -	30554	95-8056-3-16
F-30	14	- -	30554	95-8056-4
F-30	15	5940-00-143-4780	98410	BB-837-10
F-30	16	- -	30554	95-8056-4-13
F-30	17	5940-01-356-6456	00779	640919-1
F-30	18	- -	30554	95-8056-5
F-30	19	5940-00-243-0409	06383	P14-6R
F-30	20	- -	30554	95-8056-5-16
F-30	21	- -	30554	95-8056-5-13
F-30	22	5940-01-082-3321	15912	RB2573
F-30	23	- -	30554	95-8056-6
F-30	24	5940-00-243-0409	06383	P14-6R
F-30	25	- -	30554	95-8056-6-16
F-30	26	- -	30554	95-8056-6-13
F-30	27	5940-01-082-3321	15912	RB2573
F-30	28	- -	30554	95-8056-7
F-30	29	5940-00-243-0409	06383	P14-6R
F-30	30	- -	30554	95-8056-7-16
F-30	31	- -	30554	95-8056-7-13

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-30	32	5940-01-082-3321	15912	RB2573
F-30	33	- -	30554	95-8056-8
F-30	34	5940-00-243-0409	06383	P14-6R
F-30	35	- -	30554	95-8056-8-16
F-30	36	- -	30554	95-8056-8-13
F-30	37	5940-01-082-3321	15912	RB2573
F-30	38	- -	30554	95-8056-9
F-30	39	5940-00-243-0409	06383	P14-6R
F-30	40	- -	30554	95-8056-9-16
F-30	41	- -	30554	95-8056-9-13
F-30	42	5940-01-082-3321	15912	RB2573
F-30	43	- -	30554	95-8056-10
F-30	44	5940-00-243-0409	06383	P14-6R
F-30	45	- -	30554	95-8056-10-16
F-30	46	- -	30554	95-8056-10-13
F-30	47	5940-01-082-3321	15912	RB2573
F-30	48	- -	30554	95-8056-11
F-30	49	5940-00-243-0409	06383	P14-6R
F-30	50	- -	30554	95-8056-11-16
F-30	51	- -	30554	95-8056-11-13
F-30	52	5940-01-082-3321	15912	RB2573
F-30	53	- -	30554	95-8056-12
F-30	54	5940-00-243-0409	06383	P14-6R
F-30	55	- -	30554	95-8056-12-16
F-30	56	- -	30554	95-8056-12-13
F-30	57	5940-00-143-4780	98410	BB-837-10
F-30	58	- -	30554	95-8056-13
F-30	59	5940-00-243-0409	06383	P14-6R
F-30	60	- -	30554	95-8056-13-16
F-30	61	- -	30554	95-8056-13-13
F-30	62	5940-00-143-4780	98410	BB-837-10
F-30	63	- -	30554	95-8056-14
F-30	64	5940-00-143-4780	98410	BB-837-10
F-30	65	- -	30554	95-8056-14-13
F-30	66	5940-01-356-6456	00779	640919-1
F-30	67	- -	30554	95-8056-15
F-30	68	5940-00-230-0515	98410	BB-825-14
F-30	69	- -	30554	95-8056-15-13
F-30	70	5940-01-082-3321	15912	RB2573
F-30	71	- -	30554	95-8056-16
F-30	72	5940-00-230-0515	98410	BB-825-14
F-30	73	- -	30554	95-8056-16-13

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FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-30	74	- -	30554	95-8056-16-16
F-30	75	5940-00-243-0409	06383	P14-6R
F-30	76	- -	30554	95-8056-17
F-30	77	5940-00-143-4780	98410	BB-837-10
F-30	78	- -	30554	95-8056-17-13
F-30	79	5940-01-458-9497	56501	RB14-12
F-30	80	- -	30554	95-8056-18
F-30	81	5940-00-243-0409	06383	P14-6R
F-30	82	- -	30554	95-8056-18-16
F-30	83	- -	30554	95-8056-18-13
F-30	84	5940-01-458-9497	56501	RB14-12
F-30	85	- -	30554	95-8056-19
F-30	86	5940-01-068-1879	56501	RB-2577F
F-30	87	- -	30554	95-8056-19-13
F-30	88	- -	30554	95-8056-19-16
F-30	89	5940-00-243-0409	06383	P14-6R
F-30	90	- -	30554	95-8056-20
F-30	91	5940-01-465-3185	06383	PV8-10R-Q
F-30	92	- -	30554	95-8056-20-6
F-30	93	5940-01-465-4413	06383	PV8-38R-Q
F-30	94	- -	30554	95-8056-21
F-30	95	5940-01-467-8197	06383	PV4-14R-E
F-30	96	- -	30554	95-8056-21-4
F-30	97	- -	30554	95-8056-22
F-30	98	5940-01-467-8197	06383	PV4-14R-E
F-30	99	- -	30554	95-8056-22-4
F-30	100	5940-01-467-8190	06383	PV4-12R-E
F-30	101	- -	30554	95-8056-23
F-30	102	5940-01-467-8190	06383	PV4-12R-E
F-30	103	- -	30554	95-8056-23-4
F-30	104	5940-01-467-8203	06383	PV4-38R-E
F-30	105	- -	30554	95-8056-24
F-30	106	5940-01-467-8197	06383	PV4-14R-E
F-30	107	- -	30554	95-8056-24-4
F-30	108	5940-01-467-8203	06383	PV4-38R-E
F-31	1	5910-01-420-0466	62643	LXF63VB102M16X40LL
F-31	2	5940-00-636-5536	00779	34068
F-31	3	- -	30554	95-8017-5
F-31	4	5940-00-230-0515	98410	BB-825-14
F-31	5	5940-01-458-9497	56501	RB14-12
F-31	6	- -	30554	95-8017-6
F-32	1	5940-01-458-9497	56501	RB14-12

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-32	2	5961-01-467-6714	04713	MR2535L
F-32	3	5940-00-636-5536	00779	34068
F-32	4	- -	30554	95-8139
F-33	1	5940-01-336-7253	06383	P8-14R
F-33	2	5975-01-467-9255	3AE86	76-0706
F-33	3	5975-00-111-3208	43999	LE127-0011-0005
F-33	4	- -	30554	95-8029-7
F-33	5	- -	30554	95-8029-14
F-33	6	5935-01-316-8302	71468	CA3108R20-8S-F80
F-33	7	- -	71468	M85049/41-12A WITH BUSHING
F-33	8	- -	30554	95-8029-16
F-33	9	- -	30554	95-8029-3
F-33	10	- -	77060	08917000
F-33	11	- -	30554	95-8029-13
F-33	12	5940-01-465-3177	06383	P8-56R-Q
F-33	13	5940-01-082-3321	15912	RB2573
F-33	14	5940-01-316-4525	14726	MP4847F
F-33	15	- -	35537	A00864
F-33	16	- -	06383	P14-10R
F-34	1	2990-01-467-7570	0AK42	114970-66400
F-34	2	5975-01-467-6588	30554	95-8081
F-35	1	5940-01-465-3177	06383	P8-56R-Q
F-35	2	- -	30554	95-8141-8
F-35	3	- -	30554	95-8141-2
F-35	4	5975-01-467-9255	3AE86	76-0706
F-35	5	5940-01-336-7253	06383	P8-14R
F-35	6	- -	30554	95-8141-5
F-35	7	5975-00-111-3208	43999	LE127-0011-0005
F-35	8	- -	30554	95-8141-7
F-36	1	- -	71468	CA3108R24-12S-F80
F-36	2	- -	71468	M85049/41-16A WITH BUSHING
F-36	3	- -	30554	95-8028-3
F-36	4	5975-00-111-3208	43999	LE127-0011-0005
F-36	5	- -	30554	95-8028-10
F-36	6	- -	17826	RH50
F-36	7	- -	30554	95-8028-13
F-36	8	- -	30554	95-8028-11
F-36	9	5940-00-230-0515	98410	BB-825-14
F-36	10	5940-01-467-8197	06383	PV4-14R-E
F-36	11	- -	06383	PV4-56R
F-36	12	5940-00-283-5281	96906	MS25036-109
F-36	13	5940-00-620-9780	00779	42282-2

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGE	PART NUMBER
F-36	14	- -	30554	95-8028-14
F-37	1	5120-01-415-8266	0AK42	114250-92101
F-37	2	5120-01-416-0424	0AK42	114250-92130
BULK	1	- -	30554	ASTM D 1056
BULK	2	4720-01-464-0400	1DS07	AEM02022
BULK	3	4720-01-464-0411	1DS07	AEM02012
BULK	4	- -	30554	SAE 30305
BULK	5	- -	0FB20	012FEJSX0000XBS
BULK	6	- -	28105	ST-301-1/2 BLACK
BULK	7	- -	94423	RW-25SBR
BULK	8	- -	28105	ST-301-1/8 BLACK
BULK	9	- -	3N861	M16878/3BJE-9
BULK	10	- -	3N861	M16878/3BNL-9
BULK	11	- -	28105	ST-301-3/8 BLACK
BULK	12	- -	28105	ST-301-3/16 BLACK
BULK	13	- -	3N861	M16878/3BKE-9
BULK	14	- -	3N861	M16878/3BRL-9
BULK	15	- -	28105	ST-301-1/4 WHITE
BULK	16	- -	0FB20	716FEJSX0000XBS
BULK	17	- -	0FB20	038FEJSX0000XBS
BULK	18	- -	0FB20	034FEJSX0000XBS
BULK	19	- -	35537	M44A0111-14-0
BULK	20	- -	28105	ST-301-3/64 BLACK
BULK	21	- -	28105	ST-301-1-1/2 BLACK
BULK	22	- -	28105	ST-301-3/4 BLACK

APPENDIX G

ILLUSTRATED LIST OF MANUFACTURED ITEMS

G-1. INTRODUCTION.

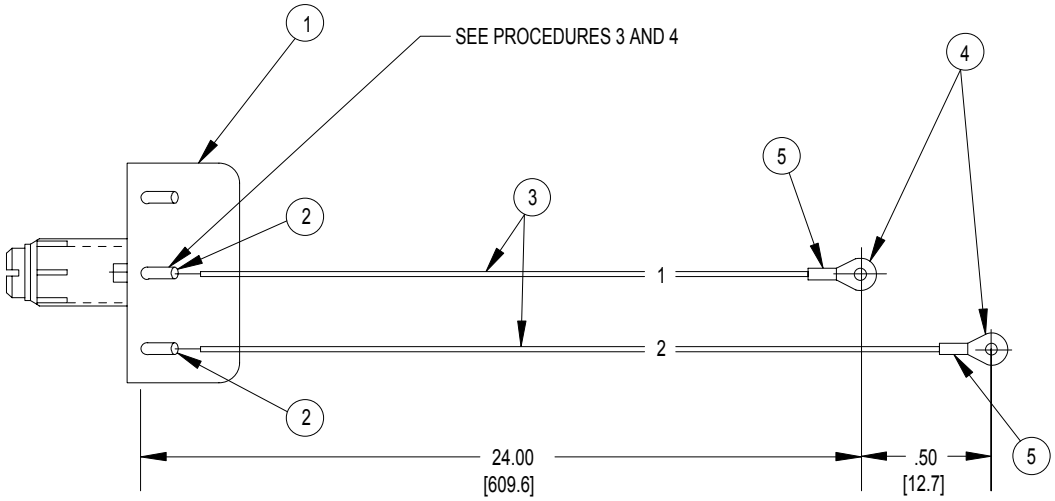
This appendix includes complete instructions for fabricating or assembling components required for the generator sets.

G-2. ILLUSTRATIONS.

The following pages contain illustrations with instructions for the manufacture of generator set components.

NOTE

All item numbers in this appendix are identical to those in Appendix F.



WIRE REF NO.	TERMINATION		WIRE BULK NO.
	FROM	TO	
1	R2	TB1-12	M16878/3BJE-9
2	R2	TB1-11	M16878/3BJE-9

NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-24 (MEP-531A) for materials required.

PROCEDURES:
1. Cut each wire (3) to length indicated then strip 0.50 [13] from ends of each wire.

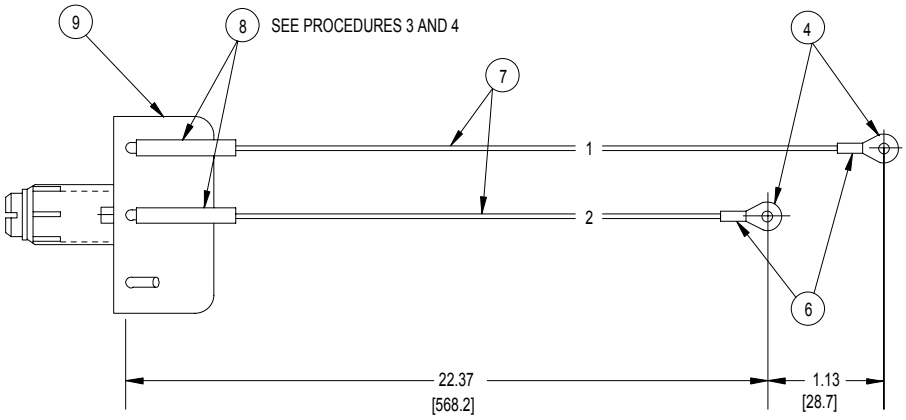
2. Solder wires (3) to terminals on potentiometer (1).

3. Install 0.25 to 0.75 [6.4 to19.1] of insulation sleeving (2) over soldered terminals on potentiometer (1) and heat shrink insulation to a firm fit.

4. Slide insulation sleeving (5) over wires (3). Crimp terminal lug (4) on end of wires (3). Install insulation sleeving (5) over terminal lugs (4) and heat shrink to a firm fit.

5. Mark the appropriate wire number which will consist of the 'FROM' termination, a double headed arrow (↔), and the 'TO' termination.

Figure G-1. Potentiometer, VOLTAGE ADJ. (P/N: 95-8077)



WIRE REF NO.	TERMINATION		WIRE BULK NO.
	FROM	TO	
1	R2	TB1-13	M16878/3BJE-9
2	R2	TB1-12	M16878/3BJE-9

NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-24 (MEP-501A) for materials required.

PROCEDURES:
1. Cut each wire (7) to length indicated then strip 0.50 [13] from ends of each wire.

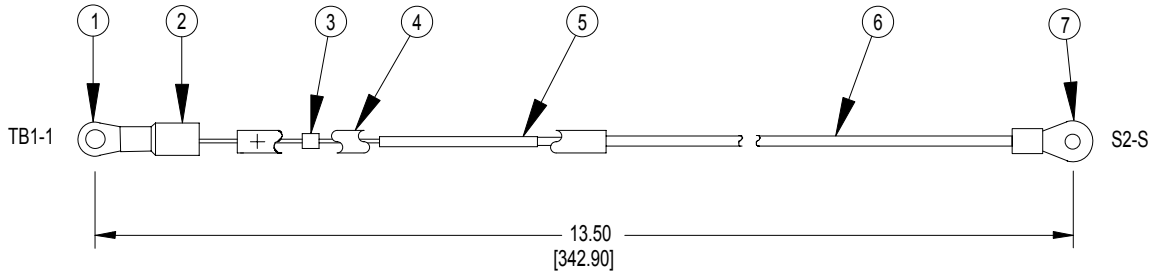
2. Solder wires (7) to terminals on potentiometer (9).

3. Install 0.25 to 0.75 [6.4 to 19.1] of insulation sleeving (8) over soldered terminals on potentiometer (9) and heat shrink insulation to a firm fit.

4. Slide insulation sleeving (6) over wires (7). Crimp terminal lugs (4) on end of wires (7). Install insulation sleeving (6) over terminal lugs (4) and heat shrink to a firm fit.

5. Mark the appropriate wire number which will consist of the 'FROM' termination, a double-headed arrow (↔) and the 'TO' termination.

Figure G-2. Potentiometer, VOLTAGE ADJ. (P/N: 95-8014)



NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-28 for materials required.

PROCEDURES:
1. Cut wire (6) to length indicated then strip 0.50 [13] from ends of wire.

2. Install insulation sleeving (2) by sliding over positive wire of diode (3).

3. Crimp terminal lug (1) to positive wire of diode (3).

4. Install insulation sleeving (2) over terminal lug (1), and heat shrink to a firm fit.

5. Slide splice (5) over negative wire of diode (3) and crimp.

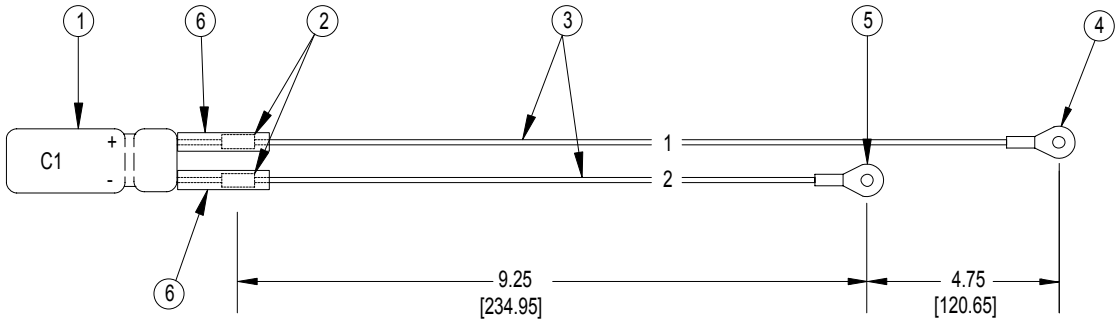
6. Slide wire (6) into splice (5) and crimp.

7. Slide insulation marker (4) over wire (6), splice (5) and diode (3), then heat shrink to a firm fit.

8. Slide terminal lug (7) onto wire (6) and crimp.

9. Mark the appropriate wire number which will consist of the ‘FROM’ termination, a double-headed arrow (↔), and the ‘TO’ termination.

Figure G-3. Flywheel Diode Assembly (P/N: 95-8050)



WIRE REF NO.	TERMINATION		WIRE BULK NO.
	FROM	TO	
1	C1 (+)	CB1-P1 (LINE)	M16878/3BJE-9
2	C1 (-)	-	M16878/3BJE-9

NOTES:
1. Dimensions are show in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-31 for materials required.

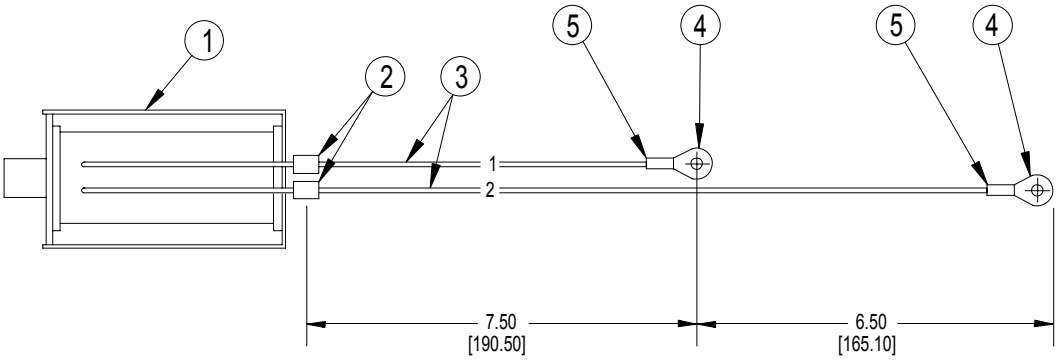
PROCEDURES:
1. Cut each wire (3) to length indicated, then strip 0.50 [13] from ends of each wire.

2. Attach wires (3) to capacitor (1) leads with splices (2). Install insulation sleeving (6) over splices (2) and heat shrink to a firm fit.

3. Crimp terminal lug (4) to one end of longer wire and terminal lug (5) on end of other wire.

4. Mark the appropriate wire number which will consist of the 'FROM' termination, a double-headed arrow (↔), and the 'TO' termination.

Figure G-4. Capacitor Assembly (P/N: 95-8017)



WIRE REF NO.	TERMINATION (MEP-531A)		TERMINATION (MEP-501A)		WIRE BULK NO.
	FROM	TO	FROM	TO	
1	L4 (Y)	TB1-4	L4 (YEL)	TB1-5	M16878/3BJE-9
2	L4 (R)	TB1-2	L4 (RED)	TB1-3	M16878/3BJE-9

NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.
2. Refer to Appendix F, Fig. F-25 for materials required.

PROCEDURES:
1. Cut each wire (3) to length indicated, then strip 0.50 [13] from ends of each wire.
2. Attach wires (3) to solenoid (1) leads with splices (2).
3. Slide insulation sleeving (5) over wires (3).
4. Crimp terminal lug (4) on one end of each wire. Install insulation sleeving (5) over terminal lugs (4) and heat shrink to a firm fit.
5. Mark the appropriate wire number which will consist of the 'FROM' termination, a double-headed arrow (↔), and the 'TO' termination.

Figure G-5. LOP Solenoid Valve Assembly (P/N: 95-8019)

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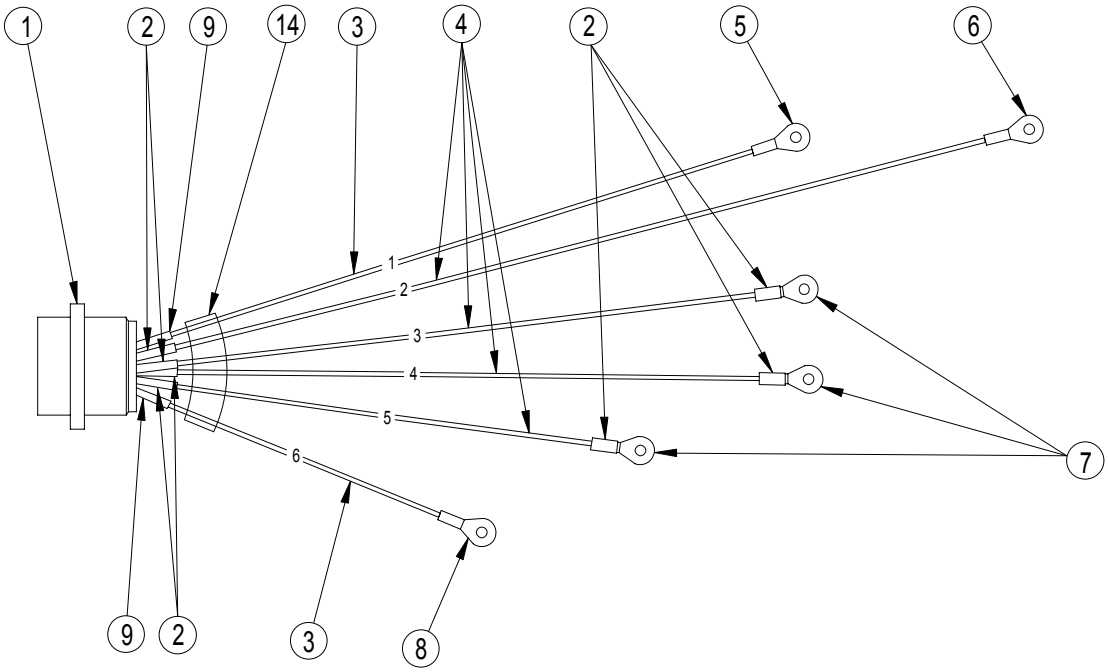


MEP-531A

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	J2-A	S2-H	M16878/3BNL-9	13.50 [342.9]
2	J2-C	S2-S	M16878/3BJE-9	22.50 [571.5]
3	J2-B	TB1-3	M16878/3BJE-9	12.00 [304.8]
4	J2-E	TB1-5	M16878/3BJE-9	12.00 [304.8]
5	J2-F	TB1-6	M16878/3BJE-9	11.25 [285.75]
6	J2-D	SR1 (+)	M16878/3BNL-9	6.00 [152.4]

Figure G-6. Wiring Harness, Control Panel (P/N: 95-8084)(Sheet 1 of 2)

NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-26 (MEP-531A), for materials required.

3. Connector shall be marked “J2” on insulation sleeving (14) with 0.18 [5] minimum high characters IAW MIL-STD-130 using rubber stamp or stencil.

PROCEDURES:

1. Cut each wire (3) and (4) to length indicated, then strip 0.50 [13] from ends of each wire.

2. Insert wires (3) and (4) into each pin from connector (1) and crimp using crimping tool.

3. Slide .75 to 1.25 [19.1 to 31.8] of insulation sleeving (9) over wire (3) and insulation sleeving (2) over wire (4).

4. Using a pin insertion tool, insert pins from connector (1) into connector (1) until pins lock into place, following termination indicators in wire list reference table.

5. Slide insulation sleeving (2) over each of the wire reference numbers 2, 3, 4 and 5, and insulation sleeving (9) over each of the wire reference numbers 1 and 6, to connector (1) and heat shrink to a firm fit.

6. Slide insulation sleeving (14) over wire bundle to connector (1), and heat shrink to a firm fit.

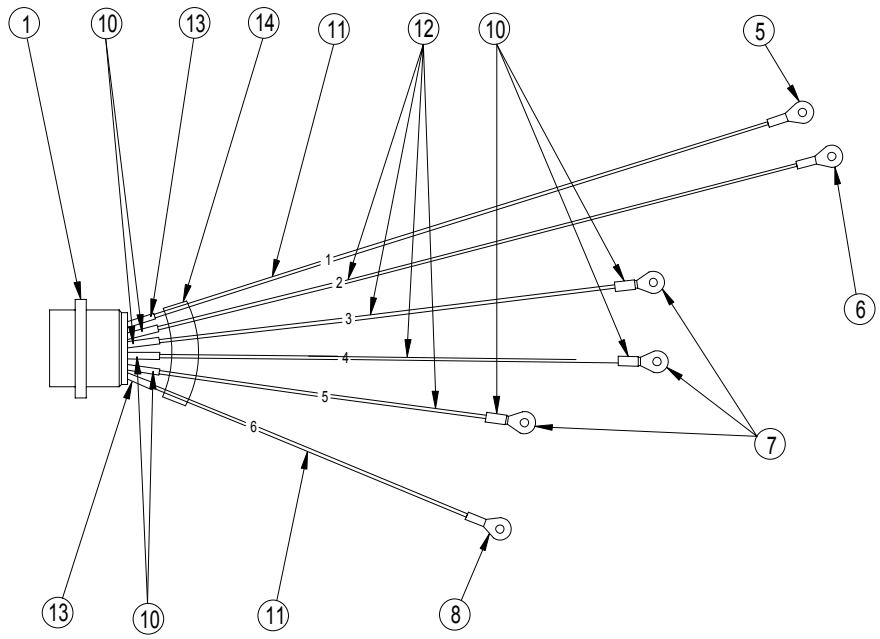
7. Slide insulation sleeving (2) over each of the wire reference numbers 3, 4 and 5.

8. Slide terminal lug (7) onto wire reference numbers 3, 4 and 5 and crimp. Slide insulation sleeving (2) over terminal lugs (7) and heat shrink to a firm fit.

9. Slide terminal lugs (5), (6) and (8) onto wire reference numbers 1, 2 and 6 and crimp.

10. Mark the appropriate wire number which will consist of the ‘FROM’ termination, and double-headed arrow (↔), and the ‘TO’ termination.

Figure G-6. Wiring Harness, Control Panel (P/N: 95-8084)(Sheet 2 of 2)



MEP-501A

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	J2-A	S2-H	M16878/3BNL-9	12.25 [311.15]
2	J2-C	S2-S	M16878/3BJE-9	14.87 [377.7]
3	J2-B	TB1-4	M16878/3BJE-9	8.75 [222.25]
4	J2-E	TB1-6	M16878/3BJE-9	8.25 [209.5]
5	J2-F	TB1-7	M16878/3BJE-9	7.50 [190.5]
6	J2-D	SR1 (+)	M16878/3BNL-9	8.25 [209.5]

Figure G-7. Wiring Harness, Control Panel (P/N: 95-8023)(Sheet 1 of 2)

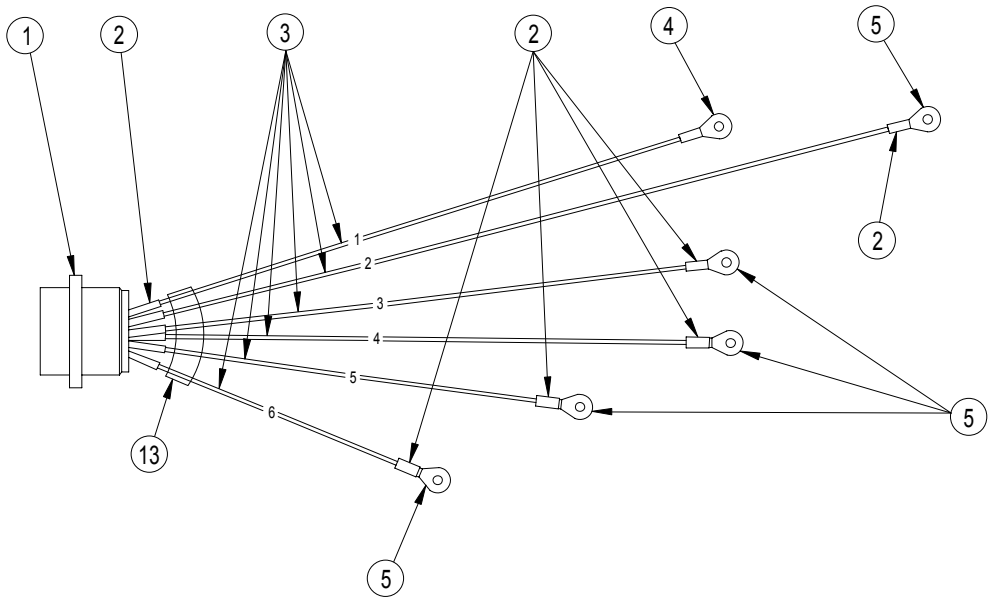
NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.
2. Refer to Appendix F, Fig. F-26 (MEP-501A), for materials required.
3. Connector shall be marked “J2” on insulation sleeving (14) with 0.18 [5] minimum high characters IAW MIL-STD-130 using rubber stamp or stencil.

PROCEDURES:

1. Cut each wire (11) and (12) to length indicated, then strip 0.50 [13] from ends of each wire.
2. Insert wires (11) and (12) into each pin from connector (1) and crimp using crimping tool.
3. Slide .75 to 1.25 [19.1 to 31.8] of insulation sleeving (10) over wire (12) and insulation sleeving (13) over wire (11).
4. Using a pin insertion tool, insert pins from connector (1) into connector (1) until pins lock into place, following termination indicators in wire list reference table.
5. Slide insulation sleeving (10) and (13) to connector (1), and heat shrink to a firm fit.
6. Slide insulation sleeving (14) over wire bundle to connector (1), and heat shrink to a firm fit.
7. Slide insulation sleeving (10) over each of the wire reference numbers 3, 4 and .5
8. Slide terminal lug (7) onto wire reference numbers 3, 4 and 5 and crimp. Slide insulation sleeving (10) over terminal lugs (7) and heat shrink to a firm fit.
9. Slide terminal lugs (5), (6) and (8) onto wire reference numbers 1, 2 and 6 and crimp.
10. Mark the appropriate wire number which will consist of the ‘FROM’ termination, a double-headed arrow (↔), and the ‘TO’ termination.

Figure G-7. Wiring Harness, Control Panel (P/N: 95-8023)(Sheet 2 of 2)



MEP-531A

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	J1-B	FL1-N*	M16878/3BKE-9	12.00 [304.8]
2	J1-A	TB1-13	M16878/3BKE-9	10.50 [266.7]
3	J1-C	TB1-14	M16878/3BKE-9	11.50 [292.1]
4	J1-D	TB1-15	M16878/3BKE-9	12.00 [304.8]
5	J1-E	TB1-8	M16878/3BKE-9	9.25 [234.9]
6	J1-F	TB1-9	M16878/3BKE-9	10.00 [254.0]

*N for Mechron 120 VAC set.

Figure G-8. Wiring Harness, Control Panel (P/N: 95-8075)(Sheet 1 of 2)

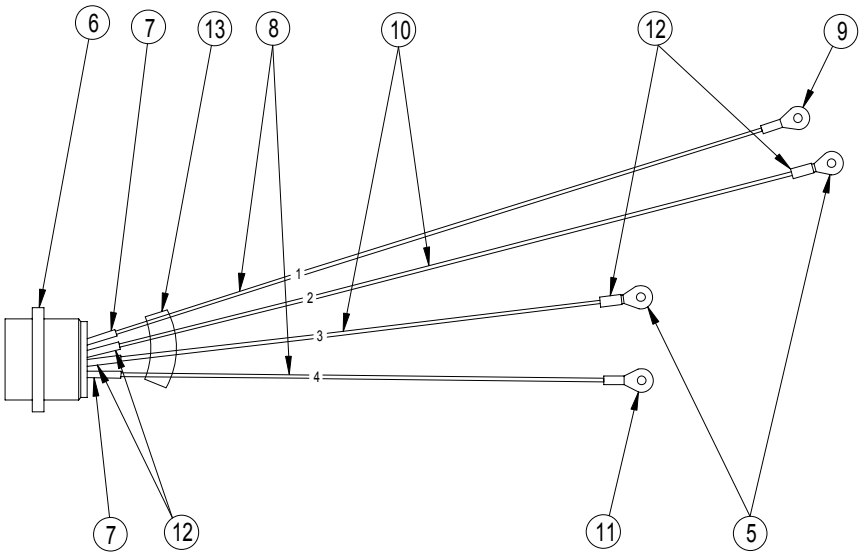
NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.
2. Refer to Appendix F, Fig. F-27 (MEP-531A), for materials required.
3. Connector shall be marked “J1” on insulation sleeving with 0.18 [5] minimum high characters IAW MIL-STD-130 using rubber stamp or stencil.

PROCEDURES:

1. Cut each wire (3) to length indicated, then strip 0.50 [13] from ends of each wire.
2. Insert wires (3) into each pin from connector (1) and crimp using crimping tool.
3. Slide 0.75 to 1.25 [19.1 to 31.8] of insulation sleeving (2) over wires (3).
4. Using a pin insertion tool, insert pins from connector (1) into connector (1) until pins lock into place, following termination indicators in wire list reference table.
5. Slide insulation sleeving (2) to connector (1), and heat shrink to a firm fit.
6. Slide insulation sleeving (13) over wire bundle to connector (1), and heat shrink to a firm fit.
7. Slide insulation sleeving (2) over each of the wire reference numbers 2, 3, 4, 5 and 6.
8. Slide terminal lug (5) onto wire reference numbers 2, 3, 4, 5 and 6 and crimp. Slide insulation sleeving (2) over terminal lugs (5) and heat shrink to a firm fit.
9. Slide terminal lug (4) onto wire reference number 1 and crimp.
10. Mark the appropriate wire number which will consist of the ‘FROM’ termination, a double-headed arrow (↔), and the ‘TO’ termination.

Figure G-8. Wiring Harness, Control Panel (P/N: 95-8075)(Sheet 2 of 2)



MEP-501A

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	J1-A	R3	M16878/3BRL-9	4.75 [120.6]
2	J1-B	TB1-10	M16878/3BKE-9	10.25 [260.35]
3	J1-D	TB1-11	M16878/3BKE-9	10.50 [266.7]
4	J1-C	(-)	M16878/3BRL-9	4.75 [120.6]

Figure G-9. Wiring Harness, Control Panel (P/N: 95-8022)(Sheet 1 of 2)

NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.
2. Refer to Appendix F, Fig. F-27 (MEP-501A), for materials required.
3. Connector shall be marked “J1” on insulation sleeving (13) with 0.18 [5] minimum high characters IAW MIL-STD-130 using rubber stamp or stencil.

PROCEDURES:

1. Cut each wire (8) and (10) to length indicated, then strip 0.50 [13] from ends of each wire.
2. Insert wires (8) and (10) into each pin from connector (1) and crimp using crimping tool.
3. Slide 0.75 to 1.25 [19.1 to 31.8] of insulation sleeving (7) over wire (8) and insulation sleeving (12) over wire (10).
4. Using a pin insertion tool, insert pins from connector (1) into connector (1) until pins lock into place, following termination indicators in wire list reference table.
5. Slide insulation sleeving (7) and (12) to connector (1), and heat shrink to a firm fit.
6. Slide insulation sleeving (13) over wire bundle to connector (1), and heat shrink to a firm fit.
7. Slide insulation (12) over each wire reference numbers 2 and 3.
8. Slide terminal lug (5) over wire reference numbers 2 and 3 and crimp. Slide insulation sleeving (12) over terminal lugs (5) and heat shrink to a firm fit.
9. Slide terminal lugs (9) and (11) over wire reference numbers 1 and 4 and crimp.
10. Mark the appropriate wire number which will consist of the ‘FROM’ termination, a double-headed arrow (↔), and the ‘TO’ termination.

Figure G-9. Wiring Harness, Control Panel (P/N: 95-8022) (Sheet 2 of 2)

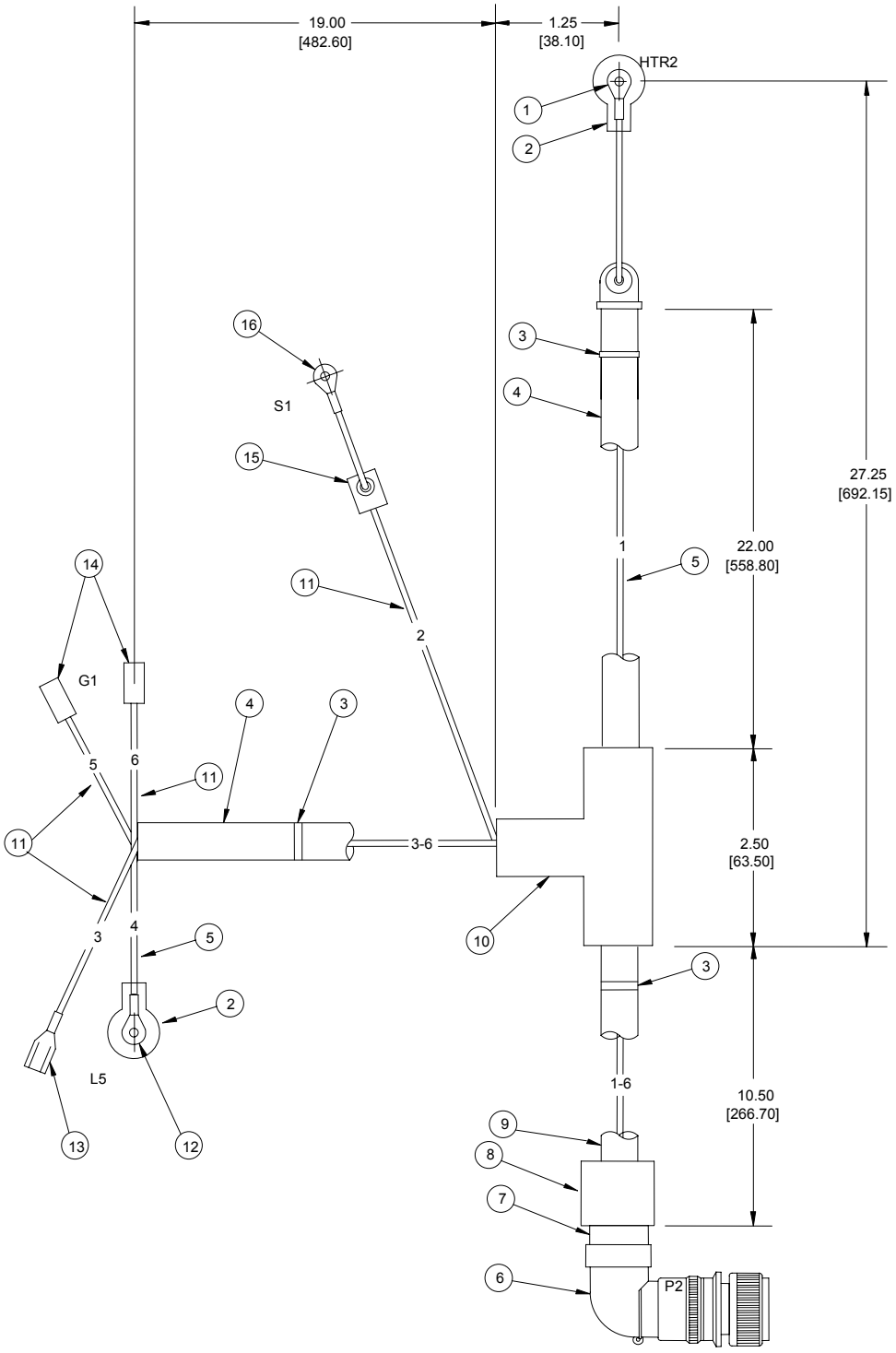


Figure G-10. Wiring Harness, Engine (P/N: 95-8029) (Sheet 1 of 3)

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	P2-A	HTR2	M16878/3BNL-9	37.75 [958.85]
2	P2-B	S1	M16878/3BJE-9	19.0 [482.6]
3	P2-C	L5-C	M16878/3BJE-9	36.0 [914.4]
4	P2-D	L5-S	M16878/3BNL-9	34.5 [876.3]
5	P2-E	G1	M16878/3BJE-9	32.5 [825.5]
6	P2-F	G1	M16878/3BJE-9	32.5 [825.5]

Figure G-10. Wiring Harness, Engine (P/N: 95-8029) (Sheet 2 of 3)

NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, F-33 for materials required.

3. Connector shall be marked “P2” on insulation sleeving with 0.18 [5] minimum high characters IAW MIL-STD-130, using rubber stamp or stencil.

PROCEDURES:

1. Cut each wire to length indicated, then strip 0.50 [13] from ends of each wire.

2. Insert wires ref. no. 1-6 into pins from connector (6) and crimp using crimping tool.

3. Slide tubing (9) and 1.75 to 2.25 [44.4 to 57.2] of insulation sleeving (8) over wires ref. no. 1-6).

4. Insert pins from connector (6) through clamp (7) and using a pin insertion tool, insert pins from connector (6) into connector (6) until pins lock into place, following termination indicators in wire list reference table.

5. Clamp wires ref. no. 1-6 to connector (6).

6. Slide tubing (9) up to clamp (7), slide insulation sleeving (8) over tubing (9) and clamp (7), and heat shrink to a firm fit.

7. Cut tubing (4) into a 19 inch length and a 22 inch length. Slide 22 inch tubing (4) over wire ref. no. 1. Slide 19 inch tubing (4) over wires ref. no. 3, 4, 5 and 6.

8. Insert tubings (4) and (9) into tee (10) and close tee clamping tubes.

9. Slide nipple (2) over wire ref. no. 1. Slide terminal lug (1) over wire ref. no. 1 and crimp.

10. Slide boot (15) over wire ref. no. 2. Slide terminal lug (16) over wire ref. no. 2 and crimp.

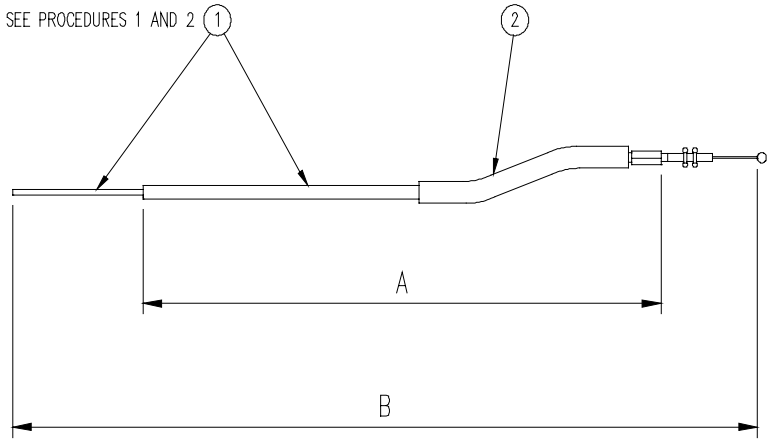
11. Slide quick disconnect terminals (14) over wires ref. no. 5 and 6 and crimp. Slide quick disconnect terminal (13) over wire ref. no. 3 and crimp.

12. Slide nipple (2) over wire ref. no. 4. Slide terminal lug (12) over wire ref. no. 4 and crimp.

14. Position straps (3) at 3-inch intervals and at all breakouts.

15. Mark the appropriate wire number which will consist of the “FROM” termination, a double-headed arrow (↔), and the “TO” termination.

Figure G-10. Wiring Harness, Engine (P/N: 95-8029) (Sheet 3 of 3)



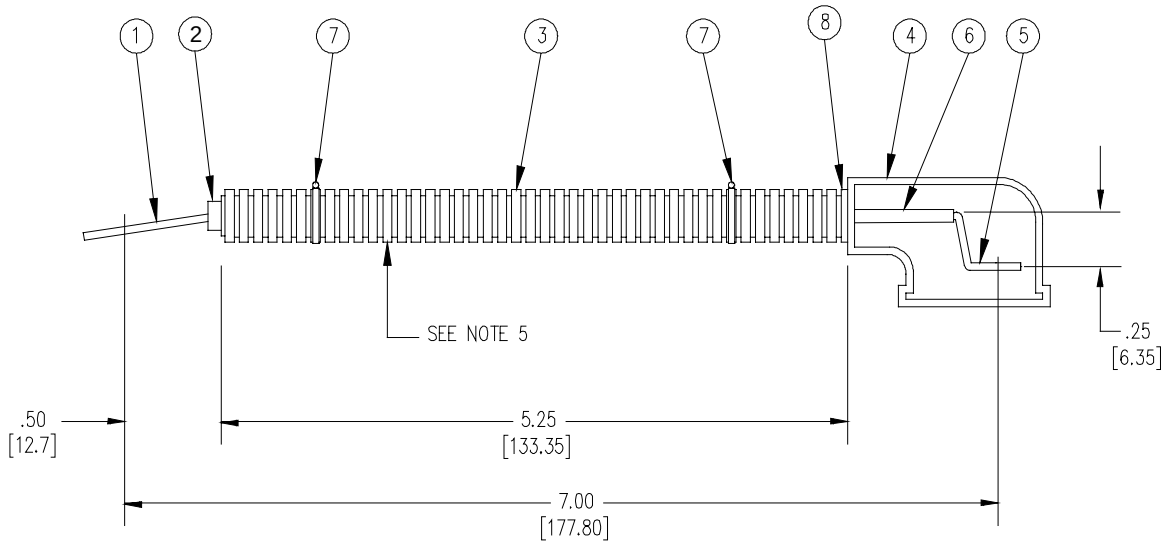
NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-34, for materials required.

PROCEDURES:
1. Cut overall length of outer cable (part of 1), 13.70 [348.0] long (Dimension A).

2. Cut overall length of inner circle cable (part of 1), 16.54 [420.1] (Dimension B).

Figure G-11. LOP Shutdown Cable (P/N: 95-8082)



TERMINATION		WIRE BULK NO.
FROM	TO	
ENG HEAD BOLT	HTR1	M16878/3BNL-9

NOTES:

1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.
2. Refer to Appendix F, Fig. F-35 for materials required.

PROCEDURES:

1. Cut wire (6) to 8.0 [203.2], then strip 0.5 [13] from ends of wire.
2. Slide insulation sleeving (2) over wire (6).
3. Crimp terminal lug (1) to one end of wire (6) and terminal lug (5) to other end of wire (6).
4. Slide insulation sleeving (2) over terminal lug (1) and heat shrink to a tight fit.
5. Slide tube (3) over wire assembly (1, 2, 5 and 6). Slide nipple (4) over terminal lug (5) and tube (3).
6. Install insulation sleeving (8) over tube (3) and nipple (4) and heat shrink to a firm fit.
7. Tube (3) shall be bonded together with cable ties (7) at 3 inch intervals.
8. Mark the appropriate wire number which will consist of the “FROM” termination, a double-headed arrow (↔), and the “TO” termination.

Figure G-12. Preheater Lead, Electrical (P/N: 95-8141)

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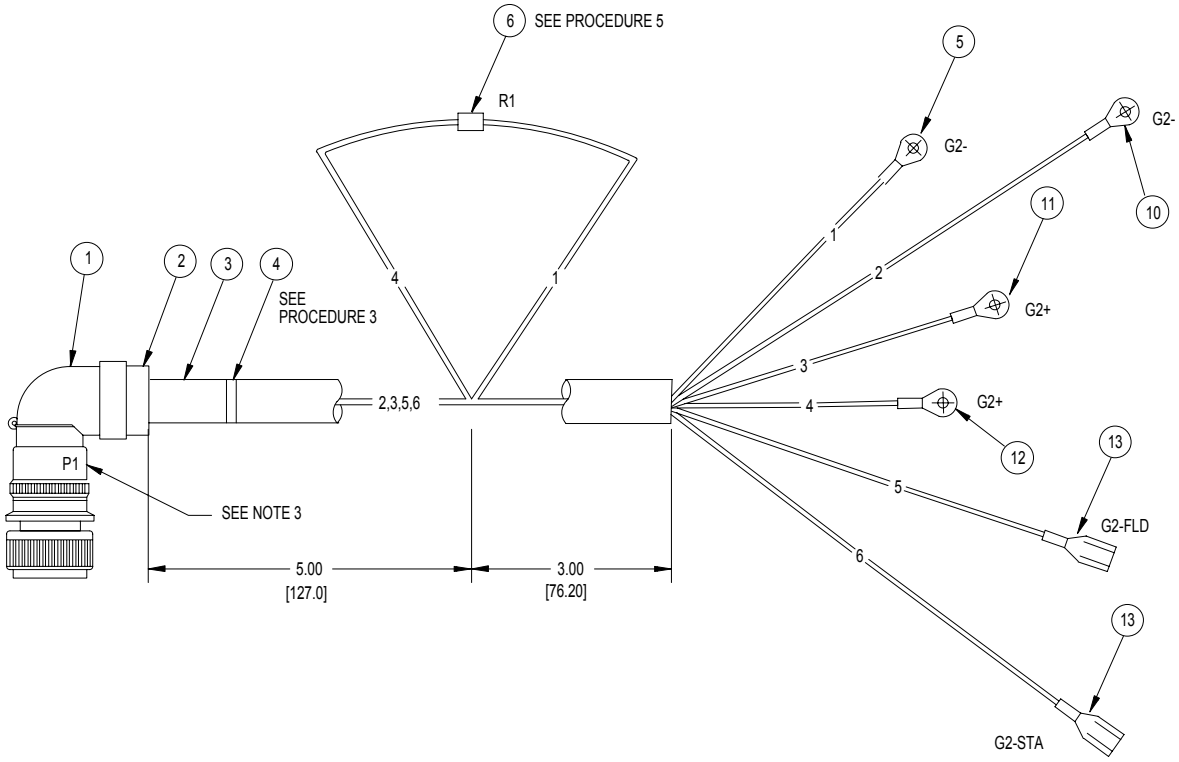


Figure G-13. Wiring Harness, Alternator (P/N: 95-8028) (Sheet 1 of 2)

WIRE REF NO.	TERMINATION		WIRE BULK NO.	WIRE LENGTH
	FROM	TO		
1	R1	G2-	M16878/3BKE-9	12.75 [323.85]
2	P1-C	G2-	M16878/3BRL-9	13.75 [349.25]
3	P1-A	G2+	M16878/3BRL-9	12.0 [304.8]
4	R1	G2+	M16878/3BKE-9	12.25 [311.15]
5	P1-B	G2-FLD	M16878/3BKE-9	15.25 [387.25]
6	P1-D	G2-STA	M16878/3BKE-9	15.25 [387.25]

NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-36 for materials required.

3. Connector (1) shall be marked “P1” on insulation sleeving (14) with 0.18 [5] minimum high characters IAW MIL-STD-130, using rubber stamp or stencil.

PROCEDURES:
1. Cut each wire to length indicated, then strip 0.5 [13] from ends of each wire.

2. Crimp terminal lug (9) to wire ref. no. 1. Crimp terminal lug (10) to wire ref. no. 2. Crimp terminal lug (11) to wire ref. no. 3. Crimp terminal lug (12) to wire ref. no. 4. Crimp quick disconnects (13) to wires ref. no. 5 and 6.

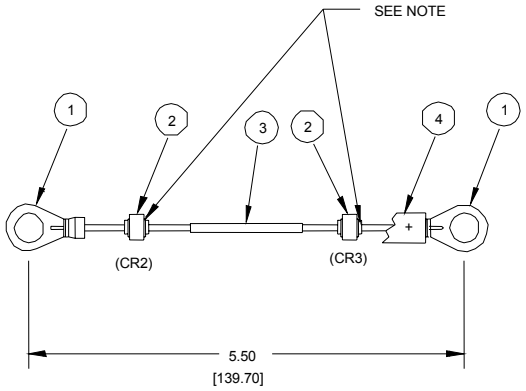
3. Position straps (4) at 3 inch intervals and at all breakouts.

4. Mark appropriate wire number which will consist of the ‘FROM’ termination, a double-headed arrow (↔), and the ‘TO’ termination.

5. Solder leads, wires ref. no. 1 and 4 to resistor (6) and cover solder connections with 0.75 to 1.25 [19.1 to 31.8] of insulation sleeving (7) and heat shrink to a firm fit.

6. Insert tubing (3) into bushing (part of 2), and cover with 1.75 to 2.25 [45.1 to 57.8] of insulation sleeving (14) and heat shrink to a firm fit.

Figure G-13. Wiring Harness, Alternator (P/N: 95-8028) (Sheet 2 of 2)



NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Refer to Appendix F, Fig. F-32, for materials required.

PROCEDURES:

NOTE
Install diodes (2) to orient cathode indicator band as shown.

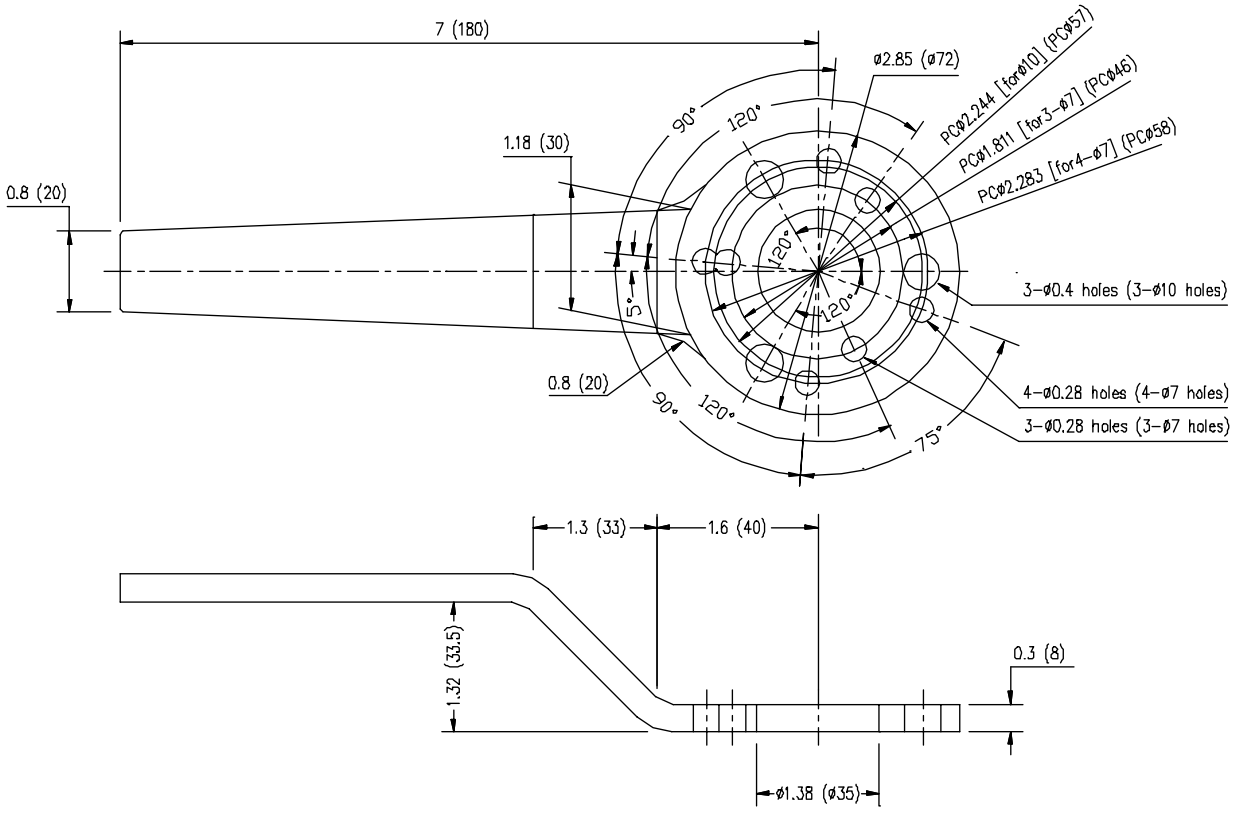
1. Crimp terminal lugs (1) to each diode (2).

2. Slide splice (3) over wire of each diode (2) and crimp.

3. Install marker (4) over diodes (2) and splice (3) and heat shrink to a firm fit.

Figure G-14. Transient Suppressor (P/N: 95-8025)

Flywheel Locking Tool
Material: steel
Scale: free
Unit: in. (mm)

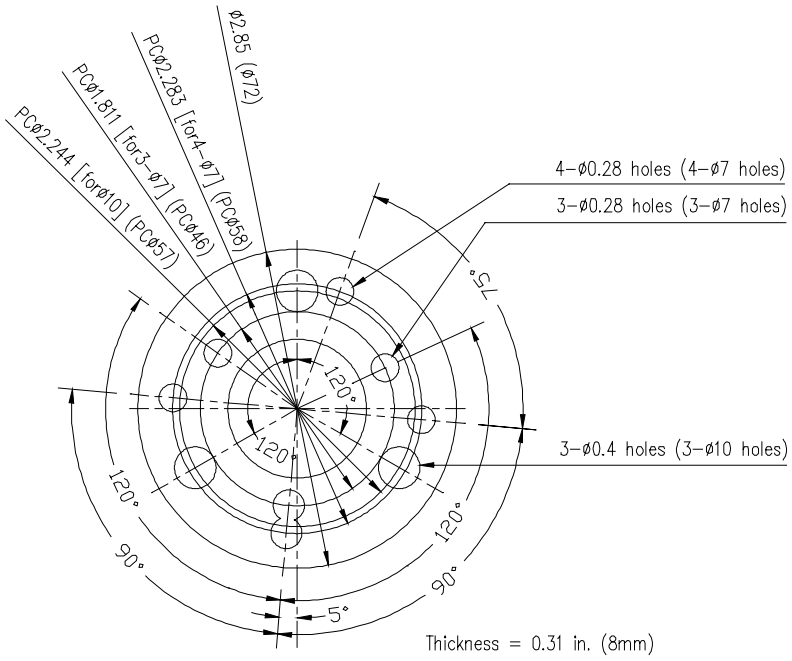


NOTES:
1. Dimensions are shown in inches and dimensions in [ ] are in millimeters.

2. Material is steel.

Figure G-15. Flywheel Locking Handle (P/N: 114250-92101)

Flywheel Extractor
Material: steel
Scale: free
Unit: in. (mm)



NOTES:
1. Dimensions are shown in inches and dimensions [ ] are in millimeters.

2. Material is steel.

Figure G-16. Flywheel Extractor (P/N: 114250-92130)

Table G-1. Electrical Lead Fabrication for Control Panel (MEP-531A)

TERMINATION		WIRE BULK NO.	"FROM" TERMINAL END	"TO" TERMINAL END	WIRE LENGTH in. [mm]	ELECTRICAL LEAD NO.
FROM	TO					
M1	XF1	M16878/3BJE-9	BB-837-10	640919-1	12.25 [311.15]	95-8166-1
XF1	M2-1	M16878/3BJE-9	640919-1	BB-837-10	11.50 [292.10]	95-8166-2
M2-1	M4-1	M16878/3BJE-9	BB-837-10	BB-837-10	2.75 [69.85]	95-8166-3
TB1-2	M3 (+)	M16878/3BJE-9	P14-6R	RB2573	23.50 [596.90]	95-8166-4
M2-2	FL1-N*	M16878/3BJE-9	BB-837-10	BB-825-14	22.50 [571.50]	95-8166-5
M2-2	M4-2	M16878/3BJE-9	BB-837-10	BB-837-10	2.75 [69.85]	95-8166-6
E1	M3 (-)	M16878/3BJE-9	BB-825-14	RB2573	29.00 [736.60]	95-8166-7
E1	TB1-1	M16878/3BJE-9	BB-825-14	P14-6R	9.75 [247.65]	95-8166-8
TB1-10	CB1-A (LINE)	M16878/3BJE-9	P14-6R	BB-837-10	8.75 [222.25]	95-8166-9
TB1-14	M1	M16878/3BKE-9	P14-6R	BB-837-10	31.25 [793.75]	95-8166-10
TB1-15	FL1-N*	M16878/3BKE-9	P14-6R	BB-825-14	12.75 [323.85]	95-8166-11
J3-GR	E1	M16878/3BKE-9	BB-8194-08	BB-825-14	21.00 [533.40]	95-8166-12
FL1-N*	E1	M16878/3BKE-9	BB-825-14	BB-825-14	11.50 [292.10]	95-8166-13
M1	CB1-A (LINE)	M16878/3BKE-9	BB-837-10	BB-837-10	32.75 [831.85]	95-8166-14
CB1-B (LOAD)	FL1-L*	M16878/3BKE-9	BB-837-10	BB-825-14	15.00 [381.00]	95-8166-15
J3-HOT	FL1-L*	M16878/3BKE-9	BB-8194-08	13230E4455-2 (MEP-531A) BB-825-14 (Mechron 120VAC)	21.50 [546.10]	95-8166-16
S2-B	SR1 (+)	M16878/3BNL-9	PV8-10R	PV8-38R	8.00 [203.20]	95-8166-17
J3-NEUT	FL1-N*	M16878/3BKE-9	BB-8194-08	RB2573 (MEP-531A) BB-825-14 (Mechron 120VAC)	18.50 [469.90]	95-8166-18
E1	SR1 (-)	M16878/3BNL-9	PV8-14R	PV8-38R	5.00 [127.00]	95-8166-19

* N and L are the designations for the Mechron 120 VAC set.

ELECTRICAL LEAD FABRICATION PROCEDURES:

1. Cut wire to length indicated, then strip 0.50 in. [13 mm] from each end of wire.

2. Crimp terminal "FROM" on one end of wire and terminal "TO" on other end.

3. Mark the appropriate wire number which will consist of the "FROM" termination, a double-headed arrow (↔), and the "TO" termination.

4. Install insulation sleeving, ST-301-3/16 over terminal, P14-6R and heat shrink to a tight fit.

Table G-2. Electrical Lead Fabrication for Control Panel (MEP-501A)

TERMINATION		WIRE BULK NO.	"FROM" TERMINAL END	"TO" TERMINAL END	WIRE LENGTH in. [mm]	ELECTRICAL LEAD NO.
FROM	TO					
R3	M1-RED	M16878/3BJE-9	BACT12B301	BB-837-10	23.75 [603.25]	95-8056-1
R3	M1-BLK	M16878/3BJE-9	BACT12B301	BB-837-10	27.50 [698.50]	95-8056-2
R3	TB1-9	M16878/3BJE-9	BACT12B301	BACT12B301	5.00 [127.00]	95-8056-3
M1-RED	XF1	M16878/3BJE-9	BB-825-14	BACT12B301	9.00 [228.60]	95-8056-4
TB1-10	A1-F	M16878/3BJE-9	BACT12B301	RB2573	14.50 [368.30]	95-8056-5
TB1-9	A1-S	M16878/3BJE-9	BACT12B301	RB2573	13.88 [352.55]	95-8056-6
TB1-9	A1-A	M16878/3BJE-9	BACT12B301	RB2573	13.63 [346.20]	95-8056-7
TB1-12	A1-1	M16878/3BJE-9	BACT12B301	RB2573	13.50 [342.90]	95-8056-8
TB1-13	A1-2	M16878/3BJE-9	BACT12B301	RB2573	14.00 [355.60]	95-8056-9
TB1-11	A1-L	M16878/3BJE-9	BACT12B301	RB2573	13.63 [346.20]	95-8056-10
TB1-3	M3 (+)	M16878/3BJE-9	BACT12B301	RB2573	20.75 [527.05]	95-8056-11
TB1-3	CB1-P2 (LINE)	M16878/3BJE-9	BACT12B301	BB-837-10	8.00 [203.20]	95-8056-12
TB1-8	CB1-P2 (LOAD)	M16878/3BJE-9	BACT12B301	BB-837-10	7.00 [177.80]	95-8056-13
M2-RED	XF1	M16878/3BJE-9	640919-1	BB-837-10	13.00 [330.20]	95-8056-14
E1	M3 (-)	M16878/3BJE-9	RB2573	BB-825-14	29.25 [742.95]	95-8056-15
E1	TB1-1	M16878/3BJE-9	BB-825-14	BACT12B301	10.00 [254.00]	95-8056-16
M2-BLK	(-)	M16878/3BJE-9	BB-837-10	RB14-12	26.50 [673.10]	95-8056-17
TB1-2	(-)	M16878/3BJE-9	RB14-12	BACT12B301	5.00 [127.00]	95-8056-18
A1 GND	TB1-2	M16878/3BJE-9	RB2573	BACT12B301	9.13 [231.90]	95-8056-19
S2-B	SR1 (+)	M16878/3BNL-9	PV8-10R	PV8-38R	8.50 [215.90]	95-8056-20
R3	CB1-P1 (LINE)	M16878/3BRL-9	PV4-14R	PV4-14R	13.00 [330.20]	95-8056-21
CB1-P1 (LOAD)	(+)	M16878/3BRL-9	PV4-14R	PV4-12R	15.25 [387.35]	95-8056-22
(-)	SR1 (-)	M16878/3BRL-9	PV4-12R	PV4-38R	11.25 [285.75]	95-8056-23
E1	SR1 (-)	M16878/3BRL-9	PV4-14R	PV4-38R	5.63 [143.00]	95-8056-24

ELECTRICAL LEAD FABRICATION PROCEDURES:

1. Cut wire to length indicated, then strip 0.5 in. [13 mm] from each end of wire.

2. Crimp terminal "FROM" on one end of wire and terminal "TO" on other end.

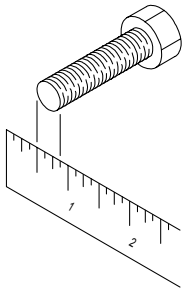
3. Mark the appropriate wire number which will consist of the "FROM" termination, a double-headed arrow (↔), and the "TO" termination.

APPENDIX H

TORQUE LIMITS

HOW TO USE THE TORQUE TABLES

1. Measure the diameter of the screw you are installing

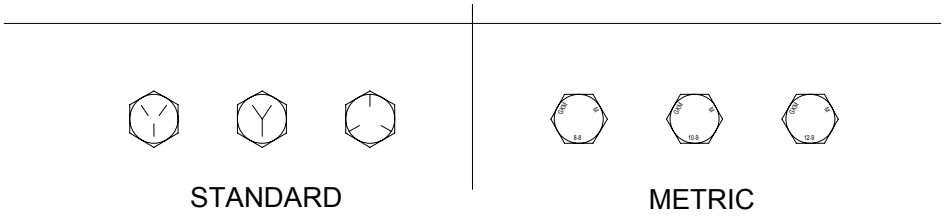


2. Under the heading DIA. INCHES or MM, look down the left hand column until you find the diameter of the screw you are installing.

CAPSCREW HEAD MARKINGS

Manufacturer's marks may vary.
These are all SAE Grade 5 (3-line).

Metric screws are of three grades: 8.8, 10.9, and 12.9. Grades and manufacturer's marks appear on the screw head.



STANDARD METRIC

3. To find the grade screw you are installing, match the markings on the head of the screw to the correct picture of the capscrew head markings at the top of the torque table.

4. Look down the column under the picture you found in step 3 until you find the torque limit (LB-FT or NM) for the diameter of the screw you are installing.

Table H-1. Torque Limits for Steel Fasteners

Dia. (inches)	Torque
4-40	6 lbs-in. (0.68 Nm)
6-32	11 lbs-in. (1.2 Nm)
8-32	20 lbs-in. (2.3 Nm)
10-32	32 lbs-in. (3.6 Nm)
1/4-20	75 lbs-in. (8.5 Nm)
5/16-18	140 lbs-in. (15.8 Nm)
3/8-16	31 lbs-ft (42.0 Nm)
1/2-13	75 lbs-ft (101.7 Nm)

Torque values shown are for nut-screw combinations that have not been plated or have not had special lubricants applied to them. Discount the residual lubricant present that was applied during manufacture.

Table H-2. Torque Limits for Brass Fasteners

Dia. (inches)	Torque
1/4-20	50 lbs-in. (5.6 Nm)
1/2-13	35 lbs-ft (47.5 Nm)

Torque values shown are for nut-screw combinations that have been plated or have had lubricant applied.

Table H-3. Torque Limits for Metric Fasteners into Steel

Dia. (inches)	Torque
M6 x 1	7.3 lbs-ft (9.9 Nm)
M8 x 1.25	18 lbs-ft (24.4 Nm)
M10 x 1.5	35 lbs-ft (47.5 Nm)

Torque values shown are for nut-screw combinations that have not been plated or have not had special lubricants applied to them. Discount the residual lubricant present that was applied during manufacture.

APPENDIX I

MANDATORY REPLACEMENT PARTS

The following list consists of parts that are automatically replaced when removed while performing a maintenance task.

Item No.	Part Number	National Stock No.	Nomenclature	Qty Rqd
1	31665	3130-01-4677863	Bearing, AC Alternator	1
2	11-3303-1	3110-01-4193167	Bearing, Front, DC Alternator	1
3	11-1072-1	- -	Bearing, Rear, DC Alternator	1
4	390-00000	5910-01-3198589	C-Washer, AC Alternator	1
5	114250-55510	2910-01-4209067	Filter Element, Fuel	1
6	95-8053-1	- -	Gasket, Air Filter	2
7	114250-12200	5330-01-3248287	Gasket, Air Intake Pipe	1
8	95-8047-2	- -	Gasket, Alternator Harness, Ctrl. Panel	1
9	114250-01412	5330-01-3536007	Gasket, Crankcase Cover	1
10	114770-01340	5330-01-4195479	Gasket, Cylinder Head	1
11	95-8047-1	- -	Gasket, Engine Harness, Ctrl. Panel	1
12	102103-55520	5331-01-4317566	Gasket, Fuel Filter	1
13	114250-11460	5330-01-3268021	Gasket, Fuel Injector	1
14	114250-13200	5330-01-3264780	Gasket, Muffler	1
15	114250-11310	5330-01-3268022	Gasket, Valve Cover	1
16	114250-01380	5330-01-3284148	O-ring, Cylinder Head	1
17	103338-32570	5330-01-3248279	Preformed Packing, Oil Pump Cover	1
18	24341-000224	5330-01-3268017	O-ring, Oil Strainer	1
19	160110-02220	5330-01-3248254	Seal, Crankshaft, Front	1
20	160210-02220	5330-01-3248253	Seal, Crankshaft, Rear	1
21	114250-11340	5330-01-3248831	Seal, Valve Stem	2
22	114250-12580F	2940-01-4211106	Filter Element, Air	1

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APPENDIX J

DEWEY/MECHRON CROSS-REFERENCE LIST

Table J-1. MEP-531A Cross-Reference List for Component Identifiers

Dewey	Mechron	Description
A1	VR109	VOLTAGE REGULATOR, 120 V, 60 HZ
A2	UA117	GENERATOR, CONTROL CIRCUIT
B1	B123	MOTOR, STARTER, PART OF ENGINE
CB1	CB104	CIRCUIT BREAKER, SINGLE POLE, SHUNT, AUX
CR1	D125	DIODE
CR2	D110	DIODE
F1	F102	FUSE
F1A	F102A	FUSE, SPARE
G1	UA121	DYNAMO
G2	UA102	ALTERNATOR, 120 VAC
HTR1	HR112a	HEATER, ENGINE PREHEAT
HTR2	HR112b	HEATER, ENGINE PREHEAT
J1	J104	CONNECTOR, RECEPTACLE, ELECTRICAL
J2	J124	CONNECTOR, RECEPTACLE, ELECTRICAL
J3	RP107	RECEPTACLE, GROUND FAULT
L	L1	TERMINAL, LINE 120 V, 60 HZ
L4	SOL116	SOLENOID, LOW OIL PRESSURE
L5	SOL124	SOLENOID, STARTER MOTOR, PART OF ENGINE
M1	M102	AMMETER
M2	M104	VOLTMETER, AC
M3	M103	METER, TIME TOTALIZING
M4	M105	METER, FREQUENCY
N	N	TERMINAL, NEUTRAL
P1	P104	CONNECTOR, PLUG, ELECTRICAL 90 DEG

Table J-1. MEP-531A Cross-Reference List for Component Identifiers - Continued

Dewey	Mechron	Description
P2	P124	CONNECTOR, PLUG, ELECTRICAL 90 DEG
R2	RH109	POTENTIOMETER, VOLTAGE ADJUSTMENT
S1	S115	SWITCH, LOW OIL PRESSURE
S2	S121	SWITCH, ROTARY, FOUR-POSITION
SR1	RP123	RECEPTACLE, SLAVE, 24 VDC, EXTERNAL SUPPLY
TB1	TB1	TERMINAL BOARD
V1	RV123	VARISTOR, DISCHARGE
XF1	F102	FUSEHOLDER
XF1A	F102A	FUSEHOLDER, SPARE

Table J-2. MEP-531A Cross-Reference List for Wiring Identifiers

Dewey		Mechron		
From	To	Wire No.	From	To
A1-4	TB1-15	4	VR109-4	TB1-15
A1-3/F+	TB1-8	3/F+	VR109-3/F+	TB1-8
A1-E1	TB1-13	E1	VR109-E1	TB1-14
A1-F-	TB1-9	F-	VR109-F-	TB1-9
A1-HZ	NC	HZ	VR109-HZ	NC
A1-HZ	NC	HZ	VR109-HZ	NC
A1-VAR	TB1-11	VAR	VR109-VAR	TB1-11
A1-VAR	TB1-12	VAR	VR109-VAR	TB1-12
A2-F	NC	21	UA117-F0	NC
A2-GND	TB1-1	GND	UA117-GND	TB1-1
A2-LOP SOL	TB1-4	7	UA117-LOP SOL	TB1-4
A2-LOP SW	TB1-3	6	UA117-LOP SW	TB1-3
A2-STC	TB1-7	11	UA117-STC	TB1-7
A2-VINAC	TB1-10	57	UA117-VINAC	TB1-10
A2-VINDC	NC	20	UA117-VINDC	NC
A2-VMAG+	TB1-2	4	UA117-VMAG+	TB1-2
A2-VMAG1	TB1-5	8	UA117-VAMG1	TB1-5
A2-VMAG2	TB1-6	9	UA117-VMAG2	TB1-6
B1	L5	-	R123	SOL124
CB1-A(LINE)	M1	57	CB104	M102
CB1-A(LINE)	TB1-10	57	CB104	TB1-10
CB1-B(LOAD)	FL1-L	59	CB104	L1
CB1-C	CR2	-	CB104	D103
CB1-COM	TB1-2	4	CB104-COM	TB1-2
CB1-D	CR2	-	CB104	D103
CB1-NO	CR2	12	CB104-NO	D103
CR1	S2-S	3	D125	S121-S
CR1	TB1-1	GND	D125	TB1-1
CR2	TB1-7	11	D103	TB1-7

Table J-2. MEP-531A Cross-Reference List for Wiring Identifiers - Continued

Dewey			Mechron	
From	To	Wire No.	From	To
E1	FL1-N	GND	GND STUD	N
E1	SR1 (-)	GND	GND STUD	RP123
E1	TB1-1	GND	GND STUD	TB1-1
E1	J3-GR	GND	GND STUD	RP107a,b
G1	P2-E	8	UA121	P124-E
G1	P2-F	9	UA121	P124-F
G2 (+)	P1-E	55	UA102 (+)	P104-E
G2 (-)	P1-F	56	UA102 (-)	P104-F
G2-1	P1-A	51	UA102-1	P104-A
G2-2	P1-B	52	UA102-2	P104-B
G2-3	P1-C	53	UA102-3	P104-C
G2-4	P1-D	54	UA102-4	P104-D
HTR1	HTR2	5	HR112a	HR112b
HTR1	GND	13	HR112a	GND
HTR2	P2-A	10	HR112b	P124-A
J1-A	TB1-13	51	J104-A	M102
J1-B	FL1-N	52	J104-B	N
J1-C	TB1-14	53	J104-C	TB1-14
J1-D	TB1-15	54	J104-D	TB1-15
J1-E	TB1-8	55	J104-E	TB1-8
J1-F	TB1-9	56	J104-F	TB1-9
J2-A	S2-H	10	J124-A	S121-H
J2-B	TB1-3	6	J124-B	TB1-3
J2-C	S2-S	3	J124-C	S121-S
J2-D	SR1 (+)	1	J124-D	RP123 (+)
J2-E	TB1-5	8	J124-E	TB1-5
J2-F	TB1-6	9	J124-F	TB1-6

Table J-2. MEP-531A Cross-Reference List for Wiring Identifiers - Continued

Dewey		Mechron		
From	To	Wire No.	From	To
J3-HOT	FL1-L	59	RP107a,b	L1
J3-NEUT	FL1-N	N	RP107a,b	N
L4-R	TB1-2	4	SOL116	TB1-2
L4-Y	TB1-4	7	SOL116	TB1-4
L5-C	P2-C	3	SOL124	P124-C
L5-S	P2-D	1	SOL124	P124-D
M1	TB1-14	51	M102	TB1-14
M2-1	M4-1	N	M104	M105
M2-2	FL1-N	N	M105	N
M2-2	M4-2	N	M104	M105
M3(+)	TB1-2	4	M103	TB1-2
M3(-)	E1	GND	M103	GND STUD
FL1-N	TB1-15	N	N	TB1-15
P2-B	S1	6	P124-B	S115
R2	TB1-11	63	RH109	TB1-11
R2	TB1-12	64	RH109	TB1-12
S2-B	SR1(+)	1	S121-B	RP123
TB1-13	TB1-14		TB1-13	TB1-14
V1	TB1-5		RV123	TB1-5
V1	TB1-6		RV123	TB1-6
XF1	M2-1	60	F102	M104/M105
XF1	M1	51	F102	M102
		60	M105	F102

Table J-3. MEP-501A Cross-Reference List for Component Identifiers

Dewey	Mechron	Description
-ve	-ve	TERMINAL, NEGATIVE
+ve	+ve	TERMINAL, POSITIVE
A1	VR109	VOLTAGE REGULATOR, 24 VOLT
A2	UA117	CONTROL, GENERATOR
B1	B123	MOTOR, STARTER, 24 VDC, PART OF ENGINE
C1	C110	CAPACITOR, 1000 F, 63 VDC
CB1	CB104	CIRCUIT BREAKER, 2-POLE
CR1	D125	DIODE
CR2	D110	DIODE
CR3	D109	DIODE
E1	GND	CHASSIS CONNECTION
E2	GND(G2)	CHASSIS CONNECTION
E3	GND(ENG)	CHASSIS CONNECTION
E4	GND(HTR)	CHASSIS CONNECTION
F1	F102	FUSE
F1A	F102A	FUSE, SPARE
G1	UA121	DYNAMO
G2	UA102	GENERATOR, 28 VDC
HTR1	HR112a	HEATER, PREHEAT
HTR2	HR112b	HEATER, PREHEAT
J1	J104	CONNECTOR, RECEPTACLE, ELECTRICAL 90
J2	J124	CONNECTOR, RECEPTACLE, ELECTRICAL 90
L4	SOL116	SOLENOID, LOW OIL PRESSURE
L5	SOL124	SOLENOID, STARTER MOTOR
M1	M102	AMMETER
M2	M104	VOLTMETER, DC
M3	M103	METER, TIME TOTALIZING
P1	P104	CONNECTOR, PLUG, ELECTRICAL 90
P2	P124	CONNECTOR, PLUG, ELECTRICAL 90

Table J-3. MEP-501A Cross-Reference List for Component Identifiers - Continued

Dewey	Mechron	Description
R1	R102	RESISTOR, POWER, 20 OHMS, 50 W, 1%
R2	RH109	POTENTIOMETER, VOLTAGE ADJUSTMENT
R3	SH104	RESISTOR, SHUNT, 0-89.3A
S1	S115	SWITCH, LOW OIL PRESSURE
S2	S121	SWITCH, ROTARY, FOUR-POSITION
SR1	RP123	RECEPTACLE, SLAVE, 24 VDC, EXTERNAL SUPPLY
TB1	TB1	TERMINAL BOARD
V1	RV123	VARISTOR, DISCHARGE
XF1	F102	FUSEHOLDER
XF1A	F102A	FUSEHOLDER

Table J-4. MEP-501A Cross-Reference List for Wiring Identifiers

Dewey			Mechron	
From	To	Wire No.	From	To
A1-1	TB1-12	25	VR109-1	TB1-12
A1-2	TB1-13	26	VR109-2	TB1-13
A1-L	TB1-11	22	VR109-L	TB1-11
A1-F-	TB1-10	21	VR109-F-	TB1-10
A1-S	TB1-9	20	VR109-S	TB1-9
A1-A	TB1-8	20	VR109-A	TB1-8
A1-GND	TB1-2		VR109-GND	TB1-2
A2-STC	TB1-8	11	UA	TB1-8
A2-GND	TB1-1	GND	UA117-GND	TB1-1
A2-VINAC	NC	57	UA117-VINAC	NC
A2-VMAG2	TB1-7	9	UA117-VMAG2	TB1-7
A2-VMAG1	TB1-6	8	UA117-VMAG1	TB1-6
A2-VMAG+	TB1-3	4	UA117-VMAG+	TB1-3
A2-LOP SW	TB1-4	6	UA117-LOP SW	TB1-4
A2-LOP SOL	TB1-5	7	UA117-LOP SOL	TB1-5
A2-VINDC	TB1-9	20	UA117-VINDC	TB1-9
A2-F	TB1-10	21	UA117-F	TB1-10
B1	L5		B123	SOL124
CB1-P1(LINE)	R3	23	CB104	SH104
CB1-P1(LINE)	C1(+)	23	CB104	C110(+)
CB1-P2(LINE)	TB1-3	4	CB104	TB1-3
CB1-P1(LOAD)	+ve	1	+ve	CB104
CB1-P2(LOAD)	TB1-8	11	CB104	TB1-8
C1(-)	-ve	2	+ve	C110(-)
CR1	TB1-1	GND	D125	TB1-1
CR1	S2-S	3	D125	S2-S
CR2	CR3	14	D110	D109
CR2	-ve	2	D109	-ve
CR3	+ve	1	D109	+ve
E1	M3(-)	GND	GND STUD	M103

Table J-4. MEP-501A Cross-Reference List for Wiring Identifiers - Continued

Dewey		Wire No.	Mechron	
From	To		From	To
E1	SR1 (-)	GND	GND STUD	RP123
E1	TB1-1	GND	GND STUD	TB1-1
XF1	M2- (RED)	20	F102	M104
XF1	M1- (RED)	24	F102	M102
G1	P2-E	8	UA121	P124-E
G1	P2-F	9	UA121	P124-F
G2 (+)	P1-A	20	UA102-1	P104-A
G2-FLD	P1-B	21	UA102-2	P104-B
G2-STA	P1-D	22	UA102-3	P104-D
G2 (-)	P1-C	2	UA102-4	P104-C
G2 (+)	R1		UA102 (+)	R102
G2 (-)	R1	2	UA102 (-)	R102
HTR2	P2-A	10	HR112b	P124-A
J1-A	R3	20	J104-A	M102
J1-B	TB1-10	21	J104-B	NC
J1-C	-ve	2	J104-C	TB1-14
J1-D	TB1-11	22	J104-D	TB1-15
J2-A	S2-H	10	J124-A	S121-H
J2-B	TB1-4	6	J124-B	TB1-4
J2-C	S2-S	3	J124-C	S121-S
J2-D	SR1 (+)	1	J124-D	RP123 (+)
J2-E	TB1-6	8	J124-E	TB1-6
J2-F	TB1-7	9	J124-F	TB1-7
-ve	TB1-2	2	+ve	TB1-2
-ve	M2-BLK	2	+ve	M104
-ve	SR1(-)	2	+ve	RP123(-)
L4-Y	TB1-5	7	SOL116	TB1-5
L4-R	TB1-3	4	SOL116	TB1-3
L5-S	P2-D	1	SOL124	P124-D
L5-C	P2-C	3	SOL124	P124-C

Table J-4. MEP-501A Cross-Reference List for Wiring Identifiers - Continued

Dewey		Mechron		
From	To	Wire No.	From	To
M1-R	R3	20	M102	SH104
M1-BLK	R3	23	M102	SH104
R3	TB1-9	20	SH104	TB1-9
M3(+)	TB1-3	4	M103	CB104
P2-B	S1	6	P124-B	S115
R2	TB1-12	25	RH109	TB1-12
R2	TB1-13	26	RH109	TB1-13
S2-B	SR1 (+)	1	S121-B	CB104
V1	TB1-6		RV123	TB1-6
V1	TB1-7		RV123	TB1-7

APPENDIX K

SPECIAL PACKAGING INSTRUCTIONS

This appendix contains special packaging instructions for the 2 kW generator sets.

SPECIAL PACKAGING INSTRUCTION (MIL-STD-2073)				CODE IDENT 30554		SPI NO.	
PART OR DRAWING NO. 95-531			NATIONAL STOCK NO. 6115-01-435-1565			DATE 98150	REVISION 0
QUP 001	ICQ 000	UNIT PACK WT 163.8 lbs (approx)	UNIT PACK CUBE 5.93		UNIT PACK SIZE 29.5 x 16 x 21.7	SHEET 1 OF 2	

Preservation:

Generator Set: MIL-P-116, Method IIb

Engine: MIL-E-10062, Level A, Type II, Method II

Cleaning: MIL-P-116

Drying: MIL-P-116

Packing: Level A: MIL-STD-2073-1A

Marking: MIL-ST-129

STEPS	REQD	DESCRIPTION
1		Preserve generator set IAW MIL-P-116, IIb
2		Preserve diesel engine IAW MIL-E-10062, A, II, II
3		Tape air intake and exhaust openings.
		Tape PPP-T-60, IV
4		Container; PPP-B-601, overseas-type (inside diameter) 29.5 x 16 x 21.7 inches.

NOTES:

1. **Seal air intake and exhaust openings with tape PPP-T-60, Type IV (or MIL-T-22085, Type II).**
2. **An internal-type humidity indicator shall be required as specified in MIL-P-116.**
3. **Generator set shall be packed in a close fitting plywood box conforming to PPP-B-601, overseas-type. Metal strapping shall be zinc-coated.**

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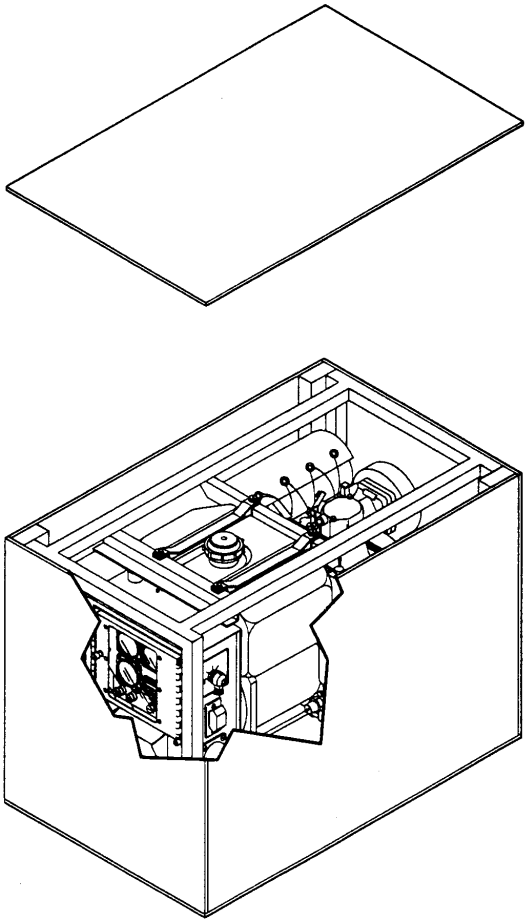
Special Packaging Instructions, MEP-531A (Sheet 1 of 2)

SPECIAL PACKAGING INSTRUCTION (MIL-STD-2073) (CONTINUATION SHEET)	CODE IDENT 30554	SPI NO.	
PART OR DRAWING NO. 95-531	NATIONAL STOCK NO. 6115-01-435-1565	DATE 98150	REVISION 0
		SHEET 2 OF 2	



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Special Packaging Instructions, MEP-531A (Sheet 2 of 2)

SPECIAL PACKAGING INSTRUCTION (MIL-STD-2073)				CODE IDENT 30554	SPI NO.
PART OR DRAWING NO. 95-501			NATIONAL STOCK NO. 6115-01-435-1567	DATE 98150	REVISION 0
QUP 001	ICQ 000	UNIT PACK WT 147.1 lbs (approx)	UNIT PACK CUBE 5.93	UNIT PACK SIZE 29.5 x 16 x 21.7	SHEET 1 OF 2

Preservation:

Generator Set: MIL-P-116, Method IIb

Engine: MIL-E-10062, Level A, Type II, Method II

Cleaning: MIL-P-116

Drying: MIL-P-116

Packing: Level A: MIL-STD-2073-1A

Marking: MIL-ST-129

STEPS	REQD	DESCRIPTION
1		Preserve generator set IAW MIL-P-116, IIb
2		Preserve diesel engine IAW MIL-E-10062, A,
		II, II
3		Tape air intake and exhaust openings.
		Tape PPP-T-60, IV
4		Container; PPP-B-601, overseas-type (inside
		diameter) 29.5 x 16 x 21.7 inches.

NOTES:

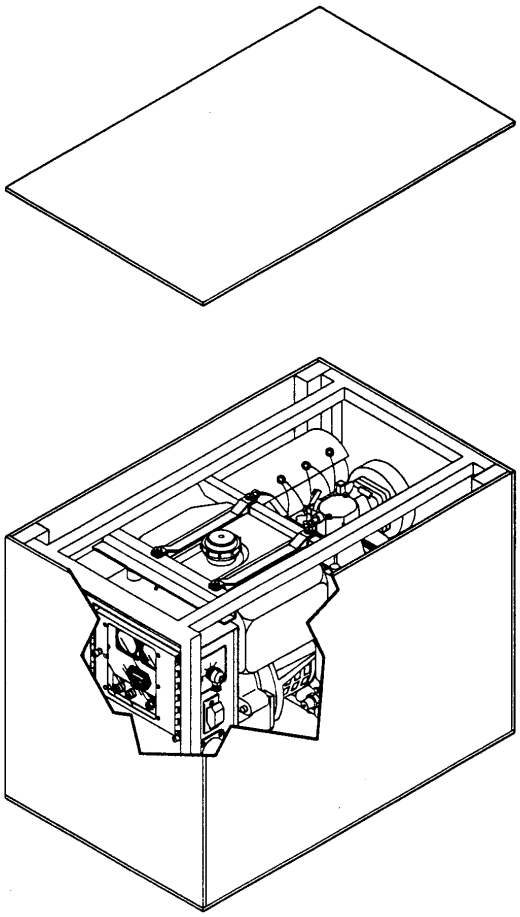
1. Seal air intake and exhaust openings with tape PPP-T-60, Type IV (or MIL-T-22085, Type II).
2. An internal-type humidity indicator shall be required as specified in MIL-P-116.
3. Generator set shall be packed in a close fitting plywood box conforming to PPP-B-601, overseas-type. Metal strapping shall be zinc-coated.

DD FORM 1 JAN 79 2169

Special Packaging Instructions, MEP-501A (Sheet 1 of 2)

SPECIAL PACKAGING INSTRUCTION (MIL-STD-2073) (CONTINUATION SHEET)	CODE IDENT 30554	SPI NO.	
PART OR DRAWING NO. 95-501	NATIONAL STOCK NO. 6115-01-435-1567	DATE 98150	REVISION 0

SHEET 2 OF 2



DD FORM 1 JAN 79 2169

Special Packaging Instructions, MEP-501A (Sheet 2 of 2)

APPENDIX L

COMPONENTS AND INSTRUCTIONS FOR AUXILIARY FUEL SYSTEM

L-1. SCOPE

This appendix lists the components and provides instructions for the installation of the auxiliary fuel system on the 2 kW Military Tactical Generator (MTG) Sets, MEP-531A and MEP-501A.

L-2. GENERAL

The current configuration of the 2 kW MTG set lacks the capability to draw fuel from an external source. The set has a 1.6-gallon day tank, which requires the operator to refill the tank every 4.8 hours (when operating at rated load). This auxiliary fuel system will allow the users to extend their mission to over 15 hours of continuous operation at rated load.

L-3 ITEM DESCRIPTION

The auxiliary fuel system (see Figure L-1) utilizes a standard military 5-gallon fuel can. The can fits on a steel bracket, which can be mounted on the top rail of the set frame, at either the engine or control panel end of the set (see Figure L-4). When not in use, the bracket will be stored in a stowed position on top of the set (see Figure L-5). The auxiliary fuel system consists of a 5-gallon can fitted with a stinger, 5-gallon can mounting bracket (fabricated in accordance with Figure L-3), 3-way valve, 3-way valve mounting bracket (fabricated in accordance with Figure L-2), primer bulb, quick disconnect fittings, fuel hoses and hose clamps.

L-4 EXPLANATION OF COLUMNS – FIGURE L-1

a. **Item No. [Column (1)].** Indicates the number used to identify items called out in Figure L-1.

b. **Drawing No./Specification [Column (2)].** Indicates the Government drawing number or military specification number that describes the item.

c. **Description [Column (3)].** Indicates the nomenclature of the item.

d. **Quantity [Column (4)].** Indicates the quantity of the item used in the breakout shown on Figure L-1.

e. **NSN [Column (5)].** This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN. When requisitioning items use the complete NSN (13 digits) sequence.

f. **Part Number [Column (6)].** Indicates the Government drawing part number or the military specification part number that identifies the item.

g. **MFG [Column (7)].** Indicates the manufacturers of the items.

h. **MFG P/N [Column (8)].** Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the part ordered.

i. **CAGEC [Column (9)].** This column lists the Commercial and Government Entity Code (CAGEC).

Auxiliary Fuel System Instructions

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing maintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

CAUTION

After installing the Auxiliary Fuel System, check to ensure none of the hoses come into contact with sharp edges. It may be necessary to reorient the hose clamps.

CAUTION

When installing the fuel primer bulb assembly, Item No. 2, into the auxiliary fuel can, do not let the hose come into contact with the muffler or any other potentially hot surfaces.

Fabrication Instructions

1. The following brackets need to be fabricated at a machine shop:

    a. 3-way valve bracket in accordance with Figure L-2.
    b. Fuel can bracket in accordance with Figure L-3.

Tools Required for Pre-assembly, Assembly, and Disassembly

2. The following tools are required for pre-assembly, assembly, and disassembly of the Auxiliary Fuel System:

    a. Hose cutter.
    b. Two (2) crescent wrenches.
    c. Measuring device.
    d. Screwdriver.

Pre-assembly Instructions

3. Using a 4-1/2-foot (54-inch) section of 5/16-inch ID hose, cut four (4) sections of hose in the following lengths:

    a. One (1) 2.0-inch length (Item No. 6).
    b. One (1) 29.0-inch length (Item No. 8).
    c. One (1) 9.0-inch length (Item No. 9).
    d. One (1) 8.0-inch length (Item No. 16).

4. Before assembling fittings, coat all male pipe threads with sealing compound, Item No. 24.

Pre-assemble 3-way valve, Item No. 11, with the following items: male pipe to hose straight adapter, Item No. 14; male pipe to hose elbow, Item No. 10; male pipe to male pipe elbow, Item No. 13, male quick disconnect to female pipe fitting, Item No. 4, and dust cap, Item No. 26; and two (2) hoses, Item Nos. 9 and 16.

Looking at the handle side of the 3-way valve, with screw holes facing down, install the fittings as follows:

a. Install male pipe to hose straight adapter, Item No.14, into the left side port of the 3-way valve.

b. Install male pipe to hose elbow, Item No. 10, into the center port of the 3-way valve.

c. Install male pipe to male pipe elbow, Item No. 13, into the right side port of the 3-way valve. Attach dust cap, Item No. 26, onto elbow, Item No. 13, and install male quick disconnect to female pipe fitting, Item No. 4, onto elbow, Item No. 13.

d. Slide one hose clamp, Item No. 5, onto hose, Item No. 16. Slide one end of hose, Item No. 16, onto male pipe to hose straight adapter, Item No. 14. Slide the hose clamp, Item No. 5, over the straight adapter, Item No. 14, and tighten.

e. Slide one hose clamp, Item No. 5, onto hose, Item No. 9. Slide one end of hose, Item No. 9, onto male pipe to hose elbow, Item No. 10. Slide the hose clamp, Item No. 5, over the elbow, Item No. 10, and tighten.

5. Remove the existing pipe to tube adapter from the fuel drum adapter assembly, Item No. 1, and replace it with male to male pipe nipple, Item No. 12. Discard the pipe to tube adapter. Attach dust cap, Item No. 26, onto nipple, Item No. 12, and install male quick disconnect to female pipe fitting, Item No. 4, onto nipple, Item No. 12.

6. Pre-assemble fuel primer bulb assembly, Item No. 2, as follows:

a. Slide two (2) hose clamps, Item No. 5, onto hose, Item No. 6. Attach one end of hose, Item No. 6, to the suction side of the fuel primer bulb, Item No. 7. Slide one hose clamp, Item No. 5, over the primer bulb fitting and tighten. Insert male pipe to hose straight adapter, Item No. 14, in the free end of hose, Item No. 6. Slide remaining hose clamp, Item No. 5, over straight adapter, Item No. 14, and tighten. Attach dust plug, Item No. 15, onto straight adapter, Item No. 14, and install female quick disconnect to female pipe thread half coupling, Item No. 3, onto straight adapter, Item No. 14.

b. Slide two (2) hose clamps, Item No. 5, onto hose, Item No. 8. Attach one end of hose, Item No. 8, to the pressure side of the fuel primer bulb, Item No. 7. Slide one hose clamp, Item No. 5, over the primer bulb fitting and tighten. Insert male pipe to hose straight adapter, Item No. 14, in the free end of hose, Item No. 8. Slide remaining hose clamp, Item No. 5, over straight adapter, Item No. 14, and tighten. Attach dust plug, Item No. 15, onto straight adapter, Item No. 14, and install female quick disconnect to female pipe thread half coupling, Item No. 3, onto straight adapter, Item No. 14.

Assembly Instructions

7. Using a suitable container (2-gallon capacity), drain the set fuel tank by opening the drain cock (Figure F-4, Item No. 6) on the bottom of the tank.

8. Turn the handle on the fuel filter (Figure F-3, Item No. 18) to the up position to close the filter. Disconnect the fuel supply hose (Figure F-3, Item No. 10) from the input side of the fuel filter by loosening hose clamp (Figure F-3, Item No. 11).

9. Remove the elbow barb fitting and hose (Figure F-3, Item Nos. 12 and 10) from the bottom of the fuel tank (Figure F-3, Item No. 6). Remove the rubber bushing (Figure F-4, Item No. 4) from the tank and discard. Loosen the hose clamp (Figure F-3, Item No. 11) on the elbow barb fitting, remove the hose and discard it. Retain the elbow barb fitting.

10. Attach the 3-way valve assembly to the bracket, Item No. 17, using two (2) each machine screws, lock-spring washers, flat washers, and machine nuts (Item Nos. 18, 19, 20, and 21). The order of assembly should be screw, bracket, 3-way valve assembly, flat washer, lock-spring washer, and machine nut.

11. Facing the fuel tank side of the generator set, disassemble the capscrew, plain washer, lock-spring washers (2), and hex nuts (2) attaching the ground braids (2) to the generator cross member (Figure F-1, Item Nos. 29, 24, 23 (2), 26 (2), 25 and 27). Place the bracket assembly on the cross member so that the bent flange is against the side of the cross member and the 3-way valve assembly faces out. Reassemble the screw, washers, ground braids and nuts through the bracket in their original configuration.

12. Slide one hose clamp, Item No. 5, onto hose, Item No. 16. Slide end of hose, Item No. 16, over the elbow barb fitting (Figure F-3, Item No. 12) from which the supply hose (Figure F-3, Item No. 10) was removed (see step 9 above). Insert rubber bushing, Item No. 25, into the bottom of the set tank. Insert elbow barb fitting with hose, Item No. 16, into the rubber bushing, Item No. 25. Slide hose clamp, Item No. 5, over the elbow barb fitting and tighten.

13. Slide one hose clamp, Item No. 5, onto hose, Item No. 9. Slide end of hose, Item No. 9, onto the input fitting of the fuel filter (Figure F-3, Item No. 18). Slide hose clamp, Item No. 5, over the fuel filter fitting and tighten. Turn the handle on the fuel filter down to open the fuel filter.

CAUTION

After installing the Auxiliary Fuel System, check to ensure none of the hoses come into contact with sharp edges. It may be necessary to reorient the hose clamps.

14. Attach the fuel can bracket, Item No. 22, to the generator set frame by tilting the bracket so that the ears on the end of the bracket will slide under the top longitudinal members of the set frame. Hook the bracket over the end of the frame.

15. Set the auxiliary fuel can into the bracket and secure with the strap, Item No. 23.

CAUTION

When installing the fuel primer bulb assembly, Item No. 2, into the auxiliary fuel can, do not let the hose come into contact with the muffler or any other potentially hot surfaces.

16. Complete the installation of the Auxiliary Fuel System as follows:

    a. Insert the fuel drum adapter assembly, Item No. 1, into the auxiliary fuel can and secure by depressing the cam handle.

    b. Attach the quick disconnect half coupling, Item No. 3, of the suction side of fuel primer bulb assembly, Item No. 2, to the male quick disconnect, Item No. 4, on the fuel drum adapter assembly, Item No. 1.

    c. Complete the assembly by attaching the quick disconnect half coupling, Item No. 3, of the pressure side of fuel primer bulb assembly, Item No. 2, to the male quick disconnect, Item No. 4, on the 3-way valve assembly. Turn the handle on the 3-way valve, Item No. 11, to the auxiliary fuel tank position. Prime the system by squeezing the bulb several times. The set is now ready to operate from the auxiliary fuel supply.

Disassembly Instructions

17. To disconnect the auxiliary fuel system, perform the following:

    a. Turn the handle on the 3-way valve, Item No. 11, to the closed position.

    b. Separate the fuel primer bulb assembly, Item No. 2, from the fuel drum adapter assembly, Item No. 1, by releasing the quick disconnect coupling. Place the dust cap, Item No. 26, over the male quick disconnect, Item No. 4, on the fuel drum adapter assembly, Item No. 1. Insert the dust plug, Item No. 15, into the quick disconnect half coupling, Item No. 3, on the fuel primer bulb assembly, Item No. 2.

    c. Separate the fuel primer bulb assembly, Item No. 2, from the 3-way valve, Item No. 11, by releasing the quick disconnect coupling. Place the dust cap, Item No. 26, over the male quick disconnect, Item No. 4, on the 3-way valve elbow, Item No. 13. Insert the dust plug, Item No. 15, into the quick disconnect half coupling, Item No. 3, on the fuel primer bulb assembly, Item No. 2.

WARNING

The fuels in this generator set are flammable. Do not smoke or use open flames when performing aintenance. Do not service or drain the fuel system while open flames are present. Flames and explosion could result in severe personal injury or death. Use a container or cloth to catch any excess fuel to prevent spilling over engine components. Be sure to properly dispose of diesel fuel and diesel fuel soaked cloths.

    d. Remove the strap, Item No. 23, from the auxiliary fuel can.

    e. Remove the auxiliary fuel can from the fuel can bracket, Item No. 22.

    f. Remove the fuel can bracket, Item No. 22, by tilting the bracket to release it from the frame.

    g. Store the fuel can bracket, Item No. 22, as shown in Figure L-5, by securing it with the strap, Item No. 23.

    h. Turn the handle on the 3-way valve, Item No. 11, to the primary fuel tank position. The set is now ready to operate from the primary fuel tank.

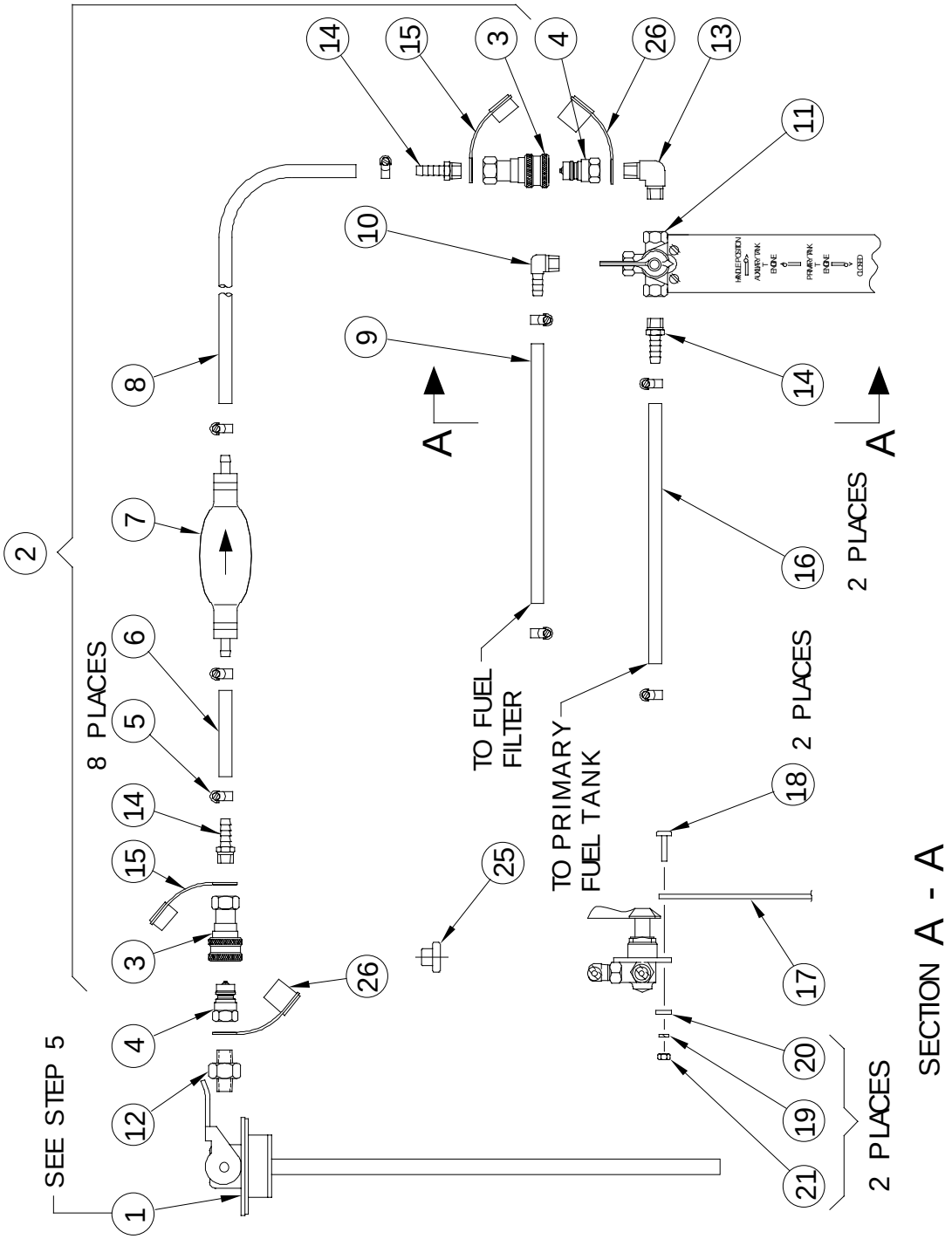


Figure L-1. Auxiliary Fuel System (Sheet 1 of 2)

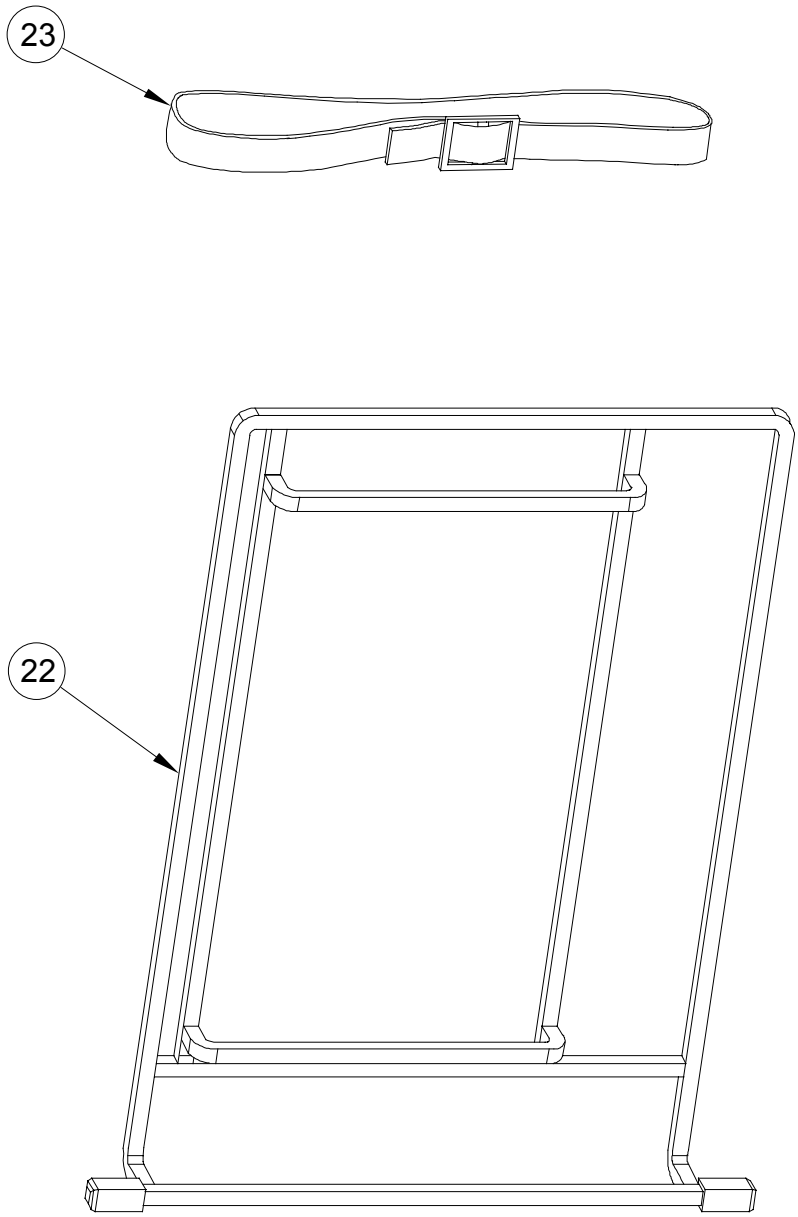


Figure L-1. Auxiliary Fuel System (Sheet 2 of 2)

Table L-1. Auxiliary Fuel System Components

ITEM NO.	DRAWING NO./ SPECIFICATION	DESCRIPTION	QTY	NSN	PART NO.	MFG	MFG P/N	CAGEC
1	13211E7541	ADAPTER ASSEMBLY, FUEL DRUM	1	5342-00-066-1235	13211E7541	GATEWAY CABLE COMPANY		61090
2		BULB, PRIMER, FUEL ASSEMBLY	1		CONSISTING OF ITEM NO. 3, 5, 6, 7, 8, 14, AND 15			
3		COUPLING HALF, DISCONNECT FEMALE PIPE THREAD	2	4730-01-184-1683		PARKER-HANNIFIN CORP/QUICK COUPLER DIV	H2-62	97111
4		MALE QUICK DISCONNECT FEMALE PIPE THREAD	2	4730-00-729-7087		PARKER-HANNIFIN CORP/QUICK COUPLER DIV	H2-63	97111
5	SAE J1508	CLAMP, HOSE TYPE M, SIZE 4	8	NONE AVAILABLE				
6		HOSE, 5/16 ID	2.0 IN.	NONE AVAILABLE		AMAZON HOSE AND RUBBER CO.	K3150	3N656
7	13226E1768	BULB, PRIMER, FUEL	1	2805-01-186-7855	13226E1768	OUTBOARD MARINE CORP.	174061	80256
8		HOSE, 5/16 ID	29.0 IN.	NONE AVAILABLE		AMAZON HOSE AND RUBBER CO.	K3150	3N656
9		HOSE, 5/16 ID	9.0 IN.	NONE AVAILABLE		AMAZON HOSE AND RUBBER CO.	K3150	3N656
10		ELBOW, MALE PIPE TO HOSE	1	NONE AVAILABLE		PARKER-HANNIFIN CORP/BRASS PRODUCTS DIV	129HB-5-4	93061
11		3 WAY VALVE	1	NONE AVAILABLE		ANDERSON BRASS CO.	SP2201-B3	70411
12		PIPE NIPPLE MALE TO MALE ¼-18 NPTF	1	NONE AVAILABLE		PARKER-HANNIFIN CORP/BRASS PLASTICS DIV	¼ FF	93061
13		ELBOW, MALE TO MALE PIPE ¼-18 NPTF	1	NONE AVAILABLE		PARKER-HANNIFIN CORP/BRASS PRODUCTS DIV	¼ CR	93061
14		ADAPTER, STRAIGHT, MALE PIPE TO HOSE	3	4730-00-595-1721		PARKER-HANNIFIN CORP/BRASS PRODUCTS DIV	125HBL-5-4	93061
15		DUST PLUG	2	5340-01-307-2679		PARKER-HANNIFIN CORP/QUICK COUPLER DIV	H2-65M	97111
16		HOSE, 5/16 ID	8.0 IN.	NONE AVAILABLE		AMAZON HOSE AND RUBBER CO.	K3150	3N656
17		BRACKET	1	NONE AVAILABLE	FIGURE L-2			
18	13218E0493	SCREW, MACHINE .250-2OUNC X .62 L, CRES	2	NONE AVAILABLE	13218E0493-1369			
19	13230E6744	WASHER, LOCK-SPRING, HELICAL .25 ID	2	NONE AVAILABLE	13230E6744-139			
20	88-20033	WASHER, FLAT .25 ID	2	NONE AVAILABLE	88-20033-20C			
21	13218E0320	NUT, MACHINE, FINISHED, HEXAGON .250-20 UNC	2	NONE AVAILABLE	13218E0320-291			
22		BRACKET, FUEL CAN	1	NONE AVAILABLE	FIGURE L-3			
23	10897501	STRAP, WEBBING, 1X51	1	5340-00-988-1895	10897521			19207
24	88-20595	SEALING COMPOUND	AR	NONE AVAILABLE	88-20595-1	PERMATEX INDUSTRIAL/ DIV OF LOCTITE CORP	80010	62377
25	95-8137	BUSHING, MOLDED RUBBER	1	NONE AVAILABLE	95-8137	THE DEWEY ELECTRONICS CORP	95-8137	14058
26		DUST CAP	2	5340-01-307-4394		PARKER-HANNIFIN CORP/QUICK COUPLER DIV	H2-66M	97111

NOTE

Item No. corresponds to Figure L-1

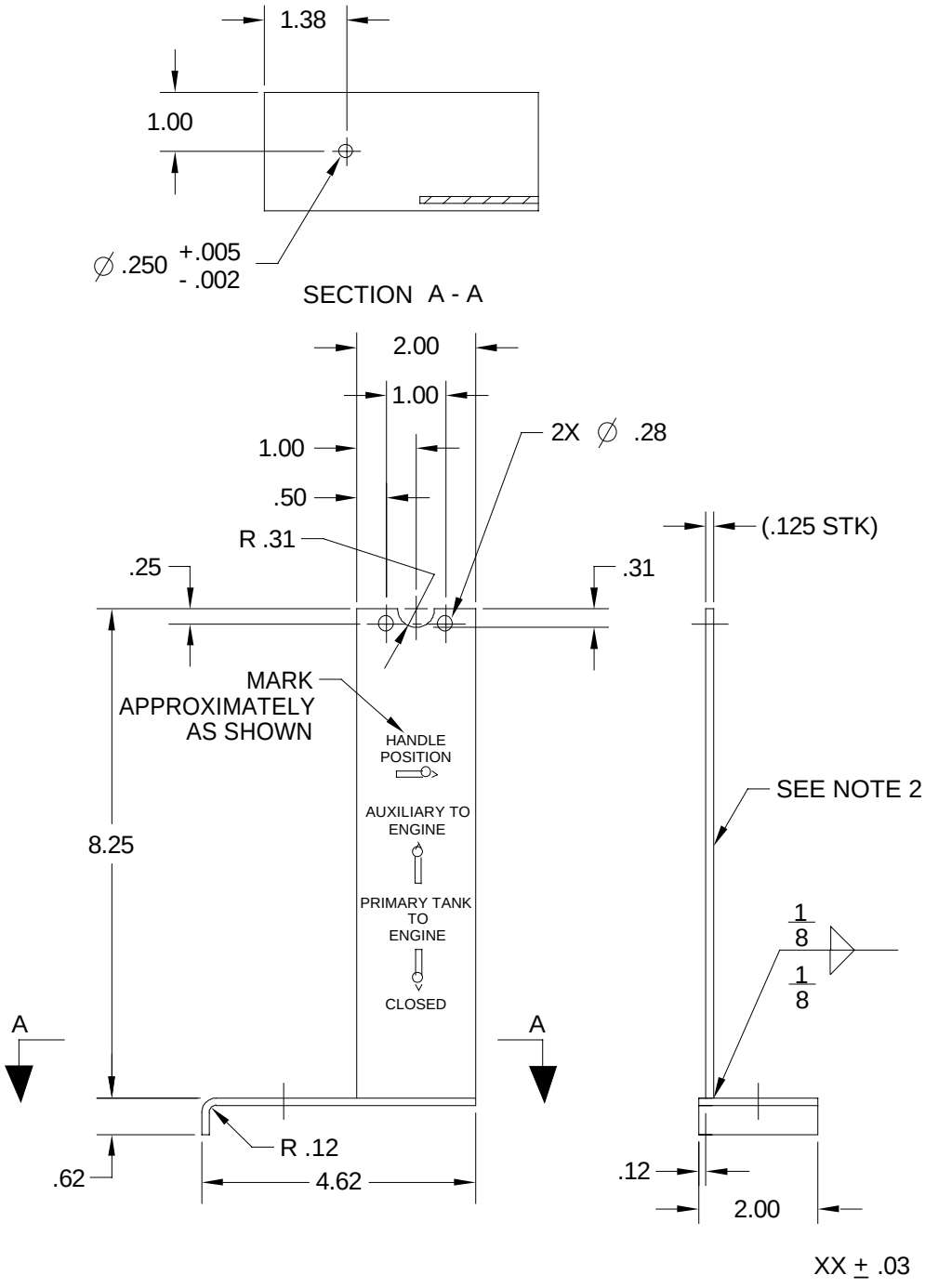


Figure L-2. Three Way Valve Bracket

NOTES TO FIGURE L-2:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100.

2. MATERIAL: STRIP, 2.00 X .125, 1018 LOW CARBON STEEL IN ACCORDANCE WITH ASTM A 108.

3. WELDING AND INSPECTION SHALL BE IN ACCORDANCE WITH AWS D1.1. INSPECTION SHALL BE VISUAL. 5 X MAGNIFICATION SHALL BE USED TO EVALUATE ANY AREAS QUESTIONED BY INITIAL VISUAL EXAMINATION.

4. TREAT AND PAINT IN ACCORDANCE WITH MIL-T-704, TYPE F.

5. MARK IN ACCORDANCE WITH MIL-STD-130, METHOD OPTIONAL. LETTERING SHALL BE ¼ MINIMUM EXCEPT WHERE NOTED, LETTERING SHALL BE BLACK.

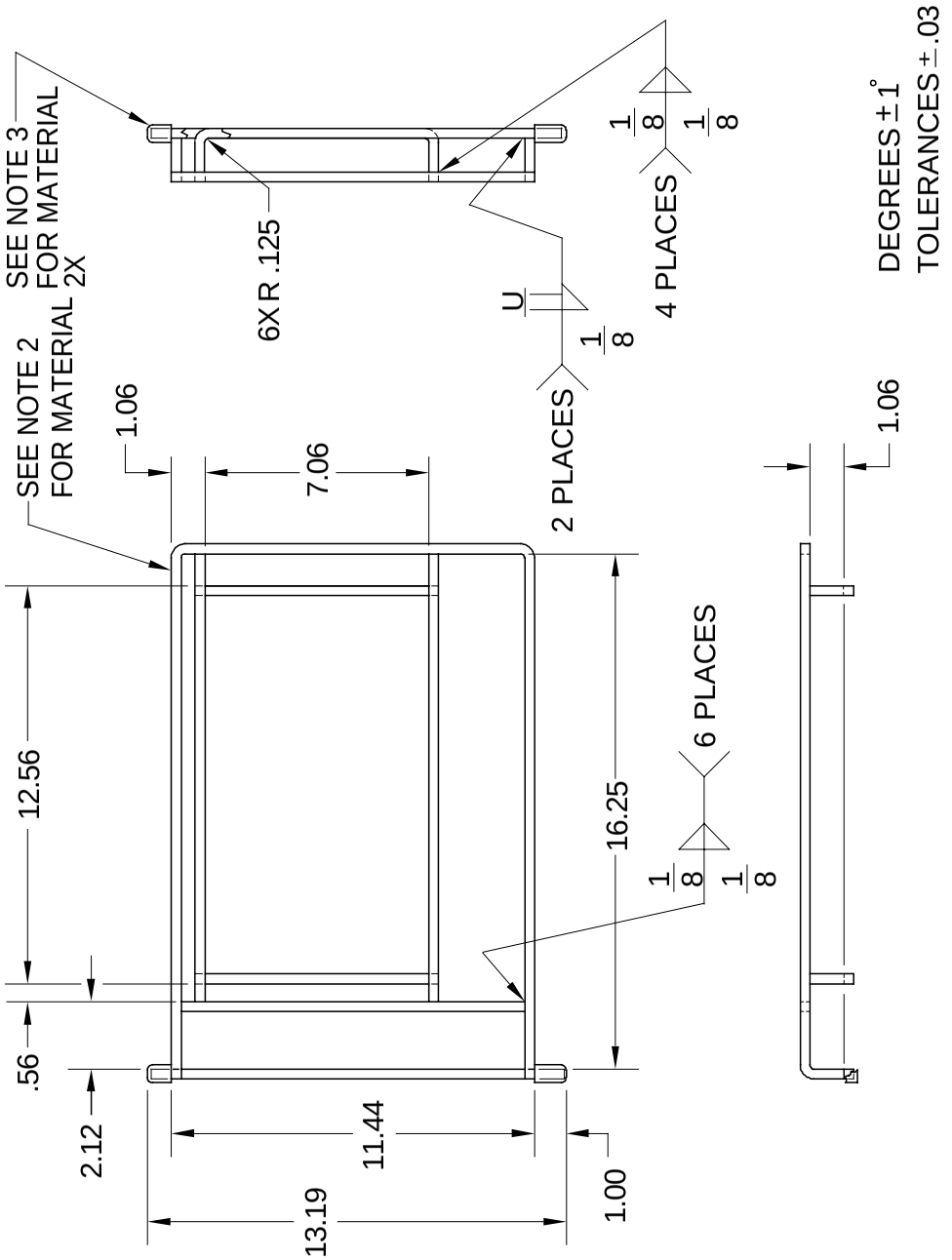


Figure L-3. Auxiliary Fuel Tank Bracket

NOTES TO FIGURE L-3:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100.
2. MATERIAL: BAR, SQUARE, .312 STK, 1018 LOW CARBON STEEL, PER ASTM A 108.
3. MATERIAL: INSULATION SLEEVING, ELECTRICAL, 88-20541-13.
4. WELDING AND INSPECTION SHALL BE IN ACCORDANCE WITH AWS D1.1. INSPECTION SHALL BE VISUAL. 5 X MAGNIFICATION SHALL BE USED TO EVALUATE ANY AREAS QUESTIONED BY INITIAL VISUAL EXAMINATION.
5. TREAT AND PAINT IN ACCORDANCE WITH MIL-T-704, TYPE F.
6. IDENTIFY IN ACCORDANCE WITH MIL-STD-130, METHOD OPTIONAL.
7. ALL INSIDE RADII SHALL BE .125.

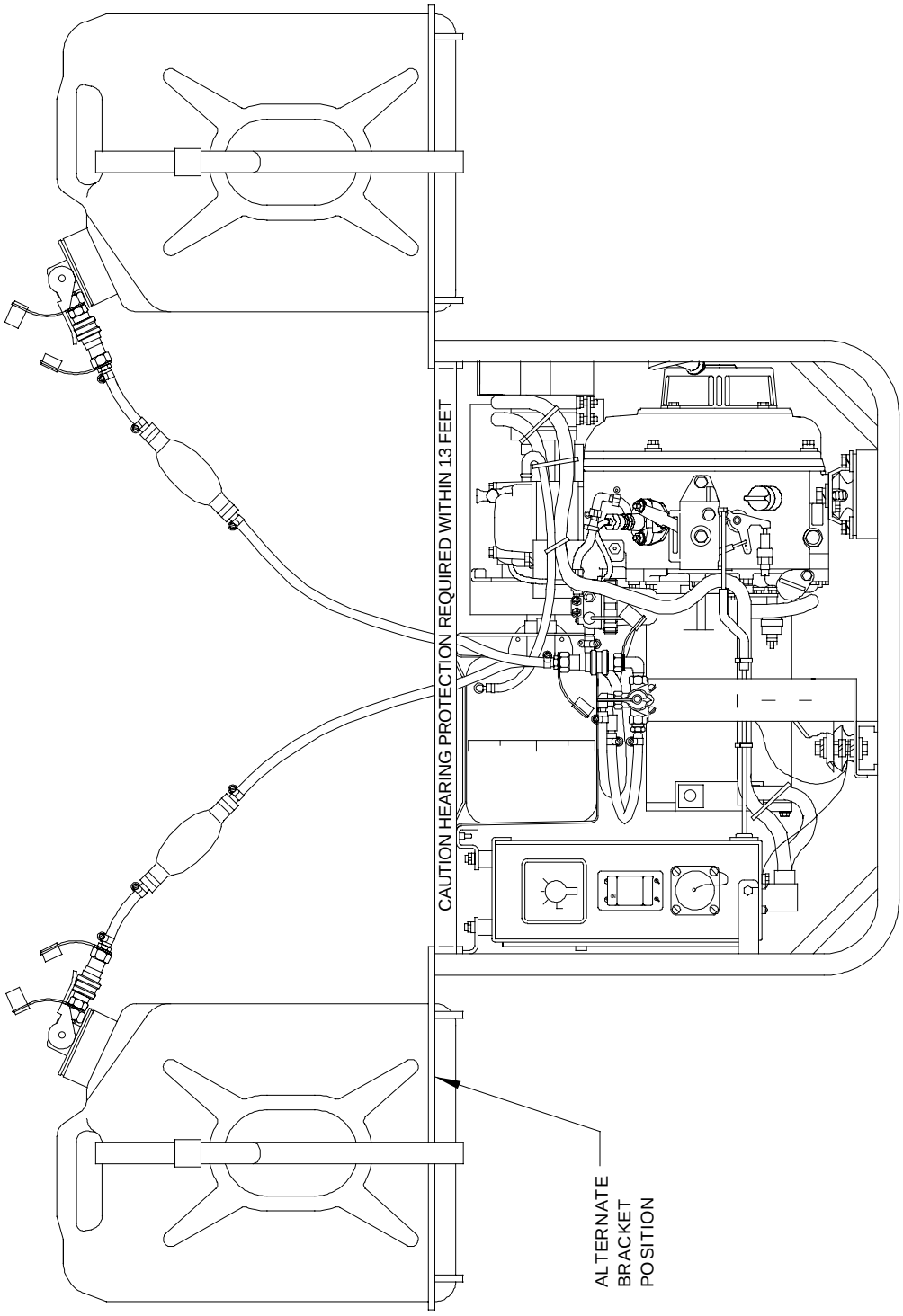


Figure L-4. 2 KW Set with Auxiliary Fuel System Installed

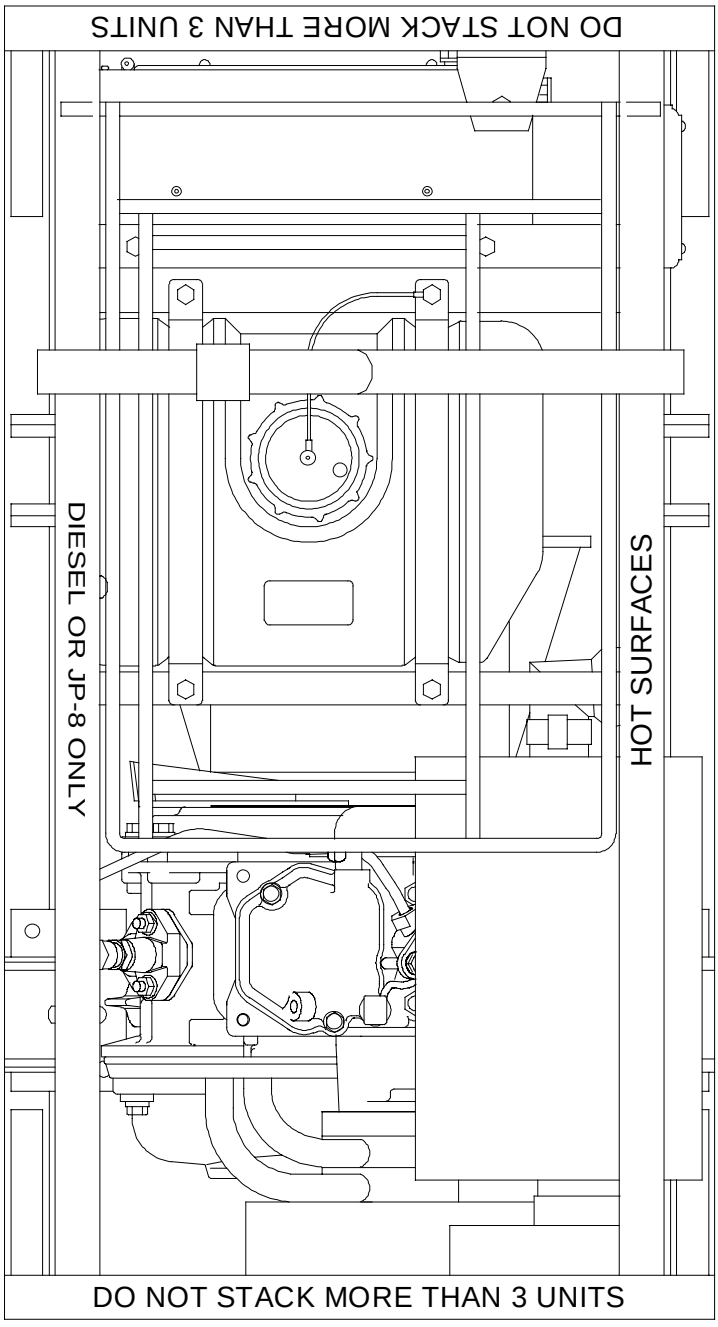


Figure L-5. Fuel Can Bracket Shown in the Stowed Position

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APPENDIX M

2 KW DEPROCESSING CHECKLIST

For use of this checklist, see the Deprocessing check sheet

Required items:

Fuel	DL-1, DL-2, or JP8
Lubricating oil	GR OEA, GR OE/HD-15, GR OE/HDO-10, GR OE/HDO-30 or GR OE/HDO-40
Ground rod	NSN 5975-00-878-3791
Ground cables	6 AWG min.
Tool kit	NSN 5180-00-177-7033
Container	suitable for excess fuel
Cloth	for fuel spilling
Load bank	
Hearing protection	
24 VDC battery source (for cold weather starting)	

Checklist

_____Packaging material

_____Identification plate

_____Frame

_____Control panel

_____Before Preventive Maintenance Checks and Services

_____During Preventive Maintenance Checks and Services

_____After Preventive Maintenance Checks and Services

DEPROCESSING CHECKSHEET

WARNING

Exhaust discharge contains deadly gases. Do not operate generator set in enclosed area unless exhaust discharge is properly vented outside. Position as far away from personnel, shelters, and occupied vehicles as possible. Failure to observe this warning could result in severe personal injury or death due to carbon monoxide poisoning.

Generator sets weight 123 to 144 lbs. Use suitable lifting device or four-man lift.

Place the generator set on a level site if possible. Provide enough clearance around the generator set to allow for normal operation and maintenance functions.

1. Deprocessing Inspection.

TM 9-6115-673-13&P is the source reference unless otherwise noted.

1.1 Remove all packaging material.

1.2 Inspect identification plate for positive identification of generator set.

(Figure 2-9.)

1.3 At a minimal inspect the following items on the generator set for missing hardware, looseness or any damage that may have occurred during shipment,

Frame:
- Ground Strap (figure 4-32)
- Ground Stud (figure 4-63)
- Frame assembly (figure 4-64)

Control Panel exterior and interior:
- Meters (figure 2-1)
- Instrument cover (figure 4-21)
- Voltage adjust potentiometer (figure 4-27)
- Fuses (figure 4-31)
- Receptacles (figure 4-33)
- Start-preheat/preheat/off/start rotary switch (figure 4-34)
- NATO slave receptacle (figure 4-36)
- Load terminals (figure 4-37)
- On-off load circuit breaker (figure 4-40)
- Electrical wiring (typical) (figure 4-44)
- Load terminal board cover (figure 4-45)

Alternator:
- Ground strap (figure 4-32)
- Assembly (figure 5-39 AC Alternator/figure 5-42 DC Alternator)

Engine:

Fuel filter assembly (figure 4-13)
Air filter (figure 4-16)
Exhaust system (figure 4-17)
Low oil pressure switch (figure 4-47)
Engine shutdown cable (figure 4-49)
Governor regulator bracket (run/stop controls) (figure 4-52)
Recoil starter (figure 4-56)
Starter (figure 4-59)

Fuel Tank:

Brackets (figure 4-15, items 8 and 10)
Drain cock (figure 4-15, item 14)
Guard (figure 4-15, item 11)

2. Deprocessing Servicing.

2.1 Perform the Before Preventive Maintenance Checks and Services (table 2-2).

Item 1
Control panel
Instrument panel

Item 2
Ground terminal stud (para. 2.7.a for installation of ground rod)

Item 3
Identification and Instruction Plates

Item 4
Load terminals (para. 2.7.b for placement of load cables)

Item 5
Air Intake Cover Wing Nut

Item 6
Filter Assembly, Fuel (use para. 2.7.c for priming and bleeding the fuel system)

Item 7
Fuel system; use the required fuel for the operating environment.

Item 8
Crankcase Oil (figure 2-1, item 8) use the required oil for the operating environment.

Item 9
Cylinder head cooling fins and recoil starter cover.

Item 10
Spark arrestor.

2.2 During Preventive Maintenance Checks and Services (table 2-2).
Follow the Initial adjustment and checks/operating procedures to operate the set, placement of the intake cover and limitation of load (75%) (para. 2.8).

Operate the generator set 15 minutes minimum to ensure that no leaks are detected, and a load can be drawn.

Item 1
Instrument Panel

Item 4
Ground Terminal Stud

Item 7
Fuel system

Item 8
Crankcase Oil

Item 9
Cylinder head cooling fins and recoil starter cover.

2.3 After Preventive Maintenance Checks and Services (table 2-2).
To stop the generator set, follow Stopping Procedure (para. 2.9.e).

Item 1
Instrument Panel

Item 2
Identification and Instruction Plates

Item 6
Filter Assembly, Fuel

Item 7
Fuel System

Item 8
Crankcase Oil

Item 9
Cylinder head cooling fins and recoil starter cover.

3. Quality Deficiency Report (QDR)

Develop a QDR on any deficiencies, which prevent operational capabilities from being achieved.

ALPHABETICAL INDEX

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Stateside Army Depot
ATTN: AMSTA-US
Stateside, N.J. 07703-5007

DATE SENT
10 July 1975

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-20P	23 Jan 74	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA GRAPH	FIGURE NO	TABLE NO	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
2-25	2-28			Recommend that the installation antenna alignment procedure be changed throughout to specify a 20 IFF antenna lag rather than 10. REASON: Experience has shown that with only a 10 lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 20 without degradation of operation.
3-10	3-3		3-1	Item 5, Functional Column. Change • 2 dB" to • 3 dB". REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, • Replace cover plate removed in step e.1, above." REASON: To replace the cover plate.
		FO-3		Zone C 3. On J1-2, change • +24 VDC" to • +5 VDC". REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SSG I. M. DeSpiritof 999-1776

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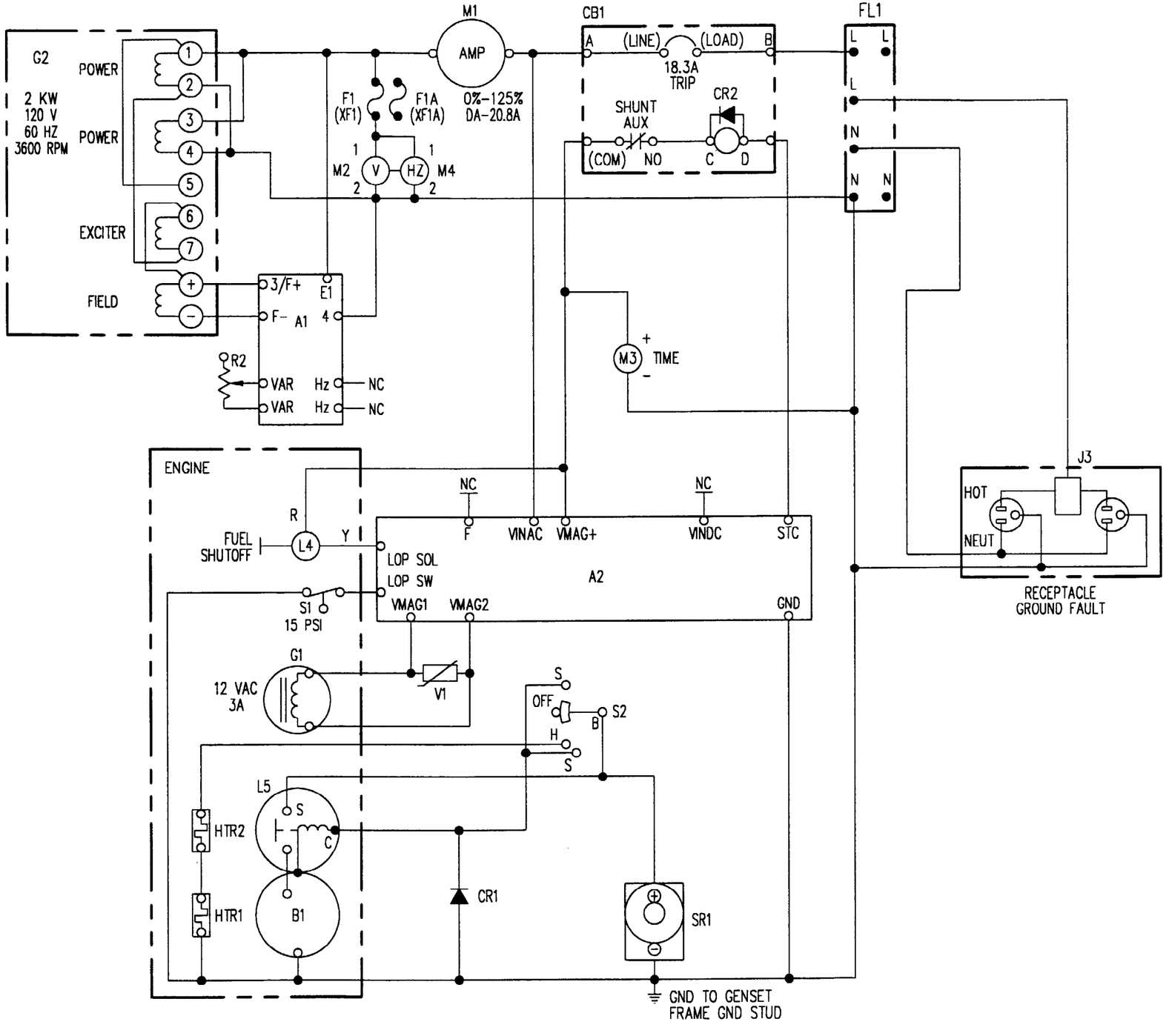
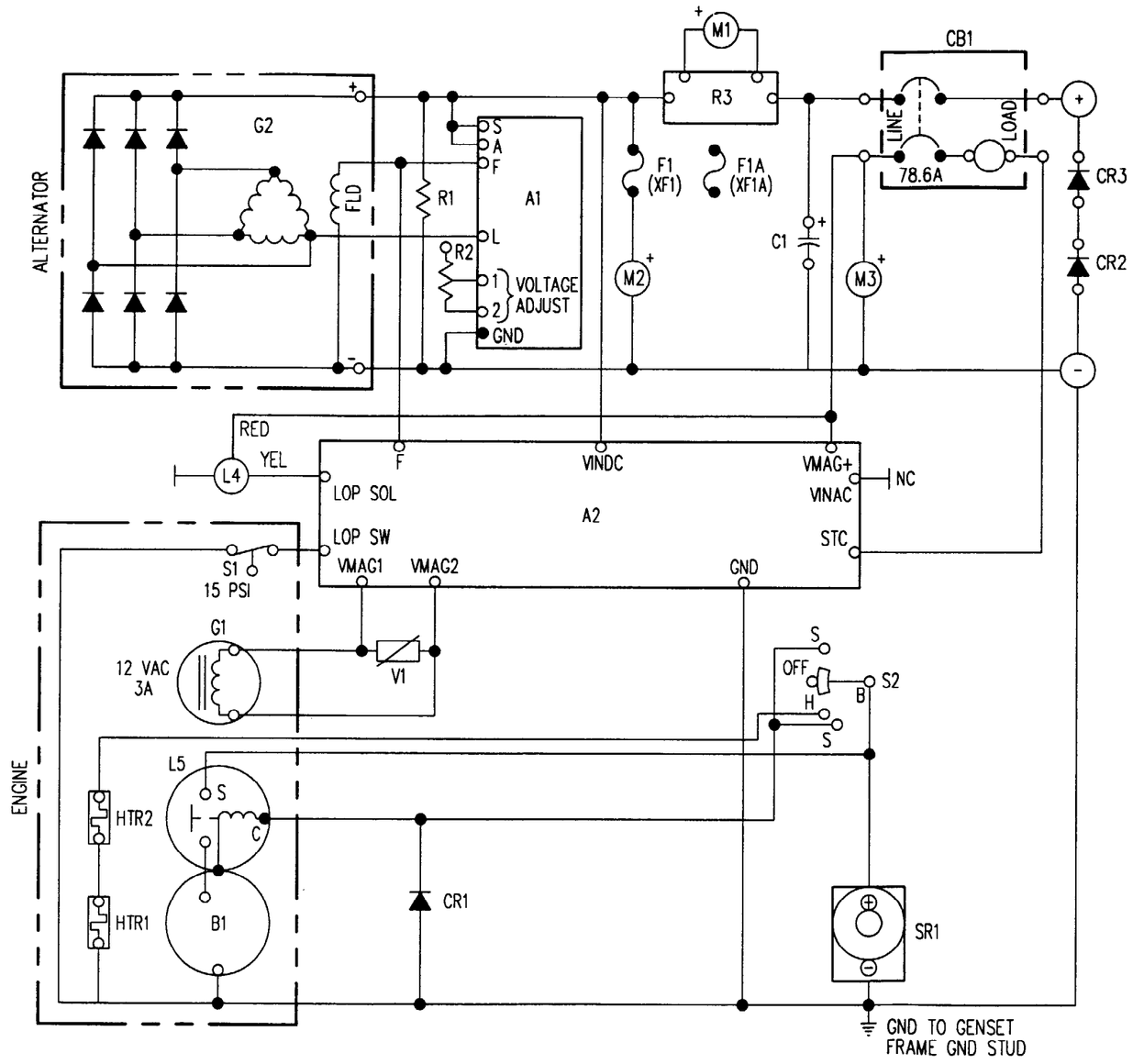


REF DESIGNATOR	DESCRIPTION
A1	VOLTAGE REGULATOR, 120 V, 60 HZ
A2	GENERATOR, CONTROL UNIT
B1	MOTOR, STARTER, PART OF ENGINE
CB1	CIRCUIT BREAKER, SINGLE POLE, SHUNT, AUX
CR1, CR2	DIODE
FL1	EMI FILTER
F1	FUSE
F1A	FUSE, SPARE
G1	DYNAMO, PART OF ENGINE
G2	ALTERNATOR, 120 VAC
HTR1, HTR2	HEATER, ENGINE PREHEAT, PART OF ENGINE
L	TERMINAL, LINE, 120 V, 60 HZ
L4	SOLENOID, LOW OIL PRESSURE
L5	SOLENOID, STARTER MOTOR, PART OF ENGINE
J3	RECEPTACLE, GROUND FAULT
M1	AMMETER
M2	VOLTMETER, AC
M3	METER, TIME TOTALIZING
M4	METER, FREQUENCY
N	TERMINAL, NEUTRAL
R2	POTENTIOMETER, VOLTAGE ADJUST
S1	SWITCH, LOW OIL PRESSURE
S2	SWITCH, ROTARY, FOUR POSITION
SR1	RECEPTACLE, SLAVE
V1	VARISTOR, DISCHARGE
XF1, XF1A	FUSE HOLDER

S2

	START WITH PREHEAT	PREHEAT	OFF	START
B-H	X	X		
B-S	X			X

Figure FO-1. Electrical Schematic, MEP-531A

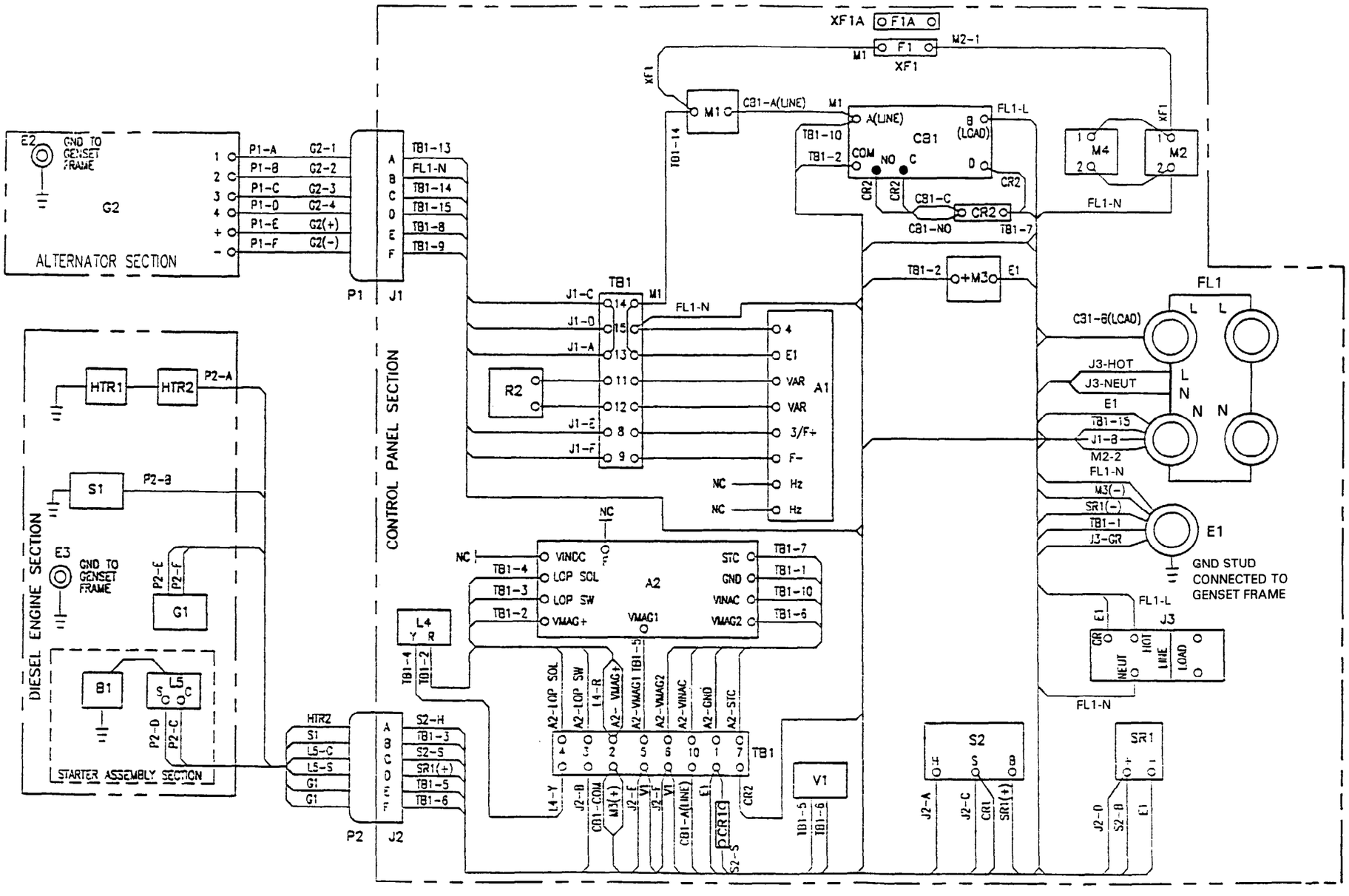


REF DESIGNATOR	DESCRIPTION
A1	REGULATOR, VOLTAGE, 28 VOLT
A2	CONTROL, GENERATOR, 2 KW
B1	MOTOR, STARTER, 24 V DC, PART OF ENGINE
C1	CAPACITOR, 1000 uF 63 VDC
CB1	CIRCUIT BREAKER, 2 POLE
CR1	DIODE
CR2, CR3	DIODE, TRANSIENT SUPPRESSION
F1	FUSE
F1A	FUSE, SPARE
G1	DYNAMO, 12 VAC, 3A, PART OF ENGINE
G2	ALTERNATOR, 2 KW, 28 V DC, 3600 RPM
HTR1, HTR2	HEATER, ENGINE PREHEAT, PART OF ENGINE
–	TERMINAL, NEGATIVE OUTPUT OF GENSET
+	TERMINAL, POSITIVE OUTPUT OF GENSET
L4	SOLENOID, LOW OIL PRESSURE
L5	SOLENOID, STARTER MOTOR, PART OF ENGINE
M1	METER, INDICATION, CURRENT
M2	METER, OUTPUT VOLTAGE
M3	METER, TIME TOTALIZING
R1	RESISTOR, POWER, 20 Ω, 50 W. 1%
R2	POTENTIOMETER, VOLTAGE ADJUSTMENT
R3	RESISTOR, SHUNT 0–89.3A
S1	SWITCH, LOW OIL PRESSURE
S2	SWITCH, START, PREHEAT, SPRING RETURN TO OFF POSITION
SR1	CONNECTOR, PLUG, ELECTRICAL, INTERVEHICLE POWER CABLE
V1	VARISTOR, DISCHARGE
XF1, XF1A	FUSE HOLDER

S2

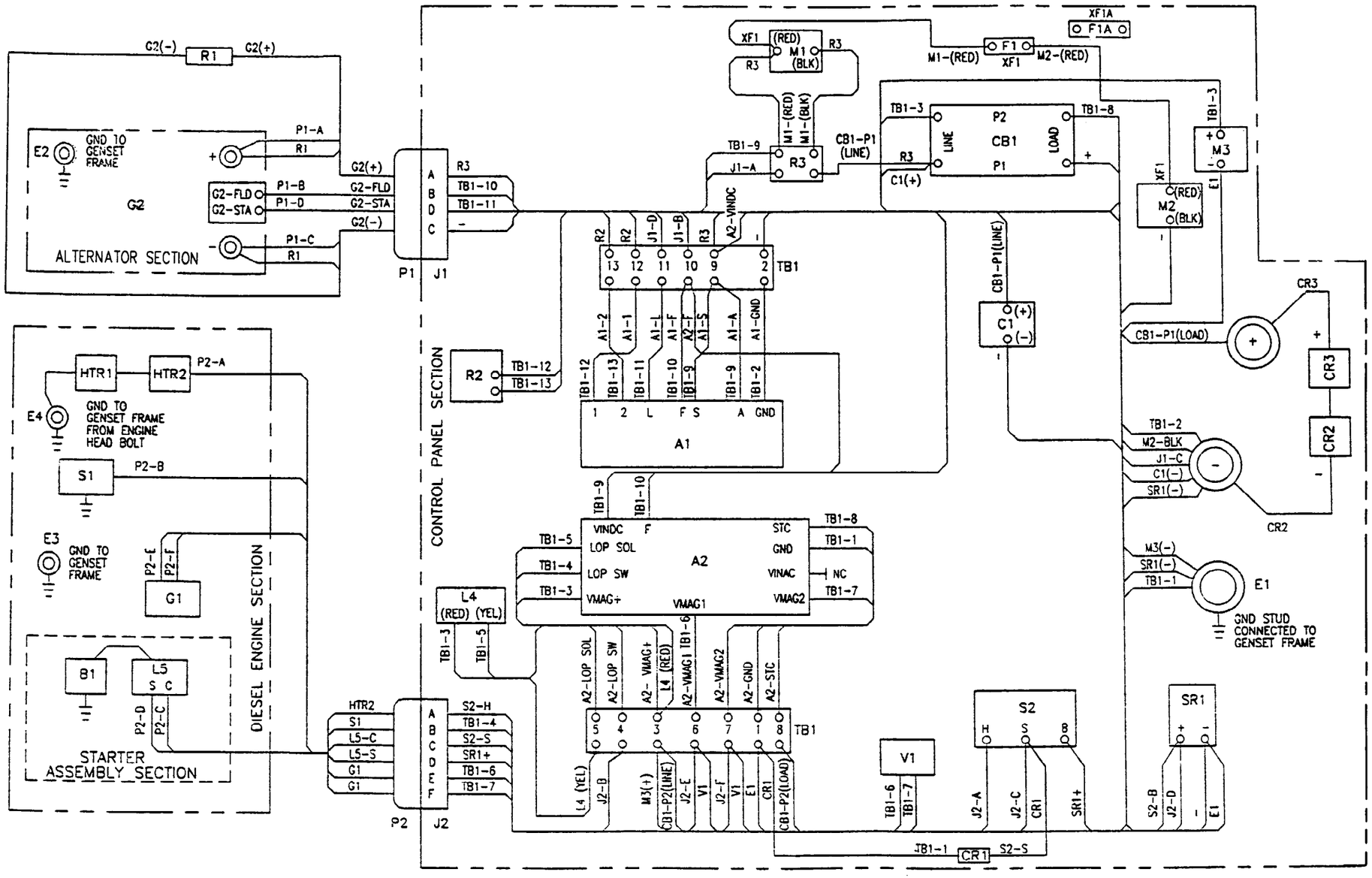
	START WITH PREHEAT	PREHEAT	OFF	START
B–H	X	X		
B–S	X			X

Figure FO-2. Electrical Schematic, MEP-501A



ELEC REF DES	DESCRIPTION
A1	VOLTAGE REGULATOR, 120 V, 60 HZ
A2	GENERATOR CONTROL UNIT
B1	MOTOR, STARTER, PART OF ENGINE
CB1	CIRCUIT BREAKER
CR1,CR2	DIODE
E1,E2,E3	CHASSIS CONNECTION
FL1	EMI FILTER
F1	FUSE
F1A	FUSE, SPARE
G1	DYNAMO
G2	ALTERNATOR, 120 VAC
HTR1,HTR2	HEATER, PREHEAT, PART OF ENGINE
J1	CONNECTOR, RECEPTACLE, ELECTRICAL
J2	CONNECTOR, RECEPTACLE, ELECTRICAL
J3	RECEPTACLE, GROUND FAULT
L	TERMINAL, LINE
L4	SOLENOID, LOP
L5	SOLENOID, STARTER MOTOR, PART OF ENGINE
M1	AMMETER
M2	VOLTMETER, AC
M3	METER, TIME TOTALIZING
M4	METER, FREQUENCY
N	TERMINAL, NEUTRAL
P1	CONNECTOR, PLUG, ELECTRICAL 90°
P2	CONNECTOR, PLUG, ELECTRICAL 90°
R2	POTENTIOMETER, VOLTAGE ADJUSTMENT
S1	SWITCH, LOW OIL PRESSURE
S2	SWITCH, ROTARY, FOUR POSITION
SR1	RECEPTACLE, SLAVE
TB1	TERMINAL, BOARD, MOLDED, BARRIER
V1	VARISTOR, DISCHARGE
XF1,XF1A	FUSEHOLDER

Figure FO-3. Wiring Diagram, MEP-531A



ELEC REF DES	DESCRIPTION
A1	REGULATOR, VOLTAGE, 24 VOLT
A2	CONTROL, GENERATOR
B1	MOTOR, STARTER, 24 VDC, PART OF ENGINE
C1	CAPACITOR, 1000 µF, 63 VDC
CB1	CIRCUIT BREAKER, 2 POLE
CR1	DIODE
CR2, CR3	DIODE, TRANSIENT SUPPRESSION
E1,E2,E3,E4	CHASSIS CONNECTION
F1	FUSE
F1A	FUSE, SPARE
G1	GENERATOR, CHARGING, 12 VAC, 3A, PART OF ENGINE
G2	GENERATOR, 28 VDC
HTR1, HTR2	HEATER, PREHEAT, PART OF ENGINE
-	TERMINAL, NEGATIVE
+	TERMINAL, POSITIVE
L4	SOLENOID, LOP
L5	SOLENOID, STARTER MOTOR, PART OF ENGINE
M1	AMMETER
M2	VOLTMETER, DC
M3	METER, TIME TOTALIZING
R1	RESISTOR, POWER, 20 Ω, 50 W, 1%
R2	POTENTIOMETER, VOLTAGE ADJUSTMENT
R3	RESISTOR, SHUNT, 0-89.3A
S1	SWITCH, LOW OIL PRESSURE
S2	SWITCH, ROTARY, 4 POSITION
SR1	RECEPTACLE, SLAVE, 24 VDC EXTERNAL SUPPLY
TB1	TERMINAL BOARD, MOLDED, BARRIER
V1	VARISTOR, DISCHARGE
P1	CONNECTOR, PLUG, ELECTRICAL, 90°
P2	CONNECTOR, PLUG, ELECTRICAL, 90°
J1	CONNECTOR, RECEPTACLE, ELECTRICAL
J2	CONNECTOR, RECEPTACLE, ELECTRICAL
XF1, XF1A	FUSE HOLDER

Figure FO-4. Wiring Diagram, MEP-501A

B123	STARTER MOTOR, 24 VDC
CB104	CIRCUIT BREAKER, 18.3 A
D103	DIODE FLYWHEEL
D125	DIODE FLYWHEEL
F101	SPARE FUSE, 1 A
F102	INSTRUMENT FUSE, 1 A
HR112a	PREHEATER, 400 W
HR112b	PREHEATER, 400 W
J104	CONNECTOR, MALE POWER
J124	CONNECTOR, MALE ENGINE
L1	TERMINAL LUG, 120 VAC
M102	LOADMETER, 0-125% (0-20.8 A)
M103	HOURMETER, 0-9999 HRS
M104	VOLTMETER, 0-40 VDC
M105	FREQUENCY METER, 55-65 HZ
N	TERMINAL LUG, NEGATIVE
P104	CONNECTOR, FEMALE POWER
P124	CONNECTOR, FEMALE ENGINE
RH109	VOLTAGE ADJUST POTENTIOMETER 1 K OHM
RP107	DUPLEX RECEPTACLE
RP123	SLAVE RECEPTACLE
RV123	VARISTOR
S115	LOW OIL PRESSURE SWITCH
S121	START/PREHEAT SWITCH
SOL116	LOW OIL PRESSURE SOLENOID
SOL124	STARTER SOLENOID
TB1	TERMINAL BLOCK
UA102	ALTERNATOR, 120 VAC
UA117	CONTROL CIRCUIT
UA121	DYNAMO, 12 VAC 3 A
VR109	VOLTAGE REGULATOR

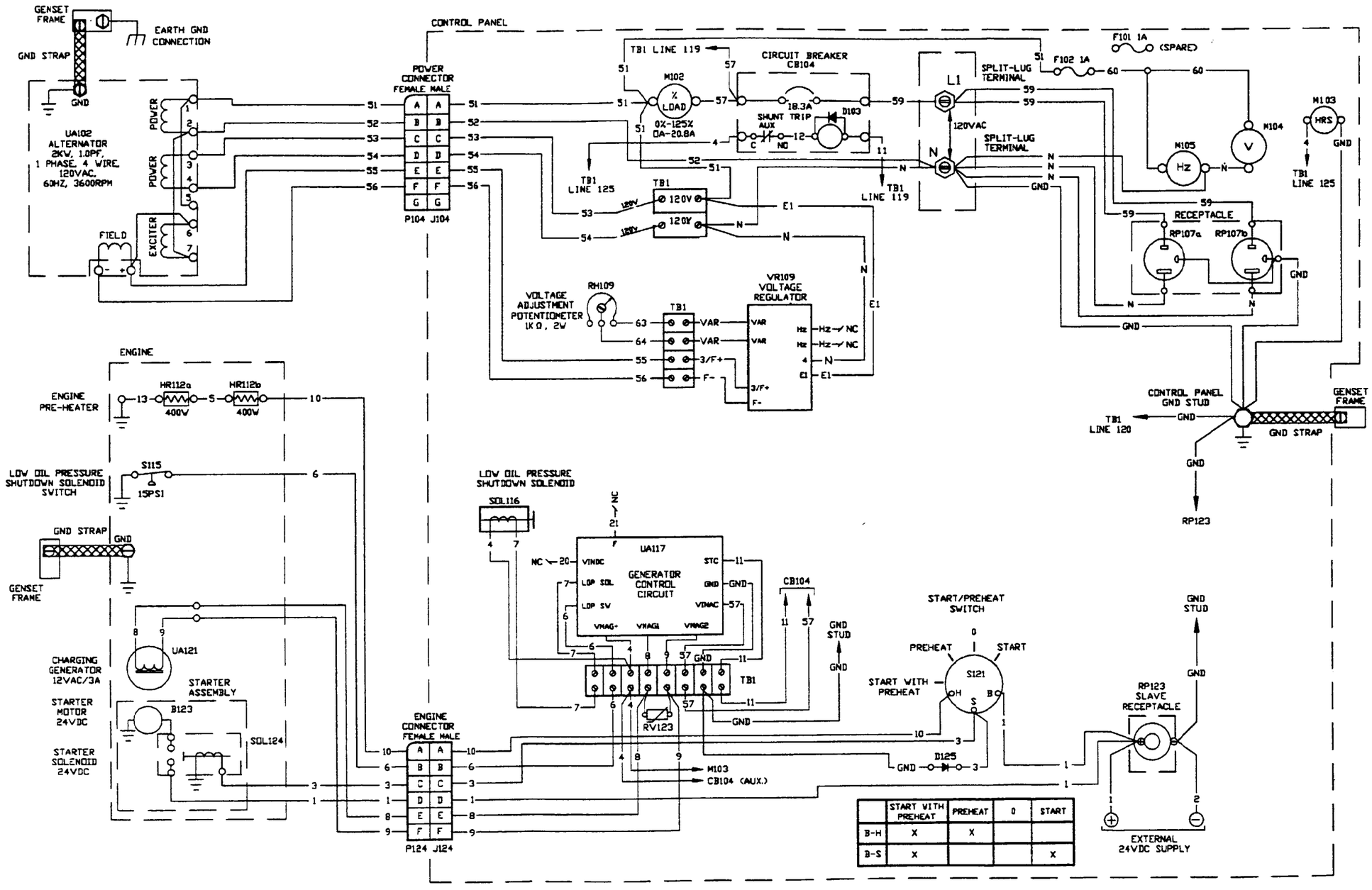


Figure FO-5. Generator Set Schematic, Mechron 120 VAC

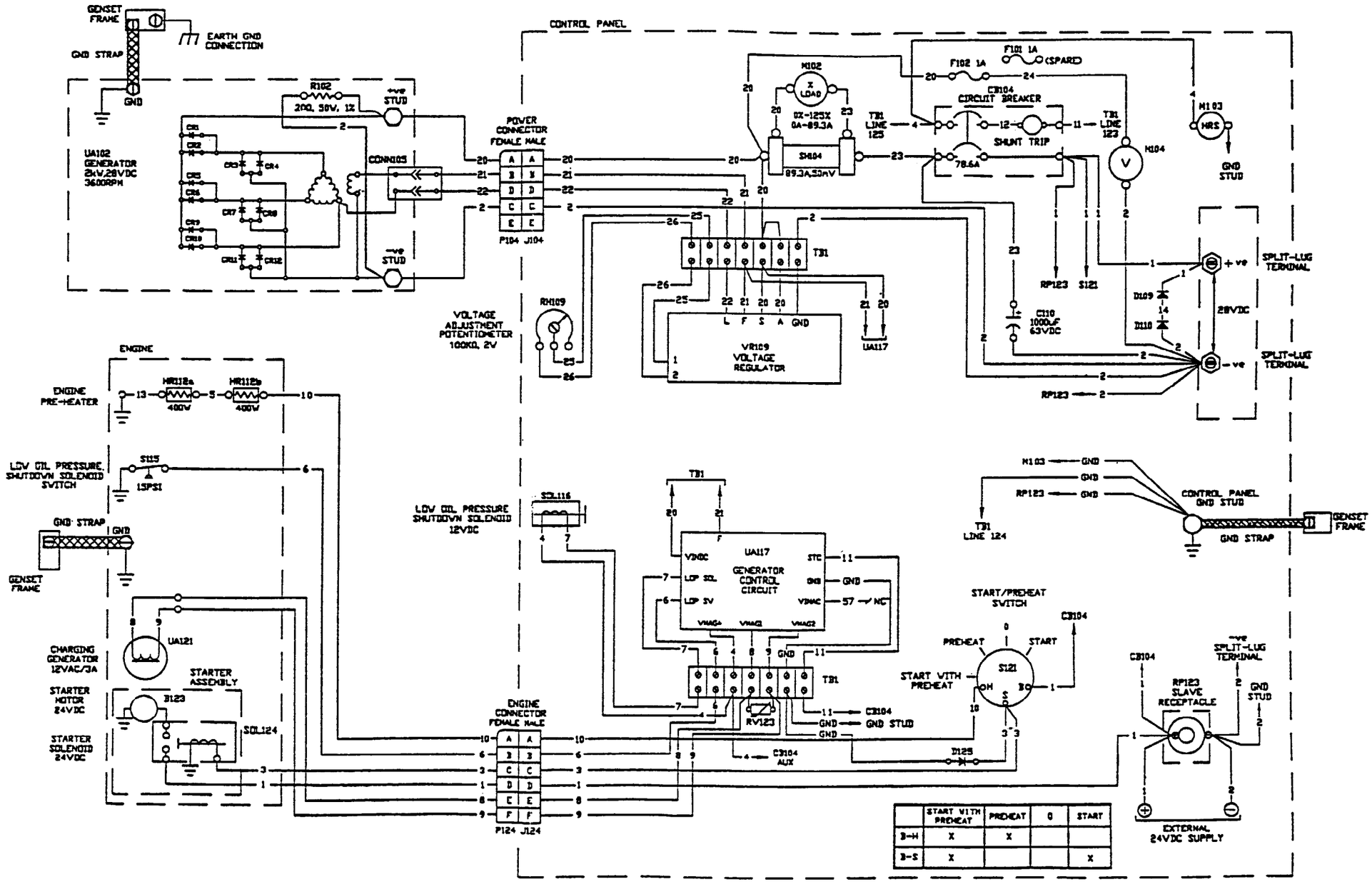


Figure FO-6. Generator Set Schematic, Mechron 28 VDC

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0225602

By Order of the Secretary of the Air Force:

JOHN P. JUMPER
General, United States Air Force
Chief of Staff

Official:

GEORGE T. BABBITT
General, United States Air Force
Commander, AFMC

DISTRIBUTION:

To be distributed in accordance with the initial distribution number (IDN) 361115 requirements for TM 9-6115-673-13&P.

METRIC CONVERSIONS

TEMPERATURE:	**(EF-32) x .555 = EC**
TORQUE:	**lbs-ft x 1.3558 = Nm** **lbs-in. x 0.11298 = Nm**
PRESSURE:	**psi x 6.895 = kPa**
DISTANCE:	**in. x 25.4 = mm** **in. x 2.54 = mm** **ft x 0.3048 = m**
CAPACITY:	**qt x 0.9464 = liters** **gal x 3.7854 = liters** **cu. in. x 0.0164 = liters**
MASS:	**lb x 0.4536 = kg**

PIN: 077581-000