GENERAC®

Owner's Manual

Stationary Emergency Generator

Models: 005564-0
005574-0
005576-0
005585-0
005586-0
005588-0
005717-0

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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!

INDICATES A HAZARDOUS SITUATION OR ACTION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING!

Indicates a hazardous situation or action which, if not avoided, could result in death or serious injury.

⚠ CAUTION!

Indicates a hazardous situation or action which, if not avoided, could result in minor or moderate injury.

NOTE:

Notes contain additional information important to a procedure and will be found within the regular text body of this manual.

These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or 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.

Safety Rules

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.

SAVE THESE INSTRUCTIONS – This manual contains important instructions that should be followed during installation and maintenance of the generator and batteries.

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.

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit are, therefore, not all-inclusive. If using a procedure, work method or operating technique that the manufacturer does not specifically recommend, ensure that it is safe for others. Also make sure the procedure, work method or operating technique utilized 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, the manufacturer recommends that this equipment be installed, serviced and repaired by an 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, do nothing 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 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 work must be done 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), Article 250 requires the frame and external electrically conductive parts of the generator to be connected to an approved earth ground and/or grounding rods. 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 there are any questions pertaining to fire extinguishers, consult the 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.
- 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.

CALIFORNIA PROPOSITION 65 WARNING
Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

CALIFORNIA PROPOSITION 65 WARNING
This product contains or emits chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

1.1 IDENTIFICATION RECORD

1.1.1 DATA LABEL

Every generator set has a DATA LABEL that contains important information pertinent to the generator. The data label, 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.

Generator Model Number

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

Groups and Assembly Numbers

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

1.2 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. Generators with a four-pole rotor are driven at rated speeds of 1,800 rpm to supply a frequency of 60 Hertz.

Refer to the data label on the specific generator or to the data label affixed to the unit for rated AC voltage, wattage, amperage, number of phases, etc.

1.2.1 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.

1.3 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.

1.3.1 COOLANT TEMPERATURE SENSOR

This sensor monitors engine coolant temperature and will shut down the generator if engaine coolant temperature rises above a safe level.

1.3.2 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.

1.3.3 OIL PRESSURE SENSOR

This sensor monitors engine oil pressure. If oil pressure drops below a safe level, the generator will shut down automatically.

1.3.4 LOW FUEL PRESSURE SWITCH

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

1.3.5 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.

1.3.6 OVERCRANK SHUTDOWN

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

1.3.7 RPM SENSOR LOSS SHUTDOWN

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

1.4 DC FUSES

These fuses are located inside the control panel. They protect the panel wiring and components from damaging overload. The unit will not start or crank if a fuse is blown. Replace the fuses with the same size, type, and rating.

1.5 FUEL SYSTEM

1.5.1 FUEL REQUIREMENTS

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 #046622).

1.5.2 DIESEL FUEL SYSTEM

Diesel fuel is supplied to the generator set from a base-mounted fuel 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.

1.6 SPECIFICATIONS

1.6.1 GENERATOR

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

1.6.2 ENGINE

General:

Cylinders and Arrangement ..... 4 in-line
Displacement ..... 2.4 L (149 in^3)
Bore ..... 86 mm (3.4 in.)
Stroke ..... 105 mm (4.1 in.)
Compression Ratio 18.0-to-1
Number of Main Bearings 5
Connecting Rods ..... Drop Forged Steel
Aspiration ..... Turbocharged/Aftercooled
Governed Engine Speed ..... 1800 rpm
Type of Valve Lifters ..... Solid
Cylinder Head ..... Cast Iron
Pistons ..... Aluminum Alloy
Crankshaft ..... Forged Steel
Number of Flywheel Teeth 127

Engine Lubrication System:

Type of Oil Pump ..... Gear Driven
Oil Filter ..... Full Flow, Cartridge
Crankcase Oil Capacity ..... 7 L (7.5 U.S. quarts)

Fuel System:

Type of Fuel ..... #2D Fuel (Min Cetane #40)
Consumption:*

Rated Freq.	*25% Load*	*50% Load*	*75% Load*	*100% Load*
60 Hertz	1.1	2.2	3.2	4.2

*Given in: gal/h

Cooling System:

Type ..... Pressurized, Closed Recovery
Coolant Capacity
System ..... 17 L (4.5 U.S. gals.)
Engine ..... 10.4 L (2.75 U.S. gals.)
Coolant Flow Per Minute ..... 106 L (28 U.S. gals.)
Heat Rejection to Coolant ..... 135,900 Btu/h
Cooling Fan (No. Blades) 6
Diameter of Fan ..... 560 mm (22 in.)
Cooling Airflow Required ..... 7,500 cfm
Recommended Coolant ..... See "Coolant" Section
Combustion Airflow Required ..... 166 cfm

Exhaust System:

Exhaust Flow at Rated Output ..... 448 cfm
Exhaust Outlet Size ..... 2.5 in.
Exhaust Temperature at Rated Output ..... (1044° C) 562° F

Engine Electrical System:

DC Alternator Output ..... 20 amps at 12 volts
Starter Motor ..... 12-volt DC
Recommended Battery ..... One 12-volt, 110 Ah, 31E
Ground Polarity ..... Negative (–)

1.6.3 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 80º F (27º C)	SAE 30W or 15W-40
32º to 80º F (-1º to 27º C)	SAE 20W-20 or 15W-40
Below 32º F (0º C)	SAE 10W or 15W-40

1.6.4 COOLANT

Use a mixture of half Propylene glycol base, or Ethylene glycol base antifreeze, and half de-ionized water. Use only de-ionized water and Propylene glycol, or Ethylene glycol antifreeze. 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.

Propylene glycol base antifreeze is poisonous. Do not use mouth to siphon coolant from the radiator, recovery bottle or any container. Wash 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 propylene glycol base antifreeze. Using any high silicate antifreeze boosters or additives also will cause overheating. We also recommend that any soluble oil inhibitor is NOT USED for this equipment.

1.6.5 FUEL SYSTEM REQUIREMENTS AND RECOMMENDATIONS

- **Diesel Fuel System:** See the Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual (part #046622).

1.7 GENERATOR AC LEAD CONNECTIONS

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 the application. If there is any question regarding lead connection, refer to the wiring diagrams at the back of this manual.

1.7.1 FOUR-LEAD, SINGLE-PHASE STATOR

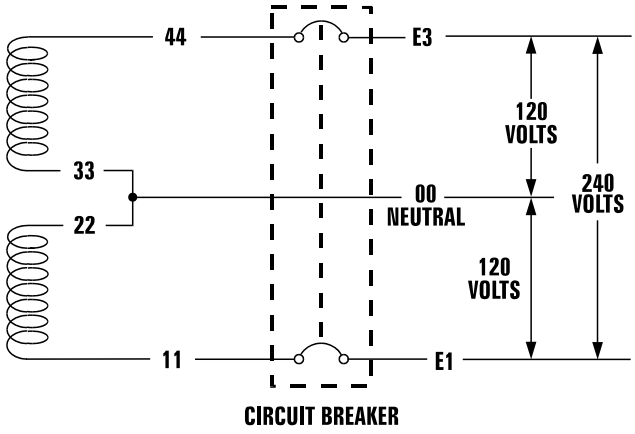
Four-lead generators are dual voltage coils or windings (Figure 1.1). Units may be assigned the following voltage code:

- "A" units are rated 120/240 VAC, single-phase, 60 Hertz.

Each stator winding in this case delivers a 120 VAC output. Connecting the two windings in series results in a 240 VAC output.

The neutral line is formed by a junction of stator leads 22 and 33. Therefore, a 120 VAC load can be connected across leads 11 and neutral, or across leads 44 and neutral.

Figure 1.1 – Four-lead, Single-phase Stator



1.8 ALTERNATOR POWER WINDING CONNECTIONS

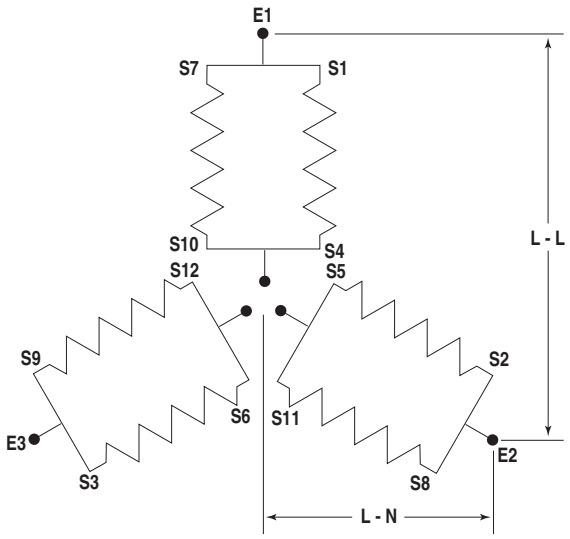
1.8.1 3-PHASE ALTERNATORS

The generator is designed to supply 3-phase electrical loads. Electric power is produced in the alternator power windings. These windings were connected at the factory to the main circuit breaker with a "Y" configuration as shown in Figure 1.2.

The rated voltage between circuit breaker terminals E1-E2, E1-E3 and E2-E3 is 208V.

The rated voltage between each circuit breaker terminal and the neutral point 00 is 120V.

Figure 1.2 — Stator Power Winding Connections - 3-phase, 120/208V (12 Lead)



1.9 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, do nothing that may result in noncompatibility between the generator and connected electrical loads.

1.10 STARTING AIDS

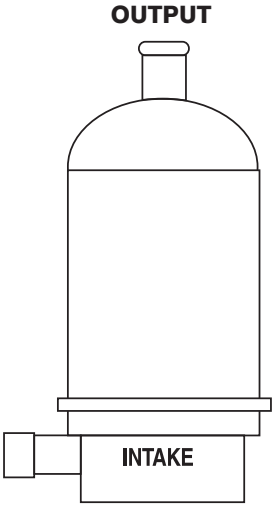
This standby generator is equipped with the following starting aids that serve to provide quicker, easier starts under varying climactic conditions.

This generator has been mounted with an engine coolant heater and a battery charger. These aids are powered by a normal (UTILITY) power source during nonoperating periods.

1.10.1 ENGINE COOLANT HEATERS

This unit is equipped with an engine coolant (block) heater (Figure 1.3). 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, helping to ensure quicker starts. Heated coolant in the engine rises continuously drawing cold coolant into the heater, making certain of a constant flow of warm coolant through the engine.

Figure 1.3 – Typical Engine Coolant Heater



1.10.2 BATTERY CHARGERS

All units are fitted with a 12 VDC, 10 amp charger.

2.1 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 "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.

⚠ CAUTION!

If an open bottom is used, the engine-generator is to be installed over non-combustible materials and should be located such that combustible materials are not capable of accumulating under the generator set.

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.

This genset must be installed on a level surface. The base frame must be level within 1/2 inch all around.

⚠ CAUTION!

After the system has been installed, do nothing that might render the installation in noncompliance with such codes, standards and regulations.

NOTE:

For more information about the installation of a standby system, order *Engine-Generator Standby Electric Power Systems Installer's Guide and Reference Manual (part #046622*) from an Authorized Service Dealer.

2.1.1 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.

2.1.2 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, N ew York, N.Y. 10018.

2.2 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:

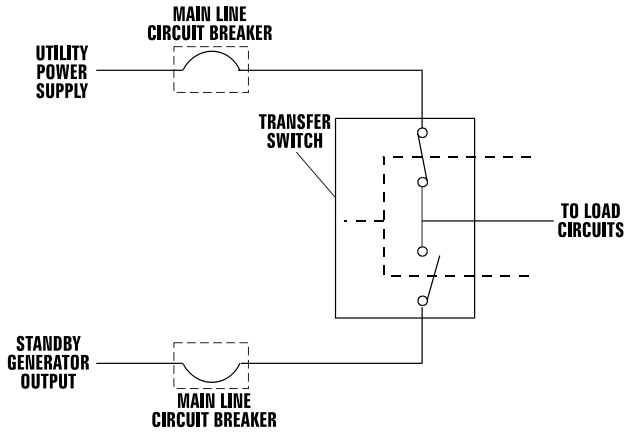
- Allows the LOAD circuits to be connected to only one power supply at a time.
- Prevents electrical backfeed between the generator and the UTILITY power circuits.

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:

The manufacturer recommends the use of a "GTS" type transfer switch in conjunction with this generator.

Figure 2.1 – Basic Standby Electric System



2.3 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, 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.

2.4 TOTAL CIRCUIT ISOLATION METHOD

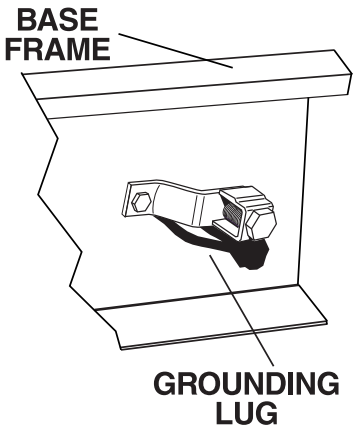
When a generator capable of powering all electrical loads in the circuit is to be installed, use the "Total Circuit Isolation Method." It is possible for the generator to be overloaded when this isolation method is employed. The following apply to the transfer switch in this type of system.

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

2.5 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 and/or grounding rods. For that purpose, a GROUND LUG (Figure 2.2) is provided on the generator mounting base. Consult a qualified electrician for grounding requirements in the area. Grounding procedures must meet local regulations.

Figure 2.2 – Generator Grounding Lug (typical)



⚠ 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.

2.6 GENERATOR AC NEUTRAL CONNECTIONS

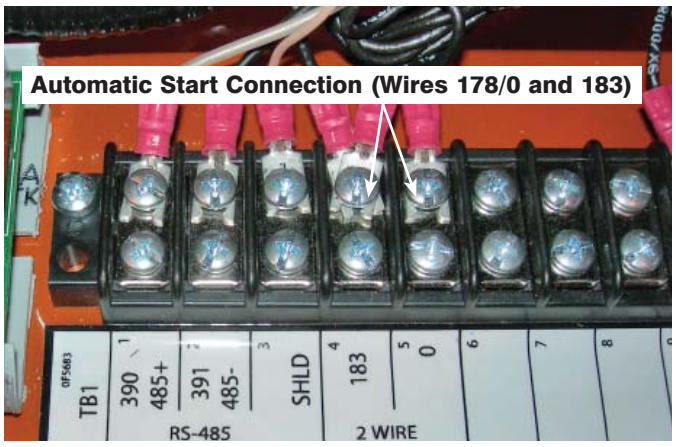
The manufacturer uses an UNGROUNDED AC neutral. Grounding is recommended only at the main service entrance. If the neutral wire is grounded and one of the phase loads becomes grounded, the excessive current opens the load circuit breaker or collapses the generator field. The actual result depends on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

2.7 TRANSFER SWITCH START SIGNAL CONNECTIONS

If the generator is to be installed with an automatic transfer switch, such as a GTS-type switch, it is 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 lower center of the AC connection panel (see Figure 2.3). Match wires 178/0 and 183 in the transfer switch to 178/0 and 183 on the terminal strip in the connection box. The conductors for the two-wire start circuit must be in their own conduit.

Figure 2.3 – Start Signal Connections



2.8 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 certain that NORMAL source voltage at the transfer switch is correct and the system is ready for 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 fluid is spilled, 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.

2.8.1 VENTED BATTERIES

⚠ CAUTION!

The electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. The following procedures are to be observed:

- **Wear full eye protection and protective clothing,**
- **Where electrolyte contacts the skin, wash it off immediately with water,**
- **Where electrolyte contacts the eyes, flush thoroughly and immediately with water and seek medical attention, and**
- **Spilled electrolyte is to be washed down with an acid-neutralizing agent. A common practice is to use a solution of one pound (500 grams) bicarbonate of soda to one gallon (4 liters) of water. The bicarbonate of soda solution is to be added until the evidence of reaction (foaming) has ceased. The resulting liquid is to be flushed with water and the area dried.**

Lead acid batteries present a risk of fire because they generate hydrogen gas. The following procedure are to be followed:

- **DO NOT SMOKE when near batteries,**
- **DO NOT cause flame or spark in battery area, and**
- **Discharge static electricity from body before touching batteries by first touching a grounded metal surface.**

Servicing of batteries is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

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 the “Maintenance" section. 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.

2.9 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.

2.9.1 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 the “Maintenance” and “Service Schedule” sections.

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" 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" and "Engine Oil Recommendations" sections.

NOTE:

This engine is shipped from the manufacturer with 15W-40 oil. This oil should be changed after 30 hours of operation.

Engine Coolant

Have the engine cooling system properly filled with the recommended coolant mixture. Check the system for leaks and other problems. See the "Specifications" and "Coolant" sections.

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.

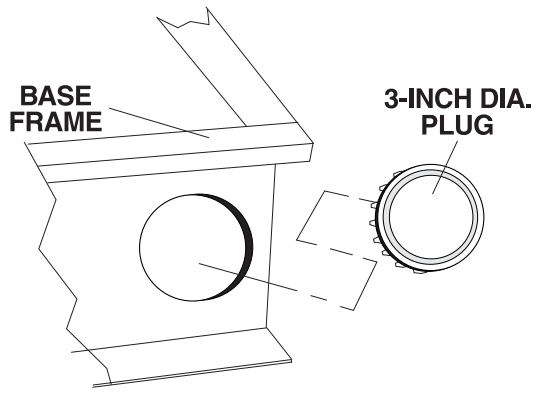
Make sure the generator battery is fully charged, properly installed and interconnected, and ready for use.

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, three-inch diameter cap plugs (part # 0A8785) 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



2.9.2 START-UP INSPECTION

A standard three-part form titled "Start-up Inspection for Standby Power Systems" (part # 067377) should be completed by an Authorized Service Dealer. As stated on the form, inspections are to be completed only by factory-trained personnel. The installer should complete the form and disperse copies as follows:

- White copy: Mail to Generac Warranty Department, P.O. Box 425, Whitewater, WI 53190.
- Pink Copy: For service file of installing dealer.
- Yellow Copy: For the customer's records.

3.1 GENERATOR CONTROL AND OPERATION

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

3.2 OPERATING UNIT WITH AUTOMATIC TRANSFER SWITCH

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

NOTE:

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

4.1 SERVICE SCHEDULE

4.1.1 AUTHORIZED OPERATOR MAINTENANCE FUNCTIONS

Every Month or 100 Hours (whichever comes first)

- Test standby generator system.
- Inspect battery (batteries) 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.

4.1.2 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 (batteries) 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 (batteries).
- Check electrical connections.
- Check/test annunciator panel.
- Perform operational test.

The following **MUST** be performed by an Authorized John Deere Dealer ONLY.

- Check engine compression.

Annually or Every 600 Hours (whichever comes first)

- Inspect all wiring.
- Test engine starter operation.
- Drain water from fuel tank.
- Retorque fan bolts.
- Drain and refill gearbox (If so equipped.)

The following **MUST** be performed by an Authorized John Deere Dealer ONLY.

- Check engine valve clearance.
- Test fuel injection nozzles.
- Test injection timing.

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

- Retorque engine mounting brackets.

The following **MUST** be performed by an Authorized John Deere Dealer ONLY.

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

As Required

- Bleed engine fuel system.

4.2 PERIODIC MAINTENANCE

A periodic program of scheduled maintenance should be established and maintained. Such a program, if adhered to diligently, provides added assurance that the 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.

The manufacturer recommends that a “Customer Maintenance Inspection Agreement” be established between the user of this equipment and the installing Authorized Service Dealer. Under this agreement, (Part No. 053263), an Authorized Service Technician performs prestart and engine running tests and checks at six-month and one-year intervals. Ask an Authorized Service Dealer about this agreement.

The tasks listed in the “Service Schedule” section 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 an Authorized Service Technician. Fluid capacities and recommendations, as well as other applicable specifications, are listed in the “Specifications” section.

4.2.1 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. Inspect wiring and grounding connections (see "Grounding the Generator") and ensure 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 also be ran at least 30 minutes and any discrepancies corrected immediately.

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

4.2.2 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 certain that NORMAL source voltage at the transfer switch is correct and the system is ready for 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 fluid is spilled, 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), an 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.

4.2.3 BATTERY REPLACEMENT

When replacing batteries, use the same number and the following type batteries.

Part Number	BCI Group No.	CCA
061119	31E	925 @ 0 deg. F

NOTE:

The BCI number should be located directly on the battery. For more information, see "Specifications."

4.2.4 CHECK FLUIDS

An authorized operator should check the levels of engine oil, 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 the "Specifications: section.

4.2.5 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 an Authorized Service Technician.

4.2.6 INSPECT/TEST FUEL SUPPLY SYSTEM

Every three months (or 120 hours), an authorized operator should inspect and test 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 an Authorized Service Technician.

4.3 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.

4.3.1 HOW TO ORDER PARTS

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

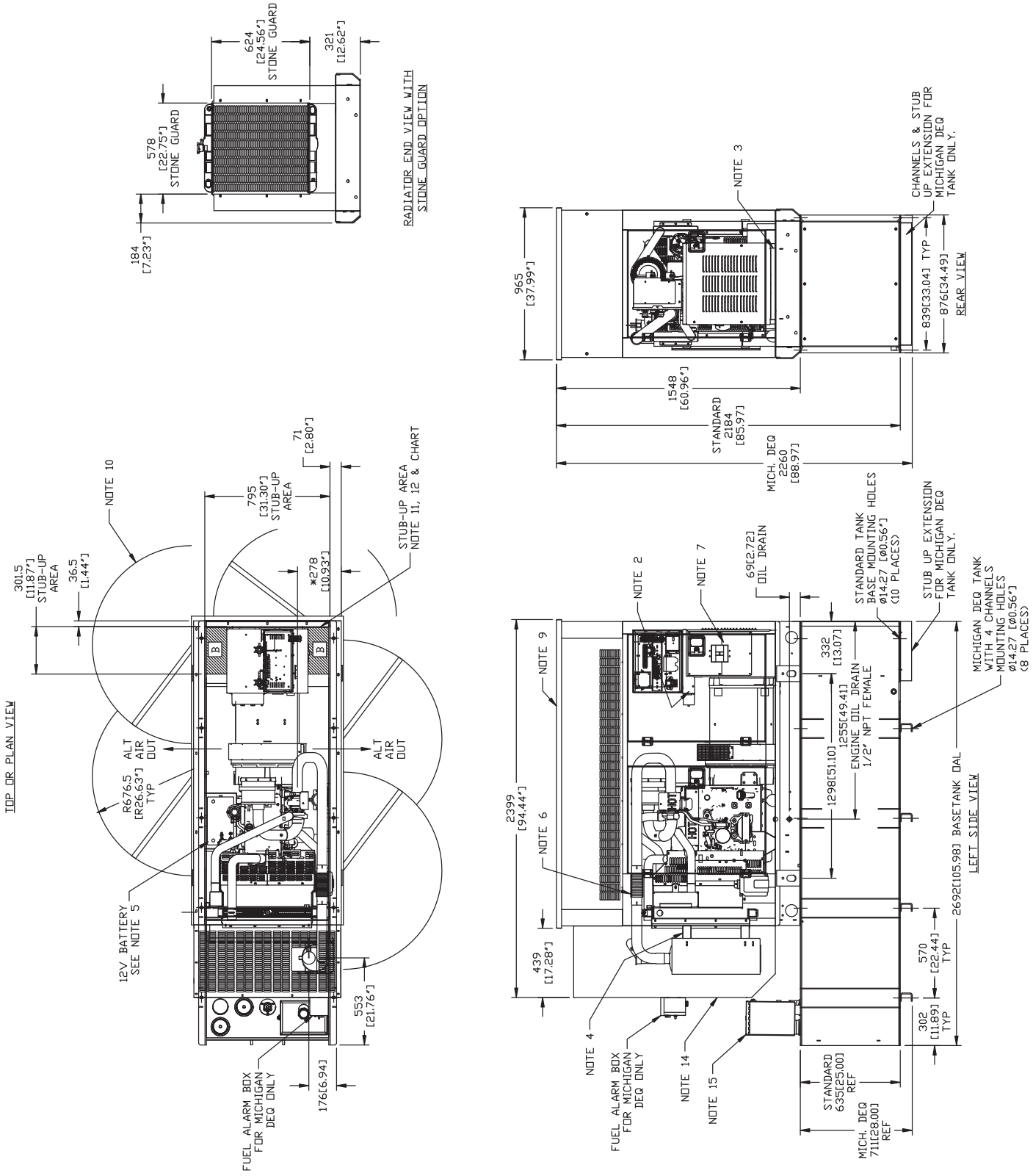
- The generator model number.
- The generator identification code, which indicates the specific generator assembly for each unit.
- The part number and corresponding description from the applicable parts list in this manual.
- The applicable exploded view "Group" letter (A-H) and drawing number (five-digit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

NOTE:

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

Notes

Notes


RADIATOR END VIEW WITH STONE GUARD OPTION
624 [24.56"] STONE GUARD
321 [12.62"]
578 [22.75"] STONE GUARD
184 [7.23"]
TOP OR PLAN VIEW
NOTE 10
301.5 [11.87"] STUB-UP AREA
36.5 [1.44"]
795 [31.30"] STUB-UP AREA
71 [2.80"]
*278 [10.93"]
STUB-UP AREA NOTE 11, 12 & CHART
ALT AIR OUT
R676.5 [R26.63"] TYP
12V BATTERY SEE NOTE 5
553 [21.76"]
176[6.94]
FUEL ALARM BOX FOR MICHIGAN DEQ ONLY
NOTE 3
CHANNELS & STUB UP EXTENSION FOR MICHIGAN DEQ TANK ONLY.
965 [37.99"]
839[33.04] TYP
876[34.49]
REAR VIEW
1548 [60.96"]
STANDARD 2184 [85.97"]
MICH. DEQ 2260 [88.97"]
NOTE 2
NOTE 7
69[2.72] OIL DRAIN
STANDARD TANK BASE MOUNTING HOLES Ø14.27 [Ø0.56"] (10 PLACES)
STUB UP EXTENSION FOR MICHIGAN DEQ TANK ONLY.
NOTE 9
NOTE 6
2399 [94.44"]
439 [17.28"]
332 [13.07]
1255[49.41] ENGINE OIL DRAIN 1/2" NPT FEMALE
1298[51.10]
MICHIGAN DEQ TANK WITH 4 CHANNELS MOUNTING HOLES Ø14.27 [Ø0.56"] (8 PLACES)
2692[105.98] BASETANK DAL
LEFT SIDE VIEW
570 [22.44] TYP
302 [11.89] TYP
NOTE 4
FUEL ALARM BOX FOR MICHIGAN DEQ ONLY
NOTE 14
NOTE 15
STANDARD 635[25.00] REF
MICH. DEQ 711[28.00] REF

Installation Diagram

Drawing No. 0G8480-D

RECOMMENDED FUEL/ELECTRICAL STUB-UPS
(SEE TOP VIEW)

DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT (RIGHT)	A
(LEFT)	A[1]
ADDITIONAL STUB UP AREA FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER, AND OTHER 120 VAC OPTIONS).	B

NOTE:
FUEL SYSTEM SET UP WITH OUTSIDE STUB UPS (SEE RIGHT SIDE VIEW). UNITS SOLD WITH OPTIONAL BASE TANK HAVE FUEL SYSTEM PLUMBED TO TANK.

WEIGHT DATA
UNIT WITH ENCLOSURE & TANK: 1527 KG [3366 LBS]

UNITS: mm [INCHES]

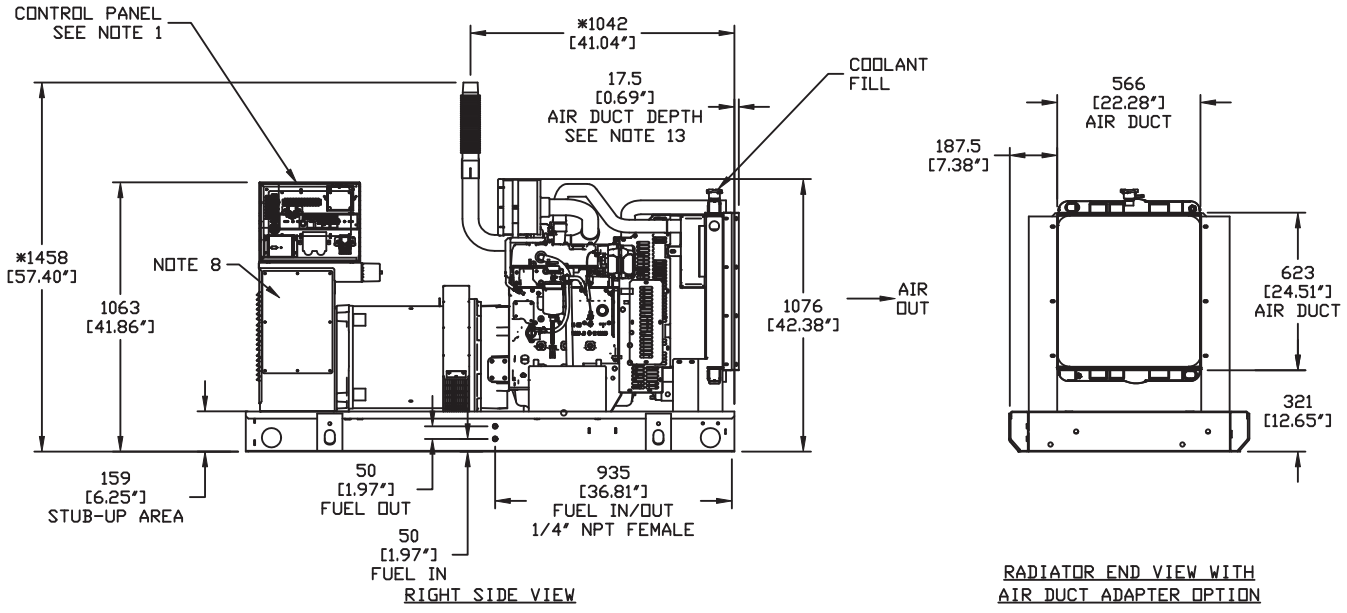
ENGINE SERVICE CONNECTIONS

FUEL INLET = 1/4" NPT COUPLING
FUEL RETURN = 1/4" NPT COUPLING
OIL DRAIN = 1/2" NPT COUPLING
EXHAUST OUTLET - EXHAUST MANIFOLDS AS SHOWN ON OPEN SET, 3" OD MUFFLER OUTLET WITH ENCLOSURE

NOTES:

1. CONTROL PANEL MAY BE ROTATED 180° IN EITHER DIRECTION.
2. STANDARD 20A GFCI DUPLEX OUTLET - 120VAC REQUIRED.
3. CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN AC CONNECTION PANEL.
4. EXHAUST MUFFLER SUPPORT BRACKETS SUPPLIED WITH OPTIONAL ENCLOSURE.
5. 12 VOLT NEGATIVE GROUND SYSTEM.
6. 2.5" I.D. FLEX EXHAUST, STANDARD WITH ENCLOSURE UNITS, OPTIONAL WITHOUT.
7. MAIN LINE CIRCUIT BREAKER (MLCB) AND AC LOAD LEAD CONNECTION.
8. REMOVABLE BLANK PANEL FOR OPTIONAL 2nd MAIN LINE CIRCUIT BREAKER.
9. OPTIONAL ENCLOSURE
10. DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED.
11. STUB-UPS:
    STANDARD BASE TANK REQUIRES ALL STUB-UPS TO BE OUTSIDE OR IN THE REAR TANK STUB-UP AREA.
12. A OR A[1] IS THE STUB UP AREA UNDER THE MLCB, DEPENDING ON CIRCUIT BREAKER LOCATION. AREA B IS STUB UP AVAILABLE FOR UNITS WITH A BASE TANK.
13. STONE GUARD AND AIR DUCT ADAPTER STANDARD WITH OPEN SET ONLY.
14. SEE DRAWING 0C3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.
15. FUEL FILL W/ 5 GALLON SPILL.

*NOTE: DIMENSIONS TO THE CENTER OF EXHAUST FLANGE SHOULD BE USED AS A REFERENCE WHEN EXHAUST SYSTEM IS NOT ORDERED. APPLIES TO OPEN SET ONLY.



United States Environmental Protection Agency Warranty Statement
(Stationary Emergency Compression-Ignition Generators)

Warranty Rights, Obligations and Coverage

Your emission-related warranty covers only components whose failure would increase an engine's emissions of any regulated pollutant where they are designed, built, and equipped to be free from defects in materials and workmanship under applicable regulations of section 213 of the clean air act. To receive information about how to make an emission-related warranty claim, and how to make arrangements for authorized repairs call **1-800-333-1322** or **www.generac.com**. Emission- related warranty claims may be denied without proof of proper maintenance or use, accidents beyond the control of the manufacturer, or act of God. Proper maintenance is specified in the Owner's Manual. Usage is limited to stationary emergency operations and 100 hours per year for maintenance and readiness testing. The warranty period begins when the engine is placed into service. Warranty periods for compression ignition engines greater than 25 horsepower is five years. This warranty is applicable to compression-ignition generator models; equal to and larger than an SD80 starting 1/1/2011, equal to and larger than an SD35 starting 1/1/2012, and all compression-ignition generator models starting 1/1/2013.

Important Note

This warranty statement explains your rights and obligations under the Emission Control System Warranty, which is provided to you by Generac pursuant to federal law. Note that this warranty shall not apply to 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). 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. Any implied warranties which are allowed by law, shall be limited in duration to the terms of the express warranty provided herein. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

United States Environmental Protection Agency & California Warranty Statement (Compression- Ignition Generators)

Warranty Rights, Obligations and Coverage

The United States Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) 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.
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.

This warranty is applicable to compression-ignition generator models; equal to and smaller than an SD60 starting 1/1/2011, equal to and smaller than an SD30 starting 1/1/2012, and not applicable to any compression-ignition generator models starting 1/1/2013.

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.

Important Note

Note that this warranty shall not apply to 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). 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. Any implied warranties which are allowed by law, shall be limited in duration to the terms of the express warranty provided herein. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

United States Environmental Protection Agency & California Warranty Statement (Stationary Compression-Ignition Generators)

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 five years, 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.

Emission Related Parts Include the Following (if so equipped)

(A) Fuel Metering System:
  (1) Fuel injection system

(B) Air Induction System:
  (1) Intake manifold and gasket
  (2) Turbocharger systems (if so equipped)
  (3) Charge air cooling systems (if so equipped)

(C) Exhaust System:
  (1) Exhaust manifold and gasket (turbocharged engines only)
  (2) Catalytic Converter only

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

Warranty

GENERAC POWER SYSTEMS STANDARD TWO-YEAR BASIC LIMITED WARRANTY FOR STANDBY POWER SYSTEMS

NOTE: ALL UNITS MUST HAVE A START-UP INSPECTION PERFORMED BY AN AUTHORIZED GENERAC DEALER.

For a period of two (2) years or two thousand (2,000) hours of operation from the date of start up, which ever occurs first, Generac Power Systems, Inc. (Generac) will, at its option, repair or replace any part(s) which, upon examination, inspection, and testing by Generac or an Authorized/Certified Generac Dealer, or branch thereof, is found to be defective under normal use and service, in accordance with the warranty schedule set forth below. Repair or replacement pursuant to this limited warranty shall not renew or extend the original warranty period. Any repaired product shall be warranted for the remaining original warranty period only. Any equipment that the purchaser/owner claims to be defective must be examined by the nearest Authorized/Certified Generac Dealer, or branch thereof. This warranty applies only to Generac Generators used in "Standby" applications, as Generac has defined Standby, provided said generator has been initially installed and/or inspected on-site by an Authorized/Certified Generac Dealer, or branch thereof. It is highly recommended that scheduled maintenance, as outlined by the generator owner's manual, be performed by an Authorized/Certified Generac Dealer, or branch thereof. This will verify service has been performed on the unit throughout the warranty period. This warranty is limited to and available only on Liquid-cooled units.

*****This warranty only applies to units sold for use in the US and Canada.*****

WARRANTY SCHEDULE

YEAR ONE — Limited comprehensive coverage on mileage, labor, and parts listed.
- ALL COMPONENTS — ENGINE, ALTERNATOR AND TRANSFER SWITCH

YEAR TWO — Limited comprehensive coverage on parts listed.
- ALL COMPONENTS — ENGINE, ALTERNATOR AND TRANSFER SWITCH PARTS ONLY

GEARBOX EQUIPPED UNITS - LIMITED GEARBOX COVERAGE

YEARS ONE THROUGH FIVE — Parts and labor coverage on gearbox and components.
YEARS SIX THROUGH TEN — Parts only coverage on gearbox and components.

GUIDELINES:

1. Travel allowance is limited to 300 miles maximum, and 7.5 hours maximum (per occurrence), round trip, to the nearest authorized Generac Service Facility.
2. Warranty only applies to permanently wired and mounted units.
3. All warranty repairs, must be performed and/or addressed by an Authorized/Certified Generac Dealer, or branch thereof.
4. A Generac Transfer Switch is highly recommended to be used in conjunction with the generator set. If a Non-Generac Transfer Switch is substituted for use and directly causes damage to the generator set, no warranty coverage shall apply.
5. All warranty expense allowances are subject to the conditions defined in Generac's General Service Policy Manual.
6. Units that have been resold are not covered under the Generac Warranty, as this Warranty is not transferable.
7. Unit enclosure is only covered during the first year of the warranty provision.
8. Use of Non-Generac replacement part(s) will void the warranty in its entirety.
9. Engine coolant heaters (block-heaters), heater controls and circulating pumps are only covered during the first year of the warranty provision.
10. Generac may chose to Repair, Replace or Refund a piece of equipment.
11. Warranty Labor Rates are based on normal working hours. Additional costs for overtime, holiday or emergency labor costs for repairs outside of normal business hours will be the responsibility of the customer.
12. Warranty Parts shipment costs are reimbursed at ground shipment rates. Costs related to requests for expedited shipping will be the responsibility of the customer.
13. Batteries are warranted by the battery manufacturer.
14. Verification of required maintenance may be required for warranty coverage.

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

Any unit built/manufactured prior to July 1, 2004.
1. Costs of normal maintenance (i.e. tune-ups, associated part(s), adjustments, loose/leaking clamps, installation and start-up).
2. Any failure caused by contaminated fuels, oils, coolants/antifreeze or lack of proper fuels, oils or coolants/antifreeze.
3. Units sold, rated or used for "Prime Power", "Trailer Mounted" or "Rental Unit" applications as Generac has defined Prime Power,Trailer Mounted or Rental Unit. Contact a Generac Distributor for Prime Power, Trailer Mounted or Rental Unit definition and warranty.
4. Failures caused by any external cause or act of God such as, but not limited to, collision, fire, theft, freezing, vandalism, riot or wars, lightning, earthquake, windstorm, hail, volcanic eruption, water or flood, tornado, hurricane, terrorist acts or nuclear holocaust.
5. Products that are modified or altered in a manner not authorized by Generac in writing.
6. Failures due, but not limited to, normal wear and tear, accident, misuse, abuse, negligence, or improper installation, maintenance, or sizing.
7. 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).
8. Damage related to rodent and/or insect infestation.
9. Failure due to misapplication, misrepresentation, or bi-fuel conversion.
10. Telephone, facsimile, cellular phone, satellite, Internet, or any other communication expenses.
11. Rental equipment used while warranty repairs are being performed (i.e. rental generators, cranes, etc.).
12. Modes of transportation deemed abnormal (refer to Generac General Service Policy Manual).
13. Steel enclosures that are rusting due to improper installation, location in a harsh or saltwater environment or scratched where integrity of paint applied is compromised.
14. Any and all expenses incurred investigating performance complaints unless defective Generac materials and/or workmanship were the direct cause of the problem.
15. Starting batteries, fuses, light bulbs, engine fluids, and overnight freight cost for replacement part(s).

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Any implied warranties which are allowed by law, shall be limited in duration to the terms of the express warranty provided herein. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to purchaser/owner.
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 limitations may not apply to purchaser/ owner. Purchaser/owner agrees to make no claims against Generac based on negligence. This warranty gives purchaser/owner specific legal rights. Purchaser/owner also may have other rights that vary from state to state.

Generac Power Systems, Inc. • P.O. Box 8 • Waukesha, WI 53187
Ph: (262) 544-4811 • Fax: (262) 544-4851

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