GENERAC®

POWER SYSTEMS, INC.

GR-125
Operation and Maintenance Manual

Standby Output 110 kW (137 kVA)
Prime Output 100 kW (125 kVA)

Liquid-cooled
Diesel Engine
Generator Set

Model No. 004363-1

Optional Dual Axle Trailer
Model No. 004600-0

Optional Installation
of Factory Trailer
Model No.004605-0

*** This Manual Should Remain With The Unit ***

INTRODUCTION

This Owner's Manual was prepared especially for the purpose of familiarizing personnel with the operation and servicing of the applicable equipment.

Every effort was expended to make sure that the information and instructions in the Manual are accurate and current at the time the Manual was written. However, the manufacturer reserves the right to change, alter or otherwise improve product(s) at any time without prior notice.

CAUTION: Read all instructions and safety rules before attempting to operate or service this (and related) equipment. Protect yourself and others by strictly complying with these instructions and rules. Failure to comply with these safety rules may result in personal injury, death or damage to equipment and/or property. Retain these instructions for future reference.

■ READ THIS MANUAL THOROUGHLY

If you do not understand any portion of this manual, contact Generac or the nearest Generac Authorized Service Dealer for starting, operating and servicing procedures.

Throughout this publication, and on tags and decals affixed to the generator, DANGER, WARNING, CAUTION and NOTE blocks are used to alert you to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully.

These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the service are essential to preventing accidents.

The following definitions apply to DANGER, WARNING, CAUTION and NOTE blocks found throughout the manual.

DANGER: After this heading, read the handling, installing, operating or servicing instructions that, if not strictly complied with, will result in personal injury.

WARNING: After this heading, read the handling, installing, operating or servicing instructions that, if not strictly complied with, may result in personal injury.

CAUTION: After this heading, read the instructions for handling, installing, operating or servicing the generator that, if not strictly complied with, could result in damage to equipment and/or property.

NOTE: After this heading, read the explanatory statements that require special emphasis.

These symbols indicate the following:

Points out important safety information that, if not followed, could endanger personal safety and/or property of you and others.

Points out potential explosion hazard.

Points out potential fire hazard.

Points out potential electrical shock hazard.

The operator is responsible for proper and safe use of the equipment. We strongly recommend that the operator read this *Owner's Manual* and thoroughly understand all instructions before using this equipment. We also strongly recommend instructing other users to properly start and operate the unit. This prepares them if they need to operate the equipment in an emergency.

■ OPERATION AND MAINTENANCE

It is the operator's responsibility to perform all safety checks, to make sure that all maintenance for safe operation is performed promptly, and to have the equipment checked by an authorized dealer periodically. Normal maintenance service and replacement of parts are the responsibility of the owner/operator and, as such, are not considered defects in materials or workmanship within the terms of the warranty. Individual operating habits and usage contribute to the need for maintenance service.

Proper maintenance and care of your generator ensures a minimum number of problems and keeps operating expenses at a minimum. See a Generac authorized dealer/distributor for service aids and accessories.

■ HOW TO OBTAIN SERVICE

When the generator set requires servicing or repairs, simply contact an authorized service facility for assistance. Service technicians are factory-trained and are capable of handling all service needs.

When contacting an authorized service facility or the factory about parts and service, always supply the complete model number, serial number, and vin number of the unit as given on its data decal.

The warranty on the generator is included in this *Owner's Manual,* as well as listings for repair parts.

SERVICE DEALER LOCATION

TO LOCATE THE NEAREST GENERAC SERVICING DEALER, PLEASE CALL OUR 800 NUMBER.
ONLY DEALER LOCATION INFORMATION CAN BE OBTAINED AT THIS NUMBER.

1-800-333-1322

THE MANUFACTURER SUGGESTS THAT THESE "RULES" FOR SAFE OPERATION BE COPIED AND POSTED IN POTENTIAL HAZARD AREAS. SAFETY SHOULD BE STRESSED TO ALL OPERATORS AND POTENTIAL OPERATORS OF THIS EQUIPMENT.

WARNING:

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

WARNING:

This product contains or emits chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

Study these "SAFETY RULES" carefully before installing, operating or servicing this equipment. Become familiar with the Owner's Manual and with the unit. The generator can operate safely, efficiently and reliably only if it is properly set up, operated and maintained. Many accidents are caused by failing to follow simple and fundamental rules or precautions.

Generac cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit, are, therefore, not all-inclusive. If you use a procedure, work method or operating technique Generac does not specifically recommend, you must satisfy yourself that it is safe for you and others. You also must make sure the procedure, work method or operating technique that you choose does not render the generator unsafe.

DANGER: Despite the safe design of this generator set, operating this equipment imprudently, neglecting its maintenance or being careless can cause possible injury or death. Permit only responsible and capable persons to operate or maintain this equipment.

DANGER: Generator sets can be dangerous. Only suitably qualified personnel should attempt to install or work on this type of equipment.

DANGER: Potentially lethal voltages are generated by these machines. Ensure all steps are taken to render the machine safe before attempting to work on the generator set.

DANGER: Parts of the generator set are rotating and/or hot during operation. Exercise care near running generator sets.

For safety reasons, Generac recommends that the initial start-up of this equipment is carried out by a Generac Authorized Dealer.

- Adequate, unobstructed flow of cooling and ventilating air is critical to correct generator set operation. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator set.
- Diesel engine exhaust fumes contain carbon monoxide, which can be DEADLY. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. This exhaust system must be properly installed, in strict compliance with applicable codes and standards. Following installation, do nothing that might render the system unsafe or in noncompliance with such codes and standards. Inspect the exhaust system regularly to ensure that it is free from leaks and damage, and that it is not possible for fumes to enter any area where people or animals are located. Never operate this equipment with a leaking or defective exhaust system. Repair or replace any damaged or leaking component immediately.
- Keep hands, feet, clothing, etc., away from drive belts, fans, and other moving or hot parts. Never remove any drive belt or fan guard while the unit is operating.
- When working on this equipment, remain alert at all times. Never work on the equipment when you are physically or mentally fatigued.
- Before performing any maintenance on the generator set, disconnect its battery cables to prevent accidental start up. Disconnect the cable from the battery post indicated by a NEGATIVE, NEG or (-) first. When reconnecting the battery, connect the NEGATIVE, NEG or (-) last.
- This generator set may be capable of automatic, unattended operation, and may start and run at any time. To prevent possible injury under such conditions, NEVER work on a generator in automatic mode. Before commencing work, select the control system to "OFF," disconnect generator starting battery and isolate any other sources of electrical power to the machine (such as battery charger or engine heater supplies).
- Never use the generator or any of its parts as a step. Stepping on the unit can stress and break parts, and may result in dangerous operating conditions from leaking exhaust gases, fuel leakage, oil leakage, etc.
- Inspect the generator set regularly, and repair or replace all damaged or defective parts immediately.
- Remove the fuse from the battery charger before disconnecting the battery to minimize the chance of equipment damage.

For fire safety, the generator must be installed and maintained properly. Installation always must comply with applicable codes, standards, laws and regulations. Adhere strictly to local, state and national electrical and building codes. Comply with regulations the Occupational Safety and Health Administration (OSHA) has established. Also, ensure that the generator is set up in accordance with the manufacturer's instructions and recommendations. Following proper set up, do nothing that might alter a safe installation and render the unit in noncompliance with the aforementioned codes, standards, laws and regulations.

- Keep a fire extinguisher near to the generator set at all times. Extinguishers rated "ABC" by the National Fire Protection Association are appropriate for use on generator sets and are useful for small fires. For more sophisticated fire protection systems, contact your local fire department for advice, or contact a specialist fire protection company.

The generator set covered by this manual produces dangerous electrical voltages and can cause fatal electrical shock. Avoid contact with bare wires, terminals, connections, etc., while the unit is running. Ensure all appropriate covers, guards and barriers are in place before operating the generator set. If work must be done around an operating unit, stand on an insulated, dry surface to reduce shock hazard.

- The National Electric Code (NEC) requires the frame and external electrically conductive parts of the generator set to be connected to an approved earth ground. Local electrical codes also may require proper grounding of the generator electrical system.
- Operation of the generator set in damp or wet locations can be extremely hazardous. Electrical resistance to current is reduced whenever items become wet.
- Never wear jewelry or watches when working on this equipment. Jewelry and watches can conduct electricity resulting in electric shock, or may get caught in moving components causing injury.

In case of accident caused by electric shock, immediately shut down the source of electrical power. If this is not possible, attempt to free the victim from the live conductor. AVOID DIRECT CONTACT WITH THE VICTIM. Use a nonconducting implement, such as a board or a rope, to free the victim from the live conductor. If victim is unconscious, apply first aid and get immediate medical help.

Do not smoke around the generator set. Wipe up any fuel or oil spills immediately. Ensure that no combustible materials are left on or near the generator set, as FIRE or Explosion might result. Keep the area surrounding the generator set clean and free from debris.

- Diesel fuel can be hazardous. Regularly inspect the installation for leaks and rectify them immediately.

IDENTIFICATION RECORD

DATA PLATE

Every generator has a DATA PLATE which contains important information pertinent to the generator. The data plate lists the unit's serial number, its rated voltage, amps, wattage capacity, phase, frequency, rpm, power factor, etc.

Generator Model Number: This number is the key to numerous engineering and manufacturing details pertaining to your unit. Always supply this number when requesting service, ordering parts, or seeking information.

Voltage Code X: The GR Series generators are capable of supplying a variety of single-phase and 3-phase voltages, in total referred to as an "X" voltage code. They include the following:

- 120/208 to 139/240 volts, single phase, 60 Hz.
- 120/208 to 139/240 volts, 3-phase, 60 Hz.
- 240/416 to 277/480 volts, 3-phase, 60 Hz.

NOTE:

The above voltage ratings are stated in the form, V_{ph}/V_L.

— V_{ph} is the phase voltage (i.e., voltage above neutral).

— V_L is the line-to-line voltage.

EQUIPMENT DESCRIPTION

This equipment is a revolving field, alternating current generator set. The generator is designed to supply electrical power for the operation of compatible, electrical loads when Utility Power is unavailable.

The generator's revolving field is directly connected to and driven by an engine by means of flexible discs and a coupling assembly. Units with 4-pole rotors are driven at speeds of 1800 rpm to supply a rated frequency of 60 Hz.

The unit can be equipped with an optional dual axle highway transportable trailer (Model No. 004600-0) equipped with breakaway safety chains and a jack stand. The trailer may be installed either at the factory using Model No. 004605-0 or shipped seperately for freight savings.

STANDARD GENERATOR FEATURES

This generator incorporates the following features:

- The unit meets temperature rise standards for Class "F" insulation as defined by NEMA MG1-22.40, NEMA MG1-1.65 and NEMA MG1-1-66.
- The generator is self-ventilated and drip-proof constructed.
- The voltage waveform deviation, total harmonic content of the AC waveform and "telephone influence factor" have been evaluated and are acceptable according to NEMA MG1-22.
- A state of the art magnetic circuit provides minimal level of waveform distortion and an electro-magnetic interference level which meets accepted requirements for standard AM radio, TV and marine radio telephone applications.

GENERATOR SPECIFICATIONS

Refer to the DATA PLATE on your particular generator for rated watts (kW), rated maximum amperes, rated AC frequency, rated voltage, number of phases and other pertinent information.

ENGINE SPECIFICATIONS

General
Type .....Diesel
Cylinders and Arrangement.....6, in-line
Displacement.....6.8 Liter (414 inches3)
Bore.....106mm (4.19 inches)
Stroke.....127mm (5 inches)
Compression Ratio .....17.0 to 1
Intake Air .....Turbo Charged
No. of Main Bearings 7
Governed Engine Speed .....See DATA PLATE
Maximum Horsepower at 1800 rpm 166
Engine Lubrication System
Type of Oil Pump .....Gear
Oil Filter .....Full Flow Cartridge
Crankcase Oil Capacity.....17 liters (4.5 U.S. gallons)
Cooling System
Type .....Pressurized, closed recovery
Coolant Capacity
System.....17.8 liters (4.7 U.S. gallons)
Engine .....11.3 liters (3 U.S. gallons)
Radiator .....6.5 liters (1.75 U.S. gallons)
Coolant Flow Per Minute
At 1800 rpm .....174 liters (46 U.S. gallons)
Heat Rejection to Coolant .....211,500 BTU/hr.
Cooling Fan .....Pusher type
Diameter of Fan .....559mm (22 inches)
Intake Air Flow Required
60 Hz. .....11.5 m^3/min. (406 cfm)
Exhaust System
60 Hz. .....22.6m^3/min. (798 cfm)
Exhaust Temperature at Rated Output.....573°C (1,063°F)
Engine Electrical System
DC Alternator Output.....55 amps at 12 volts
Starter Motor .....12 volt DC
Recommended Battery .....(1) 12 volt, 135 A.H., 4DLT
Ground Polarity.....Negative (–)

Fuel Consumption

Model	50%	75%	100%	Standby
GR125 at 60 Hz. (gph)	3.4	5.1	6.8	7.1
(liters per hour)	12.8	19.3	25.7	26.8

INSTALLATION

■ STANDBY ELECTRIC SYSTEM

A standby electric system may be defined as a system in which the generator is used to operate critical electrical loads normally powered by a utility power source when the utility power source fails or is not present.

- If the units are to operate electrical loads in standby system applications, the units may be used up to their rated capacity. If the total electrical power demanded by all loads in a system is greater than the rated limit, only power essential or key loads (up to the stated capacity).
- Generac does not recommend installing or operating a trailer mounted generator indoors. Other units are available which are better suited for indoor installations.
- A double throw transfer switch is required in standby electric system applications to prevent electrical feedback between the generator and the utility power circuit.
- Figure 1 illustrates a typical standby electric system. Figure 2 shows a schematic diagram of such a system. The transfer switch is used to select which power supply (generator or utility) will operate load circuits in such a system. The transfer switch also prevents load circuits from being connected to both power supplies at the same time.
- If the installer has not installed a transfer switch and modified the electric system as shown in Figure 2, plug critical electrical devices (furnace, fan, sump pump, water pump, etc.) directly into one of the generator's output receptacles.
- If the electrician has installed a transfer switch and a connection box, use a suitable, approved cord set between the connection box and a suitable generator receptacle, or between the connection box and the generator's full capacity terminal studs.

DANGER: If existing electrical circuits in a building are normally powered by the utility source, the installer must provide a positive means of making sure that both power supplies never feed to the load circuits at the same time.

- Never connect the generator output to any live building circuits. If the generator is connected to any existing electrical circuit during a commercial power outage, a positive method of isolating the two power supplies must be provided. The usual method of isolating the circuits is by means of a double throw transfer switch.

Figure 2 - Simple Standby Electric System

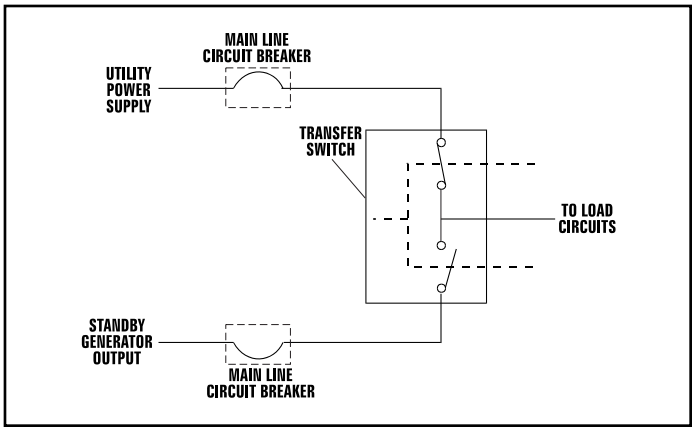
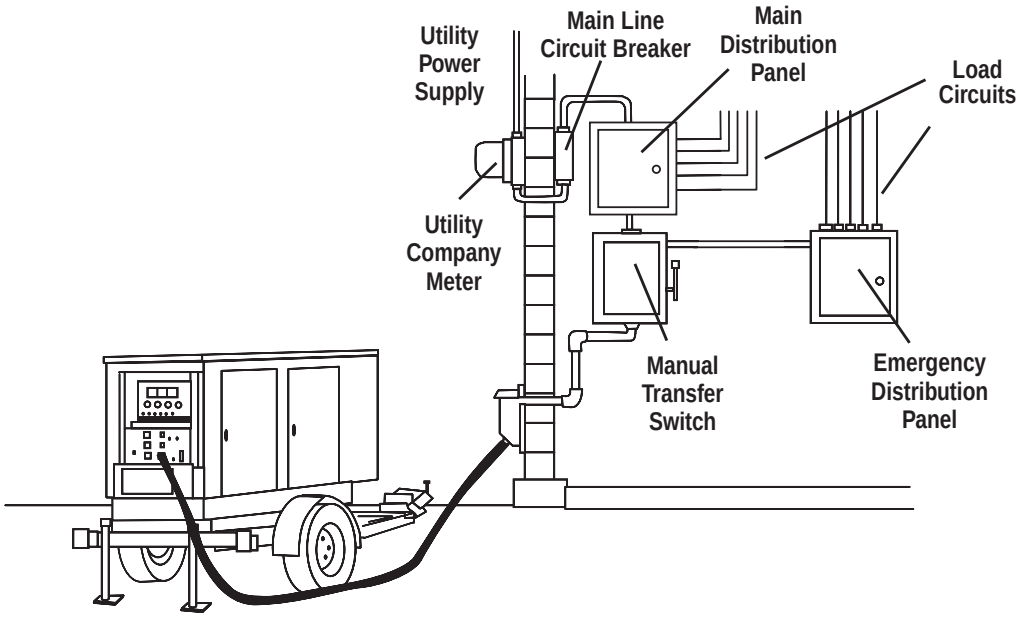


Figure 1 - Typical Standby Electric System



DANGER! A hazard exists during a power outage if the generator is connected to building circuits and no method of positively isolating the generator from the utility supply is provided.

Power company workers attempting to restore utility power will open a switch between the main power supply and the spot where they are working. If the home or building electrical circuits are not isolated from the utility supply, generator AC output will backfeed through the building electrical circuits and up the power line. A power company worker may be electrocuted.

If utility and generator power are not isolated and utility power is suddenly restored while the generator is powering load circuits, the generator can be severely damaged.

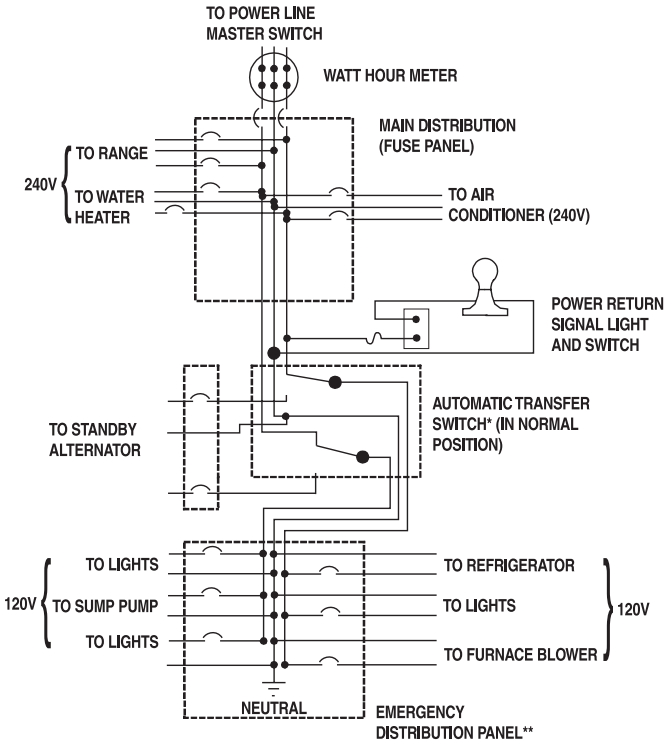
EMERGENCY CIRCUIT ISOLATION

One isolation method is to have emergency circuits (important or essential items to be powered during a utility outage) grouped together and rewired into a separate "emergency distribution panel" (Figure 3). Using this method helps prevent accidental overloading of the generator or the specific generator receptacle in use.

Loads fed by this emergency distribution panel must not exceed the wattage/amperage rating of the generator or the specific receptacle in use.

A transfer switch having an ampere rating equal to or exceeding the ampere rating of the emergency circuit should be connected between the building's main electrical distribution panel and the emergency distribution panel.

Figure 3 - Emergency Circuit Isolation



*Ampere rating must be equal to or exceed the ampere rating of the emergency distribution panels.

**Ampere capacity not to exceed the alternator rating. Only these items will be powered by the standby alternator. If the electrician sizes the load properly, the alternator cannot be overloaded.

All wiring must conform to the United States National Electrical Code (NEC) and all state and local codes. Consult a qualified licensed electrician.

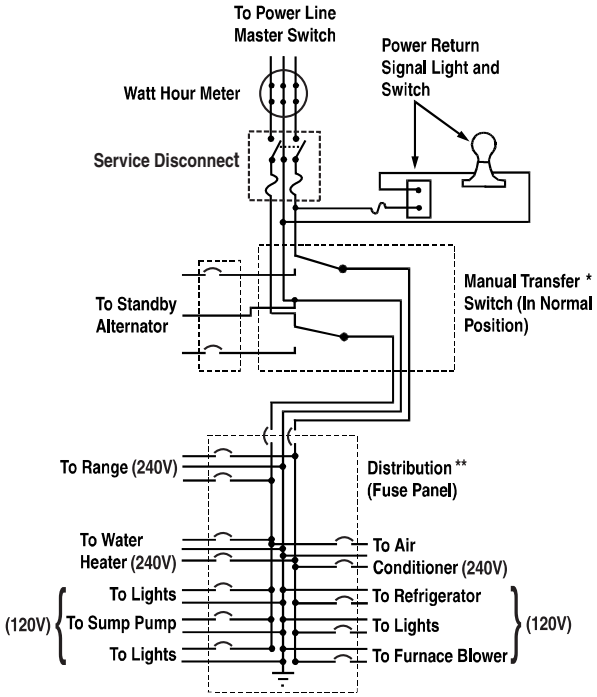
The above illustration assumes the utility is supplying 120/240 volt single phase electric service.

TOTAL CIRCUIT ISOLATION

If the emergency circuits (Figure 4) are not or cannot be wired together in a separate emergency distribution panel, select the circuits and specific appliances to be powered by the generator during a utility power failure. When this is done, take care to avoid overloading the generator or generator receptacles.

When using the total circuit isolation method, the ampere rating of the transfer switch must equal the rating of the normal incoming utility service.

Figure 4 - Total Circuit Isolation Method



*Ampere rating must be equal to or larger than main (normal) utility entrance service.
**With this system take care to prevent overloading the alternator. During utility power failure, turn OFF individually all load items to distribution panel. Only certain items can be turned back on during alternator operation. Have your electrician specify these items so you do not overload the alternator. All wiring must conform to the United States National Electrical Code (NEC) and all state and local codes. Consult a qualified licensed electrician. The above illustration assumes the utility is supplying 120/240 volt single phase electric service.

PREPARATION BEFORE USE

CAUTION: Prior to initially starting the generator, you must properly prepare it for use. Any attempt to crank or start the engine before it has been properly serviced with the recommended oil may result in an engine failure. Also, engine coolant level must be checked and replenished if necessary.

■ ENGINE LUBRICATION

Check engine crankcase oil level prior to use and add oil to the proper level. See "Maintenance" section for recommendations.

■ ENGINE COOLANT

Check engine coolant level and add the recommended coolant mixture as required. Refer to "Maintenance" section.

■ FUEL

Fill the fuel tank with the correct recommended diesel engine fuel (see "Maintenance" section). The base tank holds 165 gallons of fuel, if so equipped.

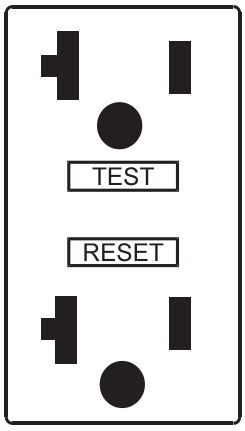
NOTE: If the unit has been idle for a long period of time or if fuel lines or fuel system components have been removed and re-installed, the fuel system may require bleeding to remove air from the system. See "Maintenance" section for fuel system bleeding procedures. Air in the fuel system causes hard starting and rough engine operation. All fuel system lines must be installed and must be tight. A loose line may show no sign of leakage, but may draw air into the system.

■ CORD SETS - 120 VOLT GFCI DUPLEX RECEPTACLE

CAUTION: Panel receptacles can supply only single-phase AC output. Never connect any 3-phase electrical load to a receptacle.

The generator is equipped with a 120 volt ground fault circuit interrupter (GFCI) duplex receptacle on the generator receptacle panel (Figure 5). See "Ground Fault Protection'" on Page 14. This outlet consists of a "pair" of receptacles, protected against overload by a 20-amp, push-to-reset type circuit breaker. Thus, use the receptacle pairs to power 120 volts, 60 Hz, AC electrical loads requiring up to 20 AC amperes of total current.

Figure 5 - 120 V, GFCI Duplex Outlet



Note:

The GFCI outlets are supplied by a "tap" on the main winding. This is done to reduce the maximum voltage that is present on this outlet. The voltage on this outlet will be as follows:

Generator Voltage	Outlet Voltage
120/208V or 240/416V	105V
139/240V or 277/480V	122V

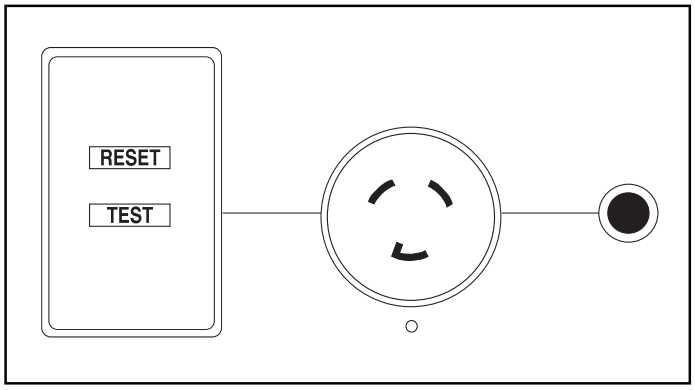
Use only high quality, well-insulated, 3-wire, grounded cord sets with the 120-volt duplex type receptacles. Cord sets should be rated 20 AC amperes at 135 volts or greater.

120 VOLT LOCKING TYPE RECEPTACLE

CAUTION: Panel receptacles can supply only single-phase AC output. Never connect any 3-phase electrical load to a receptacle.

This locking type receptacle (Figure 6) is protected against ground faults with a ground fault circuit interrupter (GFCI) module. See “Ground Fault Protection” on Page 14. It is also protected against overload by a 20-amp, push-to-reset type circuit breaker. The receptacle, a NEMA L5-20R type, requires a mating NEMA L5-20P connector plug. Use only high quality, well-insulated, 3-wire, grounded cord set with connector plug. The cord set must be rated for 20 AC amperes at 135 volts (or greater) electrical loads.

Figure 6 - 120 Volt, Locking Type Receptacle



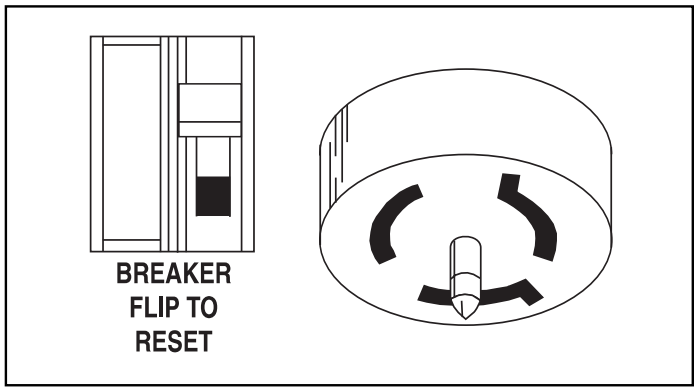
CAUTION: Any attempt to power total loads in excess of 20 amperes from the 120V receptacle pair, or the 120V locking type receptacle, will trip open a circuit breaker, blocking power to either receptacle.

120/208 TO 139/240 VOLTS, 50 AMP LOCKING TYPE RECEPTACLE

CAUTION: Panel receptacles can supply only single-phase AC output. Never connect any 3-phase electrical load to a receptacle.

These two receptacles are each protected against overload by two seperate 50 amp, flip-to-reset type circuit breakers. These receptacles are type CS6369 and require the proper mating plugs. Use only high quality, well insulated, 3-wire, grounded cord sets with mating 50 amp connector plugs. The cord sets used must be rated for 1-phase, 50 AC amps at 250 volts (or greater) electrical loads (Figure 7).

Figure 7 - 120/208 Volts, 50 Amp Receptacle



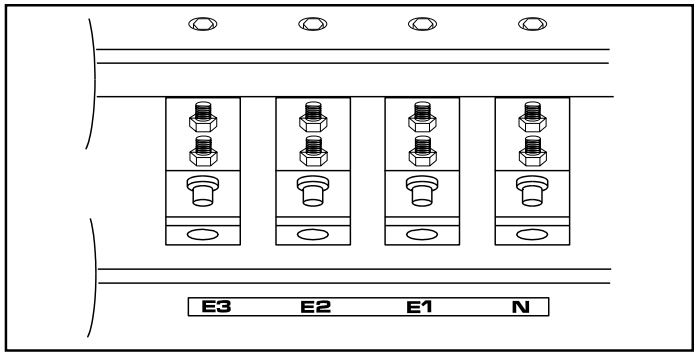
The voltage on this receptacle can be adjusted between 120/208 volts and 139/240 volts. Adjusting for 127/220 volts AC with the voltage adjustment dial is also acceptable for most 120/240 volts loads.

WARNING! Never unplug a connector plug from any panel receptacle while an electrical load is connected and turned on. Conversely, never plug a load in while that load is turned on. Dangerous electrical arcing can occur between the receptacle and the connector plug.

FULL CAPACITY TERMINAL COMPRESSION LUGS

Terminal compression lugs are provided in the two AC power panels (Figure 8). Four terminal studs in one panel are identified as E3, E2, and E1, N (neutral) high voltage connections. The studs for low voltage connections are labeled N (Neutral), L1, L2, and L3 in the second panel. These studs may be used to operate either single or 3-phase electrical loads at up to the full-rated wattage/amperage capacity for each mode of operation (1 phase or 3 phase). Terminal stud AC output is limited by the generator's 500 amp main circuit breaker (CB7) for 208 volts AC loads or the 200 amp main circuit breaker (CB8) for 480 volts AC loads.

Figure 8 - High Voltage Terminal Compression Lugs



CAUTION: Although you can operate single-phase loads through the terminal lugs as well as the receptacles, DO NOT attempt to connect any 3-phase loads to the receptacles.

- Wiring cables for connecting loads to terminal studs must be rated 480 volts at 200 AC amperes (or greater) for loads on E1, E2, E3, N and 240 volts at 500 AC amps (or greater) for loads on L1, L2 L3.
- When connecting electrical loads, be sure the voltage adjust dial is positioned to the correct voltage. The dial permits you to adjust the voltage from 120/208 volts and 240/416 volts up to 139/240 volts and 277/480 volts.

CAUTION! Voltage adjust dial affects all receptacles and terminals at the same time.

NOTE:

All receptacles and terminals are available at all times and can be loaded at the same time. MAXIMUM TOTAL LOAD must not exceed generator rating. Maximum load for single-phase or three-phase operation must not exceed the rating for that particular mode of operation (rating for single-phase may be less than for three-phase operation). The total load connected to any phase, including loads connected to receptacles, must not exceed the rated generator output per phase.

- Set voltage adjust dial to "120/208V" for 120 volts, single-phase or 208 volts, 3-phase when connecting for one of these voltages. See "Voltage Adjust Dial" on page 12. Connect cord set leads as follows:
  - L1 to N = 120 volt, single-phase
  - L1 to L2 = 208 volt, 3-phase
  - L2 to N = 120 volt, single-phase
  - L2 to L3 = 208 volt, 3-phase
  - L3 to N = 120 volt, single-phase
  - L3 to L1 = 208 volt, 3-phase
- Set the voltage adjust dial to "139/240V" for 139 volt, single-phase or 240 volt, 3-phase when connecting for one of these voltages. See "Voltage Adjust Dial" on page 12. Then connect cord set leads as follows:
  - L1 to N = 139 volt, single-phase
  - L1 to L2 = 240 volt, 3-phase
  - L2 to N = 139 volt, single-phase
  - L2 to L3 = 240 volt, 3-phase
  - L3 to N = 139 volt, single-phase
  - L3 to L1 = 240 volt, 3-phase

WARNING! With voltage set line-to-line for 240V, line-to-neutral voltage will be 139V at receptacles.

- Set the voltage adjust dial to "240/416V" for 240 volt, single-phase or 416 volt 3-phase when connecting for one of these voltages. See "Voltage Adjust Dial" on page 12. Then connect cord set leads as follows:
  - E1 to N = 240 volt, single-phase
  - E1 to E2 = 416 volt, 3-phase
  - E2 to N = 240 volt, single-phase
  - E2 to E3 = 416 volt, 3-phase
  - E3 to N = 240 volt, single-phase
  - E3 to E1 = 416 volt, 3-phase
- Set the voltage adjust switch to "277/480V" for 277 volt, single-phase or 480 volt, 3-phase when connecting for one of these voltages. See "Voltage Adjust Dial" on page 12. Then connect cord set leads as follows:
  - E1 to N = 277 volt, single-phase
  - E1 to E2 = 480 volt, 3-phase
  - E2 to N = 277 volt, single-phase
  - E2 to E3 = 480 volt, 3-phase
  - E3 to N = 277 volt, single-phase
  - E3 to E1 = 480 volt, 3-phase

CAUTION: Do NOT connect E1 or E2 or E3 to L1 or L2 or L3. Damage to equipment, personal injury or death may result.

DANGER: Connect cable leads to the power terminal studs when the engine is shut down. The panel door is equipped with a push-button safety interlock switch (Figure 9) that prevents engine startup and operation while the door is open. Opening the door while engine is running immediately shuts down the engine. The switch is provided for your protection. Do not attempt to bypass or disconnect it.

TRANSFER SWITCH TERMINAL

The AC power panel includes a terminal strip for connecting an automatic transfer switch, such as a GTS transfer switch (Figure 10). This connection allows you to use the unit as a standby generator in practical applications or in emergency situations.

Figure 9 - Interlock Switch on Panel Door

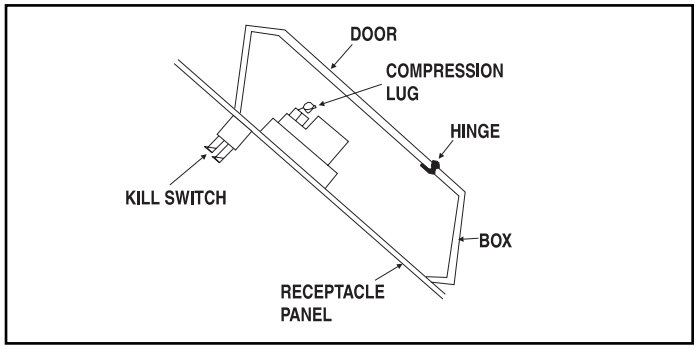
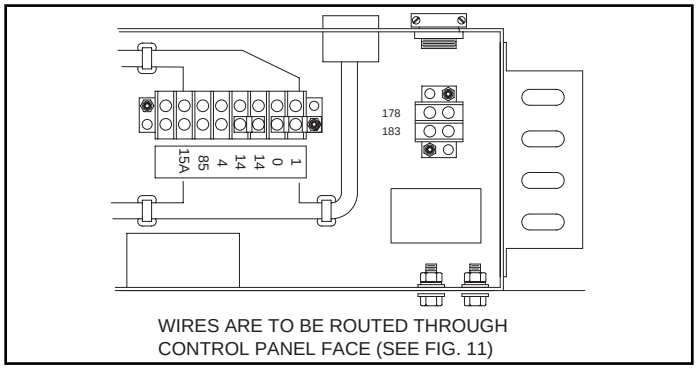


Figure 10 - Transfer Switch Terminals



GROUNDING THE GENERATOR

The National Electric Code (NEC) requires that the frame and external electrically conductive parts of the generator be properly connected to an approved earth ground. Local electrical codes may also require that the unit be grounded. Consult with a local electrician for grounding requirements in the area.

Grounding helps prevent dangerous electrical shock if a ground fault exists in the generator or connected electrical devices. Grounding also helps to dissipate static electricity that often builds up in ungrounded devices. Static electricity alone can cause very painful shock and may cause one to believe that a shorted condition exists in equipment.

GROUNDING THE GENERATOR NEUTRAL

The neutral conductor of the generator may or may not need to be grounded depending if it is supplying a seperately derived system or being used as a Standby electric system for an existing, utility fed electrical system.

Seperately Derived System – A wiring system whose power is derived solely from the generator and that has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

A bonding conductor is required to be installed between the neutral conductor of the generator and the ground lug mounted on the frame of the mobile generator. The neutral conductor of the generator can be accessed at either of full capacity compression lug connections. The neutral terminal is labeled "N". Contact an electrician to determine the proper size conductor and to install the bonding conductor.

Standby Electic System – A bonding conductor is <u>not</u> required to be installed between the generator neutral and the generator frame. Consult an electrician to perform this installation.

STARTING BATTERY

This unit requires one 12 volt, Type 4DLT storage battery rated at 135 amp-hours (not included).

- The red battery cable (from starter contactor) should be connected to battery post indicated by a positive POS or (+).
- The black cable (from frame ground) must be connected to the battery post indicated by a negative, NEG or (—).
- The battery must be properly retained in its mounting tray, using the hardware provided.

SWITCHES, METERS AND LIGHTS

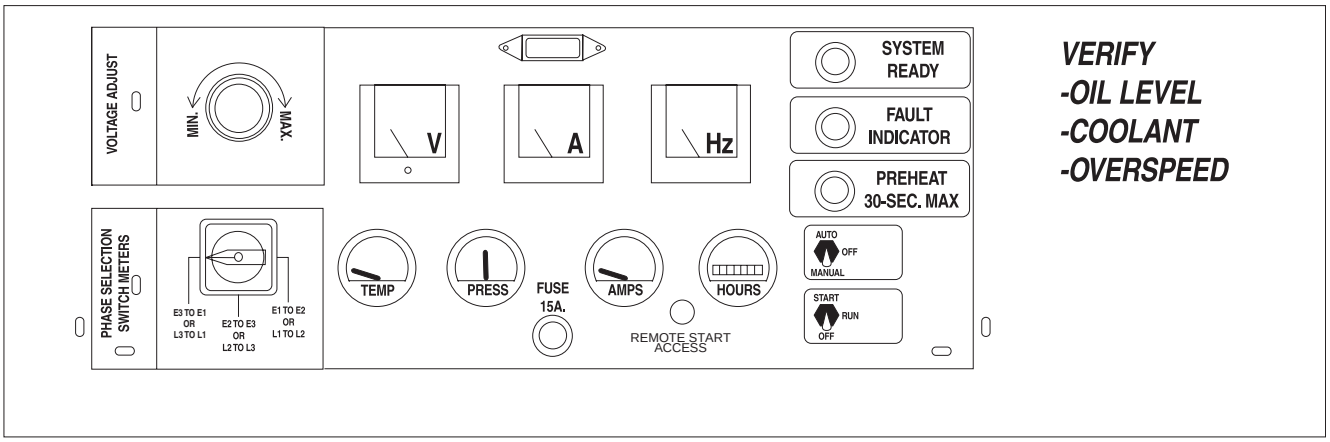
For all the components mentioned in this section, refer to Figure 11.

AC VOLTMETER

This AC voltmeter indicates the voltages for generator AC output. Also see "Voltage Adjust Dial".

When connecting electrical loads, be sure the voltage adjust dial is positioned to the correct voltage. The voltage adjust dial permits you to adjust voltages from 120/208 volts and 240/416 volts up to 139/240 volts and 277/480 volts.

Figure 11 - Generator Control Console



CAUTION! Voltage adjust dial affects all receptacles at the same time.

NOTE:

All receptacles and terminals are available at all times and can be loaded at the same time. MAXIMUM TOTAL LOAD must not exceed generator rating. Maximum load for single-phase or three-phase operation must not exceed the rating for that particular mode of operation (rating for single-phase may be less than for three-phase operation). The total load connected to any phase, including loads connected to receptacles, must not exceed the rated generator output per phase.

AC AMMETER

Indicates current draw of connected loads, in amps. Rated maximum continuous load current should be kept within the limits of the rated wattage capacity of the unit for single phase and for 3-phase loads.

FREQUENCY METER

Indicates generator AC output frequency in "Hertz" (cycles per second). The generator's rated AC frequency is 60 Hertz, which is supplied at 1800 rpm. The engine governor was factory adjusted at no-load to about 1860 rpm or 62 Hertz. Maximum droop with the generator fully loaded should not be below about 59 Hertz. While operating, normal frequency is between 59-62 Hertz.

NOTE: The engine automatically shuts down and the fault indicator light goes ON if frequency exceeds about 74 Hertz (2220 rpm). This is an "overspeed" condition.

COOLANT TEMPERATURE GAUGE

Indicates engine coolant temperature. Coolant temperature during unit operation is about 170°-200°F. If the coolant temperature exceeds about 250°F, the engine automatically shuts down and the fault indicator light goes ON.

OIL PRESSURE GAUGE

Indicates engine oil pressure.

DC AMMETER

The engine is equipped with a belt-driven DC alternator which maintains battery state of charge while the unit is running. This ammeter indicates rate of charge to the battery while operating.

- Immediately after startup, the DC ammeter needle may swing to the right of zero (+ - charging) but should drop to zero or just slightly to the right of zero (+) within a few minutes.
- If the needle drops to the left of zero (or —), battery is discharging. Investigate and correct this problem immediately.
- If the ammeter needle fluctuates, investigate and correct immediately. Disconnect battery and control panel fuse prior to working on unit.

HOURMETER

Provides a continuous indication of engine-generator operating time, in hours and tenths of hours. Use the hourmeter with the periodic maintenance schedule (See "Maintenance" section).

FAULT INDICATOR

Lamp goes on if any one or more of the following automatic shutdown faults occurs:

- High coolant temperature (above 250°F).
- Low coolant level.
- Low engine oil pressure (below 10 psi).
- Overspeed above about 74 Hz (2220 rpm).
- Overcrank

SYSTEM READY LAMP

This lamp goes ON when the unit is running. The lamp will not go ON if a fault has occurred and if the Start/Run/Off switch hasn't been switched to OFF to reset the fault.

PRE-HEAT SWITCH

This engine comes with INTAKE AIR HEATERS to heat the combustion chamber air for quicker and easier starts. Prior to starting a cold engine manually, hold the PREHEAT switch for about 15 seconds. DO NOT PREHEAT FOR MORE THAN 30 SECONDS.

AUTO/OFF/MANUAL SWITCH

This safety switch should be used to prevent automatic startup of the engine when working on the engine-generator. Use the switch as follows:

- AUTO Position: Always set switch to AUTO for automatic system operation. This means, when this generator is installed along with a GTS type automatic transfer switch, the generator automatically cranks and starts when the utility source voltage drops below a preset level. See "Engine Control Operation".
- OFF Position: Engine cannot be started either automatically or manually. Always set switch to OFF before working on or around the engine-generator.
- MANUAL Position: Engine can be cranked and started manually using the panel Start/Run/Off switch. Engine will not start automatically.

START/RUN/OFF SWITCH

To crank and start the engine, hold the Start/Run/Off switch at "Start". When engine starts and runs at rated frequency, release the switch to its center (Run) position. To shut engine down, set the switch to the "Off" position.

PANEL LIGHT

The panel light will turn on when the unit is running or cranking.

VOLTAGE ADJUST DIAL

This potentiometer permits the operator to select the desired output voltage from the alternator. Turning the voltage adjust dial counterclockwise decreases the voltage and allows operation of loads down to 120/208 volts AC and 240/416 volts AC and a little below.

Turning the dial clockwise, the unit can operate up to 139/240 volts and 277/480 volts AC and slightly higher loads. The generator can power any load with voltage between these two extremes including 127/220 volts AC near the center of the dial.

NOTE:

The voltage indicated on the voltage adjust dial is line-to-line voltage (See "Voltage Code X" on page 4).

CAUTION! Voltage adjust dial affects all receptacles and terminals at the same time.

NOTE:

All receptacles and terminals are available at all times and can be loaded at the same time. MAXIMUM TOTAL LOAD must not exceed generator rating. Maximum load for single-phase or three-phase operation must not exceed the rating for that particular mode of operation (rating for single-phase may be less than for three-phase operation). The total load connected to any phase, including loads connected to receptacles, must not exceed the rated generator output per phase.

PHASE SELECTION SWITCH

This switch permits selections between the phases for which the line-to-line voltage and amperage readings are displayed on the console AC voltmeter and ammeter.

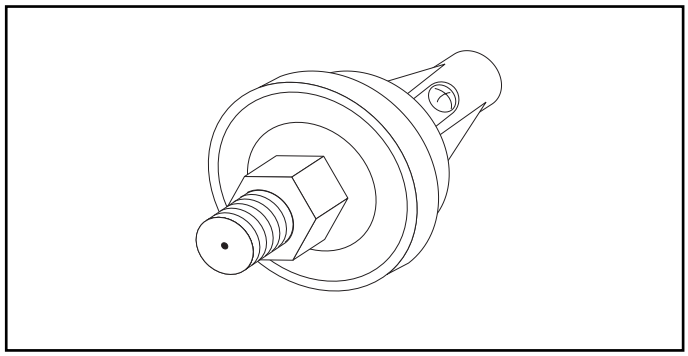
ENGINE PROTECTIVE DEVICES

Unlike an automobile, the generator may be required to run for long periods without an operator nearby to monitor engine parameters (oil pressure, temperature, engine speed, etc.). For that reason, the unit is equipped with various protective devices which will stop the engine automatically if an operational fault occurs.

LOW OIL PRESSURE SWITCH

This normally-closed, pressure actuated switch (Figure 12) is held open by engine oil pressure during running. Should engine oil pressure drop below about 10 PSI, the switch contacts will close. When contacts close, the engine automatically shuts down and the fault indicator lamp goes ON.

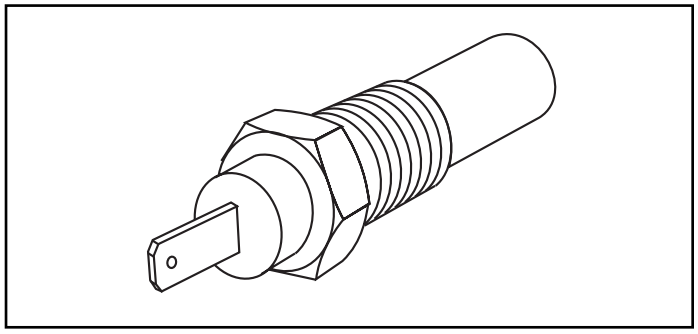
Figure 12 - Low Oil Pressure Switch



HIGH COOLANT TEMPERATURE SWITCH

This thermostatic, normally-open switch (Figure 13), is immersed in engine coolant. Should coolant temperature increase above about 250°F, the switch contacts close and an automatic shutdown occurs.

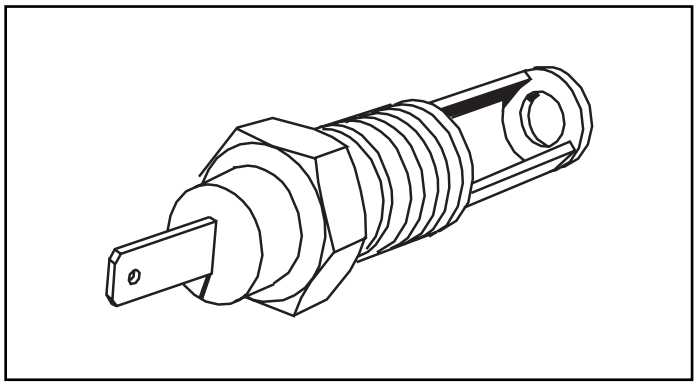
Figure 13 - High Coolant Temperature Switch



LOW COOLANT LEVEL SENSOR

If engine coolant level is low, a high temperature condition can exist without affecting the high coolant temperature switch. However, the low coolant level sensor (Figure 14) will detect the low level condition and initiate an engine shutdown.

Figure 14 - Low Coolant Level Sensor



DC CONTROL/LATCH-CRANK CIRCUIT BOARD

The circuit board, housed inside the generator control console, controls engine starting, running and shutdown. The board provides either manual or automatic starting. It senses the generator is running by means of generator AC output.

ENGINE STARTUP

When the engine starts, the starter is disabled when AC output reaches about 40 volts AC (rms). Engine speed at that point has reached between 1000 to 1250 rpm.

A nominal 5-second time delay after starter cutout is provided. That is, if any one or more of the shutdown faults (low oil pressure, high coolant temperature, low coolant level, etc.) occurs 5 seconds or more after the starter cutout has occurred, the engine shuts down and the fault indicator lamp goes ON after the fault has been maintained for 2 seconds.

AFTER FAULT SHUTDOWN

The engine cannot start until the engine control is reset, following an automatic fault shutdown, with the fault lamp ON. Reset the control by setting the Start/Run/Off switch to "Off" and then back to "Start."

OVERSPEED

A speed circuit controls engine cranking, start-up, operation and shutdown. Engine speed signals are delivered to the circuit board whenever the unit is running. Should the engine overspeed above a safe, preset value, the circuit board initiates an automatic engine shutdown.

OVERCRANK SHUTDOWN

If the engine fails to start after a crank cycle of 90 seconds (8 seconds on, 8 seconds off), this function will illuminate the fault indicator and stop the crank cycle.

OPERATING INSTRUCTIONS

BEFORE STARTING

- Prior to starting the engine, make sure the engine-generator has been properly prepared for operation as outlined in PREPARATION BEFORE USE (Pages 7-10).
- Check that both of the power panel (compression lug) doors are closed and latched. Engine will not start if any power panel door is open (Figure 9 on page 9).
- Check that the Voltage Adjust Dial is adjusted for the proper voltage that your loads require.

STARTING THE ENGINE

- Be sure all necessary cables are connected to the full capacity compression lugs before starting the engine (see pages 8-9). ALL electrical loads must be switched off before starting the engine (including loads connected to the receptacle panel).
- Place the Auto/Off/Manual switch in "Manual" position.
- Crank the unit by moving the Start/Run/Off switch to "Start".
- When engine starts and runs at rated Hertz, release the start switch to the "Run" position.
- Let the engine stabilize and warm up for a few minutes. Then turn on the desired electrical loads.

NOTE:

During starting, the fault indicator lamp remains ON until oil pressure builds. If any monitored shutdown occurs, restarting of the engine cannot occur until the controls have been reset. To do this, set the Start/Run/Off switch to "Off" and then back to "Start."

SHUT DOWN

- Turn all loads OFF.
- Let the engine run at no-load for a few minutes to stabilize internal engine temperatures.
- On the generator control console, set the Start/Run/Off switch to "Off". Wait for the engine to come to complete stop.

OPERATION IN ICE OR SNOW

If the generator has been exposed to freezing rain or snow, be sure to inspect the air inlet and outlet areas in the compartment. Do not operate the unit if snow or ice have blocked or obstructed the air openings.

The generator is equipped with a "pusher" type cooling fan. This type of cooling fan draws air into the generator, then expels the air outward through the engine radiator. If cooling air flow is obstructed, the engine-generator may overheat.

GROUND FAULT PROTECTION

The generator is equipped with a 120 volt duplex receptacle, and a 120V locking type receptacle. Each of these receptacles incorporates a Ground Fault Circuit Interrupter (GFCI) rated at 20 amps. These devices meet standards with applicable federal, state and local codes.

The GFCI protects against electrical shock that may be caused if a body becomes a path through which electricity travels to reach ground. This could happen if you touch an appliance or cord that is “live.” You don't even have to be on the ground, you could be touching plumbing or other material that leads to ground.

When protected by a GFCI, a person will still feel a shock, but the GFCI should cut it off quickly enough so a person in normal health should not have a serious electrical injury (Children can still be affected).

WARNING! THE GFCI WILL NOT PROTECT AGAINST THE FOLLOWING SITUATIONS: (1) LINE-TO-LINE SHOCKS (such as shocks from touching metal in both straight slots of an outlet); (2) CURRENT OVERLOADS OR LINE-TO-LINE SHORT CIRCUITS. THE FUSE OR CIRCUIT BREAKER AT THE DISTRIBUTION PANEL MUST PROVIDE SUCH PROTECTION.

Testing the GFCI: Test the GFCI outlets every month. Follow these instructions:

1. Push the black TEST button. Red RESET button should pop out from inner surface, which should allow no power to reach the outlet. Use a test lamp in each outlet.

CAUTION! If RESET button does not pop out or test lamp remains lit when RESET button does pop out, DO NOT USE ANY OUTLETS ON THE CIRCUIT. CALL A QUALIFIED ELECTRICIAN.

2. If the GFCI tests good, restore power by pressing the RED RESET button. THE RESET BUTTON MUST BE PUSHED FIRMLY AND FULLY INTO PLACE UNTIL IT LOCKS AND REMAINS IN THAT POSITION. IF THE GFCI DOES NOT RESET PROPERLY, DO NOT USE THE OUTLET — CALL A QUALIFIED ELECTRICIAN. Test lamp should go ON.
3. If the GFCI trips by itself at any time during or after installation, reset and perform steps 1 and 2. IF RESET BUTTON DOES NOT POP OUT WHEN TEST BUTTON IS PRESSED, DO NOT USE THE OUTLET. CALL A QUALIFIED ELECTRICIAN.

NOTE: Each 120 volt receptacle is protected with a 20 amp circuit breaker. The maximum total current from each receptacle is limited to 20 amps (See "Cord Sets - 120 Volt GFCI Duplex Receptacle", and "120 Volt Locking Type Receptacle).

MAINTENANCE

It is the owner's responsibility to perform all safety checks; to verify all required maintenance is performed for safe operation; and to have the equipment checked periodically by an authorized service technician. Normal maintenance service and replacement of parts are the responsibility of the owner/operator and, as such, are not considered defects in workmanship or material under the terms of the warranty.

Individual operating habits and equipment usage contribute to the need for maintenance service. Proper maintenance and care of your generator will help keep the number of problems and overall operating expenses at a minimum. Contact an authorized Generac Power Systems dealer/distributor or contact the factory for service aids.

100-HOUR BREAK IN

The first 100 hours is the break in period. Correctly breaking in the engine-generator is essential to minimize oil consumption and maximize engine performance. During break in, observe the following rules.

- For the 100 hours of operation, avoid light electrical loads. Load the unit at 50% or more of its capacity during this period. Repeated light loads during break in can cause improper seating of the engine piston rings, resulting in blowby and high oil consumption after prescribed break in period.
- Check engine oil level frequently during break in. It is normal for oil consumption to be higher than normal during this period. The proper break in oil is John Deere’s P/N TY22014.
- After the 100-hour break in, complete the tasks recommended under “100-Hour Break In Period”.
- If continuous light loads are applied to unit during break in period, run unit for another 100 hour break in period with the recommended engine oil.

100-HOUR BREAK IN PERIOD

After the first 100 hours of operation, contact an authorized service facility for the following maintenance. The generator owner is responsible for all charges.

- Change engine oil and filter.
- Check all fluid levels.
- During break in, don’t add oil until level is at the bottom of the crosshatching on dip stick.
- Inspect cooling system hoses for leaks, loose or defective clamps, and for damage or deterioration.
- Check the fuel system for leaks, condition, and tightness of fuel lines.
- Check the engine for proper operation.
- Check generator AC output. Make sure voltage and frequency are correct.

- Check the unit battery for proper electrolyte fluid level, proper state of charge, and condition.
- With engine running, note readings of all gauges and instruments.

RECOMMENDED ENGINE FLUIDS

■ ENGINE OIL

Use a high quality detergent oil having API classification "For Service CF-4 or CG-4" or oils conforming to CCMC-D5 or CCMC-D4 specifications.

Consider the ambient temperature when selecting the viscosity of lubricating oil for your engine. Use the following chart to determine the oil you use:

AMBIENT TEMPERATURE	OIL RECOMMENDATION
-40° to 30°C (-40° to 86°F)	SAE 0W-30
-30° to 30°C (-22° to 86°F)	SAE 5W-30
-20° to 40°C (-4° to 104°F)	SAE 10W-40
-15° to 50°C (5° to 122°F)	SAE 15W-40
0° to 30°C (32° to 86°F)	SAE 30
10° to 50°C (50° to 122°F)	SAE 40
API Service Certification	CG-4 or CF-4

NOTE:

Multi-viscosity diesel engine oils are preferred. If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval by 50%.

■ ENGINE COOLANT

The use of coolant products, as outlined is strongly recommended.

Coolant products to use are silicate ethylene glycol base coolants for heavy-duty diesel engines. Use when mixed with quality water and supplemental coolant additives (SCAs), if they meet the following specifications:

- ASTM D5345 (prediluted coolant)
- ASTM D4985 (coolant concentrate) in a 40% to 60% mixture of concentrate with quality water.

Coolants meeting these specifications require addition of supplemental coolant additives (SCAs), formulated for heavy-duty diesel engines, for protection against corrosion and cylinder liner erosion and pitting.

IMPORTANT:

Never use automotive-type coolants (such as those meeting ASTM D3306 or ASTM D4656). These coolants do not contain the correct additives to protect heavy-duty diesel engines. They often contain a high concentration of silicates and may damage the engine or cooling system.

■ SUPPLEMENTAL COOLANT ADDITIVES

The recommended coolant additive is John Deere's P/N TY16005 (or compatible) Liquid Coolant Conditioner.

IMPORTANT:

DO NOT over-inhibit antifreeze solutions, as this can cause silicate-dropout. When this happens, a gel-type deposit is created which retards heat transfer and coolant flow causing engine to overheat.

Operating without proper coolant additive will result in increased corrosion, cylinder liner erosion and pitting, and other damage to the engine and cooling system. A simple mixture of ethylene glycol and water WILL NOT give adequate protection.

The use of supplemental coolant additives reduces corrosion, erosion, and pitting. These chemicals reduce the number of vapor bubbles in the coolant and help form a protective film on cylinder liner surfaces. This film acts as a barrier against the harmful effects of collapsing vapor bubbles.

IMPORTANT:

Check inhibitors between drain intervals (every 600 hours or 12 months) of operation. Replenish inhibitors by the addition of a supplemental coolant additive as necessary. DO NOT use soluble oil.

■ FUEL

Use clean, fresh, No. 2D diesel fuel having a minimum Cetane Number "40" and conforming to ASTM* specifications.

*ASTM — American Society of Testing and Materials

CHECKING FLUID LEVELS

■ ENGINE OIL

Check engine oil level at least once daily (prior to use) or at least every 8 hours of operation, whichever comes first. The following rules apply:

- When checking oil level, the generator should be sitting on a level surface.
- Always check oil level BEFORE starting the engine, or wait at least 30 minutes after the engine is shut down.
- Avoid mixing different brands or different types of oil.
- The higher pressures and hotter temperatures in a diesel engine require that you use only Class CF-4 or CG-4 oil be used.

- Never operate the engine with oil below the crosshatching on dipstick.
- Never overfill the engine crankcase above the dipstick crosshatching.
- To check oil level, remove dipstick and wipe dry with a clean cloth. Then, re-insert dipstick into dipstick tube and remove again. Oil should be between the top of the crosshatching and "ADD" marks. Add oil as required.

■ ENGINE COOLANT

Maintaining adequate concentrations of glycol and inhibiting additives in the coolant is critical to protect the engine and cooling system against freezing, corrosion, and cylinder liner erosion and pitting.

Test the coolant solution at 600 hours or 12 month intervals and whenever excessive coolant is lost through leaks or overheating to ensure the necessary protection. If coolant level in radiator or recovery bottle is low, proceed as follows:

- Inspect the radiator cap gasket for wear or damage. Replace cap, if necessary.
- Have the radiator pressure cap tested at an automotive repair facility or at an authorized Generac service facility.
- Check cooling system hoses and radiator for leaks.

NOTE:

When working properly, the coolant recovery system keeps the radiator coolant at the proper level. The radiator cap is equipped with both a pressure relief and a vacuum relief valve. When hot radiator coolant expands, excess coolant opens the pressure relief valve and drains into the coolant recovery bottle. After shutdown, as coolant mixture in the radiator cools, it contracts to form a vacuum. The vacuum relief valve then opens, to draw coolant from the recovery bottle and return it to the radiator. The coolant recovery bottle must be kept filled to the proper level to maintain radiator coolant at the proper level.

■ FUEL

Check fuel quantity at least once daily (every eight hours) and prior to use. If equipped with optional factory trailer package, fill tank when level is between half full and 1/4 full.

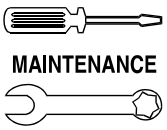
IMPORTANT:

NEVER PERMIT THE ENGINE TO RUN OUT OF FUEL. IF ENGINE RUNS OUT OF FUEL OR IF FUEL LEVEL IN TANK DROPS TOO LOW, AIR WILL ENTER FUEL SYSTEM LINES AND CAUSE SERIOUS PROBLEMS, SUCH AS HARD STARTING AND ROUGH, ERRATIC OPERATION. BLEED THE ENGINE FUEL SYSTEM WHEN IT RUNS OUT OF FUEL.

OWNER/OPERATOR PERIODIC MAINTENANCE

Some maintenance tasks may be beyond the capability of the owner/operator and should be done by a competent, qualified service technician. The owner/operator can do the following:

- Check the engine oil level once daily; more often during the 100-hour break in period.
- Inspect entire fuel system once each month. Look for leaks, damage, loose lines, etc.
- Inspect engine drive belts prior to initial use and once each month thereafter. Replace any belt that is worn, cracked weathered, or otherwise damaged. Check and adjust belt tension. Consider tension correct when applying thumb pressure midway between pulleys causes a belt deflection of about 3/8 to 3/4 inch.
- Check battery electrolyte fluid level once each week. Add distilled water, if needed. Also inspect battery posts, cables and terminals for tightness, cleanliness, corrosion. Clean and tighten as required.
- Drain water and sediment from the optional spin-on fuel filter once each week (if so equipped).
- Start and exercise the unit at least once each week. Run the engine for at least 30 minutes during this exercise period.
- Keep the unit clean and as dry as possible. Use a mild detergent and water to clean exterior surfaces. Areas with paint damage should be cleaned, dried and repainted as necessary. An automotive type of paint may be used on the outside of the compartment.
- If unit has the trailer option, check the tire pressure before using and at least once each week thereafter. Keep the tires properly inflated according to tire specifications.



BLEEDING THE FUEL SYSTEM

The fuel system for this engine has a self-bleeding function, so air should not enter the fuel lines unless the engine has been disassembled for any reason. Bleeding air from the fuel system involves manually actuating the fuel lift pump.

PERIODIC MAINTENANCE LIST

The following maintenance tasks should be performed by an authorized service facility at these periodic intervals.

DAILY

- Check engine oil and coolant level.
- Check air cleaner dust valve & restriction indicator, replace filter (as required).
- Visual walk around inspection.
- Inspect AC power cables and cord sets.

EVERY 50 HOURS OR 2 WEEKS

- Check fuel filter.

EVERY 250 HOURS OR 6 MONTHS

- Check battery state-of-charge and condition, service as necessary.
- Change engine oil and replace filter.**

**Change the oil for the first time after 100 hours maximum of (break-in) operation, then every 250 hours thereafter.

EVERY 600 HOURS OR 12 MONTHS

- Clean crankcase vent tube.
- Check air intake hoses, connections & system.
- Replace spin-on fuel filters.
- Check automatic belt tensioner and belt wear.
- Check cooling system.
- Coolant Solution analysis-add SCAs as needed.

EVERY 1200 HOURS OR 24 MONTHS

- Adjust droop on generator set engine.
- Pressure test cooling system.
- Flush cooling system.
- Check operation of engine protective devices (low oil pressure, high coolant temperature, low coolant level, overspeed).

EVERY 2000 HOURS OR 24 MONTHS

- Check and adjust engine valve clearance.
- Retorque engine intake manifold bolts.
- Retorque engine exhaust manifold bolts.
- Check injection timing.
- Check/inspect injection nozzles.
- Check engine compression pressure.

ADJUSTMENT OF FUEL INJECTION TIMING

A diesel engine does not have an electrical ignition system like those used on gaseous or gasoline-fueled engines. The diesel fuel is ignited by the heat of compression when the piston moves upward on its compression stroke. The engine firing is timed by precisely timing the injection of fuel into each cylinder at the proper moment. If the unit's injection system appears to be “out of time,” have the engine checked and adjusted by an authorized diesel engine service facility. Do not attempt to adjust ignition timing without proper tools, test equipment and general knowledge of the product.

ENGINE SPEED ADJUSTMENT

The engine speed is controlled either with a mechanical governor or electronically.

The mechanical, fixed speed governor is part of the fuel injection pump. The governor was factory set to maintain 62 Hertz (1860 RPM) with no electrical loads applied. Under full rated wattage/amperage capacity, frequency may droop to about 59-60 Hertz.

The electronic governor has a solid-state design for the controller circuit board and actuator. This design results in fast, stable engine response to load changes.The controller board was factory set to maintain the unit's rated speed of 1800 rpm to achieve a frequency of 60 Hertz.

If the engine speed controller on the generator needs adjusting, contact an authorized service facility. They will have the proper equipment and trained personnel to complete all necessary adjustments.

**** Contact your nearest Generac/Guardian Authorized Dealer for assistance.**

WARNING! Do not adjust the engine governed speed without proper equipment and general know-how. The governed speed was factory set and should require no additional adjustment. Excessively high speeds are dangerous and increase the risk of personal injury or damage to equipment and/or property. Correct AC frequency and voltage are supplied only at the correct governed speed. Some connected electrical devices are extremely sensitive to frequency and voltage, and may be damaged by incorrect frequency and/or voltage. Operation of the unit at excessively low speeds imposes a heavy load on the engine when sufficient engine power is not available and may shorten engine life.

NOTE:

Generally, if AC frequency and voltage are both correspondingly high or low, the engine governor requires adjustment. If AC frequency is correct but voltage is not, the voltage regulator requires adjustment or some other problem exists.

VOLTAGE REGULATOR ADJUSTMENT

The generator's AC voltage regulator has been factory set to allow an operator to select proper voltage via the voltage adjust dial. If the voltage regulator on the generator needs adjusting, contact an authorized service facility. Only qualified service technicians should adjust voltage regulators.

GENERATOR ROTOR BEARING

The generator rotor is attached to the engine drive shaft at one end. The opposite end of the rotor rides in a prelubricated and sealed ball bearing that requires no additional lubrication for the life of the bearing.

MAJOR REPAIRS

Proper and regular maintenance of the generator is needed to make sure the generator has a long and trouble-free life. Only a qualified, competent generator service technician should perform all major generator service, including installation and replacement of factory approved repair parts. Only qualified, competent diesel engine repair facilities should service the engine, using only factory approved parts.

This section or your OWNER'S MANUAL consists of EXPLODED VIEWS pertaining to the generator and its engine, along with PARTS LISTS for the EXPLODED VIEWS. The PARTS LISTS consist of (a) an item number, (b) quantity required, (c) a part number and (d) a description of the part. The ITEM NUMBER relates to an identical number in the EXPLODED VIEW.

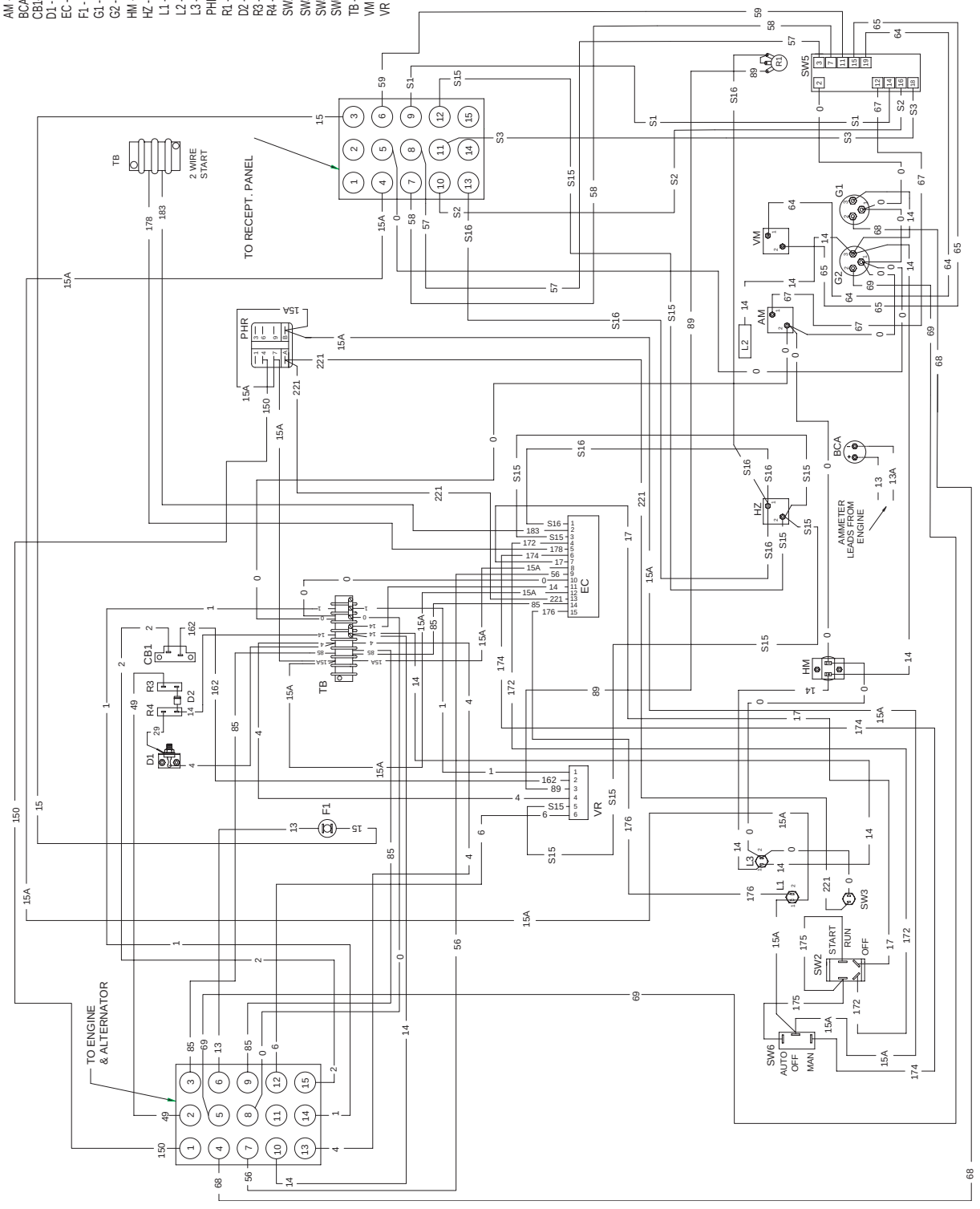
■ HOW TO ORDER PARTS

To order a replacement part, locate the part in the applicable EXPLODED VIEW in this manual. Provide the dealer/distributor with the following information:

- Generator BUILD NUMBER (from the unit data plate).
- Part NUMBER and DESCRIPTION (from the applicable PARTS LIST in this manual).
- The applicable exploded view DRAWING NUMBER.

Wiring Diagram — Control Panel — Drawing No. 0D5632

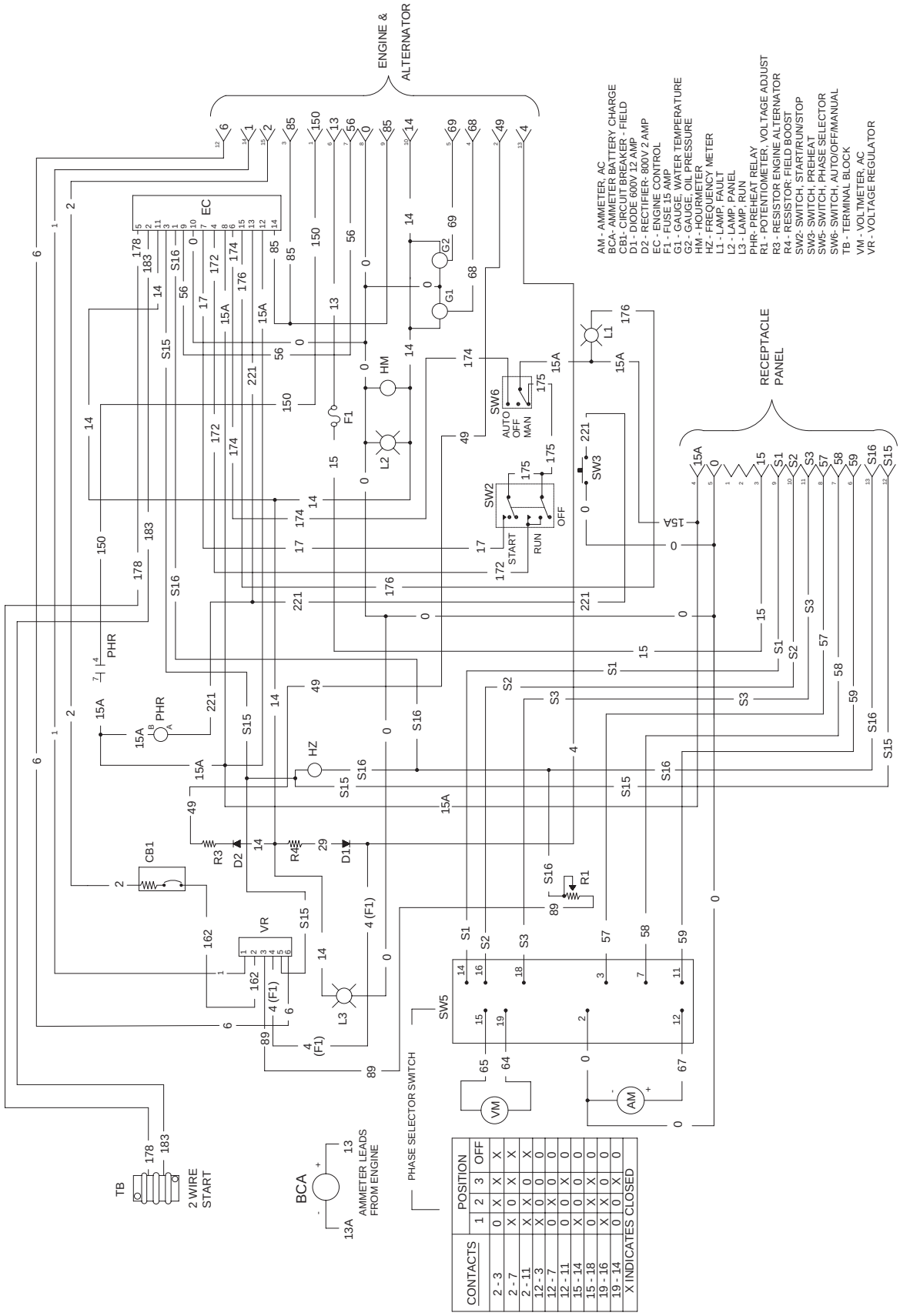
AM - AMMETER, AC
BCA - AMMETER BATTERY CHARGER
CB1- CIRCUIT BREAKER - FIELD
D1 - DIODE 600V 12 AMP
EC - ENGINE CONTROL
F1 - FUSE 15 AMP
G1 - GAUGE, WATER TEMPERATURE
G2 - GAUGE, OIL PRESSURE
HM - HOURMETER
HZ - FREQUENCY METER
L1 - LAMP, FAULT
L2 - LAMP, PANEL
L3 - LAMP, RUN
PHR - PREHEAT RELAY
R1 - POTENTIOMETER, VOLTAGE ADJUST
D2 - RECTIFIER 800V 2A
R3 - RESISTOR - ENG. ALTERNATOR
R4 - RESISTOR, FIELD BOOST
SW2 - SWITCH, START/RUN/STOP
SW3 - SWITCH, PREHEAT
SW5 - SWITCH, PHASE SELECTOR
SW6 - SWITCH, AUTO/OFF/MANUAL
TB - TERMINAL BLOCK
VM - VOLTMETER, AC
VR - VOLTAGE REGULATOR

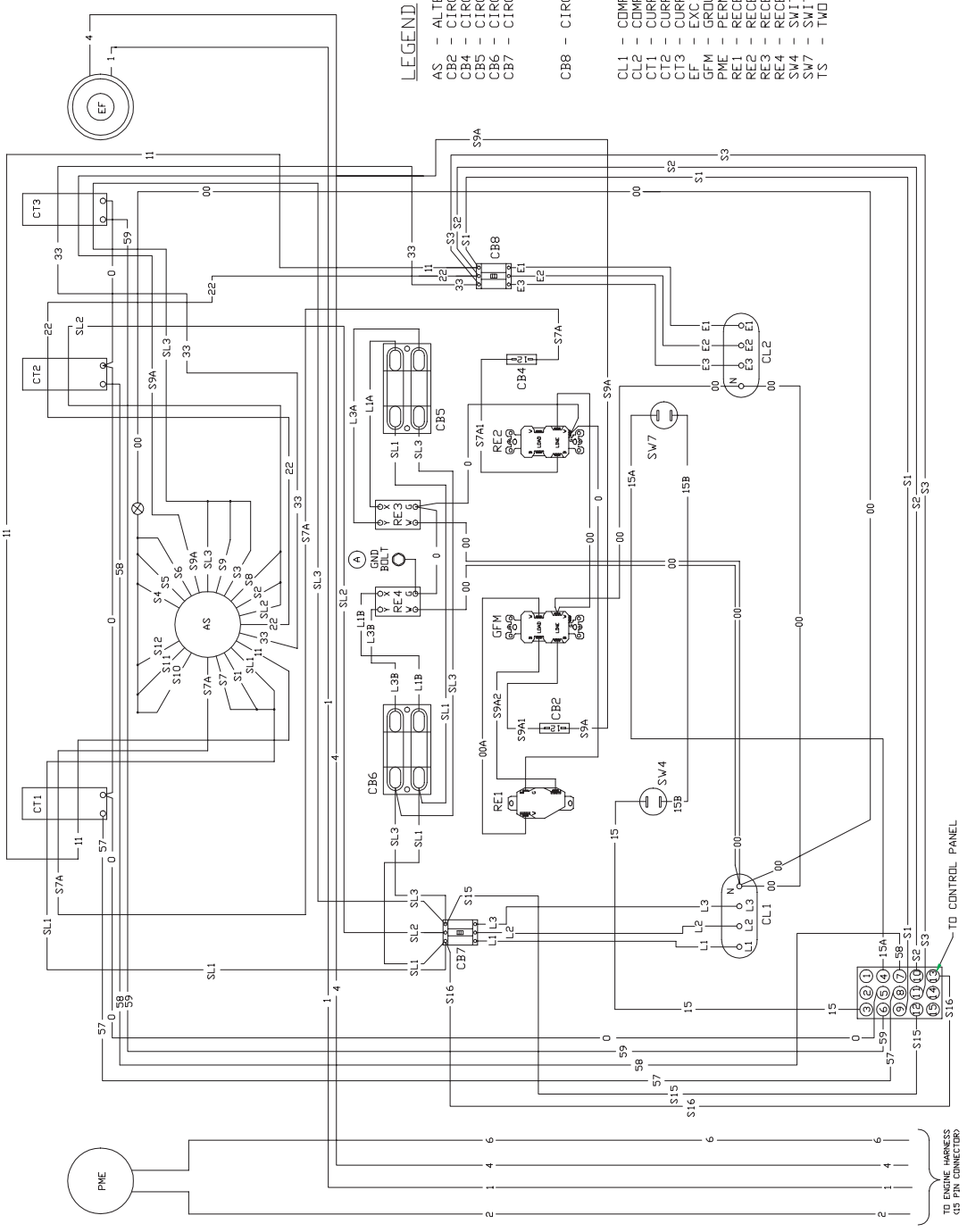


Electrical Data

GR-125 Generator Set

Schematic — Control Panel — Drawing No. 0D5633

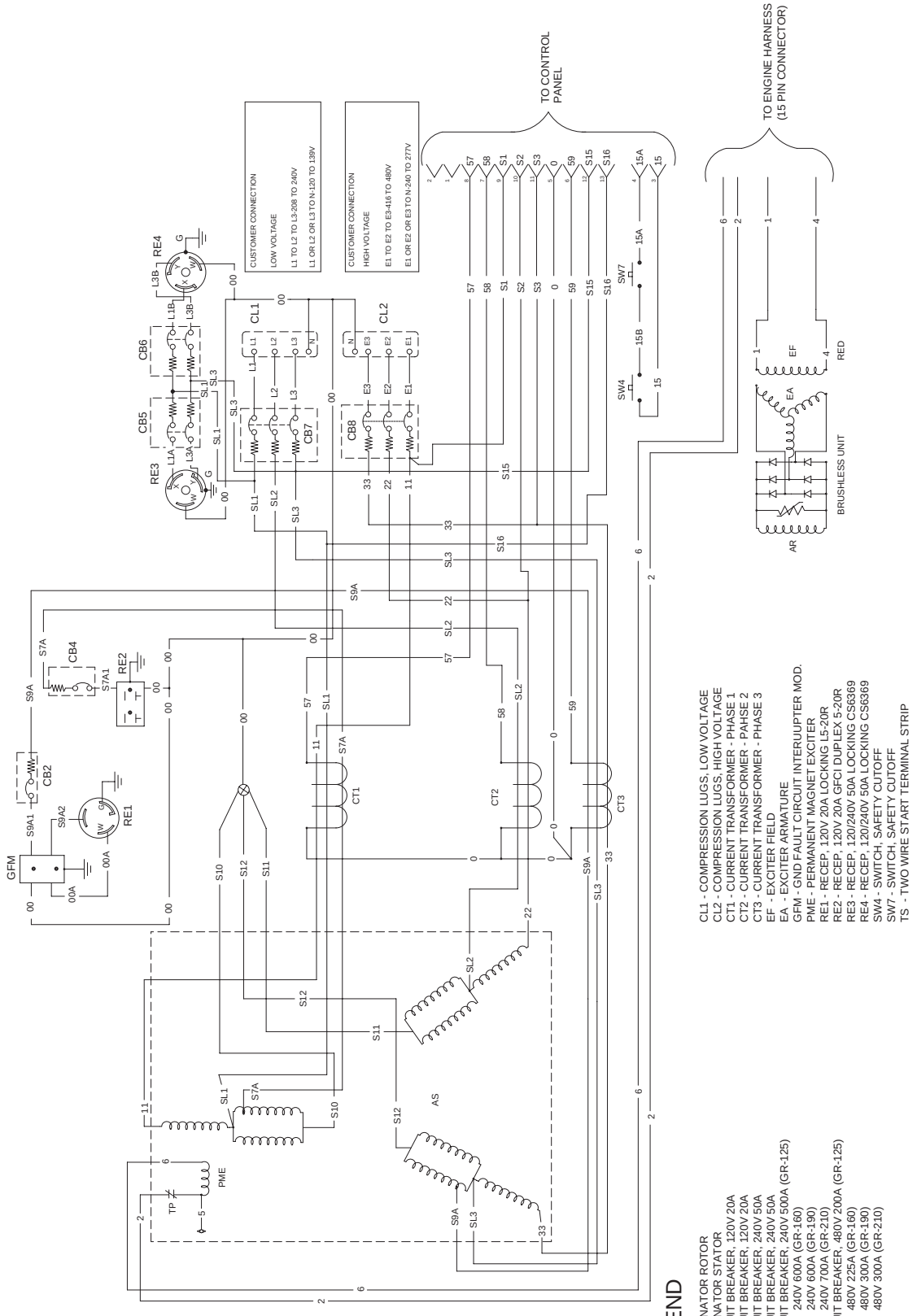



LEGEND
AS - ALTERNATOR STATOR
CB2 - CIRCUIT BREAKER, 120V 20A
CB4 - CIRCUIT BREAKER, 120V 20A
CB5 - CIRCUIT BREAKER, 240V 50A
CB6 - CIRCUIT BREAKER, 240V 50A (GR-125)
CB7 - CIRCUIT BREAKER, 240V 500A (GR-160)
240V 600A (GR-190)
240V 600A (GR-210)
CB8 - CIRCUIT BREAKER, 480V 200A (GR-125)
480V 225A (GR-160)
480V 300A (GR-190)
480V 300A (GR-210)
CL1 - COMPRESSION LUGS, LOW VOLTAGE
CL2 - COMPRESSION LUGS, HIGH VOLTAGE
CT1 - CURRENT TRANSFORMER - PHASE 1
CT2 - CURRENT TRANSFORMER - PHASE 2
CT3 - CURRENT TRANSFORMER - PHASE 3
EF - EXCITER FIELD
GFM - GROUND FAULT CIRCUIT INTERRUPTER MODULE
PME - PERMANENT MAGNET EXCITER
RE1 - RECEPTACLE, 120V 20A LOCKING L5-20R
RE2 - RECEPTACLE, 120V 20A GFCI DUPLEX 5-20R
RE3 - RECEPTACLE, 120/240V 50A LOCKING CS6369
RE4 - RECEPTACLE, 120/240V 50A LOCKING CS6369
SW4 - SWITCH, SAFETY CUTOFF
SW7 - SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP
TO CONTROL PANEL
TO ENGINE HARNESS (35 PIN CONNECTOR)

Electrical Data

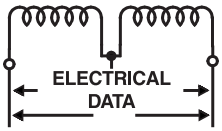
GR-125 Generator Set

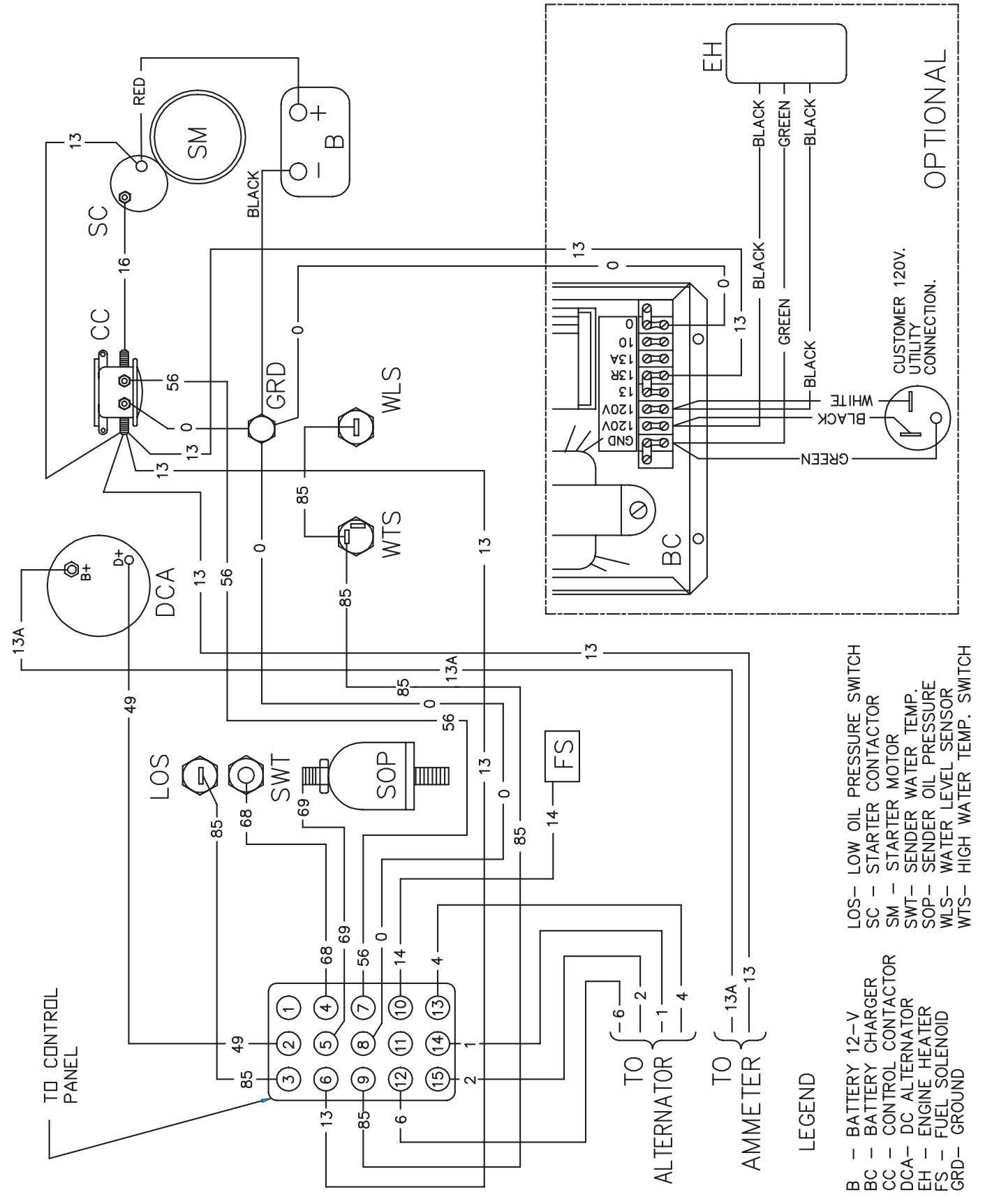
Schematic — AC Receptacle Panel —Drawing No. 0D6825



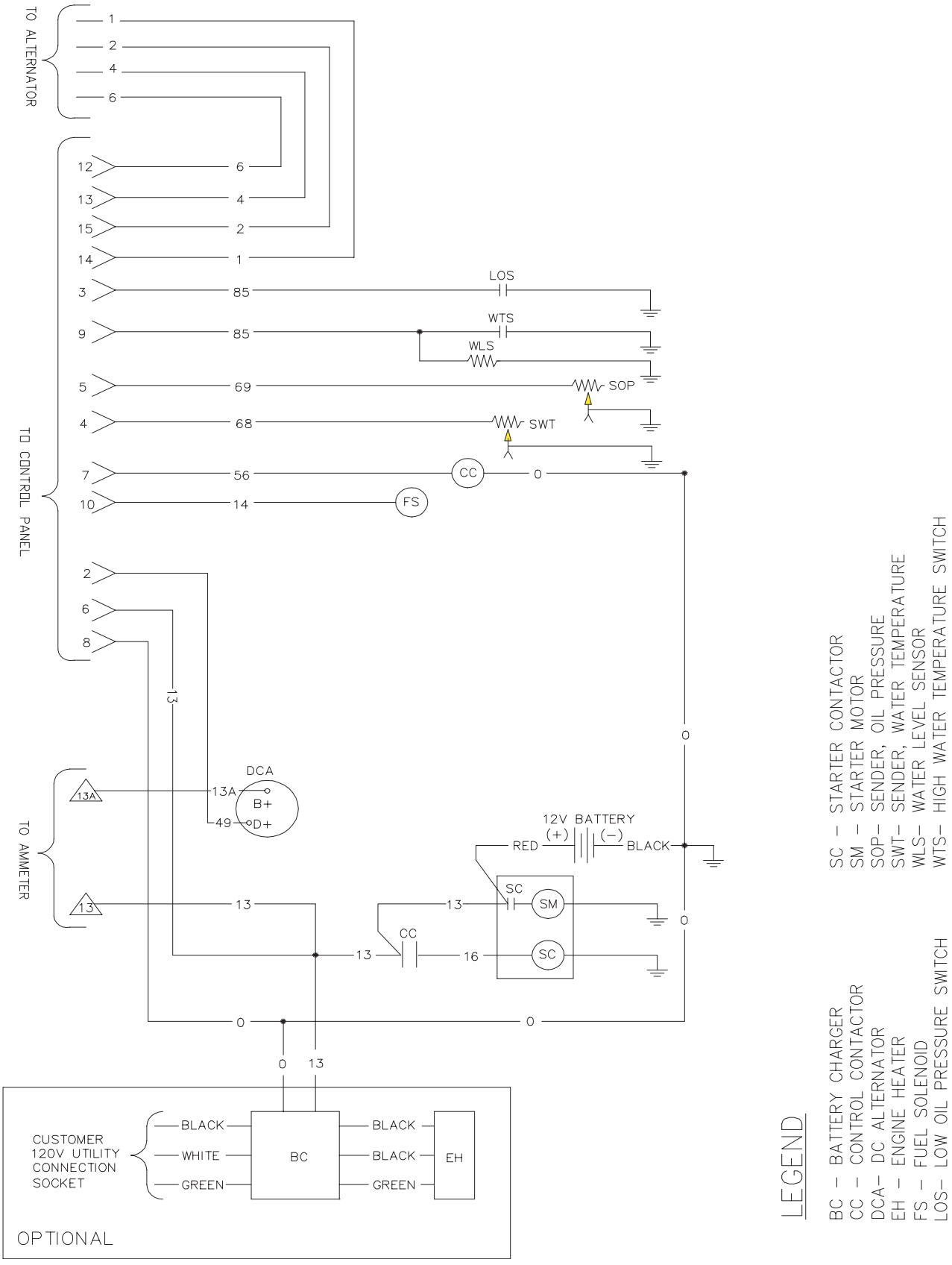
LEGEND

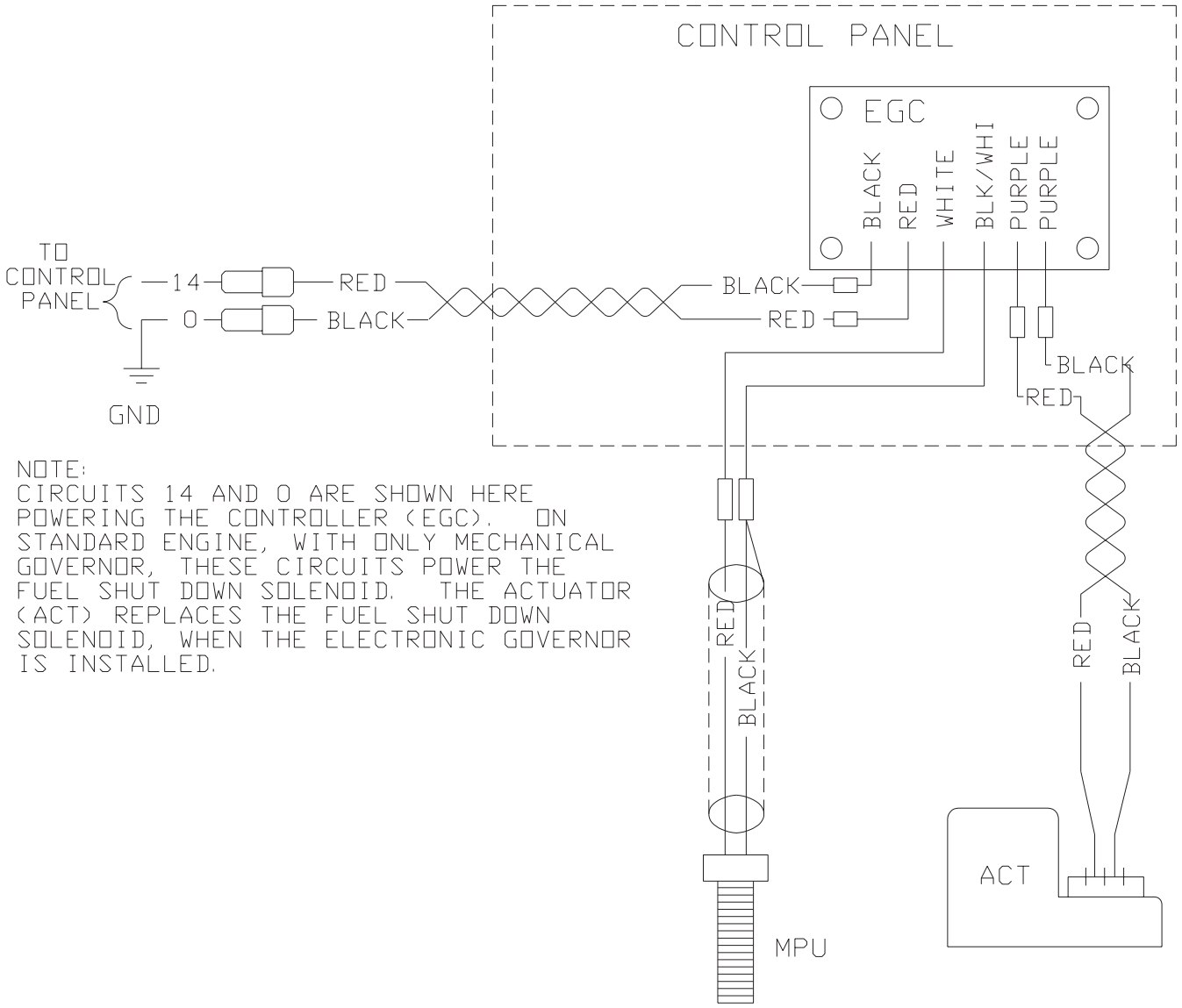
AR - ALTERNATOR ROTOR
AS - ALTERNATOR STATOR
CB2 - CIRCUIT BREAKER, 120V 20A
CB4 - CIRCUIT BREAKER, 120V 20A
CB5 - CIRCUIT BREAKER, 240V 50A
CB6 - CIRCUIT BREAKER, 240V 50A
CB7 - CIRCUIT BREAKER, 240V 500A (GR-125)
240V 600A (GR-160)
240V 600A (GR-190)
240V 700A (GR-210)
CB8 - CIRCUIT BREAKER, 480V 200A (GR-125)
480V 225A (GR-160)
480V 300A (GR-190)
480V 300A (GR-210)
CL1 - COMPRESSION LUGS, LOW VOLTAGE
CL2 - COMPRESSION LUGS, HIGH VOLTAGE
CT1 - CURRENT TRANSFORMER - PHASE 1
CT2 - CURRENT TRANSFORMER - PAHSE 2
CT3 - CURRENT TRANSFORMER - PHASE 3
EF - EXCITER FIELD
EA - EXCITER ARMATURE
GFM - GND FAULT CIRCUIT INTERUUPTER MOD.
PME - PERMANENT MAGNET EXCITER
RE1 - RECEP, 120V 20A LOCKING L5-20R
RE2 - RECEP, 120V 20A GFCI DUPLEX 5-20R
RE3 - RECEP, 120/240V 50A LOCKING CS6369
RE4 - RECEP, 120/240V 50A LOCKING CS6369
SW4 - SWITCH, SAFETY CUTOFF
SW7 - SWITCH, SAFETY CUTOFF
TS - TWO WIRE START TERMINAL STRIP


ELECTRICAL
DATA


OPTIONAL
EH
BLACK
GREEN
BLACK
CUSTOMER 120V.
UTILITY
CONNECTION.
WHITE
BLACK
GREEN
GND
120V
120V
13
13R
13A
0
BC
SM
RED
SC
CC
B
+
–
BLACK
GRD
WLS
WTS
DCA
B+
D+
LOS
SWT
SOP
FS
TO CONTROL
PANEL
TO
ALTERNATOR
TO
AMMETER
LEGEND
B – BATTERY 12–V
BC – BATTERY CHARGER
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL PRESSURE SWITCH
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– HIGH WATER TEMP. SWITCH

Schematic — Diesel Engine — Drawing No. 0A5357



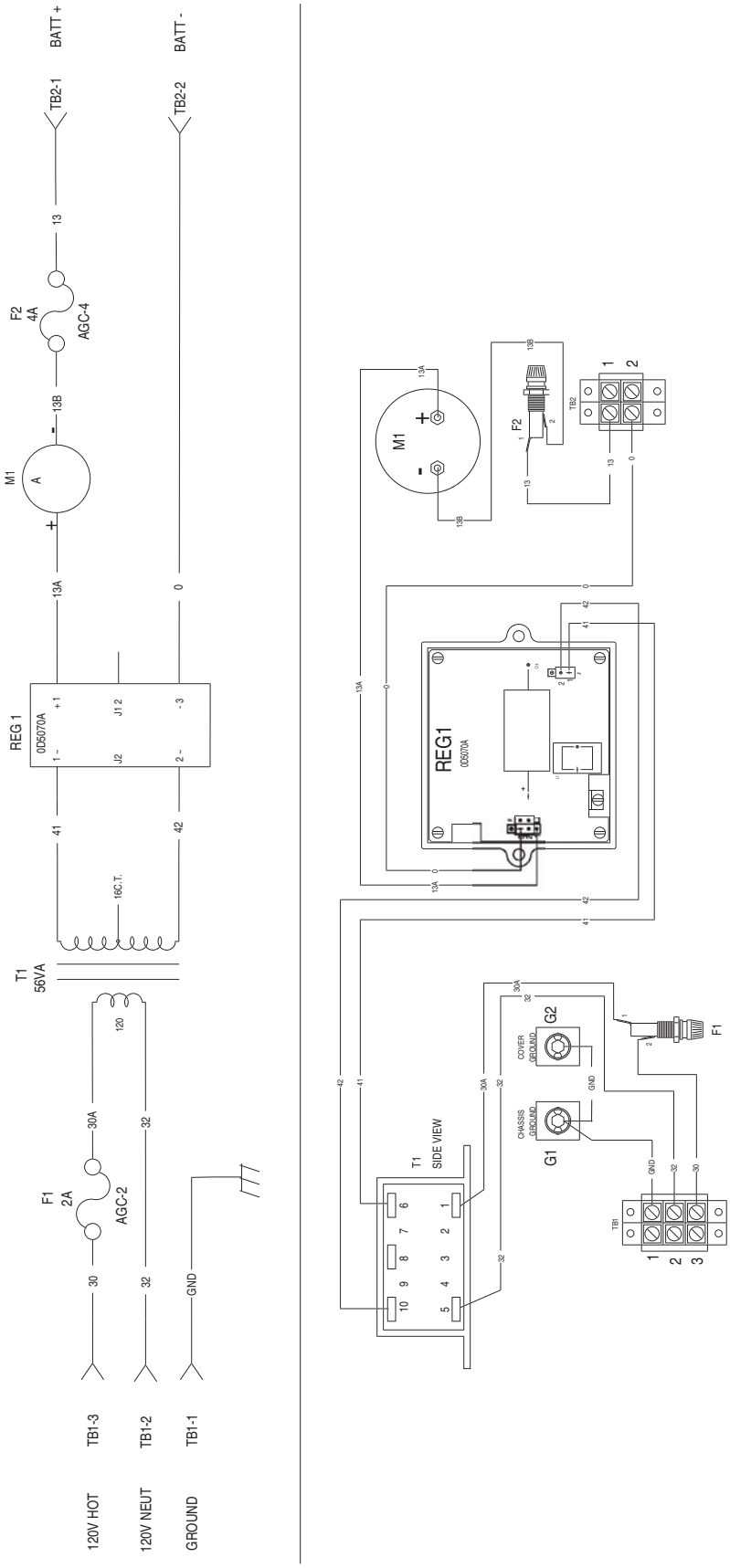


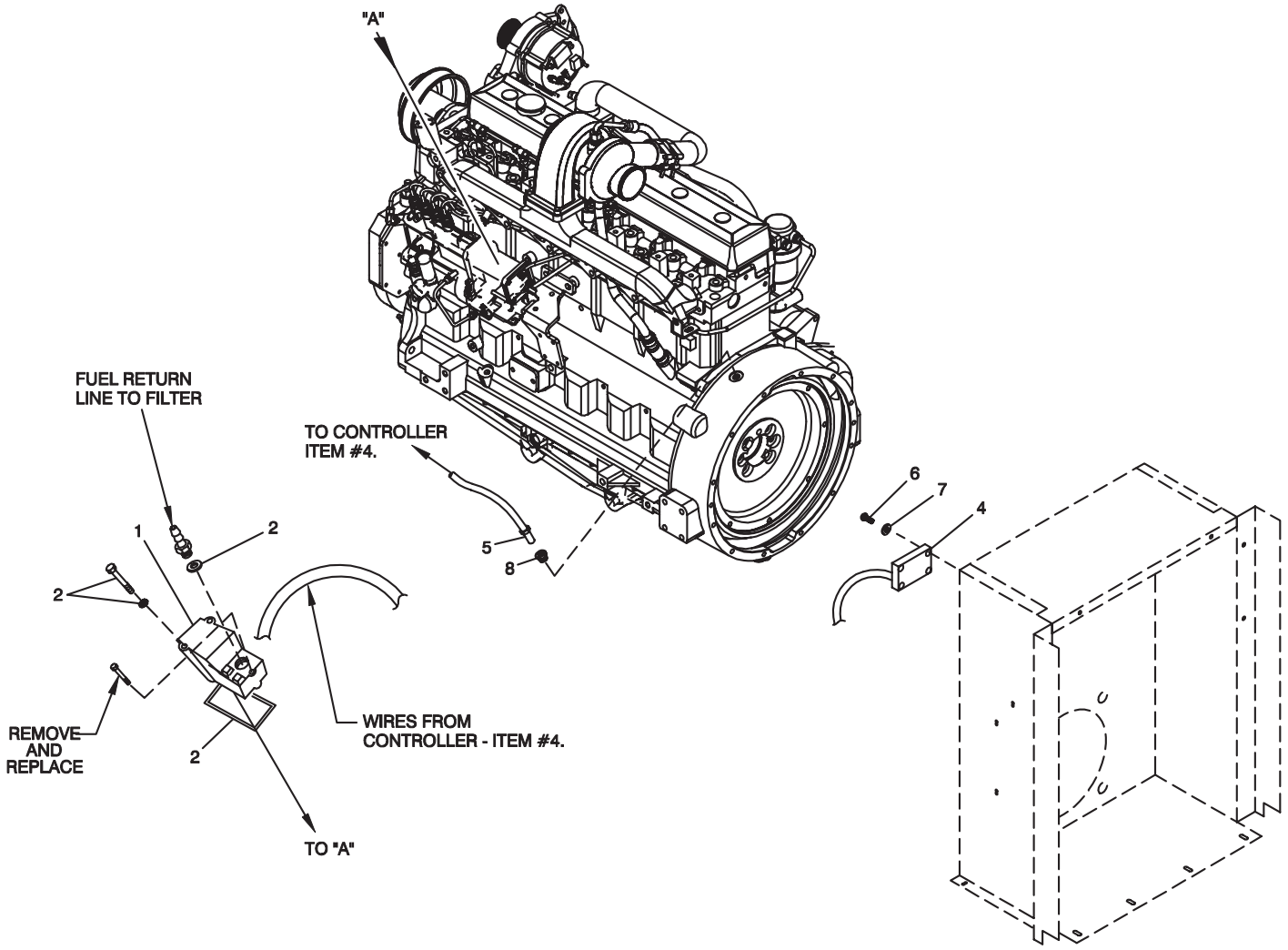
LEGEND

ACT - ACTUATOR
EGC - ELECTRONIC GOVERNOR CONTROLLER
MPU - MAGNETIC PICK-UP

GR-125 Generator Set

Schematic — 12V, 2A Connection — Drawing No. 0D4688



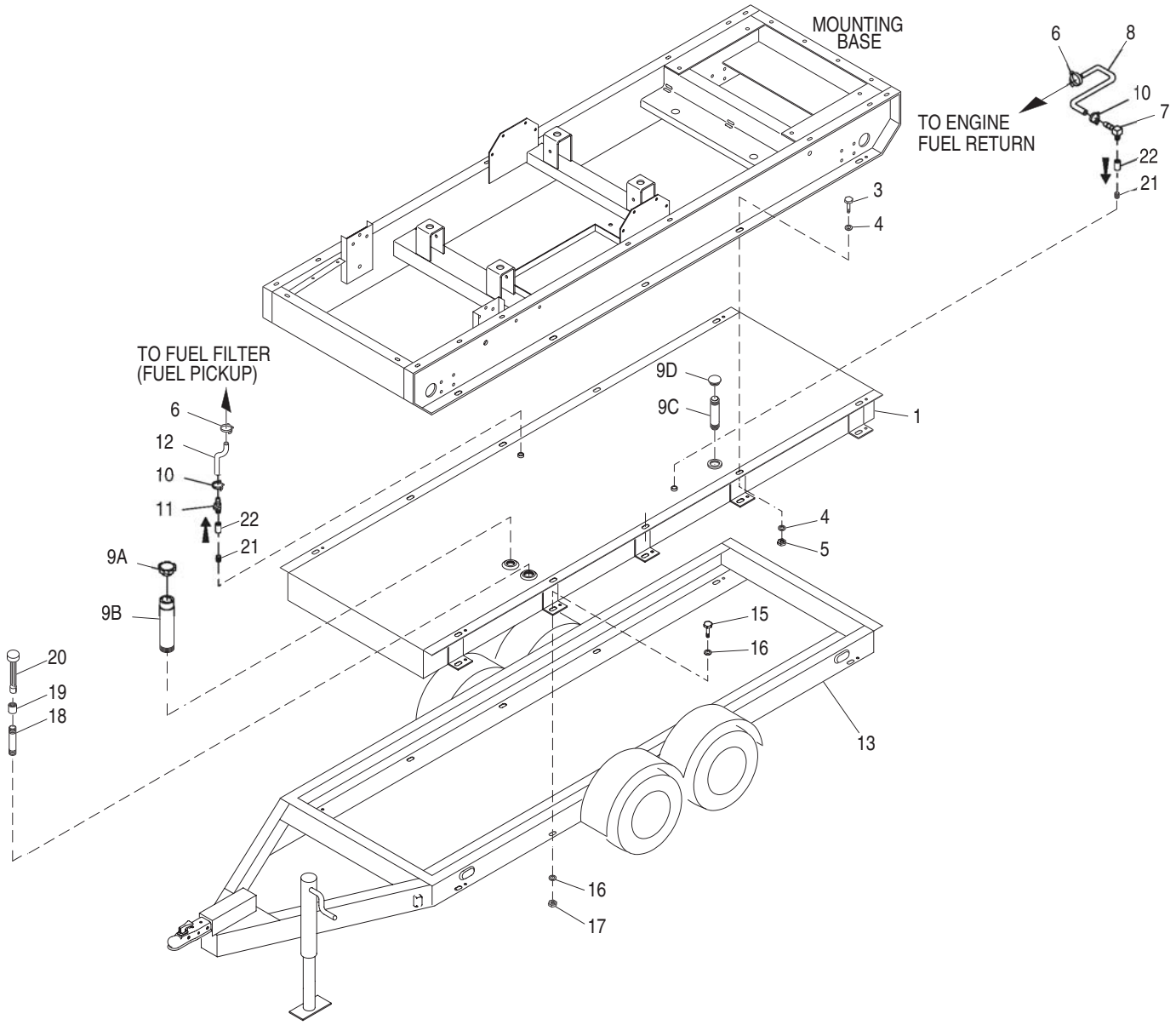


ITEM	PART NO.	QTY.	DESCRIPTION
1	090091	1	ACTUATOR ELECTRONIC GOVERNOR
2	090166	1	KIT, GASKET ELECTRONIC GOVERNOR
	"	2	SCREW #10-24
	"	2	LOCKWASHER EXTERNAL TOOTH
	"	1	COVER SEAL
	"	1	0-RING
4	090093	1	ASSEMBLY CONTROLLER
5	082130G	1	ASSEMBLY MAGNETIC PICK 48"
6	033138	4	SCREW HHM #10-32 X 5/8
7	023897	4	WASHER FLAT #10 ZINC
8	088034A	1	REDUCER 3/4 TO 3/8

Exploded View and Parts List

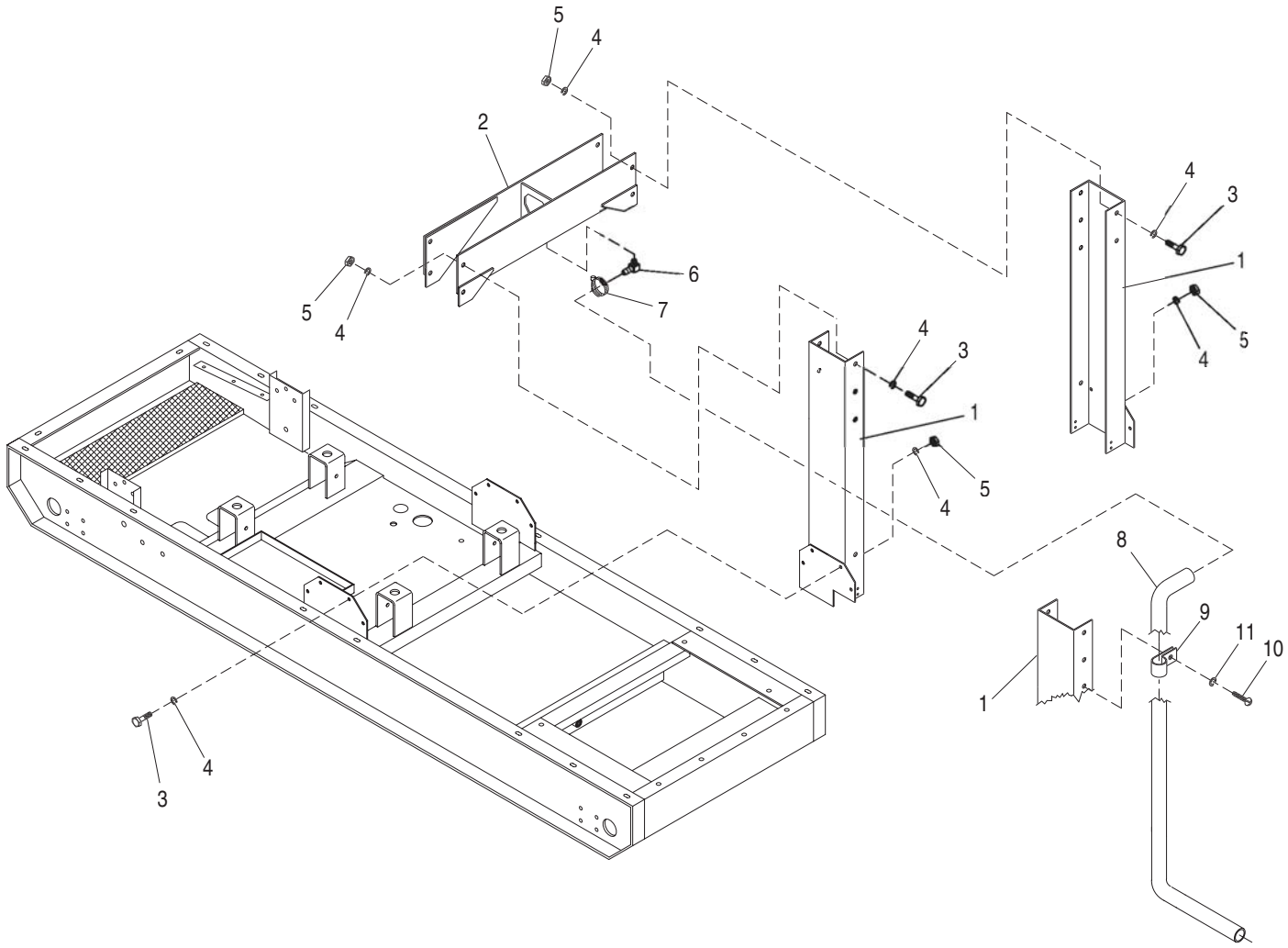
GR-125 Generator Set

Trailer (OPTIONAL) Model No. 004600-0— Drawing No. 0D4364-B



ITEM	PART NO.	QTY.	DESCRIPTION
1	0D4472	1	BASE TANK GR-125 165 GAL D/1
2	0D4454	1	KIT GR UNIT MTG HARDWARE ITEMS 3 THRU 6
3	035713	10	SCREW HHC 1/2-13 X 1-1/2 G5
4	022304	20	WASHER FLAT 1/2 ZINC
5	073320	10	NUT LOCK HEX INDENT 1/2-13 G5
6	040173	2	CLAMP HOSE #5.5 .62 - .62
7	062007	1	ELBOW BARBED 90 1/4 NPT X 1/4
8	074995	36"	HOSE 1/4 ID PETROLEUM
9	0D2740	1	FUEL FILL EXTENSION KIT-19"
9A	0A1492	1	CAP FUEL FILL
9B	0D2670C	1	FUEL FILL NECK 490MM
9C	0D2736	1	NIPPLE PIPE 2 NPT X 18" BLK IRN

ITEM	PART NO.	QTY.	DESCRIPTION
9D	021178	1	VENT OEM 2"
10	040173	2	CLAMP HOSE #5.5 .62 - .62
11	058043	1	BARBED STRAIGHT 1/4 NPT X 5/16
12	052221	35"	HOSE RES 5/16 TYP1 SNGL
13	0D4195	1	TRAILER DUAL AXLE GR-125 D/1
14	0D4455	1	KIT GR TANK MTG HARDWARE ITEMS 15 THRU 17
15	035713	10	SCREW HHC 1/2-13 X 1-1/2 G5
16	022304	20	WASHER FLAT 1/2 ZINC
17	073320	10	NUT LOCK HEX INDENT 1/2-13 G5
18	091042	1	NIPPLE 1-1/2 NPT X 5.68
19	067729	1	COUPLING FULL 1.5-11.5 TAPERED
20	090578	1	GAUGE FUEL (15.0")

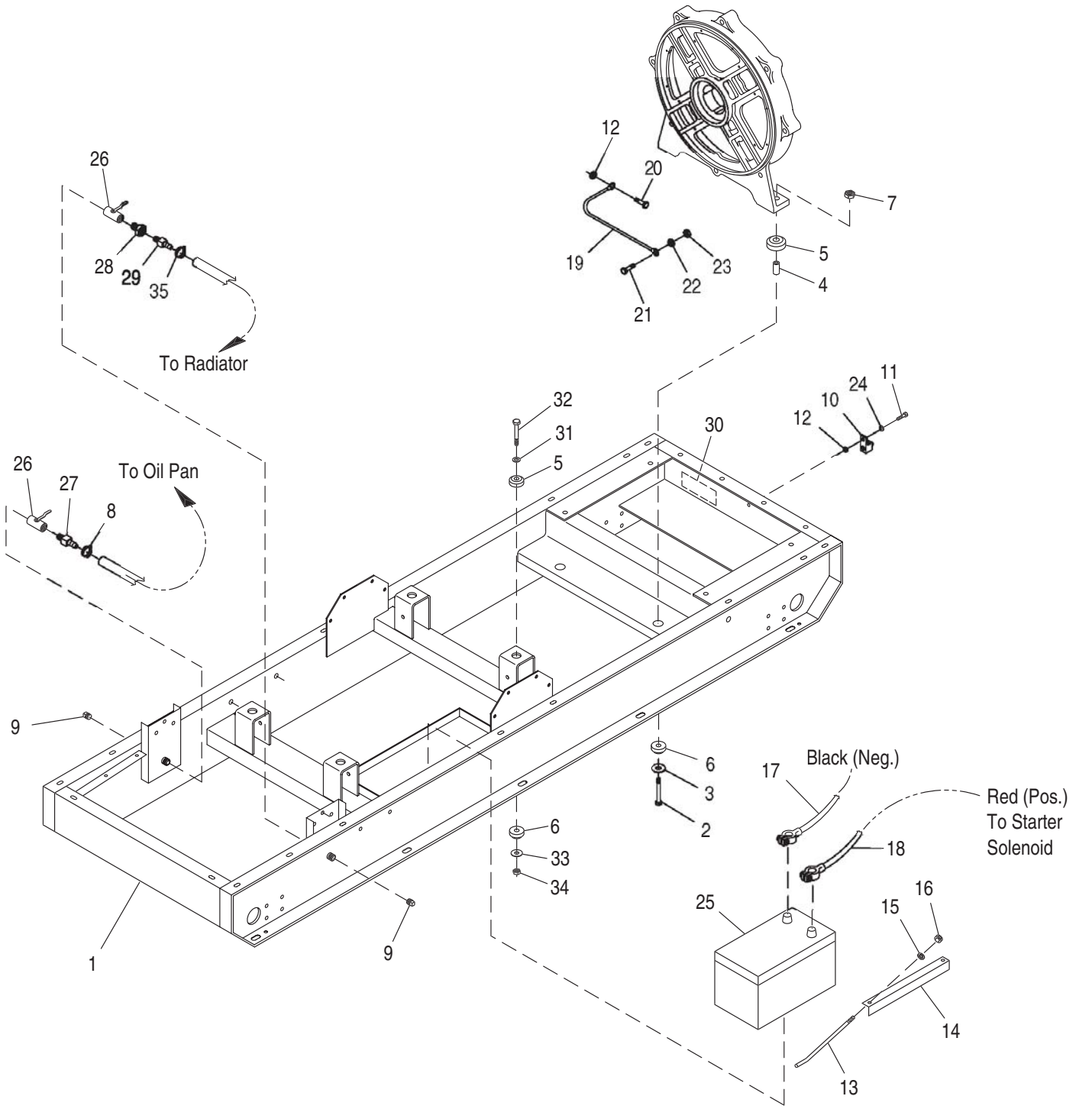


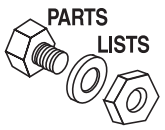
ITEM	PART NO.	QTY.	DESCRIPTION
1	0A4047	2	CENTERLIFT SIDE
2	089483B	1	CENTERLIFT TOP
3	059921	16	SCREW HHC M12-1.75 X 40 G10.9
4	022250	32	WASHER FLAT 7/16
5	052860	16	NUT LOCK FL M12-1.75
6	056460	1	ELBOW BARBED 90 1/2 NPT X 5/8
7	057822	1	CLAMP HOSE #8 .53 - 1.00
8	050967	105"	HOSE RES 5/8 RIA 250F
9	055934B	2	CLAMP VINYL 1 X .281 Z
10	083512	2	SCREW TAPTITE M8 X 16 YEL CHR
11	022129	2	WASHER LOCK M8-5/16

Exploded View and Parts List

GR-125 Generator Set

Mounting Base — Drawing No. 0D4360-A



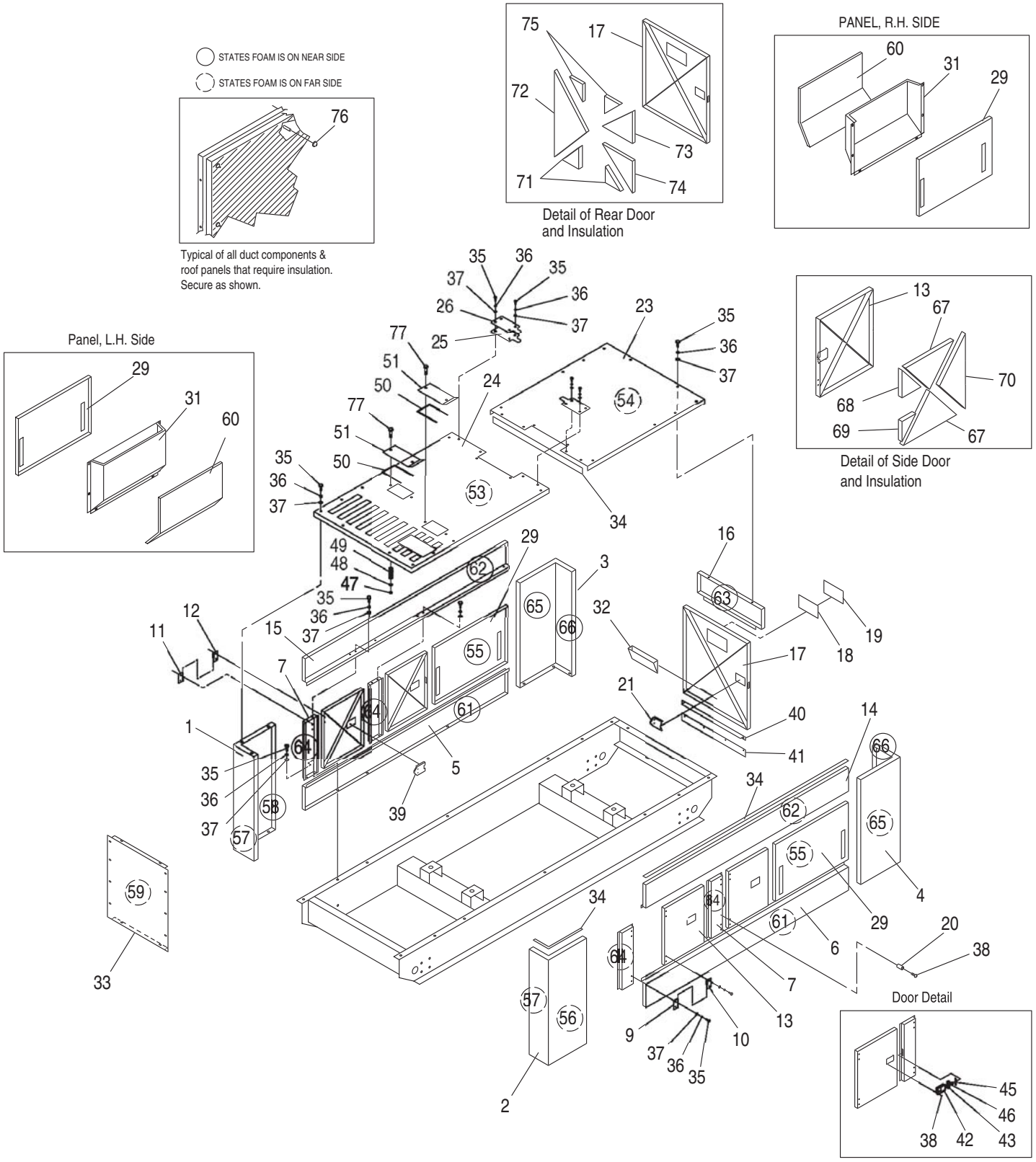


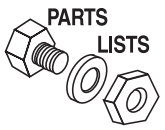
ITEM	PART NO.	QTY.	DESCRIPTION
1	0D4198	1	MOUNTING BASE 6.8L J.D. D/1
2	055597	2	SCREW HHC M12-1.75 X 85
3	052259	6	WASHER FLAT M12
4	052257	4	SPACER .49 X .62 X 1.87 PWDR/ZNC
5	059675	6	MOUNT UPPER VIBRATION
6	059676	6	MOUNT LOWER VIBRATION
7	052860	2	NUT LOCK M12-1.75
8	057822	1	CLAMP HOSE #8 .53 - 1.00
9	036532	2	CAP PIPE 1/2 NPT
10	057329	1	LUG SLDLSS 350-#6 X 13/32 AL/CU
11	059980	1	SCREW HHC M10-1.5 X 25 G10.9
12	025507	3	WASHER SHAKEPROOF EXT 7/16 STL
13	059567	2	BOLT BATTERY HOLD DOWN
14	059568	1	BAR BATTERY HOLD DOWN
15	022145	14	WASHER FLAT 5/16 ZINC
16	027028	2	NUT LOCK HEX 5/16-18 NYL INSRT
17	038805G	1	CABLE BATTERY BLK #1 X 41.50
18	03880400AA	1	CABLE BATTERY RED #1 X 44.00
19	0536210147	1	GROUND WIRE #4 10.0"
20	051756	1	SCREW HHC M10-1.5 X 20
21	033212	1	SCREW HHC 5/8-16 X 1-1/4 G5
22	027482	1	WASHER SHAKEPROOF EXT 5/16 STL
23	022259	1	NUT HEX 5/16-18 STEEL
24	022131	1	WASHER FLAT 3/8 ZINC
25	061915	1	BATTERY 12V 135-AH 4DLT
26	078944	2	VALVE BALL
27	044118	1	BARBED STRAIGHT 1/2 NPT X 5/8
28	030418	1	BUSHING REDUCER 1/2 TO 3/8
29	055596	1	BARBED STRAIGHT 3/8 NPT X 3/8
30	094988	1	DECAL GROUNDING
31	022132	4	WASHER FLAT 9/16 ZINC
32	059983	4	SCREW HHC M14-2.0 X 110 G8.8
33	049869	4	SCREW HHC M14-2.0 X 110 G8.8
34	060079	4	NUT LOCK HEX M14-2.0 NYL INS
35	035472	1	CLAMP HOSE #6 .43 - .78

Exploded View and Parts List

GR-125 Generator Set

Compartment — Drawing No. 0A6195-J





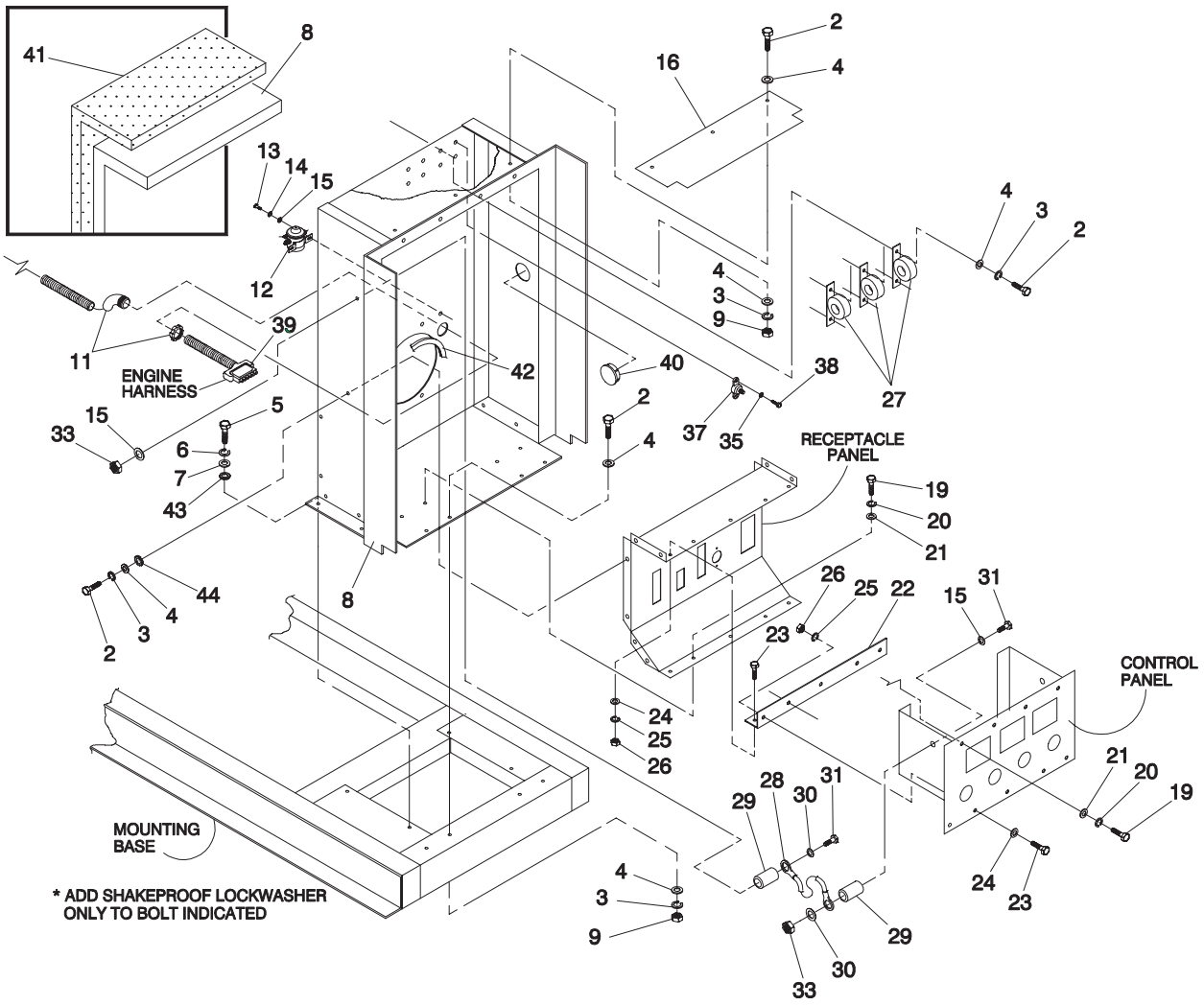
ITEM	PART NO.	QTY.	DESCRIPTION
1	0A4131	1	CORNER POST RH FRONT
2	0A4131A	1	CORNER POST LH FRONT
3	0A4132	1	CORNER POST RH REAR
4	0A4132A	1	CORNER POST LH REAR
5	0A4135B	1	BRACE RH LOWER SIDE
6	0A4135A	1	BRACE LH LOWER SIDE
7	0A4129	4	POST SIDE COMPT 6.8L
9	091089A	6	HINGE MALE RH
10	091090A	6	HINGE FEMALE RH
11	091087A	4	HINGE MALE LH
12	091088A	4	HINGE FEMALE LH
13	092141	4	DOOR-FRONT
14	0A4134	1	BRACE UPPER SIDE LH
15	0A4134A	1	BRACE UPPER SIDE RH
16	0A4128	1	CROSS PANEL REAR TOP
17	091111	1	DOOR RECEPTACLE PANEL
18	079498	1	WINDOW RECEPTACLE PANEL REAR
19	079497	2'	WEATHERSTRIP .625 WIDTH
20	091006	4	BUMPER RUBBER
21	089461	1	COVER LATCH
23	0A4126	1	ROOF REAR PANEL
24	0A4125	1	ROOF FRONT PANEL
25	0A3339	2	SEAL ROOF NEOPRENE RF GR
26	0A3340	2	SEAL ROOF GR
29	0A4130	2	PANEL REAR SIDE
31	0A4133	2	BAFFLE REAR SIDE PNL
32	091112	1	HOLDER MANUAL
33	0A4127	1	PANEL FRONT
34	089961	44.5"	FOAM STRIP 3/4" WIDE X 3/16" THK
35	070013	127	SCREW HHC 5/16-18 X 3/4 SS VIB
36	070006	167	WASHER LOCK M8 SSTL
37	095395	75	WASHER NYLON .315
38	078436	23	SCREW PPHM #8-32 X 1/2 SS
39	089357	5	COVER LATCH
40	090355	1	BRACKET SPLASH GUARD
41	090354	1	GUARD SPLASH
42	089900	5	LATCH PADDLE
43	089903	5	LOCK ROTARY
45	089488	5	PLATE LATCH PIN
46	089973	5	PIN STRIKER
47	052858	2	NUT LOCK FLANGE M8-1.25
48	022145	2	WASHER FLAT 5/16 ZINC
49	056315	2	SPRING COMP .35 ID X 1.0
50	056326	3'	TRIM VINYL BLACK 1/8 GP
51	056313	2	COVER ACCESS
52	0A7062	1	INSL KT 6.8L EAGLE
53	0A7062L	1	(AI) ROOF FRONT
54	0A7062M	1	(AI) ROOFREAR
55	0A7062A	2	(AI) BAFFLE REAR SIDE
56	0A7062Y	1	(AI) CORNER POST LH FRONT
57	0A706200AA	2	(AI) CORNER POST LH FRONT
58	0A7062Z	1	(AI) CORNER POST RH FRONT
59	0A7062B	1	(AI) PANEL FRONT
60	0A7062C	2	(AI) BAFFLE REAR SIDE
61	0A7062E	2	(AI) BRACE LOWER SIDE
62	0A7062F	2	(AI) BRACE UPPER SIDE
63	0A7062G	1	(AI) PANEL CROSS TOP
64	0A7062H	4	(AI) POST SIDE
65	0A7062J	2	(AI) CORNER POST REAR
66	0A7062K	2	(AI) CORNER POST REAR
67	0A7062N	8	(AI) DOOR COMP SIDE
68	0A7062P	4	(AI) DOOR COMP SIDE
69	0A7062Q	4	(AI) DOOR COMP SIDE
70	0A7062X	4	(AI) DOOR COMP SIDE
71	0A7062R	2	(AI) DOOR COMP REAR
72	0A7062T	1	(AI) DOOR COMP REAR
73	0A7062U	1	(AI) DOOR COMP REAR
74	0A7062V	1	(AI) DOOR COMP REAR
75	0A7062W	2	(AI) DOOR COMP REAR
76	078115	18	WASHER SELF LOC/DOME
77	042909	2	SCREW HHC M8-1.25 X 30 G8.8

NOTE: P/N 0A7062 KIT INSULATION 6.8L, PARTS ARE NOTED WITH (AI).

Exploded View and Parts List

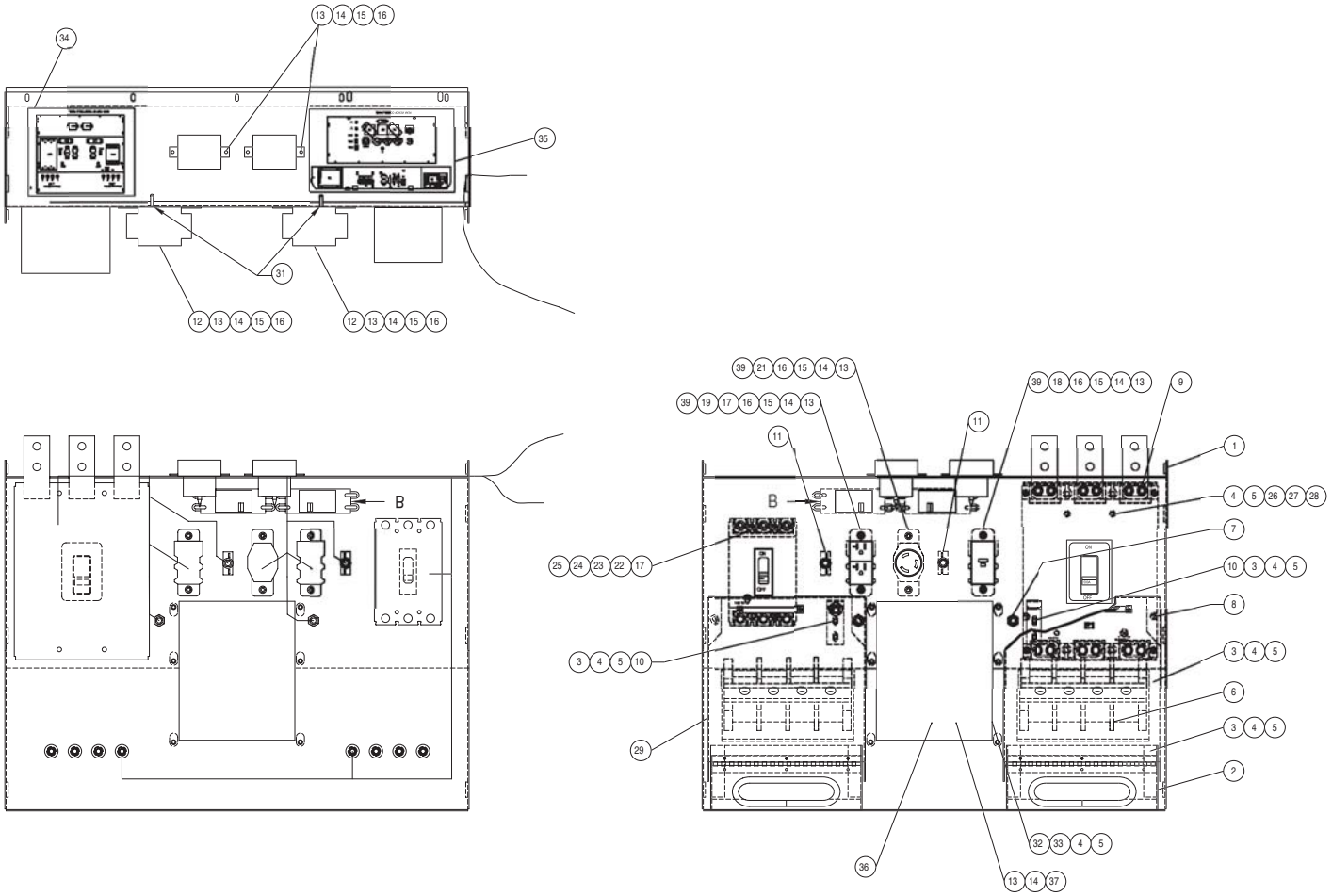
GR-125 Generator Set

Connection Panel — Drawing No. 0A5165-F



ITEM	PART NO.	QTY.	DESCRIPTION
2	070013	23	SCREW HHC 5/16-18 X 3/4 SS VIB
3	070006	23	WASHER LOCK M8 SSTL
4	090977	32	WASHER FLAT .375 ID X .875 OD
5	029745	4	SCREW HHC 3/8-16 X 1 G5
6	022237	4	WASHER LOCK 3/8
7	022131	4	WASHER FLAT 3/8-M10 ZINC
8	0A3864	1	ASSEMBLY CONTROL BOX PANEL 6.8L JD
9	082351	9	NUT HEX 5/16-18 SSTL
11	034616	1	FITTING STRAIGHT 3/4
12	056739	1	RELAY SOLENOID 12VDC PANEL MOUNT
13	022507	2	SCREW HHC 1/4-20 X 1/2 G5
14	022097	2	WASHER LOCK M6-1/4
15	022473	4	WASHER FLAT 1/4 ZINC
16	090425	1	BAFFLE UPPER RECEPTACLE PANEL
19	085296	10	SCREW HHC 1/4-20 X 1/2 SS
20	083896	10	WASHER LOCK 1/4-M6 SS
21	084929	10	WASHER FLAT 1/4 SS
22	089487	1	HINGE CONTROL PANEL
23	090426	10	SCREW PPHM #10-32 X 3/8 SS

ITEM	PART NO.	QTY.	DESCRIPTION
24	090427	10	WASHER FLAT #10 SS
25	040295	10	WASHER LOCK #10 SS
26	040292	10	NUT HEX #10-32 SSTL
27	059925	3	TRANSFROMER 600A TO 5A
28	090515	1	CABLE CONTROL PANEL
29	038196	2	SPACER .28 X .62 X .19 STL/ZNC
30	054381	2	WASHER FLAT .266 ID X 1.0 OD
31	022287	2	SCREW HHC 1/4-20 X 3/4 G5
33	050993	2	NUT LOCK HEX INDENT 1/4-20
35	023897	2	WASHER FLAT #10 ZINC
37	057073	1	JUNCTION BLOCK 3/8-16
38	033530	2	SCREW PHM #10-32 X 5/8 CAD
39	055089	1	CONN PLUG PNL 15P AMP M-N-L
40	058221	1	PLUG PLASTIC 1.750 BLACK
41	0A7567D	1	AI-PANEL CONTROL BOX
42	056326	13"	TRIM VINYL BLACK 1/8GP
43	022261	1	WASHER SHAKEPROOF INT 3/8
44	026204	1	WASHER SHAKEPROOF INT 5/16



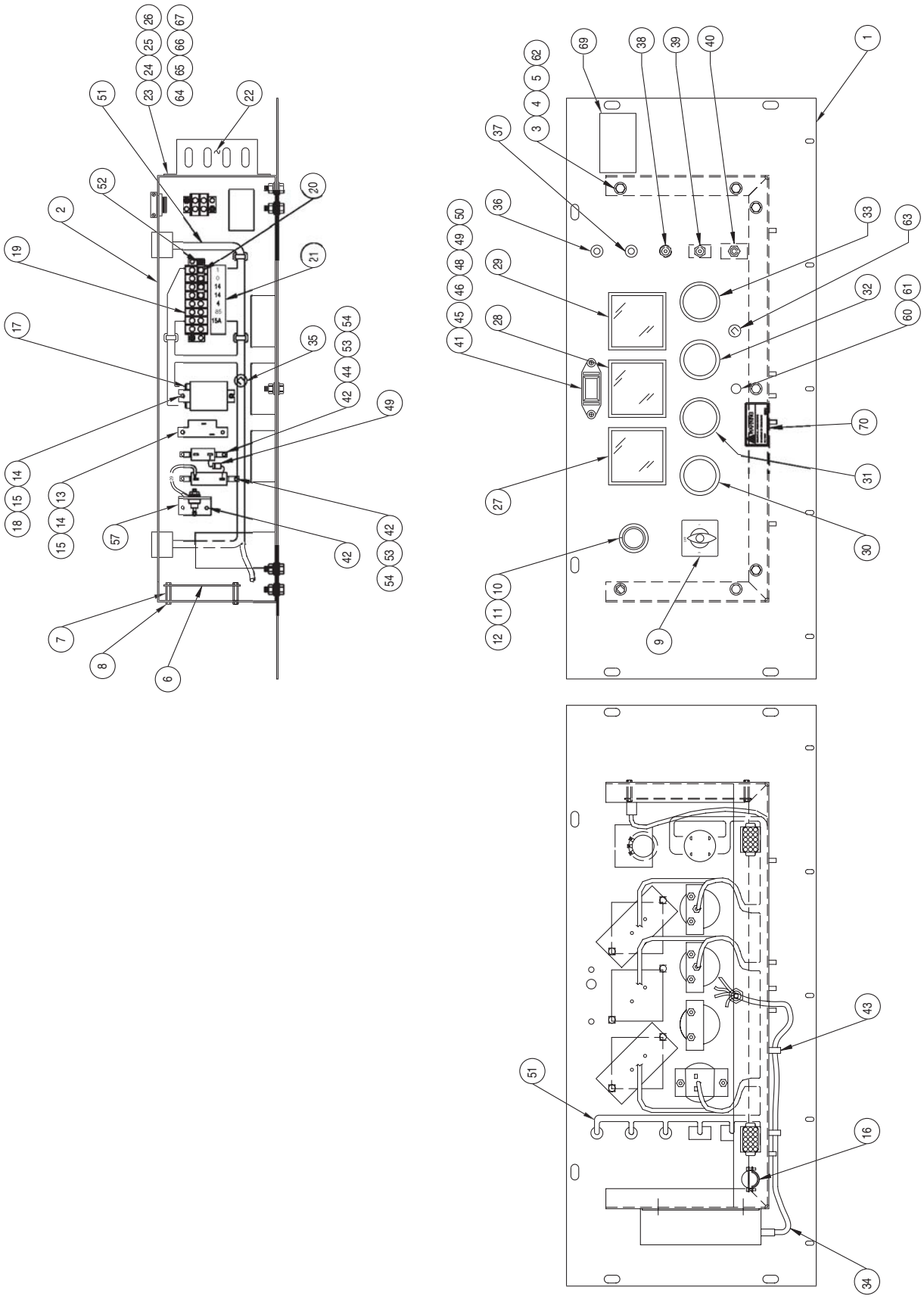
ITEM	PART NO.	QTY.	DESCRIPTION
1	0A5679	1	RECEPTACLE PANEL W/SILKSCREEN (GR-125)
2	0A6791	1	ASSEMBLY LUG BOX LOW VOLTAGE
3	085296	16	SCREW HHC 1/4-20 X 1/2 SS
4	083896	18	WASHER LOCK 1/4-M6 SS
5	084929	24	WASHER FLAT 1/4 SS
6	0A5572	2	ASSEMBLY LUG BLOCK
7	055920	2	SWITCH 1 PST SPADE PNL MNT
8	080765	2	BUMPER RUBBER
9	065511	12	PLUG BUTTON 1/2 DIA
10	0A2081	2	HASP LUG BOX DOOR
11	075207	2	CIRCT BRK 20 X 1 UL/CSA
12	083331	2	CIRCT BRK 50 X 2 240V
13	078436	13	SCREW PPHM #8-32 X 1/2 SS
14	078437	13	WASHER LOCK #8-M4 SS
15	078438	14	NUT HEX #8-32 SS
16	080490	40	WASHER FLAT #8 SS
17	040295	4	WASHER LOCK #10 SS
18	080410	1	RECEPTACLE BLANK FACE GFCI 20AMP.
19	080409	1	RECEPTACLE DUPLEX GFCI 20AMP.
20	079486	2	OUTLET 120/240V

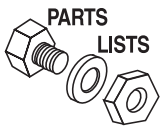
ITEM	PART NO.	QTY.	DESCRIPTION
21	074190	1	OUTLET 20A 125V NEMA L5-20R
22	090427	8	WASHER FLAT #10 SS
23	040292	4	NUT HEX #10-32 SS
24	085294	4	SCREW RHM #10-32 X 4 SS
25	081523U	1	CIRCUIT BREAKER 200 X 3 600V UL SQ D
26	085889	4	NUT HEX 1/4-20 SS
27	085295	4	SCREW HHC 1/4-20 X 5 SS
28	081529U	1	CIRCUIT BREAKER 500 X 3 600V UL SQ D
29	0A6792	1	ASSEMBLY LUG BOX HIGH VOLT
30	0D5616	1	HARNESS RECEPTACLE PANEL (NOT SHOWN)
31	029333	1	TIE WRAP 7" WHITE
32	096801	1	GUARD BRIDGE RECTIFIER
33	083895	6	SCREW HHC 1/4-20 X 1 SS
34	091150	1	DECAL RECEPTACLE PANEL
35	091149	1	DECAL CONTROL PANEL
36	094660	4	NUT #10-32 SS (SPECIAL)
37	091175	1	ASSEMBLY WRENCH HEX 3/8
38	0A7009W	1	LOOSE WIRES "GR" RECEPT PANEL (NOT SHOWN)
39	026579	6	WASHER SHAKEPROOF EXT #8 STEEL

Exploded View and Parts List

GR-125 Generator Set

Control Panel — Drawing No. 0D4357-D



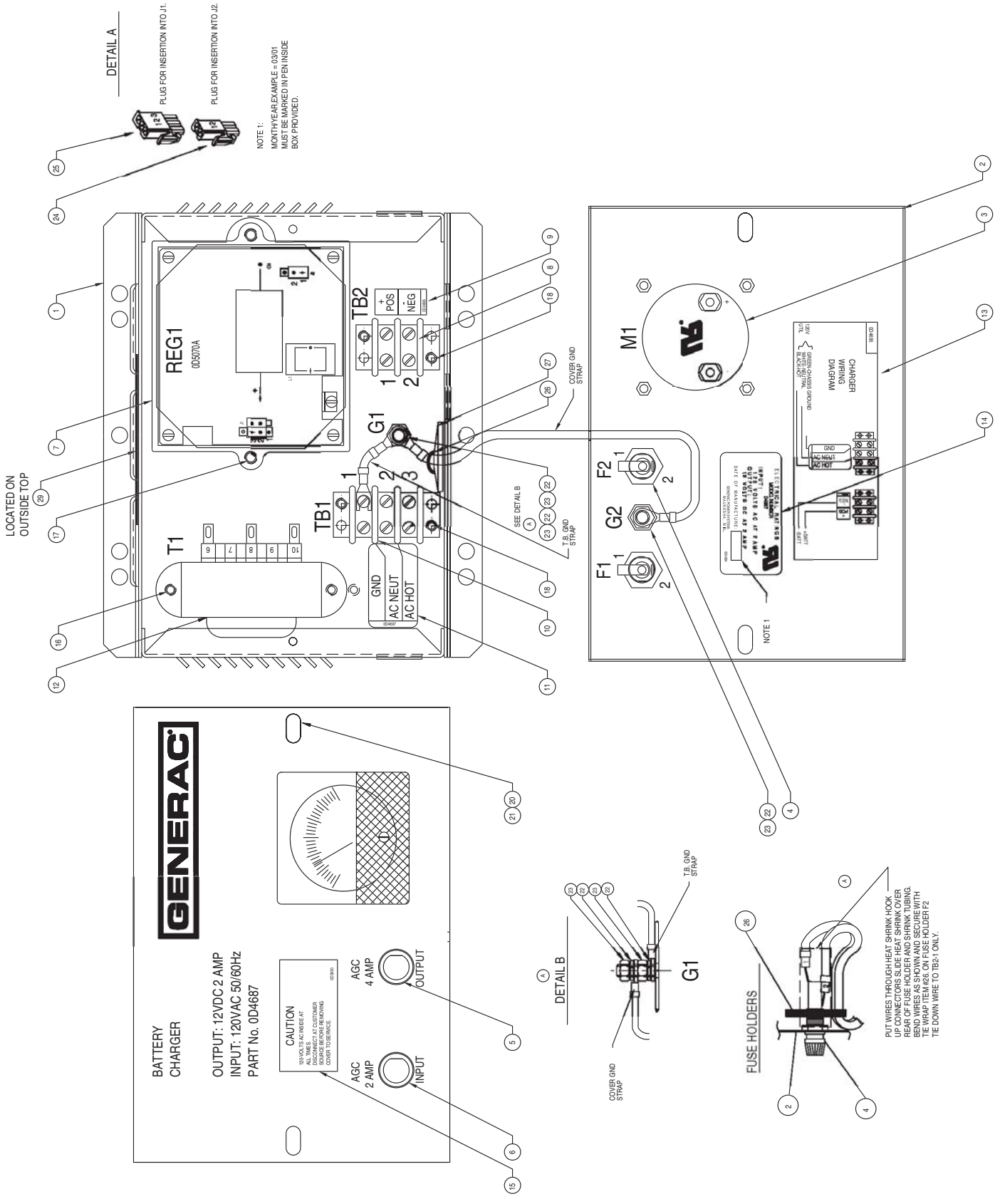


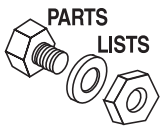
ITEM	PART NO.	QTY.	DESCRIPTION
1	0D4220	1	CONTROL PANEL W/SILKSCREEN GR/D1
2	090504	1	CONTROL PANEL REAR
3	085296	7	SCREW HHC 1/4-20 X 1/2 SS
4	083896	11	WASHER LOCK 1/4-M6 SS
5	084929	18	WASHER FLAT 1/4-M6 SS
6	082495	1	ASSEMBLY 12/24V ENGINE CONTROL
7	064525	4	STANDOFF HEX 3/4
8	064526	8	SCREW TAP HWH #6-25 X 3/8 ZINC
9	061945	1	SWITCH 6A AMP/V SELECTOR
10	055349	1	INSULATOR
11	053693	1	POTENTIOMETER 10K 10% 2.25W PANEL MT
12	050123	1	KNOB PLASTIC .25 SHAFT
13	048476	1	CIRCUIT BREAKER 4.5 X 1 AUT30KW CNT45K
14	0C2428	4	SCREW TAPTITE PH #6-32 X 1/2 ZYC
15	022155	4	WASHER LOCK #6
16	022206	1	FITTING STRAIGHT 3/8
17	063617	1	RELAY PNL 12VDC DPDT 10A@240VA
18	022985	2	WASHER FLAT #6 ZINC
19	057701	1	BLOCK TERM 20A 8 X 6 X 1100V
20	046669	3	BLOCK TERM JUMPER FOR S141
21	090513	1	DECAL TERMINAL STRIP
22	067680	1	ASSEMBLY VOLTAGE REGULATOR 60HZ
23	033135	4	SCREW HHM #8-32 X 1/2
24	022264	4	WASHER LOCK M4
25	038150	4	WASHER FLAT #8 ZINC
26	022471	4	NUT HEX #8-32 STEEL
27	079983	1	VOLTMETER DAUL VOLTAGE
28	070058	1	AMMETER AC 0-400
29	070042	1	METER FREQUENCY 55-65HZ
30	055406	1	GAUGE COOLANT TEMPERATURE
31	055405	1	GAUGE OIL PRESSURE
32	062304	1	AMMETER 40-0-40 DC
33	070081	1	HOURMETER
34	090512	1	HARNESS VOLTAGE REGULATOR
35	042632	1	GROMMET 1/2 X 1/16 X 3/8
36	064009B	1	LIGHT 12VDC .02A LED GREEN PILOT
37	064009	1	LIGHT 12VDC .02A LED RED PILOT
38	055920	1	SWITCH SPST SPADE PANEL MOUNT
39	061694	1	SWITCH SPDT 6A SPD CTR OFF TOG
40	061943	1	SWITCH TOG DPST 15A SPD PROG
41	023897	2	WASHER FLAT #10 ZINC
42	036261	6	RIVET POP .125 X .129-.133/#30
43	028739	3	TIE WRAP 4" BLACK
44	044213	1	RESISTOR 10R 5% 12W
45	022152	2	WASHER LOCK #10
46	033138	2	SCREW HHM #10-32 X 5/8
48	070202	1	LIGHT PANEL #26306C
49	025192	1	RECTIFIER MSC 2A 600V 1N5062
50	070082	1	BLOCKER LIGHT
51	0D4861	1	HARNESS CONTROL PANEL GR D/1
52	0A1661	2	RIVET POP .156 X .160-.164/#20
53	057405	1	RESISTOR 25R 5% 25W
54	064733	2	BRACKET RESISTOR MOUNTING FOR 25W
57	0E6871	1	RECTIFIER ASSEMBLY
60	032300	1	HOLDER FUSE
61	022676	1	FUSE 15A X AGC15
62	085889	7	NUT HEX 1/4-20 SS
63	021717A	1	GROMMET 3/8 X 1/16 X 1/4
64	048766	1	BLOCK TERMINAL 20A 2 X 6 X 1100V
65	0D4561	2	SCREW TAPTITE #6-32 X 5/8 BP
66	022155	2	WASHER LOCK #6
67	022985	2	WASHER FLAT #6 ZINC
68	064828	1	DECAL TRAN SW CONN
69	095196	1	DECAL- CHK OIL & H2O
70	0E3783	1	DECAL, WARNING REMOVE FUSE

Exploded View and Parts List

GR-125 Generator Set

Battery Charger — Drawing No. 0D4687-C



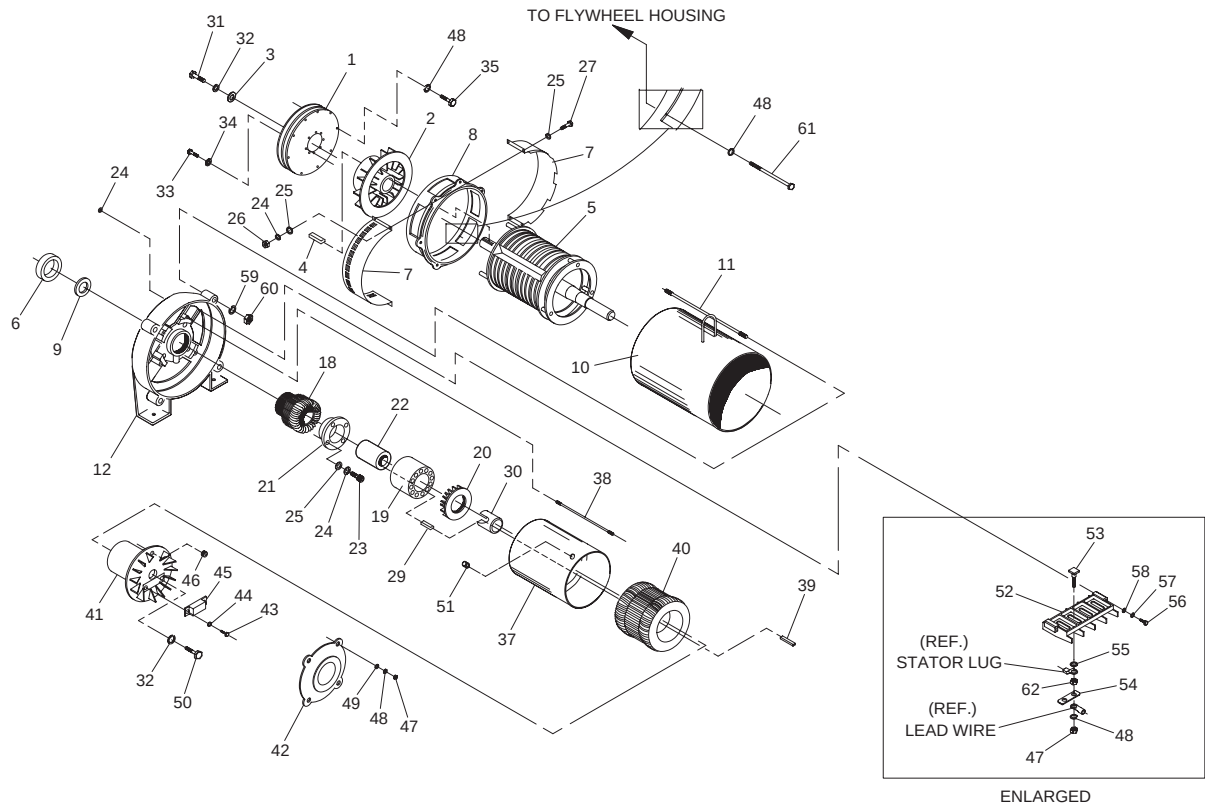


ITEM	PART NO.	QTY.	DESCRIPTION
1	0D4689	1	ENCLOSURE,2A UL CHARGER
2	0D4690	1	COVER,SILKSCREENED,12V,2A,UL
3	062060	1	AMMETER 0-5A DC 1/4FAST-ON TAB
4	032300	2	HOLDER FUSE
5	067682B	1	FUSE 4A SLO BLO GLASS
6	086310	1	FUSE 2A X AGC2
7	0D5070A	1	ASSY,2A 12V,UL BATTERY CHARGER
8	048766	1	BLOCK TERM 20A 2 X 6 X 1100V
9	0D4696	1	DECAL,2POS TERM,2A UL CHARGER
10	0D4698	1	TERMINAL BLOCK 3POS UL
11	0D4697	1	DECAL,3POS TERM,2A UL CHARGER
12	0D4707	1	TRANSFORMER, 16V CT 56VA UL
13	0D4695	1	DECAL,WIRING DIAG,2A UL CHARGE
14	0D4694	1	DECAL,RATING,12V,2A,UL,CHARGER
15	0D3930	1	DECAL, CAUTION BATT CHRG 12/24
16	0A1495	2	SCREW HHTT M4-0.7 X 10 BP
17	066849C	2	SCREW HHTT M5-0.8 X 30 BP
18	0C2323	4	SCREW PHTT #6-32 X 5/8 ZYC
19	080858	2	SHRINK TUBING .625"ID BLK
20	052621	2	WASHER NYLON .200
21	056893	2	CRMPTIT 10-24 X 1/2
22	022097	3	WASHER LOCK M6-1/4
23	049813	3	NUT HEX M6-1.0 G8 YEL CHR
24	097234B	1	CONN PLUG FREE 2P
25	097234L	1	CONN PLUG FREE 3P
26	064761	3	TIE WRAP UL 5.6 X .10 NATL
27	057593	1	CABLE TIE MOUNT BLACK
28	0D4687W	1	WIRE-BATERY CHRG 12V 2A UL
29	0D7551	1	DECAL WARNING BATTERY

Exploded View and Parts List

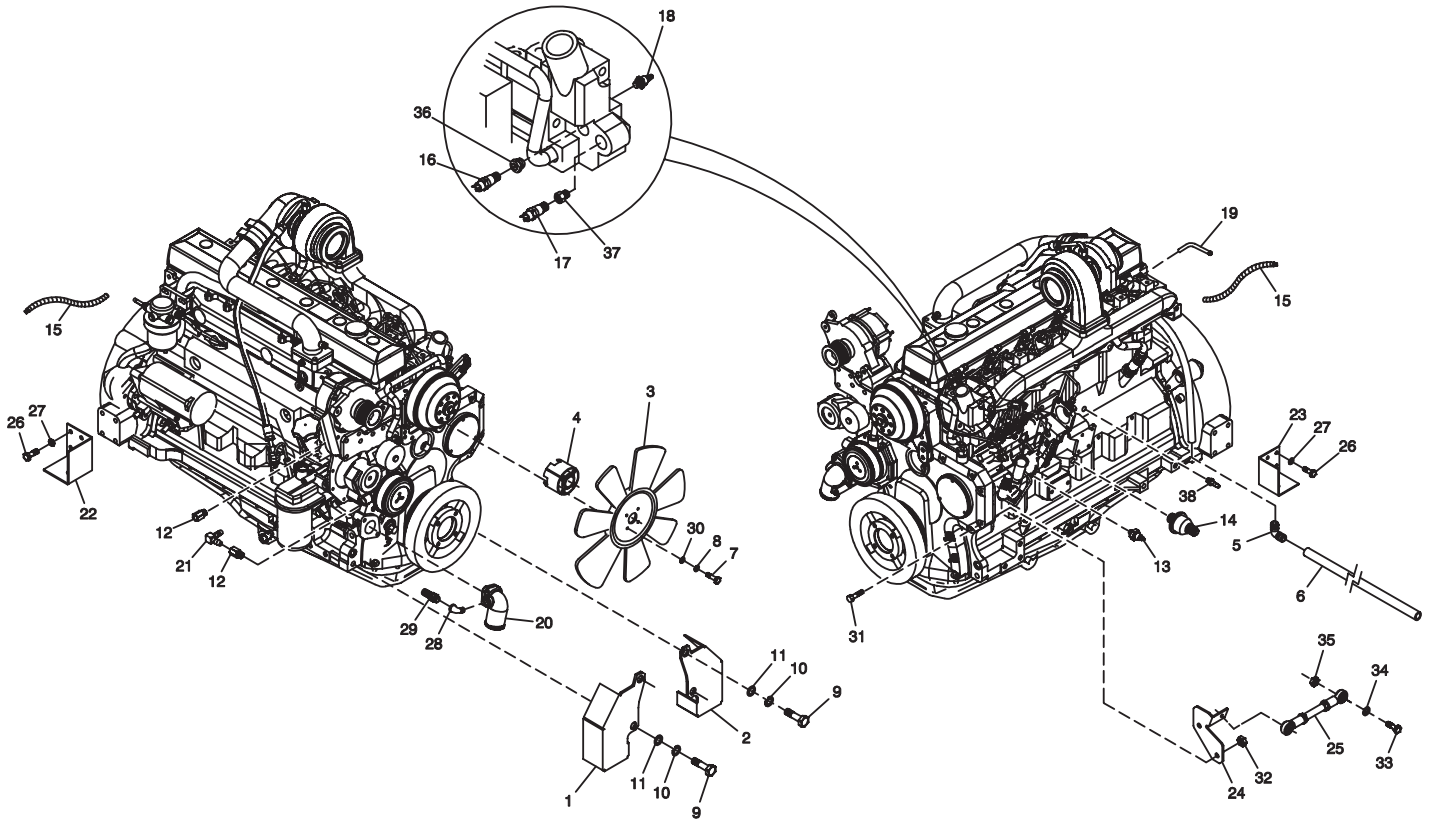
GR-125 Generator Set

Generator Assembly — Drawing No. 0A5139-F



ITEM	PART NO.	QTY.	DESCRIPTION
1	081803	5	FLEX PLATE 520 6.4L
2	081817	1	DRIVE HUB & FAN MCH
3	081815	1	SPACER DRIVE HUB & FAN
4	081825	1	KEY SQ 16MM X 76MM STEEL
5	0A6276	1	RTR-520-110QP1
6	081831	1	BEARING BALL SINGLE ROW
7	082465	2	SCREEN BLOWER HOUSING
8	088296	1	HSG-SAE3 MACH BLOWER
9	085369	1	SPACER 520 ROTOR BEARING
10	0A4335	1	STATOR 520-110QP1
11	04576100BQ	4	STUD M16-1.5 X 660 G5 ZINC
12	0A7671	1	CARRIER REAR BEARING (MACH)
18	094511	1	STATOR ASSEMBLY PME 520MM
19	084828	1	HOUSING 520 PME MAGNET
20	080933	1	FAN PME COOLING
21	080934	1	RING PME STATOR RETAINING
22	082461	1	COLLAR SLIP FIT 116.7
23	082460	4	SCREW SHC M6-1.0 X 65 G10.9
24	022097	8	WASHER LOCK M6-1/4
25	022473	12	WASHER FLAT 1/4 ZINC
26	022127	4	NUT HEX 1/4-20 STEEL
27	051751	4	SCREW HHC M6-1.0 X 50 G8.8
29	085199	1	KEY SQ 3/8 X 13/32 STEEL
30	085665	1	COLLAR SLIP FIT
31	081812	1	SCREW HHC M20-1.5 X 60 G8.8
32	081814	2	WASHER LOCK M20
33	081811	6	SCREW HHC M16-1.5 X 30 G10.9
34	049869	6	WASHER FLAT M16

ITEM	PART NO.	QTY.	DESCRIPTION
35	059981	8	SCREW HHC M10-1.5 X 30 G10.9
37	086377	1	ASSY,EXC FLD2.75"CAN
38	04576100BV	4	STUD M10-1.5 X 355 G5 ZINC
39	085666	1	KEY SQ 3/8 X 3 STEEL
40	086376	1	ASSEMBLY EXCITER 2-3/4"
41	090241	1	FAN EXCITER COOLING
42	084338	1	COVER EXCITER REAR
43	033143	2	SCREW HHM #8-32 X 7/8
44	023365	2	WASHER SHAKEPROOF INT #8
45	090152	1	ASSEMBLY BRIDGE RECTIFIER
46	070208	1	GROMMET .87 X .25 X .62
47	045772	16	NUT HEX M10-1.5 G8 YEL CHR
48	046526	36	WASHER LOCK M10
49	022131	30	WASHER FLAT M10-3/8 ZINC
50	084777	1	SCREW HHC M20-1.5 X 70 G8.8
51	027744	1	GROMMET 3/4 X 5/32 X 5/16
52	092261	3	BOARD SOLID LEAD TERMINAL
53	095152	12	SCREW SHM M10-1.5 X 40.5
54	095153	6	PLATE JUMPER
55	095586	12	WASHER FLAT .41 ID X .75 OD
56	039287	6	SCREW HHC M8-1.25 X 45 G8.8
57	022129	8	WASHER LOCK M8-5/16
58	022145	6	WASHER FLAT 5/16 ZINC
59	070265	4	WASHER LOCK M16
60	081810	4	NUT HEX M16-1.5 G8 YEL CHR
61	057642	12	SCREW HHC M10-1.5 X 40 G10.9
62	096139	12	NUT HEX JAM M10-1.5



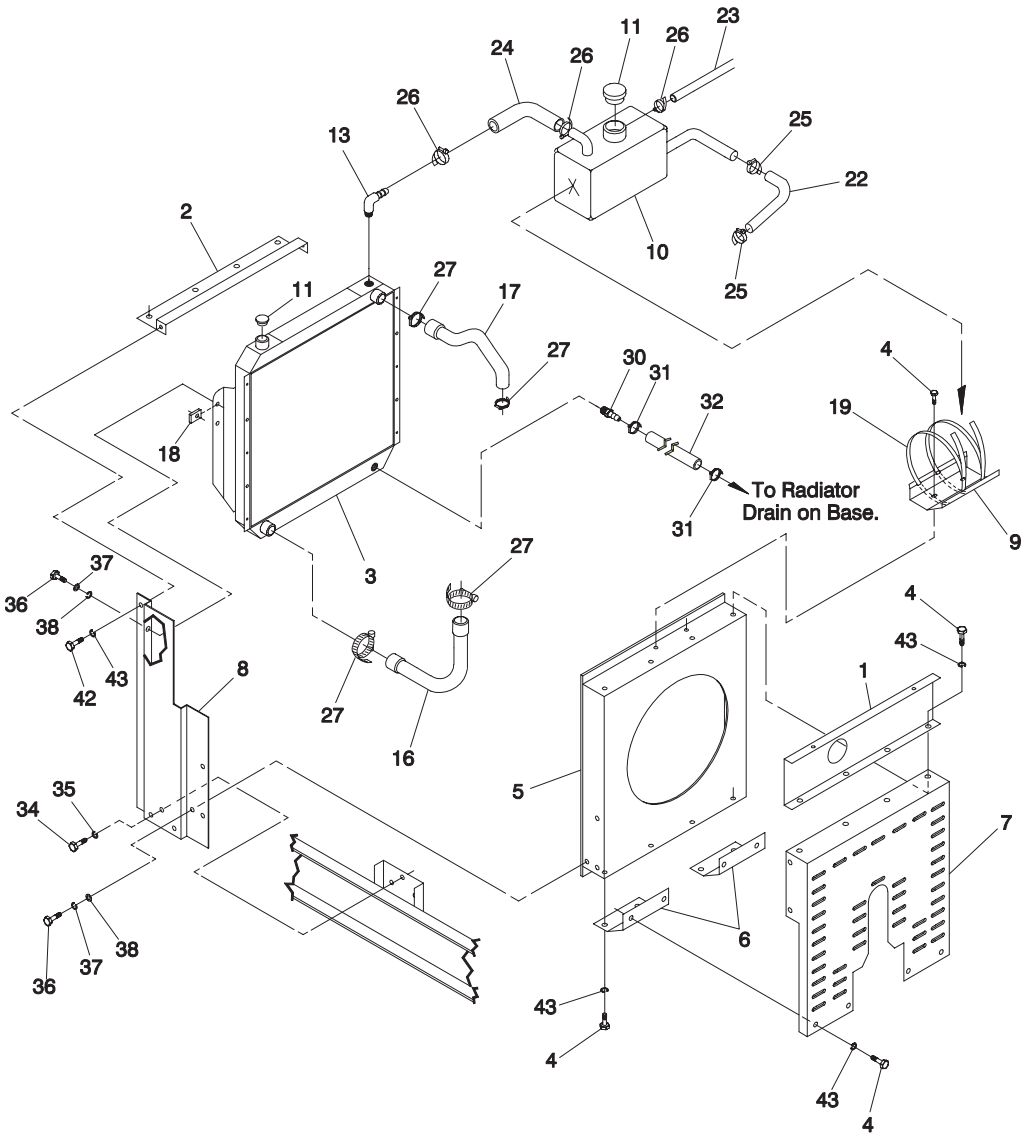
ITEM	PART NO.	QTY.	DESCRIPTION
1	021551	1	BRACKET LH ENGINE MOUNT
2	021542	1	BRACKET RH ENGINE MOUNT
3	0A5703	1	FAN KYSOR 22"
4	0A4604	1	SPACER FAN MACHINED 2"
5	0A4977	1	BARBED ELBOW 90 3/4-3/4
6	085964	25"	HOSE 3/4 ID 100 R6
7	061906	4	SCREW HHC M8-1.25 X 85 G8.8
8	022129	4	WASHER LOCK M8-5/16
9	070263	4	SCREW HHC M16-2.0 X 35 G10.9
10	070265	4	WASHER LOCK M16
11	0A1646	4	WASHER FLAT M16
12	0A4707E	1	ADAPTER 3/8 NPT-M18 X 1.5
13	0A8584	1	SWITCH OIL PRESSURE
14	053666	1	SENDER OIL PRESSURE
15	0A1693	1	WIRE HARNESS 4.5L JD
16	057522	1	SENSOR COOLANT LEVEL
17	053667	1	SENDER WATER TEMPERATURE
18	035606	1	SENSOR HI COOLANT SHUTDOWN
19	0A4854	1	TUBE FUEL RETURN 4.5L
20	0A4601	1	ELBOW WATER PUMP 1/2 “

ITEM	PART NO.	QTY.	DESCRIPTION
21	034339	1	BARBED ELBOW 90 3/8 NPT X 5/8
22	0A3931A	1	MOUNT ENGINE REAR RH JD
23	0A3931B	1	MOUNT ENGINE REAR LH JD
24	0A5676	1	BRACKET INJECTION PUMP JD
25	0A5675	1	LINKAGE INJECTION PUMP JD
26	051768	1	SCREW HHC M12-1.75 X 25 G8.8
27	051769	8	WASHER LOCK M12
28	026739	1	ELBOW RED STREET 3/4 X 1/2
29	078586	1	BARBED STRAIGHT 3/4 NPT X 1
30	022145	4	WASHER FLAT 5/16 ZINC
31	025966	2	SCREW HHC 1/4-20 X 2-1/2 G5
32	022127	2	NUT HEX 1/4-20 STEEL
33	033121	2	SCREW HHC #10-32 X 1/2
34	023897	2	WASHER FLAT #10 ZINC
35	022158	2	NUT HEX #10-32 STEEL
36	030418	1	BUSHING REDUCER 1/2 TO 3/8
37	086096	1	ADAPTER WATER TEMP SENDER
38	053660	1	BARBED STRAIGHT 1/4 NPT X 5/8

Exploded View and Parts List

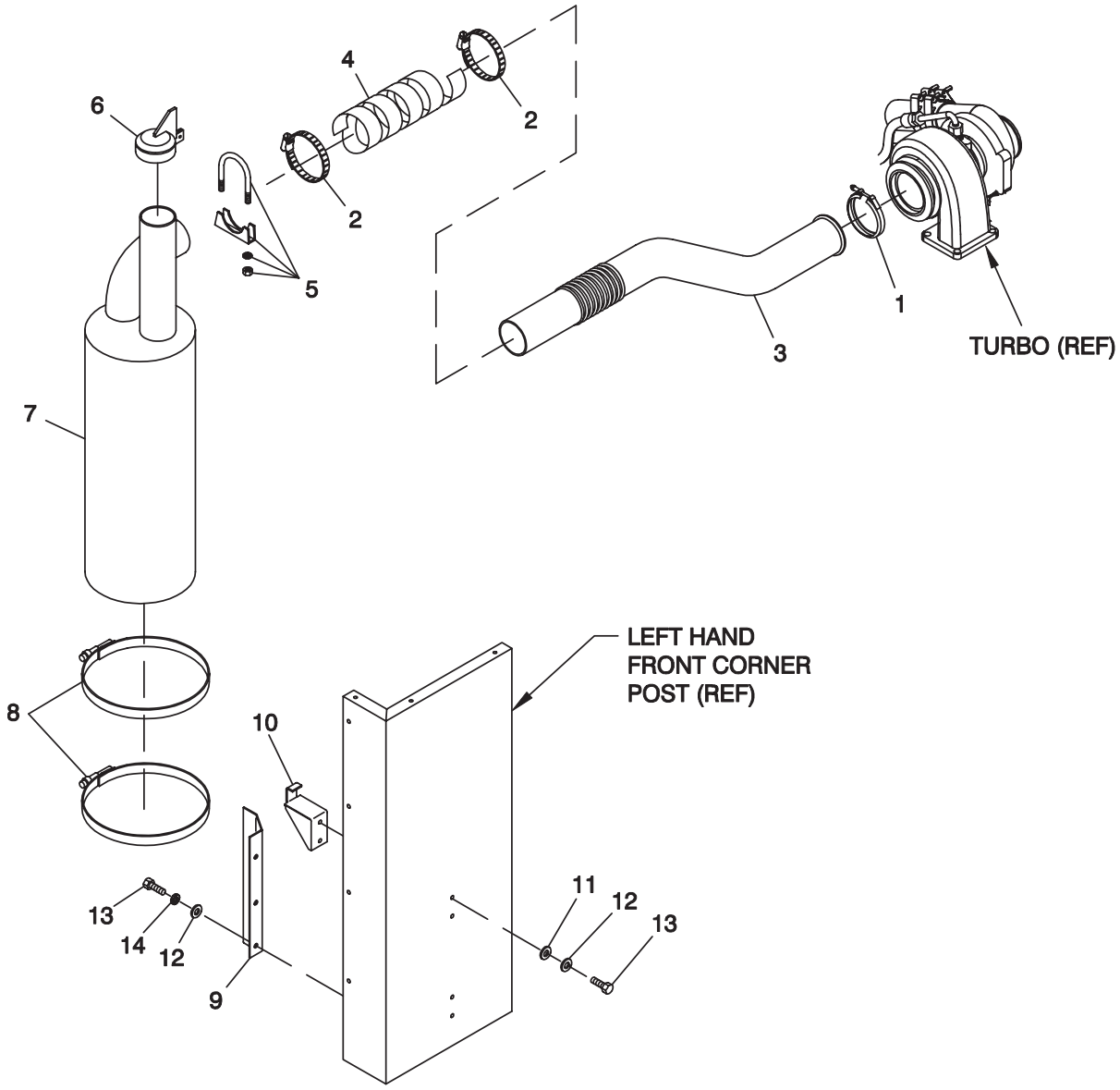
GR-125 Generator Set

Radiator Assembly — Drawing No. 0A5354-E



ITEM	PART NO.	QTY.	DESCRIPTION
1	0A2122B	1	BAFFLE, UPPER RAD.
2	099458	2	DUCT TOP/BOTTOM
3	087871A	1	RADIATOR OUTLET RH
4	022287	16	SCREW HHC 1/4-20 X 3/4 G5
5	021970A	1	VENTURI 6.8L 4 T JD
6	0A5350	2	GUARD LOWER FAN
7	0A5362	1	GUARD FAN
8	021971	1	SUPPORT RADIATOR SIDE RH JD
	021972	1	SUPPORT RADIATOR SIDE LH JD
9	099448	1	SUPPORT, SURGE TANK
10	090097	1	TANK SURGE
11	046627	2	CAP RADIATOR
13	059502	1	BARB EL 90 1/4NPT X 5/16
16	0A3433	1	HOSE RADIATOR LOWER J.D.
17	0A2509	1	HOSE RADITOR UPPER J.D.
18	099667D	6	NUT SPRINGCLIP 3/8-16
19	058612	2	CLAMP HOSE #88 5.12 - 6.00

ITEM	PART NO.	QTY.	DESCRIPTION
22	035587	1	HOSE 1IN ID CVR NEOP SAE-20R3
23	029032	24"	HOSE 9/32 ID
24	029032	30"	HOSE 9/32 ID
25	057824	2	CLAMP HOSE #16 .87 - 1.50
26	040173	3	CLAMP HOSE #5.5 .62 - .62
27	042561	4	CLAMP HOSE #36 1.88 - 2.75
30	035461	1	BARBED STRAIGHT 1/4 NPT X 3/8
31	035472	2	CLAMP HOSE #6 .43 - .78
32	047290	30"	HOSE 3/8 ID SINGLE BRAID
34	052617	6	SCREW HHC M12-1.75 X 20 G8.8
35	051769	6	WASHER LOCK M12
36	029745	6	SCREW HHC 3/8-16 X 1 G5
37	022237	12	WASHER LOCK 3/8
38	022131	12	WASHER FLAT M10-3/8 ZINC
42	047411	34	SCREW HHC M6-1.0 X 16 G8.8
43	022097	34	WASHER LOCK M6-1/4

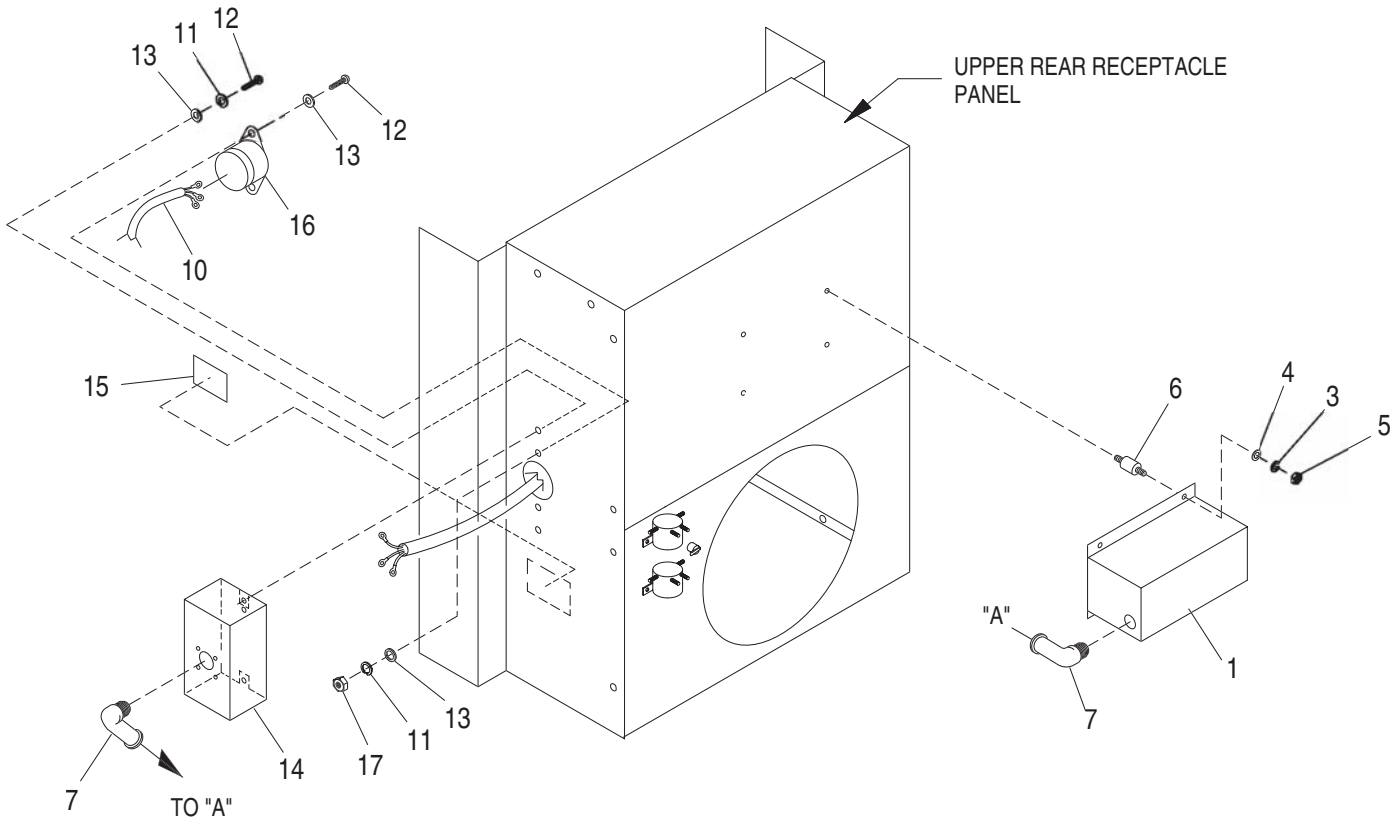


ITEM	PART NO.	QTY.	DESCRIPTION
1	098458	1	EXHAUST CLAMP V-BAND
2	039294	2	CLAMP HOSE #44 2.31 - 3.25
3	0A3930	1	FLEX PIPE 6.8L JD
4	082361	12'	INSULATION-EXHAUST
5	0A5423	1	U BOLT 3.5" CLAMP
6	059940	1	RAIN CAP 3.50 / 3.69
7	0A3929	1	MUFFLER 6.8L JD
8	0A3756	2	CLAMP TEE BOLT 11.25"
9	0A3546	1	BRACKET MUFFLER JD
10	099805	2	BRACKET MUFFLER CL B
11	096210	4	WASHER NYLON .375
12	088775	7	WASHER FLAT 3/8 SS
13	085916	7	SCREW HHC 3/8-16 X 1 SS
14	085917	3	WASHER LOCK 3/8 SS

Exploded View and Parts List

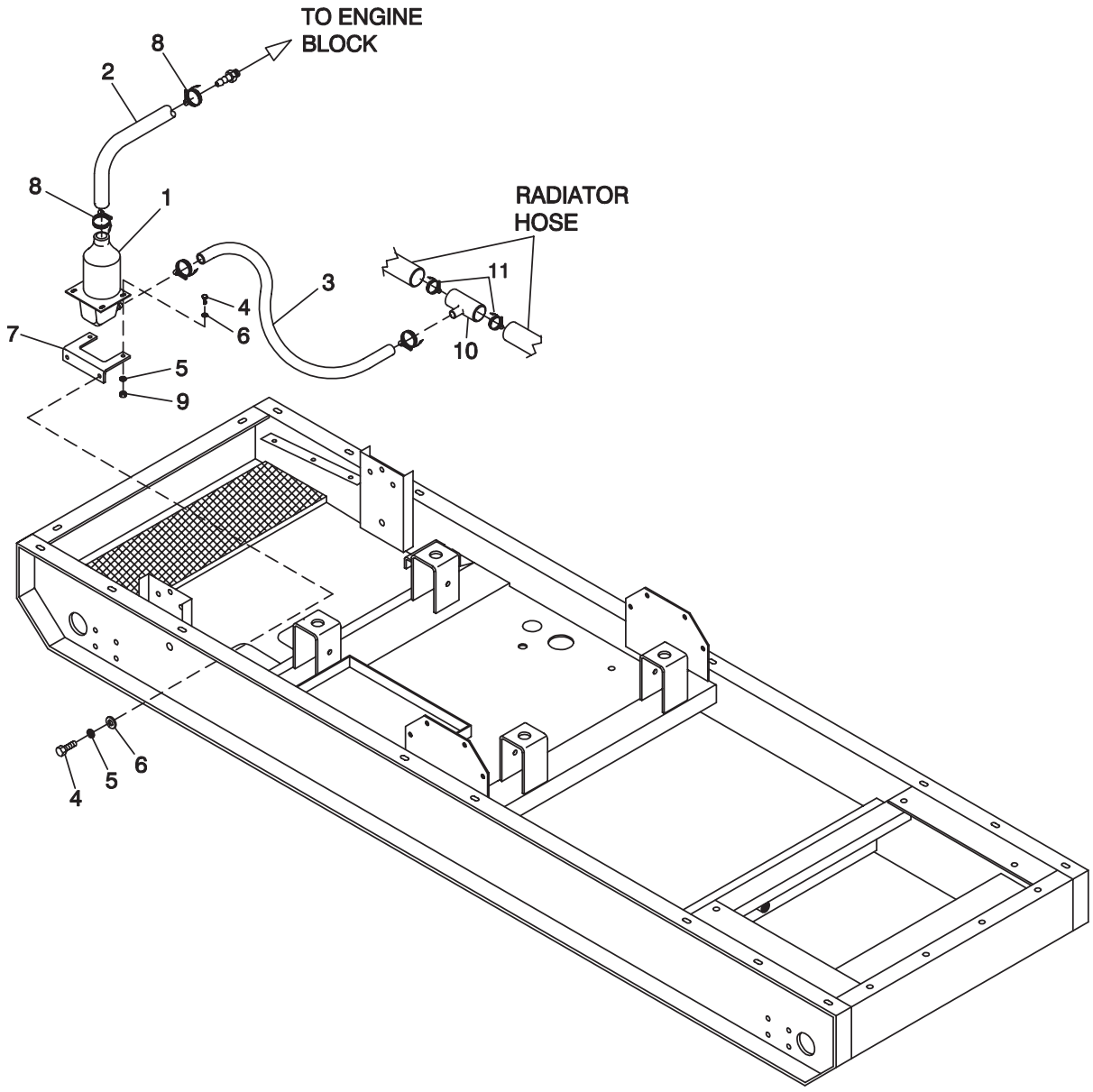
GR-125 Generator Set

Battery Charger — Drawing No. 091237-H



ITEM	PART NO.	QTY.	DESCRIPTION
1	0D3490	1	ASSY BATTERY CHAGER 12V 10AMP
	0D4687	1	BATTERY CHARGER ASSY,12V,2A,UL
3	022097	4	WASHER LOCK M6-1/4
4	022473	4	WASHER FLAT M6-1/4 ZINC
5	022127	4	NUT HEX 1/4-20 STEEL
6	027831	4	MOUNT VIBR .50 X 1.0 X .50
7	060015	2	FITTING 90 DEGREE 3/8
10	088670	1	ASSEMBLY WIRE-BATTERY CHARGER
11	081797	4	WASHER LOCK 6 SS
12	091198	4	SCREW PPHM #6-32 X 5/8 SS
13	081799	8	WASHER FLAT #6-M4 SS
14	062141	1	OUTLET BOX
15	091233	1	DECAL UTILITY CONNECTION
16	069174	1	RECEPTACLE MALE SS
17	081798	2	NUT HEX #6-32 SS
**	055934C	1	CLAMP VINYL .5 X .406 Z
**	090679	1	HARNESS BATTERY CHARGER

** NOT SHOWN



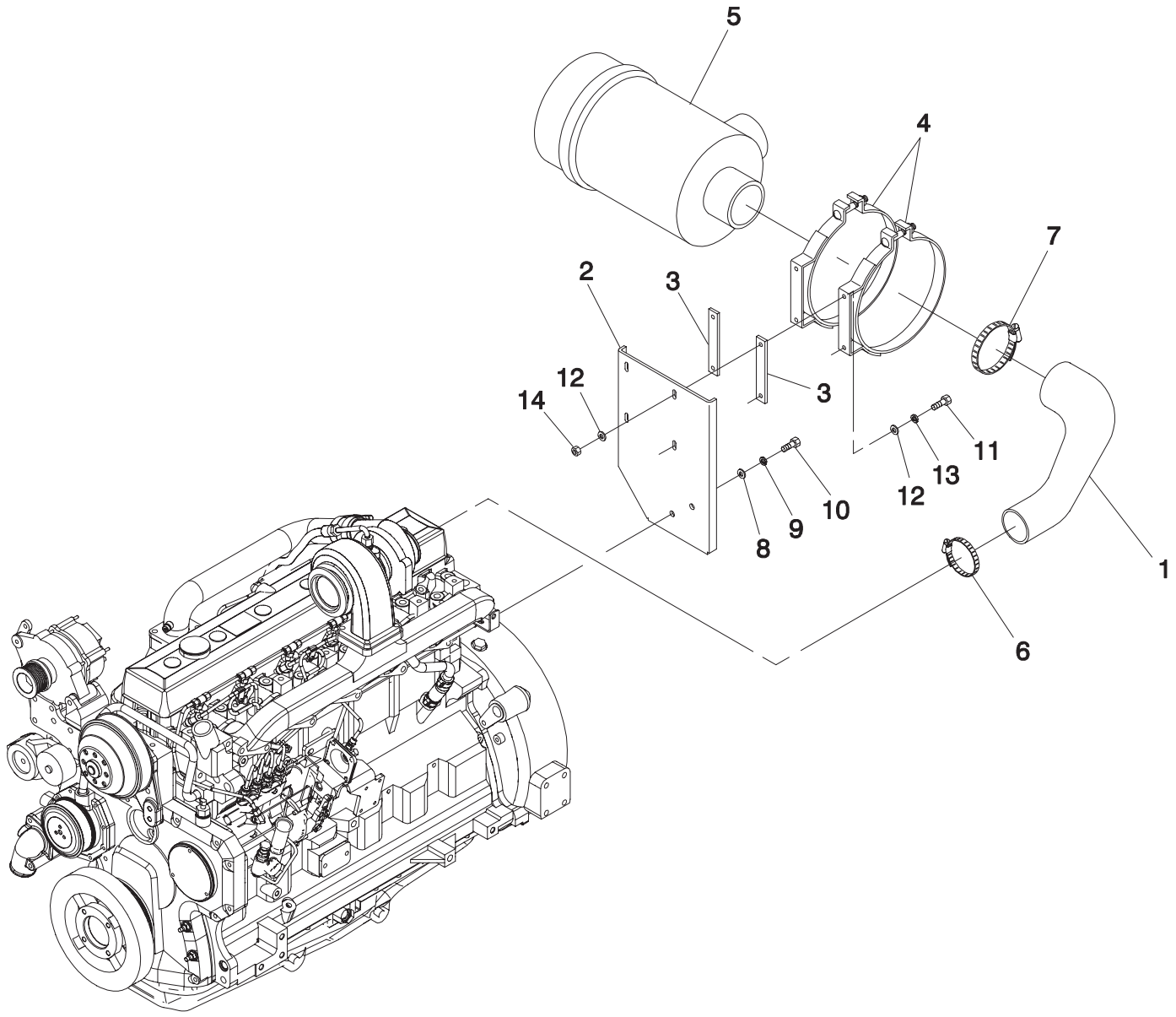
ITEM	PART NO.	QTY.	DESCRIPTION
1	084918C	1	BLOCK HEATER 1800W 120V
2	050967	20"	HOSE 5/8 ID RIA 250F
3	050967	24"	HOSE 5/8 ID RIA 250F
4	042568	4	SCREW HHC M6-1.0 X 20 G8.8
5	022097	4	WASHER LOCK M6-1/4
6	049811	4	WASHER FLAT M6
7	084427	1	BRACKET HEATER
8	057822	4	CLAMP HOSE #8 .53 - 1.00
9	049813	2	NUT HEX M6 -1.0 G8 YEL CHR
10	080723	1	HOSE CONNT. 1.75-.62
11	042561	2	CLAMP HOSE #36 1.88 - 2.75

NOTE: PUT ITEM #10 IN RADIATOR HOSE.

Exploded View and Parts List

GR-125 Generator Set

Air Cleaner — Drawing No. 0A5738-A



ITEM	PART NO.	QTY.	DESCRIPTION
1	0A4040	1	ELBOW AIR CLEANER 6.8L
2	0A4045	1	BRACKET AIR CLEANER 6.8L JD
3	0A5186	2	SPACER AIR CLEANER BRACKET
4	094194	2	BAND 10" AIR CLEANER MOUNTING
5	094193	1	AIR CLEANER FWG10
6	066212	1	CLAMP HOSE #52 2.81 - 3.75
7	078190	1	CLAMP HOSE #80 4.62 - 5.50
8	022131	2	WASHER FLAT 3/8-M10 ZINC
9	046526	2	WASHER LOCK M10
10	051756	2	SCREW HHC M10-1.5 X 20 G8.8
11	022142	4	SCREW HHC 5/16-18 X 3/4 G5
12	022145	8	WASHER FLAT 5/16 ZINC
13	022129	4	WASHER LOCK M8-5/16
14	022259	4	NUT HEX 5/16-18 STEEL

EMISSION SYSTEM WARRANTY (NON-ROAD DIESEL)

EMISSIONS CONTROL SYSTEM CERTIFICATION LABEL

WARNING: Statutes providing severe penalties for tampering with emissions controls may apply at the user's location.

The emissions warranty described below applies only to those engines marketed by John Deere that have been certified by the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB); and used in the United States and Canada in non-road mobile (self-propelled or portable/transportable*) equipment. The presence of an emissions label like the one shown signifies that the engine has been certified with the EPA and/or CARB. The EPA and CARB warranties only apply to new engines having the certification label affixed to the engine and sold as stated above in the geographic areas. The presence of an EU number in the third line of the label signifies that the engine has been certified with the European Union countries per Directive 97/68/EC. The emissions warranty does not apply to the EU countries.

Note: The hp/kW rating on the engine emissions certification label specifies the gross engine hp/kW, which is flywheel power without fan. In most applications this will not be the same rating as the advertised vehicle hp/kW rating.

* Equipment moved at least once every 12 months.

U.S. EPA EMISSIONS CONTROL WARRANTY STATEMENT

Emissions control-related parts and components are warranted by John Deere for five years or 3000 hours of operation, whichever occurs first. John Deere further warrants that the engine covered by this warranty was designed, built, and equipped so as to conform at the time of sale with all U.S. emissions standards at the time of manufacture, and that it is free of defects in materials and workmanship which would cause it not to meet these standards within the period of five years or 3000 hours of operation, whichever occurs first.

Warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately as the "John Deere New Off-Highway Engine Warranty".

Part 1

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT (CALIFORNIA ONLY)

Your Warranty Rights and Obligations

The California Air Resources Board (CARB) and John Deere are pleased to explain the emission control system on your new engine. In California, new heavy-duty engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, or improper maintenance of your engine.

Your emissions control system includes:

- Fuel Metering System

  Fuel Injection System
- Air Induction System

  Intake Manifold

  Turbocharger System

  Charge Air Cooling System
- Miscellaneous Items used in above systems

Where a warrantable condition exists, i.e. failure due to defect in John Deere-supplied material and/or workmanship, John Deere will repair your heavy-duty engine at no cost to you including diagnosis, parts and labor.

JOHN DEERE'S WARRANTY COVERAGE:

The emission control system of your heavy-duty engine is warranted for five years or 3000 hours of operation, whichever occurs first. If any emission-related part on your engine is defective, the part will be repaired or replaced by John Deere. Warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately as the "John Deere New Off-Highway Engine Warranty".

Part 2

OWNER'S WARRANTY RESPONSIBILITIES:

As the heavy-duty engine owner, you are responsible for the performance of the required maintenance as outlined in this Operation and Maintenance Manual. John Deere recommends that you retain all receipts covering maintenance on your heavy-duty engine, but John Deere cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

However, as the heavy-duty engine owner, you should be aware that John Deere may deny you warranty coverage if your heavy-duty engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.

You are responsible for initiating the warranty process. The CARB suggests that you present your heavy-duty engine to the nearest John Deere engine service dealer as soon as a problem is suspected. The warranty repairs should be completed by the service dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400 or the State of California Air Resources Board, Mobile Source Operation Division, PO Box 8001, El Monte, CA 91731-2990.

The warranty period begins on the date the engine is delivered to an ultimate purchaser, or when otherwise put into service. John Deere warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board, and that it is free from defects in materials and workmanship which would cause the failure of a warranted part.

Any warranted part which is scheduled for replacement as required maintenance by this Operation and Maintenance Manual is warranted by John Deere for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement point, the part shall be repaired or replaced under the warranty. Any such part repaired or replaced under warranty is warranted for the remainder of the period prior to the first scheduled replacement point for the part.

Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of repairing or replacing as necessary, is warranted for the warranty period.

Repair or replacement of a warranted part will be performed at no charge to you by a John Deere engine service dealer. You will not be charged for diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed by a John Deere engine service dealer.

John Deere is liable for damages to other engine components caused by the failure under warranty of any warranted part.

Any replacement part may be used in the performance of any maintenance or repairs, and such use will not reduce the warranty obligations of John Deere. However, the use of add-on or modified parts are grounds for disallowing a warranty claim.

Part 3

GENERAC POWER SYSTEMS STANDARD TWO-YEAR LIMITED WARRANTY FOR GR SERIES/PRIME POWER UNITS

NOTE: ALL UNITS MUST HAVE A STARTUP INSPECTION PERFORMED BY AN AUTHORIZED GENERAC DEALER.

For a period of 2 (two) years or 3,000 (three thousand) hours of operation from the date of sale, which ever occurs first, Generac Power Systems, Inc. will, at its option, repair or replace any part(s) which, upon examination, inspection, and testing by Generac Power Systems or a Generac Power Systems Authorized Warranty Service Facility, is found to be defective under normal use and service, in accordance with the warranty schedule set forth below. Any equipment that the purchaser/owner claims to be defective must be returned to, and examined by the nearest Generac Power Systems Authorized Warranty Service Facility. All transportation costs under the warranty, including return to the factory, are to be borne and prepaid by the purchaser/owner. This warranty applies only to Generac Power Systems Generators used in "Prime Power/Mobile" applications, as Generac Power Systems, Inc. have defined Prime Power/Mobile, provided said generator has been initially installed and inspected on-site by a Generac Power Systems Authorized Service Dealer or branch thereof. A scheduled maintenance agreement with a local Authorized Generac Power Systems Dealer is highly recommended to verify adequate service has been performed on the unit throughout the warranty period. Limited to, and available only on Liquid-cooled units.

WARRANTY SCHEDULE

YEAR ONE — 100% (one hundred percent) coverage on mileage*, labor, and parts listed.

- **ALL COMPONENTS**

YEAR TWO — 100% (one hundred percent) coverage on parts listed.

- **ALL COMPONENTS — *PARTS ONLY**
- *Travel allowance is limited to 300 miles maximum, or 7.5 hours maximum (per occurrence), **round trip**, to the nearest Generac Service Facility.
- A Generac Power Systems, Inc. Transfer Switch is highly recommended to be used in conjunction with the genset. If a Non - Generac Power Systems, Inc. Transfer Switch is substituted for use and directly causes damage to the genset, no warranty coverage shall apply.
- All warranty expense allowances **are** subject to the conditions defined in Generac Power Systems Warranty, Policies, and Procedures Flat Rate Manual.
- Trailer/Mobile units that have been resold **are** covered under the Generac Power Systems Warranty, as this Warranty **is** transferable. A transfer fee of $100.00 plus a complete inspection report that indicates the unit has been maintained and is in proper working order, **must be** received within 30 days of the date of sale or all warranty on the unit **will be** null and void. The warranty time frame is from the original in-service/start-up date of the unit provided all fees and documentation have been completed.

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

1. Any unit built/manufactured prior to January 1, 2002.
2. Unit enclosure is only covered against rust or corrosion the first year of the warranty provision.
3. Costs of normal maintenance i.e. tune-ups, associated part(s), adjustments, loose/leaking clamps, installation and start-up.
4. Use of Non-Generac replacement part(s) will void the warranty in its entirety.
5. Any failure caused by contaminated fuels, oils, coolants/antifreeze or lack of proper fuels, oils or coolants/antifreeze.
6. Units sold, rated or used for “Standby Power” applications as Generac Power Systems have defined Standby Power. Contact a Generac Power Systems Distributor for Standby Power definition and warranty.
7. Failures due, but not limited to, normal wear and tear, accident, misuse, abuse, negligence, or improper installation or sizing.
8. Failures caused by any external cause or act of God such as collision, fire, theft, freezing, vandalism, riot or wars, lightning, earthquake, windstorm, hail, volcanic eruption, water or flood, tornado, hurricane, terrorist acts or nuclear holocaust.
9. Products that are modified or altered in a manner not authorized by Generac Power Systems in writing.
10. Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
11. Failure due to misapplication, misrepresentation, or bi-fuel conversion.
12. Telephone, telegraph, teletype or other communication expenses.
13. Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.
14. Rental equipment used while warranty repairs are being performed i.e. rental generators, cranes, etc..
15. Overtime labor or more than one person performing repairs.
16. Any and all expenses incurred investigating performance complaints unless defective Generac materials and or workmanship were the direct cause of the problem.
17. *Engine coolant heaters (block-heaters), heater controls and circulating pumps after the first year.
18. *Starting batteries, fuses, light bulbs, engine fluids, and overnight freight cost for replacement part(s).

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, GENERAC POWER SYSTEMS MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

GENERAC POWER SYSTEMS ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC POWER SYSTEMS BE LIABLE FOR ANY INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC POWER SYSTEMS, INC. NEGLIGENCE. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. Purchaser/owner agrees to make no claims against Generac Power Systems, Inc. based on negligence.

This warranty gives you specific legal rights. You also may have other rights that vary from state to state.

GENERAC® POWER SYSTEMS, INC. · P.O. BOX 8 · WAUKESHA, WI 53187
PH: (262) 544-4811 · FAX: (262) 544-4851

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