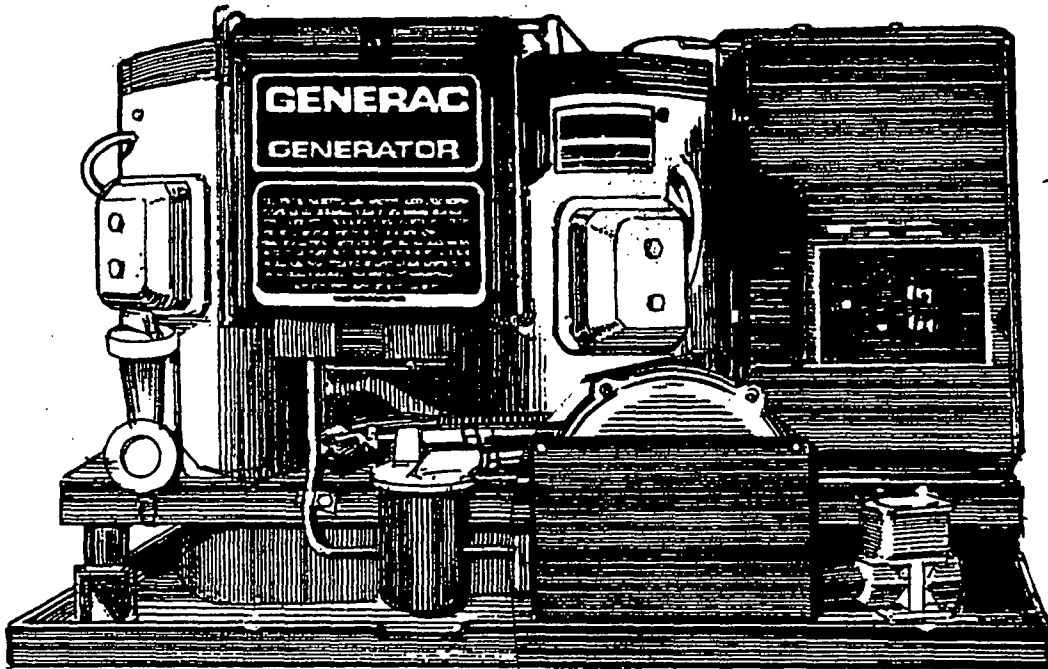


GENERAC[®]

Air-cooled Recreational Vehicle Generator

OWNER'S MANUAL



GENERAC[®]

CORPORATION

Model No. 9734-3

Series NP-66LPG

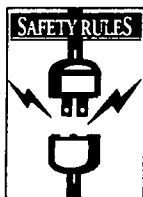
Manual No. A4081



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS, WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THE MANUAL BEFORE ATTEMPTING TO OPERATE THIS UNIT.

Revision 1 (9/18/97)

Printed in U.S.A.



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 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.



WARNING:



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

- 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.
- 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.

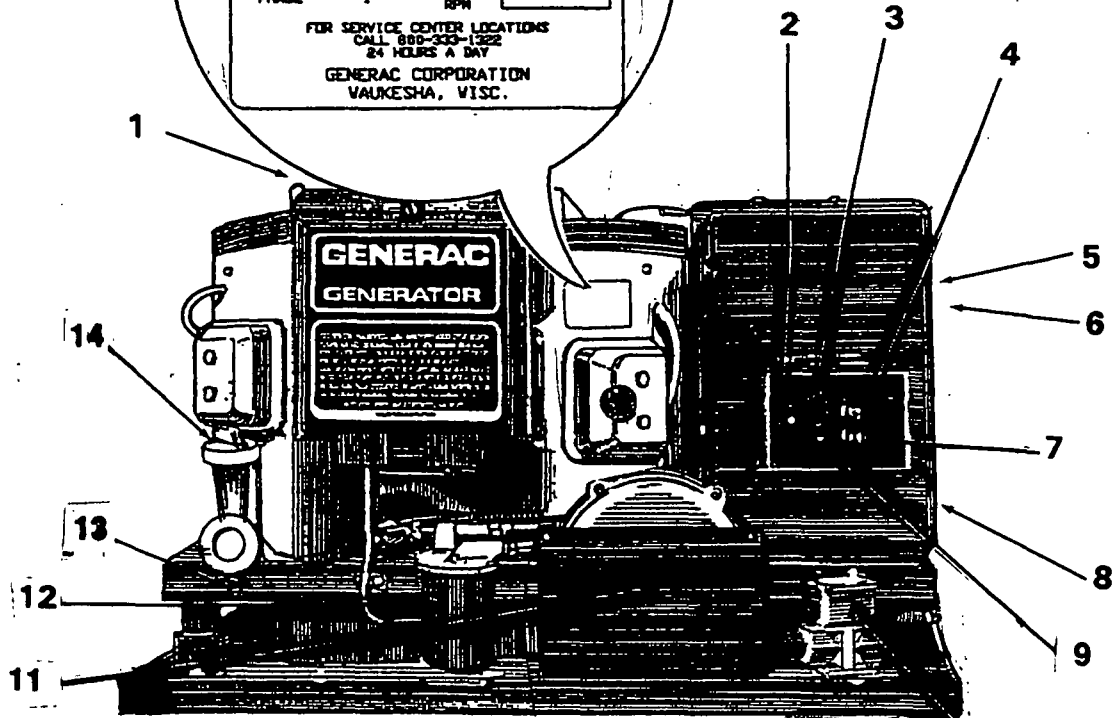
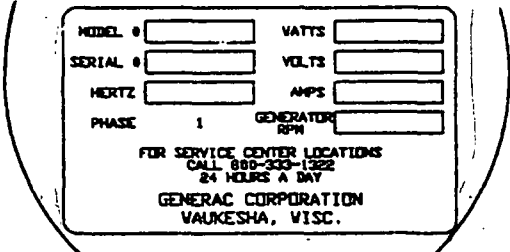
- In case of accident caused by electric shock, shut down the source of electrical power down at once. If this cannot be done, free victim from live conductor. AVOID DIRECT CONTACT WITH THE VICTIM. Use a dry board, dry rope, or other non-conducting implement to free the victim from live conductor.
- 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, fuel leakage, oil leakage, etc.
- Do not smoke around the generator. Wipe up any fuel, and oil 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.
- Inspect the generator periodically. Repair or replace all damaged or defective parts immediately.
- This generator uses LP gas (propane) as a fuel. Liquid Propane 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.

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 _____



REFERENCE NUMBER IDENTIFICATION

- | | | |
|-------------------------------------|----------------------------------|-----|
| 1. Generator Air Intake Screen | 8. 12 Volts Battery Connection | 10. |
| 2. Engine Start/Stop Switch | 9. Fuel Primer Switch | |
| 3. Fuse | 10. Fuel Solenoid | |
| 4. Circuit Breaker | 11. Pressure Regulator | |
| 5. Optional Remote Panel Receptacle | 12. Oil Filter | |
| 6. Generator AC Output Leads | 13. Oil Drain Plug | |
| 7. Circuit Breaker | 14. Oil Dipstick and Filler Tube | |



**TABLE
OF
CONTENTS**

GENERAL SAFETY RULES2

IDENTIFICATION RECORD3

GENERATOR FEATURES.....3

READ THIS MANUAL

 Operation and Maintenance5

 How to Obtain Service5

GENERATOR FAMILIARIZATION

 Generator Applicability6

 Installation6

 Safety6

 Generator AC Connection System6

OPERATING INSTRUCTIONS7-11

 Generator Control Panel7

 Optional Remote Start/Stop Panel7

 Before Starting the Engine8

 Starting8

 Stopping the Generator8

 Applying Loads to Generator9

 Don't Overload the Generator9

 Additional Information.....10-11

SPECIFICATIONS

 Fuel Requirements12

 Engine Oil Requirements.....12

 Generator Specifications12

MAINTENANCE.....13-16

 Checking Engine Oil Level.....13

 Change Engine Oil13

 Change oil filter.....13

 Engine Air Cleaner14

 Spark Arrestor Muffler14

 Engine Spark Plugs14

 Miscellaneous Maintenance15-16

 Out of Service Protection16

 Return the Unit to Service after Storage16

TROUBLESHOOTING17

REPAIR PARTS18-27

ELECTRICAL DATA28

EMMISSIONS WARRANTY30-31

BASIC 3-YEAR WARRANTYback page



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 instruction 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 recreational vehicle generator set requires servicing or repairs, simply contact an Authorized Service Facility for assistance. Service technicians are factory-trained and are capable of handling all 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 decal.

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



GENERATOR APPLICABILITY

These generators have 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 questions pertaining to its application, write or call the factory. Do not use the unit until you have been advised by a 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 this generator to supply electrical power for operating 120/240 volts, single phase, 60 Hertz, AC electrical loads. These loads can require up to 6600 watts of (6.6 kW) of power, but cannot exceed 55 AC amperes of current at 120 volts or exceed 27.5 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.

Owners/Operators should make sure nothing is done during installation that might render the unit unsafe or in noncompliance with applicable codes, standards and instructions. They should be sure the unit has been installed to allow adequate ventilation for cooling and exhaust air.

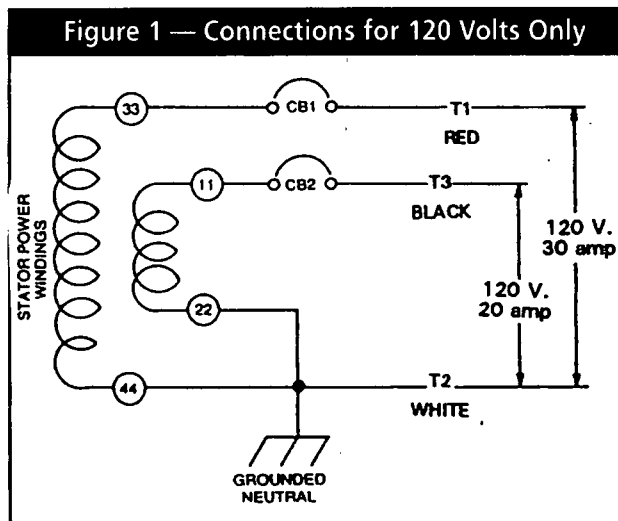
SAFETY

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 hazard areas of the recreational vehicle. Safety should be stressed to all operators of this equipment.

GENERATOR AC CONNECTION SYSTEM

This generator set is equipped with dual Stator a-c power windings. These two stator windings supply electrical power to customer electrical loads by means of a dual 2-wire connection system. Note, however, that neutral is grounded.

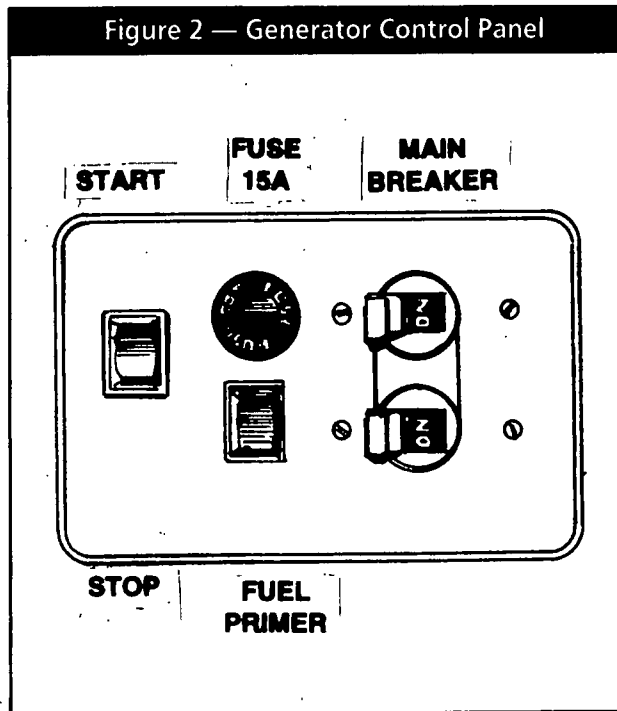
The generator may have been installed so that units power 120 volts AC loads (Figure 1); or you can wire them to connect both 120 and/or 240 volts AC electrical loads. Be sure to install jumper wire between the circuit breakers when reconnecting for 120/240 volts. Refer to the Installation Manual for more information.





GENERATOR CONTROL PANEL

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



■ FUEL 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 regulator. 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, press and hold the switch in its STOP position until the engine shuts off. The switch center position is the RUN position.

■ 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 replacement fuse.

■ MAIN BREAKER

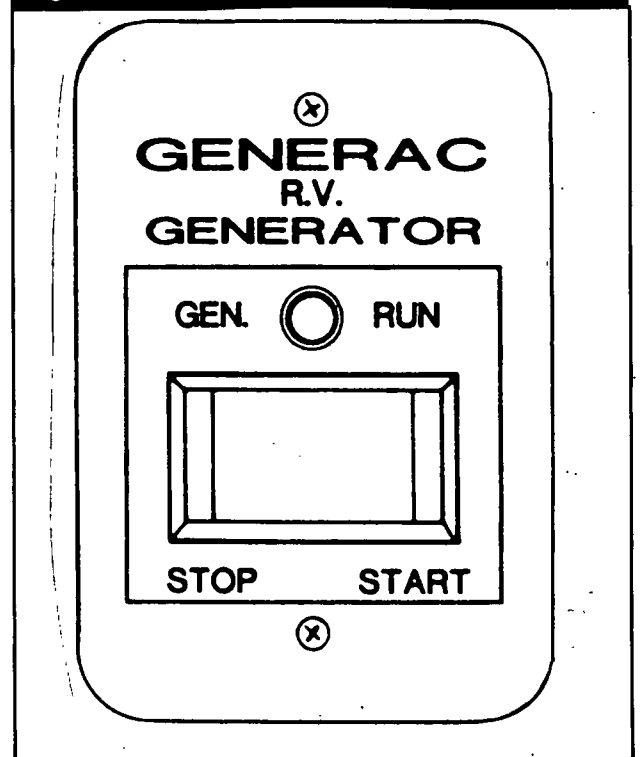
Protects generators AC output circuit against overload and provides a method of turning OFF the generators 120/240 volts AC output to vehicle circuits. The NP-66LPG has one 20 amp breaker and one 30 amp breaker.

NOTE: If the Series NP-66LPG has been reconnected for dual voltage 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 dual voltage, it is no longer RVIA listed.

REMOTE START/STOP PANEL

A remote mounted Start/Stop Panel is available, which allows you to start and stop the generator engine conveniently from inside the vehicle.

Figure 3 — Optional Remote Panel (Model 9042)





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 OF 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 may result in engine failure.

■ FUEL SUPPLY

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

■ 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 air flow, the engine-generator quickly overheats, which causes it to quickly shutdown. Overheating could also damage the unit or your vehicle.

■ ENGINE EXHAUST GAS

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) THROBBING 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 THE GENERATOR

To start the generator from either the generator control panel or from the optional Remote Panel, 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 starting from the generator panel, turn OFF loads by setting the generator's main circuit breaker to "OFF" or "OPEN". If starting from a Remote Panel, turn OFF loads using whatever means is provided in the vehicle (such as a main circuit breaker).

2. Hold the engine Start/Stop Switch at START to crank engine. Release the switch when the engine starts.
3. Let the engine run at no-load for a few minutes to stabilize and warm up.
4. Turn ON electrical loads, using whatever means provided (such as a 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. Place Start/Stop switch in its STOP position.



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.

■ LETTING THE ENGINE STABILIZE

The generator supplies correct rated frequency and voltage only at the 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.

■ DO NOT OVERLOAD THE GENERATOR

You can read the rated wattage/ampere 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 will cause the engine-generator to automatically shutdown.

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		RUNNING WATTS
*Air Conditioner (12,000 Btu).....	1700	Lawn Mower	1200
Battery Charger (20 amp).....	500	Light Bulb	100
Belt Sander (3").....	1000	Microwave Oven	700
Chain Saw	1200	*Milk Cooler	1100
Circular Saw (6-12")	800 to 1000	Oil Burner on Furnace	300
Coffee Maker	1000	Oil Fired Space Heater (140,000 Btu)	400
*Compressor (1HP)	2000	*Paint Sprayer, Airless (1/3 HP).....	600
*Deep Freeze.....	500	Radio	50 to 200
Disc Sander (9")	1200	*Refrigerator.....	600
Electric Range (one element).....	1500	Slow Cooker	200
Electric Skillet	1250	*Submersible Pump (1-1/2 HP)	2800
*Furnace Fan (1/3 HP)	1200	*Submersible Pump (1 HP)	2000
Hair Dryer	1200	*Table Saw (10")	1750 to 2000
Hand Drill (1").....	1100	Television	1750 to 2000
Hedge Trimmer.....	450	* Allow 2-1/2 times the listed watts for starting these devices.	
Impact Wrench	500		

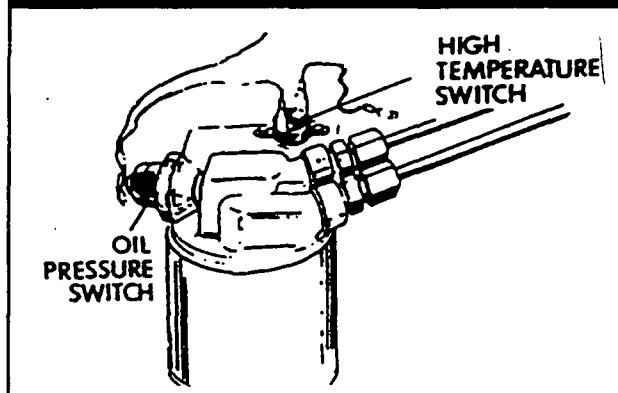
ADDITIONAL INFORMATION

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 4). Engine oil pressure holds the switch open during cranking and operation. Should oil pressure drop below about 8-10 PSI, the switch contacts close and the engine automatically shuts down.

Figure 4 — Switches for Engine Safety Shutdown



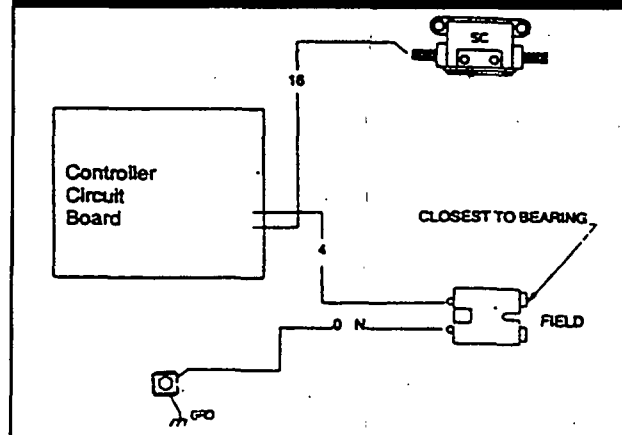
■ HIGH TEMPERATURE SHUTDOWN

An oil temperature switch (Figure 4) 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 5). During engine cranking only, a positive DC (battery) voltage is delivered through the diode, resistor, brushes and slip rings, and 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 "pick up" voltage in the stator windings.

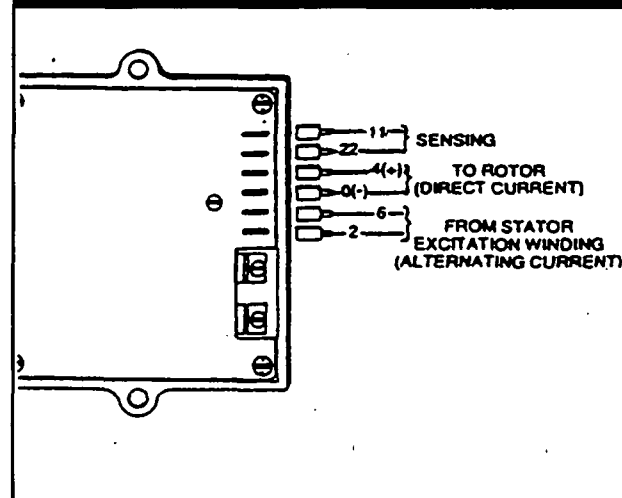
Figure 5 — Field Boost Circuit



■ OVERVOLTAGE PROTECTION

A solid state voltage regulator (Figure 6) 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 50 Hz, voltage is regulated at 120 volts (voltage-to-frequency ratio is 2-to-1).

Figure 6 — 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.

GENERAC
The Reliable One



Generac NP-66LPG Recreational Vehicle Generator

■ 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.
- 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.
- 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."

■ 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.

■ OPERATION IN HIGH GRASS OR BRUSH



WARNING: 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 BECOMES EXTREMELY HOT DURING OPERATION AND REMAINS HOT FOR A LONG TIME AFTER IT HAS SHUT DOWN.



FUEL REQUIREMENTS

The "NP" series generator is equipped with a liquefied petroleum (LP) gas fuel system. LP gas is usually supplied as a liquid in pressure tanks.

"NP" series generators require a "vapor withdrawal" type fuel system. This type of gaseous fuel system uses the vapors forming above the liquid fuel in the storage tank. Air temperature around the storage tank must be high enough to sustain adequate fuel vaporization. In colder climates, you may need to use an independent heat source to be sure the fuel sufficiently vaporizes in the storage tank.

LP gas may consist of propane, butane or mixture of two gases. Propane vaporizes at temperatures as low as -20°F (-29°C), but butane returns to its liquid state when the temperature drops below about 32°F (0°C). For that reason, a higher ratio of propane is desired in the gas mixture when temperatures drop below freezing.

ENGINE OIL REQUIREMENTS

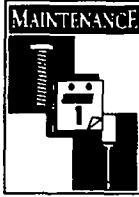
Use a high quality detergent oil classified "For Service SF" and with an oil viscosity rating of SAE 10W-30 oil. Do not pour in any additives to the recommended oil. Engine crankcase capacity is 1.5 U.S. quarts (1.4 liters). See MAINTENANCE section for oil level check and filling procedures.

ENGINE SPECIFICATIONS

Type of Engine	Twin Cylinder
Cooling Method	Air-cooled
Rated Horsepower.....	.16 at 3600 rpm
Displacement	479.4cc
Compression Ratio	8.6 to 1
Cylinder Block.....	Aluminum with cast iron sleeve
Type of Governor	Mechanical, fixed speed
Engine Governed Speed	See chart above
Air Cleaner	Paper element with foam pre-cleaner
Starter	12 volts DC electric
Ignition System	Solid state with flywheel magnet
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.....	2700
Rated Maximum Continuous AC Output	6600 watts (6.6 kw)
Voltage	120 volts*
Rated Maximum Continuous AC Current	55 amperes
Phase	single
Frequency	60 Hertz
Weight.....	213 pounds
Length	25 inches
Width	18.5 inches
Height	15.75 inches
* The unit is reconnectable to 120 and/or 240 volts, dual voltage output.	
Rated maximum continuous current at 240 volts is 27.5 amps.	



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

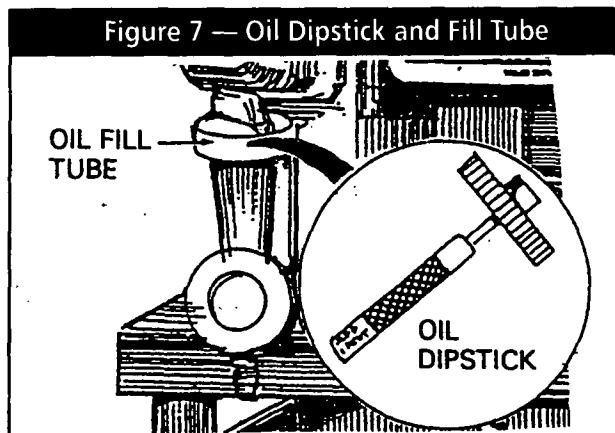
- Checking engine oil level.
- Changing engine oil.
- Changing oil filter.
- Changing the air cleaner.
- Cleaning the air intake screen.
- Cleaning spark plugs.

CHECKING ENGINE OIL LEVEL

Check engine crankcase oil level at least every eight hours of operation, or before each use (Figure 7).

- 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 FILL ABOVE "FULL" MARK.**
- Install and tighten oil dipstick cap before operating the engine.

NOTE: See "Engine Oil Requirements" on Page 12 for recommended oils.



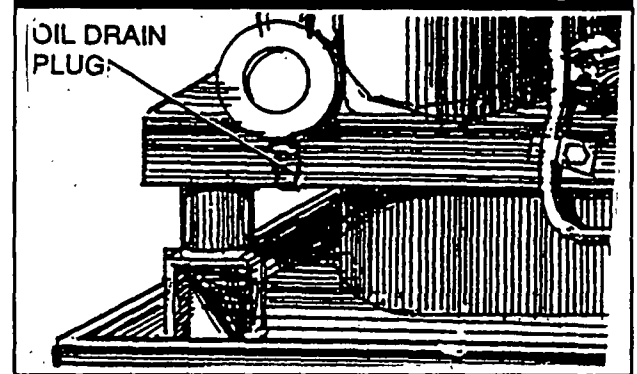
CHANGE ENGINE OIL

Change engine oil after the first 25 hours of operation (after the 25 hour break-in period, Page 8). 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 cap from oil drain hose (Figure 8). Drain oil completely into a suitable container.
- When oil has drained, install and tighten drain hose cap.
- Remove oil dipstick and fill crankcase with the recommended oil (See Page 12). The engine crankcase can hold about 1.4 liters. **DO NOT FILL ABOVE "FULL" MARK.**
- Install and tighten dipstick cap before operating engine.

Figure 8 — Location of Oil Drain Plug



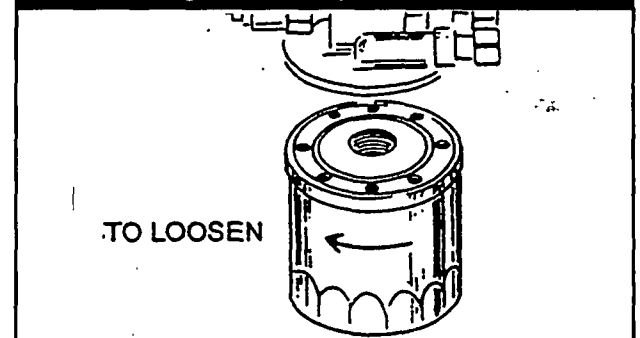
CHANGE OIL FILTER

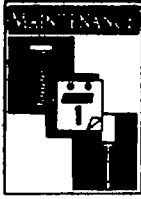
Replace the engine oil filter after the first 25 hours of operation, every 100 operating hours thereafter.

- Turn oil filter counterclockwise to remove (Figure 9).
- 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.

NOTE: Check oil level and fill to full mark after checking for leaks. Filter will retain some oil.

Figure 9 — Engine Oil Filter





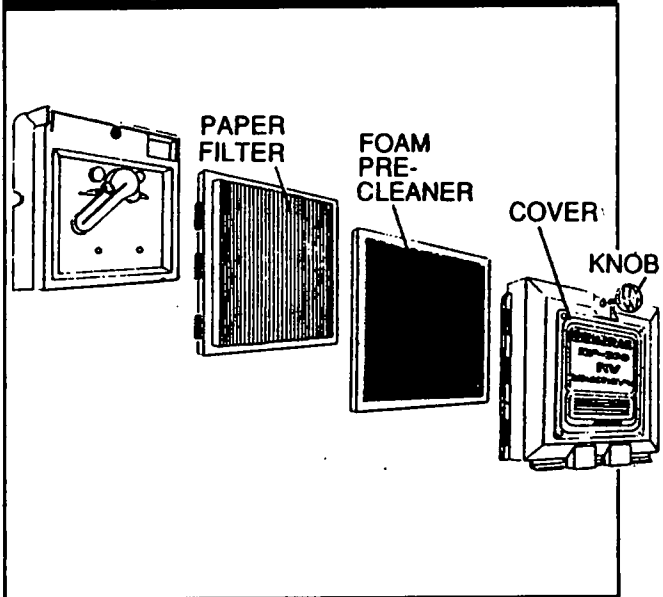
ENGINE AIR CLEANER

Clean and re-oil the foam pre-cleaner every three months or ever 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 10):

- 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.

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

Figure 10 — Engine Air Cleaner

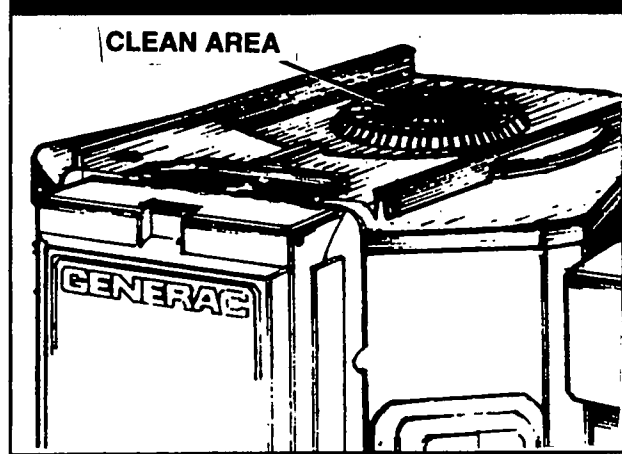


CLEAN AIR INTAKE SCREEN

Clean all foreign material from the air intake screen (Figure 11) 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 11 — Cleaning Air Intake Screen



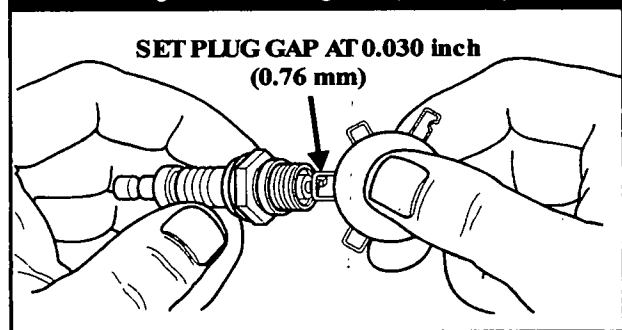
ENGINE SPARK PLUGS

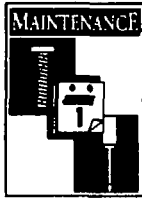
Clean each engine spark plug and set gaps to 0.030 inch (0.76mm) every 100 hours of operation (Figure 12). Clean by scraping or wire brushing and washing with commercial solvent. DO NOT BLAST CLEAN SPARK PLUGS.



CAUTION: Sparking can occur if wire terminal does not fit firmly over spark plug terminal end. If necessary, reform wire terminal to obtain a tight fit.

Figure 12 — Engine Spark Plug





MISCELLANEOUS MAINTENANCE

■ SPARK ARRESTOR MUFFLER

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 recreational vehicle generators do not have a spark arrestor screen, but are of the more efficient "toriod" 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 MATERIAL. 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. Inspect the generator battery as follows:

Once Weekly

Inspect battery posts and cables for tightness, corrosion. Clean and/or tighten as necessary.

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

Every Six Months

Have the battery state of charge and condition checked by an automotive service facility. This should be done with an automotive type battery hydrometer.



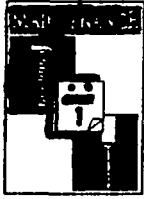
DANGER: STORAGE BATTERIES GIVE OFF EXPLOSIVE HYDROGEN GAS. THIS GAS CAN FORM AN EXPLOSIVE MIXTURE AROUND THE BATTERY FOR SEVERAL HOURS AFTER CHARGING. THE SLIGHTEST SPARK CAN IGNITE THE GAS AND CAUSE AN EXPLOSION. SUCH AN EXPLOSION CAN SHATTER THE BATTERY AND CAUSE BLINDNESS OR OTHER INJURY. ANY AREA 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 unit's 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.

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 fuel."
- While the engine is still warm from running, drain the oil completely. Refill the crankcase with SAE 10W-30 oil having an 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 table-spoons 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:

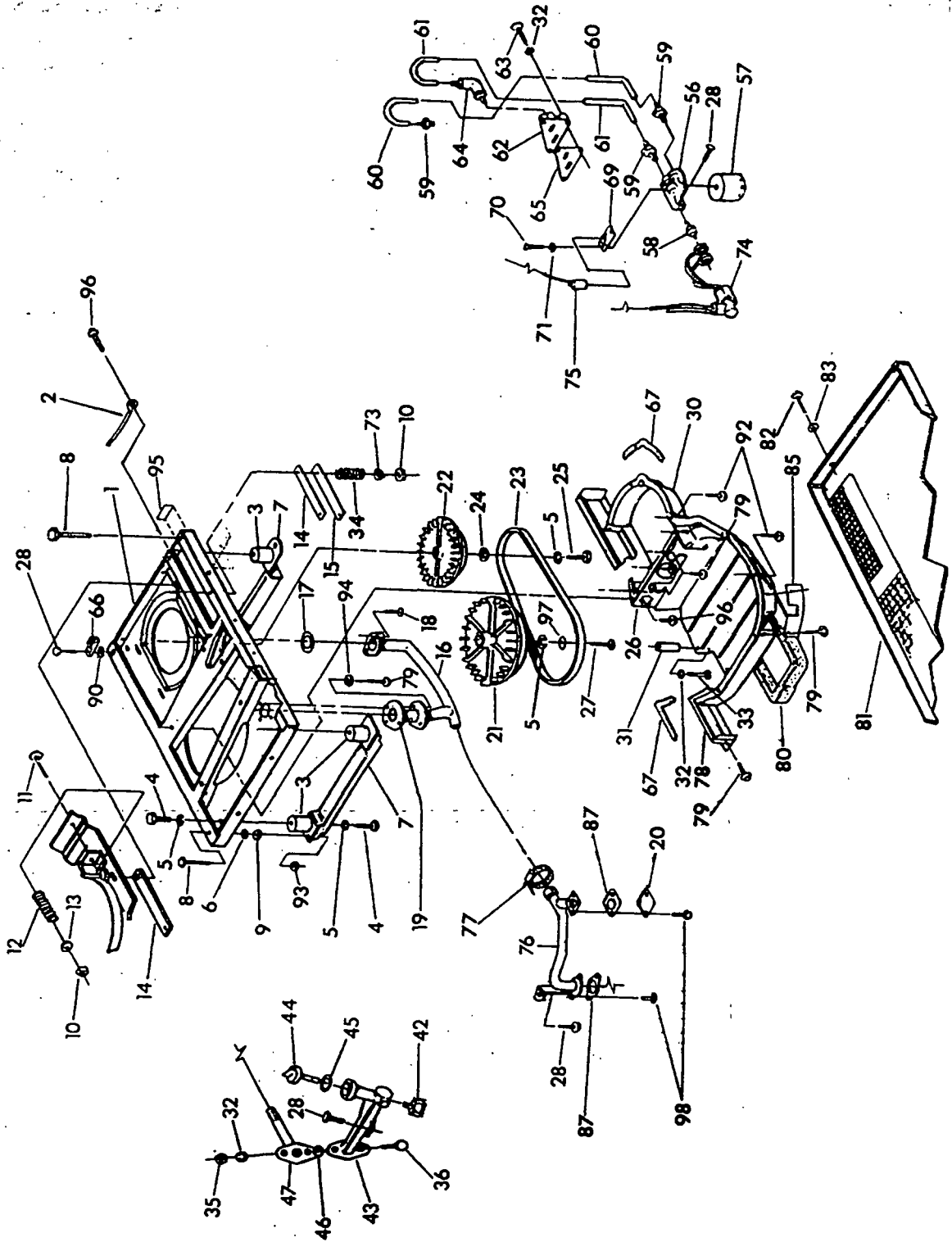
- Check tag on engine for oil viscosity and classification. Verify that the correct recommended oil is used in the engine. If necessary, drain and refill with proper oil.
 - Check battery. Fill all cells to the proper level with distilled water. **DO NOT USE TAP WATER IN THE BATTERY.** Recharge battery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



TROUBLESHOOTING POINTS

PROBLEM	CAUSE	CORRECTION
Engine won't crank.	<ol style="list-style-type: none"> 1. 15 amp fuse blown. 2. Loose or corroded or defective battery cables 3. Defective starter contactor. 4. Defective starter motor. 5. Battery is discharged or defective. 6. Defective Controller Circuit Board 	<ol style="list-style-type: none"> 1. Replace fuse. 2. Tighten, clean or replace as necessary. 3. Replace contactor. 4. Replace starter motor. 5. Recharge or replace battery. 6. Replace defective circuit board.
Engine cranks but won't start	<ol style="list-style-type: none"> 1. Out of fuel. 2. Fuel shutoff valve to RV fuel system (if so equipped) is closed. 3. Engine is flooded. 4. Defective Controller Circuit Board 5. Spark plugs defective. 6. Defective ignition magneto on engine. 7. Bad carburetor. 8. Dirty engine air cleaner filter. 	<ol style="list-style-type: none"> 1. Replenish fuel tank. 2. Open fuel shutoff valve. 3. Wait 5-10 minutes; try again. 4. Replace defective circuit board. 5. Clean, regap or replace plugs. 6. Replace, if defective. 7. Adjust, repair or replace. 8. Clean or replace filter as needed.
Engine starts hard, runs rough.	<ol style="list-style-type: none"> 1. Dirty engine air cleaner filter. 2. Defective spark plugs. 3. Defective ignition magneto on engine. 	<ol style="list-style-type: none"> 1. Clean or replace filter as needed. 2. Clean, regap or replace plugs. 3. Replace, if defective.
Engine starts, shuts down when Start/Stop switch is released.	<ol style="list-style-type: none"> 1. Engine oil level is low. 2. Defective Controller Circuit Board. 3. Defective Low Oil Pressure Switch 4. Loss of generator AC-output. 	<ol style="list-style-type: none"> 1. Check oil and add oil as needed. 2. Replace if defective. 3. Replace defective switch. 4. Contact an authorized service facility.
No AC output from generator.	<ol style="list-style-type: none"> 1. Check main line circuit breaker. 2. Transfer switch (if so equipped) is set to wrong position. 3. Failure in vehicle electrical system. 4. Generator component failure. 	<ol style="list-style-type: none"> 1. Reset to ON or CLOSED. 2. Reset transfer switch. 3. See vehicle manual. 4. Contact an authorized service facility.

EXPLODED VIEW — BASE AND PULLEYS

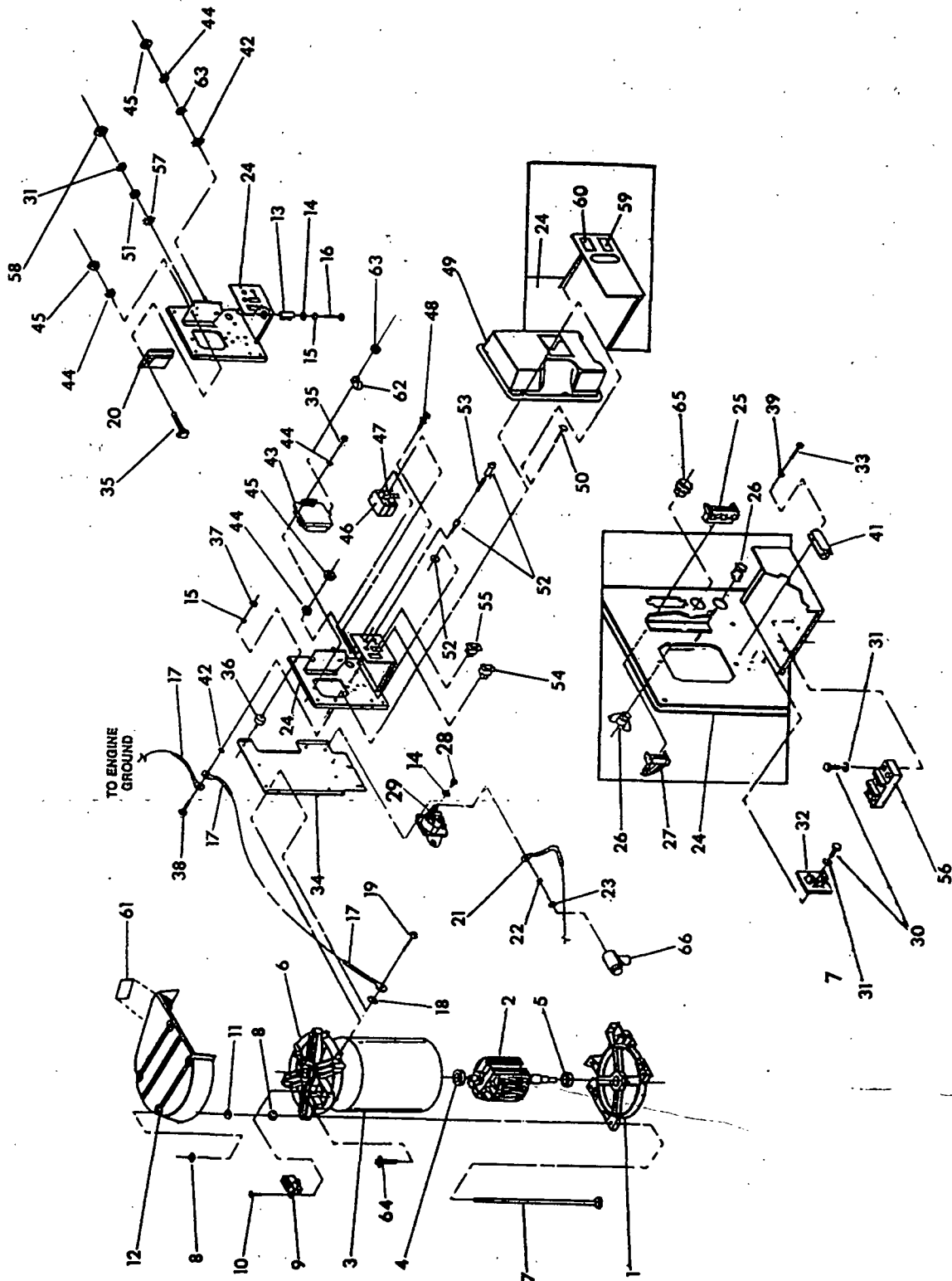


Recreational Vehicle Generator

REPAIR PARTS — BASE AND PULLEYS

ITEM	PART NO	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	86318	1	Mounting Base	47	75711	1	O-ring Adaptor
2	90141	1	Ground Cable	56	73179	1	Oil Filter Support
3	46911	4	Rubber Mount	57	70185	1	Oil Filter
4	25017	8	3/8"-16 x 1/2" Capscrew	58	60108	1	Oil Pressure Switch
5	46526	10	M10 Lock Washer	59	74948	3	5/16" Fitting
6	22129	2	M8 Lock Washer	60	74950	1	Outer Oil Tube
7	72391	2	Rubber Mount Skid	61	74951	1	Inner Oil Tube
8	77603	2	5/16"-18 x 3-1/2" Bolt	62	73134	1	Oil Pad Adaptor
9	22259	2	5/16-18 Hex Nut	63	38750	3	M6-1.00 x 30mm Capscrew
10	52858	6	M8-1.25 Flanged Lock Nut	64	74949	1	5/16" 90-degree Fitting
11	51730	2	M8-1.25 x 60mm Capscrew	65	68548	1	Oil Pad Gasket
12	29459	2	Belt Tension Spring	66	62684	1	Grounding Lug
13	75215	2	Spring Center Washer	67	29289	1	1/16" x 8" Foam Tape
14	73146	4	Nylon Slide	69	75281	1	High Temperature Switch
15	75209	2	Nylon Slide Support	70	74027	2	M3-0.5 Pan Head Screw
16	73174	1	Exhaust Manifold	71	43182	2	M3 Lock Washer
17	79678	2	Exhaust Manifold Gasket	73	75237	4	Spring Retainer Washer
18	55173	4	M8-1.25 x 20mm Capscrew	74	77681	1	LOS 2-wire Vinyl Cap
19	72383	2	Collector Pan Gasket	75	75474	1	17" x 42" x 2" Vinyl Cap
20	90859	1	Cover Plate A External	76	90800	1	Exhaust Elbow
21	75224F	1	Engine Pulley	77	74907	1	1-1/8" Exhaust Clamp
22	73106F	1	Alternator Pulley	78	75226	1	Air Cover
23	75216	1	40" Poly Vinyl 4L Belt	79	56893	14	#10-24 x 1/2" Screw
24	49451	1	Pulley Retainer Washer	80	75229	1	Slide Pan Gasket
25	42633	1	3/8"-24 x 1" Capscrew	81	75227	1	Slide Pan
26	77017	1	Blower Housing Guide	82	79246	4	M6-1.0 x 16mm Capscrew with lock washer
27	73118	1	3/8"-24 x 2-1/2" Capscrew	83	22473	4	M6 Flat Washer
28	74906	5	M6-1.00 x 20mm Screw	85	72384C	1	Exhaust Outlet Cover
29	23152	4	3/8"-16 x 3/4" Capscrew	87	77643	2	Exhaust Outlet Gasket
30	72375	1	Blower Housing	90	22447	1	M6 Toothed Lock Washer
31	73185	1	Blower Housing Spacer	91	90088	1	Vinyl coated Clamp
32	22097	6	M6 Lock Washer	92	74908	10	M5-0.8 x 10mm Screw
33	77682	1	M5-0.8 x 80mm Capscrew	93	81105	2	5/16"-18 Flange Nut (special)
34	75242	4	Generator Mounting Spring	94	23897	6	M5 Flat Washer
35	49813	2	M6-1.00 Hex Nut	95	67210	1	Decal A Ground
36	45757	2	M6-1.0 x 25mm Capscrew	96	45756	4	M6 x 10mm Taprite Screw
42	26925	1	3/8" NPT Oil Drain	97	22131	1	M10 Flat Washer
43	75710A	1	Oil Fill and Drain Tube	98	68527	4	M6-1.0 x 20mm Capscrew with Lockwasher
44	74958	1	Cap and Dipstick Assembly				
45	67871	1	O-ring Cap				
46	75712	1	O-ring Drain				

EXPLODED VIEW — ALTERNATOR AND PANEL

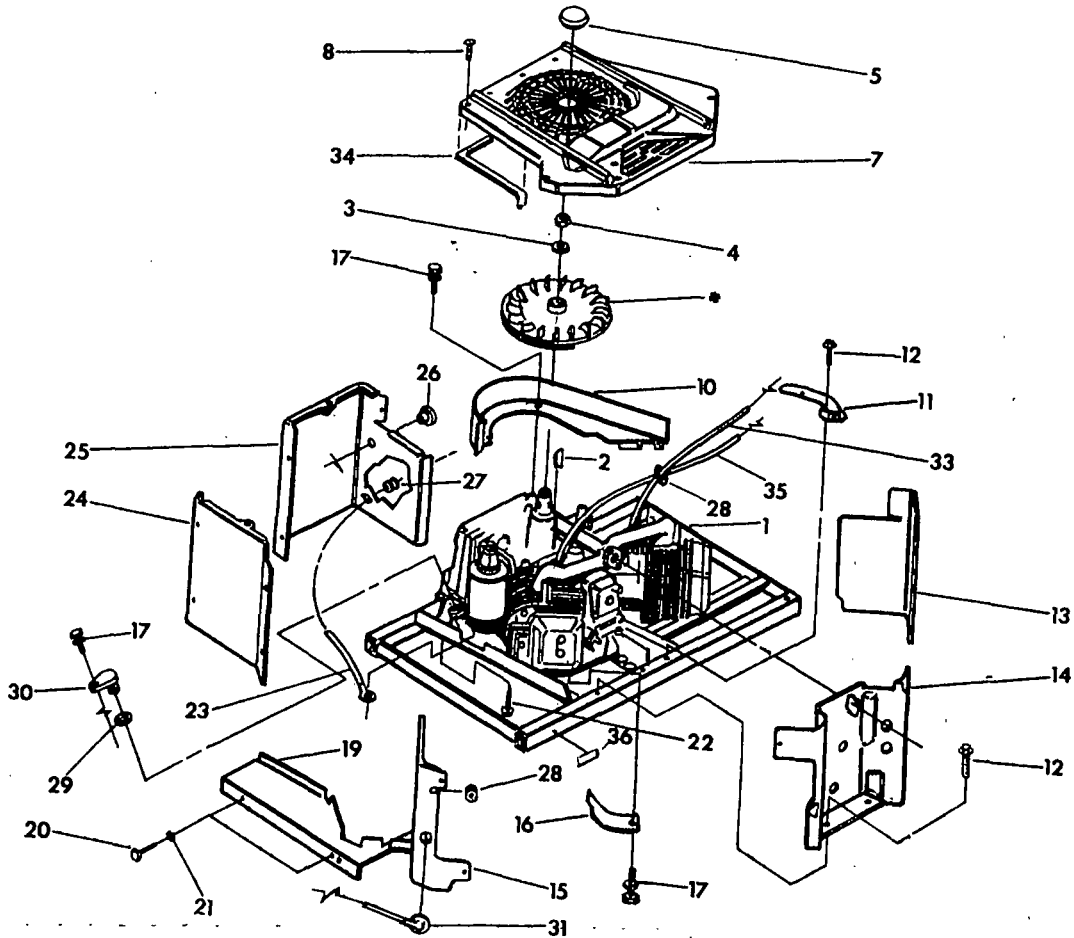


Recreational Vehicle Generator

REPAIR PARTS — ALTERNATOR AND PANEL

ITEM	PART NO	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRITPOIN
1	75995	1	Lower Bearing Carrier	34	86317	1	Panel Support Bracket
2	77004G	1	Rotor Assembly	35	75235	4	M5-0.8 x 30mm Capscrew
3	87845G	1	Stator Assembly	36	82737	4	Vibration Mount
4	73159	1	Ball Bearing	37	49813	4	M6 Hex Nut
5	31971	1	Ball Bearing	38	49815	1	M5-0.8 x 16mm Capscrew
6	72379	1	Upper Bearing Carrier	39	43182	2	M3 Lock Washer
7	77006	4	Stator Stud	41	54502	1	3A Circuit Breaker
8	52858	8	M8-1.25 Flange Lock Nut	42	67444	1	M5 Shakeproof Washer
9	66386	1	Brush Holder	43	83049	1	Voltage Regulator
10	66849	2	M5-0.80 x 15mm	44	49226	6	M5 Lock Washer
11	27756	4	Nylon Washer	45	51716	4	M5-0.80 Hex Nut
12	86314	1	Generator Top Housing	46	90145	1	30A Circuit Breaker
13	75234	1	Resistor	47	90145	1	30A Circuit Breaker
14	22473	3	Flat Washer	48	25105	4	No. 6-32 Screw with lock washer
15	22097	5	M6 Lock washer	49	86315	1	Panel Cover
16	74095	1	M6-1.00 x 60mm Capscrew	50	90734	4	M4-0.7 x 16mm Capscrew and Flat Washer
17	90141	2	Ground Cable				
18	22447	1	Shakeproof Lock Washer	51	22985	1	M4 Flat Washer
19	74906	4	M6-1.00 x 20mm Screw	52	32300	1	Fuse Holder
20	92234	1	Controller Circuit Board	53	22676	1	15 Amp Fuse
21	10-74260	1	Starter Cable	54	87798	1	Start/Stop Switch
22	22129	2	5/16" Lock Washer	55	92113	1	Fuel Pump Switch
23	22259	2	5/16"-18 Hex Nut	56	75210A	1	Terminal Block
24	86316	1	Panel Sheet Metal	57	23365	1	M4 Shakeproof Washer
25	53650	1	4-pin Connector	58	51715	1	M4-0.7 Hex Nut
26	20575	1	Connector	59	90157	1	Decal — C.B. Rating 30 Amp
27	75244	1	Remote Harness	60	90156	1	Decal — C.B. Rating 20 Amp
28	66476	2	M6-1.0 x 12mm Capscrew with lock washer	61	89438B	1	Customer Connection Decal
				62	31791	1	Hose Clamp
29	86729	1	Starter Contactor	63	23897	1	M5 Flat Washer
30	75476	3	M4-0.7 x 16mm Capscrew	64	74908	1	M5 x 10mm Taptite Screw
31	22264	4	M4 Lock Washer	65	23484S	1	Bushing
32	65795	1	Battery Charge Rectifier	66	75763A	1	Battery Cable Boot
33	90987	2	M3-0.5 x 15mm Capscrew				

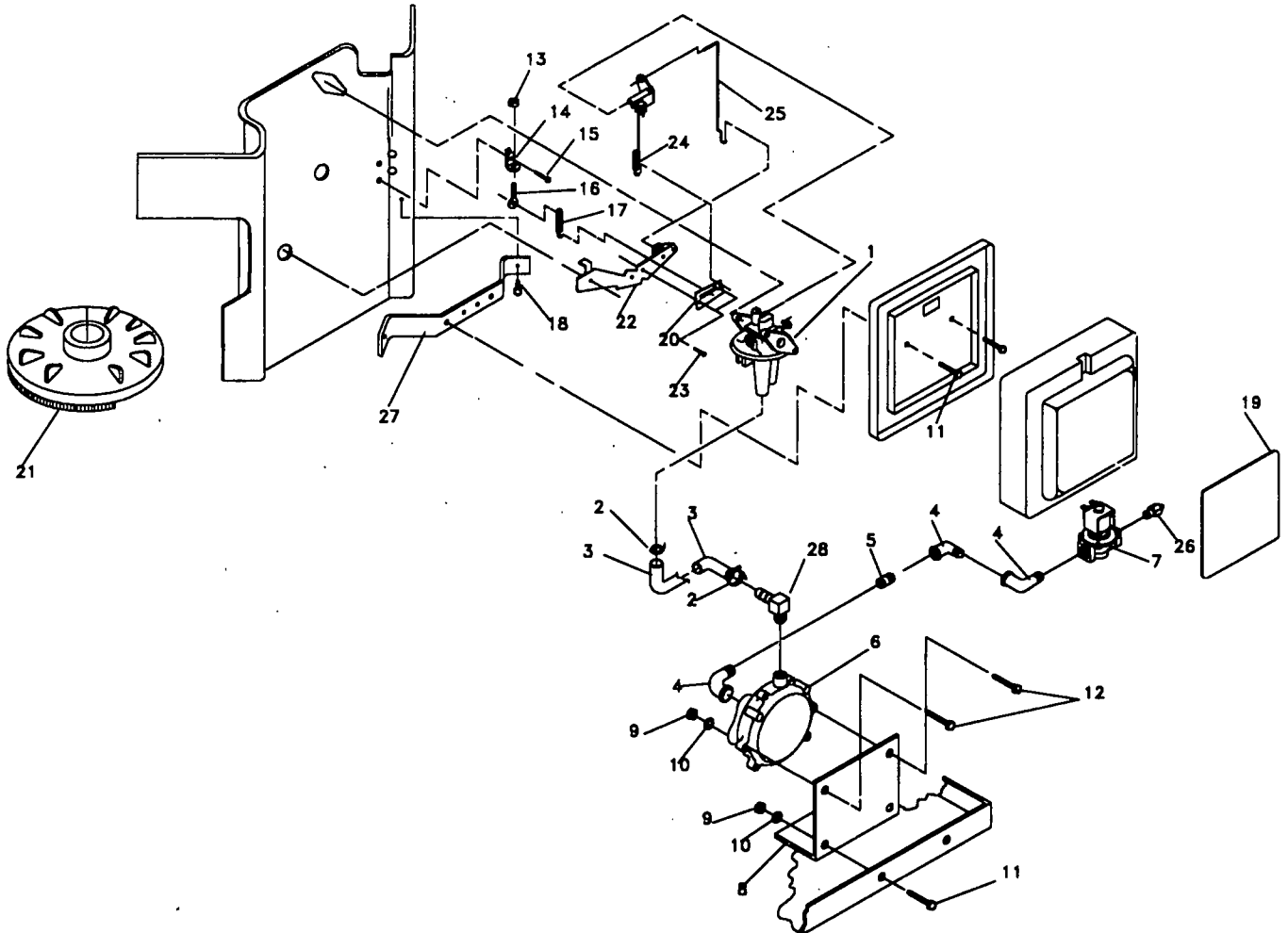
EXPLODED VIEW — ENGINE ENCLOSURE



ITEM	PART NO	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	See Engine Exploded View	20	42907	2	M8-1.25 x 16mm Capscrew
2	99258	1	6 x 25 Woodruff Key	21	22129	2	M8 Lockwasher
3	67198N	1	Belleville Washer	22	75246	4	3/8"-16 x 1-1/4" Screw
4	67890	1	M20-1.50 Hex Nut	23	10-74260	1	No. 16 Wire Assembly
5	87865	1	Flywheel Access Plug	24	74900	1	Starter Cover
7	86313	1	Engine Housing Top	25	73186	1	Crankcase Wrapper
8	56893	23	No. 10-24 x 3/8" Crimpite Screw	26	81108	1	Snap Bushing
10	87750	1	Flywheel Scroll	27	22717B	1	Rubber Grommet
11	74916	1	No. 2 Base Cover	28	22717A	3	Rubber Grommet
12	74908	9	M5 x 10mm Taptite Screw	29	67866	1	O-ring
13	73190	1	No. 2 Cylinder Wrapper	30	77001	1	Oil Fill Plug
14	78858	1	Valley Cover	31	73132	2	Spark Plug Boot
15	78859	1	No. 1 Cylinder Wrapper	33	87858A	1	Ground Wire Assembly — #2 cyl.
16	74902	2	Wrapper À Barrel	34	29289	2 ft.	Foam Tape
17	66476	5	M6-1.00 x 12mm Capscrew with lock washer	35	87858B	1	Ground Wire Assembly — #1 cyl.
19	73191	1	No. 1 Base Cylinder Cover	36	50277	1	Oil Drain Decal

Recreational Vehicle Generator

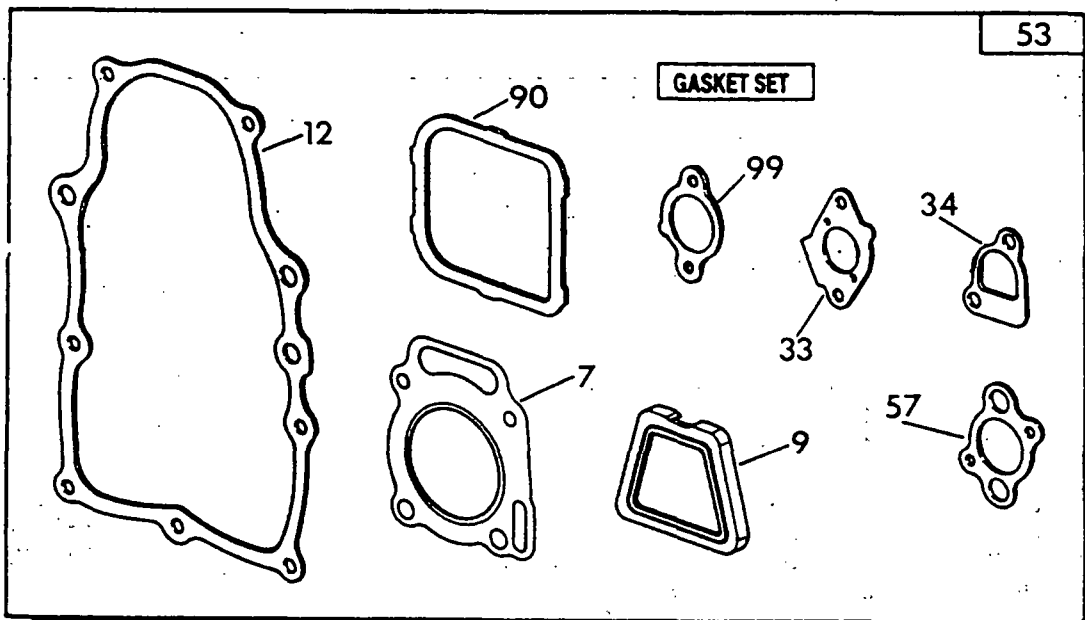
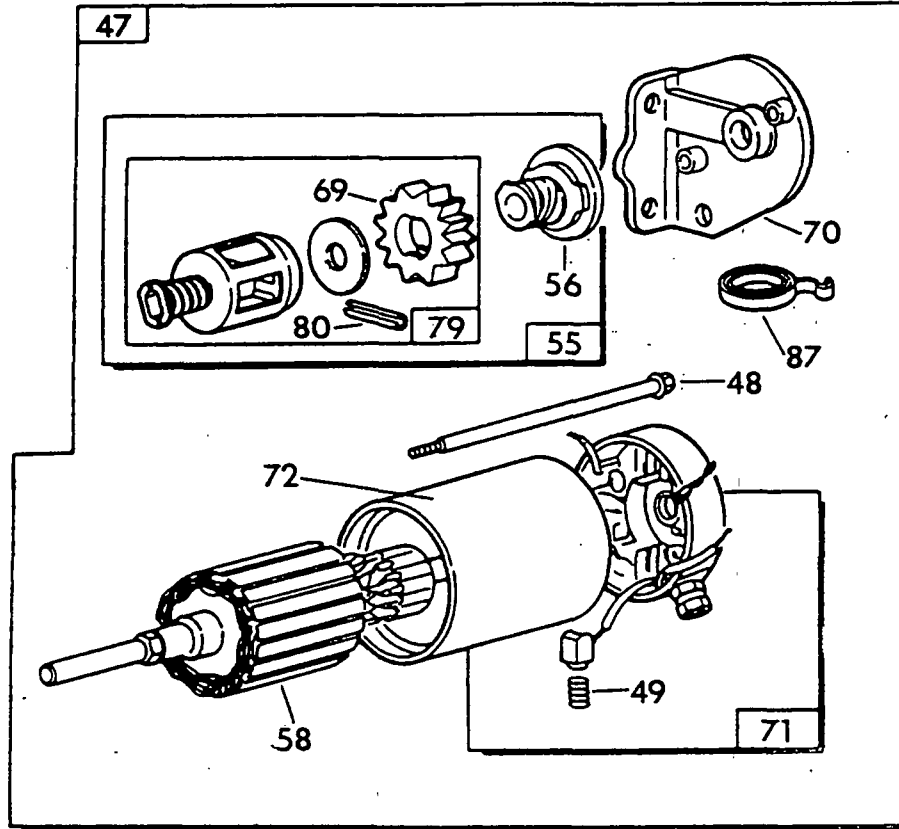
EXPLODED VIEW— CARBURETOR



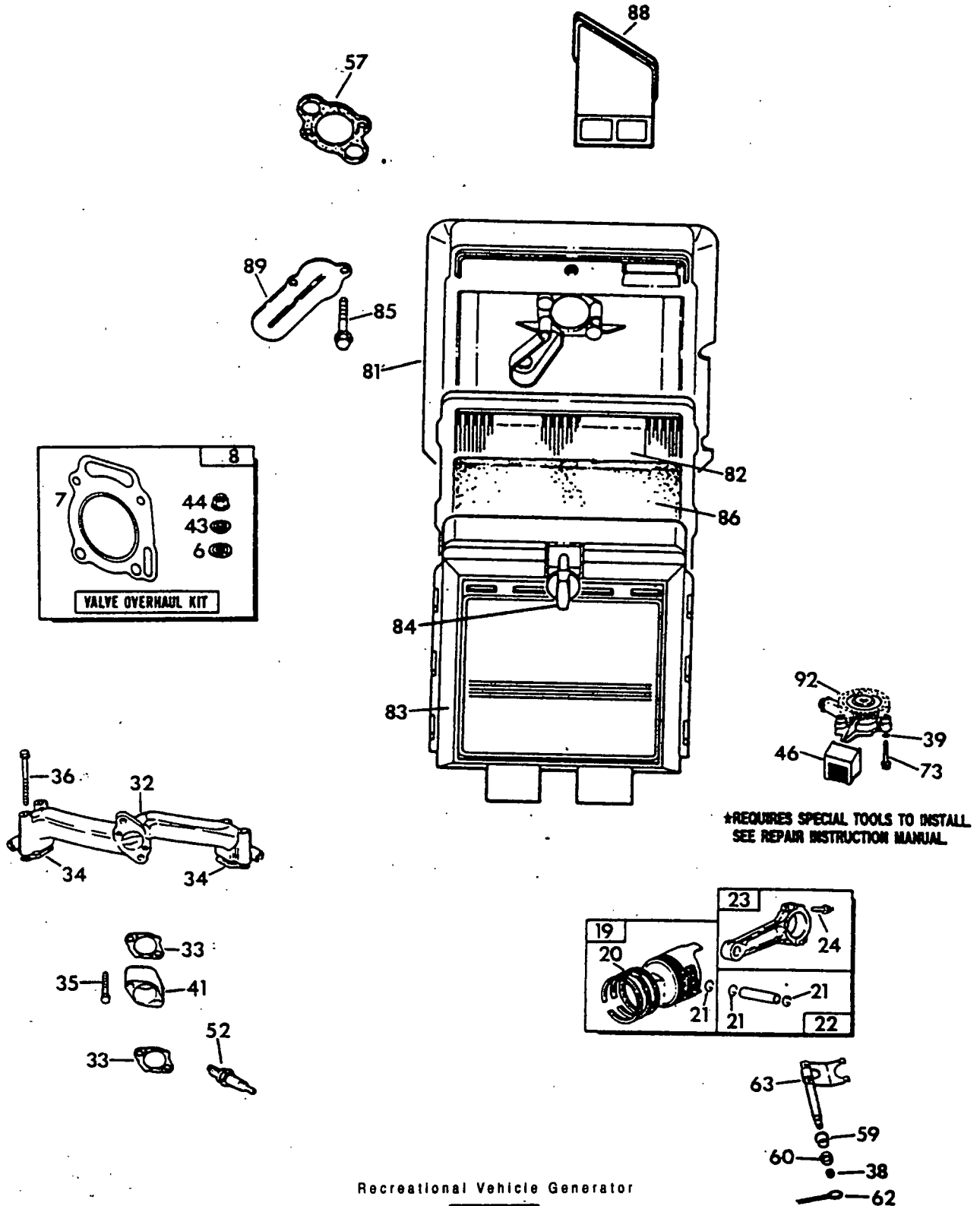
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	A1662A	1	V-TWIN CARBURETOR	17	74962C	2	M6-1.0 x 12MM HEX SCREW
2	57822	2	HOSE CLAMP	18	66476	2	M6-1.0 x 12MM HEX SCREW W/LOCKWASHER
3	74994	1	1/2" I.D. x 10" LONG HOSE	19	91351	1	AIR CLEANER DECAL
4	26307	3	STREET ELBOW	20	75944	1	GOVERNOR SPRING BRACKET
5	26915	1	3/4" PIPE SLEEVE	21	73130	1	FLYWHEEL ASSEMBLY
6	75211	1	GASEOUS FUEL REGULATOR	22	70155	1	GOVERNOR LEVER
7	A2666	1	GASEOUS FUEL SOLENOID	23	76242	2	1/8" I.D. x 1/8" RIVET
8	78864	1	REGULATOR MOUNTING BRACKET	24	70125	1	ANTI-LASH SPRING
9	49813	4	M6 HEX NUT	25	70108	1	GOVERNOR-TO-CARBURETOR ROD
10	22097	4	M6 LOCK WASHER	+	28739	4	4" LONG TIE WRAP
11	47411	2	M6-1.0 x 16MM HEX HD. CAPSCR.	+	55162	9cc	PIPE SEALANT
12	38750	2	M6-1.0 x 30MM HEX HD. CAPSCR.	26	81190	1	LP HOOK UP FITTING
13	37398	1	HEX LOCK NUT (NYLON)	27	70103	1	AIR CLEANER SUPPORT BRACKET
14	74961	1	GOVERNOR ADJUSTER BRACKET	28	61695	1	BARBED 90 DEG. 3/8" x 1/2"
15	56893	5	#10-24 x 1/2" SCREW				
16	47227	1	GOVERNOR ADJUSTER SCREW				

Recreational Vehicle Generator

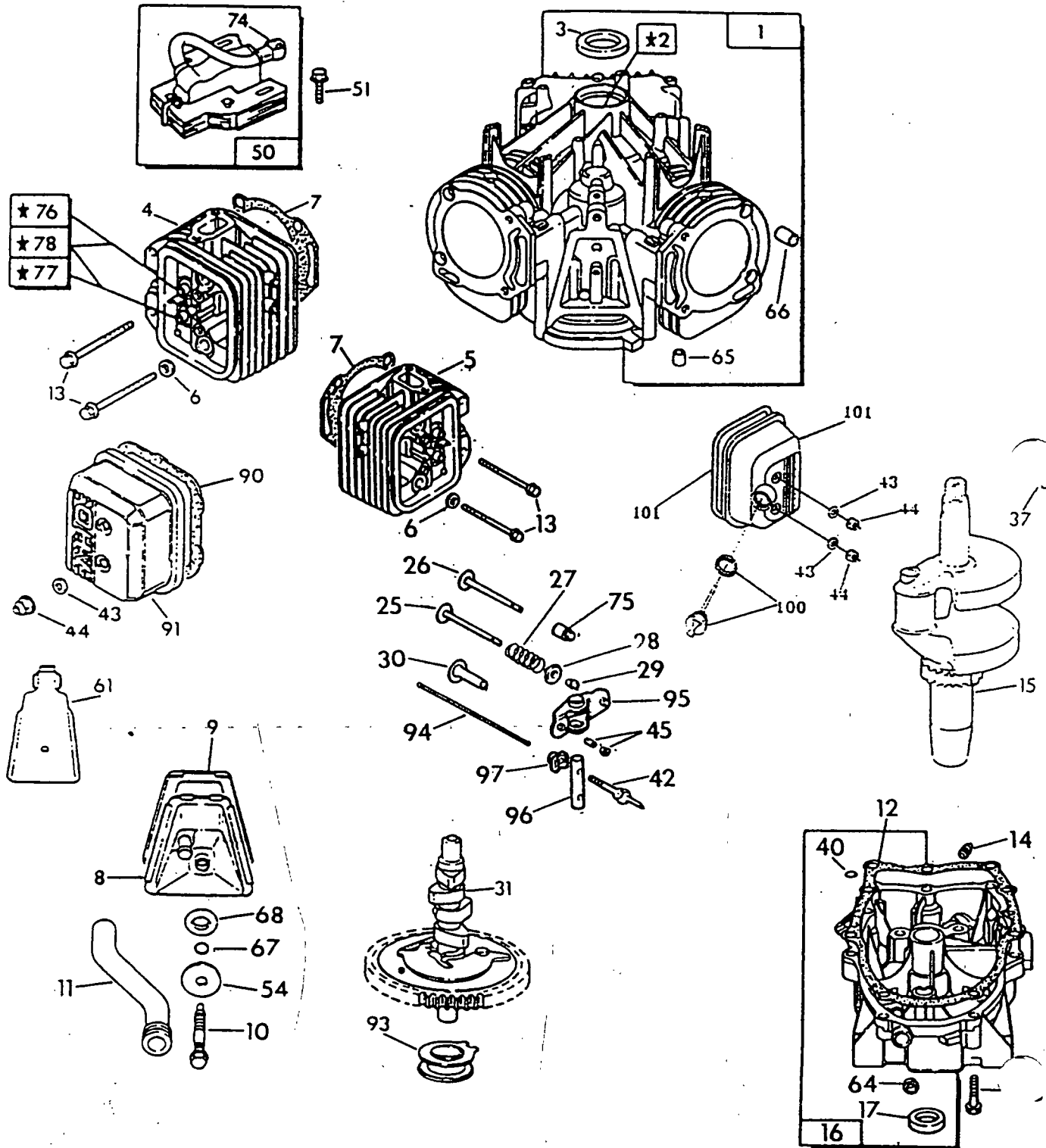
EXPLODED VIEW — GN-480 ENGINE



EXPLODED VIEW — GN-480 ENGINE



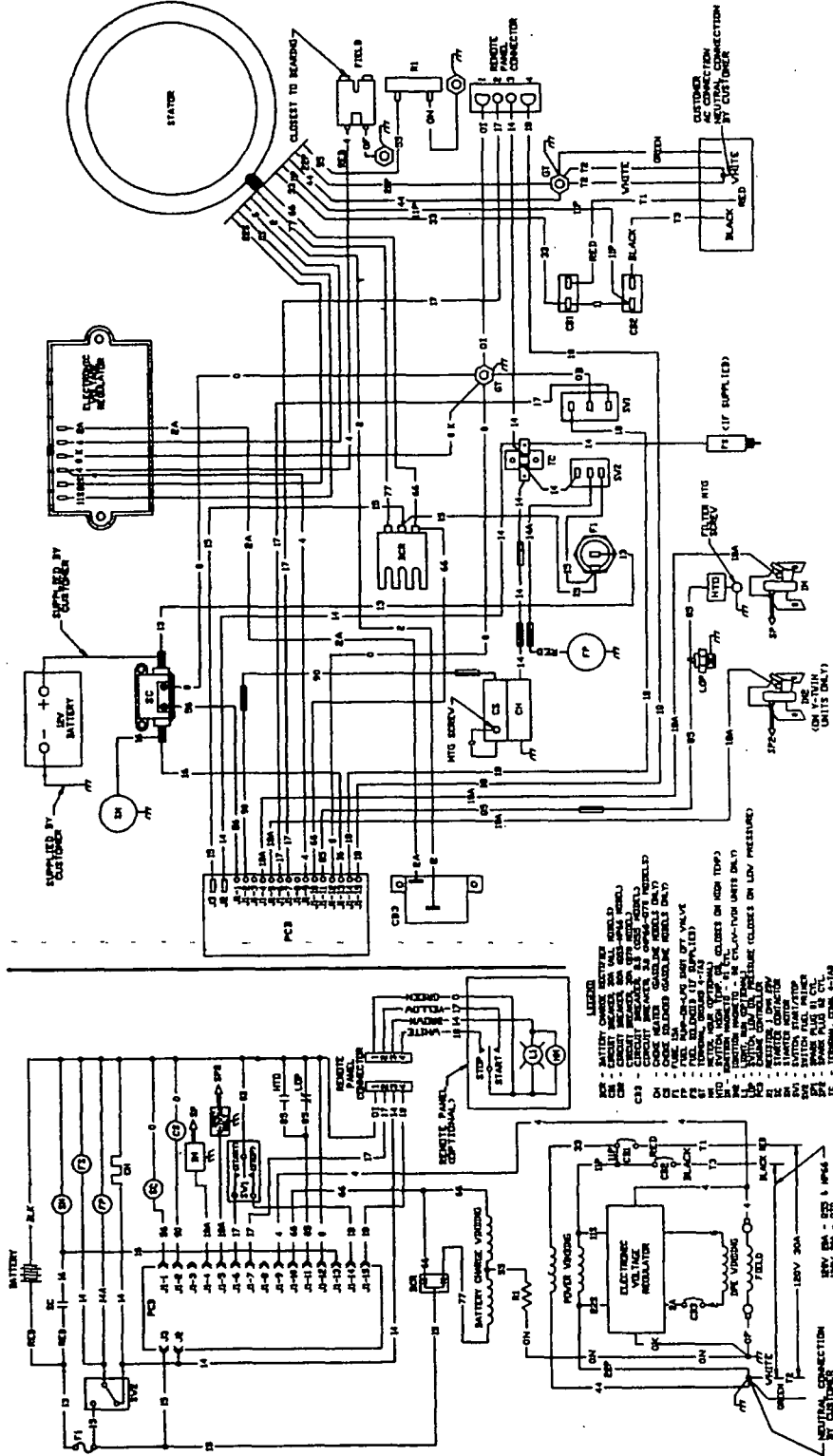
EXPLODED VIEW — ENGINE PARTS



REPAIR PARTS LIST — GN-480 ENGINE

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	69331	1	Cylinder Assembly	51	72536	2	Ignition Armature Screw
2	69333	1	Sleeve Bearing	52	72347	2	"D" Spark Plug
3	67805	1	Oil Seal	53	75258	1	Engine Gasket Kit
4	79234	1	No. 1 Cylinder Head Assembly	55	75260	1	Starter Drive Assembly
5	79235	1	No. 2 Cylinder Head Assembly	56	75261	1	Clutch Assembly
6	70169	4	Sealing Washer	57	66480	1	Air Cleaner Gasket
7	69332	2	Cylinder Head Gasket	58	75269	1	Armature Assembly
8	72301	1	Breather Assembly	59	72361	1	Governor Shaft Bushing
9	72315	1	Breather Gasket	60	72362	1	Governor Shaft Bushing
10	70190	2	Breather Screw	61	70199	1	Breather Baffle
11	70596	1	Breather Tube	62	72366	1	Cotter Pin
12	69336	1	Oil Sump Gasket	63	72367	1	Governor Fork
13	69325	8	Cylinder Head Bolt	64	72365	1	Governor Shaft Washer
14	67888	2	3/8" NPT Oil Drain Plug	65	68555	2	Crankcase Dowel
15	72334	1	Crank Shaft Assembly	66	67806	4	Cylinder Head Dowel
16	75247	1	Oil Sump Assembly	67	75262	1	Breather Screw Seal
17	67924	1	Oil Seal Assembly	68	75263	1	Breather Seal Screw
18	67878	9	Oil Sump Bolt	69	75264	1	Starter Gear
19	75248	2	Standard Piston Assembly	70	75265	1	Starter End Cap Assembly
20	75249	2	Standard Piston Ring Set	71	75266	1	Commutator Cap Assembly
21	69327	4	Piston Locking Ring	72	75267	1	Starter Housing Assembly
22	72520	2	Standard Piston Ring	73	68572	2	Oil Pump Screw
23	72521	2	Connecting Rod Assembly	74	75272	2	Spark Plug Terminal
24	72346	4	Connecting Rod Bolt	75	70122	2	Valve Stem Seal
25	69316	2	Exhaust Valve	76	67910	2	Intake Valve Seat
26	69317	2	Intake Valve	77	67911	2	Exhaust Valve Seat
27	67816	4	Valve Spring	78	67813	4	Valve Guide
28	69320	4	Valve Spring Retainer	79	75268	1	Retainer and Pin
29	70513	4	Valve Keeper	80	75270	1	Roll Pin
30	70584	4	Valve Tappet	81	70592	1	Air Cleaner Base
31	70530	1	Camshaft Assembly	82	73123	1	Air Filter
32	72358	1	Intake Manifold	83	70593	1	Air Cleaner Cover
33	69379	2	Carburetor Mounting Gasket	84	72300	1	Air Cleaner Cover Screw
34	67895	2	Intake Manifold Gasket	85	67156	2	Air Cleaner Base Screw
35	70594	2	Carburetor Mounting Bolt	86	69341	1	Foam Pre-cleaner
36	67158	4	Intake Manifold Mounting Bolt	87	80011	1	Brush Set Spring
37	68574	1	1/8" NPT Plug Pipe	88	70597	1	Air Inlet Tube
38	68554	1	Governor Shaft Seal	89	69358	1	Breather Deflector
39	68573	1	Oil Pump O-ring	90	67920	2	Valve Cover Gasket
40	70506	1	Oil Galley O-ring	91	69328	2	Valve Cover
41	70554	1	Carburetor Spacer	92	70547	1	Oil Pump Assembly
42	70568	4	Rocker Arm Stud	93	70536	1	Governor Slider
43	75253	4	Washer Valve Cover Seal	94	70577	4	Push Rod
44	67885	4	M6 Nylon Nut	95	70599	4	Rocker Arm Assembly
45	75254	4	Valve Adjust Screw	96	70567	2	Rocker Arm Shaft
46	70535	1	Oil Screen	97	70566	4	Rocker Arm Support
47	75255	1	Starter Motor	98	75271	1	Valve Overhaul Kit
48	75256	2	Starter Motor Bolt	99	67897	2	Exhaust Gasket
49	75257	4	Brush Assembly	100	91481	1	Gasket and Cap Assembly
50	67891	1	Ignition Armature Assembly	101	91480	1	Rocker Arm and Cover

ELECTRICAL DATA



Recreational Vehicle Generator

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.

This warranty is effective only upon Generac's receipt prior to expiration of the warranty period of a completed Warranty Registration Card. This card is the only valid registration identification and must be presented at time of service. Claims will not be accepted without presentation of Registration Card.

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, Computer Control Board (if applicable) 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 generator 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.

THIS WARRANTY DOES NOT COVER:

- Costs of maintenance, installation, and start-up.
- 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.
- All and all transportation/travel expenses.
- Rental equipment used while warranty repairs are being performed.
- Overtime labor.
- Starting batteries, fuses, light bulbs, and engine fluids.

****NORMAL WEAR: As with all mechanical devices, the GN-Series engines need periodic parts service and replacement to perform well. This warranty will not cover repair when normal use has exhausted the life of a part or an engine.**

There is no other express warranty, Generac hereby disclaims any and all implied warranties, including but not limited to those of merchantability and fitness for a particular purpose to the extent permitted by law. The duration of any implied warranties which cannot be disclaimed is limited to the time period (one year) as specified in the express warranty. Liability for consequential, incidental, or special damages under any and all warranties is excluded to the extent permitted by law. Some states do not allow limitations on how long an implied warranty lasts, or the exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

For service, see your nearest Generac authorized warranty service facility or call 1-800-333-1322. Warranty service can be performed only by a Generac authorized service facility. This warranty will not apply to service at any other facility. At the time of requesting warranty service, evidence of original purchase date must be presented.

Generac Corporation

P.O. Box 8

Waukesha, WI 53187

Telephone: (414) 544-4811

Fax: (414) 544-4851