



CENTURION

Owner's Manual and Installation Instructions

CENTURION 3500

**Air-cooled, Prepackaged
Automatic Standby Generator**

• **Model: 04791-0**
3.4kW LP



**This manual should
remain with the unit.**

**⚠ Not intended for use as Primary Power in place of utility ⚠
or in life-support applications.**

— ⚠ **DANGER ⚠ —**

DEADLY EXHAUST FUMES. OUTDOOR INTALLATION ONLY!!

INTRODUCTION

Thank you for purchasing this model of the CENTURION product line by Generac Power Systems Inc. This model is designed and manufactured to supply electrical power for residences.

◆ READ THIS MANUAL THOROUGHLY

If any portion of this manual is misunderstood, contact the nearest Generac Authorized Service Dealer for starting, operating and servicing procedures.

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



After this heading, read instructions that, if not strictly complied with, will result in serious personal injury, including death, as well as property damage.



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







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 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.

◆ CONTENTS

This manual contains pertinent owner's information, including warranty, electrical diagrams, exploded views and lists of repair parts for generator model numbers 04791-0. In addition, the latter portion of this manual contains information necessary for the proper installation of these generators.

◆ OPERATION AND MAINTENANCE

It is the owner'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 a Generac Authorized Service Dealer. Normal maintenance service and replacement of parts are the responsibility of the owner 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.

◆ HOW TO OBTAIN SERVICE

When your generator requires servicing or repairs, simply contact a Generac Authorized Service Dealer for assistance. Service technicians are factory trained and are capable of handling all service needs.

When contacting a Generac Authorized Service Dealer about parts and service, always supply the complete model number and serial number of the unit as given on its data decal, which is located on the generator.

Model No. _____ Serial No. _____

AUTHORIZED SERVICE DEALER LOCATION

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

1-800-333-1322

ONLY DEALER LOCATION INFORMATION CAN BE OBTAINED AT THIS NUMBER.

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

SAVE THESE INSTRUCTIONS – The manufacturer suggests that these rules for safe operation be copied and posted in potential hazard areas of the recreational vehicle. Safety should be stressed to all operators and potential operators of this equipment.

**WARNING:**

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

**WARNING:**

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

Study these SAFETY RULES carefully before installing, operating or servicing this equipment. Become familiar with this 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 possibility 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 Generac does not specifically recommend, satisfy yourself that it is safe for others. Also make sure the procedure, work method or operating technique chosen 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 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 the maintenance of this equipment is carried out by a Generac Authorized Service Dealer.
- The generator engine releases DEADLY carbon monoxide gas through its exhaust system. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. Never operate the generator inside any garage or other enclosed area. DO NOT OPERATE THE GENERATOR IF THE EXHAUST SYSTEM IS LEAKING OR HAS BEEN DAMAGED. SYMPTOMS OF CARBON MONOXIDE POISONING ARE (a) inability to think coherently, (b) nausea, (c) vomiting, (d) twitching muscles, (e) throbbing temples, (f) dizziness, (g) headaches, (h) weakness, and (i) sleepiness. IF EXPERIENCING ANY OF THESE SYMPTOMS, MOVE INTO FRESH AIR IMMEDIATELY. IF SYMPTOMS PERSIST, GET MEDICAL HELP. Shut down the generator and do not operate it until it has been inspected and repaired.
- The engine exhaust fumes contain carbon monoxide, which can be DEADLY. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. This exhaust system must be installed properly, in strict compliance with applicable codes and standards. Following installation, do nothing that might render the system unsafe or in noncompliance with such codes and standards. Never operate this equipment with a leaking or defective exhaust system.
- 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 to correct generator operation and is required to expel toxic fumes and fuel vapors from the generator. Without sufficient cooling airflow, the engine/generator overheats, which causes serious damage to the generator. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator.



- 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 contact the nearest Generac Authorized Service Dealer immediately for parts needing repair or replacement.
- 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

- The generator covered by this manual produces dangerous electrical voltages and can cause fatal electrical shock. Avoid contact with bare wires, terminals, connections, etc., while the unit is running. Ensure all appropriate covers, guards and barriers are in place before operating the generator. 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.
- During installation, have the generator properly grounded (bonded) by means of an approved bonding conductor. DO NOT disconnect the bonding conductor. DO NOT reconnect the bonding conductor to any generator part that might be removed or disassembled during routine maintenance. If the grounding conductor must be replaced, use only a flexible conductor that is of No. 12 American Wire Gauge (AWG) copper wire minimum.
- 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

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

EXPLOSION HAZARDS

- Do not smoke around the generator. Wipe up any 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.

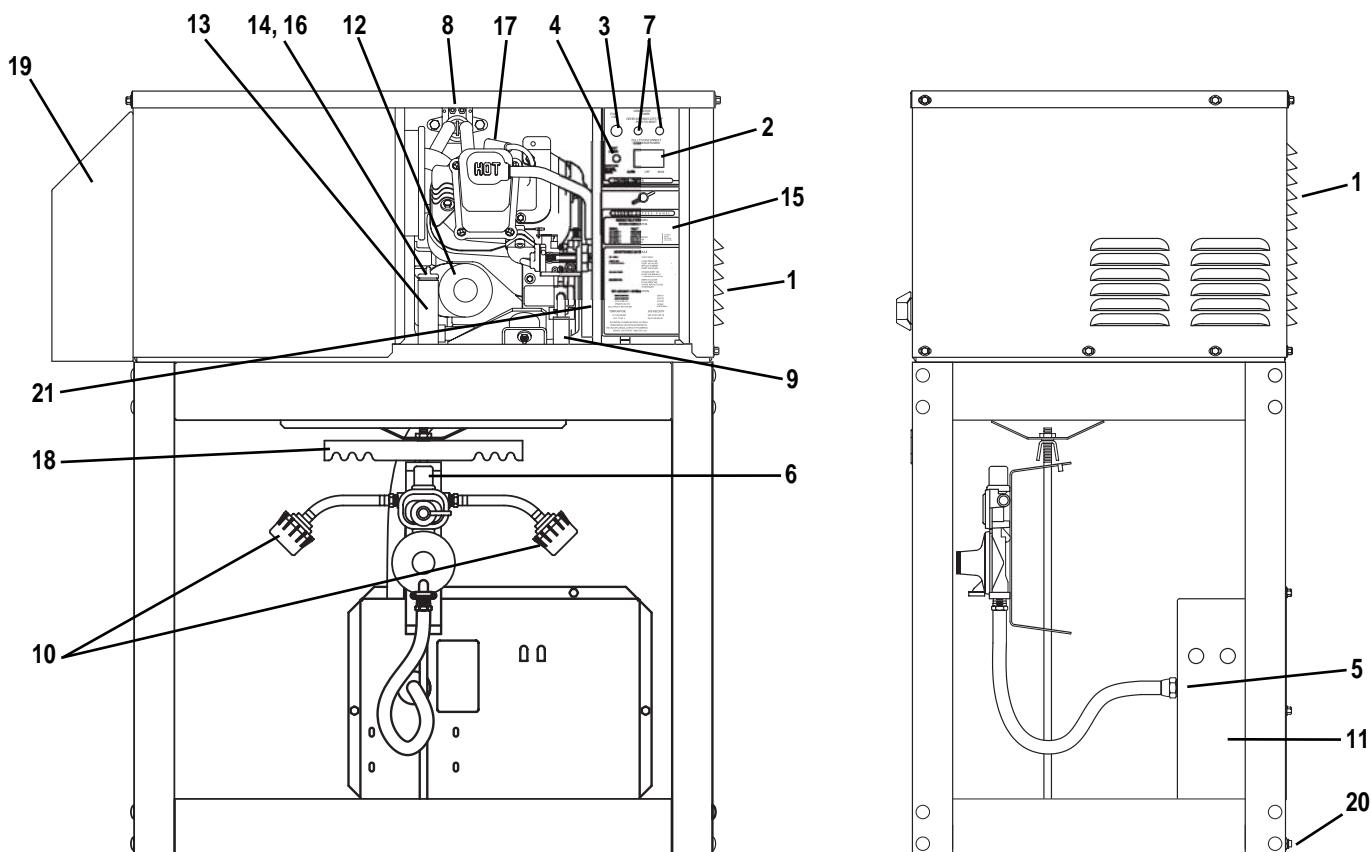
1.1 GENERATOR IDENTIFICATION

Please record the following information from the generator DATA DECAL or information decal.

- | | |
|-----------------------|------------------------|
| 1. Model Number _____ | 2. Serial Number _____ |
| 3. kW Rating _____ | 4. Rated Voltage _____ |

Model: 004700-0 – QUIETPACT 40G

- | | |
|--|---|
| 1. Generator Air Intake | 12. Oil Filter |
| 2. Engine AUTO/OFF/MANUAL Switch | 13. Oil Drain (From Underside) |
| 3. Fuse | 14. Oil Dipstick |
| 4. LED Indicator | 15. Air Filter (Behind Access Panel) |
| 5. Demand Regulator (Inside Compartment) | 16. Oil Fill |
| 6. Change-over Regulator | 17. Spark Plug |
| 7. Circuit Breakers | 18. Tank Hold Down Brace |
| 8. Starter Contactor | 19. Exhaust Hood |
| 9. Fuel Inlet | (Tailpipe and Spark Arrestor Inside) |
| 10. Tank Hook-ups. | 20. Ground Lug |
| 11. Battery (In Compartment) | 21. Data Decal (Located inside compartment) |



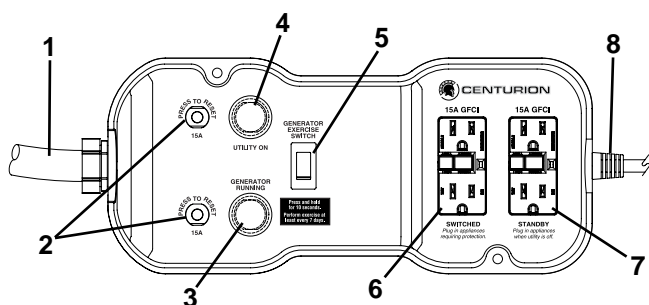
◆ 1.1.1 POWER TRANSFER MONITOR

The Power Transfer Monitor controls the automatic function of the Centurion 3500 generator set. It's six foot utility sensing cord monitors the utility line when it is plugged into a standard household 120 volt outlet.

NOTE:

Automatic start-up upon utility power outage will not occur if six foot sensing cord is not plugged into a utility powered 120 volt outlet.

Figure 1.2 — Power Transfer Monitor



1. Generator Power Conduit (15 foot)
2. Circuit Breaker Reset (2)
3. Generator Power Indicator Lamp
4. Utility Power Indicator Lamp
5. Generator Exercise Switch
6. Switched GFCI Outlet
7. Standby GFCI Outlet
8. Utility Sensing Cord (6 foot)

◆ 1.1.1.1 Generator Power Conduit

This conduit connects the Power Transfer Monitor, which is located inside the home, to the generator outside.

◆ 1.1.1.2 Circuit Breaker Reset

If the generator should experience an overload for any reason, the circuit breaker(s) will trip. The circuit breaker reset(s) should be pushed to reset after overload condition has been corrected.

◆ 1.1.1.3 Generator Power Indicator Lamp

This lamp will illuminate when the generator has started and is supplying power to the Power Transfer Monitor's GFCI outlets.

◆ 1.1.1.4 Utility Power Indicator Lamp

This lamp will be illuminated when normal utility power is available.

◆ 1.1.1.5 Generator Exercise Switch

This switch activates the exercise cycle of the generator. Make sure the combined loads do not exceed generator capacity.

◆ 1.1.1.6 Switched GFCI Outlet

This outlet is powered by the utility and by the generator. When utility power is present it acts as another normal household outlet. When the generator is supplying power this outlet is then being supplied with power from the generator.

NOTE:

There will be a momentary "No Power" period between the time of utility failure and the generator start up.

◆ 1.1.1.7 Standby GFCI Outlet

This outlet is ONLY powered by the generator. Use it for additional items during a utility power outage when the generator is providing backup electricity for the home.

◆ 1.1.1.8 Utility Sensing Cord

When plugged into a standard grounded 120 volt outlet this cord allows the Power Transfer Monitor to sense the utility line condition and react to a power outage.

1.2 UNPACKING/INSPECTION

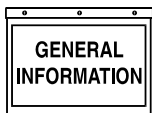
After unpacking, carefully inspect the contents for damage.

- This standby generator set has been factory supplied with a weather protective enclosure that is intended for **outdoor installation only**.
- This standby generator set is prepackaged with an automatic power transfer monitor. The power transfer monitor is prewired with 15 foot conduit and six foot utility sensing cord with plug. The Power Transfer Monitor is for **indoor installation only**.

If any loss or damage is noted at time of delivery, have the person(s) making the delivery note all damage on the freight bill or affix his or her signature under the consignor's memo of loss or damage.

If loss or damage is found after delivery, separate the damaged materials and contact the carrier for claim procedures if applicable.

Use this generator to supply electrical power for operating 120-volt, single-phase, 60 Hertz, AC electrical loads. These loads can require up to 3,400 watts (3.4 kW) of power, but cannot exceed 28.3 AC amperes of current at 120 volts.



—▲ CAUTION ▲—

▲ **Do not overload the generator. Some installations may require that electrical loads be alternated to avoid overloading. Applying excessively high electrical loads may damage the generator and may shorten its life. Add up the rated watts of all electrical lighting, appliance, tool and motor loads the generator will power at one time. This total should not be greater than the wattage capacity of the generator. If an electrical device nameplate gives only volts and amps, multiply volts times amps to obtain watts (volts x amps = watts). Some electric motors require more watts of power (or amps of current) for starting than for continuous operation.**

1.3 SAFETY

Before attempting to use the generator set, carefully read the “Safety Rules” section of this manual. Comply strictly with these rules to prevent accidents and damage to equipment and/or property. We suggest copying and posting the “Safety Rules” in potential hazard near the generator. Stress safety to all operators and potential operators of this equipment.

1.4 PROTECTION SYSTEMS

Unlike an automobile engine, the generator may have to run for long periods of time with no operator present to monitor engine conditions. For that reason, the engine is equipped with the following systems that protect it against potentially damaging conditions:

1. Overcrank
2. Overspeed
3. Low Oil Pressure Sensor
4. High Temperature Sensor
5. Underspeed

There is an LED readout on the control panel to notify personnel that one of these faults has occurred. Detail of the protection systems can be found in Section 2.9.

1.5 LOCATION

Install the generator set, in its protective enclosure, outdoors, where adequate cooling and ventilating air is always available. Consider these factors:

- Install the unit where air inlet and outlet openings will not become obstructed by leaves, grass, snow, etc. If prevailing winds will cause blowing or drifting, consider using a windbreak to protect the unit.
- Install the generator on high ground where water levels will not rise and endanger it.

- Allow sufficient room on all sides of the generator for maintenance and servicing. A good rule is to allow three feet of space on all sides.
- Where strong prevailing winds blow from one direction, face the generator air inlet openings to the prevailing winds.

1.6 SPECIFICATIONS

◆ 1.6.1 FUEL REQUIREMENTS AND RECOMMENDATIONS

With LP gas, use only the LP vapor withdrawal system. This type of system uses the vapors formed above the liquid fuel in the storage tank.

Recommended fuel should have a BTU content of at least 2,520 BTU's per cubic foot. Ask the LP fuel supplier for the BTU content of the fuel.

This generator has been designed for a specific type of tank. Acceptable tank types are DOT-4BA240 and DOT-4BW240. Any deviation in tank type may not allow the tank to fit in the LP enclosure.

—▲ DANGER ▲—

▲ **Gaseous fuels such as liquid propane (LP) gas are highly explosive. Even the slightest spark can ignite such fuels and cause an explosion. No leakage of fuel is permitted. LP gas, which is heavier than air tends to settle in low areas.**

◆ 1.6.2 FUEL CONSUMPTION

Model	1/2 Load	Full Load
Centurion 3500 (04791-0)	0.55	0.73

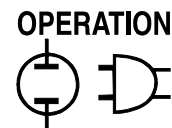
Fuel consumption is in gal/hr.

◆ 1.6.3 ENGINE OIL REQUIREMENTS

Use only high quality detergent oil rated with American Petroleum Institute (API) Service Classification SF, SG or SH. The recommended oil weights include the following:

- During summer months: SAE 30. An acceptable substitute is SAE 10W-30.
- During winter months: SAE 5W-30. **DO NOT USE SAE 10-W40.**

Crankcase and oil filter capacity is approximately 800 mL or .84 U.S. quarts. Do **NOT** use special additives. See Sections 3.1 and 3.2 for oil level check and fill procedures.



◆ 1.6.4 ENGINE

Type of Engine	GN-220, Single-cylinder
Cooling Method.....	Air-cooled
Rated Horsepower	7.8 @ 4,200 rpm
Displacement.....	220cc
Cylinder Block	Aluminum w/Cast Iron Sleeve
Type of Governor	Mechanical, Fixed Speed
Air Cleaner	Paper Element w/Foam Precleaner
Starter	12-volt DC Electric
Ignition System	Solid-state w/Flywheel Magneto
Recommended Spark Plug	
Champion	RC12YC
AC	R45S
Fram Autolite65
Spark Plug Gap	0.03. inch (76 mm)
Recommended Minimum	
Battery	235cc Amperes @ 32°F/ 195cc Amperes @ 0° F

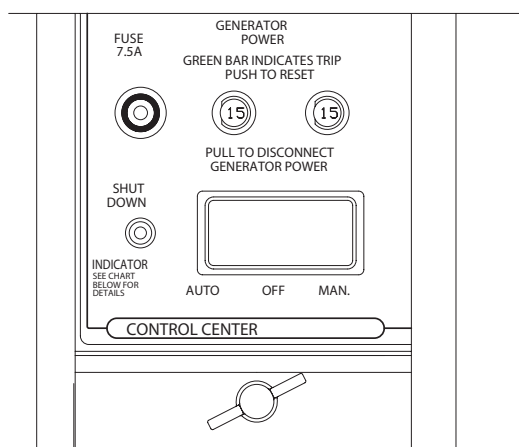
◆ 1.6.5 GENERATOR

Rated Maximum Continuous	
AC Output (LP).....	3,400 Watts (3.4kW)
Rated Voltage	120 Volts AC
Rated Maximum Continuous	
AC Current (LP)	28.3 Amperes
Phase	Single
Rotor RPM.....	3,600
Number of Rotor Poles	2
Engine RPM.....	3,600
Rated AC Frequency	60 Hz
Battery Charge Voltage	14 Volts DC
Battery Charge Current	2 Amperes (max)
Length	843 mm (33.2 in.)
Width	504 mm (19.8 in.)
Height	966 mm (38 in.)
Weight	90 kg (275 lbs.)

2.1 GENERATOR CONTROL PANEL

The following features are mounted on the generator control panel (Figure 2.1):

Figure 2.1 — Generator Control Panel



◆ 2.1.1 SHUT DOWN INDICATOR

This LED will flash a specific number of times to indicate a specific failure. Shutdowns and their failure codes follow in Section 2.9, Protection Systems. These codes can also be referenced on the decal located on the air filter cover, located below the control panel.

◆ 2.1.2 AUTO/OFF/MANUAL SWITCH

◇ 2.1.2.1 Auto Position

Selecting this switch position activates fully automatic system operation. It also allows the user the ability to start and exercise the generator from the remote Power Transfer Monitor.

◇ 2.1.2.2 Off Position

This switch position shuts down the engine. This position also prevents the engine from starting.

◇ 2.1.2.3 Manual Position

Selecting this switch position will crank and start the engine. Transfer to standby power will not occur unless there is a utility failure.

▲ WARNING ▲

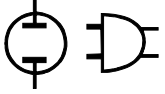
▲ With the switch set to AUTO, the engine may crank and start at any time without warning. Such automatic starting normally occurs when utility power source voltage drops below a preset level or during the normal exercise cycle. To prevent possible injury that might be caused by such sudden starts, always set the switch to OFF and remove the fuse before working on or around the generator or transfer switch. Then, place a "Do Not Operate" tag on the generator panel and on the transfer switch.

◆ 2.1.3 FUSE

The generator panel's 7.5 amp fuse protects the DC control circuit against overload. The fuse is wired in series with the battery output lead to the panel. If the fuse element has melted open, the engine cannot crank or start. The same fuse also protects the battery charge circuit against overload. If the fuse element has melted open, battery charging will not be possible. Replace the fuse using only an identical 7.5 amp fuse.

◆ 2.1.4 MAIN BREAKERS

The main breakers protect the generator's AC output circuit against overload and provide a method of turning OFF the generator's 120-volt AC output to the Power Transfer Monitor's outlets. The CENTURION 3500 has two (2) 15-amp breakers.



2.2 BEFORE STARTING THE ENGINE

NOTE:

Instructions and information in this manual assume the generator has been properly installed and connected.

◆ 2.2.1 ENGINE LUBRICATION

Have the engine crankcase properly serviced with the recommended oil before starting. Refer to Section 1.6.2 and Sections 3.1 and 3.2, for oil servicing procedures and recommendations.



Any attempt to crank or start the engine before it has been properly serviced with the recommended oil may result in an engine failure.

◆ 2.2.2 FUEL SUPPLY

The engine must have an adequate supply of proper fuel to operate. Before starting it, check that sufficient fuel is available.

◆ 2.2.3 COOLING AND VENTILATING AIR

Air inlet and outlet openings in the generator compartment must be open and unobstructed for continued proper operation. Without sufficient cooling and ventilating airflow, the engine/generator overheats, which causes it to shut down and may damage the generator.

◆ 2.2.4 ENGINE EXHAUST GAS

Before starting the generator engine, be sure there is no way for exhaust gases to endanger people or animals. Close windows, doors near the generator that, if open, might permit exhaust gases to do so.



The generator engine releases DEADLY carbon monoxide gas through its exhaust system. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. Never operate the generator set inside any enclosed area. make sure THE EXHAUST SYSTEM IS not LEAKING AND HAS NOT BEEN DAMAGED. SYMPTOMS OF CARBON MONOXIDE POISONING ARE (a) inability to think coherently, (b) nausea, (c) vomiting, (d) twitching muscles, (e) throbbing temples, (f) dizziness, (g) headaches, (h) weakness, and (i) sleepiness. IF EXPERIENCING ANY OF THESE SYMPTOMS, MOVE INTO FRESH AIR IMMEDIATELY. IF SYMPTOMS PERSIST, GET MEDICAL HELP. Shut down the generator and do not operate it until it has been inspected and repaired.

2.3 BATTERY CONNECTION

Before connecting the battery, complete the following steps:

1. Set the generator's AUTO/OFF/MANUAL switch to OFF.
2. Make sure the Power Transfer Monitor's sensing cord (6 foot) is not plugged into an electrical outlet.



If the AUTO/OFF/MANUAL switch is not set to its OFF position, the generator can crank and start as soon as the battery cables are connected. If the utility power supply is not disabled by unplugging the 6 foot sensing cord from electrical outlet, sparking can occur at the battery posts and cause an explosion.

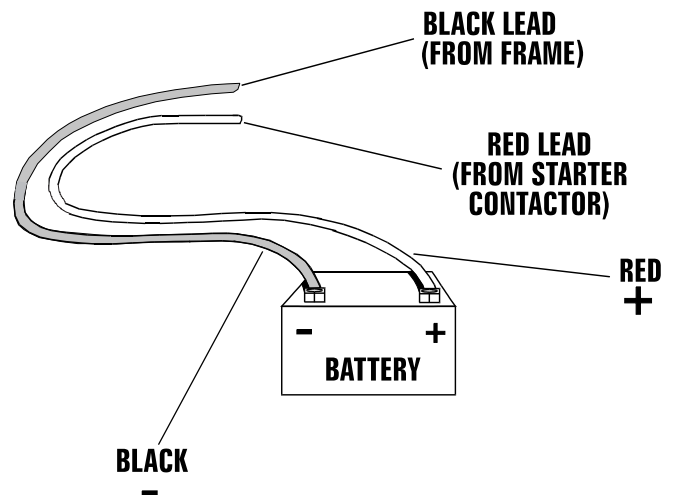
Battery cables were factory connected at the generator (Figure 2.2). Connect the cables to the battery posts using the hardware supplied in the manual bag as follows:

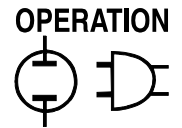
3. Slide the red battery terminal boot over the battery cable, then connect the cable (from the starter contactor) to the battery post indicated by a positive, POS or (+).
4. Connect the black battery cable (from frame ground) and the two green grounding wires (from the control panel) to the battery post indicated by a negative, NEG or (-).

NOTE:

Damage will result if battery connections are made in reverse.

Figure 2.2 — Battery Cable Connections





2.4 THE BATTERY

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

When replacing the battery, use the following type of battery, Group U1 12-volt battery with a rating of 235 cold-cranking amps at 0° C (32° F); 195 cold-cranking amps at -17.8° C (0° F) minimum. When using a maintenance-free battery, it is not necessary to check the specific gravity or electrolyte level. Have these procedures performed at the intervals specified in the “Service Schedule.” A negative ground system is used. Battery connections are shown on the wiring diagrams. Make sure the battery is correctly connected and terminals are tight. Observe battery polarity when connecting the battery to the generator set.

⚠ DANGER ⚠

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

⚠ A battery presents a risk of electrical shock and high short circuit current. The following precautions are to be observed when working on batteries:

- Remove watches, rings or other metal objects;
- Use tools with insulated handles;
- Wear rubber gloves and boots;
- Do not lay tools or metal parts on top of the battery; and
- Disconnect charging source prior to connecting or disconnecting battery terminals.

⚠ WARNING ⚠

⚠ Do not open or mutilate the battery. Released electrolyte has been known to be harmful to the skin and eyes, and to be toxic.

⚠ 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) or water. The bicarbonate of soda solution is to be added until the evidence of reaction (foaming) as 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 procedures are to be followed:

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

⚠ Be sure the AUTO/OFF/MANUAL switch is set to the OFF position before connecting the battery cables. If the switch is set to AUTO or MANUAL, the generator can crank and start as soon as the battery cables are connected.

2.5 BEFORE INITIAL START-UP

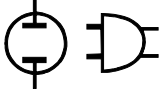
Before starting the generator, complete the following:

1. Set the generator's main circuit breakers (located in generator's control panel) to their OFF or OPEN positions by pulling the reset buttons outward. A visible GREEN stripe should appear.
2. Set the generator's AUTO/OFF/MANUAL Switch to the OFF position.
3. Turn OFF all loads connected to the Power Transfer Monitor through the GFCI outlets.
4. Check the engine crankcase oil level and, if necessary, fill to the dipstick full mark with the recommended oil. Do not fill above the oil FULL mark.
5. Check the fuel supply. Both tanks should be full.
6. The changeover valve tank indicator should be GREEN.

◆ 2.5.1 INITIAL START UP - PURGING THE FUEL SYSTEM

To purge the air that is in the lines of the fuel system, perform the following:

1. Connect the LP tanks and open both tank valves. Make sure that the selector lever on the changeover regulator is pointing at one of the two tanks. Also verify that the Full/Empty indicator on top of the changeover regulator is GREEN.
2. Set the generator's main circuit breakers to their OFF or OPEN positions by pulling the reset buttons outward. A visible Green stripe should appear.
3. Move the AUTO/OFF/MANUAL switch to the MANUAL position.



4. The engine will crank and attempt to start for approximately 15 seconds. Due to the air that will be in the fuel lines, the engine may not start during the first 15 second cranking cycle. If the engine does not start during the first crank cycle, it will rest for approximately 15 seconds and then attempt to start again. The complete starting cycle is as follows:
 - 15 seconds ON
 - 15 seconds OFF
 - 7 seconds ON
 - 7 seconds OFF
 - Repeat for 45 seconds, Approximately 90 seconds total. The engine should start during the first or second attempt.
5. If the unit does not start during this crank cycle, verify that all fuel connections are tight and that the tank valves are open. Turn the AUTO/OFF/MANUAL switch to the OFF position, wait 3-5 seconds, then repeat steps 3-4.
6. If the engine does not start after repeating steps 3-4, contact the nearest Generac Authorized Service Dealer for assistance.

◆ 2.5.2 CHECKING AUTOMATIC OPERATION

To check the system for proper automatic operation, proceed as follows:

1. Set the generator's main circuit breakers to their OFF or OPEN positions by pulling the reset buttons outward. A visible GREEN stripe should appear.
2. Check that the AUTO/OFF/MANUAL switch is set to OFF.
3. Turn ON the utility power supply to the Power Transfer Monitor by plugging the 6-foot sensing cord into a standard household outlet.
4. Set the generator's main circuit breakers to their ON or CLOSED position by pressing in the reset buttons.
5. Set the AUTO/OFF/MANUAL switch to AUTO, the system is now ready for automatic operation.
6. Turn off the utility power supply to the Power Transfer Monitor by unplugging it's 6-foot power cord from the household outlet.

Once the Power Transfer Monitor senses the utility source power is turned OFF, and after an approximate five second delay, the engine should crank and start. After starting, the Power Transfer Monitor should connect load circuits to the standby or generator side. Both sets of GFCI outlets on the Power Transfer Monitor should have power. Confirm transfer of power by depressing the test buttons on both GFCI outlets. Each one should trip and the indicator will illuminate.

With the generator running and power is available to the GFCI outlets, turn the utility power supply ON once again by plugging the six foot power cord into a standard household outlet. The following should occur.

- The Power Transfer Monitor should sense the return of utility power and transfer the loads plugged into the SWITCHED GFCI back to the utility source. Any loads connected to the STANDBY GFCI will remain powered by the generator until it shuts down. In the event of a real outage, these loads would be reconnected to the utility.
- About two minutes after re-transfer, the engine should shut down. However, if the engine was not run for it's minimum run time based on starting time, it may run for a longer period of time before shutting down. (20 minutes max.)
- The minimum run time is pre-programmed into the generator micro processor and is provided to ensure that the starting battery is fully charged before the engine shuts down. The minimum run time is based on the time it takes for the engine to crank and start. For every one second of cranking, the generator will run for 1.5 minutes.

2.6 STOPPING THE GENERATOR

1. Turn OFF all electrical loads using the means provided (such as the generator fs main circuit breakers).
2. Let generator run at no-load for a few minutes, to stabilize internal engine generator temperatures.
3. Place the AUTO/OFF/MANUAL switch in its OFF position.

2.7 APPLYING LOADS TO GENERATOR

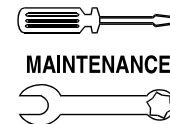
When applying electrical loads to the generator, observe these guidelines:

- Before applying electrical loads, let the generator stabilize and warm up for a minute or two.
- DO NOT overload the generator.

2.8 DO NOT OVERLOAD THE GENERATOR

Read the rated wattage/ampere capacity of the generator in **GENERATOR** data, (see Section 1.6.5). Applying electrical loads in excess of the unit's rated capacity will cause the engine/generator to automatically shut down.

To avoid overloading, add up the wattage of all connected electrical lighting, appliance, tool and motor loads. This total should not be greater than the generator's rated wattage capacity.



- Most lighting, appliance, tool and motor loads indicate their required watts on their nameplate or data plate. For light bulbs, simply note the wattage rating of the bulb.
- If a load does not show its rated wattage, multiply that load's rated VOLTS times AMPS to obtain WATTS.
- Induction type motors (such as those that run a furnace fan, refrigerator, window air conditioner, etc.) need about 2-1/2 time more watts of power for starting than for running (for a few seconds during motor starting). Be sure to allow for this when connecting electrical loads to the generator. First, figure the watts needed to start electric motors in the system. To that figure, add the running wattages of other items that will be operated by the generator.
- Do not apply heavy electrical loads for the first two or three hours of operation.

2.9 PROTECTION SYSTEMS

◆ 2.9.1 OVERCRANK – 2 FLASHES OF LED

This feature prevents the generator from damaging itself when it continually attempts to start and another problem, such as no fuel supply, prevents it from starting. The unit will crank and rest for a preset time limit. Then, it will stop cranking, and the LED will light indicating an overcrank failure. The AUTO/OFF/MANUAL switch will need to be set to OFF and then back to AUTO to reset the generator control board.

NOTE:

If the fault is not repaired, the overcrank feature will continue to activate.

◇ 2.9.1.1 Approximate Crank Cycle Times

- 15 seconds ON
 - 15 seconds OFF
 - 7 seconds ON
 - 7 seconds OFF
 - Repeat for 45 seconds
- Approximately 90 seconds total

◆ 2.9.2 OVERSPEED – 3 FLASHES OF LED

This feature protects the generator from damage by shutting it down if it happens to run faster than the preset limit. This protection also prevents the generator from supplying an output that could potentially damage appliances connected to the generator circuit. Please reference Appendix 1, Troubleshooting, if this fault occurs.

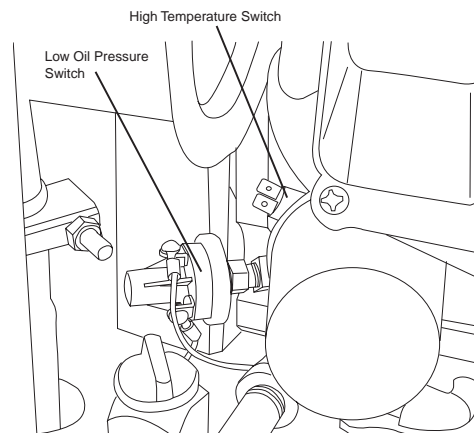
◆ 2.3.3 LOW OIL PRESSURE SWITCH – 4 FLASHES OF LED

This switch (Figure 2.2) has normally closed (N.C.) contacts that are held open by engine oil pressure during cranking and operating. Should oil pressure drop below a preset level, switch contacts close, and the engine automatically shuts down. The unit should not be restarted until oil is added. Please reference Appendix 1, Troubleshooting, if this fault occurs.

◆ 2.9.4 HIGH TEMPERATURE SWITCH – 5 FLASHES OF LED

This switch (Figure 2.2), which has normally open (N.O.) contacts, is mounted near the oil filter. The contacts close if the temperature should exceed approximately 284° F (140° C), initiating an engine shutdown. Please reference Appendix 1, Troubleshooting, if this fault occurs.

Figure 2.3 — Low Oil Pressure and High Temperature Switches



◆ 2.9.5 UNDERSPEED – 6 FLASHES OF LED

This feature protects the generator from damage by shutting down if it happens to run slower than the preset limit. Please reference Appendix 1, Troubleshooting, if this fault occurs.

◆ 2.9.6 FIELD BOOST

The Controller Circuit Board houses a field boost diode and resistor. These two components are part of a “field boost” circuit (Figure 2.4). During engine cranking only, a positive DC (battery) voltage is delivered through the diode, resistor, brushes and slip rings, to the generator rotor. Application of this voltage to the rotor “flashes the field” whenever it is started. Flashing of the field each time the generator starts makes sure that a sufficiently strong magnetic field is available to produce “pickup” voltage in the stator windings.

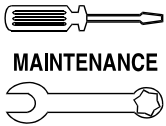
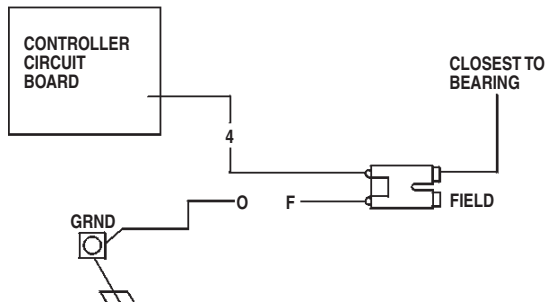


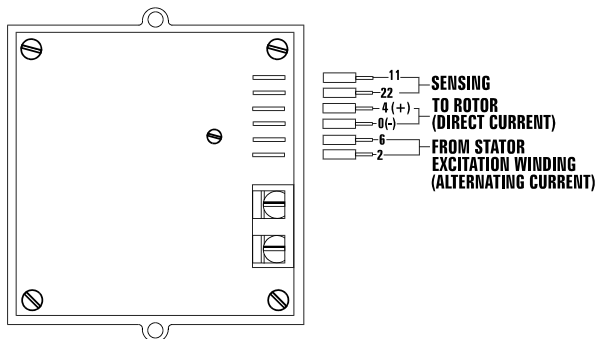
Figure 2.4 — Field Boost Circuit



◆ 2.9.7 OVERVOLTAGE PROTECTION

A solid-state voltage regulator (Figure 2.5) controls the generator’s AC output voltage. This regulator supplies an excitation current to the rotor. By regulating the rotor’s excitation current, the strength of its magnetic field is regulated and, in turn, the voltage delivered to connected electrical loads is controlled. When the AC frequency is 60 Hertz, voltage is regulated at 120 volts (voltage-to-frequency ratio is 2-to-1).

Figure 2.5 — Solid State Voltage Regulator



The voltage regulator also incorporates a “voltage surge protection circuit”. This circuit prevents troublesome surges in the generator AC output voltage. Voltage surge is a common cause of damage to electronic equipment.

2.10 ADDITIONAL INFORMATION

◆ 2.10.1 BREAK-IN PERIOD

The first few hours of operation is the break-in period for the generator. Properly breaking in the generator is essential to minimize fuel consumption and provide maximum engine performance. During this break-in period, follow this procedure:

- Run the unit at different electrical loads by plugging items into the Power Transfer Monitor’s outlets. This will help seat the engine piston rings properly.

- Check the engine oil level frequently. Add oil if needed. It is normal for the generator engine to consume more oil than is normal until the piston rings have properly seated.
- After operating the unit for the break-in period, complete the tasks recommended under Section 2.10.2.

◆ 2.10.2 POST BREAK-IN CHECK-UP

After the break-in period, the owner should perform the following maintenance items:

- Change the engine crankcase oil and oil filter.
- Check the oil level.
- Inspect the cooling and ventilation openings.
- Check the engine ignition system.
- Inspect the entire electrical system.
- Inspect the engine exhaust system.

◆ 2.10.3 ATTENTION REQUIRED AFTER SUBMERSION

If the generator has been submerged in water, it **MUST NOT** be started and operated. Following any submersion in water, have a Generac/Centurion Authorized Service Dealer thoroughly clean and dry the generator.

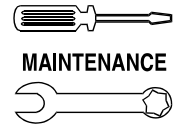
◆ 2.10.4 OPERATION IN HIGH GRASS OR BRUSH

Never operate the generator while it is in contact with high grass, weeds, brush, leaves or any other combustible substance. Such materials can ignite and burn from the heat of the exhaust system. The generator exhaust system becomes extremely hot during operation and remains hot for a long time after it has shut down.

◆ 2.10.5 EFFECTS OF MOISTURE AND DIRT

Keep the generator set as clean and dry as possible. Protect the unit against excessive dust, dirt, corrosive vapors, etc. Permitting dirt and moisture to accumulate on generator windings will have an adverse effect on the insulation resistance of those windings.

When moisture is allowed to remain in contact with windings, some of the moisture will be retained in voids and cracks in the insulation. This causes a reduced insulation resistance and will eventually cause problems. Dirt will make the problem worse, since dirt tends to hold moisture in contact with windings. Salt (as from sea air) also will worsen the problem since it tends to absorb moisture from the air. Salt and moisture, when combined, form an electrical conductor which is detrimental to the generator.



3.1 CHECKING THE ENGINE OIL LEVEL

For oil capacities and requirements, see “Engine Oil Requirements,” Section 1.6.3. Check the engine crankcase oil level weekly. To check the engine oil level, proceed as follows (see Figure 3.1):

1. Remove the oil fill/dipstick cap and wipe the dipstick dry with a clean, lint-free cloth.
2. Install and tighten the oil fill/dipstick cap; then, remove it again. The oil level should be at the dipstick “Full” mark.
3. If necessary, slowly add oil until it reaches the dipstick “FULL” mark. **DO NOT FILL ABOVE THE “FULL” MARK.**



Never operate the engine with the oil level below the “Add” mark on the dipstick. Doing this could damage the engine.

4. Install and tighten the oil fill/dipstick cap before operating the engine.

3.2 CHANGING THE ENGINE OIL AND/OR OIL FILTER

- Change the **engine oil** after the break-in period, (see Section 2.10.1). Thereafter, change oil every twelve months. Change the oil more frequently if unit operates during extended power outages of several days at a time, in dusty conditions or at high ambient temperatures.
- Change the engine **oil filter** after the break-in period, and every twelve months thereafter.

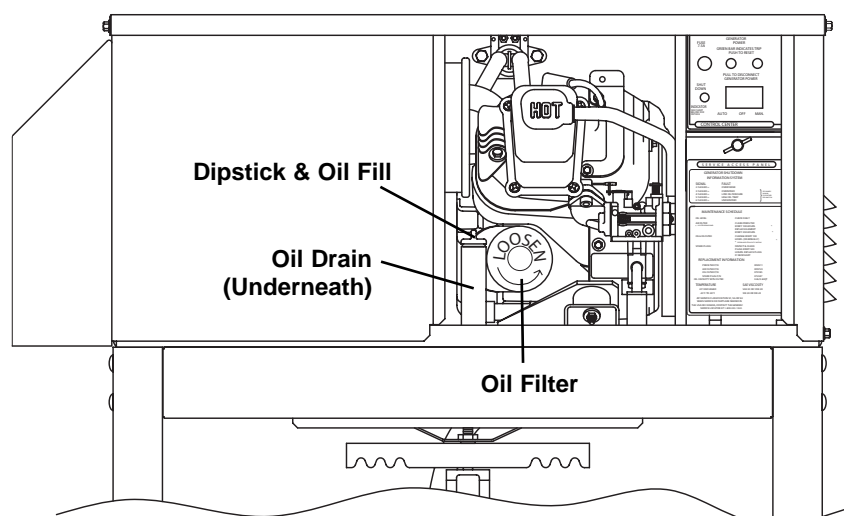
To change the oil and/or oil filter, proceed as follows (see Figure 3.1):

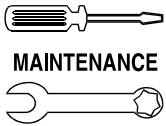
1. Run the engine until it is thoroughly warmed up (at least five minutes) then shut OFF the engine.
2. Immediately after the engine shuts OFF, remove the plug from the tube with a 5/16” allen wrench and drain the oil into a suitable container. Loosening the oil fill/dipstick cap will allow the crankcase to drain faster.
3. After the oil has drained, replace the plug onto the end of the oil drain tube.
4. With the oil drained, remove the old oil filter by turning it counterclockwise. Place a towel underneath to catch excess oil.
5. Apply a light coating of clean engine oil to the gasket of the new filter. Fill the filter until saturated with clean oil.
6. Screw the new filter on by hand until its gasket lightly contacts the oil filter adapter. Then, tighten the filter an additional 3/4 to one turn.
7. Remove the oil fill/dipstick cap and wipe the dipstick dry with a clean, lint-free cloth. This will be used later to check the oil level.
8. Slowly add the proper type and amount of recommended oil (see Section 1.6.3). Periodically use the dipstick to check the oil level and continue to fill the crankcase until the oil reaches the dipstick “Full” mark. **DO NOT FILL ABOVE THE “FULL” MARK.**
9. Install and tighten the oil fill/dipstick cap before operating the engine.
10. Start the engine and check for leaks.

NOTE:

Check the oil level and fill to the “FULL” mark after checking for leaks. The filter will retain some oil.

Figure 3.1 – Oil Maintenance Features





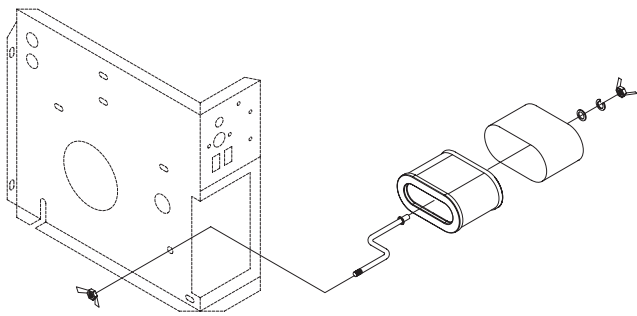
MAINTENANCE

3.3 MAINTAINING THE ENGINE AIR CLEANER

◆ 3.3.1 CLEANING THE FOAM PRECLEANER

Clean and re-oil the foam precleaner every six months. Service the foam precleaner more frequently if operating the generator in extremely dusty or dirty conditions. Use the following procedure (Figure 3.2):

Figure 3.2 — Engine Air Cleaner



1. Turn the two screws counterclockwise to loosen.
2. Remove the cover, foam precleaner and paper filter.
3. Remove the foam precleaner from the cover.
4. Wash the foam precleaner in liquid detergent and water.
5. Wrap the foam precleaner in a clean cloth and gently squeeze it dry.
6. Saturate the foam precleaner in clean engine oil. Gently squeeze it in a clean cloth to remove excess oil and to distribute oil (DO NOT TWIST).
7. Install the foam precleaner into the cover, followed by the paper filter.
8. Install the cover, foam precleaner and paper filter.
9. Tighten the two screws to retain the filter in place.

◆ 3.3.2 CLEANING OR REPLACING THE PAPER FILTER

Once each year or more frequently if operating in dirty or dusty conditions, clean or replace the paper filter. The new replacement filter must be flame retardant. Service the paper filter more frequently if operating the generator in extremely dusty or dirty conditions. Use the following procedure (Figure 3.2):

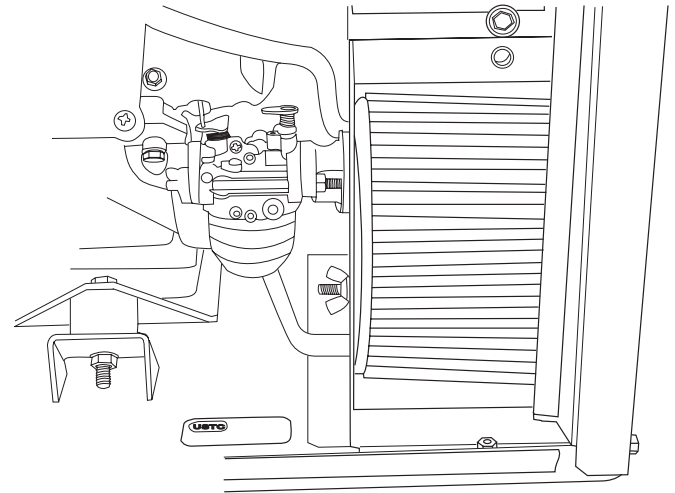
1. Follow steps 1-3 in Section 3.3.1; service the foam precleaner if necessary.
2. Remove the paper filter.
3. Clean the air filter by tapping it gently on a solid surface. If the filter is too dirty, replace it with a new one. Dispose of the old filter properly.
4. Clean the air cleaner cover then reassemble following steps 7-9 in Section 3.3.1.

3.4 CLEAN AIR INTAKE

Clean all foreign material from the air intake (Figure 3.3) at least once every six months. Clean more often if necessary.

Inspect the area around the generator periodically and remove all grass, leaves, etc., from area.

Figure 3.3 — Cleaning Air Intake

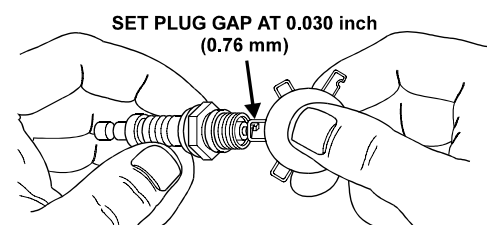


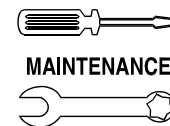
3.5 CHECKING THE ENGINE SPARK PLUG

Clean the spark plug and reset the spark plug gap annually. Replace spark plug when the electrodes have worn to the point where the proper gap cannot accurately be set, or if the insulation is cracked.

1. Clean the area around the base of the spark plug to keep dirt and debris out of the engine. Remove the spark plug and check the condition. Replace the spark plug if worn or if reuse is questionable.
2. Clean spark plug by scraping or washing using a wire brush and commercial solvent. Do not blast the spark plug to clean.
3. Check the spark plug gap using a wire feeler gauge. Adjust the gap to 0.030 inch (0.76 mm) by carefully bending the ground electrode (Figure 3.4).

Figure 3.4 — Setting the Spark Plug Gap





—▲ CAUTION ▲—

▲ Sparking can occur if the wire terminal does not fit firmly on the spark plug terminal end. If necessary, re-form the wire terminal to obtain a tight fit.

3.6 CLEAN SPARK ARRESTOR

The engine exhaust muffler has a spark arrestor screen. Inspect and clean the screen at least once each year.

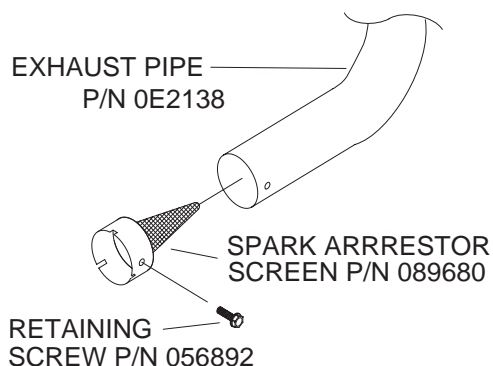
NOTE:

If using the generator on any brush-covered or grass-covered unimproved land, it must be equipped with a spark arrestor. The spark arrestor must be maintained in good condition by the owner.

Clean and inspect the spark arrestor as follows:

- Remove the screen retaining bracket by removing the screw (Figure 3.5).
- Slide the spark arrestor screen out from the exhaust pipe.
- Inspect screen and replace if torn, perforated or otherwise damaged. **DO NOT USE** a defective screen. If screen is not damaged, clean it with commercial solvent.
- Replace the screen and the retaining bracket. Reinstall screw.

Figure 3.5 — Spark Arrestor



3.7 CLEANING THE GENERATOR

Keep the generator set as clean and dry as possible. Protect the unit against excessive dust, dirt, corrosive vapors, etc. Permitting dirt and moisture to accumulate on generator enclosure reduces the effectivity of the power-coat paint to maintain color and appearance.

—▲ CAUTION ▲—

▲ **Do NOT use a forceful spray of water to clean the generator. Water will enter the generator interior and cause problems, and may also cause corrosion of brackets and linkage on the generator.**

◆ 3.7.1 CORROSION PROTECTION

Periodically wash and wax the generator enclosure using automotive type products. Frequent washing is recommended in salt water/coastal areas. Spray engine linkage, steel brackets and fasteners with a light oil such as WD-40®.

3.8 BATTERY MAINTENANCE

All lead-acid batteries will discharge when not in use. The generator battery should be inspected as follows:

◆ 3.8.1 EVERY SIX MONTHS

- Inspect the battery posts and cables for tightness and corrosion. Tighten and clean as necessary.
- Check the battery fluid level of unsealed batteries and, if necessary, fill with Distilled Water Only. **Do not use tap water in batteries.**
- Have the state of charge and condition checked. This should be done with an automotive-type battery hydrometer if battery is not a maintenance free type.

NOTE:

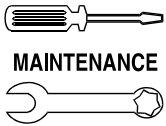
Servicing of the battery is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries. Damage will result if the battery connections are made in reverse.

—▲ DANGER ▲—

▲ **Do not dispose of the battery in a fire. The battery is capable of exploding. 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. Discharge static electricity from body before touching the battery by first touching a grounded metal surface.**

▲ **A battery presents a risk of electrical shock and high short circuit current. The following precautions are to be observed when working on batteries:**

- Remove watches, rings or other metal objects;
- Use tools with insulated handles;
- Wear rubber gloves and boots;
- Do not lay tools or metal parts on top of the battery;



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- Disconnect any charging source prior to connecting or disconnecting battery terminals; and
- Do not use any jumper cables or booster battery to crank and start the generator engine. If any battery has discharged, remove it for recharging.

—▲ WARNING ▲—

▲ Do not open or mutilate the battery. Released electrolyte has been known to be harmful to the skin and eyes, and to be toxic.

▲ 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 1 pound (500 grams) bicarbonate of soda to one gallon (4 liters) or 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.

3.9 EXERCISING THE GENERATOR

Generac recommends that this unit be exercised at least once every seven days. This generator system does not have an automatic exerciser or a utility fed battery charger. The unit must be manually started and run in order to charge the starting battery and fully lubricate the engine. It is imperative that the battery be fully charged in the event of a power outage to ensure that the generator starts automatically. Couple the exercising of the generator along with another task or activity that is done once a week.

◆ 3.9.1 TO EXERCISE THE GENERATOR:

- Make sure the AUTO/OFF/MANUAL switch located on the generator control panel is set in the AUTO position, and then depress and hold the EXERCISE switch located on the Power Transfer Monitor for about ten seconds.
- The engine will start to crank and the unit will then start.
- The unit will exercise for an amount of time that is predetermined by the time that it takes for the generator to crank and start. The unit will exercise approximately 1.5 minutes for every second that the starter motor cranks during engine start-up. The unit will run for a minimum of two minutes and a maximum of 20 minutes based on the crank time.

IMPORTANT: The generator power outlet located on the Power Transfer Monitor will be "LIVE" during this exercise cycle.

- After the generator completes its predetermined exercise cycle, the unit will enter a cool down cycle that will last approximately two minutes.
- The generator will then shut down, and the unit will return to automatic operation.

3.10 OUT OF SERVICE PROCEDURE

◆ 3.10.1 REMOVAL FROM SERVICE

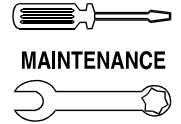
If unable exercise the generator every seven days, or do not require the generator's services for an extended period of time, please prepare the generator as follows:

1. Start the engine and let it warm up.
2. Close the fuel shutoff valves on both propane tanks and allow the unit to shut down.
3. While the engine is still warm from running, drain the oil completely. Refill the crankcase with SAE 10W-30 oil having API classification "For Service SF."
4. Attach a tag to the engine indicating the viscosity and classification of the oil in the crankcase.
5. Remove the spark plug and pour two or three tablespoons of clean, fresh engine oil into the spark plug threaded openings. Reinstall and tighten the spark plug.
6. Disconnect battery cables (negative NEG or (—) first). Remove the battery and store it in a cool, dry room on a wooden board. Never store the battery on any concrete or earthen floor.
7. Clean and wipe the entire generator.

◆ 3.10.2 RETURN TO SERVICE

To return the unit to service after storage, proceed as follows:

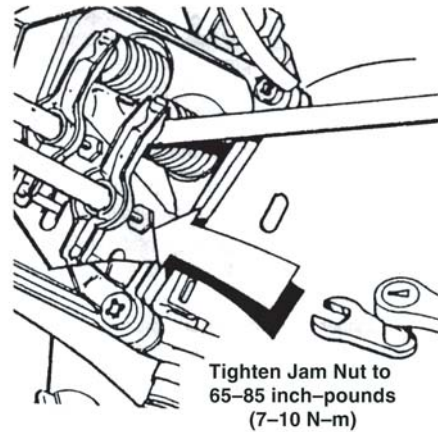
1. Check the tag on the engine for oil viscosity and classification. Verify that the correct recommended oil is used in the engine (see Section 1.6.3). If necessary, drain and refill with the proper oil.
2. Check the state of the battery. Fill all cells of unsealed batteries to the proper level with distilled water. DO NOT USE TAP WATER IN THE BATTERY. Recharge the battery to 100 percent state of charge, or, if defective, replace the battery.
3. Clean and wipe the entire generator.
4. Reconnect the battery (positive POS or (+) first). Observe battery polarity. Damage may occur if the battery is connected incorrectly.
5. Unplug any items plugged into the Power Transfer Monitor's GFCI outlets.



6. Start the unit by depressing and holding the EXERCISE switch on the Power Transfer Monitor for about ten seconds. Allow the unit to run for exercise cycle.
7. Re-plug items needing protection back into the Power Transfer Monitor's switched GFCI outlet.
8. The generator is now ready for service.

2. When valve clearance is correct, hold the pivot ball stud with the allen wrench and tighten the rocker arm jam nut with a crows foot. Tighten the jam nut to 65-85 inch-pounds torque. After tightening the jam nut, recheck valve clearance to make sure it did not change (Figure 3.7).

Figure 3.7 — Tightening Jam Nut



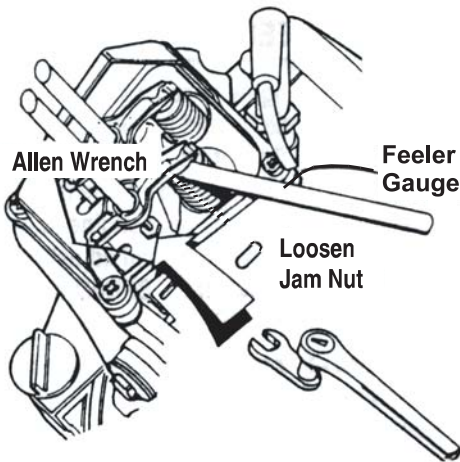
3.11 ADJUSTING VALVE CLEARANCE

After the first six months, adjust the valve clearance in the engine.

When adjusting valve clearance, the engine should be at outdoor ambient temperature and the piston should be at Top Dead Center (TDC) of its compression stroke (both valves closed). Correct clearance is 0.001-0.003 inch (0.03-0.07mm). Adjust valve clearance as follows:

1. Loosen the rocker arm jam nut. Use an allen wrench to turn the pivot ball stud while checking clearance between the rocker arm and the valve stem with a feeler gauge (Figure 3.6).

Figure 3.6 — Adjusting Valve Clearance



3.12 GENERATOR SERVICE INTERVAL CENTURION 3500

Annually	Clean Spark Arrestor
Annually.....	Change Engine Oil/filter
Every Six Months.....	Clean Air Pre-filter
Annually.....	Inspect Spark Plugs
Annually.....	Replace Paper Air Filter Element
As Needed	Replace Spark Plugs 1st Six Months
Annually	Adjust Valve Clearance



PART II – INSTALLATION INSTRUCTIONS

—▲ **DANGER** ▲—

**ONLY QUALIFIED ELECTRICIANS OR CONTRACTORS
SHOULD ATTEMPT INSTALLATION!!**



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

 **SAVE THESE INSTRUCTIONS** – The manufacturer suggests that these rules for safe operation be copied and posted in potential hazard areas near the generator set. Safety should be stressed to all operators and potential operators of this equipment. 


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


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


Study these SAFETY RULES carefully before installing, operating or servicing this equipment. Become familiar with this 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 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 Generac does not specifically recommend, satisfy yourself that it is safe for others. Also make sure the procedure, work method or operating technique that chosen 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 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 the maintenance of this equipment is carried out by a Generac Authorized Service Dealer.

- The generator engine releases DEADLY carbon monoxide gas through its exhaust system. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. Never operate the generator inside any garage or other enclosed area. DO NOT OPERATE THE GENERATOR IF THE EXHAUST SYSTEM IS LEAKING OR HAS BEEN DAMAGED. SYMPTOMS OF CARBON MONOXIDE POISONING ARE (a) inability to think coherently, (b) nausea, (c) vomiting, (d) twitching muscles, (e) throbbing temples, (f) dizziness, (g) headaches, (h) weakness, and (i) sleepiness. IF EXPERIENCING ANY OF THESE SYMPTOMS, MOVE INTO FRESH AIR IMMEDIATELY. IF SYMPTOMS PERSIST, GET MEDICAL HELP. Shut down the generator and do not operate it until it has been inspected and repaired.
- The engine exhaust fumes contain carbon monoxide, which can be DEADLY. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. This exhaust system must be installed properly, in strict compliance with applicable codes and standards. Following installation, do nothing that might render the system unsafe or in noncompliance with such codes and standards. Never operate this equipment with a leaking or defective exhaust system.
- 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 to correct generator operation and is required to expel toxic fumes and fuel vapors from the generator. Without sufficient cooling airflow, the engine/generator overheats, which causes serious damage to the generator. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator.
- 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 contact the nearest Generac Authorized Service Dealer immediately for parts needing repair or replacement.
- 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.



IMPORTANT SAFETY INSTRUCTIONS

CENTURION 3500 Home Standby Generator

- 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. Consult the local fire department for any questions pertaining to fire extinguishers.

EXPLOSION HAZARDS

- Provide adequate ventilation around 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.
- Gaseous fluids such as liquid propane (LP) gas are extremely EXPLOSIVE. LP gas is heavier than air and settles in low areas; install leak detectors accordingly.

NOTE:

THE INSTALLATION SECTION OF THIS MANUAL SHOULD NOT BE USED EXCLUSIVELY FOR ALL ASPECTS OF INSTALLATION AND OPERATION OF THE CENTURION UNIT. FAMILIARIZE YOURSELF WITH ALL FEATURES AND OPERATION OF THE UNIT TO ENSURE SAFE USE. PLEASE READ ALL INFORMATION PRIOR TO INSTALLATION AND OPERATION OF THE CENTURION EMERGENCY AUTOMATIC SYSTEM.

1.1 TOOLS REQUIRED

Drill, Drill Bits, Hole Saw (type and length will be determined by the materials that need drilling and cutting), Open-End Wrenches or Adjustable Wrenches, Socket Wrenches or Nut Drivers, Standard and Phillips Screwdrivers, Level, Sledge Hammer, Channel-lock Pliers, Spade Shovel, and Safety Goggles.

1.2 ITEMS THAT MUST BE PURCHASED

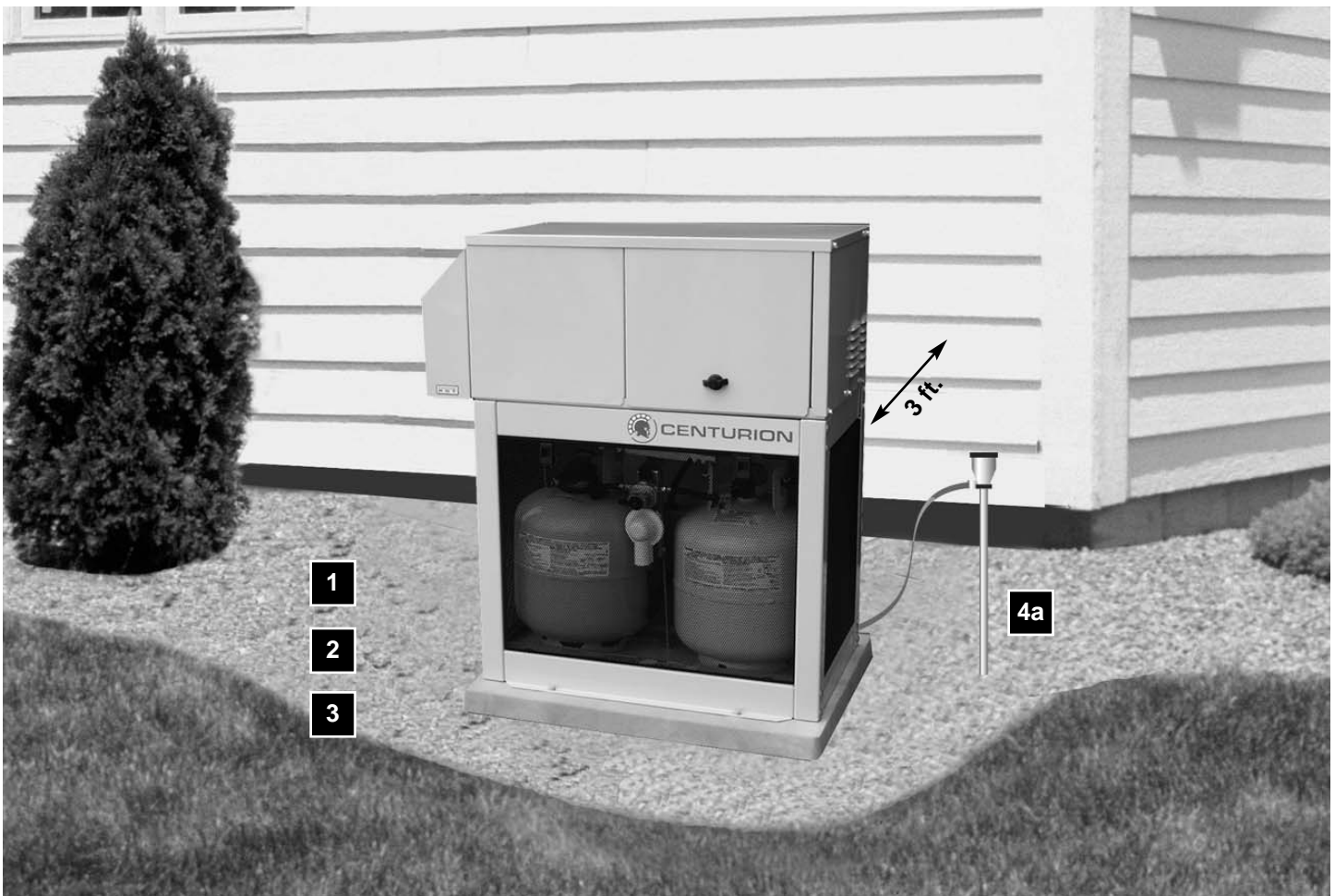
- (2) 20 pound propane tanks. Acceptable tank types are DOT-4BA240 and DOT-4BW240.
- Grounding rod with grounding strap.
- Crushed stone or pea gravel (approximately 8-10 cubic feet).
- Black polyfilm or other vegetation blocking fabric (5-1/2 feet x 3-1/2 feet).
- Silicone caulk.
- Fasteners (To mount Power Transfer Monitor).

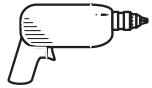
1.3 PLAN THE LOCATION OF THE GENERATOR

Select an area outside of the home near the room that the Power Transfer Monitor will be located. It must be within two cords combined length (21") of an inside outlet.

NOTE:

Do not place the generator directly under or next to a window.





2.1 SITE PREPARATION AND GENERATOR PLACEMENT

◆ 2.1.1 SITE PREPARATION

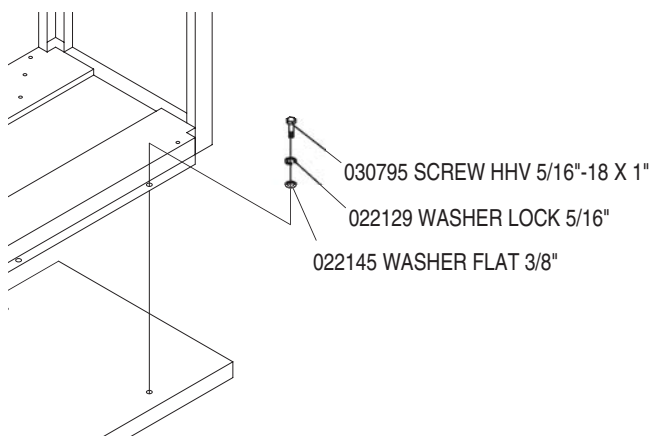
1. Clear an area 5-1/2 feet by 3-1/2 feet of grass and vegetation to a depth of five inches. This includes the distance the generator should be set away from a structure (three feet) and six inches beyond the width and length of the generator mounting pad (30" L x 24" W).
2. Lay black poly-film to cover the area.
3. Fill the area to ground level with pea gravel or crushed stone.

◆ 2.1.2 ATTACH GENERATOR TO MOUNTING PAD

Place the mounting pad in the exact desired location. Bring the generator, still attached to the shipping pallet, to the prepared area and place it along side of the mounting pad. Remove and discard the two (2) lag screws that hold the generator to the shipping pallet. Using a minimum of two adults, hold the mounting pad in place, gently slide the generator off of the shipping pallet and onto the mounting pad. Align the holes in the generator base with the holes in the mounting pad. Use the supplied fasteners to attach generator to base (Figure 2.1).

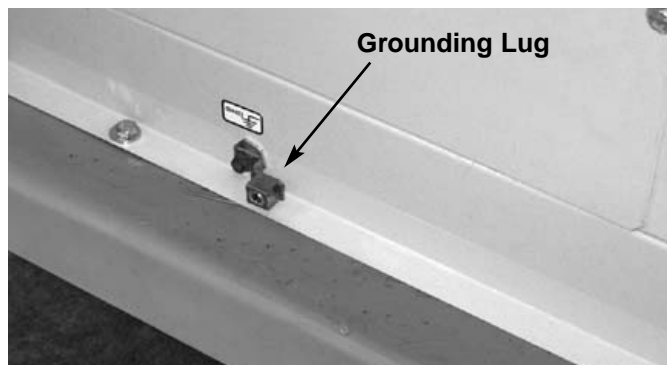
Four Each: 1" long hex head cap screw, lock washer and flat washer.

Figure 2.1 — Attach Generator To Pad



4. Drive an 8-foot grounding rod into the ground to grade.
 - A. Attach one end of the grounding strap (No. 12 AWG stranded copper wire) to grounding rod and the other end to the grounding lug (located at rear of unit). Make sure grounding rod and strap are not exposed above ground level. (NEC code applies to grounding method.)

Figure 2.2 — Grounding Lug



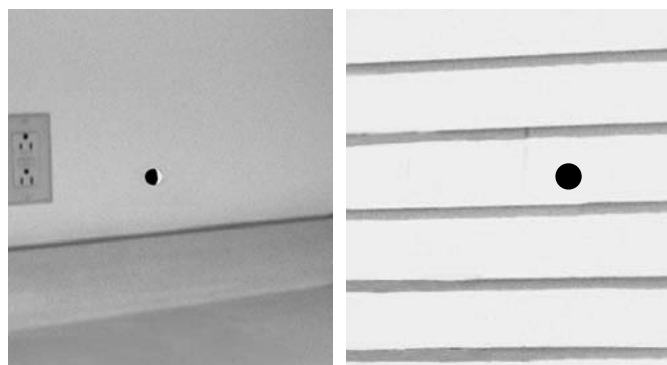
2.2 POWER CORD INSTALLATION

◆ 2.2.1 DRILL PASS THROUGH HOLE

The power transfer monitor needs to be located in a position that is appealing to the homeowner. Recommended locations are underneath or inside a kitchen or utility room cabinet, or in a basement where access is convenient. The homeowner should test multiple positions to find the most appealing one. It is not recommended that the power transfer monitor be located where water may be present, such as under a sink.

Determine where the flexible watertight conduit (power cord) will pass through the house from inside to outside (Figure 2.3). When certain there is clearance on each side of the wall and within the wall, mark the location. Drill a small pilot hole to aid location of hole saw. Drill 1-1/4 inch diameter hole through the wall with hole saw.

Figure 2.3 — Pass Through Hole



◆ 2.2.2 FEED POWER CORD OUT TO GENERATOR

From the room inside the home where the Power Transfer Monitor will be located, feed the end of the power cord through to outside of exterior wall (Figure 2.4). **DO NOT** connect power cord to generator at this time.



Figure 2.4 — Feed Power Cord



◆ 2.2.3 GENERATOR CONNECTION

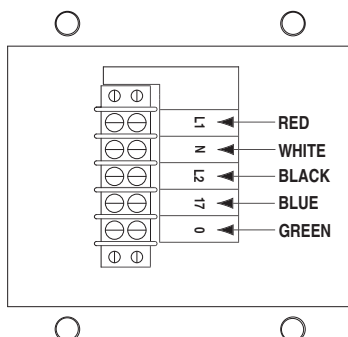
The power cord contains five wires with spade terminals. These wires are color coded and labeled for accurate connection to the generator's terminal strip.

NOTE:

Generator mode switch should be placed in the OFF position. Generator main circuit breakers should be placed in the OFF or OPEN position by pulling the reset buttons outward. A visible GREEN stripe should appear.

1. Remove the four screws that hold the cover plate in place at rear of generator. Remove cover plate.
2. Remove lock ring from the coupler on end of power cord. Feed wires through cover plate, Slip lock ring over wires and reattach lock ring to coupler. Tighten lock ring securely to assure that the coupler will not loosen during generator operation.
3. Match the wires by color or by label to the matching terminal positions on the generator. Place the appropriate spade connectors under the matching terminal screws. (See Figure 2.5). Tighten the terminal screws securely to prevent arcing.
4. Align cover plate over threaded holes. Reinstall and tighten the four screws that hold the cover plate to back of generator compartment.

Figure 2.5 — Generator Terminal Strip Connection



2.3 MOUNT POWER TRANSFER MONITOR

Hold the Power Transfer Monitor in desired location and mark the mounting holes. The mounting holes are 1/4 inch in diameter. Drill pilot holes. Use two fasteners which are appropriate for the area for mounting the Power Transfer Monitor (Figure 2.6).

NOTE:

If mounting on drywall, it is suggested to use a fastener that spreads behind the hole for added rigidity. This is necessary because of the force that will be applied when plugging in and unplugging items from the GFCI outlets.

Figure 2.6 — Mount Power Transfer Monitor



NOTE:

DO NOT plug the six foot sensing cord into standard household outlet at this time.

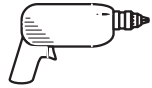
2.4 INSTALL PROPANE TANKS

This generator has been designed for a specific type of tank. Acceptable tank types are DOT-4BA240 and DOT-4BW240. Any deviation in tank type may not allow the tank to fit in the LP enclosure.

Slide the latches on the top of the mesh panel downward. Tilt the panel toward you and lift out. The tank hold down brace is held in place by a large wingnut. Loosen the wingnut to allow the brace to face perpendicular to the opening of the tank enclosure.

Tilt the top of the first tank toward you so the bottom of the tank enters the compartment first. Set the ring on the bottom of the tank into the recessed area of the tank tray. Place tank in upright position in the tank compartment. Repeat this process for second tank.

Position tanks so that the tank hold down brace can be brought down on top of tank flanges and flanges slip into grooved areas of brace.



The changeover regulator needs to be placed at a height such that the inlet hoses are located even with or above the cylinder valves on the LP tanks. This will prevent LP vapor from condensing in the LP changeover regulator and possibly damaging the fuel system.

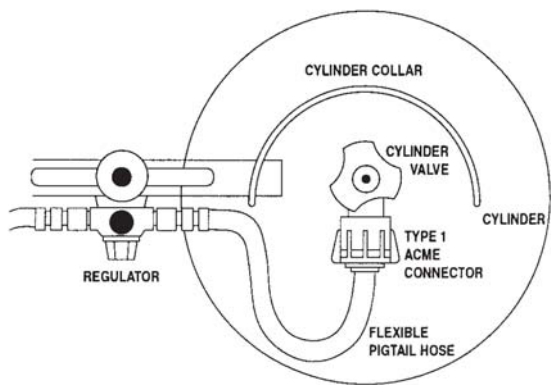
Tighten the wingnut securely to prevent vibration when the generator is running.

Connect the fuel lines by carefully threading the OPD (Overflow Protection Device) valves onto the tanks. Make sure the valve is not cross-threaded which will cause leaking. Open the valves on both tanks and swab connections with soapy water to detect any leaks. Be careful not to crimp the power cord when the power transfer monitor is in its final position.

If a leak is detected in the system near the green swivel connector, there is a possibility that the flare fitting inside the tank valve has been damaged during the tank filling process. To inspect the fitting, turn off the tank valve and visually inspect the flare fitting to make sure that there are no scratches, dents or mars on the surface of the flare. If there are visible defects in the flare fitting of the tank, a new tank must be used.

To assure that the hose does not kink, rub against the tanks or the enclosure, it is important to note the orientation of the valve on the tank. It should always be pointing towards the front of the cabinet. Do not allow the hose to kink or rub on the tank (Figure 2.7).

Figure 2.7 — Overhead View of LP Tank



On the propane tank changeover valve, move the black selector lever to the left or to the right to designate which tank will be the primary or service cylinder (tank). That tank will supply fuel to the generator first. When the lever is moved to a position an indicator will show green. When that tank empties during generator operation the indicator will show red signalling the need to refill the tank. The generator will start drawing from the reserve cylinder. The changeover feature allows gives the benefit of uninterrupted fuel flow to the generator.

Prior to disconnecting the service cylinder, rotate the black lever all the way over towards the reserve cylinder. (Figure 2.8). **DO NOT ATTEMPT TO CHANGE THE LP TANK WITHOUT ROTATING THIS LEVER.** The full-empty indicator will turn green and the reserve cylinder becomes the service cylinder. Refill and reinstall the empty cylinder to maintain interruption free back up power.

! DANGER !

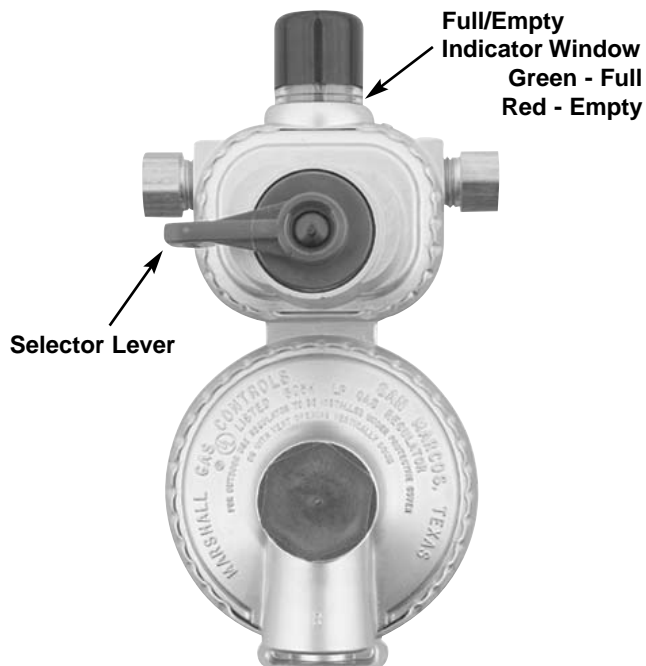
! For model 254-00, two-stage changeover regulator, failure to rotate the black lever all the way over towards the reserve cylinder will allow propane to leak from the disconnect pigtail. Leaking propane, if ignited, will result in a fire that may cause property damage, bodily injury or death. REMEMBER: NEVER disconnect a pigtail if the indicator is RED.

IMPORTANT: Only qualified persons should install, adjust or service LP ga regulators. If service is needed, contact a qualified LP dealer. Always make sure cylinders are properly filled and never accept cylinders that are over filled. When replacing newly filled cylinders to the regulator, check all connections for leaks with an approved leak detector solution or a mixture of non-ammonia soap and water. Never use matches or an open flame.

NOTE:

Low pressure regulators are designed to regulate LP vapor only.

Figure 2.8 – LP Tank Changeover Valve





2.5 SET SYSTEM FOR AUTOMATIC OPERATION

Make sure the valves on both of the filled propane cylinders are open.

At this time, plug the six foot sensing cord into a standard 120V household outlet. This will allow the Power Transfer Monitor to sense the utility power feed. Plug desired items into the SWITCHED GFCI outlet on the Power Transfer Monitor. This outlet is powered when utility power is available and when the generator is operating during a utility power outage.

Place the generator main circuit breakers to their ON or CLOSED position by pressing in the reset buttons. The GREEN indicator stripe should no longer be evident.

Place the generator mode switch, which is located on the generator control panel, in the AUTO position.

The system is now set for automatic operation.

2.6 HOW TO KEEP THE REGULATOR OPERATING EFFICIENTLY & SAFELY

The regulator is equipped with a vent which allows the diaphragm to “breathe”. The diaphragm of the regulator moves down and draws air into the bonnet of adjustment spring housing. When the diaphragm moves up, air is expelled through the vent. In the event that excess pressure builds up in the lower housing or body of the regulator, a relief mechanism vents it to the atmosphere. It is imperative to check the vent frequently to be sure it is clean and free of water, corrosion or obstruction, as clogging is a potential cause of regulator malfunction. Great care has been taken in the manufacture of the regulator and it has been thoroughly tested and UL listed.

However, even a small piece of dirt, corrosion, pipe dope or other foreign material which finds its way into the regulator can result in higher than normal pressure (high lockup) and/or loss of fuel.

If the vent does become clogged it can easily be cleaned with a toothbrush. In addition, the regulator should be checked periodically by a competent LP serviceman to be sure it is properly adjusted and in safe working condition. By following these simple precautions, the regulator should give you years of trouble-free service.

2.7 WHAT IS REGULATOR FREEZE UP?

A regulator will not freeze, nor will LP gas under normal atmospheric conditions. However, as the gas passes through the regulator it expands and cools and moisture in the gas or in the regulator may turn to ice. This ice can build up and totally or partially block the orifice and thus partially or totally block the fuel supply. There are a number of things that can be done to prevent this type of freeze up.

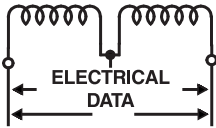
1. Be sure the LP cylinder is totally free of moisture before it is filled.
2. Be sure the cylinder is not over filled. This is particularly important if you have a permanently mounted ASME tank.
3. Keep the valves on empty cylinders closed.
4. Have the LP gas dealer purge the cylinder if freeze up occurs.
5. Have the LP gas dealer inject methyl alcohol in the cylinder.



TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	CORRECTION
The engine will not crank.	<ol style="list-style-type: none"> 1. Fuse blown 2. Loose, corroded or defective battery cables 3. Defective starter contactor 4. Defective starter motor 5. Low or defective battery 	<ol style="list-style-type: none"> 1. Replace fuse. 2. Tighten, clean or replace as necessary. 3. Replace contactor. 4. Replace starter motor. 5. Charge or replace battery.
OVERCRANK – 2 flashes of LED	<ol style="list-style-type: none"> 1. No fuel to the engine. 2. Crimped fuel hose or hoses. 3. Defective fuel solenoid. 4. Open #14 wire from engine control board. 5. Defective spark plug/plug wire not connected. 	<ol style="list-style-type: none"> 1. Make sure that the tanks are full and the valves are opened. 2. Check all fuel hoses to ensure that there is no crimping and fuel is being allowed to flow freely. 3. * 4. * 5. Clean, re-gap, or replace plug/connect plug wire.
OVERSPEED - 3 flashes of LED	<ol style="list-style-type: none"> 1. Governor spring is disconnected. 2. Governor spring is broken. 3. Governor arm or linkages are loose or broken. 	<ol style="list-style-type: none"> 1. Reconnect spring. Spring should be in the second hole from the bottom (shaft end) of the governor arm. 2. Replace spring. * 3. *
LOW OIL PRESSURE - 4 flashes of LED	<ol style="list-style-type: none"> 1. Engine oil is low. 2. Oil Pressure switch is defective. 3. Oil is contaminated with dirt. 	<ol style="list-style-type: none"> 1. Check and fill engine oil. Check generator compartment for leaks. 2. * 3. Change oil and oil filter.
HIGH TEMPERATURE - 5 Flashes of LED	<ol style="list-style-type: none"> 1. Engine oil is low. 2. Air flow is restricted. 3. Spark arrestor is plugged. 4. Oil is contaminated with dirt. 	<ol style="list-style-type: none"> 1. Check and fill engine oil. 2. Check airflow openings for blockage. 3. Clean or replace the spark arrestor. 4. Change oil and oil filter.
UNDERSPEED - 6 flashes of LED	<ol style="list-style-type: none"> 1. Fuel supply is low. 2. Speed adjust linkage is damaged or control nut is loose. 	<ol style="list-style-type: none"> 1. Check and replenish fuel supply. 2. *
The engine starts hard and runs rough.	<ol style="list-style-type: none"> 1. Air cleaner plugged or damaged 2. Defective spark plug 	<ol style="list-style-type: none"> 1. Check, clean or replace air cleaner. 2. Clean, re-gap or replace plug.
The engine starts, but shuts down immediately.	<ol style="list-style-type: none"> 1. Engine oil level low 2. Defective low oil pressure switch 3. Defective high temperature switch 4. Defective engine control board 5. Overheated engine 	<ol style="list-style-type: none"> 1. Check oil and add oil as needed. 2. * 3. * 4. * 5. Check that the airflow openings are adequate.
The AUTO/OFF/MANUAL switch is set to OFF, but the engine continues to run.	<ol style="list-style-type: none"> 1. Defective switch 2. AUTO/OFF/MANUAL switch is wired incorrectly 3. Defective engine control board 	<ol style="list-style-type: none"> 1. * 2. * 3. *
There is no AC output from the generator.	<ol style="list-style-type: none"> 1. Main line circuit breaker(s) open to ON (or closed). 2. Generator internal failure 	<ol style="list-style-type: none"> 1. Reset circuit breaker(s) 2. *
There is no transfer to utility.	Defective transfer relay	*

* Contact the nearest Generac Authorized Service Dealer for assistance.



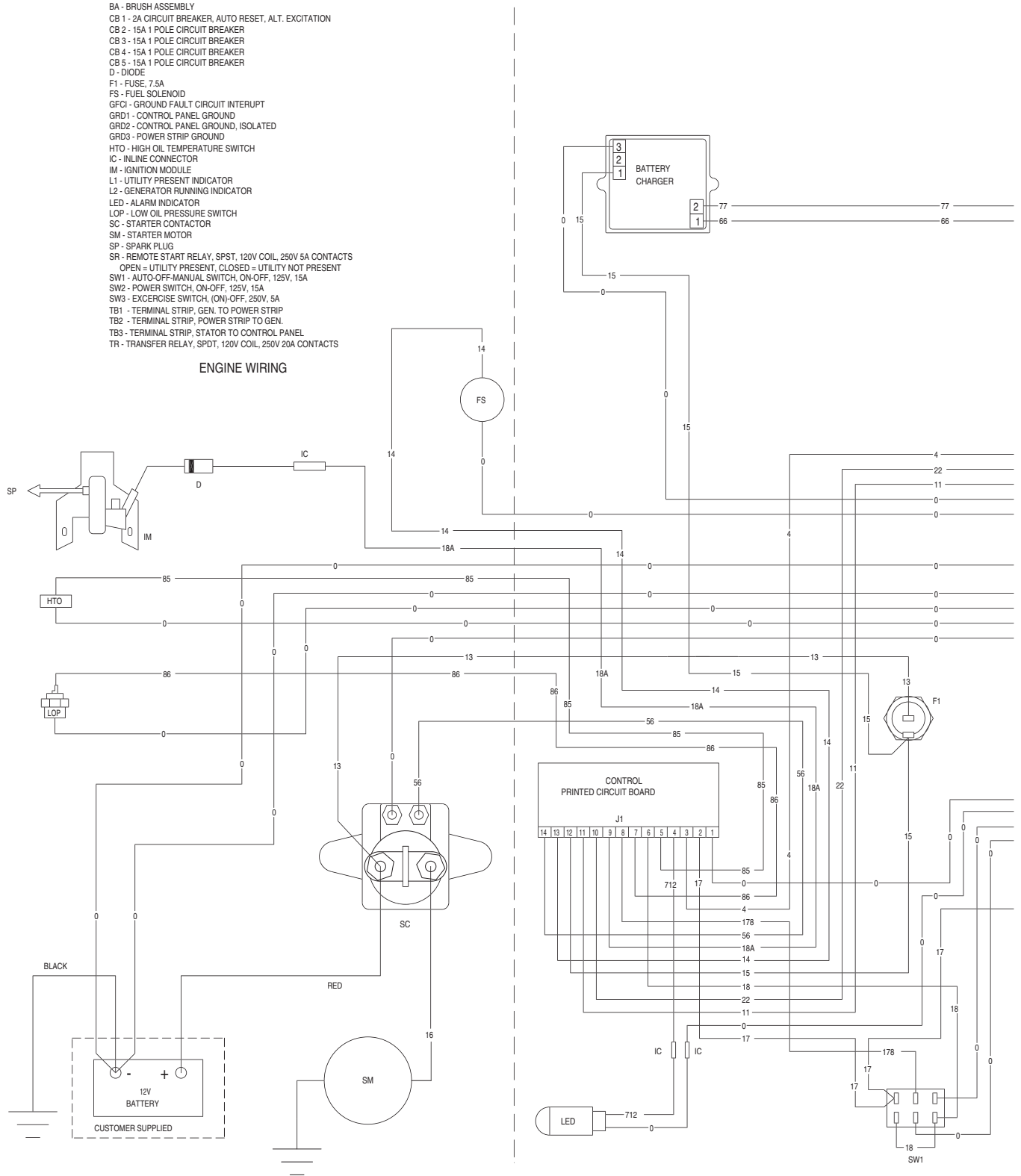
Appendix 3 – Electrical Data

CENTURION 3500 Home Standby Generator

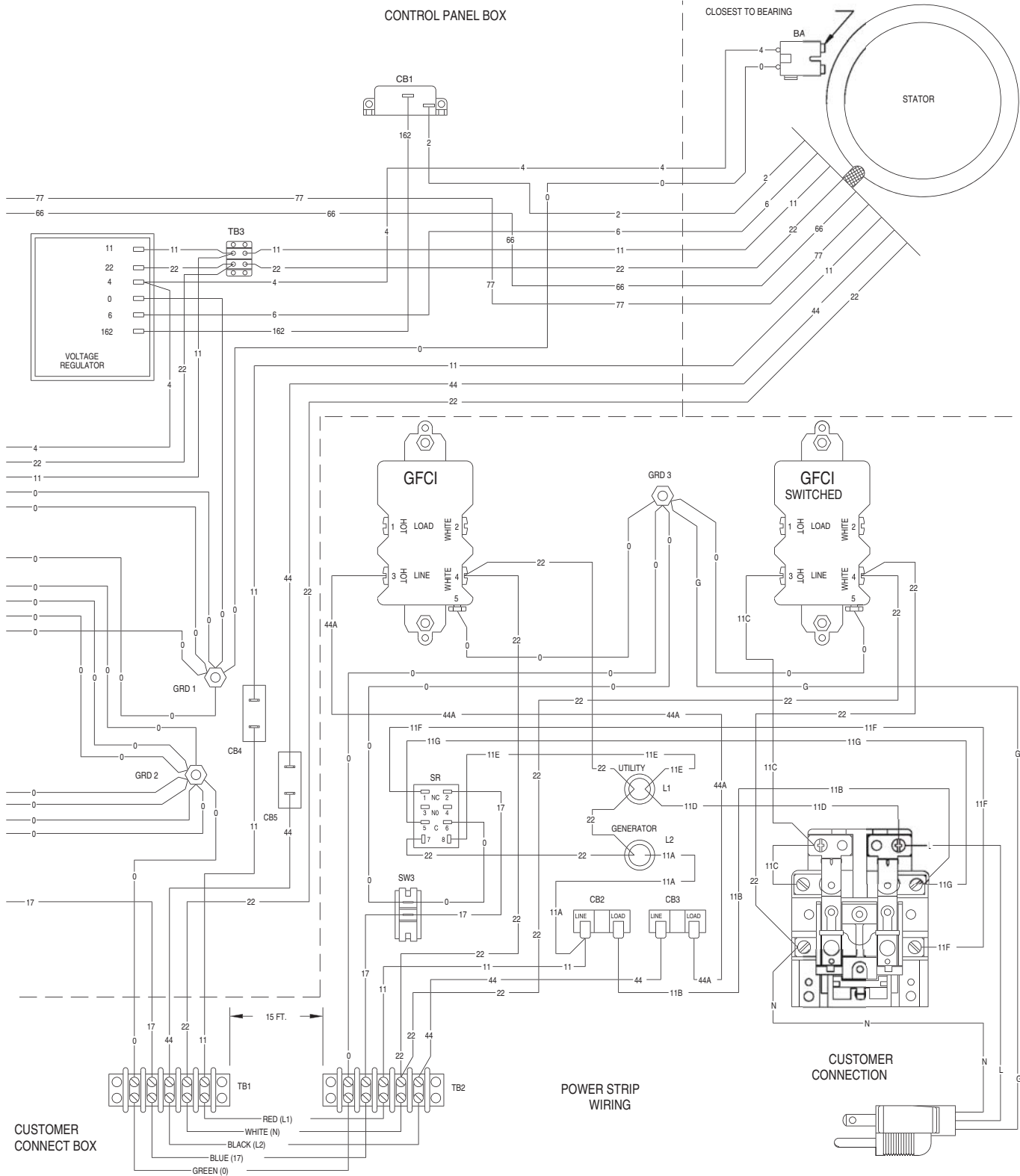
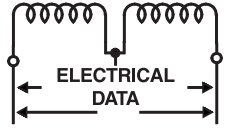
Wiring Diagram - Drawing No. 0E4263-A

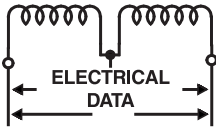
- LEGEND
- BA - BRUSH ASSEMBLY
 - CB 1 - 2A CIRCUIT BREAKER, AUTO RESET, ALT. EXCITATION
 - CB 2 - 15A 1 POLE CIRCUIT BREAKER
 - CB 3 - 15A 1 POLE CIRCUIT BREAKER
 - CB 4 - 15A 1 POLE CIRCUIT BREAKER
 - CB 5 - 15A 1 POLE CIRCUIT BREAKER
 - D - DIODE
 - F1 - FUSE, 7.5A
 - FS - FUEL SOLENOID
 - GFCI - GROUND FAULT CIRCUIT INTERRUPT
 - GRD1 - CONTROL PANEL GROUND
 - GRD2 - CONTROL PANEL GROUND, ISOLATED
 - GRD3 - POWER STRIP GROUND
 - HTO - HIGH OIL TEMPERATURE SWITCH
 - IC - IN-LINE CONNECTOR
 - IM - IGNITION MODULE
 - L1 - UTILITY PRESENT INDICATOR
 - L2 - GENERATOR RUNNING INDICATOR
 - LED - ALARM INDICATOR
 - LOP - LOW OIL PRESSURE SWITCH
 - SC - STARTER CONTACTOR
 - SM - STARTER MOTOR
 - SP - SPARK PLUG
 - SR - REMOTE START RELAY, SPST, 120V COIL, 250V 5A CONTACTS
 - OPEN = UTILITY PRESENT, CLOSED = UTILITY NOT PRESENT
 - SW1 - AUTO-OFF-MANUAL SWITCH, ON-OFF, 125V, 15A
 - SW2 - POWER SWITCH, ON-OFF, 125V, 15A
 - SW3 - EXERCISE SWITCH, (ON)-OFF, 250V, 5A
 - TB1 - TERMINAL STRIP, GEN. TO POWER STRIP
 - TB2 - TERMINAL STRIP, POWER STRIP TO GEN.
 - TB3 - TERMINAL STRIP, STATOR TO CONTROL PANEL
 - TR - TRANSFER RELAY, SPDT, 120V COIL, 250V 20A CONTACTS

ENGINE WIRING



Appendix 2 – Electrical Data
CENTURION 3500 Home Standby Generator
Wiring Diagram - Drawing No. 0E4263-A

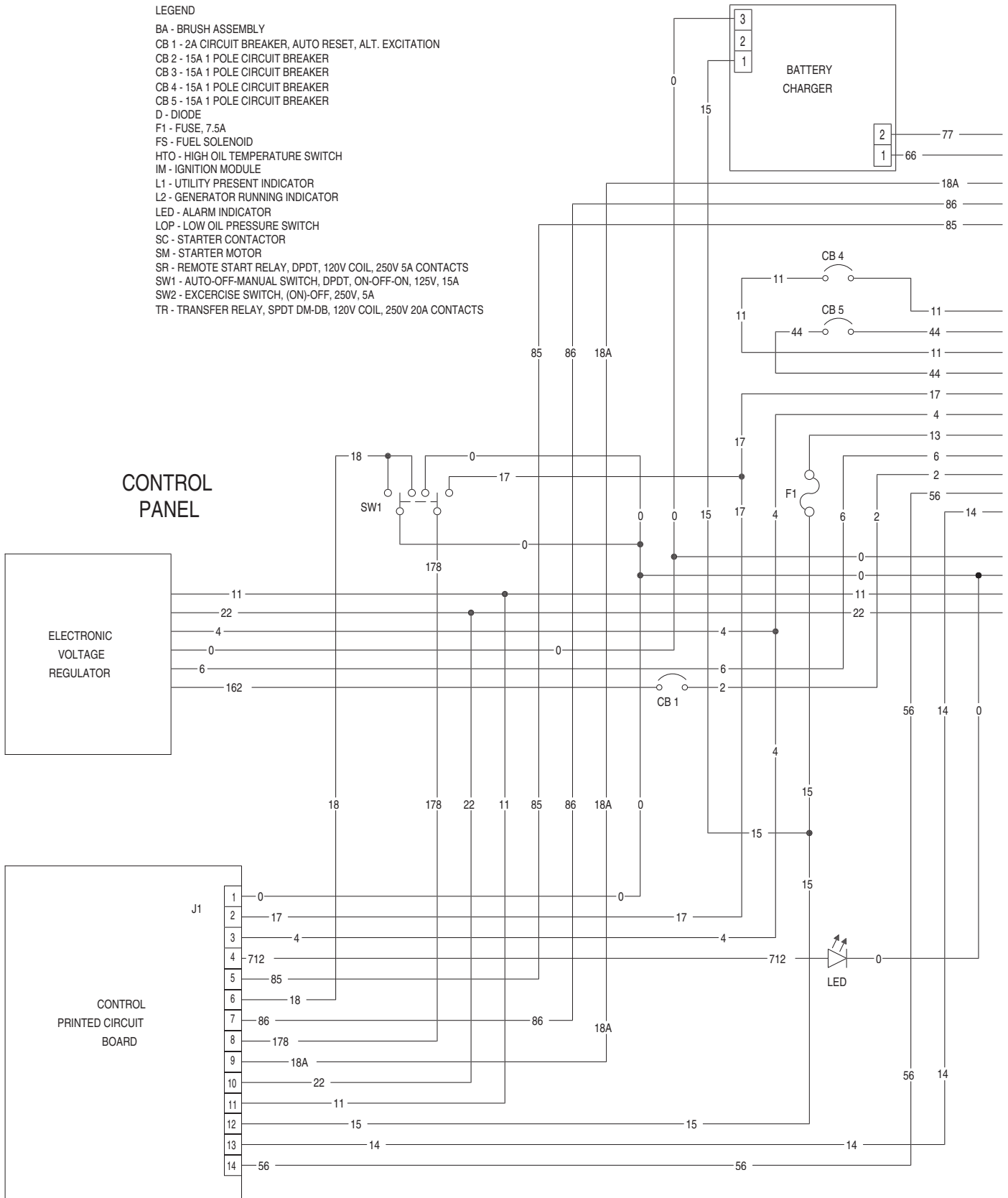




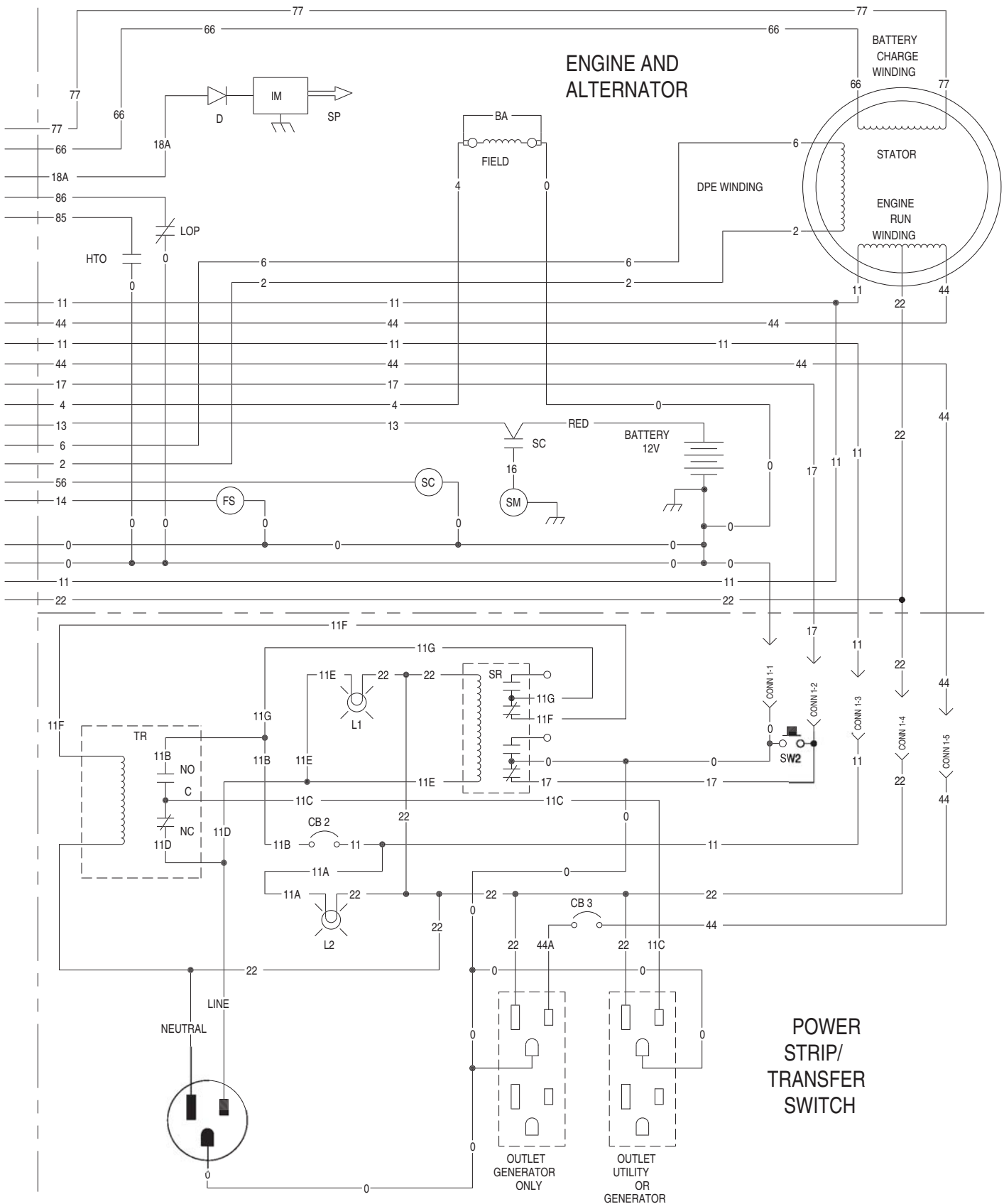
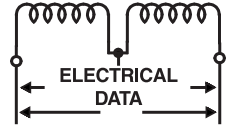
Appendix 3 – Electrical Data
CENTURION 3500 Home Standby Generator
Wiring Diagram - Drawing No. 0E6560

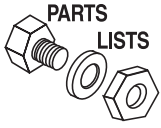
LEGEND

- BA - BRUSH ASSEMBLY
- CB 1 - 2A CIRCUIT BREAKER, AUTO RESET, ALT. EXCITATION
- CB 2 - 15A 1 POLE CIRCUIT BREAKER
- CB 3 - 15A 1 POLE CIRCUIT BREAKER
- CB 4 - 15A 1 POLE CIRCUIT BREAKER
- CB 5 - 15A 1 POLE CIRCUIT BREAKER
- D - DIODE
- F1 - FUSE, 7.5A
- FS - FUEL SOLENOID
- HTO - HIGH OIL TEMPERATURE SWITCH
- IM - IGNITION MODULE
- L1 - UTILITY PRESENT INDICATOR
- L2 - GENERATOR RUNNING INDICATOR
- LED - ALARM INDICATOR
- LOP - LOW OIL PRESSURE SWITCH
- SC - STARTER CONTACTOR
- SM - STARTER MOTOR
- SR - REMOTE START RELAY, DPDT, 120V COIL, 250V 5A CONTACTS
- SW1 - AUTO-OFF-MANUAL SWITCH, DPDT, ON-OFF-ON, 125V, 15A
- SW2 - EXERCISE SWITCH, (ON)-OFF, 250V, 5A
- TR - TRANSFER RELAY, SPDT DM-DB, 120V COIL, 250V 20A CONTACTS

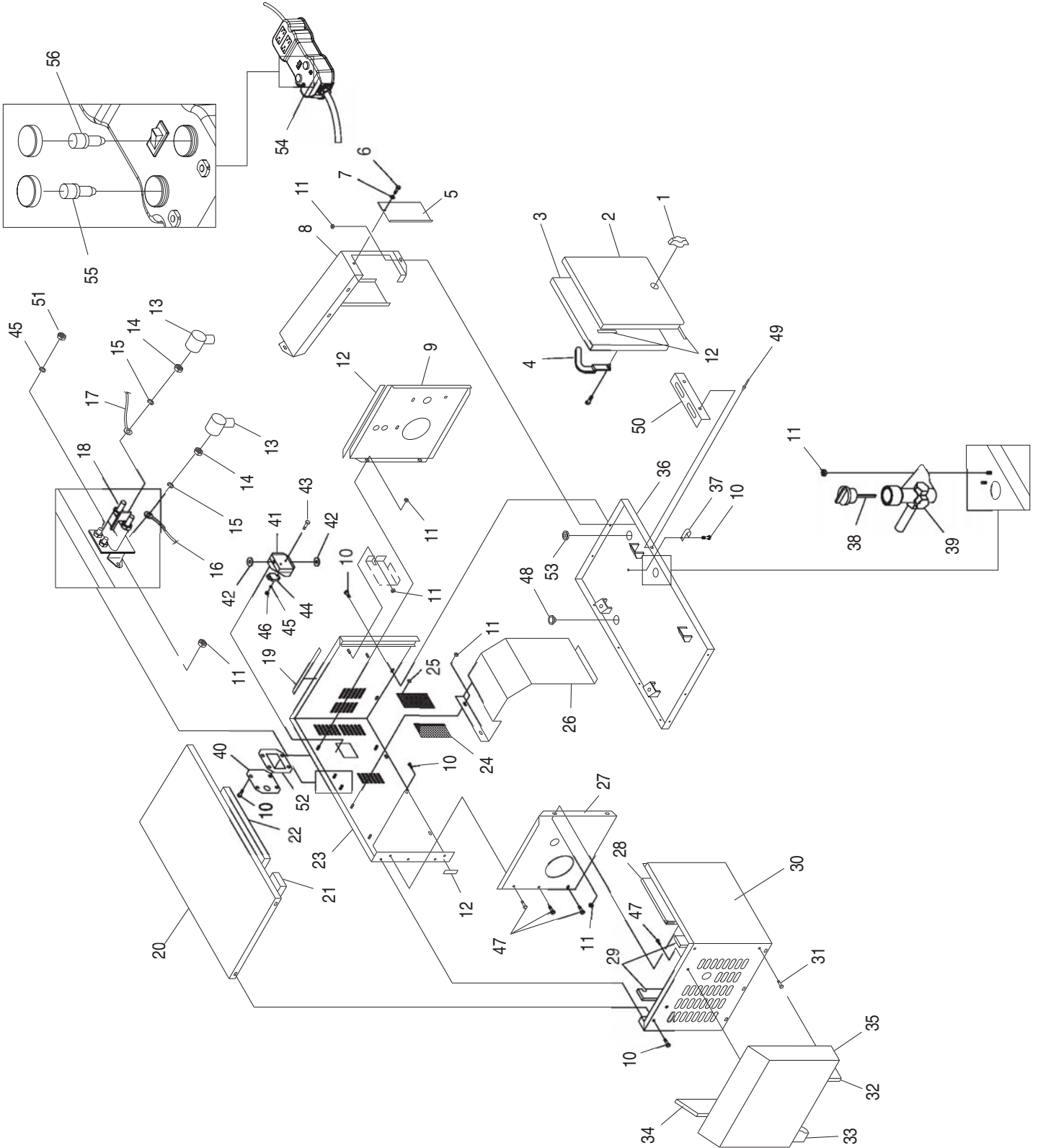


Appendix 3 – Electrical Data
CENTURION 3500 Home Standby Generator
Wiring Diagram - Drawing No. 0E6560





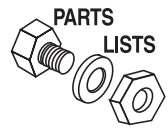
Appendix 4 – Exploded Views & Parts Lists
CENTURION 3500 Home Standby Generator
Enclosure - Drawing No. 0E2150



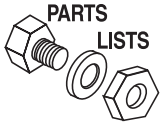
Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

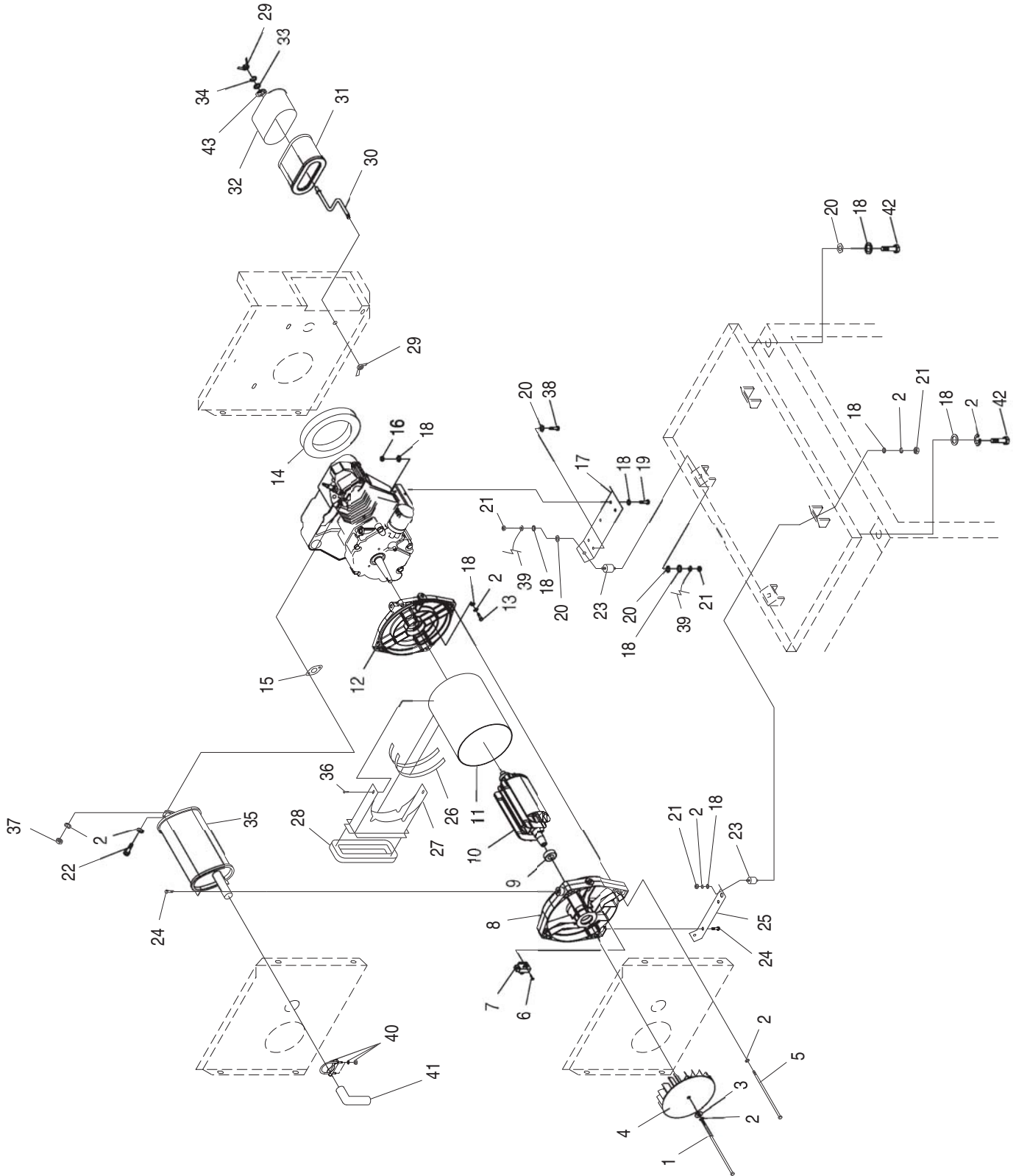
Enclosure - Drawing No. 0E2150



ITEM	PART NO.	QTY.	DESCRIPTION
1	0D3037	1	LATCH, QUARTER TURN LOCKING
2	0E2046	1	PANEL, GENERATOR ENCLOSURE DOOR
3	0E5686	1	FOAM, DOOR
4	0C7781	1	PAWL, DOOR
5	0E6551	1	PANEL AIR BOX COVER
6	064113	1	SCREW, M6-1.00 X 20MM WING
7	0A2115	1	WASHER NYLON .250"
8	0E2108	1	COMPARTMENT, AIR INTAKE
9	0E2109	1	PANEL, FRONT DIVIDER
10	0A7215	20	SCREW SW ¼"-20 X 5/8" WITH NYLON WASHER
11	0D3700	18	NUT FLANGE M6-1.0 NYLOK
12	029451	2.5	TAPE FOAM 1/8" X ½"
13	075763A	2	BOOT BATTERY CABLE
14	022127	2	NUT HEX ¼"-20
15	022097	2	WASHER LOCK M6-1/4"
16	0742600144	1	CABLE, STARTER
17	388040AL0	1	CABLE, BATTERY CONNECTION
18	086729	1	CONTACTOR, STARTER
19	029451A	8.75'	FOAM TAPE 1/16" X ½"
20	0E2047	1	PANEL, GENERATOR ENCLOSURE ROOF
21	0E5685A	1	FOAM, ROOF FAN COMPARTMENT
22	0E5685	1	FOAM, ROOF
23	0E2049	1	PANEL, GENERATOR ENCLOSURE SIDE & BACK
24	0C2506A	3	MESH, DOOR PANEL
25	0D7176	12	WASHER SELF LOCKING 1"DIA 12GA
26	0D8254	1	SHIELD, MUFFLER
27	0E2099	1	PANEL, REAR DIVIDER
28	0E5685C	1	FOAM, ENGINE COMPARTMENT FRONT
29	0E5685B	2	FOAM, FAN COMPARTMENT FRONT & BACK
30	0E2048	1	PANEL, GENERATOR ENCLOSURE SIDE
31	0E3926	2	SCREW, SHOULDER M6-1.0
32	0E5685F	1	FOAM, EXHAUST DUCT RIGHT SIDE
33	0E5685D	1	FOAM, EXHAUST DUCT BACK PANEL
34	0E5685E	1	FOAM, EXHAUST DUCT LEFT SIDE
35	0E1789	1	DUCT, AIR OUT
36	0E2050	1	TRAY, GENERATOR ENCLOSURE
37	082121C	1	CLIP-J VINYL COAT 0.625" ID
38	0E0361	1	DIPSTICK
39	0E0724A	1	ASSEMBLY OIL DRAIN
40	0E2039	1	COVER, CONNECTION ACCESS PANL
41	0E2045	1	BOX, ELEC CONNECTION
42	096021	2	GROMMET 0.75" X 0.06" X 0.50"
43	075476	2	SCREW PPHM M4-0.7 X 16MM
44	0E2110	1	BLOCK TERM 15A 6 X 5 X 1100V
45	022264	4	WASHER LOCK #8-M4
46	051715	2	NUT HEX M4-0.7
47	090388	7	SCREW HHTT M6-1.0 X 12
48	023484S	1	BUSHING SNAP
49	0A9973	2	RIVET POP 0.125" X 0.337"
50	0E4854	1	BRACKET, DOOR LATCH
51	022471	2	NUT HEX #8-32
52	0E6451	1	GASKET, CONTROL PNL ACCESS
53	0E1330	1	GROMMET, 38.1 DIA. CROSS SLIT
54	0E2043	1	POWER STRIP
55	0E7088	1	LED, GREEN
56	0E7088A	1	LED, WHITE



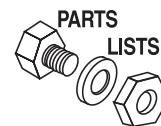
Appendix 4 – Exploded Views & Parts Lists
CENTURION 3500 Home Standby Generator
Generator - Drawing No. 0E2151-A



Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

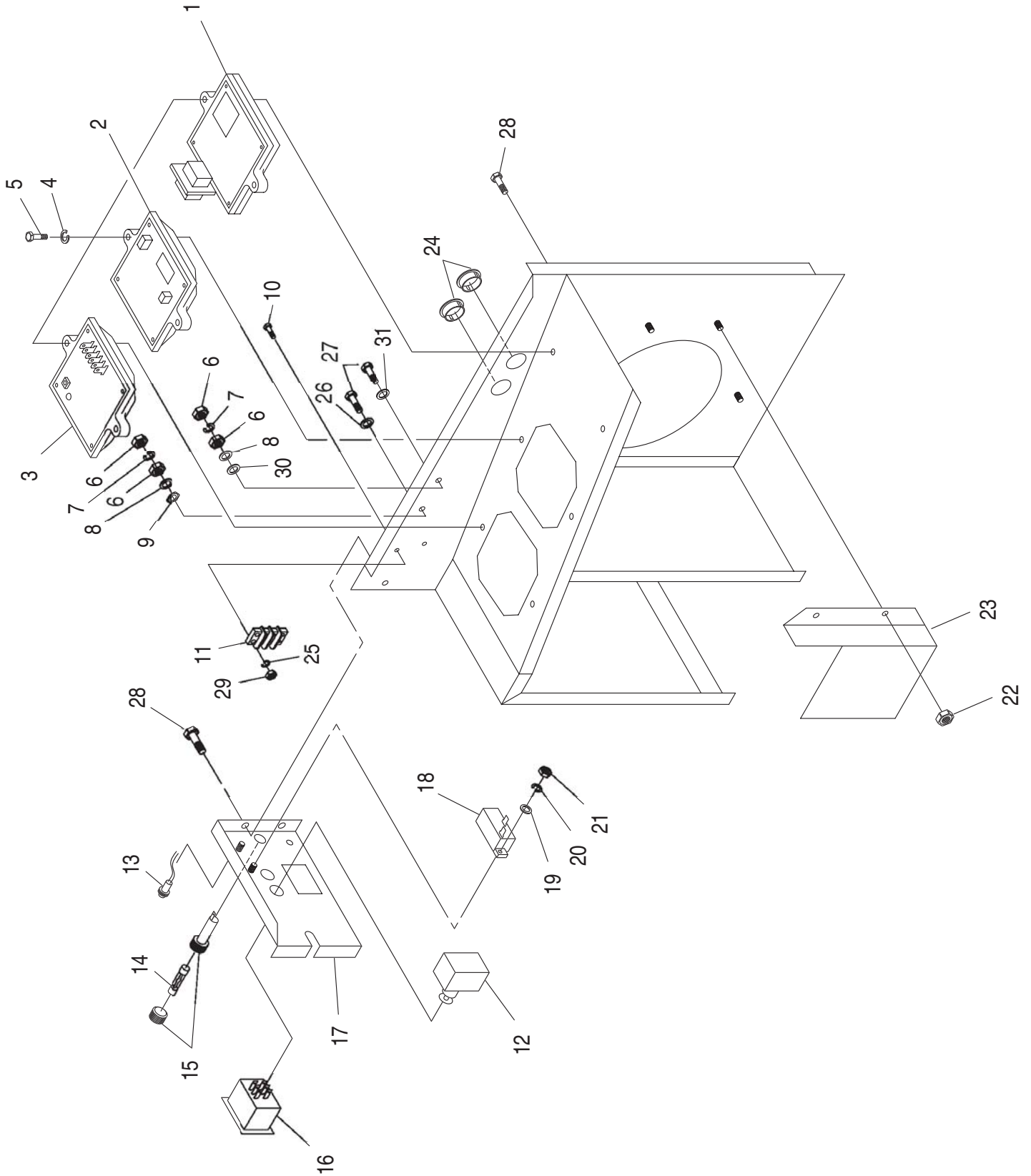
Generator - Drawing No. 0E2151-A



ITEM	PART NO.	QTY.	DESCRIPTION
1	050322	1	SCREW IHHC 5/16"-24 X 9-3/4"
2	022129	16	WASHER LOCK M8-5/16"
3	049451	1	WASHER FLAT .406" I.D. X 1.62" O.D.
4	0C8096A	1	FAN, 8" CURVE BLADE, 16.5MM I.D.
5	0D8120	4	SCREW IHHC M8-1.25 X 260MM
6	066849	2	SCREW HHTT M5-0.8 X 16MM
7	066386	1	ASSEMBLY, BRUSH HOLDER
8	0D4217	1	CARRIER, REAR BEARING
9	073159	1	BEARING
10	0E2089H	1	ROTOR
11	0E2101H	1	STATOR
12	0D4216	1	ADAPTOR, ENGINE
13	048614	4	SCREW HHC 5/16"-24 X 3/4"
14	0D2588A	1	GASKET, FRONT DIVIDER
15	089476	1	GASKET, EXHAUST
16	027028	4	NUT LOCK HEX 5/16"-18 NYLON INSERT
17	0D6832	1	BRACKET, ENGINE MOUNTING
18	022145	19	WASHER FLAT 5/16"
19	030231	3	SCREW HHC 5/16"-18 X 1-1/2"
20	0C3168	4	5/16" SPECIAL LOCK WASHER
21	022259	8	NUT HEX 5/16"-18
22	0C8565	1	SCREW SHC M8-1.25 X 18MM
23	0D8048	4	VIBRATION MOUNT
24	083512	6	SCREW HHTT M8-1.2 X 16MM
25	0D6831	1	BRACKET, ALTERNATOR MOUNTING
26	029451	2.14'	TAPE ELEC. UL FOAM 1/8" X 1/2"
27	0E2098	1	DUCT, ALTERNATOR AIR IN
28	0D2558	1	GASKET, ALTERNATOR DUCT
29	087680	2	NUT WING M6-1.0
30	0D7530	1	STUD, M6-1.0 OFFSET
31	0D9723	1	ELEMENT, AIR FILTER
32	0D4511	1	PRECLEANER, AIR
33	0D8451	1	WASHER FLAT .281" I.D. X 1.50" O.D.
34	022097	1	WASHER LOCK M6-1/4"
35	0E2044	1	MUFFLER
36	090388	2	SCREW HHTT M6-1.0 X 12MM
37	045771	1	NUT, HEX M8-1.25
38	022531	1	SCREW HHC 5/16"-18 X 1-3/4"
39	0C2417A	1	EARTH STRAP 3/8" X 3/8"
40	025145	1	BOLT U 5/16"-18 X 1.25" WITH SADDLE
41	0E2138	1	TAILPIPE
42	022142	4	SCREW HHC 5/16"-18 X 3/4"
43	0D8981	1	FILTER GASKET



Appendix 4 – Exploded Views & Parts Lists
CENTURION 3500 Home Standby Generator
Control Panel - Drawing No. 0E2152-A



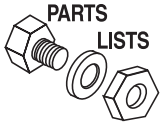
Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

Control Panel - Drawing No. 0E2152-A



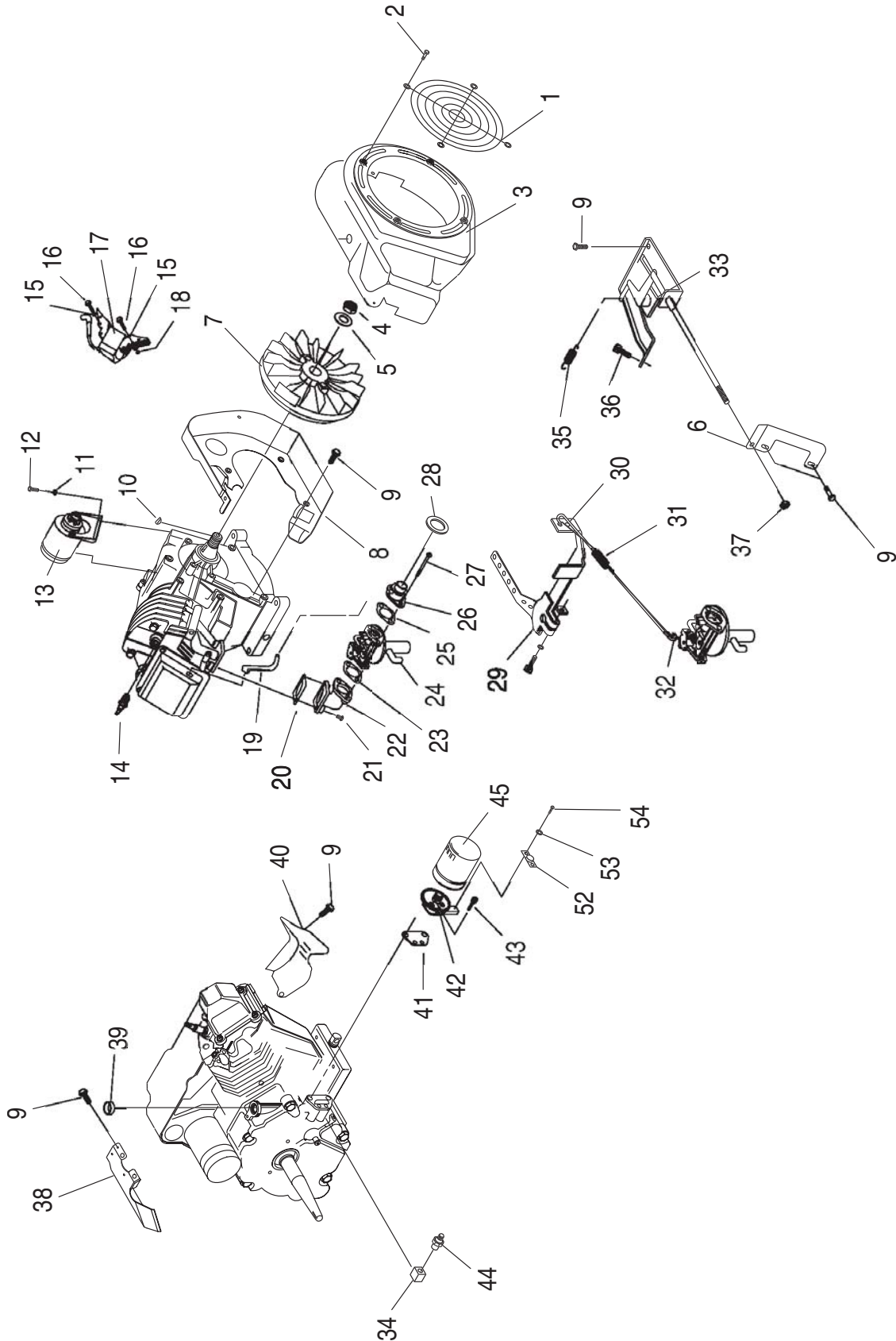
ITEM	PART NO.	QTY.	DESCRIPTION
1	0E4914	1	PCB CONTROL ASSEMBLY
2	0E8331	1	BATTERY CHARGER ASSEMBLY
3	083049	1	VOLTAGE REGULATOR
4	049226	6	WASHER LOCK M5
5	075235	6	SCREW HHC M5-0.8 X 30MM
6	049813	4	NUT HEX M6 X 1.0
7	022097	2	WASHER LOCK M6-1/4"
8	022473	2	WASHER FLAT 1/4"-M6
9	0A1658	1	WASHER LOCK SPECIAL 1/4"
10	075476	2	SCREW PPHM M4-0.7 X 16MM
11	048766	1	TERMINAL STRIP, 2 POSITION
12	0E5840	2	CIRCUIT BREAKER 15A PUSH/PULL MAIN RESET
13	0E2042	1	INDICATOR LIGHT
14	0A9611	1	FUSE AGC-7.5A
15	032300	1	FUSE HOLDER
16	0E4494	1	SWITCH ROC DPDT ON-OFF-ON
17	0E5103	1	CONTROL PANEL FRONT
18	057159	1	CIRCUIT BREAKER, DPE
19	031879	2	WASHER FLAT #4
20	043182	2	WASHER LOCK M3
21	051714	2	NUT HEX M3-0.5
22	0D3700	3	NUT FLANGE M6-1.0 NYLOK
23	0E4584	1	BAFFLE, ENGINE INTAKE
24	023484R	2	SNAP BUSHING, 1.25"
25	022264	2	WASHER LOCK #8-M4
26	0D5303	1	WASHER FLAT 0.25" I.D. X 1.00" O.D. ZINC
27	049721	2	SCREW HHC M6-1.0 X 35MM
28	090388	4	SCREW HHTT M6-1.0 X 12MM
29	051715	2	NUT HEX M4-0.7
30	0E6553	1	ISOLATOR/SHOULDER WASHER NYLON
31	0E6553A	1	WASHER NYLON 0.50" X 0.32" X 0.12"



Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

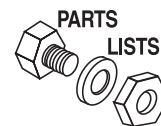
Gn-220 H/SH Engine - Drawing No. 0E2153-A Part 1



Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

Gn-220 H/SH Engine - Drawing No. 0E2153-A Part 1

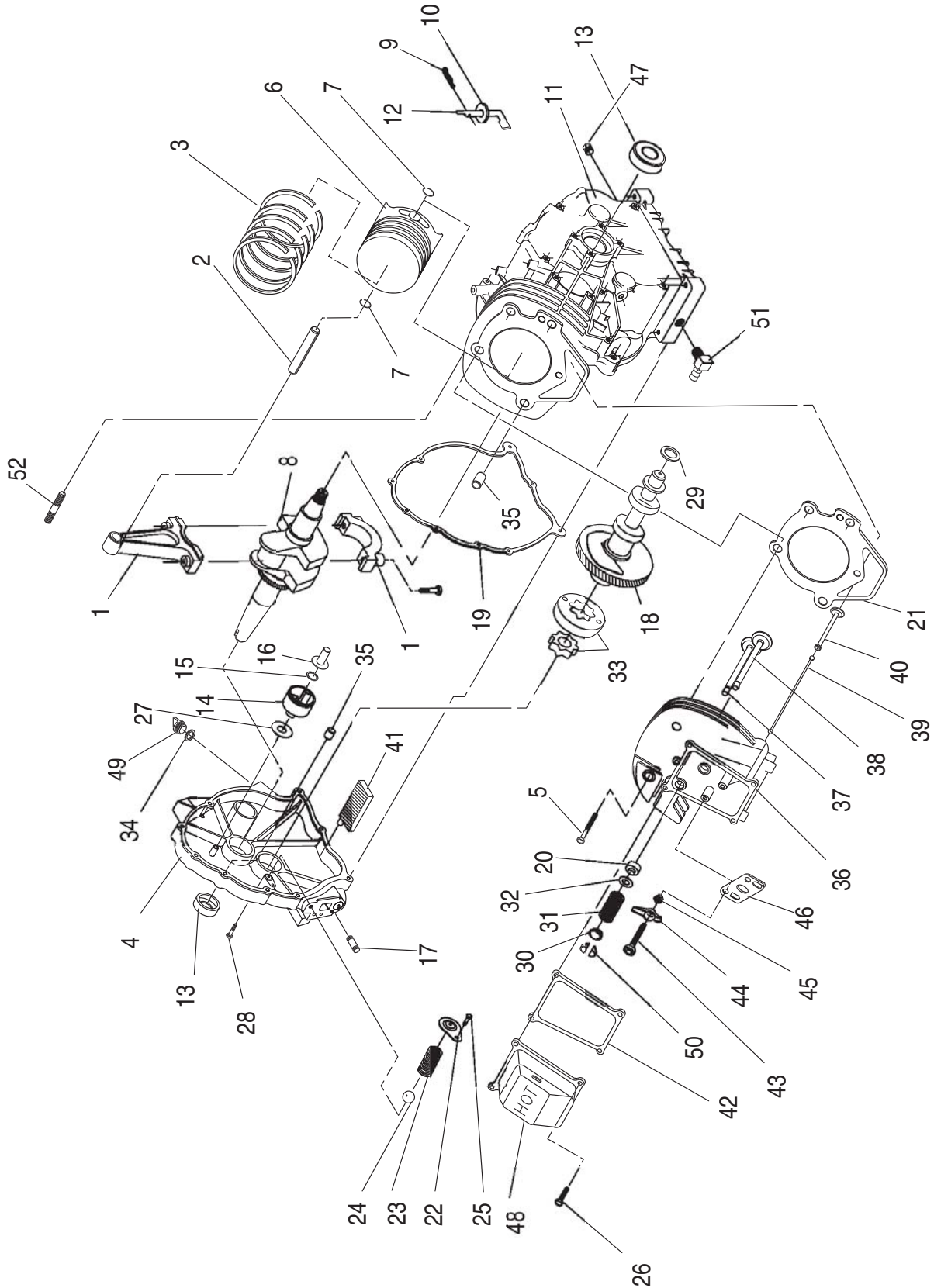


ITEM	PART NO.	QTY.	DESCRIPTION
1	0D8433	1	GUARD, FAN
2	0C1069	10	SCREW, HHTT M6-1.0 X 8MM
3	090695F	1	BLOWER HOUSING
4	081810	1	NUT, HEX M16-1.5
5	083312	1	WASHER, M16 CONICAL
6	0E2091	1	BRACKET, GOV SPEED ADJUST
7	0C8917D	1	FLYWHEEL, WITH RING GEAR
8	0C8798A	1	BACKPLATE, ELECTRIC START
9	045756	9	SCREW HHTT M6-1.0 X 10MM
10	082774	1	KEY, WOODRUFF 4 X 19D
11	022129	2	5/16"-M8 LOCK WASHER
12	081990	2	SCREW SHC M8-1.25 X 40MM
13	0D9004A	1	STARTER ASSEMBLY
14	072347	1	SPARKPLUG
15	022097	2	LOCKWASHER, 1/4"- M6
16	082981	2	TAPTITE, M6-1.0 X 30MM
17	081675	1	ASSEMBLY, IGNITION COIL
18	0C2018	2	WASHER
19	0D7666	1	BREATHER TUBE
20	090051	1	GASKET, MANIFOLD/ HEAD
21	080316	2	SCREW HHFC M6-1.0 X 30MM
22	090948	1	INTAKE MANIFOLD
23	078631	1	GASKET CARBURETOR/MANIFOLD
24	0E2094	1	CARBURETOR
25	091846	1	GASKET, CARB/ ADAPTOR
26	0D7558	1	ADAPTOR, CARB
27	078643	2	BOLT, CARB MOUNT M6-1.0 X 75MM
28	0D8372	1	GASKET, CARB TO AIRBOX
29	0C2756	1	ASSEMBLY, GOVERNOR LEVER
30	0D7458	1	ROD, GOVERNOR
31	0C3979	1	SPRING, ANTI LASH
32	085953	1	WASHER, CARB WEAR
33	0D8739A	1	ASSEMBLY BRACKET GOVERNOR ADJUST
34	0D9689	1	ELBOW 90D STREET 1/8NPT
35	0E7019	1	SPRING, GOVERNOR
36	083512	1	SCREW HHTT M8-1.2 X 16MM
37	082025	1	NUT HEX LOCK M5-0.8 NYLOCK
38	092984	1	TOP WRAPPER
39	094820	1	PLUG, EXPANSION
40	089739	1	LOWER WRAPPER
41	091848	1	GASKET, OIL PSI PAD
42	0D8778	1	ADAPTER, OIL FILTER
43	0D8803	2	SCREW SHC M6-1.0 X 22MM
44	0A8584	1	SWITCH, OIL- 10 PSI
45	070185	1	FILTER, OIL
52	075281	1	SWITCH, THERMAL 284F
53	043182	2	WASHER LOCK M3
54	0C1085	2	SCREW PPHM M3-0.5 X 8MM

Appendix 4 – Exploded Views & Parts Lists

CENTURION 3500 Home Standby Generator

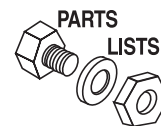
Gn-220 H/SH Engine - Drawing No. 0E2153-A Part 2



Appendix 4 – Exploded Views & Parts Lists

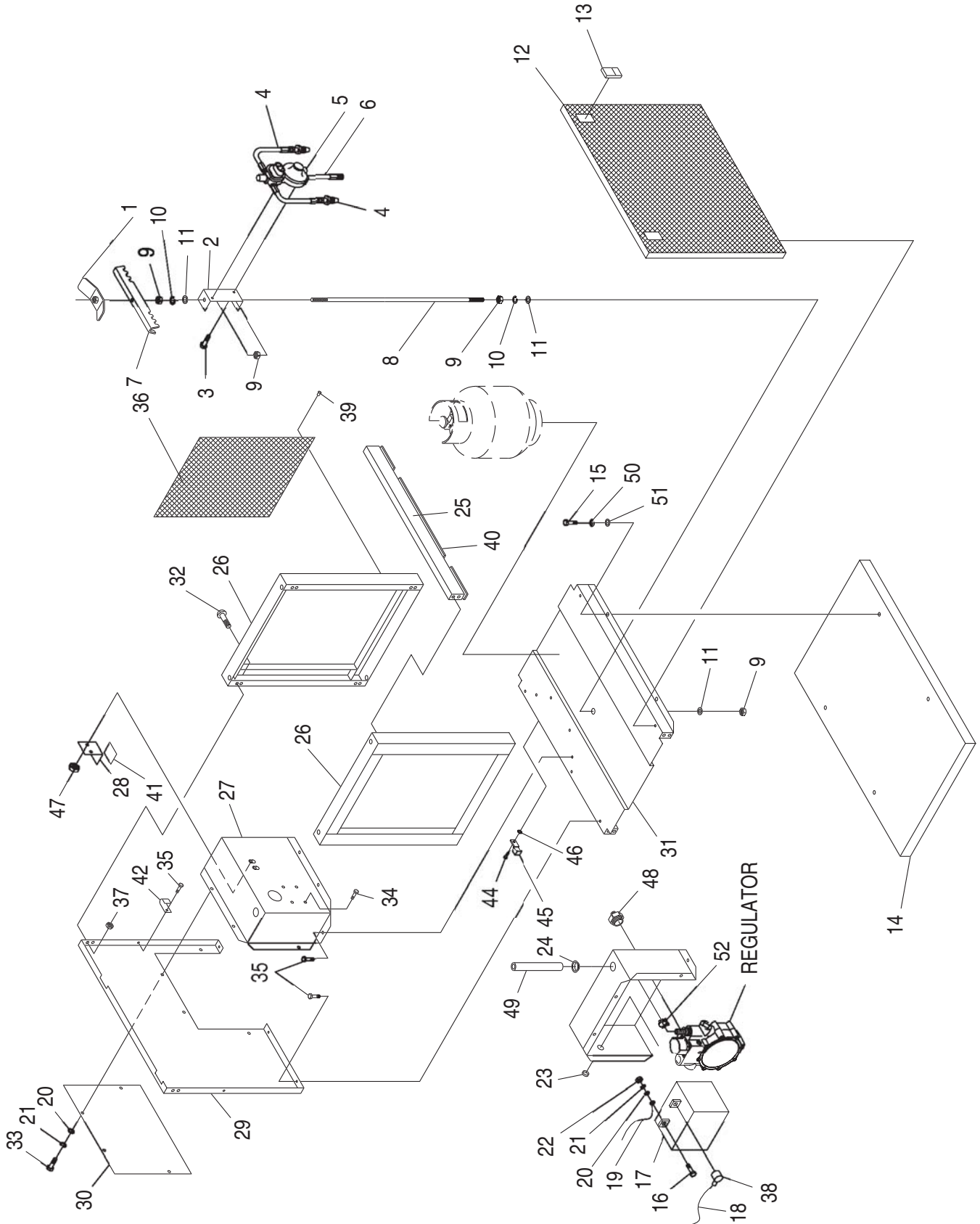
CENTURION 3500 Home Standby Generator

Gn-220 H/SH Engine - Drawing No. 0E2153-A Part 2



ITEM	PART NO.	QTY.	DESCRIPTION
N/A	0E7400	1	LONG BLOCK ASSEMBLY
1	078621	1	CONNECTING ROD ASSEMBLY
2	076389	1	PISTON PIN
3	088411	1	PISTON RING SET
4	0A8897B	1	GEAR COVER ASSEMBLY
5	077168	5	M8 X 56MM HEAD BOLT
6	088057	1	PISTON
7	076390	2	PIN RETAINER RING
8	083337A	1	TAPERED CRANKSHAFT ASSEMBLY
9	078658	1	GOVERNOR "R" PIN
10	078659	1	GOVERNOR ARM THRUST WASHER
11	089213E	1	CRANKCASE ASSEMBLY
12	0A7637	1	GOVERNOR ARM
13	0E3811	2	OIL SEAL
14	0D1303	1	GOVERNOR GEAR ASSEMBLY
15	078645	1	GOVERNOR GEAR C-RING
16	0A7811	1	GOVERNOR SPOOL
17	072683A	1	1/8" NPT PIPE PLUG
18	0A9878	1	CAMSHAFT ASSEMBLY
19	089096	1	CRANKCASE GASKET
20	088156	1	VALVE STEM SEAL
21	0A8822	1	CYLINDER HEAD GASKET
22	078691	1	OIL PRESSURE RELIEF COVER
23	0A5772	1	OIL PRESSURE SPRING
24	0A5776	1	11/32" BALL
25	074908	1	M5 FORM SCREW
26	078606	4	M6-1.0 X 12MM SCREW
27	076361	1	GOVERNOR GEAR THRUST WASHER
28	0D2414	6	SCREW, HHFC M8-1.25 X 35MM
29	099922	1	SPRING WASHER
30	0C3733	2	VALVE RETAINER
31	0C4390	2	VALVE SPRING
32	084186	2	VALVE SPRING WEAR WASHER
33	083192	1	GEROTER SET
34	0E0057	1	"O" RING
35	078699B	4	SLEEVE, SEAM DWL
36	021705B	1	CYLINDER HEAD ASSEMBLY
37	0C3590	1	EXHAUST VALVE
38	0C3591	1	INTAKE VALVE
39	0D9853A	2	PUSH ROD
40	083235	2	TAPPET
41	080336	1	OIL PICK-UP ASSEMBLY
42	0C8754	1	ROCKER COVER GASKET
43	077161	2	PIVOT BALL STUD
44	077160	2	GN- 191/220 ROCKER ARM
45	076307	2	ROCKER ARM JAM NUT
46	088403	1	PUSH ROD GUIDE PLATE
47	026073A	1	1/4" NPT PIPE PLUG
48	088412C	1	ROCKER COVER ASSEMBLY
49	076329	1	PLASTIC OIL FILL PLUG
50	0C3592	4	VALVE SPRING KEEPER
51	049340A	1	BARBED ELBOW 90 1/4" NPT X 3/8"
52	045761A	1	STUD M8-1.25 / 10MM X 30MM

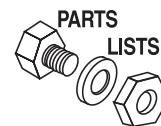
Appendix 4 – Exploded Views & Parts Lists
CENTURION 3500 Home Standby Generator
Tank Enclosure - Drawing No. 0E2154-A



Appendix 4 – Exploded Views & Parts Lists

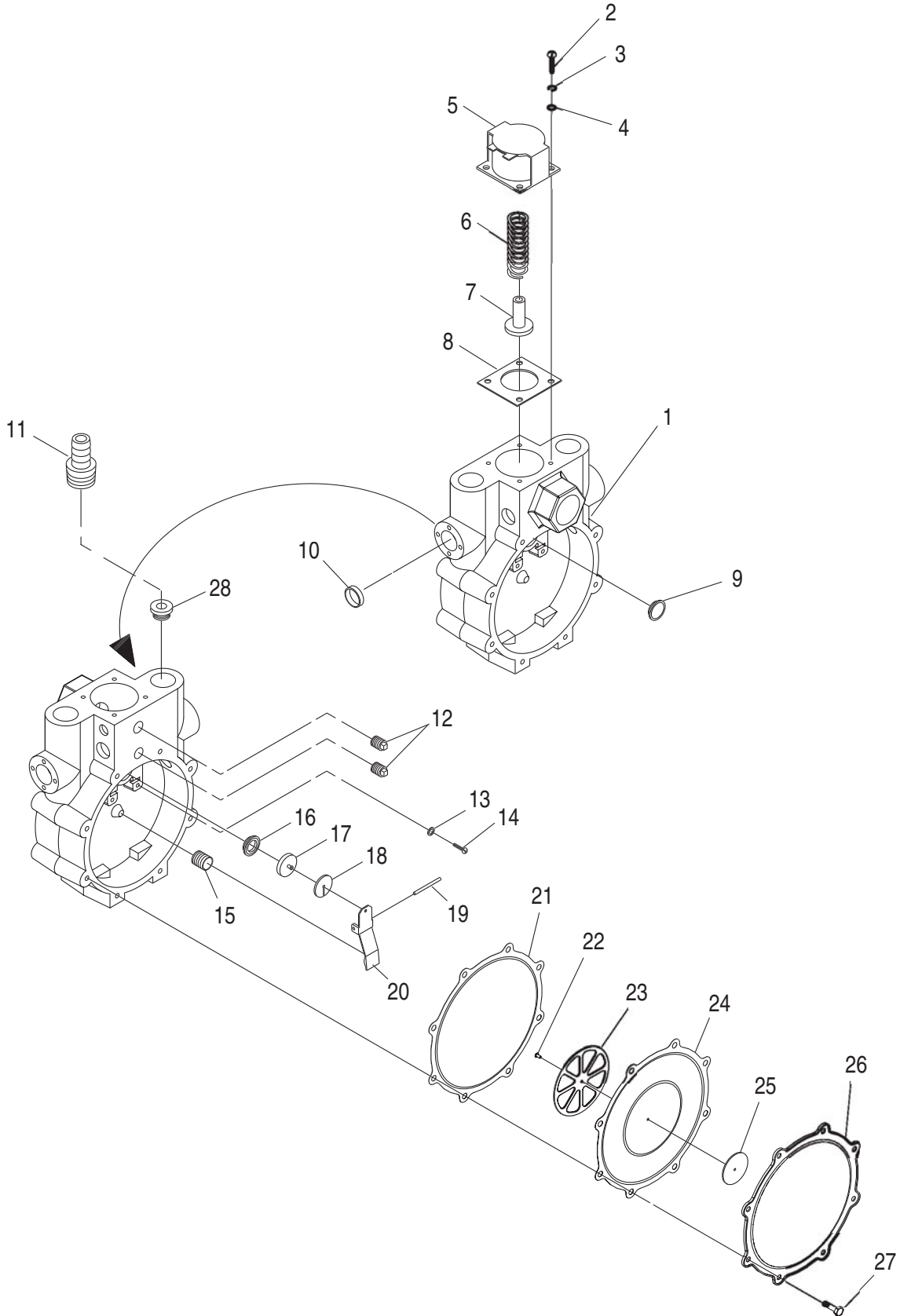
CENTURION 3500 Home Standby Generator

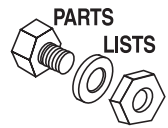
Tank Enclosure - Drawing No. 0E2154-A



ITEM	PART NO.	QTY.	DESCRIPTION
1	0A6111	1	HOLD DOWN SPIN WITH NUT
2	0E2132	1	BRACKET, REGULATOR ASSEMBLY
3	022774	2	SCREW PPH #8-32 X 3/8"
4	0E4112	2	FUEL LINE (TANK TO REGULATOR)
5	0A6101	1	REGULATOR ASSEMBLY
6	0E4113	1	FUEL LINE (REGULATOR TO REGULATOR)
7	0A6110	1	DUAL TANK HOLD DOWN
8	0E2040	1	RETAINING ROD
9	022241	4	NUT HEX 3/8"-16
10	022237	4	WASHER LOCK 3/8"
11	022131	7	WASHER FLAT 3/8"
12	0E2061	1	DOOR, TANK ENCLOSURE
13	0C5644	2	SLIDE LATCH, FLUSH
14	0E2041A	1	MOUNTING PAD
15	030795	4	SCREW HHC 5/16"-18 X 1"
16	022287	2	SCREW HHC 1/4"-20 X 3/4"
17	0E2090	1	BATTERY
18	0388040ALO	1	BATTERY CABLE (POSITIVE)
19	0388050AGO	1	BATTERY CABLE (NEGATIVE)
20	022473	6	WASHER FLAT 1/4"- M6
21	022097	6	WASHER LOCK M6-1/4"
22	022127	2	NUT HEX 1/4"-20
23	023484D	2	BUSHING SNAP
24	0E1330	1	GROMMET
25	0E3199	1	TOP RAIL, FUEL ENCLOSURE
26	0E1788	2	MOUNTING FRAME ASSEMBLY LP ENCLOSURE
27	0E3163	1	BOX, BATTERY & REGULATOR
28	0C8285	1	BRACKET, BATTERY HOLD DOWN
29	0E2038	1	PANEL, TANK ENCLOSURE BACK
30	0E3164	1	COVER, BATTERY & REG BOX
31	0E1805	1	TRAY, TANK ENCLOSURE
32	022142	16	SCREW HHC 5/16"-18 X 3/4"
33	047411	4	SCREW HHC M6-1.0 X 16MM
34	045764	4	SCREW HHTT M4-0.7 X 8MM
35	090388	9	SCREW HHTT M6-1.0 X 12MM
36	0E2066	2	PANEL, TANK ENCLOSURE SIDE
37	027028	16	NUT LOCK HEX 5/16-18
38	075763	1	BOOT BATTERY CABLE
39	0A9973	16	RIVET POP 0.125" X 0.337"
40	029451	2 FT	FOAM TAPE
41	0D3167	1	GASKET, BATTERY HOLD DOWN
42	082121C	1	CLIP-J VINYL COAT 0.625" I.D.
43	0C7649	2	CLAMP HOSE 0.38"-0.87"
44	092079	1	SCREW HHTT M6-1.0 X 25MM
45	055414	1	LUG SLDLSS #2-#8 X 17/64"
46	0A1658	1	WASHER LOCK SPECIAL 1/4"
47	0D3700	2	NUT FLANGE M6-1.0 NYLOK
48	0E4170	1	CONN 3/4"NPT - 3/8" 45D BRASS
49	047290	2.3 FT	HOSE 3/8" I.D.
50	022129	4	WASHER LOCK M8-5/16
51	022145	4	WASHER FLAT 5/16-M8
52	0C7649	1	CLAMP HOSE 0.38"-0.87"

Appendix 4 – Exploded Views & Parts Lists
CENTURION 3500 Home Standby Generator
Gas Regulator - Drawing No. 0E3924



Appendix 4 – Exploded Views & Parts Lists**CENTURION 3500 Home Standby Generator****Gas Regulator - Drawing No. 0E3924**

ITEM	PART NO.	QTY.	DESCRIPTION
1	0D5694	1	CASTING, TWIN REGULATOR HOUSING
2	075475	4	SCREW PPHM M4-0.7 X 10
3	022264	4	WASHER LOCK #8-M4
4	043180	4	WASHER FLAT M4
5	0C5765	1	SOLENOID, TWIN REGULATOR
6	0C6070	1	SPRING-SOLENOID PLUNGER
7	0C4680	1	PLUNGER LP REG. ASSY
8	0C4647	1	GASKET, SOLENOID
9	0C4643	1	INLET, TWIN REGULATOR NO HOLE
10	0D3973	1	PLUG, EXPANSION 16MM TWINREG
11	0D7020A	1	BARBED STR 1/2NPT X 3/8" W/V/S
12	026073	2	PLUG STD PIPE 1/8 STEEL SQ HD
13	0D3308	2	WASHER FLAT 3.2MM ID X 10MM OD
14	070728	2	SCREW PFILHM M3-0.5 X 5
15	0C5764A	1	SPRING, REGULATOR
16	0C4643A	1	INLET, TWIN REG 11.11 DIA.
17	0C6066	1	SEAL, INLET REGULATOR
18	0C5968	1	SUPPORT, INLET SEAL
19	0C5759	1	PIN, PIVOT ARM
20	0C5761	1	LEVER, REGULATOR
21	0C6069	1	GASKET, DIAPHRAGM
22	0C6731	1	RIVET .118 X .125 ALUMINUM
23	0C6067	1	SUPPORT, DIAPHRAGM
24	0C4706	1	DIAPHRAGM, TWIN REGULATOR
25	0C6068	1	CAP, DIAPHRAGM SUPPORT
26	0C5762	1	COVER, TWIN REGULATOR
27	045764	8	SCREW HHTT M4-0.7 X 8 BP
28	0C5760	1	JET LP



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 engine.* New utility, and lawn and garden equipment 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 engine for the periods of time listed below provided there has been no abuse, neglect, unapproved modification or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor, ignition and exhaust systems. Generac will repair your engine at no cost to you for diagnosis, replacement parts and labor, should a warrantable condition occur.

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

Emissions control systems on 1997 and later model year engines are warranted for two years as hereinafter noted. If, during such 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 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 on your engine. However, Generac cannot deny warranty solely because of the lack of receipts or for your failure to ensure the completion of all scheduled maintenance.

As the engine purchaser/owner, you should, however, be aware that Generac may deny any and/or all warranty coverage or responsibility if your 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.

You are responsible for presenting your engine to 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 California and federal 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 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 Warranty describe important rights and obligations with respect to your new 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 the sale to the original purchaser/owner. The purchaser/owner shall be responsible for any expenses or other charges incurred for service calls and/or transportation of the product to/from the inspection or repair facilities. The purchaser/owner also shall be responsible for any and/or all damages or losses incurred while the engine is being transported/shipped for inspection or warranty repairs.

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.
P.O. BOX 297
WHITEWATER, WI 53190**



EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty (ECS Warranty) for 1997 and later model year engines:

- (a) Applicability: This warranty shall apply to 1997 and later model year engines. The ECS Warranty Period 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 24 consecutive months thereafter.
- (b) General Emissions Warranty Coverage: Generac warrants to the original, end-use purchaser/owner of the new engine or equipment, and to each subsequent purchaser/owner, that each of its engines 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 emissions-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 only pertains to emissions-related parts on your 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 or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at 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 emission-related part covered by the ECS Warranty.
 - (7) Throughout the ECS Warranty Period, Generac shall maintain a supply of warranted emission-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 purchaser/owner. Such use shall 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 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 engine caused by the use of such an unapproved, add-on, modified, counterfeit and/or 'grey market' part.

EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

- | | |
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| <ol style="list-style-type: none">1) Fuel Metering System:<ol style="list-style-type: none">1.1) Gasoline carburetor assembly and its internal components (if so equipped).<ol style="list-style-type: none">a) Fuel filter (if so equipped)b) Carburetor gasketsc) Fuel pump (if so equipped)1.2) LPG carburetion assembly and its internal components (if so equipped).<ol style="list-style-type: none">a) Fuel controller (if so equipped)b) Mixer and its gaskets (if so equipped)c) Carburetor and its gaskets (if so equipped)d) Primary gas regulator (if so equipped)e) LP liquid vaporizer (if so equipped) | <ol style="list-style-type: none">2) Air Induction System including:<ol style="list-style-type: none">a) Intake pipe/manifoldb) Air cleaner3) Ignition System including:<ol style="list-style-type: none">a) Spark plugb) Ignition module4) Catalytic Muffler Assembly (if so equipped) including:<ol style="list-style-type: none">a) Muffler gasketb) Exhaust manifold5) Crankcase Breather Assembly including:<ol style="list-style-type: none">a) Breather connection tube |
|--|--|

*Generac engine types covered by this warranty statement include the following:

- 1) Utility
- 2) Lawn and Garden Equipment
- 3) Recreational Vehicle (RV) Generator
- 4) Industrial Mobile (IM) Generator



Appendix 5 – Warranty

CENTURION 3500 Home Standby Generator

GENERAC POWER SYSTEMS "TWO YEAR" STANDARD WARRANTY FOR "PREPACKAGED EMERGENCY AUTOMATIC STANDBY GENERATORS"

For a period of two years from the date of original sale, 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 Dealer, is found to be defective under normal use and service, in accordance with the warranty schedule set forth below. Any equipment that the purchaser/owner claims to be defective must be returned to and examined by the nearest Generac Authorized Warranty Service Dealer. This warranty applies only to Generac prepackaged emergency automatic standby generators sold and rated for use in "Standby" applications.

WARRANTY SCHEDULE

YEARS ONE and TWO - 100% (one hundred percent) transferable coverage on Labor and Part(s) listed (proof of purchase and maintenance is required):

- Engine - All Components
- Alternator - All Components
- Transfer System - All Components

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

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

- Generac/Centurion generators that utilize non-Generac/Centurion replacement parts.
- Generac/Centurion generators utilizing non-Generac/Centurion transfer switches.
- Any Generac/Centurion generators used as rental or trailer mounted applications.
- Units used for prime power in place of existing utility power where utility power is present or in place of utility power where utility power service does not normally exist.
- Costs of normal maintenance, adjustments, installation and start-up.
- Failures caused by any contaminated fuels, oils, coolants or lack of proper fluid amounts.
- Failures due, but not limited, to normal wear and tear, accident, misuse, abuse, negligence or improper installation. As with all mechanical devices, the Generac engines need periodic part(s) service and replacement to perform well. This warranty will not cover repair when normal use has exhausted the life of a part(s) or engine.
- 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.
- Damage related to rodent or insect infestation.
- 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, cellular phone, facsimile, internet access or other communication expenses.
- Expenses related to "customer instruction" or troubleshooting where no manufacturing defect is found.
- Rental equipment used while warranty repairs are being performed.
- Costs incurred for equipment used for removal and/or reinstallation of generator, (i.e., cranes, hoists, lifts, etc.)
- 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.

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

GENERAC® POWER SYSTEMS, INC.

P.O. BOX 297 • WHITEWATER, WI 53190