Model: 1388490100
Type: SD125
Engine: D5.0

Stationary Emergency Generator

OWNER'S MANUAL

This manual should remain with the unit.

GENERAC®

INTRODUCTION

Thank you for purchasing this model of the standby generator set product line by Generac Power Systems, Inc..

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

◆ READ THIS MANUAL THOROUGHLY

If any portion of this manual is not understood, contact the nearest 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 personnel to special instructions about a particular service or operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Their definitions are as follows:

⚠ DANGER ⚠

After this heading, read instructions that, if not strictly complied with, will result in personal injury or property damage.

⚠ WARNING ⚠

After this heading, read instructions that, if not strictly complied with, may result in personal injury or property damage.

⚠ CAUTION ⚠

After this heading, read instructions that, if not strictly complied with, could result in damage to equipment and/or property.

NOTE:

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

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.

Four commonly used safety symbols accompany the DANGER, WARNING and CAUTION blocks. The type of information each indicates is as follows:

⚠ **This symbol points out important safety information that, if not followed, could endanger personal safety and/or property of others.**

This symbol points out potential explosion hazard.

This symbol points out potential fire hazard.

⚠ **This symbol points out potential electrical shock hazard.**

The operator is responsible for proper and safe use of the equipment. The manufacturer strongly recommends that the operator read this Owner's Manual and thoroughly understand all instructions before using this equipment. The manufacturer also strongly recommends 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 periodically by an Authorized Service Dealer. 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 the generator ensure a minimum number of problems and keep operating expenses at a minimum. See an Authorized Service Dealer for service aids and accessories.

Operating instructions presented in this manual assume that the standby electric system has been installed by an Authorized Service Dealer or other competent, qualified contractor. Installation of this equipment is not a “do-it-yourself” project.

◆ HOW TO OBTAIN SERVICE

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

When contacting an Authorized Service Dealer about parts and service, always supply the complete model number of the unit as given on the front cover of this manual or on the DATA LABEL affixed to the unit.

AUTHORIZED SERVICE DEALER LOCATION

To locate the nearest AUTHORIZED SERVICE DEALER, please call this number:

1-800-333-1322

DEALER LOCATION INFORMATION CAN BE OBTAINED AT THIS NUMBER or visit the website at

www.generac.com.

SAVE THESE INSTRUCTIONS – The manufacturer suggests that these rules for safe operation be copied and posted in potential hazard areas. Safety should be stressed to all operators, potential operators, and service and repair technicians for 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.

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

Generac cannot possibly anticipate every possible cir cumstance 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 that 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, operating this equipment imprudently, neglecting its maintenance or being careless can cause possible injury or death. Permit only responsible and capable persons to install, operate or maintain this equipment.

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.

Parts of the generator are rotating and/or hot during operation. Exercise care near running generators.

GENERAL HAZARDS

- For safety reasons, Generac recommends that this equipment be installed, serviced and repaired by a Generac Authorized Service Dealer or other competent, qualified electrician or installation technician who is familiar with applicable codes, standards and regulations. The operator also must comply with all such codes, standards and regulations.
- Installation, operation, servicing and repair of this (and related) equipment must always 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 installed, operated and serviced in accordance with the manufacturer's instructions and recommendations. Following installation, you must not do anything that might render the unit unsafe or in noncompliance with the aforementioned codes, standards, laws and regulations.
- The engine exhaust fumes contain carbon monoxide gas, which can be DEADLY. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. For that reason, adequate ventilation must be provided. Exhaust gases must be piped safely away from any building or enclosure that houses the generator to an area where people, animals, etc., will not be harmed. This exhaust system must be installed properly, in strict compliance with applicable codes and standards.
- 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.
- Adequate, unobstructed flow of cooling and ventilating air is critical in any room or building housing the generator to prevent buildup of explosive gases and to ensure correct generator operation. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator.
- Keep the area around the generator clean and uncluttered. Remove any materials that could become hazardous.
- When working on this equipment, remain alert at all times. Never work on the equipment when you are physically or mentally fatigued.
- Inspect the generator regularly, and promptly repair or replace all worn, damaged or defective parts using only factory-approved parts.
- Before performing any maintenance on the generator, disconnect its battery cables to prevent accidental start-up. Disconnect the cable from the battery post indicated by a NEGATIVE, NEG or (–) first. Reconnect that cable last.
- 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.

⚠ ELECTRICAL HAZARDS ⚠

- All generators covered by this manual produce dangerous electrical voltages and can cause fatal electrical shock. Utility power delivers extremely high and dangerous voltages to the transfer switch as well as the standby generator. Avoid contact with bare wires, terminals, connections, etc., on the generator as well as the transfer switch, if applicable. Ensure all appropriate covers, guards and barriers are in place before operating the generator. If you must work around an operating unit, stand on an insulated, dry surface to reduce shock hazard.
- Do not handle any kind of electrical device while standing in water, while barefoot, or while hands or feet are wet. DANGEROUS ELECTRICAL SHOCK MAY RESULT.
- If people must stand on metal or concrete while installing, operating, servicing, adjusting or repairing this equipment, place insulative mats over a dry wooden platform. Work on the equipment only while standing on such insulative mats.
- The National Electrical Code (NEC) requires the frame and external electrically conductive parts of the generator to be connected to an approved earth ground. This grounding will help prevent dangerous electrical shock that might be caused by a ground fault condition in the generator set or by static electricity. Never disconnect the ground wire.
- Wire gauge sizes of electrical wiring, cables and cord sets must be adequate to handle the maximum electrical current (ampacity) to which they will be subjected.
- Before installing or servicing this (and related) equipment, make sure that all power voltage supplies are positively turned off at their source. Failure to do so will result in hazardous and possibly fatal electrical shock.
- Connecting this unit to an electrical system normally supplied by an electric utility shall be by means of a transfer switch so as to isolate the generator electric system from the electric utility distribution system when the generator is operating. Failure to isolate the two electric system power sources from each other by such means will result in damage to the generator and may also result in injury or death to utility power workers due to backfeed of electrical energy.
- Generators installed with an automatic transfer switch will crank and start automatically when normal (utility) source voltage is removed or is below an acceptable preset level. To prevent such automatic start-up and possible injury to personnel, disable the generator's automatic start circuit (battery cables, etc.) before working on or around the unit. Then, place a "Do Not Operate" tag on the generator control panel and on the transfer switch.
- 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 dry rope or board, to free the victim from the live conductor. If the victim is unconscious, apply first aid and get immediate medical help.
- Never wear jewelry when working on this equipment. Jewelry can conduct electricity resulting in electric shock, or may get caught in moving components causing injury.

⚠ FIRE HAZARDS ⚠

- Keep a fire extinguisher near the generator at all times. Do NOT use any carbon tetra-chloride type extinguisher. Its fumes are toxic, and the liquid can deteriorate wiring insulation. Keep the extinguisher properly charged and be familiar with its use. If you have any question pertaining to fire extinguishers, consult your local fire department.

⚠ EXPLOSION HAZARDS ⚠

- Properly ventilate any room or building housing the generator to prevent build-up of explosive gas.
- Do not smoke around the generator. Wipe up any fuel or oil spills immediately. Ensure that no combustible materials are left in the generator compartment, or on or near the generator, as FIRE or EXPLOSION may result. Keep the area surrounding the generator clean and free from debris.
- Generac generator sets may operate using one of several types of fuels. All fuel types are potentially FLAMMABLE and/or EXPLOSIVE and should be handled with care. Comply with all laws regulating the storage and handling of fuels. Inspect the unit's fuel system frequently and correct any leaks immediately. Fuel supply lines must be properly installed, purged and leak tested according to applicable fuel-gas codes before placing this equipment into service.
- Diesel fuels are highly FLAMMABLE. Gaseous fluids such as natural gas and liquid propane (LP) gas are extremely EXPLOSIVE. Natural gas is lighter than air, and LP gas is heavier than air; install leak detectors accordingly.

IDENTIFICATION RECORD

◆ DATA PLATE

Every generator set has a metal DATA PLATE that contains important information pertinent to the generator. The data plate, which can be found attached to the generator's lower connection box, lists the unit's serial number and its rated voltage, amps, wattage capacity, phase, frequency, rpm, power factor, etc.

◆ DATA CARD

A DATA CARD also is affixed to the lower connection box of each standby generator set. A second, matching card is located under the control panel cover. Like the data plate, this card also contains valuable information pertaining to your generator. When requesting information, ordering replacement parts, asking for service, etc., you may be asked to supply the information from this card. It provides the following information:

- Generator Model Number
- Date of Manufacture
- Generator Identification Code
- Generator Assembly Groups

GENERAC POWER SYSTEMS

MODEL NO. 00A 00000 S DATE 00/00/00 (Generator ID Code)

GROUP	DESCRIPTION	ASSEMBLY NUMBERS		
A	Generator	00000	00000	
B	Control Panel	00000	00000	00000
C	Mounting Base	00000	00000	00000
D	Engine & Accy.	00000	00000	
E	Fuel Systems	00000		
F	Compartments	00000	00000	
G	Wiring Diagrams	00000	00000	00000
H	Kits	00000	00000	

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE ABOVE INFORMATION

NOTE:

The above is a generic representation of a data card. For actual information related to this particular model, please refer to the "construction document" located at the end of this manual, or to the data cards affixed to the unit.

▶ 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.

▶ Identification Code

Use this code to obtain important information about your generator. For example, if the code is ...

SD 100 - A 1 6 5.0 D 18 CB Y N C

– you can identify your generator as follows:

- SD – Standby diesel generator ("SG" indicates a standby gaseous fuel unit).
- 100 – Rated output is 100,000 watts (100 kW).
- A – Voltage code (see "Voltage Codes" on this page).
- 1 – Indicates single-phase unit (3 – indicates three-phase unit).
- 6 – Indicates unit rated 60 Hertz (Hz) (5 – indicates 50 Hz).
- 5.0 – Engine is 5.0 liter (304 cubic inches).
- D – Unit has diesel fuel system ("N" means natural gas; "L" means LP Liquid Withdrawal; "V" means LP Vapor Withdrawal).
- 18 – Alternator rpm rating (1,800 rpm); "36" means 3,600 rpm.
- C – Unit has an option "C" control panel (option "D" and "E" panels also are available).
- B – means a brushless unit ("D" means a direct excited unit with brushes and slip rings; "P" means a permanent magnet excitation).
- Y – Unit is equipped with a standard enclosure ("N" means no enclosure; "S" means unit has an acoustic enclosure).
- N – Unit does not have an exhaust muffler ("Y" means a muffler has been mounted; "L" means a muffler has been shipped loose with the unit).
- Y – Unit has a main line circuit breaker ("C" means unit has a UL-listed circuit breaker; "N" means no circuit breaker has been mounted).

▶ Groups and Assembly Numbers

The data card lists the groups and corresponding assembly numbers for each unit. The assembly numbers refer to exploded view drawing numbers that are applicable to your specific generator model. These drawings are located in the back half of this manual.

▶ Voltage Codes

The identification code letter following the unit's kilowatt rating is the generator's "voltage code." Any one of the following voltage codes may be listed.

A – 120/240 volts, single-phase, four-lead, 60 Hz
D – 120/240 volts, single- and three-phase, 12-lead, 60 Hz
G – 120/208 volts, three-phase, 12-lead, 60 Hz Broad Range
J – 120/240 volts, three-phase, 12-lead, 60 Hz Broad Range
K – 277/480 volts, three-phase, 12-lead, 60 Hz Broad Range
L – 346/600 volts, three-phase, six-lead, 60 Hz
M – 110/220 volts, single-phase, four-lead, 50 Hz
N – 115/200 volts, three-phase, 12-lead, 50 Hz Broad Range
P – 100/200 volts, three-phase, 12-lead, 50 Hz Broad Range
R – 231/400 volts, three-phase, 12-lead, 50 Hz Broad Range
S – 277/480 volts, three-phase, six-lead, 50 Hz

EQUIPMENT DESCRIPTION

This equipment is a revolving field, alternating current generator set. The generator was designed to supply electrical power for the operation of compatible electrical loads when the UTILITY power supply is not available or has dropped to an unacceptable level.

The generator's revolving field is directly connected to and driven by an engine by means of flexible discs or a gearbox coupling assembly. Units with a four-pole rotor are driven at rated speeds of 1,800 rpm to supply a frequency of 60 Hz, or at 1,500 rpm for a frequency of 50 Hz.

Refer to the data plate on your specific generator or to the data card affixed to the unit for rated AC voltage, wattage, amperage, number of phases, etc. See "Identification Code" on Page 4 for an explanation of the way to identify your unit's features.

◆ STANDARD GENERATOR FEATURES

This generator incorporates the following generator features:

- The rotor insulation system is Class "H" rated, and the stator insulation is Class "H" rated as defined by NEMA MG1-22.4 and NEMA MG1-1.65.
- 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.
- All prototype tested models have passed three-phase symmetrical short circuit test to ensure system protection and reliability.

ENGINE PROTECTIVE DEVICES

The standby generator may be required to operate for long periods of time without an operator on hand to monitor such engine conditions as coolant temperature, oil pressure or rpm. For that reason, the engine has several devices designed to protect it against potentially damaging conditions by automatically shutting down the unit when the oil pressure is too low, the coolant temperature is too high, the coolant level is too low, or the engine is running too fast.

NOTE:

Engine protective switches and sensors are mentioned here for the reader's convenience. Also refer to the applicable control panel manual for additional automatic engine shutdown information.

◆ HIGH COOLANT TEMPERATURE SWITCH

This normally open (N.O.) switch closes to automatically shut down the engine if the engine coolant temperature rises above a safe level.

◆ LOW COOLANT LEVEL SENSOR

Should the engine coolant level drop below the level of the high coolant temperature switch, it is possible for the engine to overheat without automatic shutdown. To prevent such overheating, the engine has a low coolant level sensor. If the level of engine coolant drops below the level of the low coolant level sensor, the engine automatically shuts down.

◆ LOW OIL PRESSURE SWITCH

This normally closed (N.C.) switch is held open by engine oil pressure during operation. If oil pressure drops below a safe level, the switch contacts close, automatically shutting down the engine.

◆ OVERSPEED SHUTDOWN

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

After a prespecified duration of cranking, this function ends the cranking if the engine has failed to start.

◆ RPM SENSOR LOSS SHUTDOWN

If the speed signal to the control panel is lost, engine shutdown will occur.

FUEL SYSTEM

◆ FUEL REQUIREMENTS

Your standby generator may be equipped with one of the following fuel systems:

- Diesel fuel system
- Liquid propane (LP) fuel system
- Propane vapor (PV) fuel system
- Natural gas fuel system
- Combination LP/natural gas fuel system

The data card that is affixed to your unit includes the "Identification Code," which may be used to identify the type of fuel system installed on the unit. See Page 4.

NOTE:

It is the responsibility of the installer to make sure that only the correct recommended fuel is supplied to the generator fuel system. Thereafter, the owner/operator must make certain that only the proper fuel is supplied.

For further information on the various types of fuel systems, refer to *Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual* (part #46622).

◆ DIESEL FUEL SYSTEM

Diesel fuel is generally supplied to the generator set from a suitable day tank or base-mounted fuel tank. Either of these tanks may be used in conjunction with a main (bulk) supply tank.

Diesel fuels are less volatile than gaseous fuels, however, careless installation can lead to safety hazards and/or serious problems with engine/generator performance and reliability.

NOTE:

Appropriate care should be taken in applications where extremely low ambient temperatures are possible to ensure the temperature of the diesel fuel is not allowed to fall below levels where "gelling" could occur.

◆ LP FUEL SYSTEM

LP is supplied as a liquid in pressure tanks. It is usually made up of propane, butane, or a mixture of the two gases. Propane tends to vaporize readily even at temperatures as low as -20° F (-29° C). However, butane reverts to its liquid state when temperatures drop below 32° F (0° C).

LP in a liquid withdrawal system must be converted to its gaseous state before it is introduced into the engine carburetor. A vaporizer-converter is generally used to accomplish this. In such a converter, heated engine coolant is ported through the converter to provide the necessary heat for conversion of the fuel from a liquid to a gaseous state.

NOTE:

On units with LP gas liquid withdrawal fuel systems, a block heater is included as standard equipment. The heater is powered by the UTILITY power source during nonoperating periods. Thus, heated coolant is always available to aid the fuel vaporization process.

◆ NATURAL GAS FUEL SYSTEM

Natural gas is supplied in its vapor state. In most cases, the gas distribution company will provide piping from the main gas distribution line to the standby generator site. The following information applies to natural gas fuel systems.

- Gas pressure in a building is usually regulated by national, state and local codes.
- To reduce gas pressure to a safe level before the gas enters a building, you need a primary regulator. The natural gas supplier may or may not supply such a regulator.
- It is the responsibility of the gas supplier to make sure sufficient gas pressure is available to operate the primary regulator.
- Gas pressure at the inlet to the fuel shutoff solenoid should not exceed approximately 20 inches water column (0.75 psi). Optimum pressure at the fuel shutoff solenoid is 11 inches water column (0.4 psi).

◆ COMBINATION LP/NATURAL GAS FUEL SYSTEM

In some areas, the cost of natural gas may be reduced considerably by procuring the gas on "interrupted service" rates. Such rates may be obtained by using LP gas as an emergency fuel when natural gas is not available. Automatic changeover is accomplished by using two regulators, i.e., a line pressure regulator and a vacuum-operated regulator for natural gas. The difference in pressure compensates for the greater Btu value of LP gas.

During operation on natural gas, a positive pressure exists in the common line to the carburetor. This pressure closes the LP gas regulator and stops the flow of LP gas. Loss of natural gas pressure causes a partial vacuum in the line, and the LP gas regulator then opens to admit LP gas into the system. Adjusting a separate power mixture in the LP gas line permits precise setting of air-to-fuel ratios on each of the fuels. Changeover is automatic with the engine operating.

◆ PROPANE VAPOR WITHDRAWAL FUEL SYSTEM

This type of system utilizes the vapors formed above the liquid fuel in the supply tank. Approximately 10 to 20 percent of the tank capacity is needed for fuel expansion from the liquid to the vapor state. The vapor withdrawal system is generally best suited for smaller engines that require less fuel. The installer should be aware of the following:

- The Generac natural gas and LP gas systems are similar. However, the natural gas system delivers gas at a pressure of approximately 5 inches water column to the carburetor. The LP gas system delivers gas at a slightly negative pressure (about -1 inch) to the engine carburetor.
- When ambient temperatures are low and engine fuel consumption is high, the vapor withdrawal system may not function efficiently.

- Ambient temperatures around the supply tank must be high enough to sustain adequate vaporization, or the system will not deliver the needed fuel volume.
- In addition to the cooling effects of ambient air, the vaporization process itself provides an additional cooling effect.

SPECIFICATIONS

◆ GENERATOR

Refer to the data plate on your particular generator for rated watts, amperes, frequency, voltage, phase and other pertinent information.

Also refer to "Identification Code" on Page 4 for information on determining unit specifications.

◆ ENGINE

General:

Cylinders and Arrangement .....4, in-line
Displacement .....5.0 L (304 in³)
Bore .....112 mm (4.41 in.)
Stroke .....127 mm (5 in.)
Compression Ratio 17.5-to-1
Number of Main Bearings 5
Type of Main Bearing Caps .....Cast Iron
Aspiration .....Turbo
Governed Engine Speed .....See DATA PLATE
Type of Valve Lifters .....Solid
Cylinder Head .....Cast Iron
Pistons .....4, Aluminum Alloy
Crankshaft .....Forged Steel
Number of Flywheel Teeth 133

Engine Lubrication System:

Type of Oil Pump .....Gerotor
Oil Filter .....Full Flow, Cartridge
Crankcase Oil Capacity .....18 L (19 U.S. qts.)

Fuel System:

Type of Fuel .....Diesel
Consumption:*

Type	*Rated Freq.*	*Fuel System*	*25% Load*	*50% Load*	*75% Load*	*100% Load*
SD060	50 Hz	Diesel Turbo	1.7	2.5	3.2	4.3
SD080	50 Hz	Diesel Turbo	2.1	3.0	4.0	5.5
SD100	50 Hz	Diesel Turbo†	1.8	3.5	5.2	6.7
SD125	50 Hz	Diesel Turbo†‡	2.8	5.3	7.9	10.6
SD060	60 Hz	Diesel Turbo	2.0	2.8	3.6	4.7
SD080	60 Hz	Diesel Turbo	2.3	3.2	4.3	6.0
SD100	60 Hz	Diesel Turbo†	2.2	4.2	6.2	8.9
SD125	60Hz	Diesel Turbo†‡	2.9	5.6	8.4	11.02

† = Aftercooled; ‡ Gear Driven
*Given in ...
Diesel: gal/h; Natural Gas (NG): cfh; Liquid Propane Vapor (LP): cfh

Cooling System:

Type .....Pressurized, Closed Recovery
Coolant Capacity
  System .....15 L (16 U.S. qts.)
  Engine .....6 L (6.4 U.S. qts.)
Coolant Flow Per Minute
  1,500 rpm .....153 L (40.5 U.S. gals.)
  1,800 rpm .....185 L (49 U.S. gals.)
Heat Rejection to Coolant (50 Hz and 60 Hz)
  SD060 .....225,000 Btu/h
  SD080 .....300,000 Btu/h
  SD100 .....375,000 Btu/h
  SD125 .....485,000 Btu/h
Cooling Fan .....Pusher Type
Diameter of Fan .....457 mm (80 in.)
Cooling Airflow Required
  50 Hz Units .....4,200 cfm
  60 Hz Units .....5,000 cfm
Recommended Coolant .....See "Coolant" on Page 8
Combustion Airflow Required (50 Hz / 60 Hz)
  SD060 .....207 cfm (5.9 m³/min.) / 258 cfm (7.3 m³/min.)
  SD080 .....220 cfm (6.2 m³/min.) / 275 cfm (7.8 m³/min.)
  SD100 .....274 cfm (7.7 m³/min.) / 330 cfm (9.3 m³/min.)
  SD125 .....340 cfm (9.5 m³/min.) / 412 cfm (11.7 m³/min.)

Exhaust System:

Exhaust Flow at Rated Output at 50 Hz / 60 Hz
  SD060 .....498 cfm / 672 cfm
  SD080 .....706 cfm / 848 cfm
  SD100 .....730 cfm / 880 cfm
  SD125 .....950 cfm / 950 cfm
Exhaust Outlet Size
  Turbo .....3 in. (bolt flange)
Exhaust Temperature at Rated Output (100 kW)
  50 Hertz Units .....(594° C) 1,100° F
  60 Hertz Units .....(630° C) 1,166° F

Engine Electrical System:

DC Alternator Output .....15 amps at 14 volts
Starter Motor .....12-volt DC, 3 kW
Recommended Battery .....12-volt, 135 Ah, 4DLT
Ground Polarity .....Negative (–)

◆ ENGINE OIL RECOMMENDATIONS

The unit has been filled with 15W-40 engine oil at the factory. Use a high-quality detergent oil classified "For Service CC, SD, SE or SF." Detergent oils keep the engine cleaner and reduce carbon deposits. Use oil having the following SAE viscosity rating, based on the ambient temperature range anticipated before the next oil change:

Temperature	Oil Grade (Recommended)
Above 86° F (30° C)	SAE 40 or 15W-40
32° to 86° F (0° to 30° C)	SAE 30 or 15W-40
Below 32° F (0° C)	SAE 20 or 15W-40
All Seasons	SAE 15W-40

◆ COOLANT

Use a mixture of half low silicate, ethylene glycol base antifreeze and half soft water. Use only soft water and only low silicate antifreeze. If desired, you may add a high quality rust inhibitor to the recommended coolant mixture. When adding coolant, always add the recommended 50-50 mixture.

⚠ DANGER ⚠

⚠ Do not remove the radiator pressure cap while the engine is hot or serious burns from boiling liquid or steam could result.

⚠ Ethylene glycol base antifreeze is poisonous. Do not use your mouth to siphon coolant from the radiator, recovery bottle or any container. Wash your hands thoroughly after handling. Never store used antifreeze in an open container because animals are attracted to the smell and taste of antifreeze even though it is poisonous to them.

⚠ CAUTION ⚠

⚠ Do not use any chromate base rust inhibitor with ethylene glycol base antifreeze, or chromium hydroxide ("green slime") will form and cause overheating. Engines that have been operated with a chromate base rust inhibitor must be chemically cleaned before adding ethylene glycol base antifreeze. Using any high silicate antifreeze boosters or additives also will cause overheating. We also recommend that you DO NOT use any soluble oil inhibitor for this equipment.

◆ GEARBOX LUBRICATION

If your generator set is equipped with a gearbox (Contact sales for availability.), the appropriate lubrication is SAE 90 gear lubrication.

◆ FUEL SYSTEM REQUIREMENTS AND RECOMMENDATIONS

- **Diesel Fuel System:** See Chapter 8 of *Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual* (part #46622).
- **Gaseous Fuel System:** See Chapter 9 of *Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual* (part #46622).

GENERATOR AC LEAD CONNECTIONS

See "Voltage Codes" on Page 4. Your generator may be rated at any one of several voltages, either single-phase or three-phase. The electrical wires in the unit's AC connection (lower) panel should be installed according to the number of leads and the voltage/phase required for your application. If there is any question regarding lead connection, refer to the wiring diagrams at the back of this manual.

Voltage codes apply to the type of stator assembly installed on a particular generator.

◆ FOUR-LEAD, SINGLE-PHASE STATOR

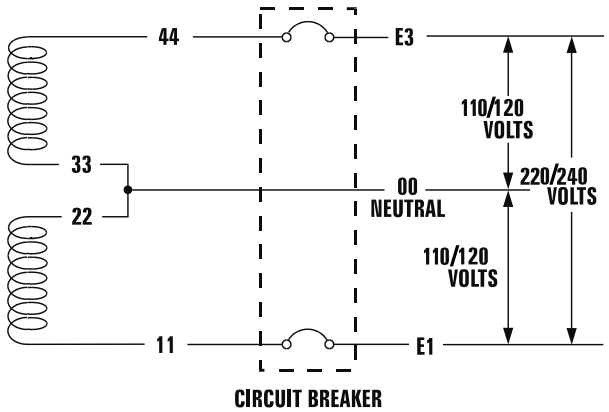
Four-lead generators are dual voltage coils or windings (Figure 1.1). Units may be assigned any of the following voltage codes:

- "A" units are rated 120/240 volts, single-phase, 60 Hertz.
- "M" units are rated 110/220 volts, single-phase, 50 Hertz.

Each stator winding in this case delivers a 110- or 120-volt AC output; connecting the two windings series results in a 220- or 240-volt AC output.

The neutral line is formed by a junction of stator leads 22 and 33. Thus, you may connect 120-volt (60 Hz) or 110-volt (50 Hz) loads across leads 11 and neutral, or across leads 44 and neutral.

Figure 1.1 – Four-lead, Single-phase Stator



◆ 12-LEAD, BROAD RANGE STATORS

This type of stator winding forms a 12-lead configuration and has six coils or windings.

▶ High Wye Stator Connection

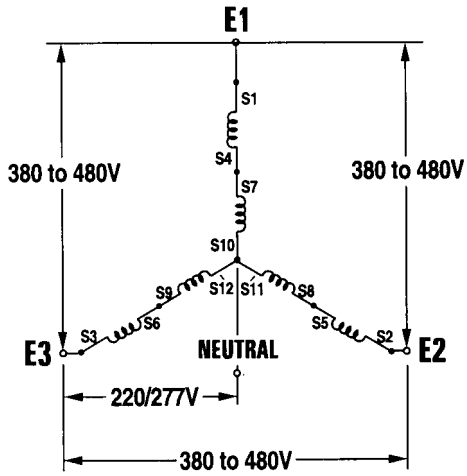
Units with this broad range stator connection may be assigned any of the following voltage codes (Figure 1.2):

- "K" units are rated 277/480 volts, three-phase, 60 Hz.
- "R" units are rated 231/400 volts, three-phase, 50 Hz

NOTE:

Different voltage ratings are available from the same stator connection by adjusting the voltage regulator.

Figure 1.2 – High Wye Stator Connection



▶ Low Wye Stator Connection

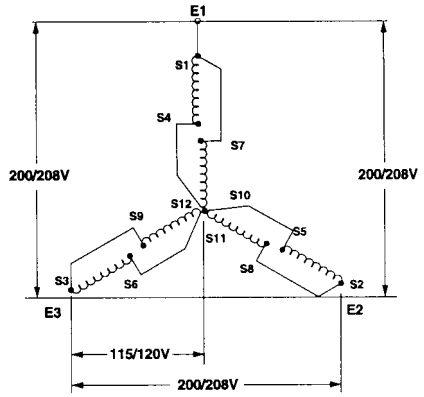
Units with this broad range stator connection may be assigned any of the following voltage codes (Figure 1.3):

- "G" units are rated 120/208 volts, three-phase, 60 Hz.
- "N" units are rated 115/200 volts, three-phase, 50 Hz.

NOTE:

Different voltage ratings are available from the same stator connection by adjusting the voltage regulator.

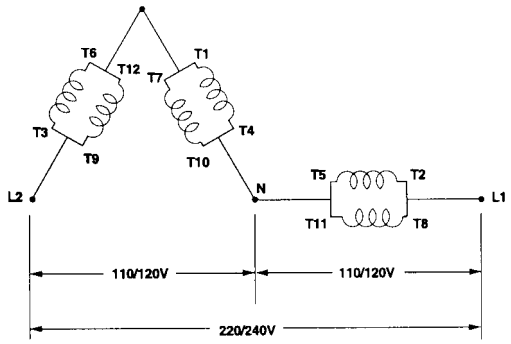
Figure 1.3 – Low Wye Stator Connection



▶ Zigzag Stator Connection

This type of stator has six coils connected in a zigzag fashion (Figure 1.4). This type of stator connection does not have an assigned Generac voltage code.

Figure 1.4 – Zigzag Stator Connection

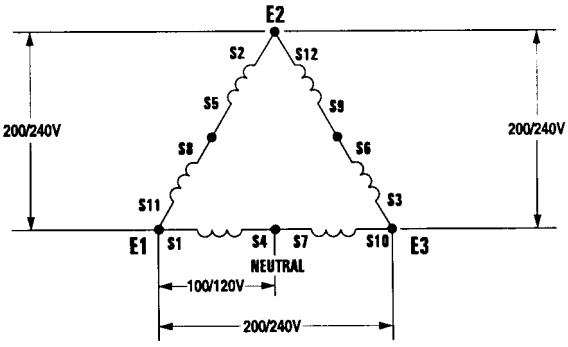


▶ Three-phase Delta Stator Connection

This type of stator has six coils and 12 leads (Figure 1.5). Units may be assigned any of the following voltage codes:

- "J" units are rated 120/240 volts, three-phase, 60 Hz.
- "P" units are rated 100/200 volts, three-phase, 50 Hz.

Figure 1.5 – Three-phase Delta Stator Connection



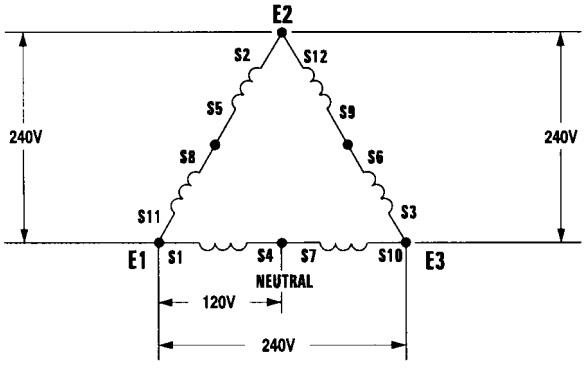
◆ LOW-VOLTAGE STATOR

▶ Three-/Single-phase Delta Stator Connection

This type of stator has six coils and 12 leads (Figure 1.6). Two coils/windings are wound with additional copper to allow for operation at full rated kW, single-phase. Units may be assigned any of the following voltage codes:

- "D" units are rated 120/240 volts, three-phase, 60 Hz.

Figure 1.6 – Three-/Single-phase Delta Stator Connection



NOTE:

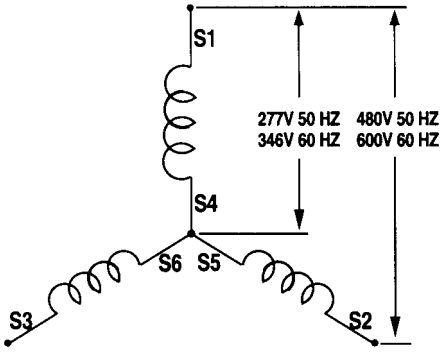
Single-phase loads should be connected to E1, E3 and Neutral.

◆ SIX-LEAD, 600-VOLT, THREE-PHASE STATOR

This type of stator has three coils and six leads (Figure 1.7). Units may be assigned any of the following voltage codes:

- "L" units are rated 346/600 volts, three-phase, 60 Hz.
- "S" units are rated 277/480 volts, three-phase, 50 Hz.

Figure 1.7 – Six-lead Stator Connection



OPTIONAL VOLTAGE SELECTOR SWITCHES

Some generators may be equipped with an optional two- or three-position switch designed for easy selection of the desired voltage and phase. Switches are available in a variety of voltage/phase options.

A typical two-position selector switch is shown in Figure 1.8.

Figure 1.8 – Typical Two-position Switch

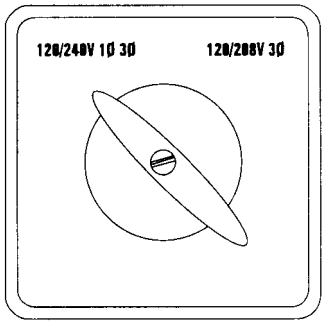
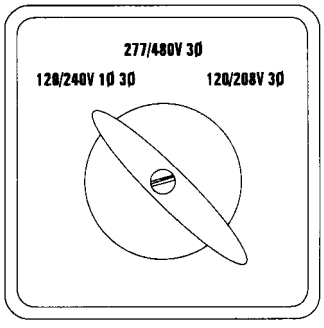


Figure 1.9 illustrates a typical three-position voltage selector switch.

Figure 1.9 – Typical Three-position Switch



GENERATOR AND LOAD COMPATIBILITY

The generator must be fully compatible with the rated voltage, phase and frequency of the connected electrical loads. The generator, connected electrical devices, or both, can be damaged if voltage, phase and frequency are not compatible.

NOTE:

This manual assumes that the standby generator has been properly selected, installed and interconnected by a competent, qualified electrician or installation contractor. Once the installation is complete, you must not do anything that may result in noncompatibility between the generator and connected electrical loads.

STARTING AIDS

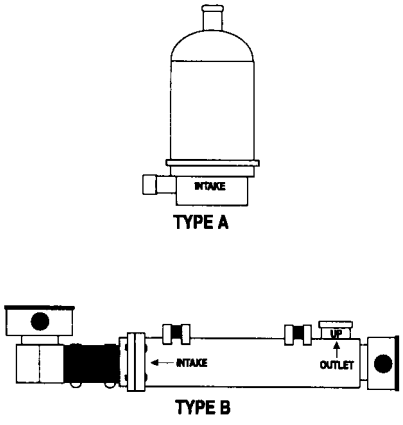
Your standby generator may be equipped with one or more starting aids that serve to provide quicker, easier starts under varying climactic conditions.

Your generator may have been mounted with (a) an engine coolant heater, (b) an engine oil heater, (c) a battery warmer or (d) a battery charger. These aids are powered by a normal (utility) power source during nonoperating periods.

◆ ENGINE COOLANT HEATERS

If your unit is equipped with an engine coolant (block) heater (Figure 1.10), it is powered by a circuit normally fed by the utility power supply. The heater acts to heat the engine coolant when the unit is not operating. This action keeps the engine warm even in cold weather, thus helping ensure quicker starts. Heated coolant in the engine rises continuously drawing cold coolant into the heater, thus making certain of a constant flow of warm coolant through the engine.

Figure 1.10 – Typical Engine Coolant Heaters



◆ ENGINE OIL HEATER

The engine oil heater is designed for installations where the engine oil must be kept near operating temperature at all times. If included with your unit, a low-watt density heater and thermostat are permanently mounted in the engine's oil sump. The heater and thermostat do not require maintenance.

◆ BATTERY WARMERS

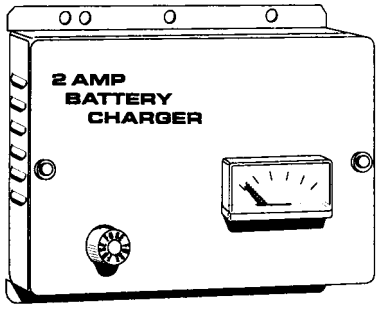
Blanket-type battery warmers are designed for installations where reliable starts are a must. When used in conjunction with a coolant (block) heater, battery warmers aid in ensuring that the engine will reach maximum cranking speed.

◆ BATTERY CHARGERS

▶ Two-amp Battery Charger

Solid-state controlled and self regulated, the two-amp battery charger (Figure 1.11) features a full-wave, SCR-controlled bridge rectifier governed by a programmable sensing circuit. The self-regulating feature "senses" the amount of charge in the battery and reduces the risk of overcharging. When the battery is fully charged, the battery charger output is then reduced to a safe maintenance level. The charger is totally enclosed in a NEMA 1 box with built-in ammeter. The unit is fuse protected, and its control circuit is temperature compensated. All connections are clearly marked on a convenient terminal strip.

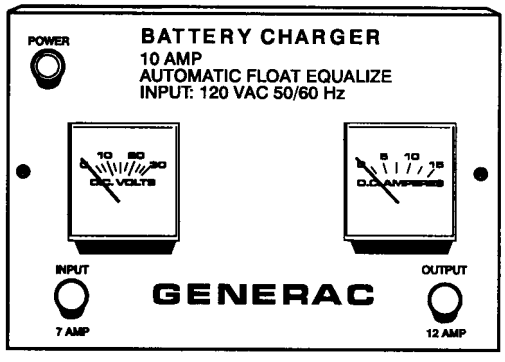
Figure 1.11 – Typical Two-amp Battery Charger



▶ Dual-rate Battery Charger

This SCR-controlled, fully automatic battery charger has a panel-mounted DC ammeter and voltmeter, fused input and output circuits, and an automatic current limiter design. The unit is equipped with automatic float and equalize control and uses an SCR to maintain proper charge voltage. This type of system precisely monitors the charge rate (Figure 1.12). The charger is rated at 10 amps DC.

Figure 1.12 – Typical Dual-rate Battery Charger



STANDBY GENERATOR INSTALLATION

DANGER

Connecting this generator to an electrical system normally supplied by an electric utility shall be by means of a transfer switch (such as the Generac "GTS" type transfer switch)**, so as to isolate the electric system from the utility distribution system when the generator is operating. Failure to isolate the electric system by these means will result in damage to the generator and may also result in injury or death to utility workers due to backfeed of electrical energy.**

Only qualified, competent installation contractors or electricians thoroughly familiar with applicable codes, standards and regulations should install this standby electric power system. The installation must comply strictly with all codes, standards and regulations pertaining to the installation.

CAUTION

After the system has been installed, you must not do anything that might render the installation in noncompliance with such codes, standards and regulations.

NOTE:

For more information about the installation of a standby system, you can order *Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual* (part #46622) from your Generac Authorized Service Dealer.

◆ NFPA STANDARDS

The following published standards booklets pertaining to standby electric systems are available form the National Fire Protection Association (NFPA), Batterymarch Park, Quincy, MA 02269:

- NFPA No. 37, STATIONARY COMBUSTION ENGINES AND GAS TURBINES.
- NFPA No. 76A, ESSENTIAL ELECTRICAL SYSTEMS FOR HEALTH CARE FACILITIES.
- NFPA No. 220, STANDARD TYPES OF BUILDING CONSTRUCTION
- NFPA No. 68, GUIDE FOR EXPLOSION VENTING
- NFPA No. 70, NATIONAL ELECTRICAL CODE.
- NFPA No. 30, FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE.
- NFPA No. 10, INSTALLATION, MAINTENANCE AND USE OF PORTABLE FIRE EXTINGUISHERS.

◆ OTHER PUBLISHED STANDARDS

In addition to NFPA standards, the following information pertaining to the installation and use of standby electric systems is available:

- Article X, NATIONAL BUILDING CODE, available from the American Insurance Association, 85 John Street, New York, N.Y. 10038.
- AGRICULTURAL WIRING HANDBOOK, obtainable from the Food and Energy Council, 909 University Avenue, Columbia, MO, 65201.
- ASAE EP-364.2, INSTALLATION AND MAINTENANCE OF FARM STANDBY ELECTRIC POWER, available from the American Society of Agricultural Engineers, 2950 Niles Road, St. Joseph, MI 49085.
- A52.1, AMERICAN NATIONAL STANDARD FOR CHIMNEYS, FIREPLACES AND VENTING SYSTEMS, available from the American National Standard Institute, 1430 Broadway, New York, N.Y. 10018.

BASIC STANDBY ELECTRIC SYSTEM

Figure 2.1 shows a schematic diagram of a basic standby electric system. Both the UTILITY power supply and the STANDBY (generator) output are connected to an approved transfer switch. The transfer switch is required by electrical code and serves the following functions:

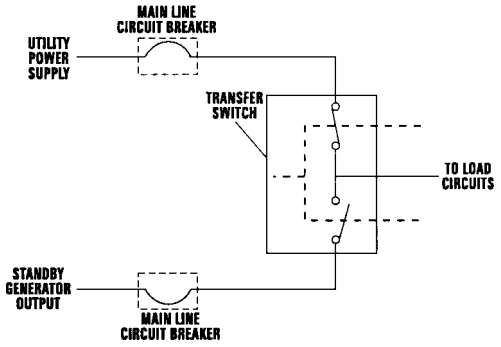
- Permits the LOAD circuits to be connected to only one power supply at a time.
- Prevents electrical backfeed between the generator and the UTILITY power circuits.

Notice that both the STANDBY and the UTILITY power supplies to the transfer switch are protected against overload by a main line circuit breaker.

NOTE:

Generac recommends the use of a Generac power systems "GTS" type transfer switch in conjunction with this generator.

Figure 2.1 – Basic Standby Electric System



EMERGENCY CIRCUIT ISOLATION METHOD

This prevents overloading the generator by keeping electrical loads below the wattage/amperage capacity of the generator. If the generator is powering only critical loads, within the wattage/amperage capacity, during utility power outages, you might consider using the emergency circuit isolation method.

Critical electrical loads are grouped together and wired into a separate "Emergency Distribution Panel." Load circuits powered by that panel are within the wattage/amperage capacity of the generator set. When this method is used, it is difficult to overload the generator. The transfer switch must meet the following requirements:

- It must have an ampere rating equal to the total amperage rating of the emergency distribution panel circuit.
- Have it installed between the building's main distribution panel and the emergency distribution panel.

TOTAL CIRCUIT ISOLATION METHOD

When a generator capable of powering all electrical loads in the circuit is to be installed, you may use the "Total Circuit Isolation Method." It is possible for the generator to be overloaded when this isolation method is employed. The following apply to the transfer switch in this type of system.

- Ampere rating of the transfer switch must equal the ampere rating of the normal incoming utility service.
- The transfer switch is installed between the utility service entrance and the building distribution panel.

GROUNDING THE GENERATOR

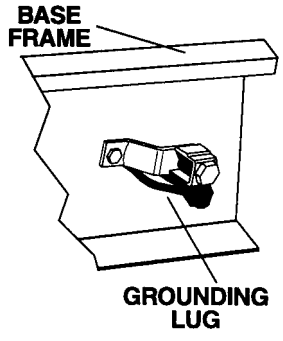
The National Electrical Code requires the frame and external electrically conductive parts of this equipment to be properly connected to an approved earth ground. For that purpose, a GROUND LUG (Figure 2.2) is provided on the generator mounting base. Consult a qualified electrician for grounding requirements in your area. Grounding procedures must meet local regulations.

⚠ DANGER ⚠

⚠ Do not connect the ground wire to any pipe that carries a flammable or explosive substance – FIRE or an EXPLOSION may result.

Proper grounding helps protect personnel against electrical shock in the event of a ground fault condition in the generator or in connected electrical devices. In addition, grounding helps dissipate static electricity that often builds up in ungrounded devices.

Figure 2.2 – Generator Grounding Lug (typical)



GENERATOR AC NEUTRAL CONNECTIONS

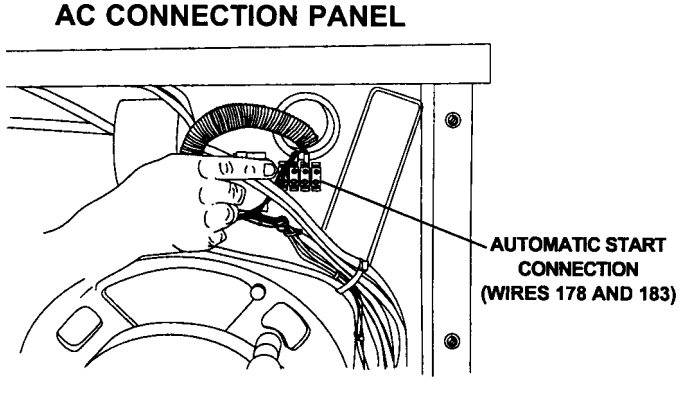
Generac uses an UNGROUNDED AC neutral. Grounding is recommended only at the main service entrance. If the neutral wire is grounded and one of the phase loads becomes grounded, the excessive current opens the load circuit breaker or collapses the generator field. The actual result depends on the electrical characteristics of the particular installed generator.

TRANSFER SWITCH START SIGNAL CONNECTIONS

If your generator is to be installed with an automatic transfer switch, such as a Generac GTS-type switch, it will be necessary to connect the two-wire start control system.

Connect the two-wire start signal from the automatic transfer switch to the automatic start connection, which is located in the upper right hand corner of the AC connection panel (see Figure 2.3). Match wires 178 and 183 in the transfer switch to 178 and 183 on the terminal strip in the control panel. The conductors for the two-wire start circuit must be in their own conduit.

Figure 2.3 – Start Signal Connections



BATTERY INSTALLATION

DANGER

Standby generators installed with automatic transfer switches will crank and start automatically when normal (utility) source voltage is removed or is below an acceptable preset level. To prevent such automatic start-up and possible injury to personnel, do not connect battery cables until you are certain that normal source voltage at the transfer switch is correct and you are ready to place the system into operation.

Storage batteries give off explosive hydrogen gas. This gas can form an explosive mixture around the battery for several hours after charging. The slightest spark can ignite the gas and cause an explosion. Such an explosion can shatter the battery and cause blindness or other injury. Any area that houses a storage battery must be properly ventilated. Do not allow smoking, open flame, sparks or any spark producing tools or equipment near the battery.

Battery electrolyte fluid is an extremely caustic sulfuric acid solution that can cause severe burns. Do not permit fluid to contact eyes, skin, clothing, painted surfaces, etc. Wear protective goggles, protective clothing and gloves when handling a battery. If you spill the fluid, flush the affected area immediately with clear water.

WARNING

Do not dispose of the battery in a fire. The battery is capable of exploding.

Do not open or mutilate the battery. Released electrolyte can be toxic and harmful to the skin and eyes.

The battery represents a risk of high short circuit current. When working on the battery, always remove watches, rings or other metal objects, and only use tools that have insulated handles.

For recommended batteries, see "Specifications." All batteries must be at 100 percent state-of-charge before they are installed on the generator.

When using maintenance-free batteries, it is not necessary to check the specific gravity or electrolyte level. Have these procedures performed at the intervals specified in Section 4, "Maintenance." A negative ground system is used. Battery connections are shown on the wiring diagrams. Make sure all batteries are correctly connected and terminals are tight. Observe battery polarity when connecting batteries to the generator set.

Note:

Damage will result if the battery connections are made in reverse.

PREPARATION BEFORE START-UP

The instructions in this section assume that the standby generator has been properly installed, serviced, tested, adjusted and otherwise prepared for use by a competent, qualified installation contractor. Be sure to read the "Safety Rules" on Pages 2 and 3, as well as all other safety information in this manual, before attempting to operate this (and related) equipment.

◆ PRIOR TO INITIAL START-UP

CAUTION

Prior to initially starting the generator, it must be properly prepared for use. Any attempt to crank or start the engine before it has been properly serviced with the recommended types and quantities of engine fluids (oil, coolant, fuel, etc.) may result in an engine failure.

Before starting the generator for the first time, the installer must complete the following procedures. For follow-up maintenance information and/or service intervals, please refer to Section 4, "Maintenance," and the "Service Schedule" on Page 17.

▶ Transfer Switch

If this generator is used to supply power to any electrical system normally powered by an electric utility, the National Electrical Code requires that a transfer switch be installed. The transfer switch prevents electrical backfeed between two different electrical systems. (For additional information, see the applicable transfer switch manual for this unit.) The transfer switch, as well as the generator and other standby components, must be properly located and mounted in strict compliance with applicable codes, standards and regulations.

▶ Fuel System

Make sure the fuel supply system to the generator (a) delivers the correct fuel at the correct pressure and (b) is properly purged and leak tested according to code. No fuel leakage is permitted. See "Specifications" (Page 7) for more information.

If the unit has been idle for a long period of time, or if the fuel lines or system components have been removed and reinstalled, the fuel system may require bleeding to remove air from the system. Air in the fuel system causes hard starting and rough 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.

⚠ CAUTION ⚠

⚠ Use a suitable container to catch the fuel that will spill during system bleeding process. Clean up all spilled fuel after bleeding.

▶ Generator Set Lubrication

Check the engine crankcase oil level before operating and add oil to the proper level – the dipstick "FULL" mark. Never operate the engine with the oil level below the dipstick "ADD" mark. See "Specifications" (Page 7) and "Engine Oil Recommendations" (Page 8).

NOTE:

This engine is shipped from the manufacturer with "break-in" oil. This oil should be changed after 30 hours of operation.

Check the oil level in the generator gearbox (if so equipped) prior to initial use and at the intervals indicated by the "Service Schedule." The recommended oil is SAE 90 gear lubricant.

Also, if the engine is equipped with a mechanical governor, make sure the governor is properly lubricated with clean engine oil.

▶ Engine Coolant

Have the engine cooling system properly filled with the recommended coolant mixture. Check the system for leaks and other problems. See "Specifications" (Page 7) and "Coolant" (Page 8).

▶ Belt Tension

Check the engine fan belt tension and condition prior to placing the unit into service and at recommended intervals. Belt tension is correct when a force of approximately 22 pounds (10 kg), applied midway between pulleys, deflects the belt about 3/8- to 5/8-inch (10 to 16 mm).

▶ Electrical System

Make sure the generator is properly connected to an approved earth ground.

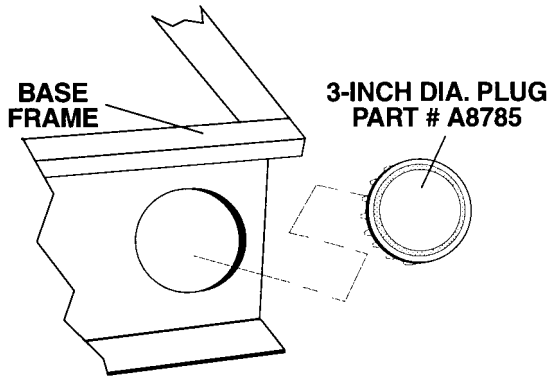
Make sure the generator battery is fully charged, properly installed and interconnected, and ready for use.

Check to ensure that there are no loose electrical connections. Restrain any loose wires to keep them clear of any moving generator set components.

▶ Rodent Protection

- Make sure the four 3-inch diameter cap plugs (part # A8785) are properly installed in the tie-down holes in the side rails of the unit's base frame (Figure 2.4). The cap plugs are shipped in a plastic bag located in the lower connection box. These plugs are needed to prevent rodents from accessing the interior of the generator set. On acoustic units, cap plugs also are needed to stay within noise specification limits.

Figure 2.4 – Base Frame Cap Plugs



◆ START-UP INSPECTION

A standard three-part form titled "Start-up Inspection for Standby Power Systems" (part # 67377) should be completed by the installation technician or engineer. As stated on the form, inspections are to be accomplished only by factory-trained personnel. The installer should complete the form and disseminate copies as follows:

- White copy: Mail to Generac Warranty Department, P.O. Box 8, Waukesha, WI 53187.
- Pink Copy: For service file of installing dealer.
- Yellow Copy: For the customer's records.

GENERATOR CONTROL AND OPERATION

Refer to the appropriate control panel operator's manual for this unit.

OPERATING UNIT WITH MANUAL TRANSFER SWITCH

If your generator was installed in conjunction with a transfer switch capable of manual operation only, the following procedure applies. A manually operated transfer switch is one that will not provide automatic start-up and does not include an intelligence circuit.

◆ ENGINE START-UP AND TRANSFER

For additional information, refer to the applicable control panel manual for this unit, as well as any literature pertaining to your specific transfer switch.

⚠ DANGER ⚠

⚠ The Safety Disconnect Switch and the Auto/Off/Manual switches (if so equipped) must be set properly, or the generator will crank and start as soon as the utility power to the transfer switch is turned off. Refer to applicable control panel and transfer switch manuals for more information.

⚠ Do not proceed until certain that utility source voltage is available to the transfer switch and the transfer switch main contacts are set to "Utility."

⚠ Do not attempt manual operation until all power supplies to the transfer switch have been positively turned off, or extremely dangerous — possibly lethal — electrical shock will result.

⚠ Transfer switch enclosure doors should be kept closed and locked. Only authorized personnel should be allowed access to the transfer switch interior. Extremely high and dangerous voltages are present in the transfer switch.

In order to transfer load from the utility source to the generator, follow these directions:

- Turn OFF or disconnect the utility power circuit to the transfer switch, using the means provided (such as the utility source main line circuit breaker).
- Set the transfer handle to its "Utility" (normal) position with load circuits connected to the utility power supply.
- Set the standby generator's main line circuit breaker to its OFF (or open) position.
- Start the generator.

⚠ CAUTION ⚠

⚠ Do not crank the engine continuously for longer than 30 seconds, or the heat may damage the starter motor.

- Let engine stabilize and warm up.
- Check all applicable instrument and gauge readings. When certain that all readings are correct, move the transfer switch manual handle to its "Standby" (generator) position, i.e., load circuits supplied by the generator.
- Set the standby generator's main line circuit breaker to its ON (or closed) position.
- Load circuits are now powered by the standby generator.

◆ RETRANSFER AND SHUTDOWN

For additional information, refer to the applicable control panel manual for this unit, as well as any literature pertaining to your specific transfer switch.

To transfer the load back to the utility power source and shut down the generator, follow these directions:

- Set the standby generator's main line circuit breaker to its OFF (or open) position.
- Manually move the transfer switch handle to its "Utility" (normal) position, i.e., load circuits connected to the utility.
- Turn ON the utility power supply to the transfer switch, using the means provided (such as the utility power source main line circuit breaker).
- Let the generator run at no-load for a few minutes to stabilize internal temperatures.
- Shut down the generator.

OPERATING UNIT WITH AUTOMATIC TRANSFER SWITCH

If your generator has been installed along with an automatic transfer switch, such as a Generac GTS-type switch, the engine may be started and stopped automatically or manually.

NOTE:

Refer to the applicable manual for your transfer switch and to "Transfer Switch Start Signal Connections" (Page 13). In addition, please note the dangers under "Engine Start-up and Transfer."

SERVICE SCHEDULE

◆ AUTHORIZED OPERATOR MAINTENANCE FUNCTIONS

Every Month or 100 Hours
(whichever comes first)

- Test standby generator system.
- Inspect battery and cables.
- Check engine oil level.
- Check gearbox oil level (if so equipped).
- Check engine coolant level.
- Check generator ground connections.
- Test/inspect starting aids.

Every Three Months or Every 120 Hours
(whichever comes first)

- Inspect and test fuel system and connections.
- Inspect exhaust system.
- Inspect/test fuel supply system.

◆ AUTHORIZED SERVICE TECHNICIAN MAINTENANCE FUNCTIONS

After First 30 Hours of Operation

- Inspect wiring.
- Change engine crankcase oil and oil filter.
- Inspect engine fan belts.
- Inspect battery and cables.

Every Six Months or Every 200 Hours
(whichever comes first)

- Change engine oil and filter.
- Lubricate engine controls.
- Service engine air cleaner.
- Service engine fuel filter.
- Inspect AC generator.
- Test engine safety controls.
- Inspect fan belts.
- Check engine coolant level.
- Inspect engine cooling system hoses.
- Check optional starting aids.
- Check battery.
- Check engine compression.
- Check electrical connections.
- Check/test annunciator panel.
- Perform operational test.

Annually or Every 600 Hours
(whichever comes first)

- Check engine valve clearance.
- Test fuel injection nozzles.
- Test injection timing.
- Inspect all wiring.
- Test engine starter operation.
- Drain water from fuel tank.
- Retorque fan bolts.
- Drain and refill gearbox (if so equipped)

Every Two Years

- Replace all rubber hoses.
- Replace engine fan belts.
- Inspect the Standby Generator System.
- Drain, flush, refill cooling system.

Every 1,000 Operating Hours

- Inspect engine DC alternator.
- Inspect engine starter.
- Retorque engine mounting brackets.
- Remove/test fuel injection pump.
- Remove/test cooling system thermostat.

As Required

- Bleed engine fuel system.

PERIODIC MAINTENANCE

A rigorous program of scheduled periodic maintenance should be established and maintained. Such a program, if adhered to diligently, will provide added assurance that your power system functions properly when it is needed.

Keeping a "Maintenance Log" is highly recommended. Such a log should be a continuous record of repairs, parts replacements, gauge and instrument readings during operational tests, etc.

Generac recommends that a "Customer Maintenance Inspection Agreement" be established between the user of this equipment and the installing Generac Authorized Service Dealer. Under this agreement, (Part No. 53263), a Generac Authorized Service Technician performs prestart and engine running tests and checks at six-month and one-year intervals. Ask your Generac Authorized Service Dealer (or consult the factory) about this agreement.

The tasks listed in the "Service Schedule" (Page 17) cover the minimum recommended maintenance requirements for this equipment.

Note that many of the tests and checks listed in the schedule are to be performed only by a Generac Authorized Service Technician. Fluid capacities and recommendations, as well as other applicable specifications, are listed in "Specifications" (Page 7).

◆ TEST STANDBY GENERATOR SYSTEM OPERATION AND COMPONENTS

An authorized operator should test the operation of the standby generator system and inspect its components monthly (or 100 hours). This should include inspecting the transfer switch for evidence of arcing, and pitted or burned contacts; inspecting wiring and grounding connections (see "Grounding the Generator," Page 13); and ensuring that starting devices are operational. During this operational test, all instrument and gauge readings should be recorded in a "Maintenance Log." The transfer system also should be tested at this time;the engine should be run at least 30 minutes and any discrepancies corrected immediately.

Every six months (or 200 hours), a Generac Authorized Service Technician should perform a system operational test.

◆ INSPECT BATTERY

⚠ DANGER ⚠

⚠ Standby generators installed with automatic transfer switches will crank and start automatically when normal (utility) source voltage is removed or is below an acceptable preset level. To prevent such automatic start-up and possible injury to personnel, do not connect battery cables until you are certain that normal source voltage at the transfer switch is correct and you are ready to place the system into operation.

⚠ Storage batteries give off explosive hydrogen gas. This gas can form an explosive mixture around the battery for several hours after charging. The slightest spark can ignite the gas and cause an explosion. Such an explosion can shatter the battery and cause blindness or other injury. Any area that houses a storage battery must be properly ventilated. Do not allow smoking, open flame, sparks or any spark producing tools or equipment near the battery.

⚠ Battery electrolyte fluid is an extremely caustic sulfuric acid solution that can cause severe burns. Do not permit fluid to contact eyes, skin, clothing, painted surfaces, etc. Wear protective goggles, protective clothing and gloves when handling a battery. If you spill the fluid, flush the affected area immediately with clear water.

⚠ WARNING ⚠

Do not dispose of the battery in a fire. The battery is capable of exploding.

Do not open or mutilate the battery. Released electrolyte can be toxic and harmful to the skin and eyes.

The battery represents a risk of high short circuit current. When working on the battery, always remove watches, rings or other metal objects, and only use tools that have insulated handles.

An authorized operator should inspect the engine battery system monthly (or 100 hours). At this time, the battery fluid level should be checked and distilled water added if needed. Battery cables and connections also should be inspected for cleanliness and corrosion.

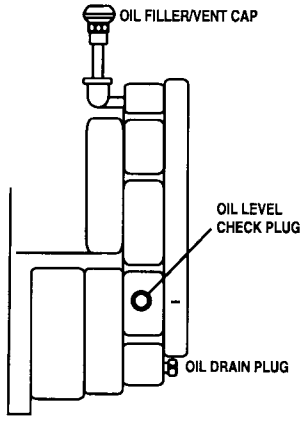
Once every six months (or 200 hours), a Generac Authorized Service Technician should inspect the battery system. At this time the battery condition and state of charge should be checked using a battery hydrometer. The battery should be recharge or replaced as required.

◆ CHECK FLUIDS

An authorized operator should check the levels of engine oil, gearbox oil (if so equipped) and engine coolant monthly (or 100 hours). The oil level should be maintained between the "FULL" and "ADD" marks on the engine dipstick. Recommended fluids are listed in "Specifications" (Page 7).

Once annually (or 600 hours), an authorized service technician should completely drain and refill the gearbox (if so equipped) using the following procedure (Figure 4.1):

Figure 4.1 – Gearbox Oil Servicing Points



1. Remove the oil filler/vent cap.
2. Remove the drain plug and drain the oil into an appropriate container. Dispose of or recycle the oil properly.
3. Reinstall the oil drain plug.
4. To add oil to the gearbox, remove the oil level check plug.
5. Add the recommended oil until it just starts to flow from the oil level check plug opening.
6. Finally, install and tighten the oil filler/vent cap and oil level check plug.

◆ INSPECT EXHAUST SYSTEM

Every three months (or 120 hours), an authorized operator should inspect the entire exhaust system. Abnormal noise levels heard during each operational test may indicate a defective exhaust pipe or muffler. Any defective or leaking component should be repaired or replaced immediately by a Generac Authorized Service Technician.

◆ INSPECT /TEST FUEL SUPPLY SYSTEM

Every three months (or 120 hours), an authorized operator should inspect and test the the fuel supply system, as well as all fuel system connections. All connections must be tight and in good condition. A loose fuel system line may show no signs of leakage, but may draw air into the system causing rough operation and starting difficulties. Any defective or leaking component should be repaired or replaced immediately by a Generac Authorized Service Technician.

REPAIR PARTS

The latter portion of this manual consist of exploded views, parts lists and electrical data pertaining to this generator set. The parts lists consist of (a) an item number, (b) a part number, (c) the quantity required, and (d) a description of the part. The item number corresponds to an identical number on the exploded view drawing.

◆ GENERATOR SET DATA CARD

Every generator set has a DATA CARD is affixed to the lower connection box. A second, matching card is located under the control panel cover. Additionally, a printed CONSTRUCTION DOCUMENT containing identical information can be found at the end of this manual.

When requesting information, ordering replacement parts, asking for service, etc., you may be asked to consult one of these sources to supply the following information:

- Generator Model Number
- Date of Manufacture
- Generator Identification Code
- Generator Assembly Groups

GENERAC POWER SYSTEMS

MODEL NO. 00A 00000 S DATE 00/00/00 (Generator ID Code)

GROUP	DESCRIPTION	ASSEMBLY NUMBERS		
A	Generator	00000	00000	
B	Control Panel	00000	00000	00000
C	Mounting Base	00000	00000	00000
D	Engine & Accy.	00000	00000	
E	Fuel Systems	00000		
F	Compartments	00000	00000	
G	Wiring Diagrams	00000	00000	00000
H	Kits	00000	00000	

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE ABOVE INFORMATION

NOTE:

The above is a generic representation of a data card. For actual information related to this particular model, please refer to the "construction document" located at the end of this manual, or to the data cards affixed to the unit.

◆ HOW TO ORDER PARTS

To order a replacement part, locate the part in the applicable exploded view. Contact your Generac Authorized Service Dealer (call 800-333-1322 to locate one in your area) and provide the following information:

- The generator model number.
- The generator identification code, which indicates the specific generator assembly for each unit.
- The part number and corresponding description from the applicable parts list in this manual.
- The applicable exploded view "Group" letter (A-H) and drawing number (five-digit number), which can be found on the exploded view drawing.

NOTE:

In most cases, you can obtain repair parts by providing your Generac Authorized Service Dealer with the data card information and a description of the required part. If you are unable to locate either the data card or the construction document, simply describe the part you need and provide your unit's model number. This number can be found on the metal DATA PLATE attached to the generator's lower connection box.

GENERAC POWER SYSTEMS' STANDARD ONE-YEAR LIMITED WARRANTY FOR STANDBY POWER SYSTEMS

NOTE: ALL UNITS MUST BE INSTALLED BY GENERAC POWER SYSTEMS AUTHORIZED SERVICE FACILITIES. For a period of 1 (one) year or 1,500 (one thousand five hundred) hours of operation from the date of original sale, whichever occurs first, Generac Power Systems, Inc. (Generac) will, at its option, repair or replace any part which, upon examination, inspection and testing by Generac or a Generac 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 examined by the nearest Generac 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 generators used in "Standby" applications, as Generac has defined Standby, provided said generators have been initially installed and inspected on-site by a Generac Authorized Service Dealer or branch thereof.

WARRANTY SCHEDULE

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

- **Engine –** All components
- **Alternator –** All components
- **Transfer System –** All components

Travel allowance is limited to 300 miles or 7.5 hours maximum, round trip, and applies only to permanently wired and mounted units.

All warranty expense allowances **are** subject to the conditions defined in Generac's *Warranty Policies, Procedures and Flat Rate Manual.*

Units that have been resold **are not** covered under the Generac warranty, as this warranty is not transferable.

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

- Costs of normal maintenance, adjustments, installation and start-up.
- Units sold, rated or used for "Prime Power" applications as Generac has defined Prime Power. Contact a Generac Authorized Service Dealer for Prime Power definition and warranty.
- Failures due, but not limited, to normal wear and tear, accident, misuse, abuse, negligence or improper installation.
- Failures caused by any external cause or act of God, such as collision, theft, vandalism, riot or wars, nuclear holocaust, fire, freezing, lightning, earthquake, windstorm, hail, volcanic eruption, water or flood, tornado or hurricane.
- Products that are modified or altered in a manner not authorized by Generac in writing.
- 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).
- Failure due to misapplication.
- Telephone, telegraph, teletype or other communication expenses.
- Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.
- Rental equipment used while warranty repairs are being performed.
- Overnight freight costs for replacement part(s).
- Overtime labor.
- Starting batteries, fuses, light bulbs and engine fluids.

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC 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'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC'S NEGLIGENCE. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. Purchaser/owner agrees to make no claims against Generac based on negligence.

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

NOTE: This Emission Control Warranty Statement applies only to mobile (trailerized) non-road diesel engine powered generators (model year 2000) as follows: The EPA portion of this statement pertains to this product; The CARB portion of this statement pertains to this product only IF the generator size is (1) 15 kW or below OR (2) 130 kW or greater.

CALIFORNIA AND FEDERAL EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (CARB) and the United States Environmental Protection Agency (EPA), together with Generac Power Systems, Inc. (Generac), are pleased to explain the Emission Control System Warranty on your new non-road diesel engine.* New non-road diesel engines must be designed, built and equipped to meet stringent anti-smog standards for the state of California and the federal government. Generac will warrant the emission control system on your non-road diesel engine for the periods of time listed below provided there has been no abuse, neglect, unapproved modification or improper maintenance of your non-road diesel engine.

Your emission control system may include such parts as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies. Generac will repair your non-road diesel engine at no cost to you for diagnosis, replacement parts and labor, should a warrantable condition occur.

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

Emission control systems on 1996 and later model year non-road diesel engines are warranted for five years, or 3,000 hours of use, whichever occurs first. In the absence of an hourmeter, the said coverage is five years. If, during said warranty period, any emission-related component or system on your engine is found to be defective in materials or workmanship, repairs or replacement will be performed by a Generac Authorized Warranty Service Facility.

PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:

As the non-road diesel engine purchaser/owner, you are responsible for the completion of all required maintenance as listed in your factory supplied Owner's Manual. For warranty purposes, Generac recommends that you retain all receipts covering maintenance of your non-road diesel engine. However, Generac cannot deny warranty solely due to lack of receipts or for your failure to ensure the completion of all scheduled maintenance.

As the non-road diesel engine purchaser/owner, you should, however, be aware that Generac may deny any and/or all warranty coverage or responsibility if your non-road diesel engine, or a part/component thereof, has failed due to abuse, neglect, improper maintenance or unapproved modifications., or the use of counterfeit and/or "grey market" parts not made, supplied or approved by Generac.

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 federal or California emission requirements.

You are responsible for contacting a Generac Authorized Warranty Service Facility as soon as a problem occurs. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

Warranty service can be arranged by contacting either your selling dealer or a Generac Authorized Warranty Service Facility. To locate the Generac Authorized Warranty Service Facility nearest you, call our toll-free number:

1-800-333-1322

IMPORTANT NOTE: This Warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by Generac pursuant to federal and California law. See also the "Generac Limited Warranties for Generac Power Systems, Inc.," which is enclosed herewith on a separate sheet, also provided to you by Generac. The ECS Warranty applies **only** to the emission control system of your new non-road diesel engine. If there is any conflict in terms between the ECS Warranty and the Generac Warranty, the ECS Warranty shall apply except in circumstances where the Generac Warranty may provide a longer warranty period. Both the ECS Warranty and the Generac describe important rights and obligations with respect to your new non-road diesel engine.

Warranty service can be performed only by a Generac Authorized Warranty Service Facility. When requesting warranty service, evidence must be presented showing the date of sale to the original purchaser/owner.

If you have any questions regarding your warranty rights and responsibilities, you should contact Generac at the following address:

ATTENTION WARRANTY DEPARTMENT
GENERAC POWER SYSTEMS, INC.
211 MURPHY DRIVE
EAGLE, WI 53119

Part 1

EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty (ECS Warranty) for 1996 and later model year non-road diesel engines:

(a) Applicability: This warranty shall apply to 1996 and later model year non-road diesel engines. The ECS Warranty shall begin on the date the new engine or equipment is purchased by/delivered to its original, end-use purchaser/owner and shall continue for 60 months, or 3,000 hours of use, thereafter, whichever occurs first.

(b) General Emissions Warranty Coverage: Generac warrants to the original, end-use purchaser/owner of the new non-road diesel engine or equipment, and to each subsequent purchaser/owner, that each non-road diesel engine is ...

(1) Designed, built and equipped so as to conform with all applicable regulations adopted by the EPA and CARB pursuant to their respective authority, and

(2) Free from defects in materials and workmanship, which, at any time during the ECS Warranty Period, may cause a warranted emission-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.

(c) The ECS Warranty pertains only to emissions-related parts on your non-road diesel engine, as follows:

(1) Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by Generac according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

(2) Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the Owner's Manual shall be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

(3) Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the Owner's Manual shall be warranted 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, the part shall be repaired or replaced by Generac according to Subsection (4) below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.

(4) Repair and replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner by a Generac Authorized Warranty Service Facility.

(5) When the engine is inspected by a Generac Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.

(6) Generac shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emissions-related part covered by the ECS Warranty.

(7) Throughout the ECS Warranty Period, Generac shall maintain a supply of warranted emissions-related parts sufficient to meet the expected demand for such emission-related parts.

(8) Any Generac authorized and approved emission-related replacement part may be used in the performance of any ECS warranty maintenance or repairs and will be provided without charge to the owner. Such use will not reduce Generac's ECS Warranty obligations.

(9) Unapproved, add-on, modified, counterfeit and/or "grey market" parts may not be used to modify or repair a Generac non-road diesel engine. Such use voids this ECS warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. Generac shall not be held liable hereunder for failures of any warranted parts of a Generac non-road diesel engine caused by the use of such an unapproved, add-on, modified, counterfeit and/or "grey market" part.

EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

1) Fuel Metering System:
a) Fuel injection system

2) Air Induction System:
a) Intake manifold and gasket
b) Turbocharger systems (if so equipped)
c) Charge air cooling systems (if so equipped)

3) Exhaust System:
a) Exhaust manifold and gasket (turbocharged engines only)
b) Catalytic converter (if so equipped)

4) Miscellaneous Items used in above systems:
a) Hoses, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware

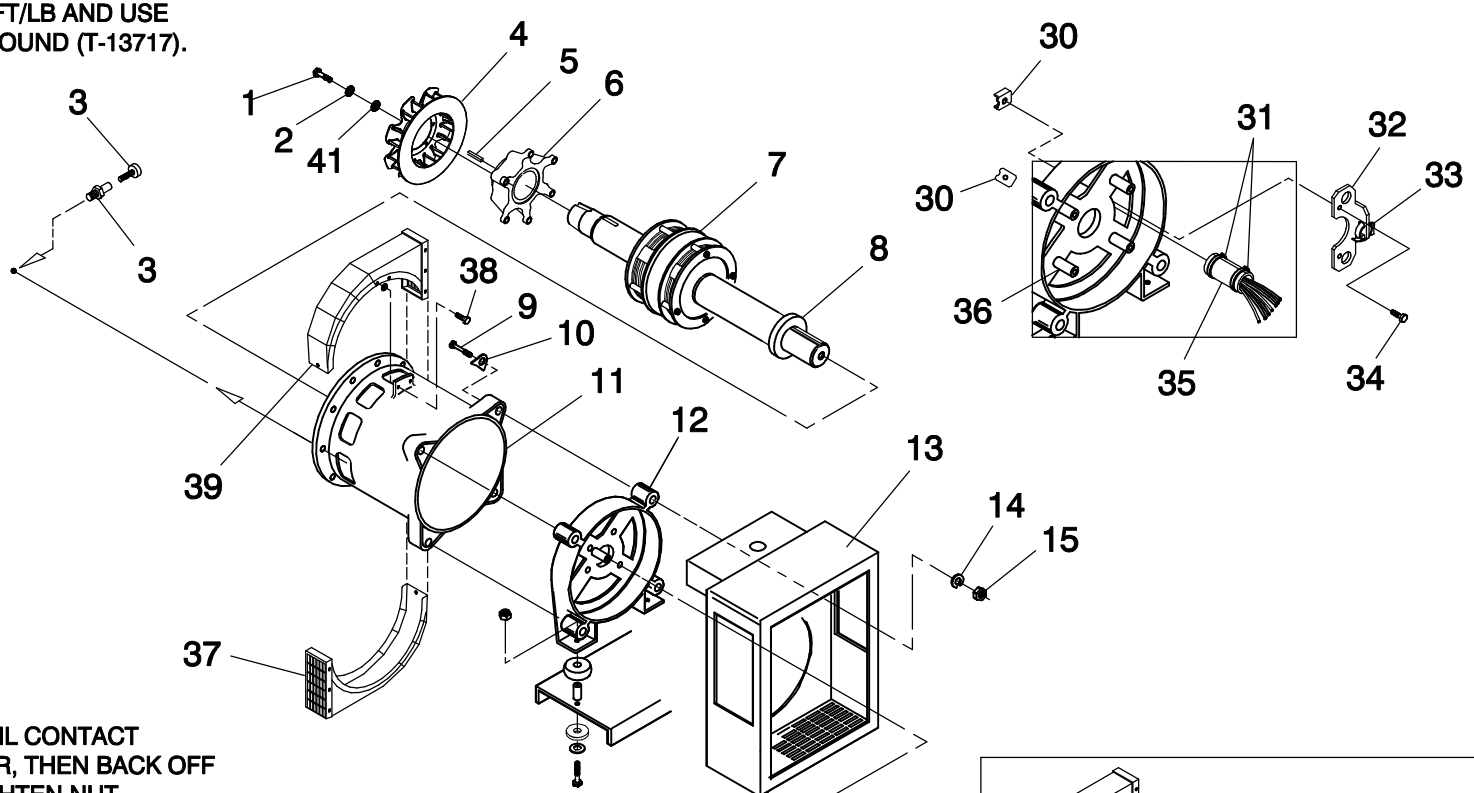
*Generac non-road diesel engine types covered by this warranty statement include the following:

1) Standby Generator

Part 2

NOTE:

TORQUE ITEM #1 TO 24 FT/LB AND USE THREAD LOCKING COMPOUND (T-13717).

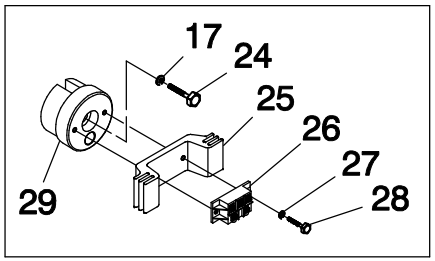


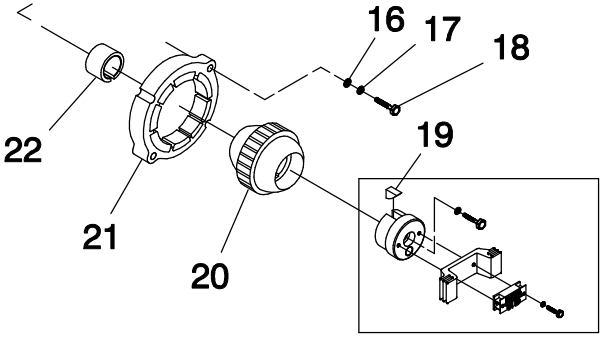
NOTE:

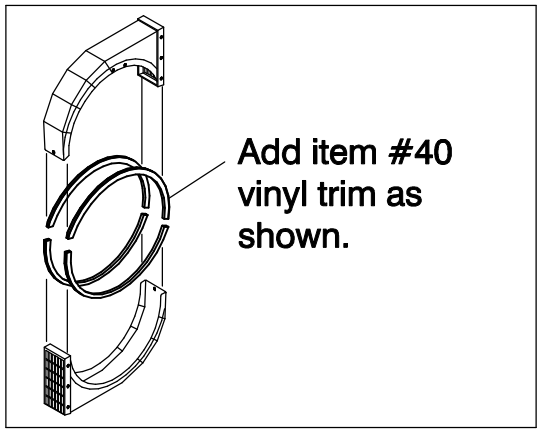
THREAD IN SENSOR UNTIL CONTACT IS MADE WITH RING GEAR, THEN BACK OFF 1/2 TO 3/4 TURN AND TIGHTEN NUT.

CAUTION:

DO NOT ROTATE ENGINE DURING THIS ADJUSTMENT.







EXPLODED VIEW:
GENERATOR, BRUSHLESS GEARBOX
DRAWING #: 0A4865

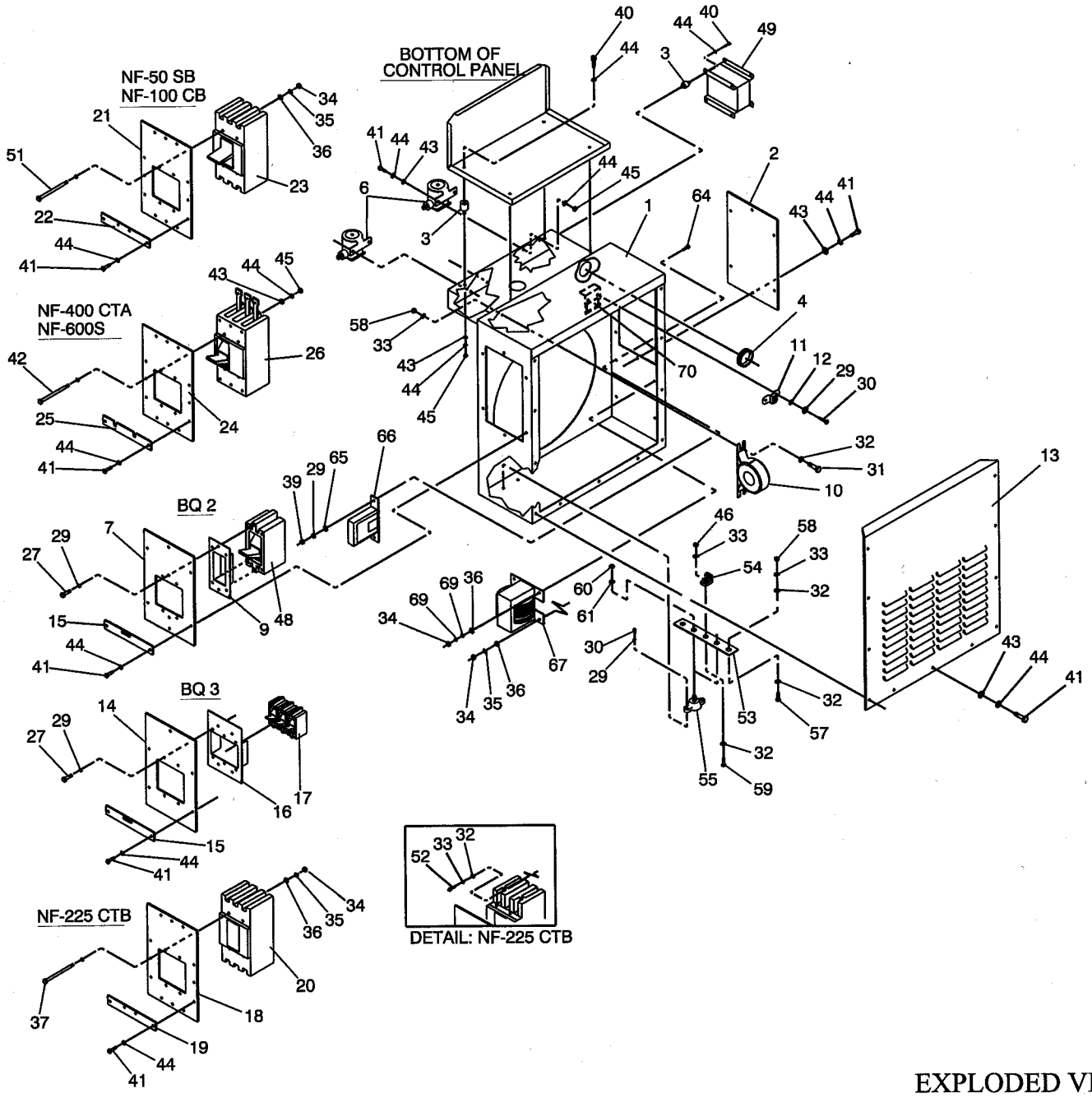
EXPLODED VIEW: GENERATOR, BRUSHLESS GEARBOX
DRAWING #: 0A4865

APPLICABLE TO: GEARBOX 390 ALTERNATOR (BRUSHLESS EXCITATION)

GROUP A

ITEM	PART #	QTY.	DESCRIPTION
1	055173	6	SCREW HHC M8-1.25 X 20 G10.9
2	022129	6	WASHER LOCK M8-5/16
3	082130C	1	SENDER MAG P-U GOV. CONT. 54"
	082130D	1	SENDER MAG P-U GOV. CONT. 72"
4	0G0724	1	FAN MACHINED 390 SAE ALTERATOR
5	0A3870	1	KEY SQ 3/8 X 1-9/16 STEEL
6	0A3009	1	HUB DRIVE
7	0A3877D	1	ROTOR 390 35KW GB BR BRLS
	0A3878D	1	ROTOR 390 40KW GB BR BRLS
	0A3879D	1	ROTOR 390 50KW GB BR BRLS
	0A3880D	1	ROTOR 390 60KW GB BR BRLS
	0A3881D	1	ROTOR 390 80KW GB BR BRLS
	0A3882D	1	ROTOR 390 100KW GB BR BRLS
	0A3883D	1	ROTOR 390 125KW GB BR BRLS
	0A3877B	1	ROTOR 390 35KW GB 1P BRLS
	0A3878B	1	ROTOR 390 40KW GB 1P BRLS
	0A3879B	1	ROTOR 390 50KW GB 1P BRLS
	0A3880B	1	ROTOR 390 60KW GB 1P BRLS
	0A3881B	1	ROTOR 390 80KW GB 1P BRLS
	0A3882B	1	ROTOR 390 100KW GB 1P BRLS
	0A3883B	1	ROTOR 390 125KW GB 1P BRLS
	0A3879G	1	ROTOR 390 50KW GB 3P LV BRLS
	0A3880G	1	ROTOR 390 60KW GB 3P LV BRLS
	0A3881G	1	ROTOR 390 80KW GB 3P LV BRLS
8	052624	1	BEARING
9	065477	4	SCREW HHC M14-2.0 X 150 G8.8
10	0A1633	4	WASHER 390 SAE ALT
11	020717D	1	STATOR 390 35KW BR BRLS
	020718D	1	STATOR 390 40KW BR BRLS
	020719D	1	STATOR 390 50KW BR BRLS
	020720D	1	STATOR 390 60KW BR BRLS
	020721D	1	STATOR 390 80KW BR BRLS
	020722D	1	STATOR 390 100KW BR BRLS
	020732D	1	STATOR 390 125KW BR BRLS
	020717B	1	STATOR 390 35KW 1P BRLS
	020718B	1	STATOR 390 40KW 1P BRLS
	020719B	1	STATOR 390 50KW 1P BRLS
	020720B	1	STATOR 390 60KW 1P BRLS
	020721B	1	STATOR 390 80KW 1P BRLS
	020722B	1	STATOR 390 100KW 1P BRLS
	020732B	1	STATOR 390 125KW 1P BRLS
	020717G	1	STATOR 390 35KW 3P LV BRLS
	020718G	1	STATOR 390 40KW 3P LV BRLS
	020719G	1	STATOR 390 50KW 3P LV BRLS
	020720G	1	STATOR 390 60KW 3P LV BRLS
	020721G	1	STATOR 390 80KW 3P LV BRLS
12	068113	1	BEARING CARRIER REAR
13	068115	1	CONTROL PANEL LOWER (SMALL)
	091065	1	CONTROL PANEL LOWER (LARGE)
14	043123	4	WASHER LOCK M14
15	051779	4	NUT HEX M14-2 G8 YEL CHR
16	052259	2	WASHER FLAT M12
17	051769	3	WASHER LOCK M12
18	068406	2	SCREW HHC M12-1.75 X 60 G10.9
19	070274	1	KEY SQ 3/8 X 2-3/4 STEEL
20	087271	1	EXCITER (25-35KW)
	087272	1	EXCITER (40-125KW)
21	068404	1	FIELD EXCITER (25-35KW)
	068405	1	FIELD EXCITER (40-125KW)
22	092950	1	COLLAR SLIP FIT
24	068406	1	SCREW HHC M12-1.75 X 60 G10.9
25	090063	1	DIODE BRIDGE SUPPORT
26	090152	1	BRIDGE RECTIFIER ASSEMBLY
27	023365	1	WASHER SHAKEPROOF INT #8
28	033143	2	SCREW HHM #8-32 X 7/8
29	090064	1	END CAP ROTOR
30	083485	2	NUT PLATE
31	031980	2	TIE WRAP 11" WHITE
32	083401	1	BRACKET STATOR WIRE
33	042561	1	CLAMP HOSE #36 1.88 - 2.75
34	033212	2	SCREW HHC 5/16-18 X 1-1/4 G5
35	083549	1	SLEEVE RUBBER
36	022392	2	PIN DOWEL 1/2 X 1-1/4
37	044089	1	SCROLL ASSEMBLY
38	0A2337	2	FASTENER 1/4-20 X 5/8
39	022473	1	WASHER FLAT M6-1/4 ZINC
40	056326	8.4'	TRIM VINYL BLACK 1/8GPVV
41	022145	6	WASHER FLAT 5/16-M8 ZINC

GROUP A



EXPLODED VIEW:
LOWER PANEL, 390
DRAWING #: 0A4998

REVISION: F-5290-F
DATE: 11/9/01

EXPLODED VIEW: LOWER PANEL, 390
DRAWING #: 0A4998

GROUP A

APPLICABLE TO:

ITEM	PART #	QTY.	DESCRIPTION
1	068115	1	PANEL LOWER 15
	091065	1	PANEL LOWER 390MM
2	068147	1	COVER CB BLANK 15"
	0A3134	1	COVER BLANK 390 PME
3	040479	8	DAMPENER VIBRATION 1.0 X 1.0 X 1/4-20
4	023484N	1	BUSHING SNAP SB-2.5-31
6 **	056739	2	RELAY SOLENOID 12VDC PNL MNT (SILVER)
	082982	2	RELAY CONTACTOR 24VDC (SILVER)
7	072868	1	COVER CIRCUIT BREAKER (BQ2)
	099227	1	COVER CIRCUIT BREAKER (BQ2)
9	039782	1	BRACKET MOUNTING CIRCUIT BRKR
10 ***	058568	3 (2)	TRANSFORMER 50A-5A CRNT XFRM/FEET
	061395	3 (2)	TRANSFORMER 100V TO 5A
	058318	3 (2)	TRANSFORMER 150A TO 5A 5VA
	058710	3 (2)	TRANSFORMER 200A TO 5A 5VA
	058377	3 (2)	TRANSFORMER 300A TO 5A 12.5VA
	057909	3 (2)	TRANSFORMER 400A TO 5A 12.5VA
11	048766	1	BLOCK TERM 20A 2 X 6 X 1100V
12	022985	4	WASHER FLAT #6 ZINC
13	068116	1	COVER LOWER PANEL 15
14	068139	1	COVER CIRCUIT BREAKER (BQ3)
	099013	1	COVER CIRCUIT BREAKER (BQ3)
15	068140	1	COVER CIRCUIT BREAKER TERM BQ3
16	039783	1	BRACKET MOUNTING CIRCUIT BREAKER
17	053691	1	CIRCUIT BREAKER 90 X 3 ITE BQ3-B090
	040532	1	CIRCUIT BREAKER 100X3 240V 39783 BR
	049135	1	CIRCUIT BREAKER 70 X 3 240V ITE
	062812	1	CIRCUIT BREAKER 80-A 3P BQ3
18	081212	1	COVER NF225CTB CB 15"
	099015	1	COVER NF225CTB CB
19	081213	1	COVER CIRCUIT BREAKER TERM. NF225CTB
20	054122	1	CIRCT BRK 125 X 3 600V BLACK-ST
	081311	1	CIRCT BRK 150 X 3 600V BLACK-ST
	081312	1	CIRCT BRK 175 X 3 600V BLACK-ST
	081313	1	CIRCT BRK 200 X 3 600V BLACK-ST
	081214	1	CIRCT BRK 225 X 3 600V BLACK-ST
21	081219	1	COVER NF50 SB100 CB
	099014	1	COVER NF50 NF100 CB
22	081220	1	COVER CIRCUIT BREAKER TERM. NF50 SB
23	081306	1	CIRCT BRK 50 X 3 600V BLACK-ST
	080566	1	CIRCT BRK 40 X 3 600V BLACK-ST
	076744	1	CIRCT BRK 60 X 3 600V BLACK-ST
	081307	1	CIRCT BRK 70 X 3 600V BLACK-ST
	081308	1	CIRCT BRK 80 X 3 600V BLACK-ST
	081309	1	CIRCT BRK 90 X 3 600V BLACK-ST
	081310	1	CIRCT BRK 100 X 3 600V BLACK-ST
24	081302	1	COVER NF-400CTA CB 15"
	099419	1	COVER NF-400CTA CB
	091082	1	COVER NF-600S CB 390MM
25	081301	1	COVER CIRCUIT BREAKER TERM NF400CTA
26	081314	1	CIRCT BRK 250 X 3 600V BLACK-ST
	081315	1	CIRCT BRK 300 X 3 600V BLACK-ST
	081316	1	CIRCT BRK 350 X 3 600V BLACK-ST
	081317	1	CIRCT BRK 400 X 3 600V BLACK-ST
	081318	1	CIRCT BRK 500 X 3 600V BLACK-ST
	081319	1	CIRCT BRK 600 X 3 600V BLACK-ST
27	033133	6	SCREW HHM #8-32 X 3/8
29	022264	13	WASHER LOCK #8-M4
30	0C2212	4	SCREW PHTT M4-0.7 X 16 ZYC
31	042907	6 (4)	SCREW HHC M8-1.25 X 16 G8.8
32	022145	11(9)	WASHER FLAT 5/16 ZINC

ITEM	PART #	QTY.	DESCRIPTION
33	022129	12 (10)	WASHER LOCK M8-5/16
34	022158	10	NUT HEX #10-32 STEEL
35	022152	14	WASHER LOCK #10
36	023897	8	WASHER FLAT #10 ZINC
37	069232	4	SCREW RHM #10-32 X 3-3/4
39	022471	7	NUT HEX #8-32 STEEL
40	022507	8	SCREW HHC 1/4-20 X 1/2 G5
41	022287	31	SCREW HHC 1/4-20 X 3/4 G5
42	081320	4	SCREW SHC 1/4-20 X 4.5 G8.8 NZ
43	022473	33	WASHER FLAT 1/4 ZINC
44	022097	50	WASHER LOCK M6-1/4
45	022127	12	NUT HEX 1/4-20 STEEL
46	022259	2	NUT HEX 5/16-18 STEEL
48	048374	1	CIRCT BRK 100 X 2 240V 39782 BR
49	062059	1	ASSEMBLY BATTERY CHARGER 2A/12V
51	025853	4	SCREW RHM #10-32 X 3
52	058306	3	SCREW SHC M8-1.25 X 25 G12.9
53	069173	1	BAR BUS NEUTRAL STRAP
54	057329	1	LUG SLDLSS 350-#6 X 13/32 AL/CU
	062684	1	LUG SLDLSS 2/0-#12 X 11/32 CU
55	057073	2	JUNCTION BLOCK 3/8-16
57	039287	2	SCREW HHC M8-1.25 X 45 G8.8
58	045771	9 (7)	NUT HEX M8-1.25 G8 YEL CHR
59	030795	1	SCREW HHC 5/16-18 X 1 G5
60	022241	2	NUT HEX 3/8-16 STEEL
61	022237	2	WASHER LOCK 3/8
64	033140	2	SCREW HHM #8-32 X 3/4
65	038150	2	WASHER FLAT #8 ZINC
66 *	072986	1	TRANSFORMER 400V TO 240V 20VA
67 *	072986A	1	TRANSFORMER 277/240/120V
69	022769	2	WASHER SHAKEPROOF INT #10
70	0D3388	1	DECAL REMOTE START CONNECTION

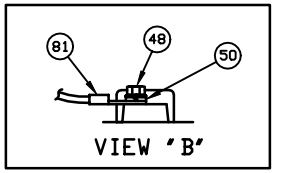
* USED ONLY ON "R" VOLTAGE GENERATORS

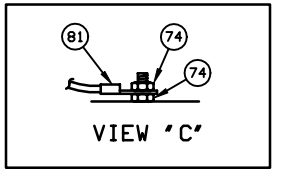
** QTY. (1) FOR GASEOUS UNITS

*** QTY. ( ) FOR SINGLE PHASE UNITS

REVISION: F-5290-F
DATE: 11/9/01

GROUP B





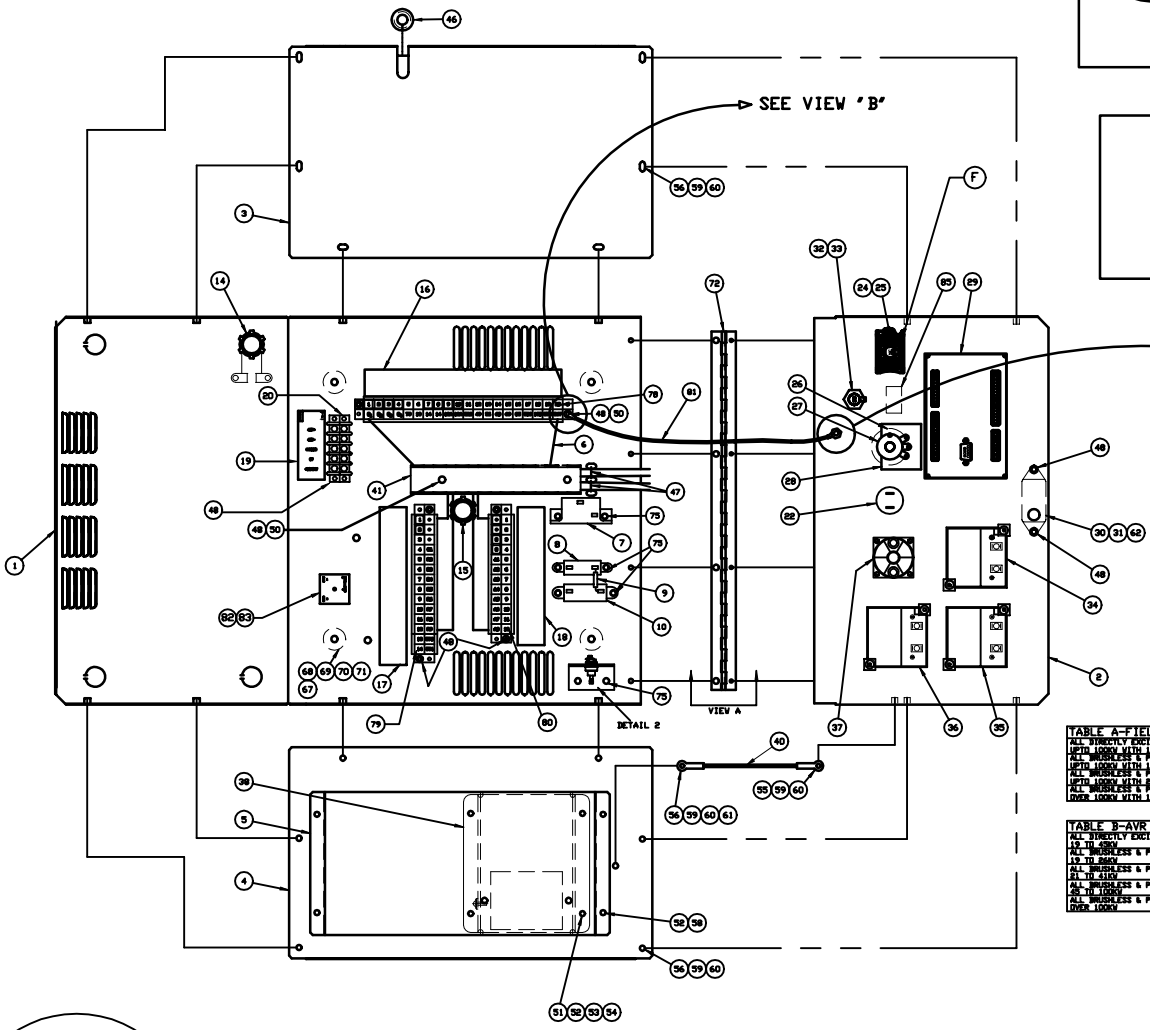
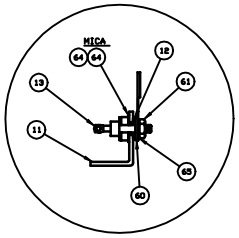


TABLE A-FIELD BOOST RESISTOR DATA

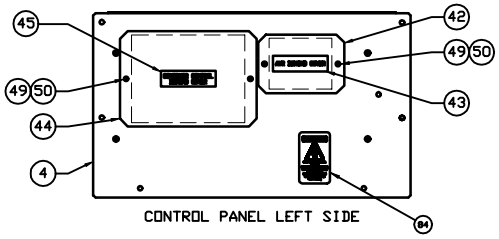
ALL DIRECTLY EXCITED MACHINES	5 OHM 25W
UPTO 100KW WITH 16 OR 24V DC SYSTEMS	P/N 048508
ALL BRUSHLESS & PME MACHINES	25 OHM 25W
UPTO 100KW WITH 16V DC SYSTEMS	P/N 057405
ALL BRUSHLESS & PME MACHINES	50 OHM 50W
UPTO 100KW WITH 24V DC SYSTEMS	P/N 048364
ALL BRUSHLESS & PME MACHINES	75 OHM 25W
OVER 100KW WITH 16 OR 24V DC SYSTEMS	P/N 048364

TABLE B-AVR POWER(DPE) CIRCUIT BREAKER DATA

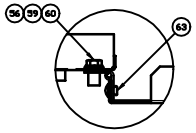
ALL DIRECTLY EXCITED MACHINES	7A
12 TO 48KW	P/N 048467
ALL BRUSHLESS & PME MACHINES	5.5A
12 TO 36KW	P/N 034430
ALL BRUSHLESS & PME MACHINES	6.0A
21 TO 41KW	P/N 048505
ALL BRUSHLESS & PME MACHINES	4.5A
48 TO 100KW	P/N 048476
ALL BRUSHLESS & PME MACHINES	4.5A
OVER 100KW	P/N 048476



DETAIL 2
RECTIFIER ASSEMBLY
SCALE: NONE

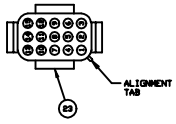


CONTROL PANEL LEFT SIDE



VIEW A
HINGE ASSEMBLY
SCALE: NONE

SLOT	WIRE
0	0
1	0
2	1
3	2
4	4
5	51
6	6
7	51S
8	52
9	51A
10	57
11	53
12	58
13	59
14	178
15	183



DETAIL 1
WIRE NUMBERS/LOCATIONS FOR LOWER PANEL HOUSING SOCKET
SCALE: NONE

EXPLODED VIEW:
"E" CONTROL PANEL W/GENERAC ALTRNTRS
DRAWING #: 0C8459

REVISION: F-9040-J
DATE: 1/23/03

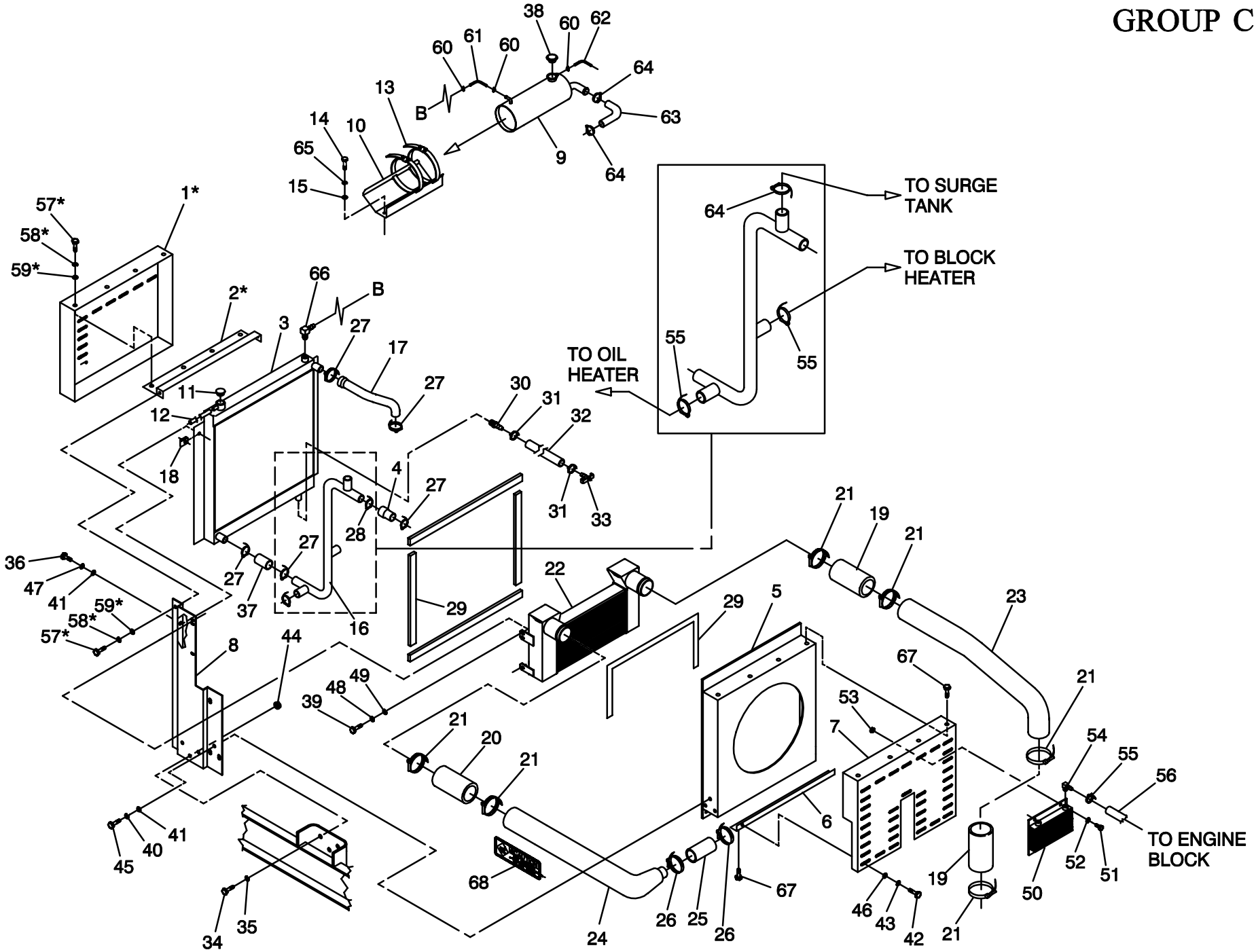
EXPLODED VIEW: "E" CONTROL PANEL W/GENERAC ALTRNTRS
DRAWING #: 0C8459

APPLICABLE TO:

GROUP B

ITEM	PART #	QTY.	DESCRIPTION
1	0A6320	1	CONTROL PANEL BOTTOM
2	0A6324	1	CONTROL PANEL FRONT
3	0A6322	1	CONTROL PANEL RIGHT SIDE
4	0A6321	1	CONTROL PANEL LEFT SIDE
5	0E3550	1	CHASSIS, UNIVERSAL
6	0C8320	1	HARNESS E PNL. WAUK (W/FS)
7	SEE TABLE B	1	CIRCUIT BREAKER
8	044213	1	RESIST MISC 10RX12W
9	025192	1	RECTIFIER MSC 2A 600V 1N5062
10	SEE TABLE A	1	RESISTOR 2
11	055444	1	HEAT SINK
12	030468	1	WASHER STEP NYLON .20
13	049939	1	RECTIFIER MSC 12A 600V 1N1206R
14	039271	1	FITTING 90DEGREE 3/4
15	034616	1	FITTING STRAIGHT 3/4
16	0A3392	1	DECAL TERMINAL STRIP
17	0C8229	1	DECAL E PNL TS#2 (W/FS)
18	0A6577	1	DECAL TERMINAL STRIP TB3
19	0C2688	1	DECAL TERMINAL STRIP TB4
20	048850	REF.	BLOCK TERM 20A 5 X 6 X 1100V
22	061286	1	AUDIBLE ALARM
23	055089	1	CONN ELEC AMP M-N-L 15PLUG PNL
24	0E2693A	1	SWITCH MUSHRM HEAD/ARROWS 40MM
25	0E2693C	3	CONTACT BLOCK D5-3 X 01 W/2 1417
26	071361	1	POTENTIOMETER PNL 5K +/-10% 2.25W
27	050123	1	KNOB PLASTIC .25 SHAFT
28	055349	1	INSULATOR
29	0A4087	1	MASTER CONTROL BOX
30	0C8481	REF.	BULB-PANEL LIGHT-12V
	0E3703	REF.	LIGHT PANEL WITH LUG
	083288	REF.	LIGHT 28VDC .17A MIN BAYNT MNT
31	070082	1	LIGHT BLOCKER
32	032300	1	FUSE HOLDER
33	022676	1	FUSE 15A X AGC15
34	070054	1	AMMETER AC 0-50
	070055	1	AMMETER AC 0-100
	070056	1	AMMETER AC 0-150
	070057	1	AMMETER AC 0-300
	070058	1	AMMETER AC 0-400
	070059	1	AMMETER AC 0-600
	070060	1	AMMETER AC 0-800
	075323	1	AMMETER AC 0-1000
	075324	1	AMMETER AC 0-1600
	075325	1	AMMETER AC 0-2000
35	070043	1	METER VOLT AC 0-300
	070044	1	METER VOLT AC 0-600
36	070042	1	METER FREQUENCY 55-65HZ
	070042A	1	METER FREQUENCY 240V 45-55HZ
37	061945	1	SWITCH 6A AMP/V SELECTOR
38	067680	1	ASSY VOLTAGE REGULATOR 60HZ
	092952	1	ASSY VOLTAGE REGULATOR 50HZ
40	0A2275	1	DOOR-STOP RAM PANEL
41	0A2400A	1	TRUNKING 180MM
42	0A1441B	1	COVER PLATE AVR
43	0C1127	1	DECAL AVR COVER
44	0A1441C	1	COVER PLATE E-GOV
45	0A3394	1	DECAL E-GOV COVER
46	030809	1	GROMMET 11/16 X 1/8 X 7/16
47	028739	2	TIE WRAP 4" WHITE
48	0C2323	12	SCREW PHM SWAGE 6-32 X 5/8 Z/YC
49	036901	4	SCREW PPHM #6-32 X 3/8
50	022155	7	WASHER LOCK #6
51	036918	8	SCREW PPHM #8-32 X 1/2
52	022264	8	WASHER LOCK M4
53	038150	4	WASHER FLAT #8 ZINC
54	022471	4	NUT HEX #8-32 STEEL
55	033120	1	SCREW HHM 10-32 X 3/8
56	033121	13	SCREW HHM 10-32 X 1/2
58	0A2284	4	SCREW SWAGE 8-32 X 1/2 Z/YC
59	022152	14	WASHER LOCK #10
60	023897	15	WASHER FLAT #10 ZINC
61	022158	2	NUT HEX #10-32 STEEL
62	074130	1	LUG DIS SN-PLG I-T 22-18 CU
63	036261	4	RIVET POP .125 X .129-.133/#30
64	070370	2	WASHER MICA .203
65	023762	1	WASHER SHAKEPROOF EXT #10 STL
67	040479	4	MOUNT VIBR 1.0 X 1.0 X 1/4-20
68	022287	4	SCREW HHC 1/4-20 X 3/4 G5
69	022097	4	WASHER LOCK M6-1/4
70	022473	4	WASHER FLAT M6-1/4 ZINC
71	047246	4	WASHER FLAT 1/4 SPECIAL
72	0A2273	1	HINGE RAM PANEL
74	022188	2	NUT HEX #6-32 STEEL
75	0C2428	8	SCREW TAPTITE PH #6-32 X 1/2 ZYC
*	0A5705	1	FUSE 5A X LTTL215005 HLDRA4017 (NOT SHOWN)
78	057335	REF.	BLOCK TERM 20A 20 X 6 X 1100V
79	0C4167	REF.	BLOCK TERM 20A 14 X 6 X 1100V
80	055911	REF.	BLOCK TERM 20A 12 X 6 X 1100V
81	0441140156	REF.	WIRE ASSEMBLY
82	084717	1	ASSY TIME DELAY (13.3L GAS ONLY)
83	036908	1	SCREW PPHM #6-32 X 1-1/4 (13.3L GAS ONLY)
84	0C1229	1	DECAL WARNING
85	0E3783	1	DECAL WARNING REMOVE FUSE

GROUP C



EXPLODED VIEW:
RADIATOR
DRAWING #: 0A7152

REVISION: F-5760-F
DATE: 1/21/02

EXPLODED VIEW: RADIATOR
DRAWING #: 0A7152

APPLICABLE TO: 5.0L NA, T, TA, TA W/GB

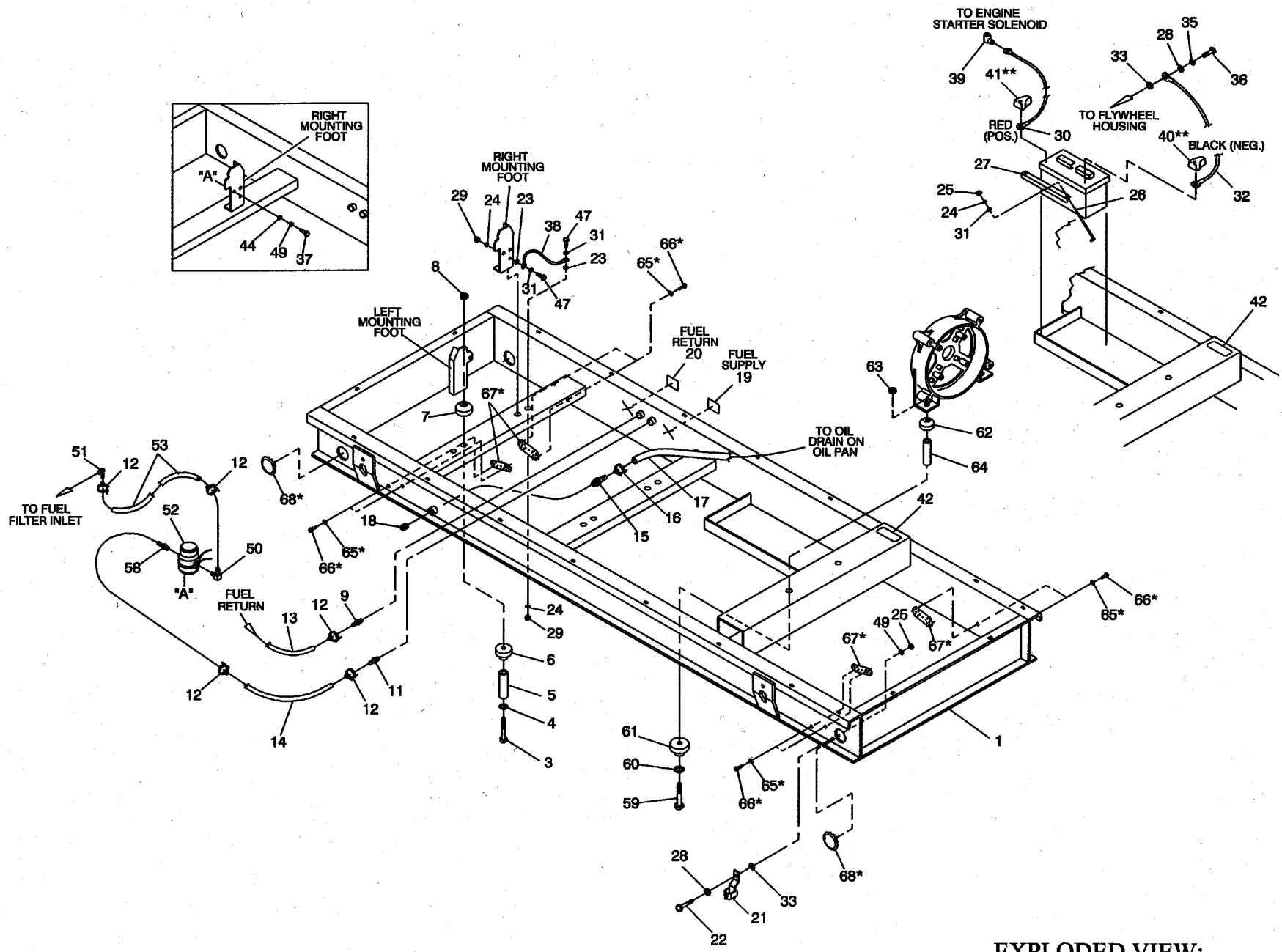
GROUP C

ITEM	PART #	QTY.	DESCRIPTION
1 *	020489	1	COVER FRONT
2 *	099458	2	DUCT TOP/BOTTOM
3	087871A	1	RADIATOR
4	022034B	1	HOSE REDUCER 2" x 1-3/4"
5	098186	1	VENTURI (40KW-80KW)
	0A5096B	1	VENTURI CAC 26" (100KW)
	0A5096C	1	VENTURI CAC 22" (125KW)
	0A5096A	1	VENTURI (EMISSION)
6**	099710	1	GUARD LOWER FAN
7**	099715	1	GUARD FAN
8	0A5095A	1	SUPPORT SIDE LH (CAC)
	0A5095B	1	SUPPORT SIDE RH (CAC)
	098311	1	SUPPORT SIDE LH
	098311A	1	SUPPORT SIDE RH
9	0A2770	1	TANK SURGE
10	099448	1	BRACKET SURGE TANK
11	046627	1	CAP RADIATOR
12	029032	1	HOSE 9/32 ID
13	058612	2	CLAMP HOSE #88 5.12 - 6.00
14	039253	2	SCREW HHC M8-1.25 X 20 G8.8
15	022145	2	WASHER FLAT M8-5/16 ZINC
16	0A7165	1	HOSE LOWER
17	0A2126	1	HOSE UPPER 5.0L
18	099667D	6	NUT SPRINGCLIP 3/8-16
27	042561	5	CLAMP HOSE #36 1.88 - 2.75
28	035685	1	CLAMP HOSE #28 1.32 - 2.25
29	052250	10'	TAPE FOAM 1 X 1
	052250	14.5'	TAPE FOAM 1 X 1 (W/AFTERCOOLER)
30	035461	1	BARB STRAIGHT 3/8 X 1/4 X 1.72
31	040173	2	CLAMP HOSE #5.5 .62 - .62
32	047290	40"	HOSE RES 3/8 SINGLE BRAID
33	036865	1	DRAINCOCK
34	052617	6	SCREW HHC M12-1.75 X 20 G8.8
35	049808	6	WASHER FLAT M12
36	029745	6	SCREW HHC 3/8-16 X 1 G5
37	040105	3"	HOSE RES 2 3PLY RAD HOS
38	090283	1	CAP RADIATOR (7 PSI)
40	046526	6	WASHER LOCK M10
41	022131	12	WASHER FLAT M10-3/8 ZINC
42**	047411	4	SCREW HHC M6-1.0 X 16 G8.8
43**	022097	4	WASHER LOCK M6-1/4
44	052860	6	NUT HEX LOCK FLANGE M12-1.75
45	051756	6	SCREW HHC M10-1.5 X 20 G8.8
46**	022473	4	WASHER FLAT M6-1/4 ZINC
47	022237	6	WASHER LOCK 3/8
57 *	047411	12	SCREW HHC M6-1.0 X 16 G8.8
58 *	022097	12	WASHER LOCK M6-1/4
59 *	022473	12	WASHER FLAT M6-1/4 ZINC
60	040173	3	CLAMP HOSE #5.5 .62 - .62
61	029032	24"	HOSE 9/32 ID
62	029032	30"	HOSE 9/32 ID
63	035587	24"	HOSE RES 1" CVR NEOPR SAE-20R3
64	057824	2	CLAMP HOSE #16 .87 - 1.50
65	022129	2	WASHER LOCK M8-5/16
66	049340	1	BARB ELBOW 3/8 X 1/4 X 1.04
67**	090388	12	SCREW TAP M6X12 YEL CHR

ITEM	PART #	QTY.	DESCRIPTION
	OIL COOLER COMPONENTS (GEARBOXES ONLY)		
50	099251	1	COOLER OIL
51	047411	4	SCREW HHC M6-1.0 X 16 G8.8
52	022473	4	WASHER FLAT M6-1/4 ZINC
53	052857	4	NUT LOCK M6-1.0
54	056460	2	BARB ELBOW 5/8 X 1/2 X 1.21
55	057822	5	CLAMP HOSE #8 .53 - 1.00
56	065386	2	HOSE RES 5/8 -40/+300 SAE100RG 7' LONG
	AFTER COOLER PARTS (100 & 125KW UNITS)		
19	0A5260A	2	HOSE 3" DIA X 3" LONG
20	080773A	3"	HOSE 3" DIA
21	086133E	6	CLAMP HI TORQUE 2.75 - 3.625
22	0D8150	1	CHARGE AIR COOLER ASSY 13TBS
	0A5160	1	AFTERCOOLER (GEARBOX & EMISSION)
23	0A5098A	1	TUBE CAC
24	0A5097A	1	TUBE CAC
25	071296A	3"	HOSE 2" DIA
26	086133C	2	CLAMP HI TORQUE 1.75 - 2.625
39	039253	6	SCREW HHC M8-1.25 X 20 G8.8
48	022129	6	WASHER LOCK M8-5/16
49	022145	6	WASHER FLAT M8-5/16 ZINC
68	0D3397	1	DECAL, CAUTION HOT SURFACES

*OPTIONAL STONE GUARD.
**FAN GUARD (KIT 0D9246), STANDARD, NOT USED WITH OPTIONAL LEVEL ONE GUARDING.

GROUP C



EXPLODED VIEW:
MOUNTING BASE, 5.0L GB 390MM
DRAWING #: C7879

REVISION: F-1802-A
DATE: 11/29/00

EXPLODED VIEW: MOUNTING BASE, 5.0L GB 390MM
DRAWING #: C7879

APPLICABLE TO:

GROUP C

ITEM	PART #	QTY.	DESCRIPTION
1	C7312	1	BASE MOUNTING
3	55597	4	SCREW HHC M12-1.75 X 85 G8.8
4	52259	4	WASHER FLAT M12
5	52257	4	SPACER .49 X .62 X 1.87 PWDR/ZNC
6	52252	4	DAMPENER VIBRATION
7	52251A	4	DAMPENER VIBRATION WHITE
8	52860	4	NUT LOCK M12-1.75
9	89617	1	BARB STRAIGHT 1/4 X 1/4
11	58043	1	BARB STRAIGHT 5/16 X 1/4 X 1.72
12	40173	5	CLAMP HOSE #5.5 .62 - .62
13	74995	48"	HOSE RES 1/4 PROP/BUT
14	52221	54"	HOSE RES 5/16 TYP1 SNGL
15	44118	1	BARB STRAIGHT 5/8 X 1/2 X 1.87
16	57822	1	CLAMP HOSE #8 .53 - 1.00
17	57448	12"	HOSE RES 5/8 TYP3 SNGL
18	24310	1	PLUG STD PIPE 1/2 STEEL SQ HD
19	56727	1	DECAL FUEL INLET
20	56726	1	DECAL FUEL RETURN
21	61383	1	LUG SLDLSS 3/0-#4X13/32 CU
22	59981	1	SCREW HHC M10-1.5 X 30 G10.9
23	27482	2	WASHER SHAKEPROOF EXT 5/16 STL
24	22129	4	WASHER LOCK M8-5/16
25	22259	2	NUT HEX 5/16-18 STEEL
26	59567	2	BOLT BATTERY HOLD DOWN
27	59568	1	BAR BATTEY HOLD DOWN
28	22131	2	WASHER FLAT M10-3/8 ZINC
29	45771	2	NUT HEX M8-1.25 G8 YEL CHR
30	38804U	1	CABLE BATT RED #1 X 28.00
31	22145	4	WASHER FLAT M8-5/16 ZINC
32	38805U	1	CABLE BATT BLK #1 X 18.00
33	70022	2	WASHER LOCK M12 EXT
34	45772	1	NUT HEX M10-1.5 G8 YEL CHR
35	46526	2	WASHER LOCK M10
36	64416	1	SCREW HHC M10-1.5 X 45 G8.8
37	22287	2	SCREW HHC 1/4-20 X 3/4 G5
38	98-53621	9"	WIRE GROUND
39	75763	1	BOOT VINYL RED
40 **	50331	1	COVER BATTERY POST BLACK
41 **	50331a	1	COVER BATTERY POST RED
42	D1507	1	DECAL WARNING BATTERY
44	22473	2	WASHER FLAT M6-1/4 ZINC
47	39253	2	SCREW HHC M8-1.25 X 20 G8.8
49	22097	2	WASHER LOCK M6-1/4
50	A6344	1	BARB ELBOW 3/8 X 1/8 X 1.01
51	97474	1	FITTING BANJO M14-1.5
52	A4119	1	PUMP FUEL
53	47290	30"	HOSE RES 3/8 SINGLE BRAID
58	52219	1	BARB STREET 5/16 X 1/8 X 1.47
59	55597	2	SCREW HHC M12-1.75 X 85 G8.8
60	52259	2	WASHER FLAT M12
61	52252	2	DAMPENER VIBRATION LOWER
62	52251A	2	DAMPENER VIBRATION UPPER WHITE
63	52860	2	NUT, LOCK-M12-1.75
64	52257	2	SPACER .49 X .62 X 1.87 PWDR/ZNC
65 *	71693	8	WASHER FLAT SPECIAL .281 I.D.
66 *	C2454	8	SCREW TH-FRM M6-1X16 N WA Z/JS
67 *	C4360	4	PLATE VARMINT
68 *	A8785	4	PLUG BUTTON 3" DIA

1) * ITEMS 65, 66, 67 & 68 ARE INCLUDED IN VARMINT KIT #C8560 FOR ENCLOSED UNITS ONLY.

2) ** ITEMS 40 & 41 ARE FOR CUSTOMER REFERENCE ONLY, SHOWS POSITIONING.

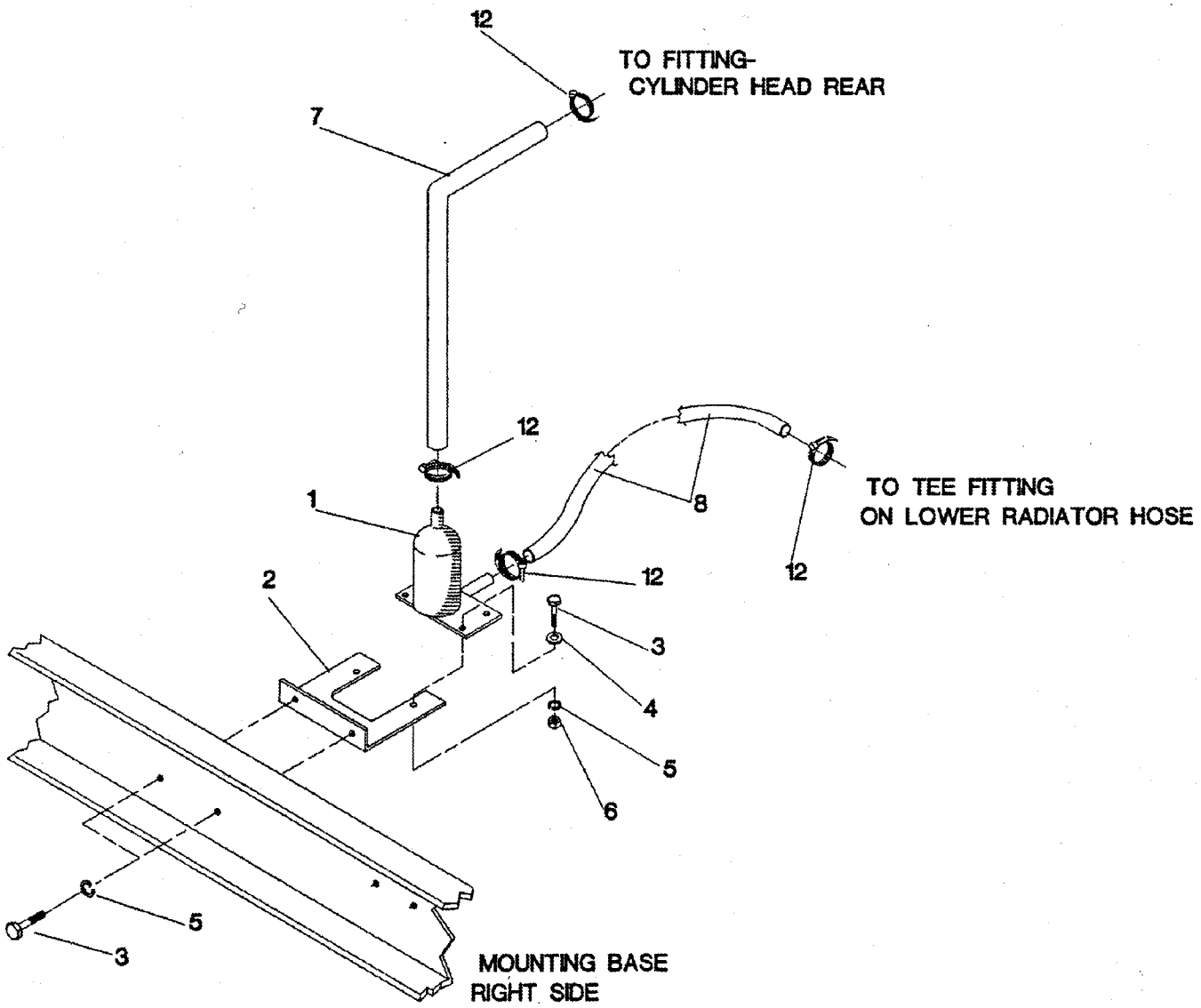
REVISION: F-1802-A
DATE: 11/29/00

EXPLODED VIEW-ENGINE HEATER

DRAWING NO. 96674 GROUP C

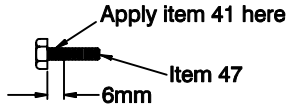
ITEM	PART NO.	QTY.	DESCRIPTION
1	84918-C	1	HEATER, ENGINE 1800 WATT-120V.
	*84918-D	1	HEATER, ENGINE 2000W 240V.
2	84427	1	BRACKET, ENGINE HEATER
3	47411	4	CAPSCREW, HEX HEAD M6-1.0 x 16MM
4	22473	4	WASHER, FLAT M6
5	22097	4	WASHER, LOCK M6
6	49813	2	NUT, HEX M6-1.0
7	50967	1	HOSE, COOLANT 5/8" I.D. x 24"
8	50967	1	HOSE, COOLANT 5/8" I.D. x 20"
12	57823	4	CLAMP, HOSE #10

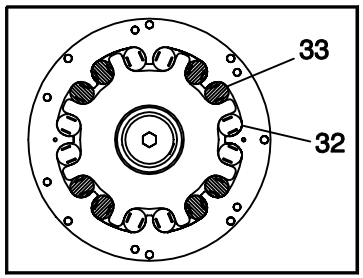
* USED ON "R" VOLTAGE GENERATORS ONLY



REVISION:
DATE: MAR. 24, 1995

Notes:
1. Apply item 40 to the ID.
2. Apply item 40 to the ID. and OD.
3. Apply item 40 to the ID.
4. Apply item 41 to the 6mm of threads nearest the head of item 47. Install screw and torque to 28-32 ft-lbs.





Application Instructions for Loctite AA Sealant (Item 40)

- Only apply Loctite after the item of interest is assembled to the shaft (Item 40 is a wicking compound).
- Do not apply Loctite to surfaces exceeding 180 degrees F.
- Avoid Loctite contact with seals & bearing balls.

EXPLODED VIEW:
GEARBOX 390 SAE
DRAWING #: 0A4497

EXPLODED VIEW: GEARBOX 390 SAE
DRAWING #: 0A4497

APPLICABLE TO:

GROUP D

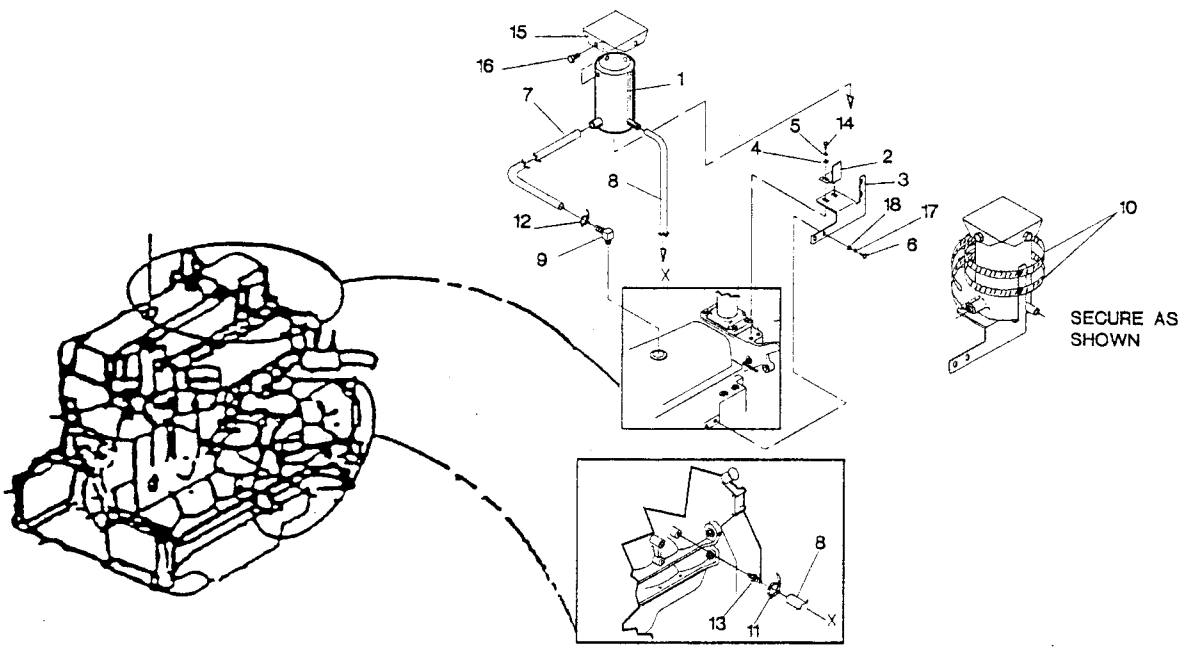
ITEM	PART #	QTY.	DESCRIPTION
1	095972	1	CASTING GEARBOX-ENG
2	0A1266	1	GEAR CASE MACHINED
3	095613	1	SEAL OIL
4	051756	2	SCREW HHC M10-1.5 X 20 G8.8
5	046526	44	WASHER LOCK M10
6	049814	4	SCREW HHC M10-1.5 X 25 G8.8
7	051735	8	SCREW HHC M10-1.5 X 70 G8.8
8	095973	1	GASKET GEARBOX ADPT
9	072879	1	SPACER .69 X 2.75 X .37 ST/ZNC
10	097557B	1	KEY 10 X 16 X 46
11	097785	1	GEAR OUTPUT 1.65:1
	095970	1	GEAR OUT 390-50H 37T
	095968	1	GEAR OUT 390-60H 35T
12	070263	2	SCREW HHC M16-2.0 X 35 G10.9
13	057019	2	BALL BRG 65 X 120 X 23
14	026847	1	BREATHER
15	097784	1	GEAR INPUT 1.65:1
	095969	1	GEAR INPT 390-50 25T
	095967	1	GEAR INPT 390-60 27T
16	095966	1	SHAFT 390 INPUT GEAR
17	095976	1	COLLAR HARDENED
18	095971	1	SEAL OIL
19	096777	1	SNAP RING INT 120MM X 3.0 KOREAN
20	057019S	1	BEARING #6213 SEALED
22	096379	1	PLATE INTRNL BRG RET
23	048189	2	PIN DOWEL M8 X 24
24	095979	1	PLATE BEARING THRST
25	021159	1	SPACER STRESSPROOF
26	097557A	1	KEY 10 X 16 X 40
27	057163	1	PLUG PIPE 3/8" MAGNETIC
28	070265	2	WASHER LOCK M16
29	099380	1	COVER,GEARBOX GUARD
30	020443	1	COUPLING INNER DRAWN
31	094666A	1	COUPLING OUTER MACHN
32	099828	8	DAMPER GB CPLR VIBRA
33	099828A	8	DAMPER GB CPLR VIBRA
34	026925	2	PLUG STD PIPE 3/8 STEEL SQ HD
35	097557C	1	KEY 10 X 16 X 50
36	038591	1	NIPPLE PIPE 3/8 NPT X 3-1/2
37	025066	1	COUPLING FULL 3/8-18
38	031578	6	SCREW HHC 3/8-16 X 1-1/2 G8
39	049814	10	SCREW HHC M10-1.5 X 25 G8.8
40	0A1786	5cc	LOCTITE #8931 AA W/S
41	0A1788	1cc	LOCTITE #25224 GASKT
44	045772	10	NUT HEX M10-1.5 G8 YEL CHR
45	052243	10	SCREW HHC M10-1.5 X 60 G8.8
46	057642	2	SCREW HHC M10-1.5 X 40 G10.9
47	0E3564	4	SCREW HHC M10-1.5 X 25 SEAL
48	027175	1.1 QT	LUBE GREASE SAE #90 80W90 (NOT SHOWN)

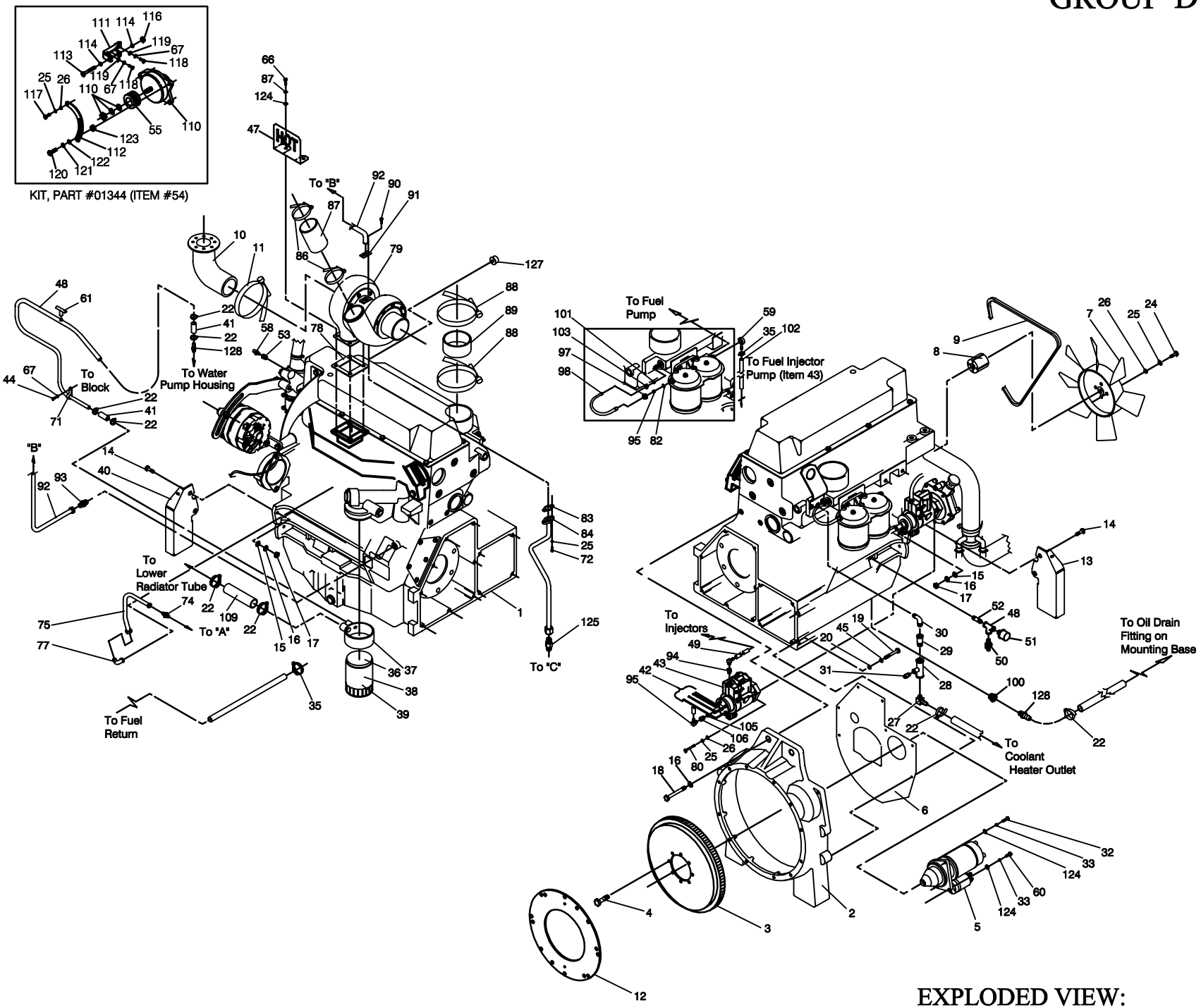
EXPLODED VIEW- BREATHER ASSEMBLY

DRAWING NO. A5043
APPLICABLE TO: 5.0L FORD

GROUP D

ITEM	PART NO.	QTY.	DESCRIPTION
1	A2771	1	SEPERATOR, AIR OIL
2	A5011	1	BRACKET, BREATHER
3	A5026	1	BRACKET, BREATHER
4	22131	2	FLAT WASHER 3/8
5	22237	2	LOCK WASHER 3/8
6	39253	2	CAPSCREW, HEX HD.M8-1.25 x 20
7	35587	8"	HOSE, 1" I.D. SAE-20R3
8	52223	24"	HOSE, 1/2" I.D. SAE-30R2
9	57421	1	BARBED 90 DEG. 3/4 x 1"
10	57648	2	HOSE CLAMP, #64
11	57822	2	HOSE CLAMP, #8
12	57824	2	HOSE CLAMP, #16
13	81017	1	BARBED, ST 1/2" x 1/4"
14	22511	2	CAPSCREW, HEX HD.-3/8-16 x 1-1/4"
15	A4850	1	COVER, RAIN
16	A2110	4	THREAD FORM, 1/4-20 x 1/2
17	22129	2	LOCKWASHER, M8
18	22145	2	FLATWASHER, M8





EXPLODED VIEW:
ENGINE PARTS 5.0L FORD TURBO
DRAWING #: 0C3214

REVISION: F-7384-J
DATE: 7/17/02

EXPLODED VIEW: ENGINE PARTS-5.0L FORD TURBO
DRAWING #: 0C3214

APPLICABLE TO:

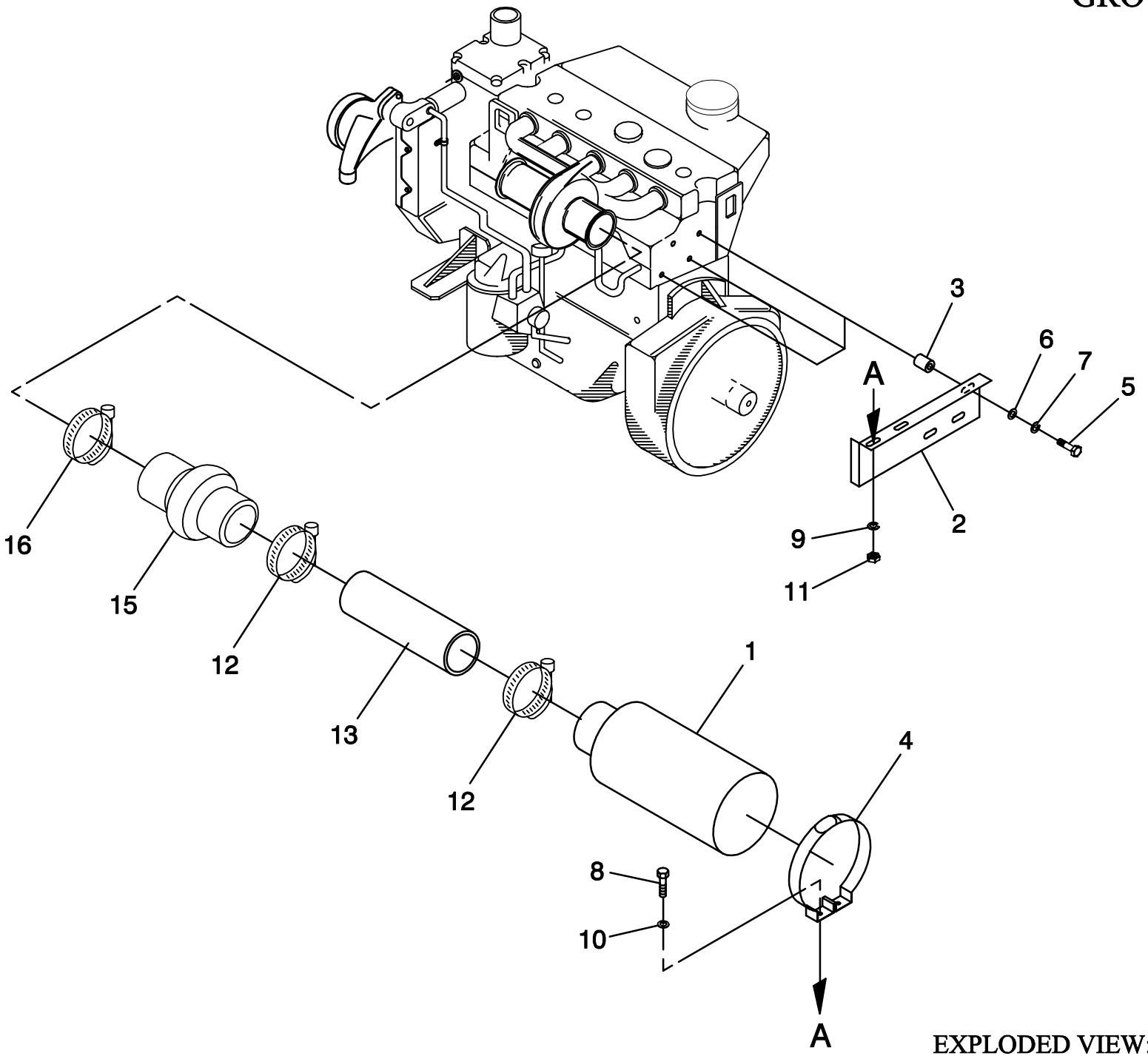
GROUP D

ITEM	PART #	QTY.	DESCRIPTION
1	092460	1	ENGINE 5.0L
2	095005	1	FLYWHEEL HSG.
3	097646	1	FLYWHEEL W/RING GEAR
4	095393	6	SCREW HHC 9/16-18 X 1.75 G8
5	095281	1	STARTER 12VDC
6	095008	1	ENGINE PLATE
7	098184	1	FAN COOLING 26" (NON-GB)
	098185	1	FAN COOLING 22" (GB)
8	021082	1	ASSEMBLY 3" SPACER
9	0A3356	2	V-BELT 1/2 X 57 (50HZ NON-GB)
	0A5747	2	V-BELT 1/2 X 58 (60HZ NON-GB & GB)
10	096693	1	ELBOW EXHAUST
	020790	1	ELBOW 3.5" EXHAUST (GB)
11	096694	1	V-BAND CLAMP EXHAUST ELBOW
	098458	1	V-BAND CLAMP EXHAUST (GB)
12 **	095610	1	PLATE DAMPNER RETAIN
13	098856	1	BRACKET ENG MOUNT RH
14	098779	4	SCREW HHC 3/4-10 X 2-3/4 G5
15	045900	4	WASHER FLAT 3/4 ZINC
16	023171	6	WASHER LOCK 3/4
17	023170	4	NUT HEX 3/4-10 STEEL
18	096387	2	SCREW HHC 3/4-16 X 1-3/4 G5
19	096388	4	SCREW HHC M16-2.0 X 60 G8.8
20	022247	4	WASHER FLAT 5/8 ZINC
22	057822	8	CLAMP HOSE #8 .53 - 1.00
24	036287	4	SCREW HHC 5/16-24 X 4 G5
25	022129	10	WASHER LOCK M8-5/16
26	022145	8	WASHER FLAT 5/16 ZINC
27	058460	1	BARBED ELBOW 90 1/2 NPT X 5/8
28	030416	1	PIPE TEE 1/2 NPT
29	030985	1	NIPPLE CLOSE 1/2 X 1.125
30	049611	1	ELBOW REDUCING STREET 1/2 X 3/8
31	035606	1	SENSOR HI COOLANT SHUTDOWN
32	059981	2	SCREW HHC M10-1.5 X 30 G10.9
33	046526	3	WASHER LOCK M10
35	040173	4	CLAMP HOSE #5.5 .62 - .62
36	096765	1	OIL COOLER FILTER STYL
37	096771	1	UPPER INSERT OIL COOLER
38	096772	1	LOWER INSERT OIL COOLER
39	096701	1	FILTER OIL
40	098855	1	BRACKET ENG MOUNT LH
41	050967	2	HOSE 5/8 ID RIA 250F (3" LONG)
42	096776	1	INJECTION LINES
43	0A5950	1	PUMP INJECTION W/SOL (NON-GB 1800RPM)
	097645A	1	PUMP INJECTION (2300 RPM-GB)
44	044831	1	SCREW HHC 3/8-16 X 3/4 G8
45	070265	4	WASHER LOCK M16
46	096759A	1	TUBE OIL COOLER RETURN
47	0D4557	1	LABEL, HOT TURBO 5.0L & 7.5L
48	035430	1	PIPE TEE 1/8 NPT
49	099856	1	FUEL RETURN
50	0A8584	1	SWITCH OIL PRESSURE
51	053666	1	SENDER OIL PRESURE
52	039558	1	NIPPLE PIPE 1/8 NPT X 1.75
53	055476	1	BUSHING REDUCER 3/8 TO 1/8 GAL
54	0A1344	1	KIT D.C ALTERNATOR (5.0L)
55	0A1349	1	PULLEY 2.75" DOUBLE (50HZ)
	0A1350	1	PULLEY 3.5" DOUBLE (60 HZ)
58	053667	1	SENDER WATER TEMP
59	097474	2	BANJO ASSEMBLY M14-1.5
60	064416	1	SCREW HHC M10-1.5 X 45 G8.8
61	036865	1	DRAINCOCK 1/8
66	022511	4	SCREW HHC 3/8-16 X 1-1/4 G5
67	022237	7	WASHER LOCK 3/8
71	055934H	1	CLAMP VINYL .62 X .406 Z
72	029745	2	SCREW HHC 3/8-16 X 1 G5
74	096986	1	REDUCER RELIEF PIPE
75	096987	1	TUBE RELIEF VENT
76	096988	1	FITTING DUAL DRAIN
77	096860	1	ELBOW RELIEF PIPE
78	097659	1	GASKET TURBOCHARGER
79	099763	1	TURBOCHARGER 5L-100KW (NON GB)
	095540	1	TURBOCHARGER 7.5L FORD (GB)
80	0E0713	3	SCREW HHC 5/16-24 X 1 G8 NZ
81 *	0A1370	8	WASHER FLAT M8 COPPER (USED ON ITEM #49)
82	0A1371	1	WASHER FLAT M14 COPPER
83	096116	1	GASKET TURBO OUTLET
84	095958B	1	TUBE TURBO OUTLET 100KW (NON GB)
	095958C	1	TUBE TURBO OUT 5L-125K (GB)
86	086133C	2	CLAMP HI TORQUE 1.75 - 2.625
87	071296A	1	HOSE 2" ID X 3.0" LG
88	086133E	2	CLAMP HI TORQUE 2.75 - 3.625
89	0A5260A	1	HOSE 3" ID X 3.0" LG
90	030795	1	SCREW HHC 5/16-18 X 1 G5
91	096859	1	GASKET TURBO INLET
92	095957B	1	TUBE TURBO INLET 100K (NON-GB)
	095957C	1	TUBE TURBO INLET 5L-125 (GB)
93	0A1531	1	CONNECTOR 3/4 NPT-3/4-16
94	057829A	1	ADAPTOR M12-1.5 1/4 NPT
95	043790	1	BARBED ELBOW 90 3/8 NPT X 3/8
96	060616	1	ADAPTOR M14-1.5 1/8 NPT
97	099477	1	FITTING COMPRESSION 1/8 NPT 3/16
98	096704A	1	TUBE PREHEATER 5.0L
99	0A6344	1	BARBED ELBOW 90 1/8 NPT X 3/8
100	065317	1	FITTING OIL DRAIN M18-1.50
101	099616	1	SLEEVE 3/16 DIA TUBE
102	047290	1	HOSE 3/8 ID SINGLE BRAID (9")
103	099615	1	COMP. NUT 3/8-24 3/16
105	052677	1	WASHER FLAT NYLON .50/.87/.06
106	054455	1	ADAPTOR OIL DRAIN 1/2-20
107	043124	1	NUT HEX JAM M14 X 1.5 G8
108	043123	1	WASHER LOCK M14
109	050967	1	HOSE 5/8 ID RIA 250F (30" LG)
110	0A1232	1	D.C. ALTERNATOR ASSEMBLY
111	0A3473A	1	BRACKET, ALTERNATOR
112	0A5610	1	BRACKET, TENSIONER
113	068407	1	SCREW HHC M12-1.75 X 90 G10.9
114	049808	2	WASHER FLAT M12
116	052860	1	NUT LOCK FL M12-1.75
117	033212	1	SCREW HHC 5/16-18 X 1-1/4 G5
118	022511	2	SCREW HHC 3/8-16 X 1-1/4 G5
119	022131	2	WASHER FLAT 3/8-M10 ZINC
120	064416	1	SCREW HHC M10-1.5 X 45 G8.8
121	046526	1	WASHER LOCK M10
122	0A5768	1	WASHER FLAT HEAVY DUTY
123	032421	1	SPACER .41 X .75 X .34 PWDR/ZNC
124	022131	4	WASHER FLAT 3/8-M10 ZINC
125	0A1532	1	CONNECTOR 1/2 NPT-7/8-14
126 *	0A3160	1	WASHER FLAT .265 ID X 1.34 OD (USED ON ITEM #36)
127	057522	1	SENSOR COOLANT LEVEL
128	044117	2	BARBED STRAIGHT 3/8 NPT X 5/8

* NOT SHOWN

** USED ON GEAR BOX UNITS ONLY.

REVISION: F-7384-J
DATE: 7/17/02



EXPLODED VIEW:
AIR CLEANER
DRAWING #: 0C9053

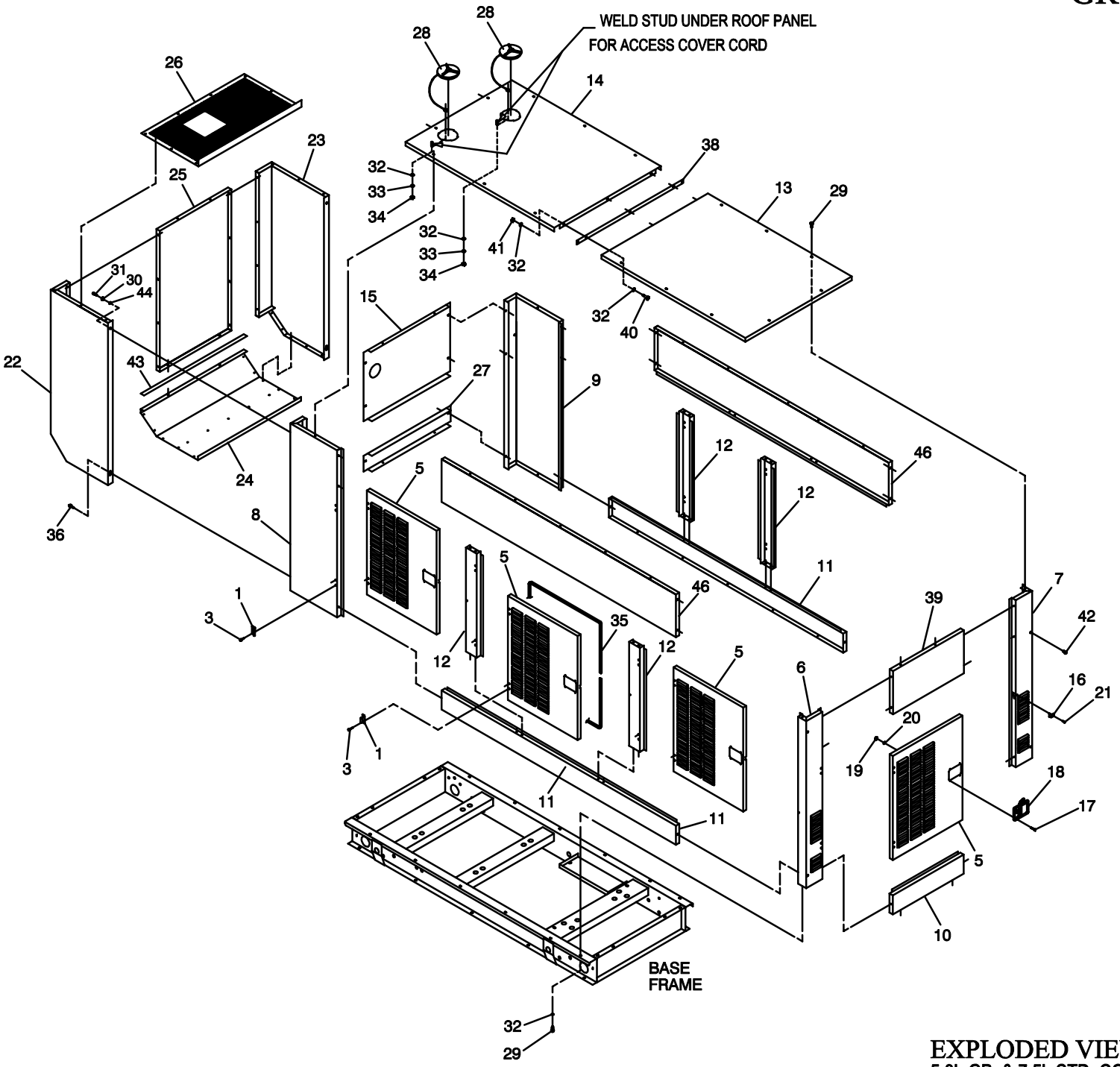
EXPLODED VIEW: AIR CLEANER
DRAWING #: 0C9053

APPLICABLE TO: 5.0L 125KW, 150KVA 7.5L 125KW, 150KW

GROUP D

ITEM	PART #	QTY.	DESCRIPTION
1	090625	1	AIR CLEANER 7 3/4 OD
2	0D3632	1	BRACKET AIR CLEANER
3	095310	3	SPACER .56 X 1.25 X 1.50 ST/ZNC
4	090624	1	MOUNTING CLAMP 7 3/4
5	022368	3	SCREW HHC 7/16-14 X 2-1/2 G5
6	022250	3	WASHER FLAT 7/16
7	022302	3	WASHER LOCK 7/16
8	049814	2	SCREW HHC M10-1.5 X 25
9	046526	2	WASHER LOCK M10
10	022131	2	WASHER FLAT M10-3/8 ZINC
11	045772	2	NUT HEX M10-1.5 G8 YEL CHR
12	057648	2	CLAMP HOSE #64 3.56 - 4.50
13	0D3631	1	TUBE AIR CLEANER 7.5L
	0A5313	1	PIPE 101.6 OD X 106 (5.0L GB)
15	072448	1	HUMP REDUCER 4"-2 3/4"
16	039294	1	CLAMP HOSE #44 2.31 - 3.25

GROUP F



EXPLODED VIEW:
5.0L GB, & 7.5L STD. COMPARTMENT
DRAWING #: 0C7889

REVISION: F-5019-C
DATE: 10/24/01

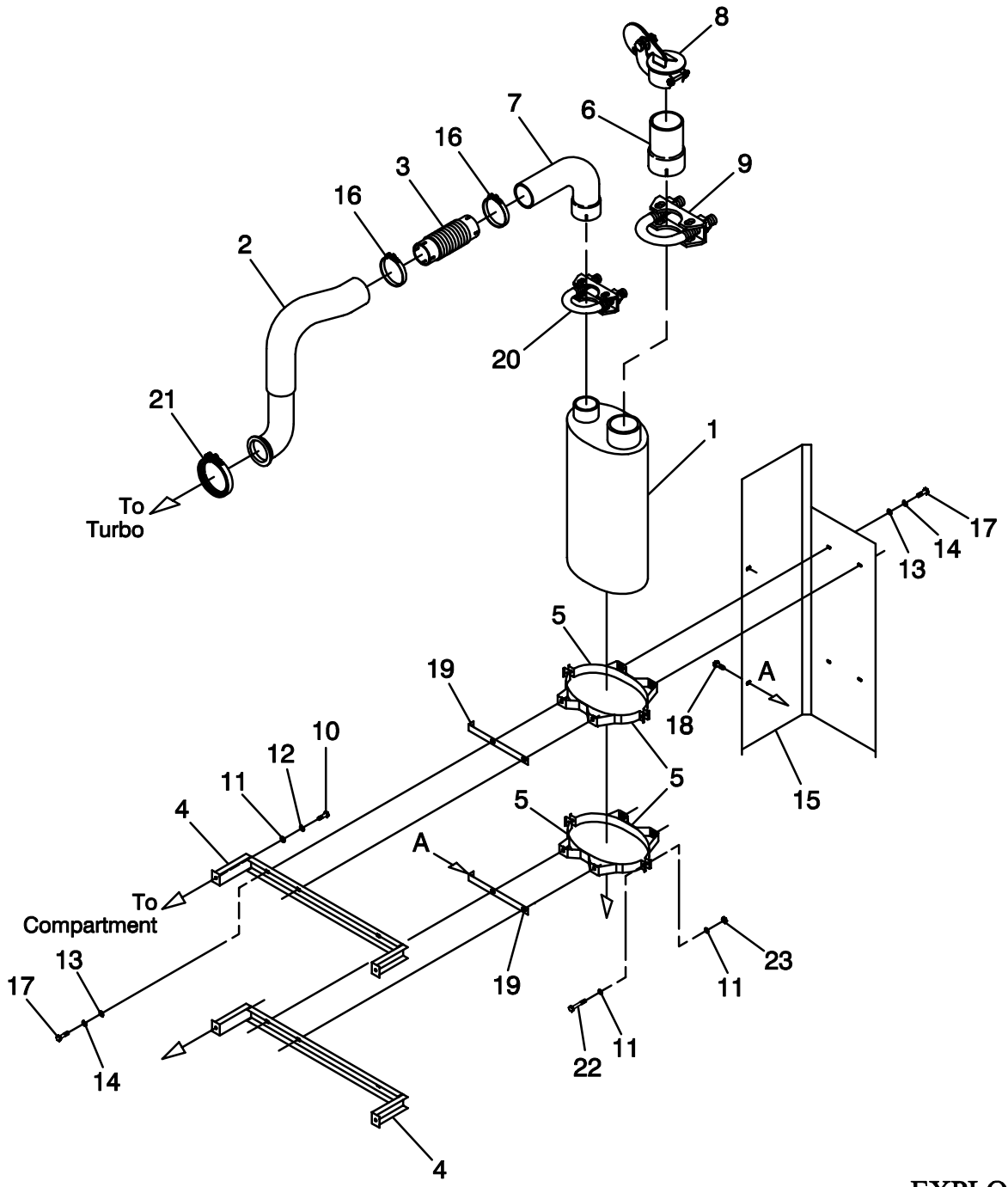
EXPLODED VIEW: 5.0L GB, & 7.5L STD. COMPARTMENT
DRAWING #: 0C7889

GROUP F

APPLICABLE TO:

ITEM	PART #	QTY.	DESCRIPTION
1	0C3594	14	ASSEMBLY M6 HINGE
3	0A3359	56	SCREW BHSC M6-1.0 X 16 SS
5	0C2522 (A)	7	DOOR SMALL STNDRD WELD
6	0C8399 (A)	1	CORNER POST LH REAR
7	0C8400 (A)	1	CORNER POST RH REAR
8	0C8397 (A)	1	CORNER POST LH FRONT
9	0C8398 (A)	1	CORNER POST RH FRONT
10	0C2548 (A)	1	REAR BRACE
11	0C2553 (A)	2	SIDE BRACE BOTTOM
12	0C2558 (A)	4	SIDE SUPPORT
13	0C2561 (A)	1	ROOF REAR WELD
14	0C2568 (A)	1	ROOF FRONT C GRP WLD
15	0C8393 (A)	1	FRONT BRACE TOP 5.0L
	0C8394 (A)	1	FRONT BRACE TOP 7.5L
16	0C2633	7	PLATE STRIKER GEN 2000
17	0C6749	28	SCREW PPHM M4-0.7 X 12 SS
18	060069	7	PADDLE HANDLE LOCK
19	0C6748	28	NUT LOCK HEX M4-0.7 SS NYL INS
20	080490	28	WASHER FLAT #8 SS
21	087233	7	RIVET POP 3/16 X 1/4
22	0C7990 (A)	1	DUCT FRONT LH
23	0C7989 (A)	1	DUCT FRONT RH
24	0C8391 (A)	1	DUCT BOTTOM
25	0C7987 (A)	1	DUCT FRONT PANEL
26	0C7986 (A)	1	DUCT FRONT TOP/LH OUT
27	0C8395 (A)	1	FRONT BRACE BOTTOM 5.0L
	0C8396 (A)	1	FRONT BRACE BOTTOM 7.5L
28	0C2634A	2	ASSEMBLY COVER ACCESS
29	0C2454	88	SCREW TH-FRM M6-1 X 16 N WA Z/JS
30	022129	2	WASHER LOCK M8-5/16
31	042907	2	SCREW HHC M8-1.25 X 16 G8.8
32	022473	24	WASHER FLAT 1/4 ZINC
33	022097	2	WASHER LOCK M6-1/4
34	022127	2	NUT HEX 1/4-20 STEEL
35	0A9881	68.88 FT	GASKET DOOR RUBBER
36	0C3393	2	SCREW SHOULDER
38	0C3064	1	SEAL ROOF
39	0C8401 (A)	1	REAR BRACE TOP C GRP
40	042568	3	SCREW HHC M6-1.0 X 20 G8.8
41	077992	3	NUT LOCK FL M6-1.0 SSTL
42	0C3397	4	FASTENER RATCHET
43	066760	39-3/8"	STRIP SEALANT 1/8 X 1
44	022145	2	WASHER FLAT 5/16 ZINC
46	0C8402 (A)	2	SIDE BRACE TOP C GRP

OPTIONAL COMPARTMENT MATERIALS:
ALL P/N'S WITH AN "A" SUFFIX
INDICATE ALUMINUM MATERIAL OPTION.



EXPLODED VIEW:
EXHAUST MUFFLER
DRAWING #: 0C7895

REVISION: F-4697-C
DATE: 9/9/01

EXPLODED VIEW: EXHAUST MUFFLER
DRAWING #: 0C7895

APPLICABLE TO: 5.0L GB

GROUP F

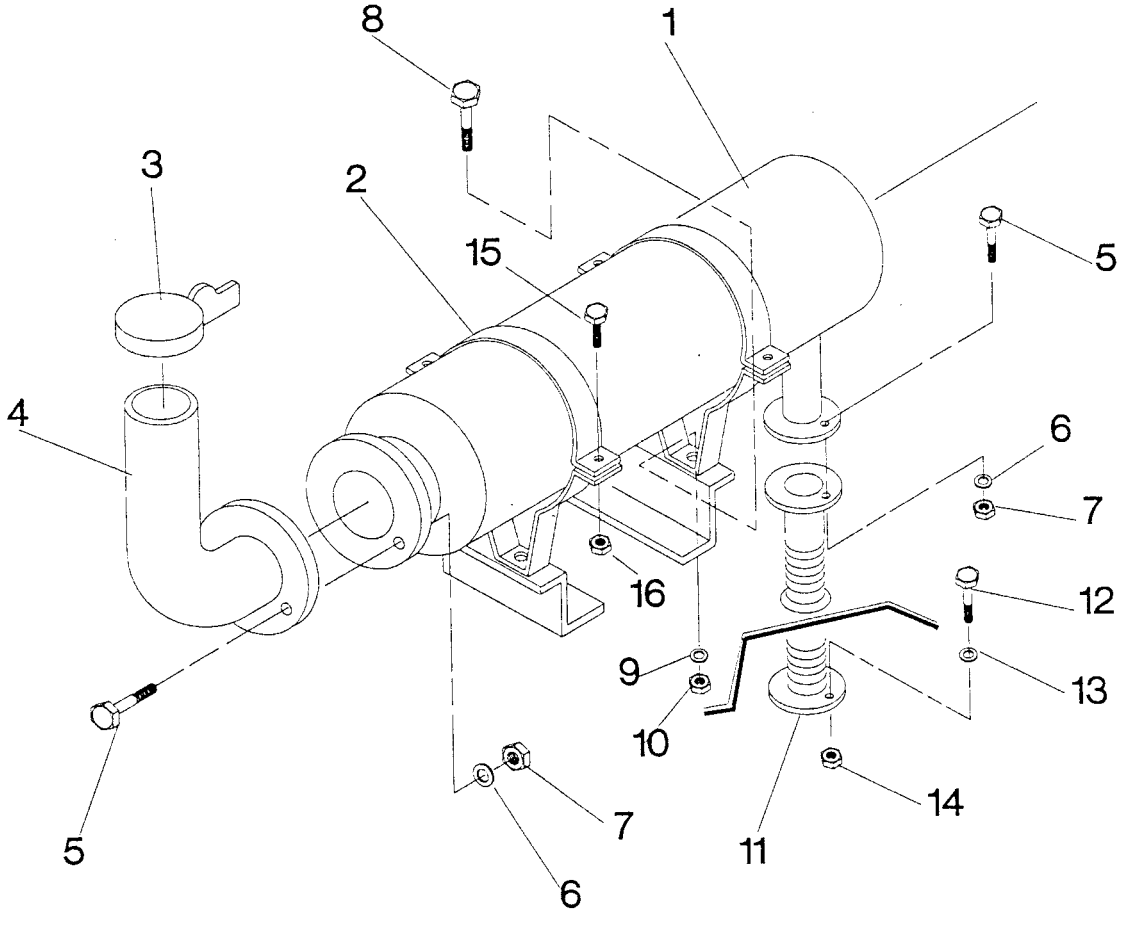
ITEM	PART #	QTY.	DESCRIPTION
1	0C9653	1	MUFFLER 4 DIA INLET & 5 OUTLET
2	0C8757	1	PIPE / FLANGE WELDMENT
3	0A5215D	1	PIPE FLEX 4 DIA
4	0C2933	2	BRACKET MUFFLER MOUNTING
5	0C5665	4	CLAMP MUFFLER
6	0C9643	1	TUBE STRAIGHT 5 DIA
7	0C9647	1	TUBE ELBOW 4 DIA
8	065805	1	CAP RAIN 5 DIA
9	0C5668	1	BOLT U 5/16-18 X 5
10	055173	4	SCREW HHC M8-1.25 X 20 G10.9
11	022145	12	WASHER FLAT M8-5/16 ZINC
12	022129	4	WASHER LOCK M8-5/16
13	022131	8	WASHER FLAT M10-3/8 ZINC
14	046526	8	WASHER LOCK M10
15	0C8403	1	SHIELD HEAT
16	0C3433C	2	BAND CLAMP 4 DIA
17	051756	8	SCREW HHC M10-1.5 X 20 G8.8
18	0C2454	2	SCREW TH-FRM M6-1X16 N WA Z/JS
19	0C5737	2	BRACKET EXHAUST SHIELD
20	083468	1	BOLT U 3/8-16 X 4
21	098458	1	CLAMP EXHAUST V-BAND
22	051730	4	SCREW HHC M8-1.25 X 60 G8.8
23	049820	4	NUT LOCK HEX M8-1.25 NYL INS
24 *	0C8981	1	BLANKET EXHAUST

* NOTE: (ITEM NOT SHOWN) BLANKET USED TO COVER ITEMS 2, 3 & 16

EXPLODED VIEW-EXHAUST MUFFLER
DRAWING NO. 96778
APPLICABLE TO: 5.0L TURBO

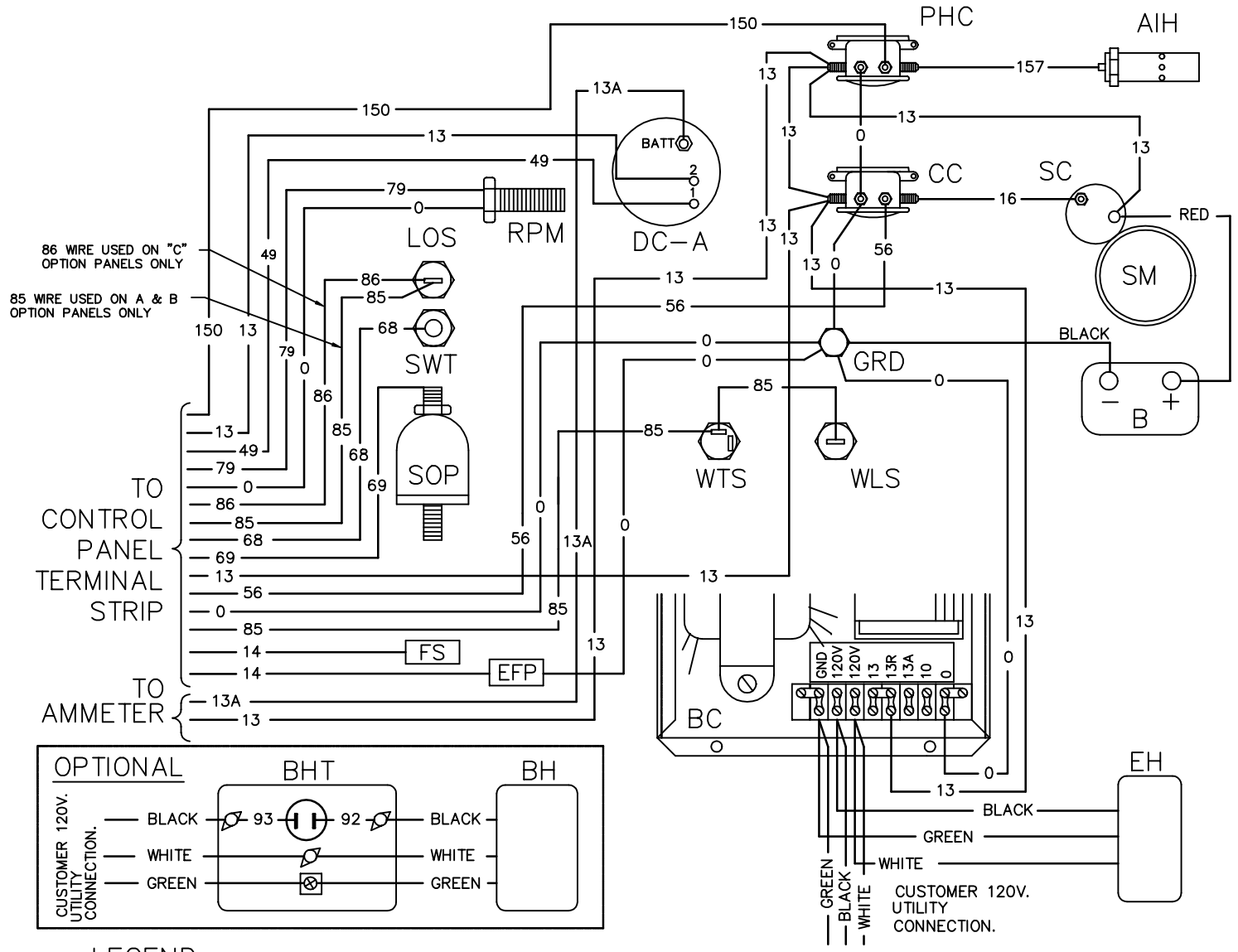
GROUP F

ITEM	PART NO.	QTY.	DESCRIPTION
1	65801	1	MUFFLER, EXHAUST-4" FLANGE
2	65802	2	STRAP, EXHAUST MUFFLER MOUNTING
3	65805	1	CAP, RAIN-5" DIAMETER
4	64999	1	EXTENSION, EXHAUST OUTLET
5	23662	16	CAPSCREW, HEX HEAD-5/8"-18 x 2-1/4"
6	22246	16	WASHER, LOCK-5/8"
7	25391	16	NUT, HEX-5/8"-18
8	49814	4	CAPSCREW, HEX HEAD-M10-1.50 x 25MM
9	22131	4	WASHER, FLAT-M10
10	52859	4	NUT, LOCK-M10-1.50
11	96580	1	EXHAUST FLEX 5.0L
12	42909	6	CAPSCREW, HEX HD., M8 x 30
13	22129	6	WASHER, LOCK-M8
14	45771	6	NUT, M8
15	A1663	4	CAPSCREW, HEX HEAD-3/8-16 x 3"
16	22241	4	HEX NUT-3/8-16



REVISION: C-9085
DATE: DEC. 6, 1996

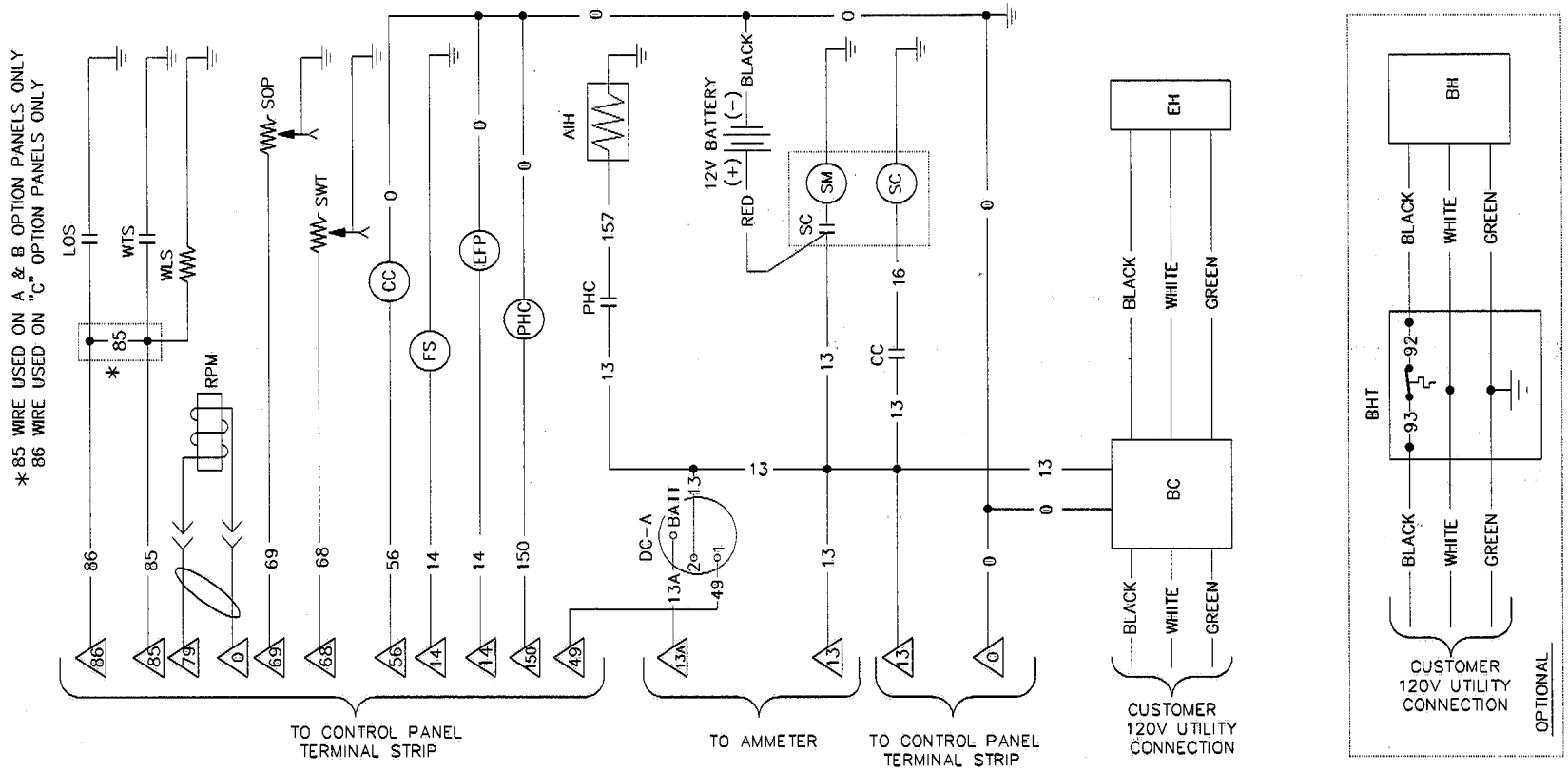
GROUP G



LEGEND

AIH– AIR INTAKE HEATER
B – BATTERY 12–V
BC – BATTERY CHARGER
BH – BATTERY HEATER
BHT– BATTERY HEATER THERMOSTAT
CC – CONTROL CONTACTOR
DCA– DC ALTERNATOR
EFP– ELECTRIC FUEL PUMP
EH – ENGINE HEATER
FS – FUEL SOLENOID
GRD– GROUND
LOS– LOW OIL SWITCH
PHC– PRE–HEAT CONTACTOR
RPM– SPEED SENSOR USED ON "C" OPTION ONLY
SC – STARTER CONTACTOR
SM – STARTER MOTOR
SWT– SENDER WATER TEMP.
SOP– SENDER OIL PRESSURE
WLS– WATER LEVEL SENSOR
WTS– WATER TEMP. SWITCH

WIRING DIAGRAM
ENGINE WIRING
DRAWING #: 0A4482



LEGEND

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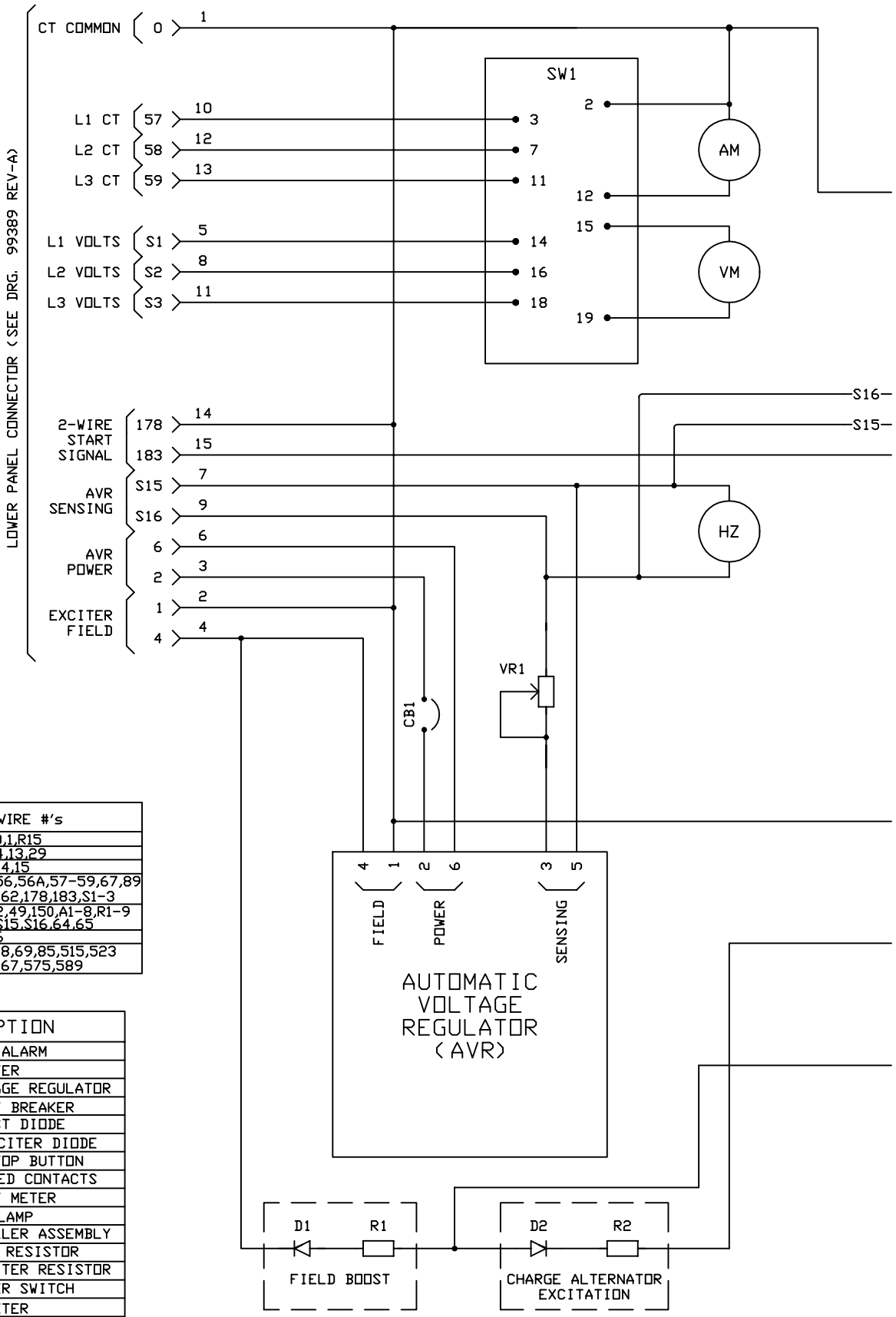
SC - STARTER CONTACTOR
SM - STARTER MOTOR
SOP- SENDER, OIL PRESSURE
SWT- SENDER, WATER TEMPERATURE
WLS- WATER LEVEL SENSOR
WTS- WATER TEMPERATURE SWITCH

REVISION:
DATE: AUG. 12, 1997

SHEET 1 of 1

SCHEMATIC
ENGINE
DRAWING NO. *A4483*

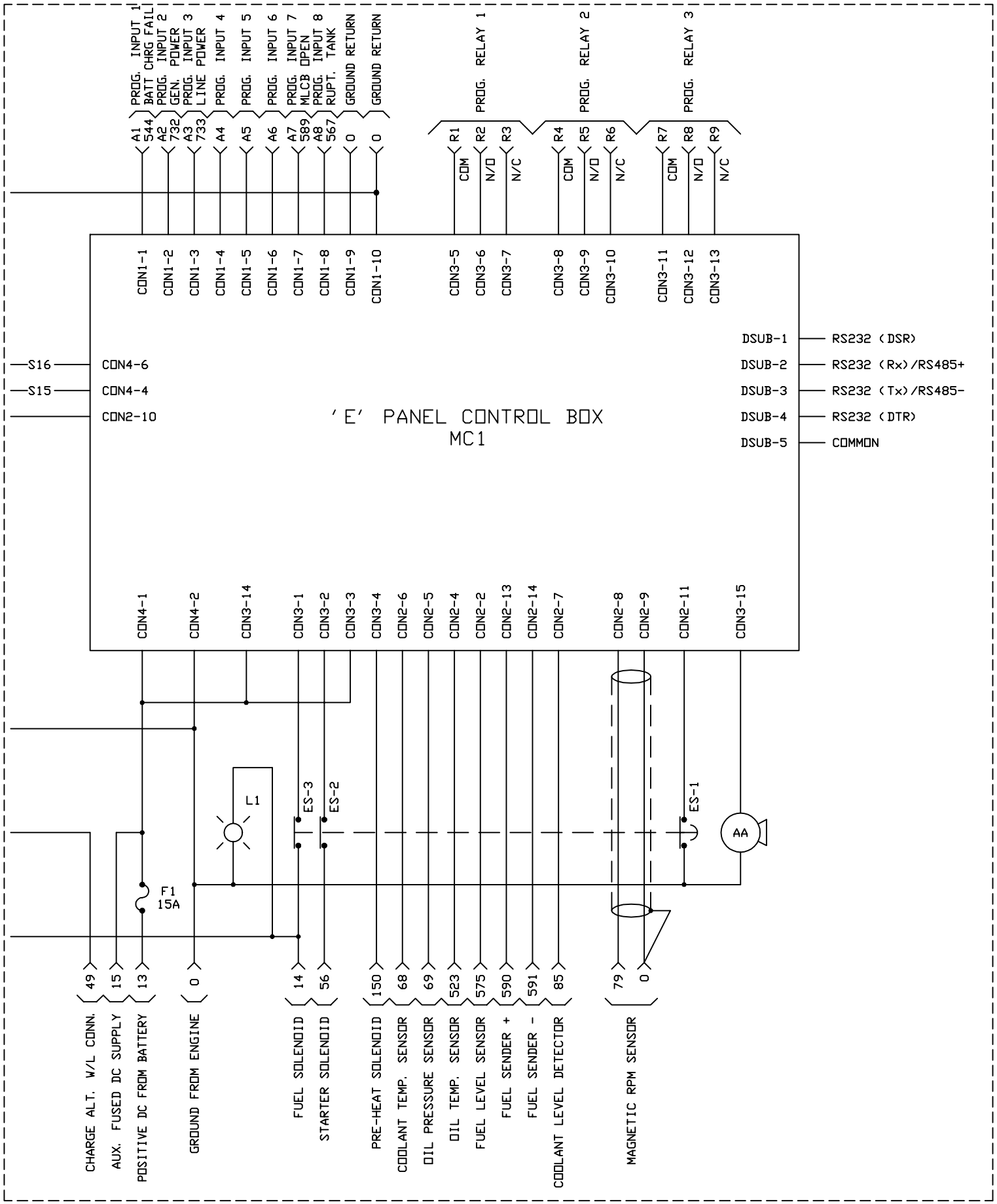


WIRE COLOR LEGEND	FUNCTION	WIRE #'s
WHITE	NEUTRAL	0,1,R15
RED	NON-FUSED DC	4,13,29
ORANGE	FUSED DC	14,15
BROWN	CONTROL	56,56A,57-59,67,89 162,178,183,S1-3
BLUE	SIGNAL/SENSING	2,49,150,A1-8,R1-9 S15,S16,64,65
BLACK	AC/MISC	6
YELLOW	UNIT STATUS	68,69,85,515,523 567,575,589

CODE	DESCRIPTION
AA	AUDIBLE ALARM
AM	AMMETER
AVR	AUTOMATIC VOLTAGE REGULATOR
CB1	AVR CIRCUIT BREAKER
D1	FIELD BOOST DIODE
D2	CHARGE ALT EXCITER DIODE
ES	EMERGENCY STOP BUTTON
ES1-3	NORMALLY CLOSED CONTACTS
HZ	FREQUENCY METER
L1	PANEL LAMP
MC1	E-PANEL CONTROLLER ASSEMBLY
R1	FIELD BOOST RESISTOR
R2	CHARGE ALT EXCITER RESISTOR
SW1	VOLT/AMMETER SWITCH
VM	VOLTMETER
VR1	VOLTS TRIM POTENTIOMETER

SCHEMATIC - DIAGRAM
"E" CONTROL PANEL W/FUEL SNDR
DRAWING #: 0C8318

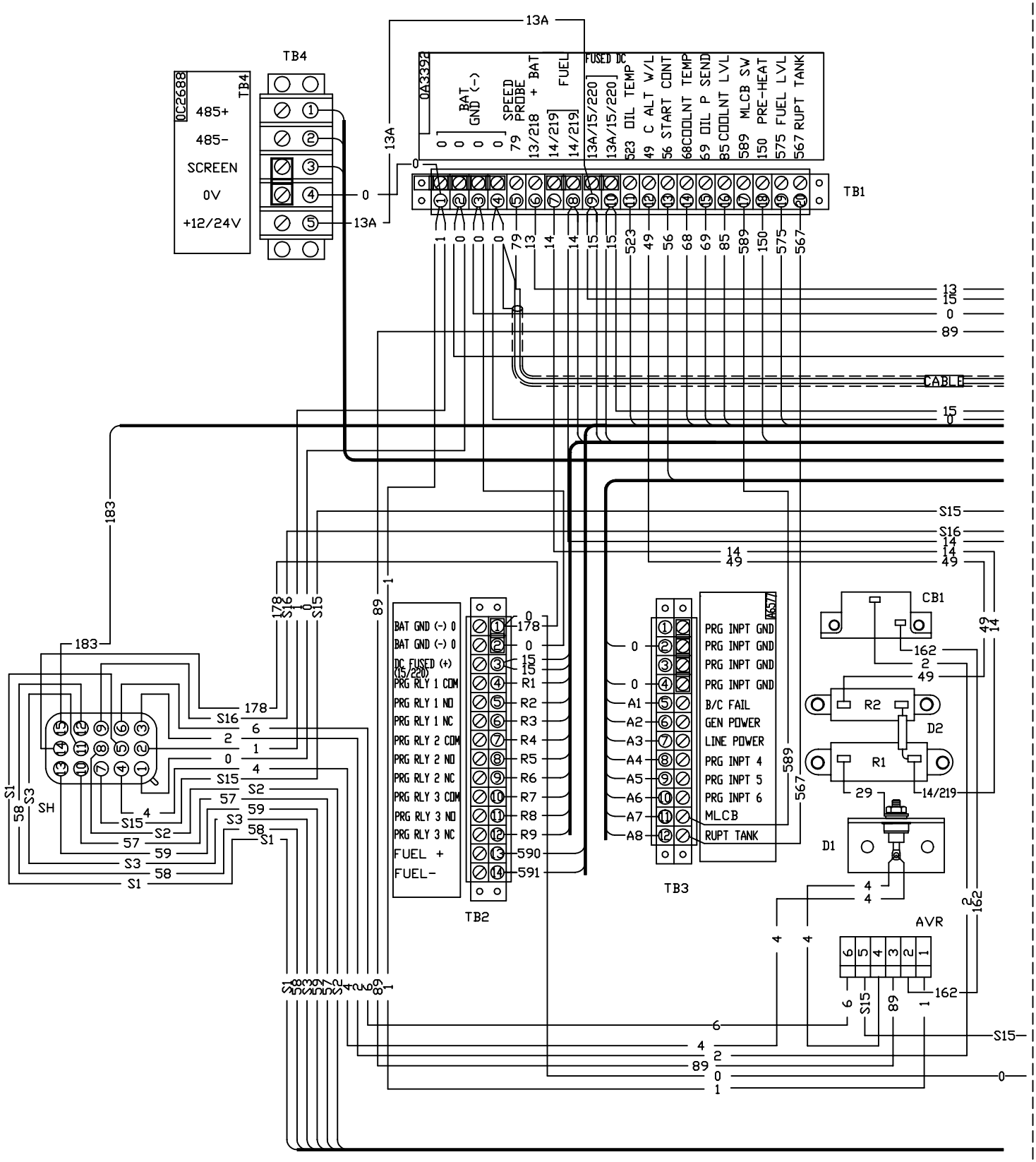
REVISION: G-2625-A
DATE: 03/29/04



SCHEMATIC - DIAGRAM

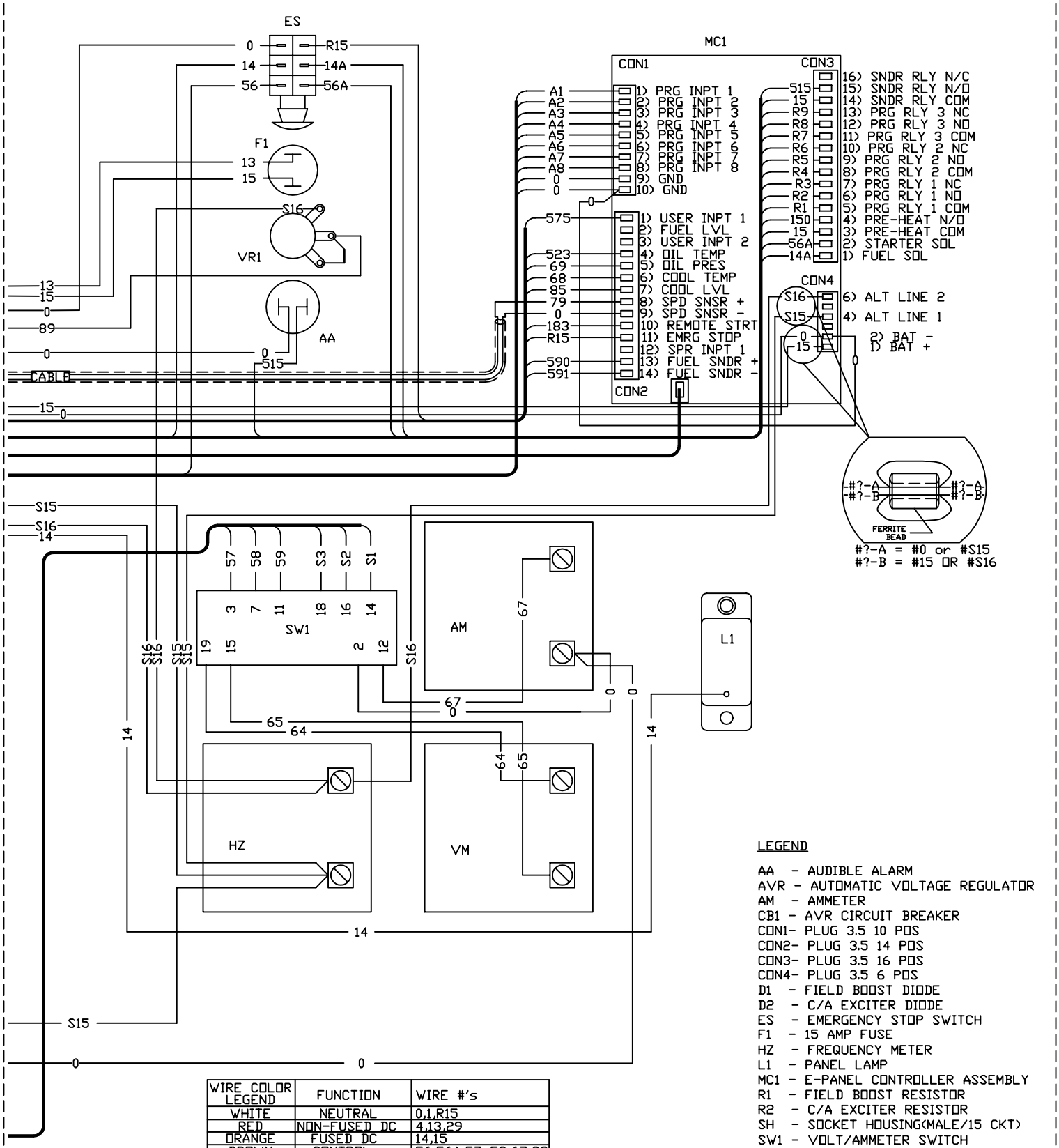
"E" CONTROL PANEL W/FUEL SNDR

DRAWING #: 0C8318



SCHEMATIC - DIAGRAM
"E" CNTRL PNL W/FUEL SNDR
DRAWING #: 0C8319

REVISION: G-2625-F
DATE: 03/30/04

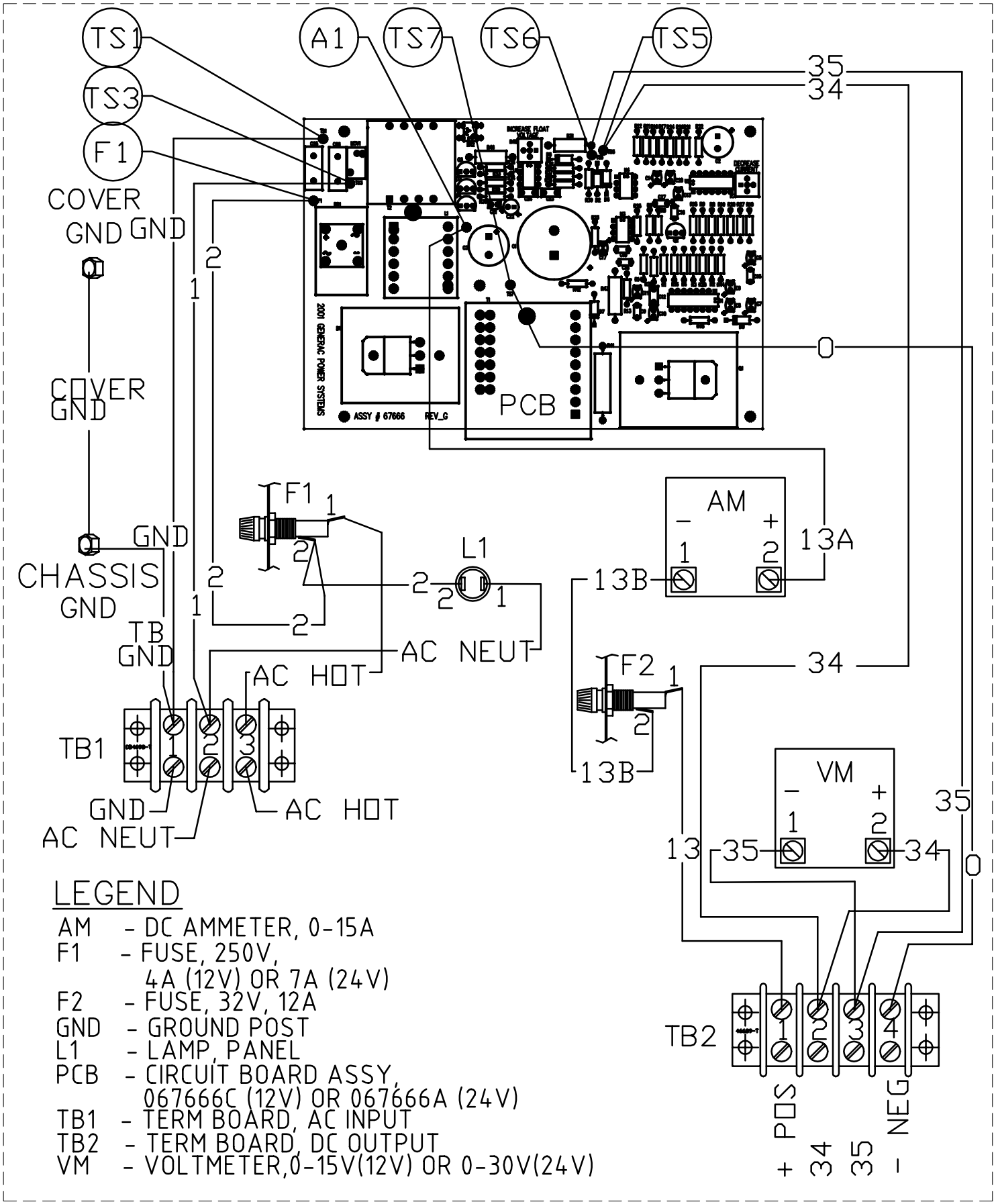


WIRE COLOR LEGEND	FUNCTION	WIRE #'s
WHITE	NEUTRAL	0,1,R15
RED	NON-FUSED DC	4,13,29
ORANGE	FUSED DC	14,15
BROWN	CONTROL	56,56A,57-59,67,89 162,178,183,S1-3
BLUE	SIGNAL/SENSING	2,49,150,A1-8,R1-9 S15,S16,64,65
BLACK	AC/MISC	6
YELLOW	UNIT STATUS	68,69,85,515,523 567,575,589

LEGEND

AA - AUDIBLE ALARM
AVR - AUTOMATIC VOLTAGE REGULATOR
AM - AMMETER
CB1 - AVR CIRCUIT BREAKER
CON1- PLUG 3.5 10 POS
CON2- PLUG 3.5 14 POS
CON3- PLUG 3.5 16 POS
CON4- PLUG 3.5 6 POS
D1 - FIELD BOOST DIODE
D2 - C/A EXCITER DIODE
ES - EMERGENCY STOP SWITCH
F1 - 15 AMP FUSE
HZ - FREQUENCY METER
L1 - PANEL LAMP
MC1 - E-PANEL CONTROLLER ASSEMBLY
R1 - FIELD BOOST RESISTOR
R2 - C/A EXCITER RESISTOR
SH - SOCKET HOUSING(MALE/15 CKT)
SW1 - VOLT/AMMETER SWITCH
TB1 - TERMINAL BLOCK 1 (20 POS)
TB2 - TERMINAL BLOCK 2 (14 POS)
TB3 - TERMINAL BLOCK 3 (12 POS)
TB4 - TERMINAL BLOCK 4 (5 POS)
VM - VOLTMETER
VR1 - VOLTS TRIM POTENTIOMETER

SCHEMATIC - DIAGRAM
"E" CNTRL PNL W/FUEL SNDR
DRAWING #: 0C8319

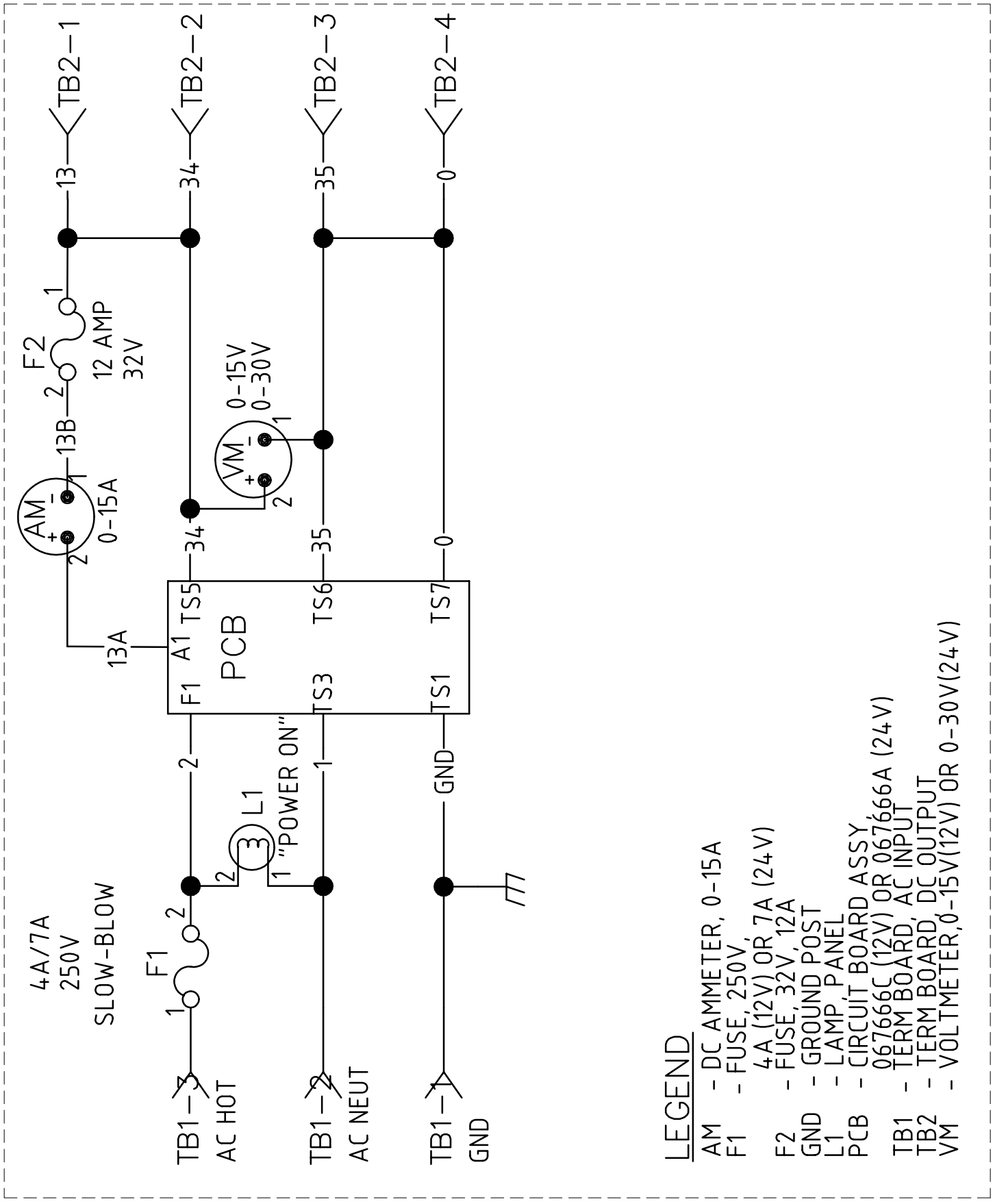


LEGEND

AM - DC AMMETER, 0-15A
F1 - FUSE, 250V, 4A (12V) OR 7A (24V)
F2 - FUSE, 32V, 12A
GND - GROUND POST
L1 - LAMP, PANEL
PCB - CIRCUIT BOARD ASSY, 067666C (12V) OR 067666A (24V)
TB1 - TERM BOARD, AC INPUT
TB2 - TERM BOARD, DC OUTPUT
VM - VOLTMETER,0-15V(12V) OR 0-30V(24V)

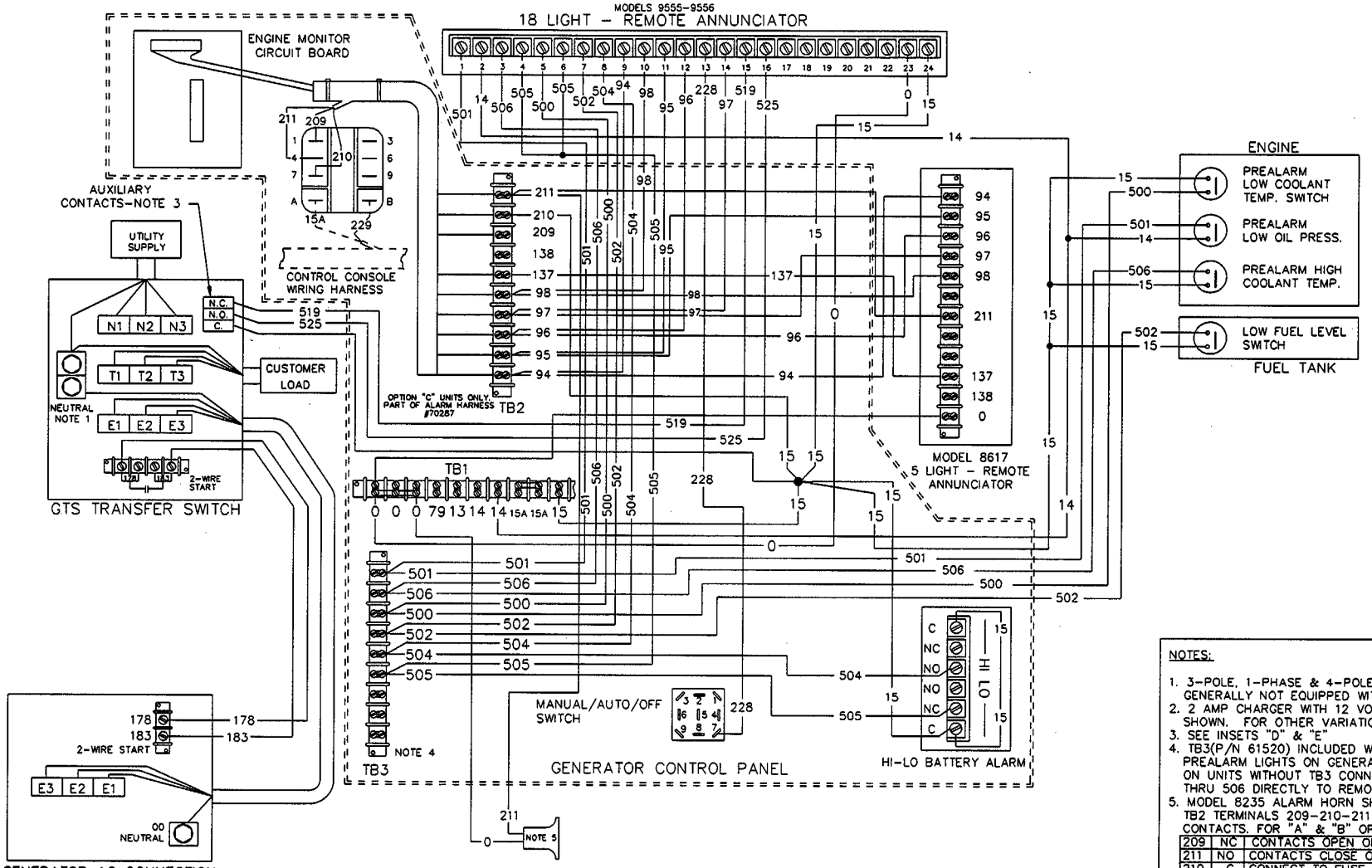
WIRING - DIAGRAM
10A BATT CHARGER, 12V & 24V
DRAWING #: 0D8610

REVISION: *
DATE: 10/14/02



SCHEMATIC - DIAGRAM
10A BATT CHARGER, 12V & 24V
DRAWING #: 0D8611

REVISION: *
DATE: 10/15/02



NOTES:

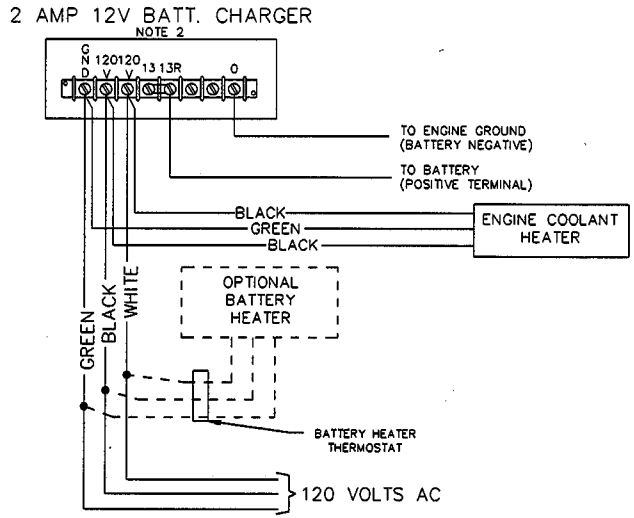
1. 3-POLE, 1-PHASE & 4-POLE, 3-PHASE TRANSFER SWITCHES GENERALLY NOT EQUIPPED WITH NEUTRAL BLOCK
2. 2 AMP CHARGER WITH 12 VOLTS SINGLE BATTERY SYSTEM SHOWN. FOR OTHER VARIATION SEE INSET "A"
3. SEE INSETS "D" & "E"
4. TB3(P/N 61520) INCLUDED WITH OPTIONAL PREALARM LIGHTS ON GENERATOR CONTROL PANEL. ON UNITS WITHOUT TB3 CONNECT WIRES 500 THRU 506 DIRECTLY TO REMOTE ANNUNCIATOR
5. MODEL 8235 ALARM HORN SHOWN FOR "C"-OPTION UNITS. TB2 TERMINALS 209-210-211 CONNECT TP ALARM RELAY CONTACTS. FOR "A" & "B" OPTION UNITS, SEE INSET "G".

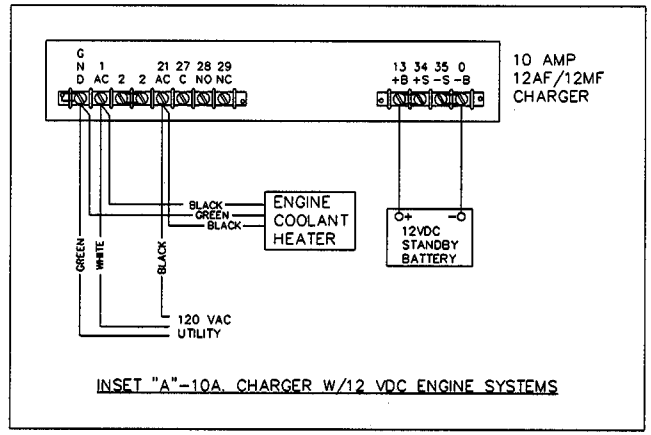
209	NC	CONTACTS OPEN ON ANNUNCIATED SHUTDOWN
211	NO	CONTACTS CLOSE ON ANNUNCIATED SHUTDOWN
210	C	CONNECT TO FUSE +12V DC CIRCUIT AS SHOWN

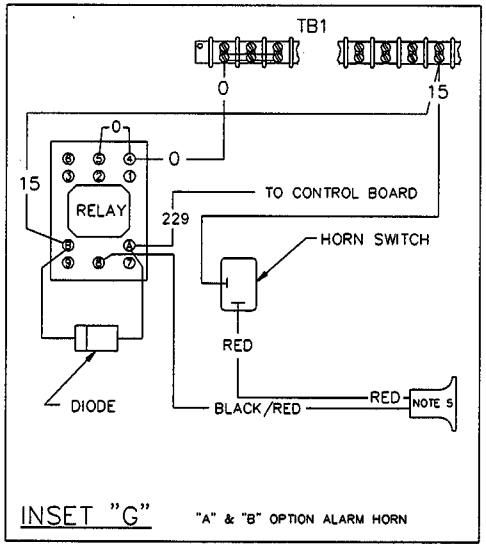
REVISION:
DATE: DEC. 8, 1992

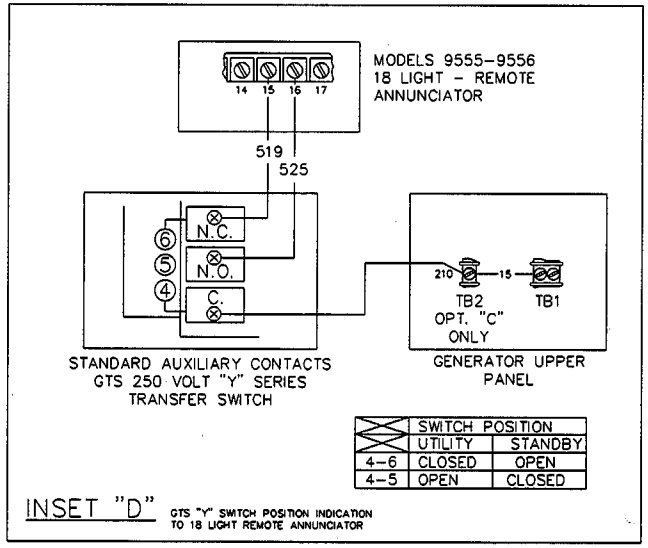
SHEET 1 of 2

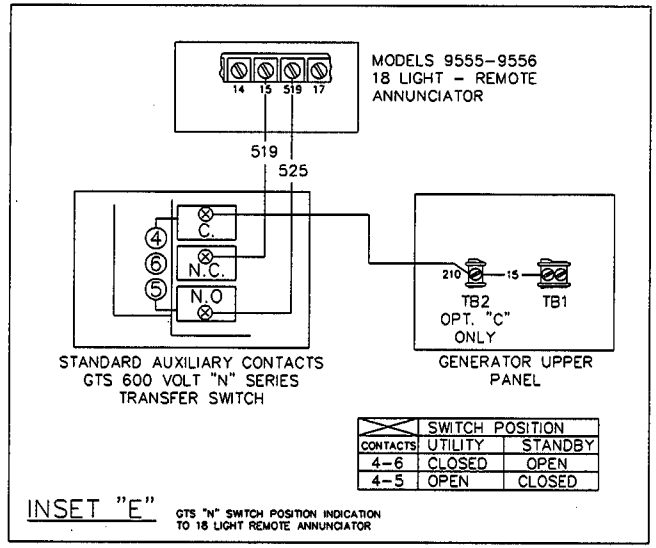
WIRING DIAGRAM
INTERCONNECTION-12V.
DRAWING NO. *87625*











REVISION:
DATE: DEC. 8, 1992

WIRING DIAGRAM
INTERCONNECTION-12V.
DRAWING NO. *87625*

GENERAC® POWER SYSTEMS, INC.
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EAGLE, WI 53119