

# OWNER'S Manual

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Series NP-50G

## AIR-COOLED RECREATIONAL VEHICLE GENERATOR

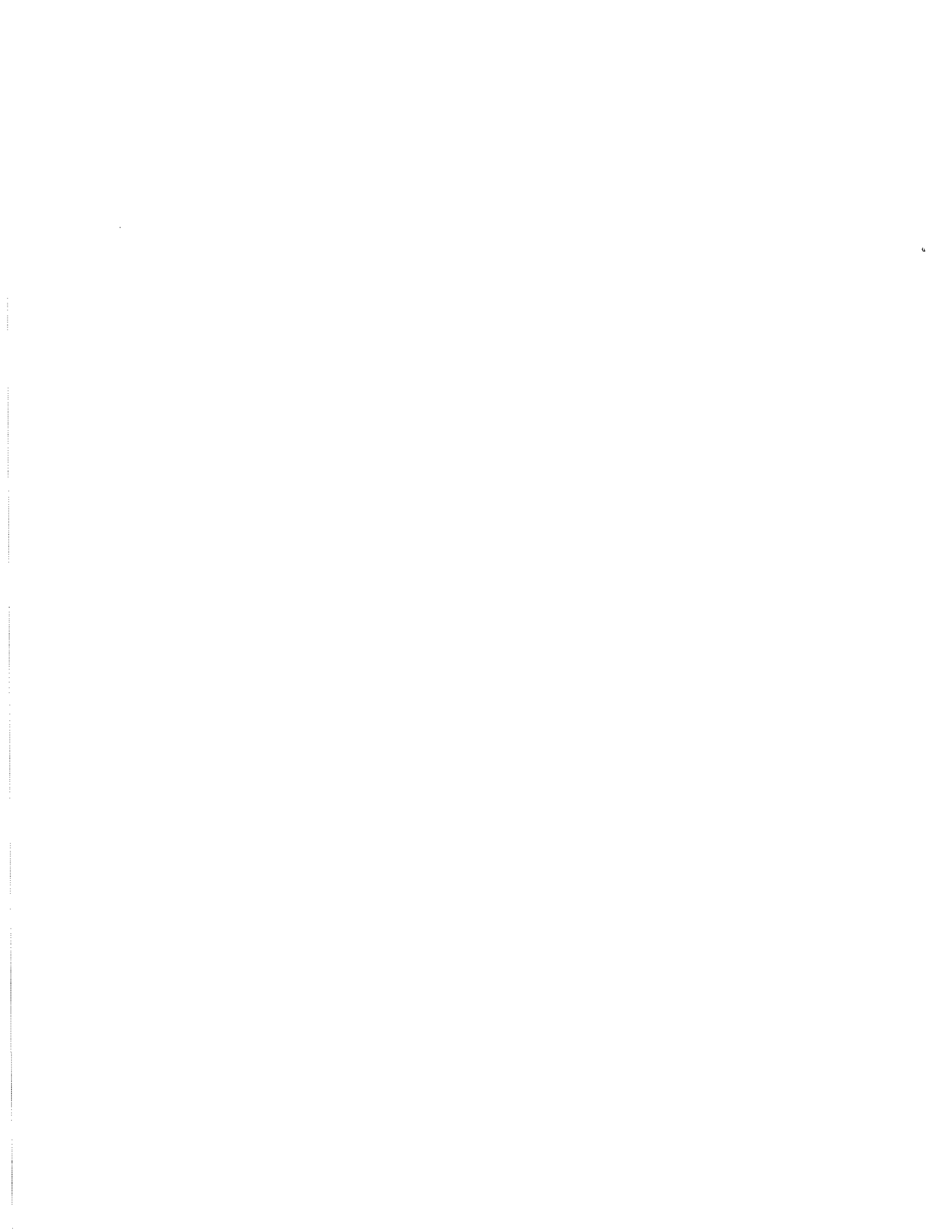
Model No. 9712-3

**GENERAC**  

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**C O R P O R A T I O N**  

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# GENERAL SAFETY RULES

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.

*Study these SAFETY RULES carefully before operating or servicing applicable equipment. Become familiar with this Owner's Manual and with your generator. Safe, efficient and reliable operation can only be achieved if generator is properly installed, operated and maintained. Many accidents are caused by failing to follow simple and fundamental rules or precautions. The manufacturer suggests that these GENERAL SAFETY RULES be copied and posted in potential hazard areas of the recreational vehicle. Safety should be stressed to all operators and potential operators of equipment.*

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

- For fire safety, the recreational vehicle generator must be properly installed and maintained. Installation must always remain in compliance with applicable codes and standards. In addition, the generator must be installed in conformance to the manufacturer's detailed installation instructions. Following installation, nothing must be done that might render the generator in noncompliance with such codes, standards and instructions.

## ! WARNING: !

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

- The RV generator produces extremely high and dangerous electrical voltages and can cause dangerous, and possibly fatal, electrical shock. Avoid contact with bare wires, terminals, etc. while the unit is running. If you must work around an operating generator, stand on an insulated, dry surface to reduce shock hazard.
- Never work on this equipment or handle any electrical device while standing in water, while barefoot, or while hands or feet are wet. Dangerous electrical shock will result.
- Have the generator properly grounded (bonded) during installation onto the vehicle, either by solid mounting to the vehicle frame or chassis or by means of an approved bonding conductor. DO NOT disconnect the bonding conductor, if so equipped. 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. 8 AWG copper wire minimum.
- Inspect the generator periodically. Repair or replace all damaged or defective parts immediately.
- In case of accident caused by electric shock, shut down the source of electrical power down at once. If this cannot be done, free victim from live conductor. AVOID DIRECT CONTACT WITH THE VICTIM. Use a dry board, dry rope, or other non-conducting implement to free the victim from live conductor. If victim is unconscious, apply CPR (cardio-pulmonary resuscitation) and get medical help.
- Inspect fuel system frequently for leaks or damage. Repair or replace any damaged or leaking component immediately. Never attempt to change, alter or modify the generator fuel system in any way that might affect safety or compliance with applicable codes and standards.
- The generator engine gives off DEADLY carbon monoxide gas through its exhaust system. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. This exhaust system must have been properly installed, in strict compliance with applicable codes and standards. Following installation, you must do nothing that might render the system unsafe or in non-compliance with such codes and standards. The generator compartment must be completely vapor sealed from vehicle interior. There must be no possibility of exhaust fumes entering the vehicle interior. Never operate this equipment with a leaking or defective exhaust system.
- 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, coolant leakage, etc.
- Do not smoke around the generator. Wipe up any fuel, oil and coolant spills immediately. Never leave oily or fuel soaked rags in the generator compartment or on the generator itself. Keep the area around the generator clean and free of debris.
- Adequate ventilation is required to expel toxic fumes and gasoline vapors from the generator compartment. Do not alter the installation of this equipment in any manner that might obstruct air and ventilation openings. Such openings must be kept clear and unobstructed.
- Keep hands, feet, clothing, etc., away from drive belts, fans and other moving parts of this equipment. Never remove any drive belt or fan guards while the unit is operating.
- Some generators may use LP gas (propane) as a fuel. LP gas is highly EXPLOSIVE. The gas is heavier than air and tends to settle in low areas where even the slightest spark can ignite the gas and cause an explosion.
- Before performing any maintenance on the generator set, disconnect its battery cables to prevent accidental start up. Disconnect the cable from the battery post indicated by a NEGATIVE, NEG or (-) first. Reconnect that cable last.

# IDENTIFICATION RECORD

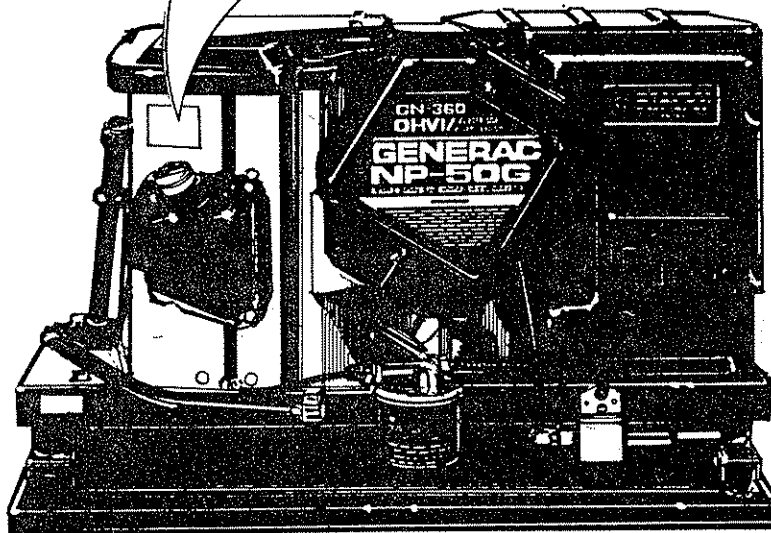
Please record the following information, from the generator DATA PLATE or information decal:

1. Model Number \_\_\_\_\_
2. Serial Number \_\_\_\_\_
3. kW Rating \_\_\_\_\_
4. Rated Voltage \_\_\_\_\_
5. Phase \_\_\_\_\_
6. Hertz \_\_\_\_\_

MODEL #	<input type="text"/>	WATTS	<input type="text" value="4500"/>
SERIAL #	<input type="text"/>	VOLTS	<input type="text" value="120/240"/>
HERTZ	<input type="text" value="60"/>	AMPS	<input type="text" value="37.5/18.8"/>
PHASE	<input type="text" value="1"/>	GENERATOR RPM	<input type="text" value="3600"/>

FOR SERVICE CENTER LOCATIONS  
CALL 800-333-1322  
24 HOURS A DAY

GENERAC CORPORATION  
WAUKESHA, WISC.



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# READ THIS MANUAL THOROUGHLY

If you don't understand any portion of this manual, contact Generac for a demonstration of actual starting, operating and servicing procedures.

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

These safety warnings cannot eliminate the hazards that they indicate. Strict compliance with the special instructions while performing the service plus "common sense" are major measures to prevent accidents.


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

 **DANGER: AFTER THIS HEADING YOU CAN READ HANDLING, INSTALLING, OPERATING OR SERVICING INSTRUCTIONS THAT, IF NOT STRICTLY COMPLIED WITH, MAY RESULT IN PERSONAL INJURY.**

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


**NOTE:** After this heading you can read explanatory statements that require special emphasis.

These symbols indicate the following:

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

 Potential explosion hazard

 Potential fire hazard

 Potential electrical shock hazard

The operator (driver) is responsible for proper and safe use of the vehicle, equipment on the vehicle, and the safety of all vehicle occupants. We strongly recommend that the operator read this Owner's Manual and thoroughly understand all instructions before using this equipment. We also strongly recommend instructing other occupants in the vehicle to properly start and operate the generator. This prepares them if they need to operate the equipment in an emergency.

## OPERATION AND MAINTENANCE

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

Proper maintenance and care of your industrial mobile generator assures a minimum number of problems and keeps your operating expenses at a minimum. See your authorized Dealer/Distributor for service aids and accessories.

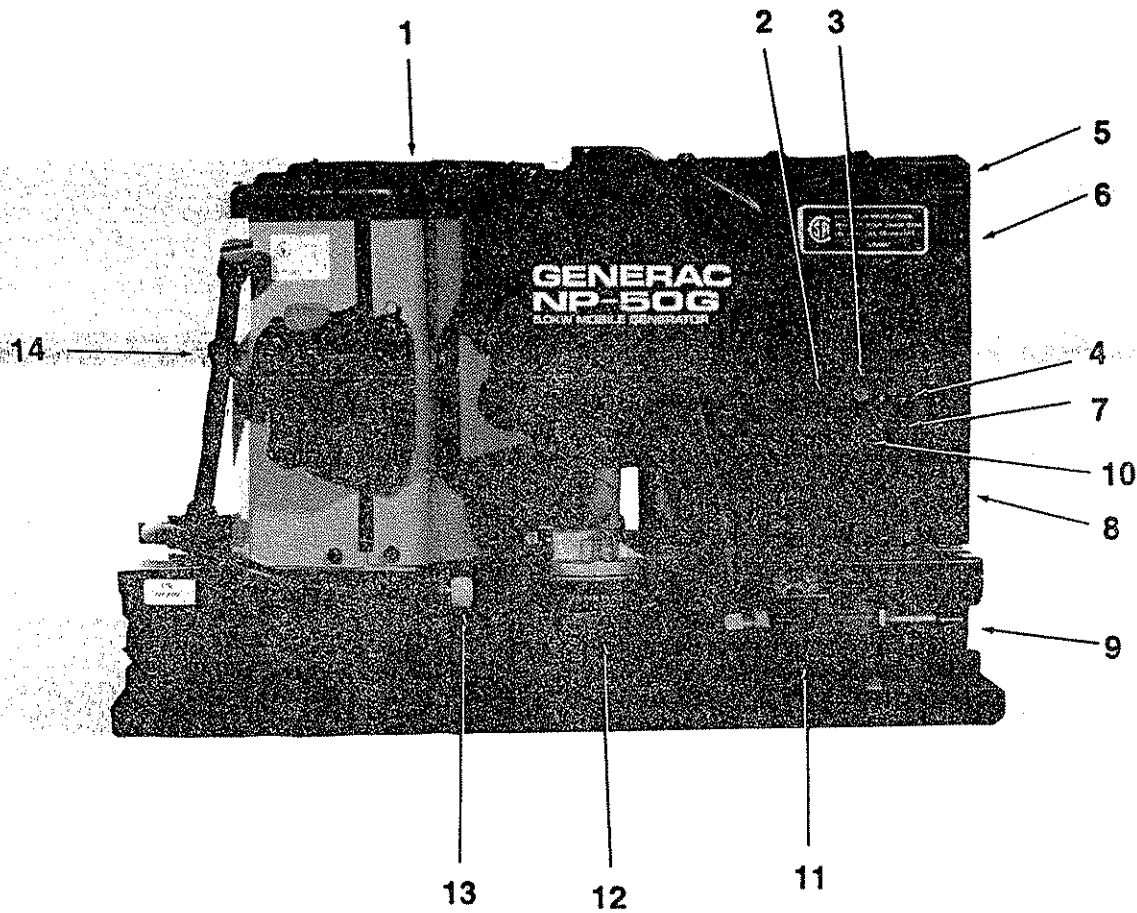
## HOW TO OBTAIN SERVICE

When your industrial mobile generator set requires servicing or repairs, simply contact an Authorized Service Station for assistance. Service technicians are factory-trained and are capable of handling all of your service needs.

When contacting an Authorized Service Facility or the factory about parts and service, always supply the complete model number and serial number of your unit as given on its data plate.

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

# GENERATOR FEATURES



## REFERENCE NUMBER IDENTIFICATION

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 1. Generator Air Intake Screen      | 8. Starter Contactor             |
| 2. Engine Start/Stop Switch         | 9. Fuel Inlet                    |
| 3. 15 amp Fuse                      | 10. Fuel Primer Switch           |
| 4. 20 amp Circuit Breaker           | 11. Fuel Pump                    |
| 5. Optional Remote Panel Receptacle | 12. Oil Filter                   |
| 6. Generator AC Output Leads        | 13. Oil Drain Plug               |
| 7. 30 amp Circuit Breaker           | 14. Oil Dipstick and Filler Tube |

# GENERATOR FAMILIARIZATION

## GENERATOR APPLICABILITY

The NP-50G generator has been designed and manufactured for supplying electrical power for recreational vehicles. You should not modify the generator or use it for any application other than for what it was designed. If there are any questions pertaining to its application, write or call the factory. Do not use the unit until you have been advised by competent authority.

**⚠ DANGER: FOR FIRE SAFETY, THE GENERATOR MUST HAVE BEEN PROPERLY INSTALLED IN COMPLIANCE WITH (1) ANSI 119.2-1975/NFPA 501C-1974 "STANDARD FOR RECREATIONAL VEHICLES", PART III, "INSTALLATION OF ELECTRICAL SYSTEMS." THE GENERATOR ALSO MUST HAVE BEEN INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S DETAILED INSTALLATION INSTRUCTIONS. AFTER INSTALLATION, DO NOTHING THAT MIGHT RENDER THE UNIT IN NON-COMPLIANCE WITH SUCH CODES, STANDARDS AND INSTRUCTIONS.**

You can use your generator set to supply electrical power for operating 120 and/or 240 volts, single phase, 60 Hz electrical loads. These loads can require up to 4800 watts (4.8 kW) of power, but cannot exceed 40 AC amperes of current at 120 volts or exceed 20 AC amperes at 240 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.

## INSTALLATION

This Owner's Manual has been prepared under the assumption that a competent, qualified technician installed the generator into a recreational vehicle. We also assume the installer complied with all applicable codes, standards and regulations pertaining to installation.

An INSTALLATION MANUAL was shipped with the generator. That Manual contains manufacturer's instructions and recommendations for installing the unit into a recreational vehicle. After installation, installers should forward the Installation Manual to Owners/Operators for their information.

Owners/Operators have the responsibility to make sure that nothing is done that might render the installation unsafe or in non-compliance with applicable codes, standards and instructions.

## SAFETY

Before using the generator set, carefully read GENERAL SAFETY RULES inside the cover. Comply with these RULES to prevent accidents and damage to equipment and/or property. Generac suggests copying and posting the GENERAL SAFETY RULES in potential operators of this equipment.

## GENERATOR AC CONNECTION SYSTEM

This air-cooled NP Series generators set is equipped with dual stator AC power windings. These two stator windings supply electrical power to customer electrical loads by means of a dual 2-wire connection system.

The generators may have been installed so that units only power 120 volts AC loads (Figure 1); or you can wire them to connect both 120 and/or 240 volts AC electrical loads. Be sure to remove the jumper between the circuit breakers when connecting for 120/240 volts.

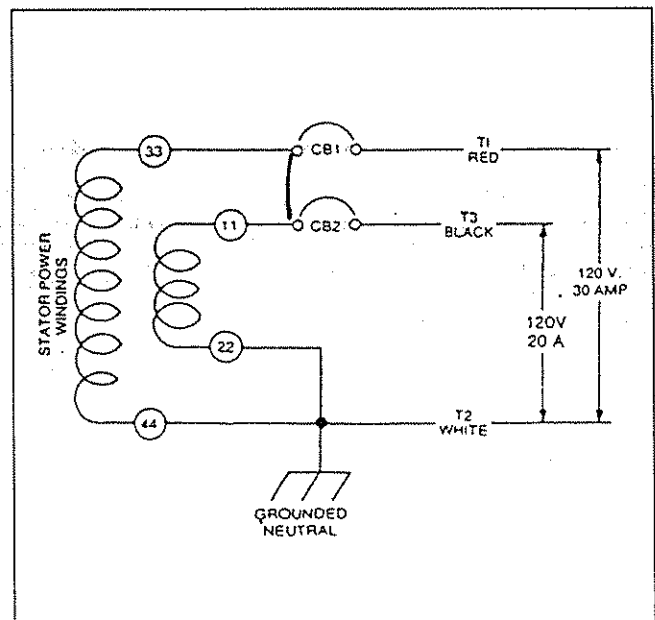


Figure 1 — Connection for 120 Volts Only



# OPERATING INSTRUCTIONS

## GENERATOR CONTROL PANEL

Mounted on the generator control panel (Figure 2) are the following features:

- Fuel Pump Primer:** Before starting a cold engine (it has not been started in more than two weeks), you must press this switch to bring fuel from the tank to the fuel pump. This rocker type switch springs back into its original position when you release it.
- Start/Stop Switch:** To crank and start the engine, hold this switch at its START position. Release the switch when the engine starts. To stop an operating engine, place the switch in its STOP position. The switch center position is the RUN position.
- 15 amp Fuse:** Protects the engine DC control circuit against electrical overload. If the fuse element has melted open due to overloading, the engine cannot be cranked. If you must replace it, use only an identical 15 amp replacement fuse.
- Line Breakers:** Protects generator's AC output circuit against overload, i.e., prevents unit from exceeding wattage/ampere capacity. NP-50G has one 20 amp breaker and one 30 amp breaker.

**NOTE:** If the Series NP-50G has been reconnected for 120 volt AC output (120/240 volts), you can install line breakers having an amperage rating that is different than stated above. The replacement line breakers consist of two separate breakers with a connecting piece between the breaker handles (so that both breakers will operate at the same time). If the unit is reconnected for 240 volt, it is no longer RVIA listed.

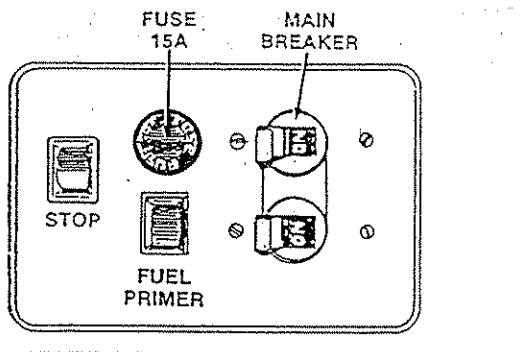


Figure 2 — Typical Control Panel

## OPTIONAL REMOTE START/STOP PANEL

Optional remote mounted panels are available which allow you to crank and start the generator from any convenient location in the recreational vehicle. Figure 3 shows the Model 9042 remote panel which includes (a) a start/stop switch and (b) a generator run lamp.

You can also order Model 9043, a remote panel which includes the (a) start/stop switch, (b) the generator run lamp and (c) an hourmeter. The hourmeter provides a continuous indication of engine-generator operating hours. Use the hourmeter for checking off periodic maintenance requirements on the unit.

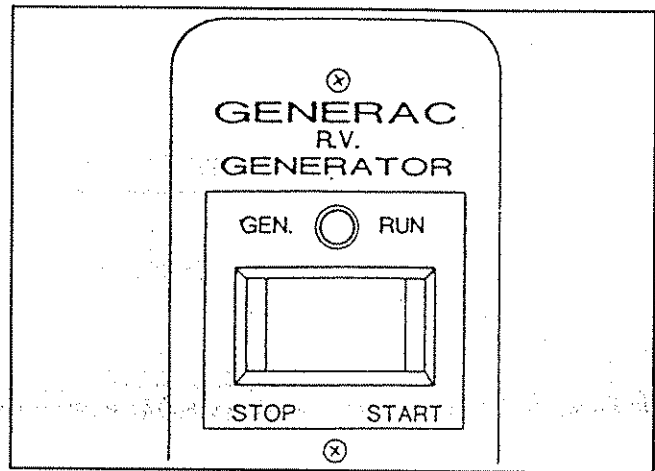


Figure 3 — Optional Remote Panel (Model 9042)

## AUTOMATIC CHOKE

The engine is equipped with an automatic choke that consists of two main components — choke solenoid and prechoke.

**Choke Solenoid:** During engine cranking (start/stop switch at START), a solid state choke module signals the choke solenoid to actuate and cycle (choke on/choke off) until engine starts. The choke solenoid thus opens and closes the carburetor choke valve only when the engine is cranking. When the engine starts, the choke cycling stops.

**Prechoke:** The choke system also has a temperature sensitive metal strip that adjusts choke valve angle according to ambient temperatures (i.e. in cold ambient temperatures, choke valve closes more). Once the engine starts, an element heats the temperature-sensitive strip to a normal operating condition, opening the choke valve. This may take about 3 minutes in cooler weather.

## BEFORE STARTING THE ENGINE

**IMPORTANT:** INSTRUCTIONS AND INFORMATION IN THIS MANUAL ASSUME THE GENERATOR HAS BEEN PROPERLY INSTALLED, CONNECTED, SERVICED, TESTED AND ADJUSTED BY A QUALIFIED INSTALLATION TECHNICIAN OR INSTALLATION CONTRACTOR.

- Installation:** Generator installation must have been properly completed so it complies with all applicable codes, standards and regulations and with the manufacturer's recommendations.
- Engine Lubrication:** Have engine crankcase properly serviced with recommended oil before starting. Refer to "Maintenance" and "Specifications" sections for oil servicing procedures and recommendations.

**CAUTION:** Any attempt to crank or start the engine before you have properly serviced it with the recommended oil will result in an engine failure.

- **Fuel Supply:** The engine must have adequate supply of proper fuel to operate. Before starting, check that sufficient fuel is available.

**NOTE:** On some installations, the generator engine may "share" the vehicle's gasoline fuel tank with vehicle engine. Some installations may provide separate fuel tanks for generator and vehicle engine.

- **Cooling and Ventilating Air:** Air inlet and outlet openings in generator compartment must be open and unobstructed for continued proper operation. Without sufficient cooling and ventilating air flow, engine-generator quickly overheats which causes it to quickly shutdown. Overheating could also damage the unit or your vehicle.
- **Engine Exhaust Gases:** Before starting the generator engine, you should be sure there is no way for exhaust gases to enter the vehicle interior and endangering people or animals. Close windows, doors and other openings in the vehicle that, if open, might permit exhaust gases to enter the vehicle.

**⚠ DANGER: THE GENERATOR ENGINE GIVES OFF DEADLY CARBON MONOXIDE GAS THROUGH ITS EXHAUST SYSTEM. THIS DANGEROUS GAS, IF BREATHED IN SUFFICIENT CONCENTRATIONS, CAN CAUSE UNCONSCIOUSNESS OR EVEN DEATH. DO NOT OPERATE THE GENERATOR IF ITS EXHAUST SYSTEM IS LEAKING OR HAS BEEN DAMAGED. SYMPTOMS OF CARBON MONOXIDE POISONING ARE (A) INABILITY TO THINK COHERENTLY, (B) VOMITING, (C) TWITCHING MUSCLES, (D) THROBING TEMPLES, (E) DIZZINESS, (F) HEADACHE, (G) WEAKNESS AND SLEEPINESS. IF YOU FEEL ANY OF THESE SYMPTOMS, MOVE INTO FRESH AIR IMMEDIATELY. IF SYMPTOMS PERSIST, GET MEDICAL HELP.**

## STARTING

**IMPORTANT:** Read the vehicle manufacturer's instructions. The owner/operator should become familiar with the vehicle in which this generator is installed. Differences exist between vehicles. For example, some vehicles may use a transfer switch to isolate dockside power from the generator, while other vehicles may use an isolating receptacle. Some vehicles may be equipped with a DC converter which allows the generator to power certain DC lighting and other DC loads.

To crank and start the generator engine, proceed as follows:

1. Turn OFF electrical loads, using whatever means provided in your vehicle (such as a main line circuit breaker or transfer switch).

**NOTE:** If you start the engine with start/stop switch on the generator control panel, turn OFF loads by setting the panel's main breakers to their "OFF" or "OPEN" positions. Electrical load circuits will be turned ON after the generator has started, stabilized and warmed up.

2. If you have not started the engine in more than two weeks, press the Fuel Pump Primer switch and hold it for about 30 seconds to activate automatic shut-off function. However, if the engine is warm, skip Step 2.
3. To crank and start the engine, hold the start/stop switch at START. Release the switch when the engine starts.

**CAUTION:** If the engine does not start after it has been cranking for 15 seconds, release the start/stop switch and try again. Holding the switch for longer than 15 seconds can damage the starter motor.

4. Let the engine run at no-load for a few minutes to stabilize and warm up the engine.
5. Turn ON electrical loads, using whatever means provided (such as main circuit breaker or transfer switch).

## STOPPING THE GENERATOR

1. Turn OFF all electrical loads, using whatever means provided (such as a main circuit breaker or transfer switch).
2. Let generator run at no-load for a few minutes, to stabilize internal engine-generator temperatures.
3. Press STOP on the start/stop switch. The engine will come to complete stop.

## 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.

**Let Engine Stabilize:** The generator supplies correct rated frequency and voltage only at proper governed speed. Some electrical appliances may be extremely sensitive to voltage and frequency. Incorrect frequencies and/or voltages can damage those appliances.

If electrical loads are applied at reduced operating speeds, such loads imposed on the engine when sufficient power is not available may shorten engine life. Never turn ON electrical loads until after the generator engine has started and stabilized ON-speed.

## SUMMER/WINTER HEAT RISER SYSTEM

Under certain weather conditions, it is possible for ice to form in the venturi area of the carburetor. This condition can be very dangerous because it can prevent the governor system from functioning properly, which results in a "run-away" engine.

The most common weather conditions leading to this problem are temperatures in the range of 25° to 35°F, along with high humidity. This ice formation can also be attributed to the load being applied during these weather conditions. Generators running with no load or light loads applied usually have the most problems.

**Construction and Function of Heat Riser System:**  
The systems consists of the following components:

- Plastic collector box that is attached to the back side of the air filter base.
- "Flapper" valve and lever assembly.
- Corrugated aluminum tube that goes from the above plastic box, through engine enclosure sheet metal and nestled very close to exhaust manifold.

When the valve is in the "Summer" position (Figure 4), air is drawn into the air filter box directly from compartment through the tube on the right side of the plastic box.

When the lever is in the "Winter" position, the hole in the plastic tube is covered and the aluminum tube is opened. As mentioned previously, the end of the alu-

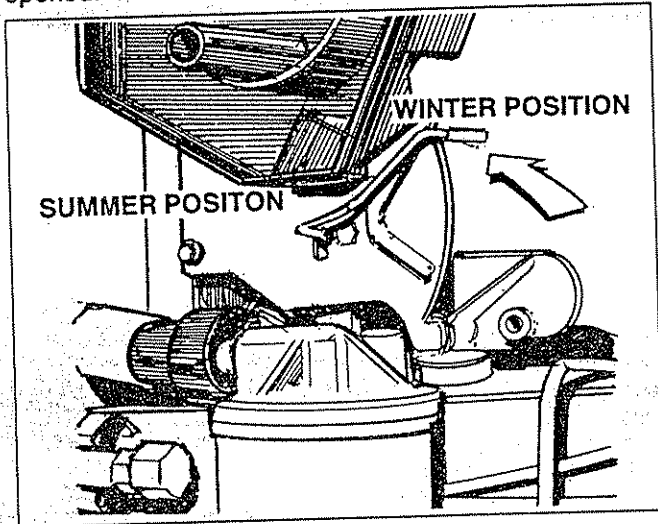


Figure 4 — Adjusting Summer/Winter Lever

minum tube is positioned very close to the exhaust manifold. As the engine is running and the exhaust system heats up, heated air is drawn through the aluminum tube, which helps to prevent ice from forming on the carburetor.

**Do Not Overload the Generator:** You can read the rated wattage/amperage capacity of your generator on the generator data plate (see "Identification Record" on Page 1).

Applying electrical loads in excess of the unit's rated capacity can burn out the unit and anything connected to it. Also, overloading trips main circuit breakers.

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 the vehicle's furnace fan, refrigerator, air conditioner, etc.) need about 2-1/2 times 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.

**WATTAGE REFERENCE GUIDE**

	RUNNING WATTS
*Air Conditioner (12,000 Btu).....	1700
Battery Charger (20 amp).....	500
Belt Sander (3").....	1000
Chain Saw.....	1200
Circular Saw (6-12").....	800 to 1000
Coffee Maker.....	1000
*Compressor (1 HP).....	2000
*Compressor (3/4 HP).....	1800
Curling Iron.....	700
*Deep Freeze.....	500
Disc Sander (9").....	1200
Electric Nail Gun.....	1200
Electric Range (one element).....	1500
Electric Skillet.....	1250
*Furnace Fan (1/3 HP).....	1200
Hair Dryer.....	1200
Hand Drill (1").....	1100
Hand Drill (1/2").....	750 to 1000

	RUNNING WATTS
Impact Wrench.....	500
*Jet Pump.....	800
Lawn Mower.....	1200
Microwave Oven.....	700
*Milk Cooler.....	1100
Oil Burner on Furnace.....	300
Oil Fired Space Heater (30,000 Btu).....	150
*Paint Sprayer, Airless (1/3 HP).....	600
Paint Sprayer, Airless (handheld).....	150
Radio.....	50 to 200
*Refrigerator.....	600
Slow Cooker.....	200
*Table Saw (10").....	1750 to 2000
Television.....	200 to 500
Weed Trimmer.....	500

\* Allow 2-1/2 times the listed watts for starting these devices.

## ADDITIONAL INFORMATION

This section discusses some of the engine protective devices, overload protection and breaking in a new generator.

### AUTOMATIC LOW OIL PRESSURE SHUTDOWN

The engine is equipped with a normally-open (N.O.) oil pressure switch (Figure 5). Engine oil pressure holds the switch open during cranking and operation. Should the oil pressure drop below about 4.5-7.5 PSI, the switch contacts close and the engine automatically shuts down.

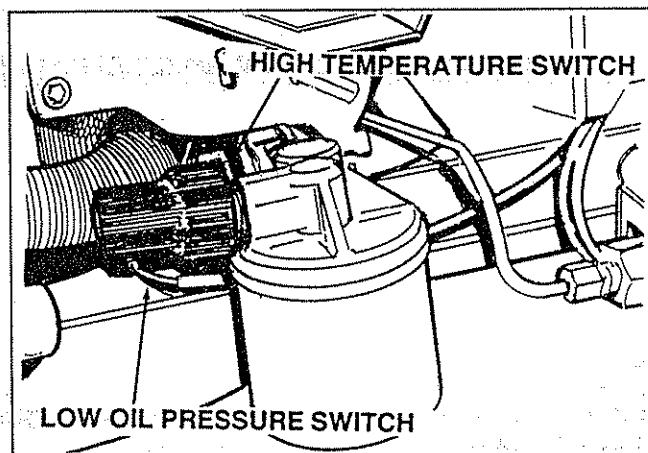


Figure 5 — Switches for Engine Safety Shutdown

### HIGH TEMPERATURE SHUTDOWN

An oil temperature switch (Figure 5) with normally-open (N.O.) contacts is mounted near the oil filter. If oil temperature were to exceed about 284°F (140°C), the switch contacts close and the engine shuts down.

### FIELD BOOST

The Controller Circuit Board houses a field boost diode and resistor which are not part of the automatic choke circuit. These two components are part of a "field boost" circuit (Figure 6). During engine cranking only, a positive DC (battery) voltage is delivered through the diode, resistor, brushes and slip rings, and 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 the required "pick up" voltage in the stator windings.

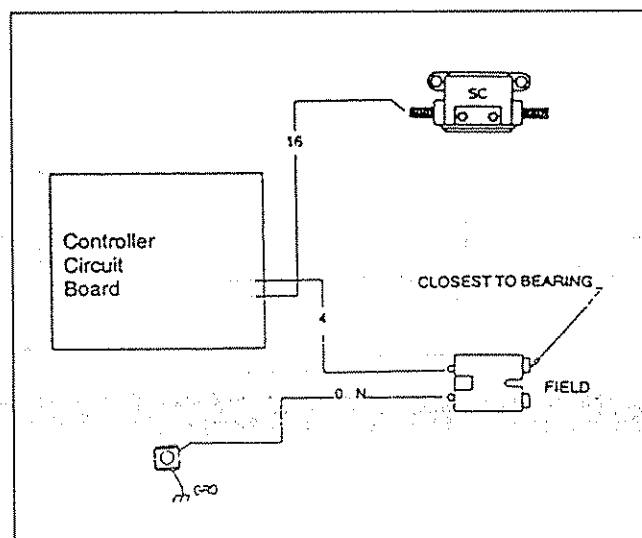


Figure 6 — Field Boost Circuit

### OVER VOLTAGE PROTECTION

A solid state voltage regulator (Figure 7) 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 Hz, voltage is regulated at 120 volts (voltage-to-frequency ratio is 2-to-1).

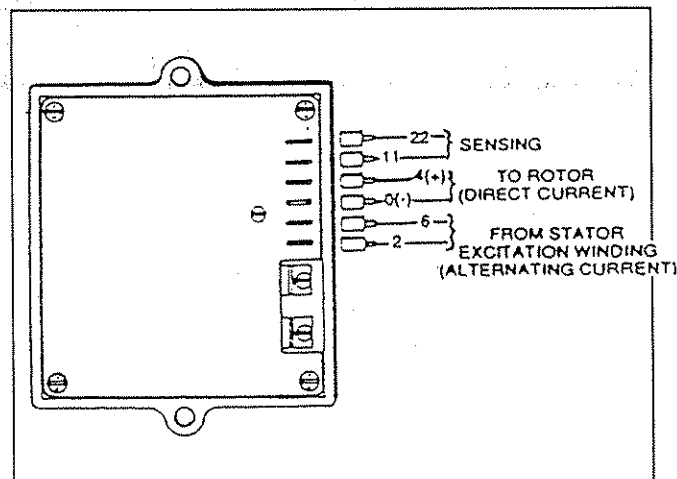


Figure 7 — Solid State Voltage Regulator

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.

## 25-HOUR BREAK IN PERIOD

The first 25 hours of operation are for "breaking in" the new generator. Correctly breaking in the generator is essential to minimize fuel consumption and provide maximum engine performance. During this 25-hour break in period, comply with the following:

- Run the unit at varying electrical loads, to help seat engine piston rings properly.
- During the break in period, check engine oil level frequently. It is normal for oil consumption to be high during the breaking in period.
- After the 25-hour break-in period, complete the tasks recommended under "25-Hour Check Up."
- For the 75 hours of operation after the "break in" period, avoid light electrical loads. Load the generator at 50% (or more) of its rated wattage capacity. Repeated light loads during the break in period can cause improper seating of engine piston rings, which could cause blowby and high oil consumption.

## 25-HOUR CHECK UP

After the 25-hour break-in period, contact an authorized service facility for the following maintenance. The vehicle owner is responsible for any charges:

- Change engine crankcase oil and oil filter.
- Check all fluid levels.
- Inspect cooling and ventilation openings on the vehicle.
- Check engine carburetor adjustments.
- Check engine ignition system.
- Inspect entire electrical system.
- Inspect the engine exhaust system.

## ATTENTION REQUIRED AFTER SUBMERSION

If the motor home generator has been submerged in water, it must NOT be started or operated. Following any submersion in water, have an authorized Generac Service Facility thoroughly clean and dry the generator.

## OPERATION IN HIGH GRASS OR BRUSH

Never operate the generator while the vehicle is parked in high grass, weeds, brush or leaves. 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.

## OPERATING PRECAUTIONS

Never operate the motor home generator set while the vehicle is parked over dry leaves, dry grass or any other combustible substance. The generator's exhaust system becomes extremely hot and can cause fire if it is too close to combustible materials.

The generator's exhaust system gives off DEADLY carbon monoxide gas. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness and even death. Never operate the generator set with the vehicle inside any garage or other enclosed area. Never operate the generator if it has a leaky exhaust system. Close windows in the vicinity of the generator exhaust outlet and take any other steps to prevent exhaust gases from entering rooms or areas occupied by people or animals.

## EFFECTS OF MOISTURE AND DIRT

Keep the generator set as clean and dry as possible. Protect the unit against excessive dust, dirt, corrosive vapors, road splash, 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) will also worsen the problem since it tends to absorb moisture from the air. Salt and moisture, when combined, form a good electrical conductor.

# SPECIFICATIONS

## FUEL REQUIREMENTS

The "NP" series generator is equipped with a gasoline fuel system as standard equipment. Specific installations may provide either a separate fuel tank for the generator, or the generator may "share" the vehicle engine's fuel tank.

**NOTE:** Some installations using a "shared" fuel tank may have a generator fuel pickup tube that is shorter than the vehicle engine's pickup tube. Such an arrangement causes the generator engine to "run out of gas" while adequate fuel in the vehicle remains in the tank.

To reduce lead and carbon deposits use high quality UNLEADED gasoline with the generator. Leaded REGULAR grade gasoline is an acceptable substitute.

**NOTE:** Using "Unleaded" gasoline contributes to longer engine valve life by reducing lead and carbon deposits.

**CAUTION:** Generac does not recommend using any gasoline containing alcohol (such as "gasohol"). If you use any gasoline containing alcohol, it must not contain more than 10 percent ethanol and it must be removed from the tank during storage. Do NOT use any gasoline containing methanol. If you use gasoline with alcohol, inspect more frequently for fuel leaks and other abnormalities.

## ENGINE OIL REQUIREMENTS

Use a high quality detergent oil classified "For Service SF" and with an oil viscosity rating of SAE 10W-30 oil. Do not pour in any additives to the recommended oil. Engine crankcase capacity is 1.5 (1.6 liters) U.S. quarts. See MAINTENANCE section for oil level check and filling procedures.

## ENGINE SPECIFICATIONS

Type of Engine .....	GN-360, single-cylinder
Cooling Method .....	Air-cooled
Rated Horsepower .....	12 at 3600 rpm
Displacement .....	363cc
Cylinder Block .....	Aluminum with cast iron sleeve
Type of Governor .....	Mechanical, fixed speed
Air Cleaner .....	Paper element with foam pre-cleaner
Starter .....	12 volts DC electric
Ignition System .....	Solid state with flywheel magneto
Recommended Spark Plugs	
Champion .....	RC12YC
AC .....	R45S
Fram Autolite .....	65
Spark Plug Gap .....	0.030 inch (0.8mm)

## GENERATOR SPECIFICATIONS

Rotor RPM .....	3600
Rotor Poles .....	2
Engine RPM .....	2571
Rated Maximum Continuous	
AC Output .....	4800 watts (4.8 kW)
Voltage .....	120 volts AC*
Rated Maximum Continuous	
AC Current .....	40 AC amperes $\Delta$
Phase .....	1
Frequency .....	60 Hertz
Weight .....	197 pounds (93 kg)
Length .....	25 inches (635mm)
Width .....	18.5 inches (470mm)
Height .....	15.75 inches (400mm)

\* All units are reconnectable to 120 and/or 240 volts, dual voltage output. Units are no longer listed per RVIA/ANSI when reconnected for dual voltage output.

$\Delta$  If reconnected for dual voltage, the ampere rating for 240 volts is 20 AC amperes.

# MAINTENANCE

This section includes information about simple maintenance which includes the following tasks:

- Checking engine oil level.
- Changing engine oil.
- Changing oil filter.
- Changing the air cleaner.
- Cleaning the air intake screen.
- Cleaning spark plugs.

## CHECKING ENGINE OIL LEVEL

Check engine crankcase oil level at least every eight hours of operation, or before you use it (Figure 8).

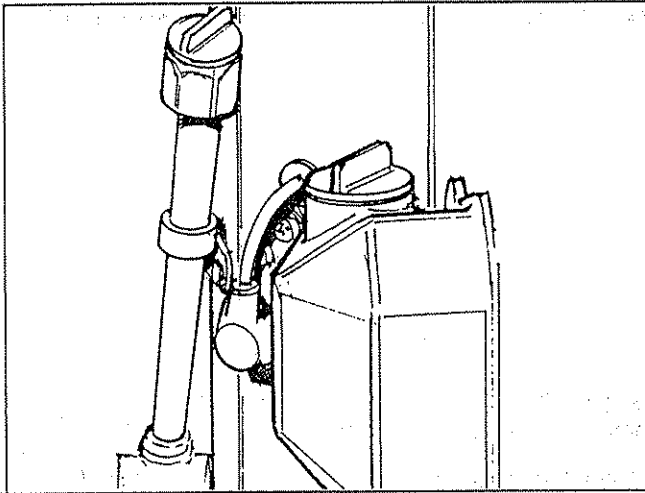


Figure 8 — Oil Dipstick and Fill Tube

- Be sure the generator is as level as possible.
- Remove oil dipstick and wipe dry with clean, lint-free cloth.
- Install and tighten oil dipstick, then remove again.
- Oil should be at dipstick FULL mark. If necessary, add the recommended oil to the FULL mark only. DO NOT OVERFILL ABOVE "FULL" MARK.
- Install and tighten oil dipstick cap before operating the engine.

**NOTE:** See "Engine Oil Requirements" on Page 11 for recommended oils.

## CHANGE ENGINE OIL

Change engine oil after the first 25 hours of operation (after the 25-hour break-in period, Page 10). Thereafter, change oil every 50 operating hours. Change oil more frequently if operating consistently under heavy load or at high ambient temperatures.

- Warm up engine for at least five minutes, then shut down.
- With engine still warm from running, remove oil drain plug (Figure 9). Drain oil completely into a suitable container.
- When oil has drained, install and tighten oil drain plug.

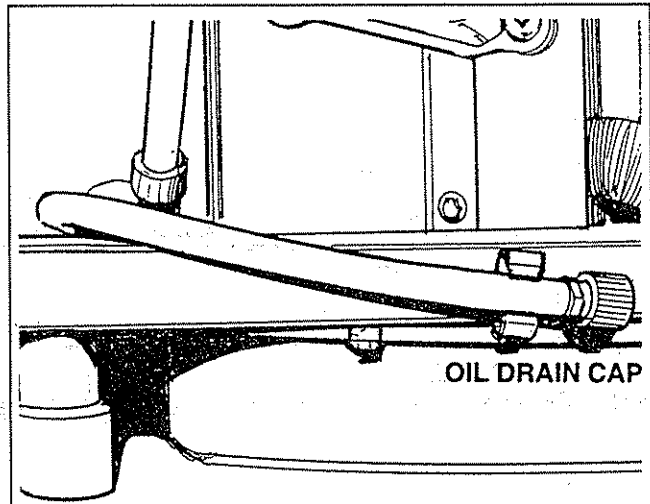


Figure 9 — Location of Oil Drain Cap

- Remove oil dipstick and fill crankcase with the recommended oil (See Page 11). The engine crankcase can hold about 1.5 U.S. quarts (1.6 liters). DO NOT OVERFILL ABOVE "FULL" MARK.
- Install and tighten dipstick cap before operating engine.

## CHANGE OIL FILTER

Replace the engine oil filter after the first 25 hours of operation, every 100 operating hours thereafter.

- Turn oil filter counterclockwise to remove (Figure 10).
- Coat gasket of new filter with engine oil.
- Turn new filter clockwise until its gasket contacts tightly with the filter adapter. Then tighten with an additional 3/4 to one turn by hand.
- Run engine and check for leaks.

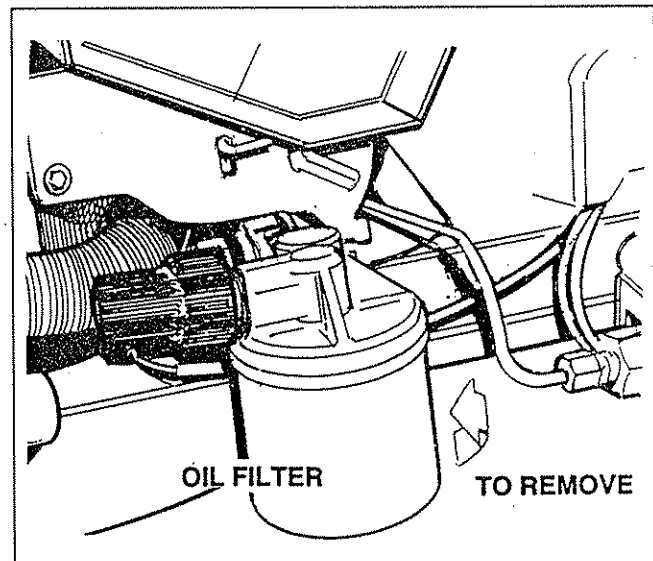


Figure 10 — Replacing Engine Oil Filter

## ENGINE AIR CLEANER

Clean and re-oil the foam pre-cleaner every three months or every 25 hours of operation, whichever occurs first. Service the foam pre-cleaner more frequently if you operate the generator in extremely dusty or dirty conditions (Figure 11):

- Turn KNOB counterclockwise to loosen.
- Remove COVER, FOAM PRE-CLEANER and PAPER FILTER.
- Remove foam pre-cleaner from cover.
- Wash foam pre-cleaner in liquid detergent and water.
- Wrap foam pre-cleaner in a cloth and squeeze dry.
- Saturate foam pre-cleaner in engine oil. Squeeze to remove excess oil and to distribute oil.
- Install foam pre-cleaner into cover, followed by paper filter. Tabs at edges of paper filter must lock into slots on cover.
- Insert bottom locking tag of cover into slot. Install cover, foam pre-cleaner and paper filter.

Once each year or every 100 operating hours (whichever comes first), replace the paper filter. The new replacement filter must be a flame retardant type.

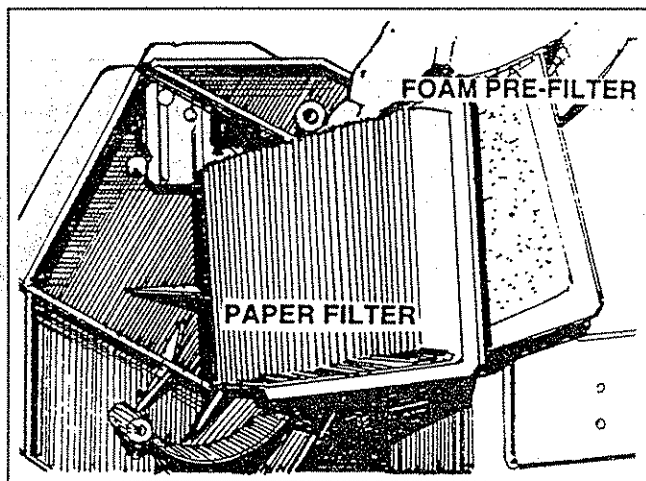


Figure 11 — Engine Air Cleaner

## CLEAN AIR INTAKE SCREEN

Clean all foreign material from the air intake screen (Figure 12) at least once every 100 hours of operation. Clean more often, if necessary.

Inspect the area around the generator exhaust muffler periodically and remove all grass, leaves, dirt, etc. from this area.

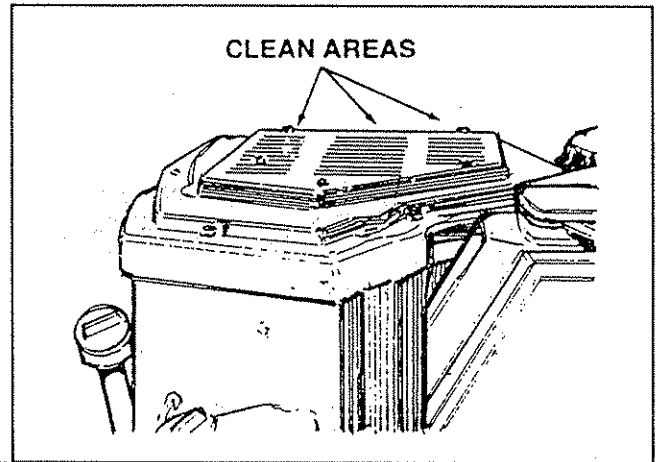


Figure 12 — Areas to Clean on Air Intake Screen

## ENGINE SPARK PLUGS

Clean engine spark plugs and reset gap to 0.030 inch (0.8mm) every 100 hours of operation (Figure 13). Clean by scraping or wire brushing and washing with commercial solvent. DO NOT BLAST CLEAN SPARK PLUGS.

**CAUTION:** Sparking can occur if wire terminals do not fit firmly over spark plug terminal ends. If necessary, reform wire terminals to obtain a tight fit.

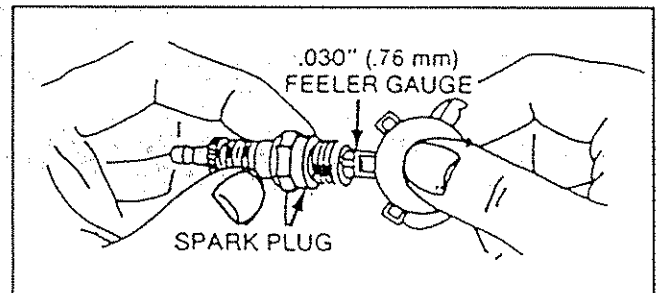


Figure 13 — Setting Spark Plug Gap

## FUEL FILTER

Remove and replace fuel filter (Figure 14) every 100 hours of operation or once each year, whichever comes first.

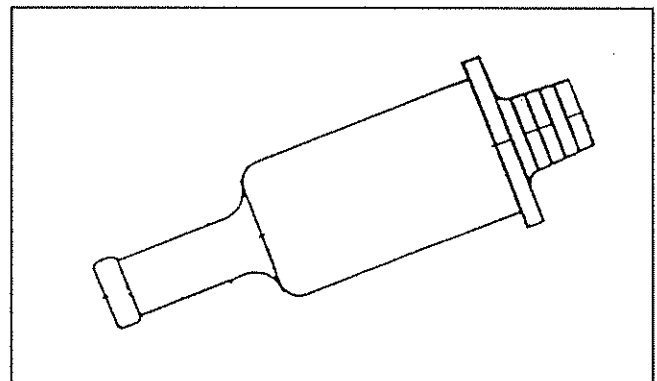


Figure 14 — Fuel Filter




# MISCELLANEOUS MAINTENANCE

## SPARK ARRESTOR MUFFLERS

If the generator is not equipped with a spark arrestor exhaust muffler and is to be used on any forest covered, brush covered or grass covered unimproved land, you may have to install a spark arrestor. The spark arrestor must be maintained in effective working order by the vehicle owner/operator.

For assistance in ordering, installing and maintaining spark arrestor exhaust mufflers, contact your nearest authorized service facility.

Exhaust mufflers supplied by Generac are spark arrestor types. Generac exhaust mufflers for RV generators do not have a spark arrestor screen, but are of the more efficient "toroid" or "swirl" type. To remove carbon and combustion deposits from such mufflers, remove the PLUG from muffler and run engine for about 15 minutes. Shut engine down, let the muffler cool and install the plug.

 **WARNING: BE SURE TO RE-INSTALL THE PLUG FROM THE MUFFLER TIGHTLY. ENGINE VIBRATION COULD CAUSE A LOOSE PLUG TO FALL OUT. WITHOUT THE PLUG IN PLACE, HOT ENGINE EXHAUST IS DIRECTED OUT THE OPENING. THIS HOT EXHAUST, DEPENDING ON THE INSTALLATION, COULD BE DIRECTED TO AREAS NOT ABLE TO WITHSTAND THE EXTREME HEAT SUCH AS WOODEN FLOOR BOARDS OR OTHER FLAMMABLE MATERIALS. THIS COULD RESULT IN A FIRE.**

## CLEANING THE GENERATOR

Keep your generator set as clean and dry as possible. Dirt and moisture that are permitted to accumulate on electrical windings have an adverse affect on the insulation resistance of those windings.

Moisture that is allowed to remain in contact with windings will be retained in voids and cracks of the windings. Dirt makes the problem worse, since it tends to hold the moisture into contact with the windings. Salt, as from sea air, worsens the problem since it tends to absorb moisture from the air. The combination of salt and moisture makes a good electrical conductor.

**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 contaminate the generator fuel system.**


## BATTERY


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


**Once Weekly:** Inspect battery posts and cables for tightness, corrosion. Clean and/or tighten as needed.

Also check battery fluid level, and, if necessary, fill with **DISTILLED WATER ONLY. DO NOT USE TAP WATER IN BATTERY.**

**Every Six Months:** Have battery state of charge and condition checked by automotive service facility. This should be done with automotive type battery hydrometer.

 **DANGER: 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.**

 **DANGER: BATTERY ELECTROLYTE FLUID IS AN EXTREMELY CAUSTIC SULFURIC ACID SOLUTION THAT CAN CAUSE SEVERE BURNS. DO NOT PERMIT FLUID TO CONTACT EYES, SKIN, CLOTHING, PAINTED SURFACES, ETC. WEAR PROTECTIVE GOGGLES, PROTECTIVE CLOTHING AND GLOVES WHEN HANDLING A BATTERY. IF YOU SPILL THE FLUID, FLUSH THE AFFECTED AREA IMMEDIATELY WITH CLEAR WATER.**

 **DANGER: DO NOT USE ANY JUMPER CABLES OR BOOSTER BATTERY TO CRANK AND START THE GENERATOR ENGINE. IF ANY BATTERY HAS DISCHARGED, REMOVE IT FROM THE VEHICLE FOR RECHARGING.**

## MAJOR SERVICE MANUAL

To obtain a service manual for your generator, order it from your dealer/distributor or contact the factory. Be sure to identify your MODEL NUMBER and SERIES.

## DRIVE BELTS

The engine drives the generator rotor by means of a pulley and drive belt arrangement. The drive train, drive belt and pulleys are warranted for the life of the generator. Drive belt tension was properly adjusted before the unit was shipped from the factory. If you suspect that drive belt tension is incorrect, contact an authorized service facility.

## EXERCISING THE GENERATOR

Generac recommends that you start and operate the generator at least once every seven days. Let the unit run for at least 30 minutes to "exercise" the engine.

## OUT OF SERVICE PROTECTION

If you cannot exercise the generator every seven days and it is to be out of service longer than 30 days, prepare the generator for storage as follows:

- Start the engine and let it warm up.
- Close the fuel shutoff valve in the fuel supply line and let the engine "run out of gas."
- While the engine is still warm from running, drain the oil completely. Refill crankcase with SAE 10W-30 oil having API classification "For Service SF."
- Attach a tag to the engine indicating the viscosity and classification of the oil in the crankcase.

- Remove spark plugs and pour about two or three tablespoons of clean, fresh engine oil into spark plug threaded openings. Crank engine several times to distribute oil, then install and tighten spark plugs.
- Remove the battery and store in a cool, dry room on a wooden board. Never store the battery on any concrete or wooden floor.
- Clean and wipe the entire generator.

## RETURN THE UNIT TO SERVICE AFTER STORAGE

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

- Check tag on engine for oil viscosity and classification. Verify that the correct recommended oil is used in engine. If necessary, drain and refill with proper oil.
- Check battery. Fill all cells to the proper level with distilled water. **DO NOT USE TAP WATER IN THE BATTERY.** Recharge battery to 100% state of charge, or, if defective, replace the battery.
- Turn OFF all electrical loads, add gasoline if necessary, then start the engine.
- Let engine warm up.
- Apply electrical loads to at least 50% of the unit's rated wattage capacity.
- When engine is thoroughly warmed up, shut it down.

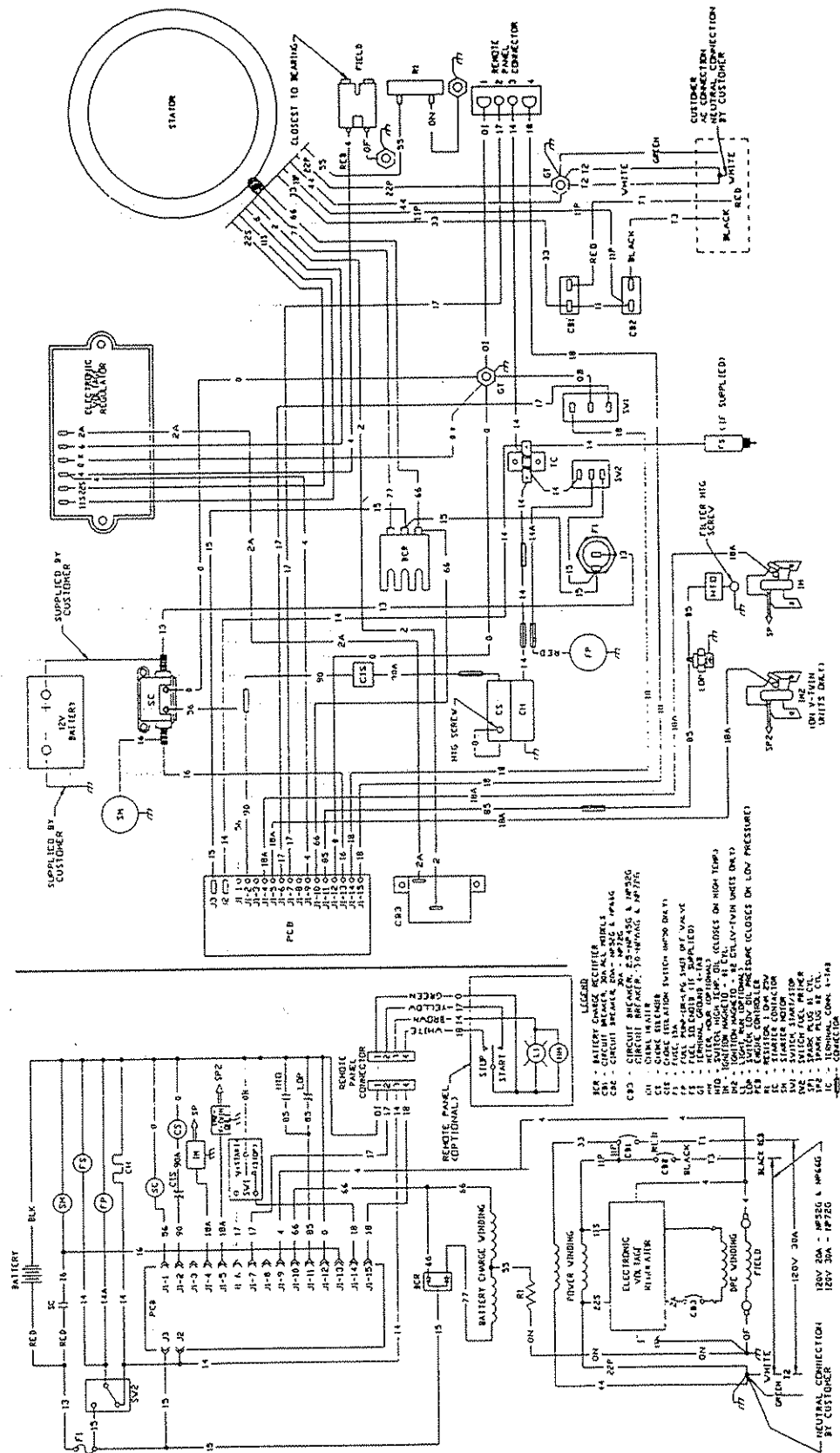
*THE GENERATOR IS NOW READY FOR SERVICE.*

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE(S)	REMEDY
Engine won't crank	<ol style="list-style-type: none"> <li>1. 15 amp fuse blown.</li> <li>2. Loose, corroded or defective battery cable(s).</li> <li>3. Battery is discharged or defective.</li> <li>4. Defective starter contactor.</li> <li>5. Defective starter motor.</li> <li>6. Defective control relay (CR1).</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace blown fuse.</li> <li>2. Tighten, clean or replace, as necessary.</li> <li>3. Recharge or replace battery.</li> <li>4. Replace starter contactor.</li> <li>5. Replace starter motor.</li> <li>6. Replace control relay.</li> </ol>
Engine cranks, won't start	<ol style="list-style-type: none"> <li>1. Out of fuel.</li> <li>2. Fuel shutoff valve is closed.</li> <li>3. Fuel pump not operating.</li> <li>4. Automatic choke not operating properly.</li> <li>5. Engine is flooded.</li> <li>6. Fuel filter is clogged.</li> <li>7. Defective Controller Circuit Board</li> <li>8. Engine spark plugs defective.</li> <li>9. Bad ignition magneto on engine.</li> <li>10. Bad carburetor.</li> <li>11. Dirty air cleaner.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refill fuel tank.</li> <li>2. Open fuel shutoff valve(s).</li> <li>3. Repair or replace pump.</li> <li>4. Repair, replace or adjust.</li> <li>5. Wait 5-10 minutes; try again.</li> <li>6. Replace filter if clogged.</li> <li>7. Replace bad circuit board.</li> <li>8. Clean, regap or replace as needed.</li> <li>9. Replace if defective.</li> <li>10. Adjust, repair or replace.</li> <li>11. Clean or replace as needed.</li> </ol>
Engine starts hard, run rough.	<ol style="list-style-type: none"> <li>1. Dirty engine air cleaner.</li> <li>2. Automatic choke is sticking.</li> <li>3. Defective spark plugs.</li> <li>4. Defective ignition magneto,</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace as needed.</li> <li>2. Free choke linkage as needed.</li> <li>3. Clean, regap or replace.</li> <li>4. Replace it if defective.</li> </ol>
Engine starts, then shuts down.	<ol style="list-style-type: none"> <li>1. Engine oil level is low</li> <li>2. Bad control relay (CR1).</li> <li>3. Bad low oil pressure switch.</li> <li>4. Bad control relay (CR2).</li> </ol>	<ol style="list-style-type: none"> <li>1. Add oil as needed.</li> <li>2. Replace if bad (CR1).</li> <li>3. Replace, if bad.</li> <li>4. Replace bad relay (CR2).</li> </ol>
No AC output voltage	<ol style="list-style-type: none"> <li>1. Main breakers open.</li> <li>2. Transfer switch (if so equipped) is set to wrong position.</li> <li>3. Failure in vehicle electrical system.</li> <li>4. Generator component failure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Close main breakers.</li> <li>2. Reset transfer switch.</li> <li>3. See vehicle manual.</li> <li>4. Contact an authorized service facility.</li> </ol>

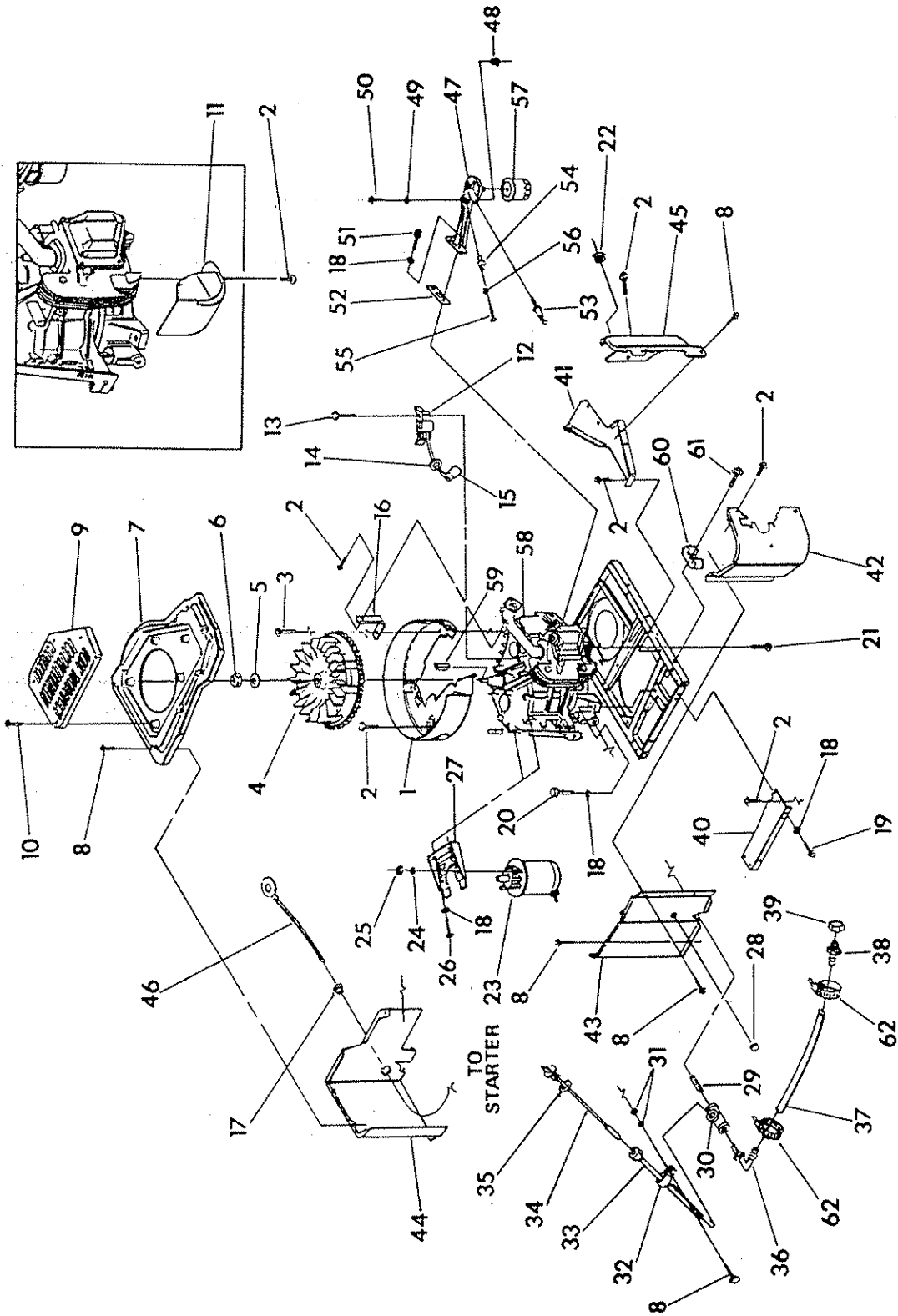
# ELECTRICAL DATA

Drawing No. 94210



# EXPLODED VIEW — SHEET METAL

Drawing No. 94108



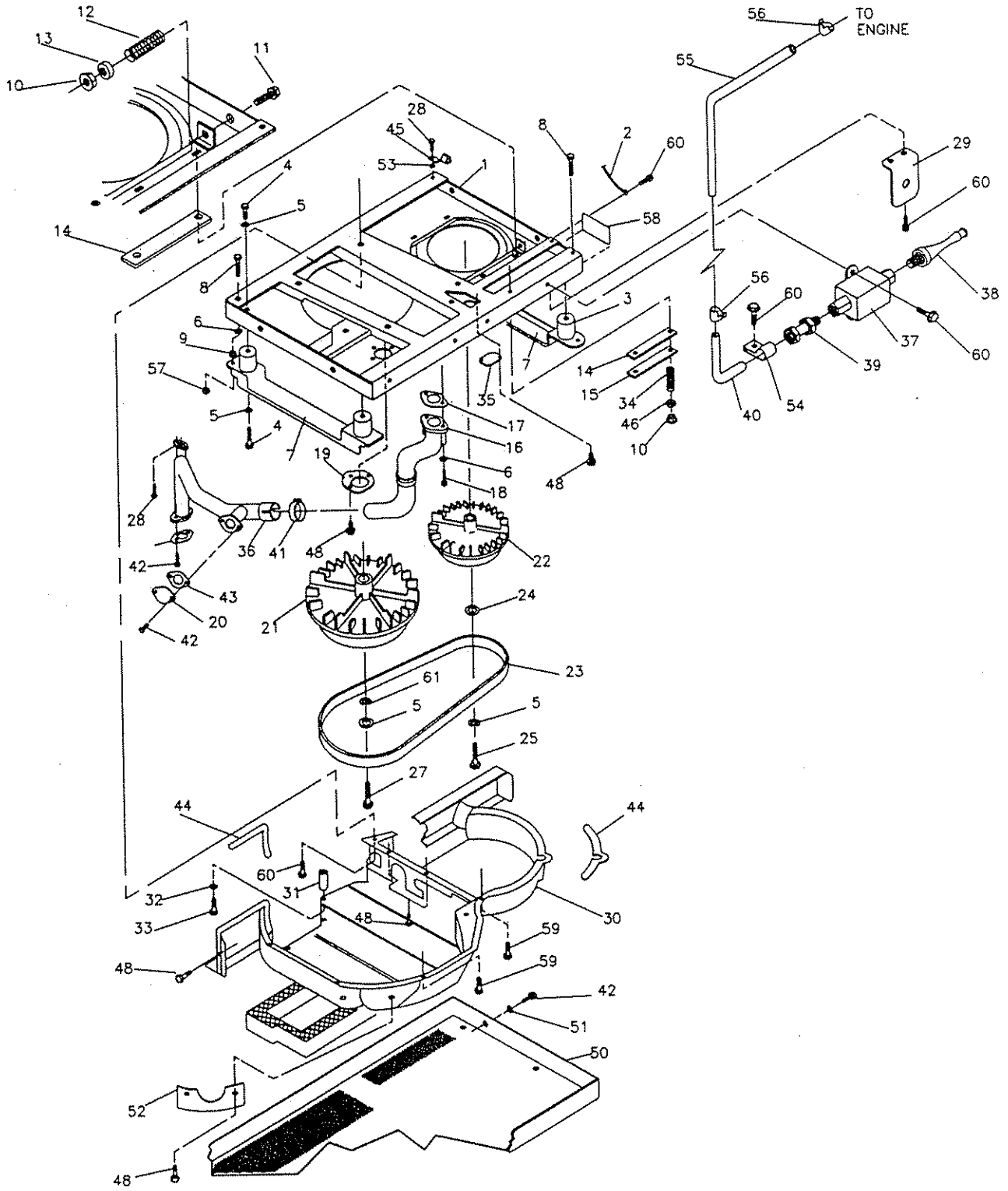
# REPAIR PARTS LIST — ENGINE SHEET METAL

Drawing No. 94108

ITEM	PART NO.	QTY.	DESCRIPTION	TEM.	PART NO.	QTY.	DESCRIPTION
1	90953	1	Flywheel Scroll	33	91519	1	Dipstick Tube
2	45756	8	M6-1.0 x 10mm Screw	34	91520	1	Cap and Dipstick Assembly
3	90388	1	M6-1.0 x 12mm Screw	35	91648	1	"O" Ring
4	91222-A	1	Flywheel (20-degree)	36	43790	1	3/8" I.D Brass Elbow
5	67198-N	1	Belleville Washer	37	47290-A	1	3/8" NPT- 3/8" x 12" Hose
6	67890	1	M20-1.50 Hex Nut	38	35461	1	1/4" x 3/8" NPT Barbed Hose Fitting
7	91327	1	Engine Top Cover	39	69811	1	1/4" NPT Cap
8	56893	23	No. 10-24 x 1/2" Crimptite Screw	40	90951	1	Base Cover – Starter Side
9	92184	1	Air Inlet Cover	41	90952	1	Base Cover – Carb. Side
10	63036	5	No. 8 x 1/4" Screw	42	91137	1	Engine Spark Plug Wrapper
11	91646	1	Exhaust Port Deflector	43	90954	1	Wrapper – starter side
12	92572	1	Ignition Coil Assembly	44	90955	1	Wrapper – rear gear case
13	92079	2	M6-1.0 x 25mm Screw	45	90956	1	Wrapper – carburetor side
14	22717-A	2	Rubber Grommet	46	74260-10	1	Wire Starter Assembly (#16)
15	73132	1	Spark Plug Boot	47	90892	1	Oil Filter Support
16	91643	1	Intake Manifold Support Brkt	48	91159	1	Rubber Bushing
17	22717-B	1	Rubber Grommet	49	91160	1	Rubber Washer
18	22129	8	M8 Lock Washer	50	91161	1	M6 x 15mm Shoulder Bolt
19	42907	2	M8-1.25 x 16mm Capscrew	51	49821	2	M8-1.25 x 30mm Bolt
20	57821	2	M8-1.25 x 40mm Capscrew	52	86999	1	Oil Filter Support Gasket
21	59637	2	3/8"-16 x 3/4" Taptite Screw	53	77667	1	Oil Pressure Switch
23	87266	1	12-volt Starter Motor	54	75281	1	Oil Temperature Switch
24	22097	2	1/4" Lock Washer	55	74027	2	M3-0.5 x 5mm Screw
25	22127	2	1/4"-20 Hex Nut	56	43182	2	M3 Lock Washer
26	40976	2	M8-1.25 x 20mm Capscrew	57	70185	1	Oil Filter
27	86260	1	Starter Mount Bracket	58	90783-A	1	Engine – Long Block GN-360RV
28	25034	1	Button Plug	59	82774	1	Woodruff Key – 4 x 19 dia.
29	35467	1	3/8" NPT Close Nipple	60	65852	1	Hose Retainer Clip
30	27738	1	3/8" NPT Pipe Tee	61	74908	1	M5-0.8 x 10mm Screw
31	22145	2	Flat Washer	62	48031E	2	Hose Clamp
32	55934-T	1	Vinyl Coated Clamp				

# EXPLODED VIEW — BASE AND PULLEYS

Drawing No. 92197



# REPAIR PARTS LIST— BASE AND PULLEYS

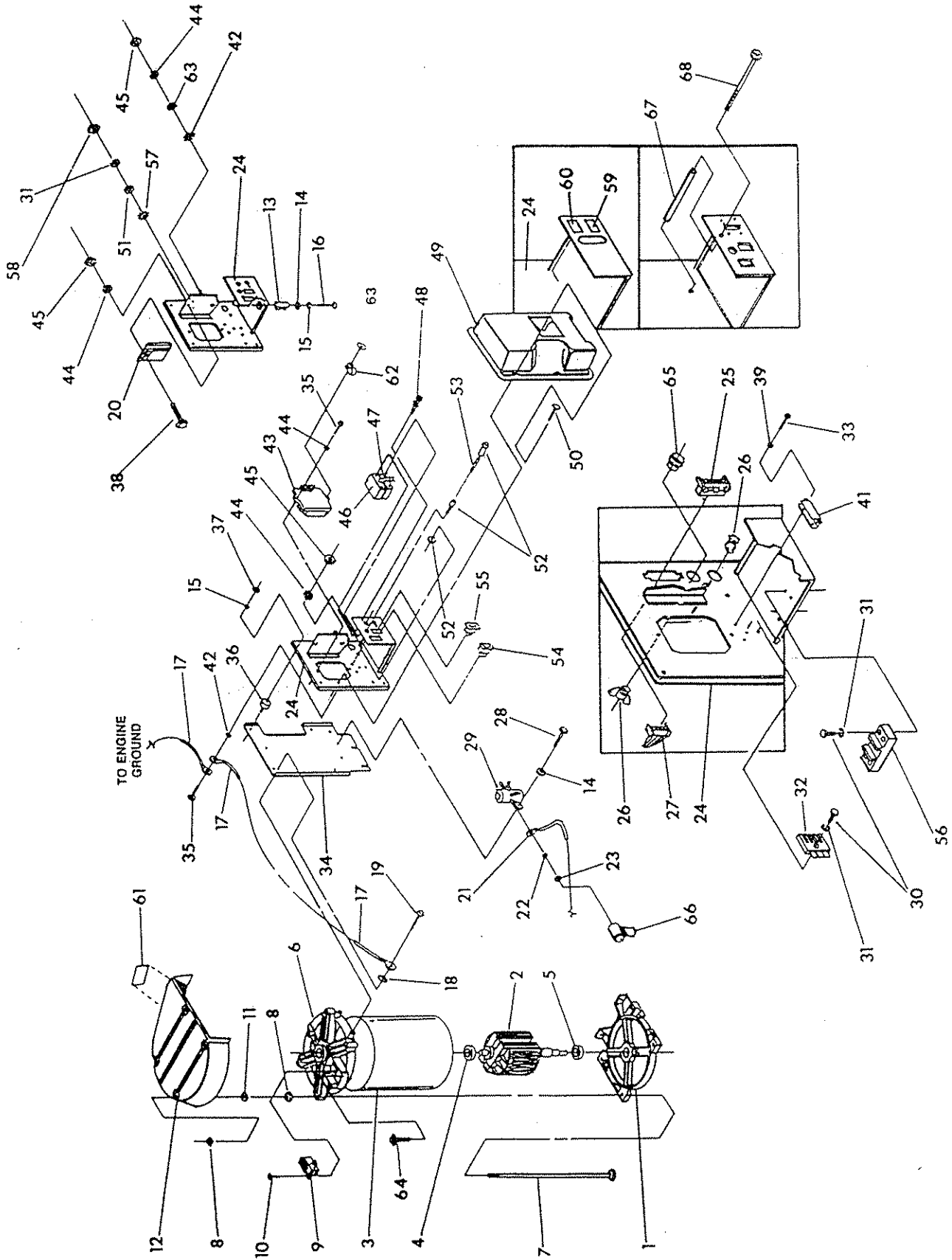
Drawing No. 92197

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	92603	1	Mounting Base	32	22152	1	M5 Lock Washer
2	90141	1	Ground Cable	33	77682	1	M5-0.8 x 80mm Capscrew
3	46911	4	Rubber Mount	34	75242	4	Generator Mounting Spring
4	25017	8	3/8"-16 x 1/2" Capscrew	35	92203	1	Exhaust Base Cover Plate
5	46526	10	M10 Lock Washer	36	91146	1	Universal Exhaust Adaptor
6	22129	4	M8 Lock Washer	37	90475	1	Fuel Pump
7	72391	2	Rubber Mount Skid	38	87769	1	Fuel Filter
8	77603	2	5/16"-18 x 3-1/2" Bolt	39	87768	1	1/8" Pipe to 1/4" Tube Fitting
9	22259	2	5/16-18 Hex Nut	40	91634	1	Metal Fuel Tube
10	52858	6	M8-1.25 Flanged Lock Nut	41	96289	1	1-1/4" Exhaust Pipe Clamp
11	51730	2	M8-1.25 x 60mm Capscrew	42	79246	8	M6-1.0 x 16mm Capscrew with lockwasher
12	29459	2	Belt Tension Spring	43	77643	1	Exhaust Pipe Gasket
13	75215	2	Spring Center Washer	44	29289	10 ft.	Foam Tape
14	73146	4	Nylon Slide	45	62684	1	Grounding Lug
15	75209	2	Nylon Slide Support	46	75237	4	Spring Retainer Washer
16	91032	1	Exhaust Manifold	47	75226	1	Air Cover
17	90239	1	Exhaust Manifold Gasket	48	56893	14	#10-24 x 1/2" Crimptite Screw
18	57636	2	M8-1.25 x 65mm Capscrew	49	75229	1	Slide Pan Gasket
19	92645	1	Collector Pan Gasket	50	75227	1	Slide Pan
20	90859	1	Cover Plate - External	51	22473	4	M6 Flat Washer
21	75224-B	1	Engine Pulley - 5.2	52	72384-C	1	Exhaust Outlet Cover
22	73106-B	1	Alternator Pulley - 7.2	53	22447	2	M6 Toothed Lock Washer
23	75216	1	40" Poly Vinyl 4L Belt	54	90088	2	Vinyl Coated Clamp
24	49451	1	Pulley Retainer Washer	55	44249-B	1	Fuel Hose
25	42633	1	3/8"-24 x 1" Capscrew	56	48031-C	2	Hose Clamp
26	77017	1	Blower Housing Guide	57	81105	2	5/16"-18 Flange Nut (special)
27	73118	1	3/8"-24 x 2-1/2" Capscrew	58	67210	1	Decal - Ground
28	74906	2	M6-1.00 x 20mm Screw	59	74908	9	M5-0.8 x 10mm Screw
29	91123	1	Fuel Pump Bracket	60	45756	9	M6 x 10mm Taplitle Screw
30	72375	1	Blower Housing	61	22131	1	M10 Flat Washer
31	73185	1	Blower Housing Spacer				



# EXPLODED VIEW — ALTERNATOR & PANEL

Drawing No. 94106



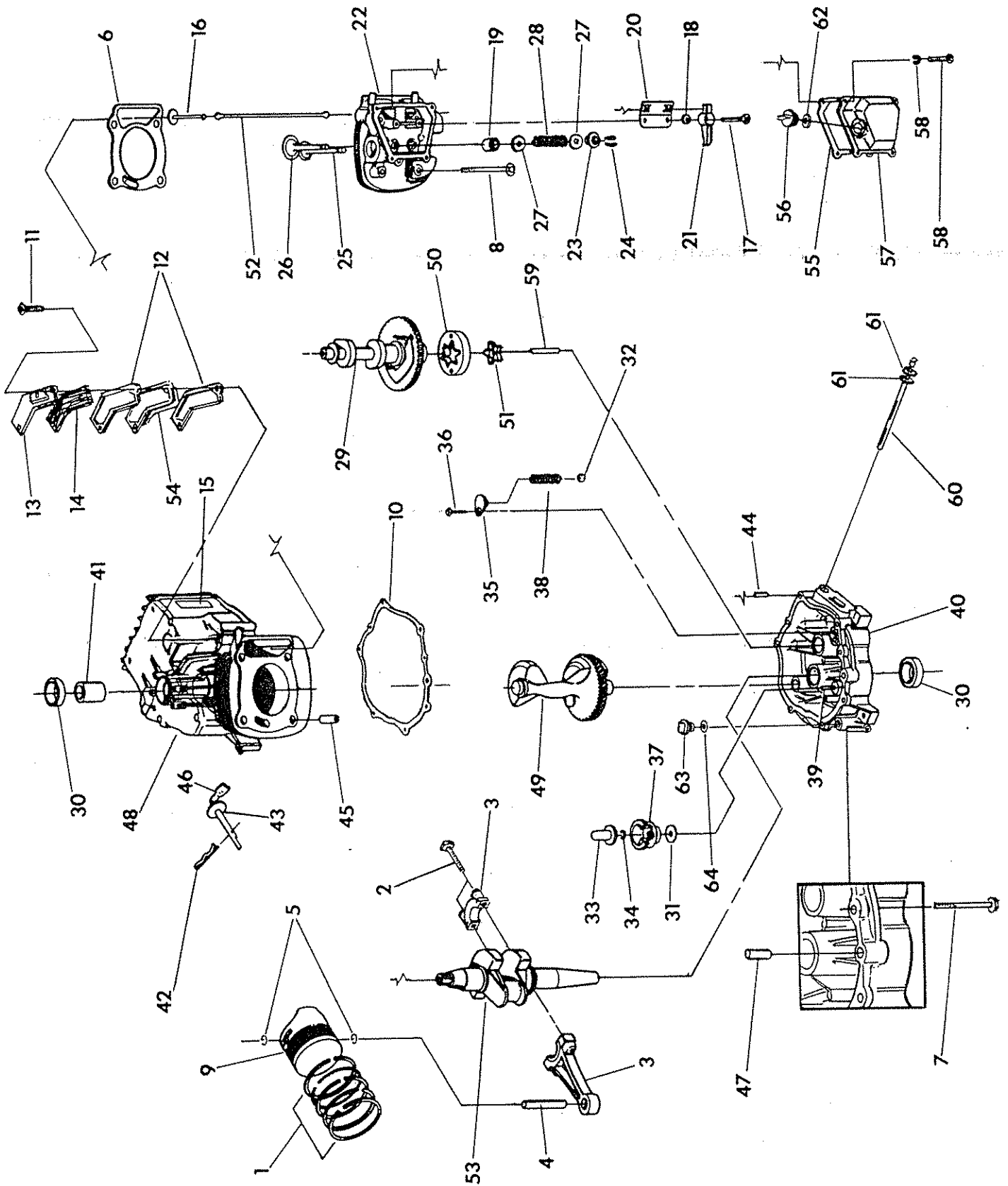
# REPAIR PARTS — ALTERNATOR & PANEL

Drawing No. 94106

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	75995	1	Lower Bearing Carrier	36	82737	4	Vibration Mount <sup>37</sup>
2	92605-G	1	Rotor Assembly	37	49813	4	M6-1.0 Hex Nut
3	92604-G	1	Stator Assembly	38	55440	1	M5-0.8 x 16mm Capscrew
4	73159	1	Ball Bearing	39	43182	2	M3 Lock Washer
5	31971	1	Ball Bearing	41	53623	1	2.5 A Circuit Breaker
6	72379	1	Upper Bearing Carrier	42	22769	2	M5 Shakeproof Washer
7	77006	4	Stator Stud	43	83049	1	Voltage Regulator
8	52858	8	M8-1.25 Flange Lock Nut	44	22152	6	M5 Lock Washer
9	66386	1	Brush Holder	45	51716	4	M5-0.80 Hex Nut
10	66849	2	M5-0.80 x 15mm	46	90144	1	20A Circuit Breaker
11	27756	4	Nylon Washer	47	90145	1	30A Circuit Breaker
12	86314	1	Generator Top Housing	48	25105	4	No. 6-32 Screw w/lock washer
13	75234	1	Resistor	49	86315	1	Panel Cover
14	22473	3	Flat Washer	50	90734	4	M4-0.7 x 16mm Capscrew and Flat Washer
15	22097	5	M6 Lock washer	51	22985	1	M4 Flat Washer
16	74095	1	M6-1.00 x 60mm Capscrew	52	32300	1	Fuse Holder
17	90141	2	Ground Cable	53	22676	1	15 Amp Fuse
18	22447	1	Shakeproof Lock Washer	54	87798	1	Start/Stop Switch
19	74906	4	M6-1.00 x 20mm Screw	55	92113	1	Fuel Pump Switch
20	94039	1	Controller Circuit Board	56	75210-A	1	Terminal Block
21	10-74260	1	Starter Cable	57	23365	1	M4 Shakeproof Washer
22	22129	2	5/16" Lock Washer	58	51715	1	M4-0.7 Hex Nut
23	22259	2	5/16"-18 Hex Nut	59	90157	1	Decal — Circuit Breaker Rating 30 Amp
24	86316	1	Panel Sheet Metal	60	90156	1	Decal — Circuit Breaker Rating 20 Amp
25	53650	1	4-pin Connector	61	89438-A	1	Customer Connection Decal
26	91915	1	Connector	62	31791	1	Hose Clamp
27	75244	1	Remote Harness	63	23365	1	M5 Flat Washer
28	66476	2	M6-1.0 x 12mm Capscrew with lock washer	64	74908	2	M5 x 10mm Taptite Screw
29	56739	1	Starter Contactor	65	23484-S	1	Bushing
30	75476	3	M4-0.7 x 16mm Capscrew	66	75763	1	Battery Cable Boot
31	22264	4	M4 Lock Washer	67	94070	1	Plastic Spacer
32	65795	1	Battery Charge Rectifier	68	94071	1	M6-0.8 x 110mm Screw
33	90987	2	M3-0.5 x 15mm Capscrew				
34	86317	1	Panel Support Bracket				
35	75235	3	M5-0.8 x 30mm Capscrew				

# EXPLODED VIEW — GN-360 ENGINE (long block)

Drawing No. 81611



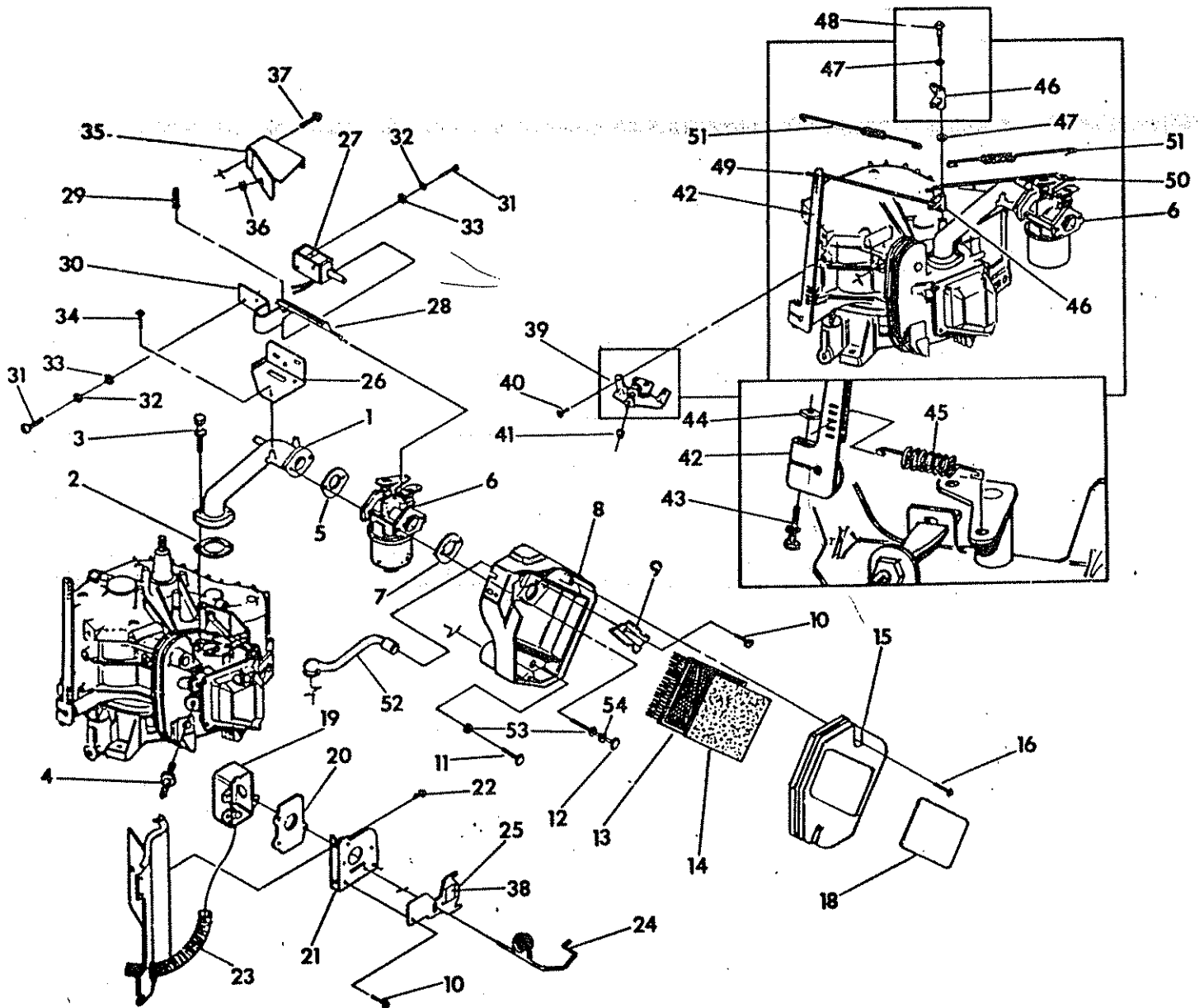
# REPAIR PARTS LIST — GN-360 ENGINE (long block)

Drawing No. 81611

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	71977	1	Piston Ring Set	33	76365	1	Governor Spool
2	71979	2	Connecting Rod Bolt	34	78645	1	Governor Retainer (C-ring)
3	72637	1	Connecting Rod with cap & bolt	35	78691	1	Oil Pressure Spring Retainer
4	71980	1	Piston Pin	36	78692	1	M5-0.8 x 8mm Screw
5	71983	2	Piston Pin Retainer	37	83912	1	Governor Gear Assembly
6	73142	1	Cylinder Head Gasket	38	83918	1	Oil Pressure Spring
7	73144	8	Flanged Hex Head Capscrew	39	72662	1	Governor Shaft
8	73149	4	M10 x 100mm Head Bolt	40	83961A	1	Oil Sump
9	76339	1	Piston	41	72654	1	Sleeve Bearing
10	76701	1	Crankcase Gasket	42	78658	1	Governor Arm "R" Pin
11	78698	2	M6 Screw (THD. forming)	43	78659	1	Thrust Washer
12	80308	2	Breather Gasket	44	78699B	1	Sleeve Dowel Pin (12mm)
13	80309	1	Breather Cover	45	78699C	2	Sleeve Dowel Pin (14mm)
14	80338	1	Oil Breather Separator	46	83948	1	Governor Arm
15	82773K	1	Decal - Serial Number	47	87710	1	Dowel Pin 12mm x 20mm
16	83897	2	Tappet	48	89288A	1	Crankcase Sub Assembly
17	72694	2	Pivot Ball Stud	49	84430	1	Balancer
18	72696	2	Jam Nut (rocker arm)	50	86002	1	Outer Gerotor
19	78672	1	Valve Stem Seal	51	86026	1	Inner Gerotor
20	78694	1	Push Rod Guide Plate	52	88396B	2	Push Rod
21	83907	2	Rocker Arm	53	90416	1	Crankshaft Assembly
22	83923	1	Cylinder Head with valve seats and guides	54	90747	1	Breather Shaft Assembly
23	86514	2	Valve Spring Retainer	55	71987	1	Rocker Cover Gasket
24	86515	4	Valve Spring Keeper	56	86690	1	Oil Fill Cap
25	86516	1	Exhaust Valve	57	92362	1	Rocker Cover with Fill
26	86517	1	Intake Valve	58	92287	4	M6-1.0 x 16mm Capscrew with washer
27	89673	4	Valve Spring Washer	59	83921	1	Bearing Tube Shaft
28	91308	2	Valve Spring	60	77158	1	Oil Screen Pickup Assembly
29	83932	1	Camshaft Assembly	61	80342	2	"O" Ring (14 x 2.4mm)
30	72655	2	Crankshaft Seal	62	90071	1	"O" Ring (27 x 3.2mm)
31	76361	1	Thrust Washer	63	76329	1	Oil Fill Plug
32	76362	1	Pressure Relief Ball	64	86254	1	"O" Ring (17.8 x 2.4mm)

# EXPLODED VIEW — ENGINE ACCESSORIES

Drawing No. 92200



# REPAIR PARTS LIST — ENGINE ACCESSORIES

Drawing No. 92200

ITEM	PART NO.	QTY.	DESCRIPTION
1	90896	1	Intake Manifold
2	91039	1	Manifold/Head Gasket
3	68527	2	M6-1.0 x 20mm Hex Head Capscrew and lock washer
4	72347	1	Spark Plug (Champion #RC12YC)
5	89228	1	Carburetor/Manifold Gasket
6	91188A	1	Carburetor
7	90970	1	Carburetor/Air Filter Gasket
8	73108	1	Air Filter Base
9	91204	1	Carburetor Plate
10	59635	4	No. 8 x 3/8" Plastite Screw
11	66476	2	M6 x 12mm Hex Head Capscrew with lock washer
12	92695	2	80mm Carburetor Mounting Bolt
13	73111	1	Air Filter
14	81646	1	Air Filter Pre-Cleaner
15	73104-B	1	Air Filter Cover
16	78609	2	Air Filter Cover Bolt
18	91554	1	Decal — A/C Data NP-Series
19	92364	1	Heat Riser Box
20	92363	1	Heat Riser Box Gasket
21	91367	1	Air Cleaner Support Gasket
22	45756	2	M6-1.0 x 10mm Taptite Bolt
23	92182	1	Heat Riser Tube
24	91994	1	Winter/Summer Lever Assembly
25	91992	1	Winter/Summer Valve Guide Plate
26	91641	1	Choke Assembly Bracket
27	91306	1	Choke Solenoid Assembly
28	91642	1	Choke Linkage
29	36544	1	Cotter Pin
30	89473	1	Choke Heater Assembly
31	47488	4	No. 4-40 x 0.19" Phillips Pan Head Machine Screw
32	22159	4	No. 4 Lock Washer
33	31879	4	No. 4 Flat Washer
34	74908	2	M5 x 10mm Taptite Screw
35	91677	1	Choke Assembly Cover
36	22717-A	1	Rubber Grommet
37	63036	1	No. 8 x 3/8" Crimptite Screw
38	92252	1	Summer/Winter Decal
39	92164	1	Assembly — Governor Spring Adjustment Bracket
40	83512	2	M8 x 15mm Taptite Bolt
41	83503	1	M5-0.8 Locking Nut
42	90968	1	Governor Arm Lever
43	83532	1	M6 x 30mm Hex Head Bolt with lock washer
44	86681	1	M6 Nut (special)
45	91638	1	Governor Spring
46	91633	1	Governor Rods (Bellcrank)
47	92586	2	Felt Washer
48	91161	1	M6 x 15mm Shoulder Bolt
49	91636	1	Linkage Rod — Governor Lever (Bellcrank)
50	91637	1	Linkage Rod — Carburetor (Bellcrank)
51	91649	2	Spring — Governor Lever (Bellcrank)
52	91645	1	Breather Tube
53	22473	4	M6 Flat Washer
54	22097	2	M6 Lock Washer

# CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

## YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board ("CARB") and Generac Corporation are pleased to explain the Emission Control System Warranty on your new recreational vehicle generator engine. In California, new utility and lawn and garden equipment engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Generac Corporation will warrant the emission control system on your recreational vehicle for the periods of time listed below provided there has been no abuse, neglect, unapproved modification, or improper maintenance of your recreational vehicle generator engine.

Your emission control system may include parts such as the carburetor, ignition system and exhaust system. Also included may be the compression release system and other emission-related assemblies.

Where a warrantable condition exists, Generac Corporation will repair your recreational vehicle generator engine at no cost to you for diagnosis, parts and labor.

### MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

Emissions control systems on 1995 and later model year recreational vehicle generator engines are warranted for two years as hereinafter noted. If, during such warranty period, any emission-related part on your engine is defective in materials or workmanship, the part will be repaired or replaced by Generac Corporation.

### OWNER'S WARRANTY RESPONSIBILITIES:

As the recreational vehicle generator engine owner, you are responsible for the performance of the required maintenance listed in your owners manual. Generac Corporation recommends that you retain all receipts covering maintenance on your recreational vehicle generator engine, but Generac Corporation will not deny warranty solely due to the lack of receipts or for your failure to provide written evidence of the performance of all scheduled maintenance.

As the recreational vehicle generator engine owner, you should, however, be aware that Generac Corporation may deny you warranty coverage if your recreational vehicle generator engine or a part thereof has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your recreational vehicle engine to a Generac Corporation Authorized Service Outlet as soon as a problem exists. 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 a Generac Corporation Authorized Service Outlet or by contacting Generac Corporation at:

**GENERAC CORPORATION PH: (414) 544-4811**  
**P.O. BOX 8 FX: (414) 544-0179**  
**WAUKESHA, WI 53187**

**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 Corporation pursuant to California law. See also the Generac Corporation Limited Warranties for Generac Corporation which is enclosed herewith on a separate sheet and also is provided to you by Generac Corporation. The ECS Warranty applies only to the emission control system of your new engine. To the extent that there is any conflict in terms between the ECS Warranty and the Generac Corporation Warranty, the ECS Warranty shall apply except in any circumstances in which the Generac Corporation Warranty may provide a longer warranty period. Both the ECS Warranty and the Generac Corporation Warranty describe important rights and obligations with respect to your new engine.

Warranty service can only be performed by a Generac Corporation Authorized Service Outlet. At the time of requesting warranty service, evidence must be presented of the date of the sale to the original purchaser. The purchaser shall pay any charges for making service calls and/or for transporting the products to and from the place where the inspection and/or warranty work is performed. The purchaser shall be responsible for any damage or loss incurred in connection with the transportation of any engine or any part(s) thereof submitted for inspection and/or warranty work.

**IF YOU HAVE ANY QUESTIONS REGARDING YOUR WARRANTY RIGHTS AND RESPONSIBILITIES, YOU SHOULD CONTACT GENERAC CORPORATION AT 1-800-222-3136**

## EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty ("ECS Warranty") for 1995 and Later Model Year recreational vehicle generator Engines:

A. Applicability: This warranty shall apply to 1995 and later model year recreational vehicle generator engines. The ECS Warranty Period ("ECS Warranty Period") shall begin on the date the new engine or equipment is delivered to its original, end-use purchaser and shall continue for 24 consecutive months thereafter.

B. General Emissions Warranty Coverage: Generac Corporation warrants to the original, end-use purchaser of the new engine or equipment and to each subsequent purchaser that each of its recreational vehicle generator engines is:

1. Designed, built and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority, and
2. Free from defects in materials and workmanship which, at any time during the ECS Warranty Period, will 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 which 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 Corporation according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for any remainder of the ECS Warranty Period.
2. Any warranted, emissions-related part which 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 any remainder of the ECS Warranty Period.
3. Any warranted, emissions-related part which is scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the period of time prior to 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 Corporation 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 Corporation Authorized Service Outlet.
5. The owner shall not be charged for diagnostic labor which leads to the determination that a part covered by the ECS Warranty is in fact defective, provided that such diagnostic work is performed at a Generac Corporation Authorized Service Outlet.
6. Generac Corporation 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 Corporation authorized and approved emission-related replacement part may be used in the performance of any ECS warranty maintenance or repairs and will be provided without charge to the owner. Such use shall not reduce Generac Corporation ECS warranty obligations.
9. Unapproved add-on modified parts may not be used to modify or repair a Generac Corporation engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. Generac Corporation shall not be liable hereunder for failures of any warranted parts of a Generac Corporation engine caused by the use of such an unapproved add-on or modified part.

### EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

1. Fuel Metering System.
  - a. Gasoline carburetor assembly (if so equipped)
    - 1) Fuel filter (if so equipped)
    - 2) Carburetor gaskets
    - 3) Fuel pump
  - a. LP/Natural gas carburetion assembly
    - 1) Fuel controller
    - 2) Mixer and its gaskets (if so equipped)
    - 3) Carburetor and its gaskets (if so equipped)
    - 4) Primary gas regulator (if so equipped)
    - 5) LP liquid vaporizer (if so equipped)
2. Air cleaner assembly
  - a. Air filter element
  - b. Intake pipe
3. Ignition system including:
  - a. Spark plug
  - b. Ignition module
4. Catalytic muffler (if so equipped)
  - a. Muffler gasket (if so equipped)
  - b. Exhaust manifold (if so equipped)
5. Crankcase breather assembly and its components.
  - a. Breather connection tube



## **GENERAC'S THREE-YEAR LIMITED WARRANTY FOR RECREATIONAL VEHICLE NP GENERATORS**

Generac warrants to the original purchaser that its generators will be free from defects in materials or workmanship for the period set forth below from date of original purchase. During said warranty period, Generac will, at its option, repair or replace any part which, upon examination by Generac or Generac Authorized Distributors and/or Dealers, is found to be defective under normal use and service.

### **THREE-YEAR WARRANTY SCHEDULE**

1. All NP Series generators used in a recreational vehicle shall be warranted for a period of three (3) years or 2,000 hours of operation, whichever occurs first. All parts, labor, removal and reinstallation shall be covered for the first two years. Parts and labor on selected generator and engine parts shall be covered during the third year or 2,000 hours, whichever occurs first. These selected parts are limited to: the main Rotor and Stator with regard to the generator; the Cylinder Block, Cylinder Head, Crankshaft, Piston, Valve, Valve Lifter, and Manifolds with regard to the engine.
2. The drive-train belt and pulleys (if so equipped) on NP air-cooled generators used in recreational vehicles shall be warranted against failure due to defective materials or normal usage for the life of the generator. For the original owner, this drive train warranty shall include parts and labor plus \$50.00 payment upon return of the failed belt or pulley by the original owner. For succeeding owners, this power train warranty shall cover belt or pulley parts only.
3. Rental units, demonstrators, prime power, or commercial applications, such as construction or utility, are warranted for (1) one year or 2,000 hours, whichever comes first.

All warranty expense allowances are subject to the conditions defined in the published "GENERAC POLICIES AND PROCEDURES" manual.

#### **THIS WARRANTY DOES NOT COVER:**

- Costs of maintenance, installation and startup.
- Failures due to (a) normal wear and tear from GN engine, or (b) accident, misuse, abuse, negligence or improper installation.
- Products which 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 defective parts.
- Failure due to misapplication.
- Telephone, telegraph, teletype or other communication expenses.
- Living or travel expenses of persons performing service.
- Any and all transportation/travel expenses.
- Rental equipment used while warranty repairs are being performed.
- Overtime labor.
- Starting batteries, fuses, light bulbs, and engine fluids.

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO 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 PARTS AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A 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. Buyer agrees to make no claims against generac based on negligence.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

**GENERAC CORPORATION, P.O. Box 8, Hwy 59 and Hillside Road, Waukesha, WI 53187**

**Telephone (414) 544-4811**

**FAX (414) 544-4851**